03.12-05/31/95-01540

APPENDIX A SITE SUMMARY REPORT (ESE, 1990)

SITE SUMMARY REPORT FINAL

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MARINE CORPS BASE Camp Lejeune, North Carolina

Contract No. N62470-83-B-6101

Prepared For:

Naval Facilities Engineering Command Atlantic Division

Prepared By:

ENVIRONMENTAL SCIENCE & ENGINEERING, INC. Plymouth Meeting, Pennsylvania

ESE PROJECT NO. 49-02036

September 1990

3.10 SITE 35 - CAMP GEIGER AREA FUEL FARM

3.10.1 SITE BACKGROUND

Camp Geiger Area Fuel Farm (Figure 35-1) is located north of the intersection of G and Fourth Streets, approximately 400 feet southwest of Brinson Creek (PWDM Coordinates 12, Cll). This 2,500 square feet AOC was used in 1957 and 1958 for storing and pumping fuel. Mogas was released to the soil through a leak in an underground line near an above-ground storage tank and tank pad. The Camp Lejeune Fire Department has estimated the amount of fuel released to be in the thousands of gallons. Exact quantities released can not be determined since the records were destroyed. The spill migrated east and northeast towards and into Brinson Creek. Fuel at the surface of the shallow aquifer was disposed of by digging holes to the water table and igniting the fuel. Fuel which contaminated Brinson Creek was also ignited and burned.

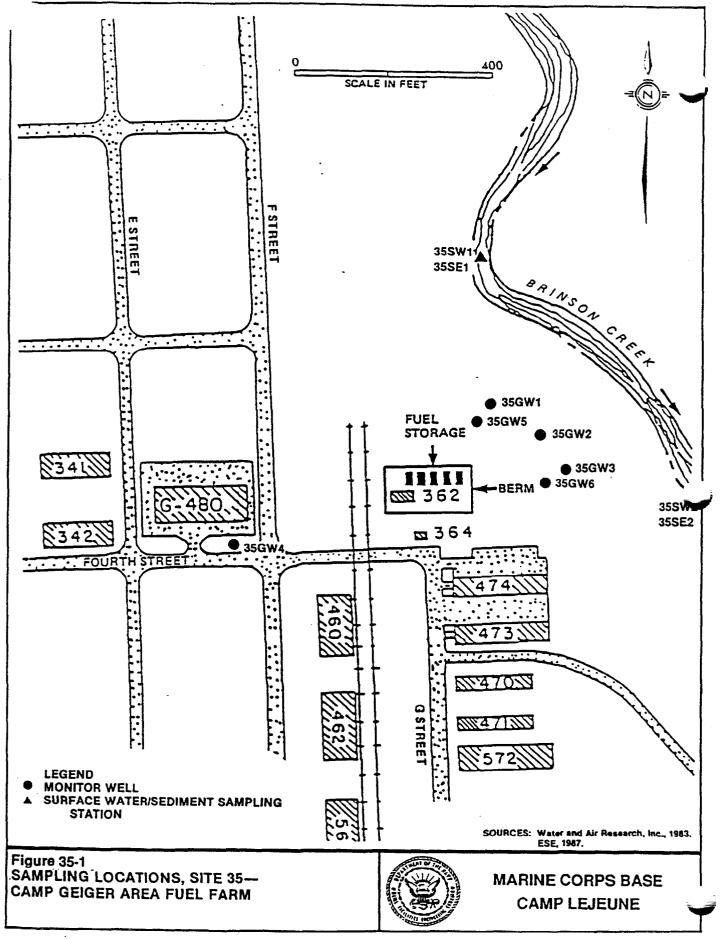
Site 35 is underlain by layers of silty sand with interbedded layers of clayey sand, coarse sand, and sandy gravel. A geologic cross section of Site 35 is presented in Figure 35-2. The cross section is drawn on an east-west line (Figure 35-3). The surface of the shallow groundwater lies within the interbedded silty sand and clayey sand at depths ranging from 7.02 to 11.05 feet below land surface. The groundwater contour map presented in Figure 35-4 indicates that the shallow groundwater flows to the northeast toward Brinson Creek with a gradient of approximately 0.014 ft/ft.

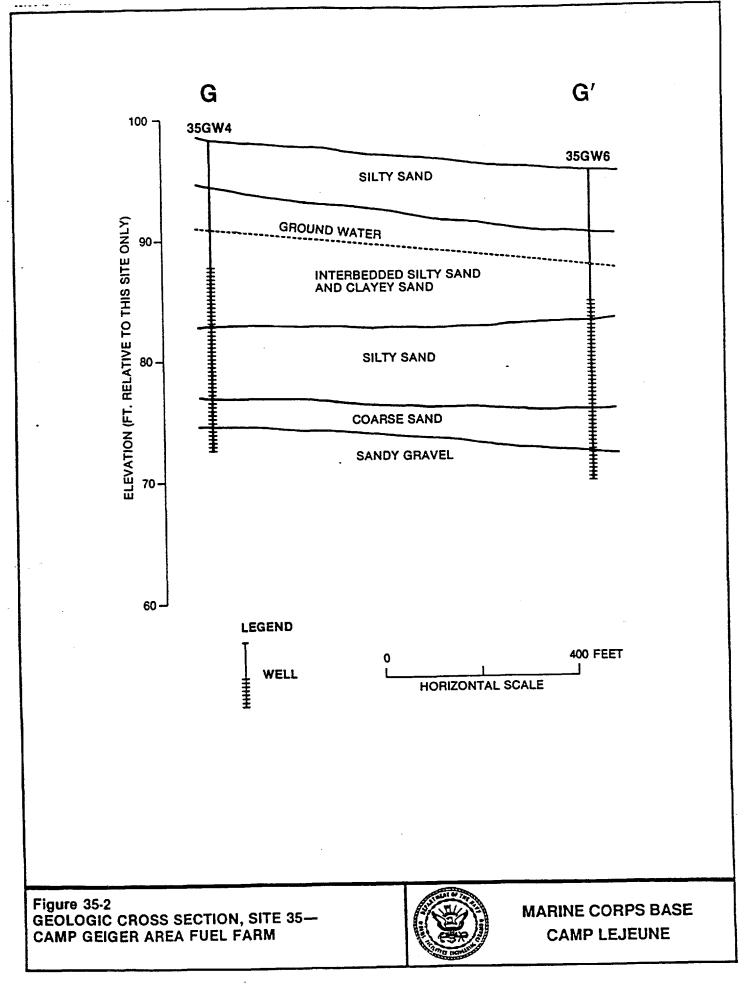
3.10.2 SITE INVESTIGATION

GROUNDWATER

Three hand-augered borings to the groundwater surface were dug at the downgradient side of the facility in 1984 and three groundwater samples were collected (35GW1, 35GW2, and 35GW3). The samples were analyzed for lead, O&G, and VOCs. Appendix A lists the individual target analytes and their abbreviations. Table 35-1 presents the analytical results for those analytes that were above the appropriate method detection limits. Levels of lead (above N.C. Groundwater Standards) were identified in all three samples which indicates that the shallow groundwater was contaminated from the release of fuel into the soils. The VOC components of the fuel were not detected.

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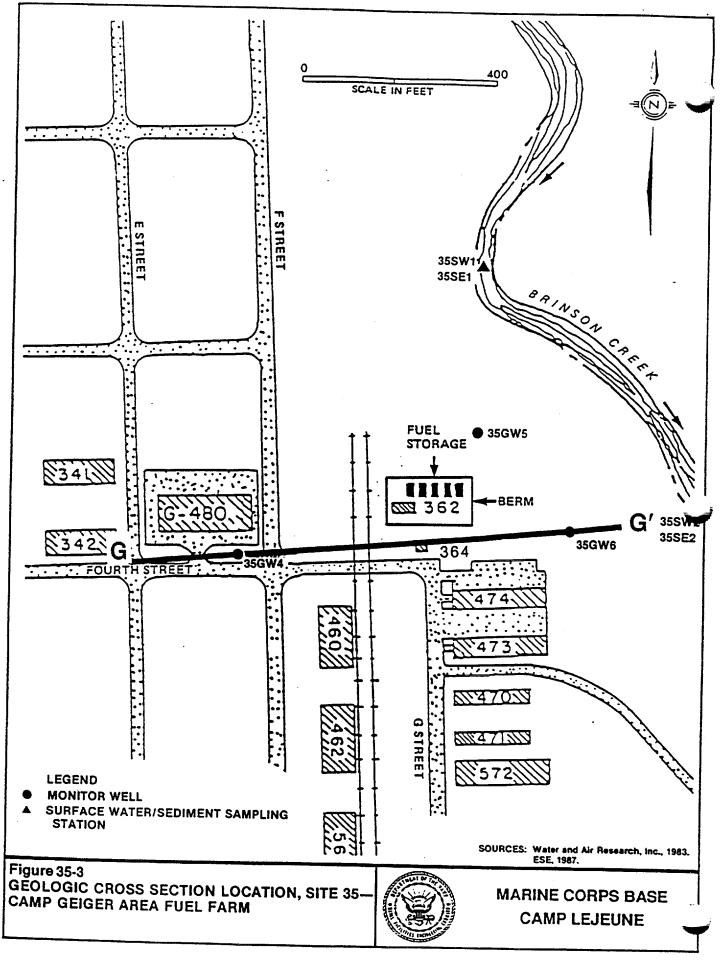
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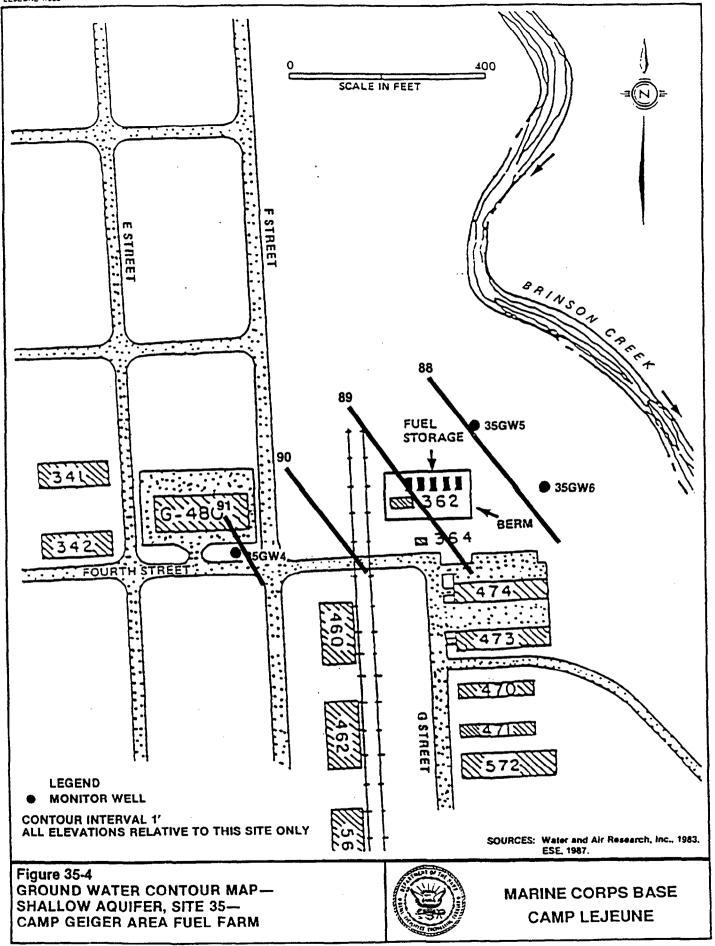


TABLE 35-1. SITE 35 - CAMP GEGER AREA FUEL FARM DETECTED TARGET ANALYTES GROUND WATER SAMPLES

DATE	NC OW STANDARDS	35GW1 8/7/84	35GW2 8/6/84	35GW3 8/7/84	35GW4 12/4/86	35GW4 3/6/87	35GWS 12/4/86	350W5 3/6/87	350W6 12/4/86	35GW6 3/6/87
PARAMETER		•								
BENZENE	1	<0.2	<0.2	<0.2	<1	<1	30	17	<1	1.3
T-1,2-DICHLORO										
ETHENE	70	<0.7	<0.7	<0.7	<1.6	3.2	<1.6	<1.6	28	29
TRICHLOROETHENE	NONE	<0.8	<0.9	<0.9	<1.0	3	<1.0	0	11	11
METHYLENE CHLORIDE	5	4	<0.7	<0.7	<2.1	<2.8	<2.8	<2.8	<2.8	<2.1
LEAD		1063	1102	3659	<21	<27	33	<27	<21	<27
OIL & GREASE	NONE	<1000	46000	<1000	200	12000	2000	· 2000	200	1000

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Values reported are concentrations in micrograms per liter (ug/L); this approximates parts per billion (ppb).

Source: ESE, 1990.

Three permanent groundwater monitoring wells were installed in 1986 to allow for more representative samples of the groundwater (Figure 35-1). Well 35GW4 was installed upgradient of the spill area and Wells 35GW5 and 35GW6 were installed downgradient. The groundwater samples taken from these wells were analyzed for lead, O&G, and VOCs, as well as xylene and ethylene dibromide (EDB). Table 35-1 presents the analytical results of the December 1986 and March 1987 sampling efforts. In the upgradient well (35GW4), no analytes were detected except for O&G in 1986. In 1987, O&G and trans-1,2dichloroethene were detected. The source of these two analytes in the upgradient well is not clearly defined in the current database.

Wells 35GW5 and 35GW6 were found to contain sporadic distributions of fuelderived compounds and VOCs. Benzene, lead and O&G were detected in Well 35GW5, which is located northeast of the tanks. This suggests that the detected analytes are a result of the recorded fuel spillage at the site. Well 35GW6 is located east of the tanks and was found to contain O&G, trans-1,2-dichloroethene, trichloroethene and benzene. The presence of VOCs in this well suggests that widespread low level contamination of the shallow aquifer may be present as a result of the fuel release or other as yet unidentified sources. Well 35GW6 is in a generally cross gradient position of the tanks and is located approximately 200 feet downgradient of an automobile maintenance (hobby) shop. Due to the distance of the well from the tanks, VOCs in the recorded fuel release may not be a sole contributor to VOCs in the groundwater at Well 35GW6. The automobile maintenance shop represents a potential source of waste solvents detected in this well.

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SOILS

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Three soil samples were analyzed from the three hand-augered borings in 1984. Lead and O&G were detected in all three samples. The analytical results are listed below.

	_	<u> Concentration (ug/g)</u>				
Parameter	3	5GW1	35GW2		<u>35GW3</u>	
Lead	8	6	j.	6		
Oil and grease		67	2200		40	

SURFACE WATER

Two surface water samples were collected from Brinson Creek in 1986, one upstream and one downstream of the site (Figure 35-1). These samples were analyzed for lead, O&G, and ethylene dibromide. No target analytes were detected in either sample.

SEDIMENT

Two sediment samples from Brinson Creek were taken in 1986 at the same locations as the surface water samples. These samples were analyzed for lead, O&G, and ethylene dibromide. Both sediment samples were found to contain lead and O&G, suggesting that episodic contamination of the creek has occurred or is occurring. Levels of both these analytes were higher in the upstream sample, suggesting that the discharge of contaminated groundwater to the creek is occurring at the far northern section of site and that the sample was not taken far enough upstream to truly represent upstream conditions. Another possibility is that the source of O&G and lead may be located upstream of Site 35.

3.10.3 SUMMARY AND CONCLUSIONS

The 1986/87 analytical data indicate that widespread contamination of the shallow aquifer with fuel derived contaminants and VOCs may exist at Site 35. The migration mechanisms by which contaminants have migrated to the upgradient well have not been identified. However, due to the nature of hydrocarbon fuel, a spill would tend to widely disperse on the surface of

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groundwater in a sandy medium. This would explain the concentrations of fuel related compounds in Well 35GW4. A second separate source of observed contaminants may be present at the automobile maintenance shop located upgradient of Well 35GW6.

The groundwater contour map (Figure 35-4) indicates that groundwater flow is towards Brinson Creek. Surface water samples contained no detectable target analytes. Sediment samples, however, contained lead and O&G. Because at the time of the fuel release to the environment, fuel reached the creek, it can be assumed that contaminants may be currently discharging to the creek via the groundwater.

3.10.4 RECOMMENDATIONS

The work efforts to date at this AOC have identified the presence of fuel derived contamination in the soils, shallow groundwater, surface water, and sediments. Further investigations should be designed to determine the extent (horizontal and vertical) of the contamination within the soils and groundwater and within Brinson Creek. In addition, investigation of the adjacent automobile hobby shop should be initiated to determine if that facility is a source of VOC contamination. A Risk Assessment should be conducted upon completion of the environmental characterization.

APPENDIX B COMPREHENSIVE SITE ASSESSMENT REPORT (LAW, 1992)

FINAL REPORT UNDERGROUND FUEL INVESTIGATION COMPREHENSIVE SITE ASSESSMENT

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VOLUME I

CAMP GEIGER FUEL FARM MARINE CORPS BASE

CAMP LEJEUNE, NORTH CAROLINA

February 8, 1992

Law Engineering Job No. J47590-6014

Law Engineering, Inc. Raleigh, North Carolina



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1.0 INTRODUCTION

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1.1 <u>Purpose of Investigation</u>

On September 29, 1990, the Commander of the Atlantic Division Naval Facilities Engineering Command (LANTDIV) in Norfolk, Virginia, contracted with Law Companies Group, Inc. to perform a Comprehensive Site Assessment (CSA) at the Camp Geiger Fuel Farm, Marine Corps Base (MCB), Camp Lejeune, North Carolina (Drawing 1.1). The purpose of the investigation was 1) to identify the presence, magnitude and extent of possible free-product accumulation and ground-water contamination and 2) to assess potential exposure to subsurface contaminants resulting from the release(s) of petroleum fuels. As stated in the CSA Workplan contained in Appendix A, the objective of the investigation was to provide sufficient data to meet the requirements of Sections 280.63 and 280.65 of 40 CFR Part 280, Federal Technical Standards for Underground Storage Tanks. This data should also be sufficient to meet the requirements of Sections .0704 and .0706 of Title 15A, Chapter 2, Subchapter 2N, North Carolina Criteria and Standards Applicable to Underground Storage Tanks.

1.2 <u>Scope of Work</u>

Authorization to proceed with the investigation was granted by the Commander of LANTDIV of Norfolk, Virginia, via Contract/Purchase Order No. N62470-90-D-7625/0002 dated September 29, 1990.

As outlined in the contract and the CSA Workplan, the Scope of Work included preparation of a health and safety plan, collection of ground-water samples using the Hydropunch ground-water sampling system, performance of a soil-gas survey and tracer testing of the underground fuel lines, excavation of soil borings, installation of monitoring wells, collection and analysis of soil and ground-water samples, performance of a preliminary exposure assessment, performance of a preliminary evaluation of remedial alternatives, preparation of a final report of investigation and presentation of data and conclusions. Specific methods employed during performance of the project activities are described within the appropriate sections of this report.

1.3 <u>Previous Investigations</u>

A leaking underground line was reportedly discovered at the Camp Geiger Fuel Farm (Fuel Farm) in 1957-58. Law Engineering could not locate written documentation of



this incident, but found reference to it in a report by Environmental Science & Engineering (ESE) of Plymouth Meeting, Pennsylvania (1990). This report stated that the Camp Lejeune Fire Department estimated that thousands of gallons of fuel was released; the records documenting the exact quantities of the spill have been destroyed. The spill migrated to the east and northeast into Brinson Creek. Gasoline at the top of the surficial aquifer was exposed by digging trenches; the fuel was then ignited and burned. Fuel which reached Brinson Creek was also ignited and burned. Mr. Ron Waters of Direct Support Stock Control of the Logistics Department at Camp Geiger, who has been employed at Camp Geiger for 35 years, stated that a fireman from the Camp Geiger Fire Department had told him that the leak occurred when a dispensing pump was damaged. He was also told that the Fire Chief had to wade through the spilled product to turn off the valve to the pump.

MCB Camp Lejeune is listed on the National Priority List (NPL) and Wastelan Preremedial Report, both of which are compiled by the Environmental Protection Agency (EPA) and monitored by the Division of Solid Waste Management of the North Carolina Department of Environment, Health and Natural Resources. MCB Camp Lejeune was placed on the NPL in 1983, after Water and Air Research, Inc. of Gainesville, Florida performed an Initial Assessment Study of 76 potentiallycontaminated sites at the base. Water and Air Research identified 21 of these sites

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as warranting further investigation. Camp Geiger Fuel Farm is one of the 21 sites recommended for further investigation. A twenty-second site at Camp Lejeune was later added to this list.

ESE performed Confirmation Studies of the 22 sites requiring further investigation and performed the Fuel Farm study between 1984 and 1987 (ESE, 1990). During this study, ESE advanced three hand-auger borings, collected ground-water and soil samples from each and documented ground water contaminated with lead and soil contaminated with lead, oil and grease. In 1986, ESE collected sediment and surfacewater samples from Brinson Creek and installed three monitoring wells, two east of and one west of the Fuel Farm. These wells were sampled after installation and again in 1987. Laboratory analysis did not reveal surface-water contamination, but did document lead, oil and grease in the sediment and soil samples. Ground water from both the upgradient and downgradient wells was found to be contaminated with volatile organic compounds. ESE could not identify a source for the contamination documented in the upgradient well. ESE identified two possible sources for the contamination in the downgradient wells. The first was the fuel spill which occurred at the fuel farm in the 1950's and the second was an automotive maintenance shop located southeast to the Fuel Farm, in Building No. TC-474.



NUS Corporation performed an investigation in the area north of the Fuel Farm in 1990. According to the NUS report (NUS, 199●), fuel was observed in a stormwater drainage ditch. Base personnel constructed an earthen dam in the drainage ditch to contain the fuel and rerouted storm drainage to the south. NUS installed four monitoring wells, three in the vicinity of the ponded stormwater and one in an apparent upgradient position. Results of laboratory tests performed by NUS revealed that ground water in one well and soil from the cuttings of two soil borings in the vicinity of this drainage ditch were contaminated with petroleum-fuel constituents. No free-phase petroleum hydrocarbons (free product) were reportedly observed in the wells. Ms. Amy Hubbard, project manager of the investigation for NUS, stated that NUS personnel did not observe any free product over the 8-week period of their investigation. Ms. Hubbard stated that she believes that the contamination resulted from a one-time surface release of product. Ms. Stephanie del Re-Johnson of the Installation/Restoration Division of the Environmental Management Department (EMD) at Camp Lejeune stated that she had observed a 5-foot thickness of free product on the surface of the ponded water. NUS determined from the four monitoring wells that the local direction of ground-water flow was to the northeast.

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During their investigation, NUS also conducted a geophysical survey in an attempt to determine if underground storage tanks (USTs) remained at the site of the former



gasoline station. This gasoline station was located west of the Fuel Farm and south of the headwaters of the drainage ditch in which the fuel was discovered. From the data acquired during this geophysical survey, NUS identified an anomaly to the north of the foundation of the gasoline station.

In addition to the ESE and NUS assessments, the United States Geological Survey (USGS) performed an investigation at MCB Camp Lejeune (Harned et al, 1989). This study is referenced fully in Section 8.0 of this report and includes discussions of the hydrology and hydrogeology of Camp Lejeune.

2.0 DESCRIPTION OF SITE

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2.1 Area of Investigation

The Camp Geiger Fuel Farm is located on the north side of Fourth Street at its intersection with G Street at Camp Geiger, Camp Lejeune MCB, Onslow County, North Carolina (Drawing 1.1). The site is situated entirely within the confines of Camp Geiger. The study area is bounded on the west by D Street, on the north by Second Street, on the east by Brinson Creek, and on the south by Building No. TC-474



(Drawing 2.1). Mr. Tom Morris of the Installation/Restoration Division of the EMD and Mr. John Starcalla of the Public Works Department at Camp Lejeune provided numerous site drawings showing the locations of underground utilities and aboveground structures. We have included a list of these drawings in Table 2.1.

2.2 <u>History and Operations of the Site</u>

2.2.1 History of the Site

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Construction of Camp Lejeune began in 1941. Construction of Camp Geiger was completed in 1945. We have not been able to identify when Camp Geiger Fuel Farm was constructed, although we have reviewed a site plan for the Fuel Farm which is dated July 17, 1941 (Y. and D. Drawing No. 161783). When constructed, the tanks at the Fuel Farm were used for the storage of No. 6 fuel oil. The tanks were converted for storage of other petroleum products when No. 6 fuel was no longer needed. Law Engineering could not determine when this conversion occurred.

Law Engineering has identified three sites in the study area which once were the sites of structures which have since been demolished. The first site is an ice house, which was located adjacent to the railroad spur on the west side of the Fuel Farm. The ice

house was supplied with ice brought to the site by train. Mr. Morris provided drawings of the ice house (Building No. TC-360, Y. & D. Drawing Nos. 161813 and 161814, dated June 26, 1941). The site drawing does not show underground utilities other than water and water drains. We cannot determine when the ice house was demolished. The foundation and pilings which supported the ice house remain at the site.

The second site is a "filling" (gasoline) station, which was located on the northeast corner of the intersection of F and Fourth Streets, adjacent to the ice-house site. Mr. Morris provided a site drawing of the building which had occupied the site (Building No. 341, P.W. Drawing No. 2816, dated November 12, 1947) but could not locate a site plan showing the location of the storage tanks, distribution lines and dispensing pumps. We cannot determine when the filling station was demolished. The foundation to the filling station remains at the site.

The third site is a mess hall, with an associated boiler and underground storage tank (UST), which was located adjacent to D Street, between Third and Fourth Streets. Mr. Morris provided a drawing (Y. and D. Drawing No. 161873) showing the location of an underground fuel distribution line, which extended from the Fuel Farm to the UST, and the approximate location of the UST. Mr. Morris stated that this UST stored



No. 6 fuel oil when the boiler was in operation. We cannot determine when the mess hall was demolished, although Mr. Morris stated that he believed this occurred in the 1960's.

In Building No. TC-474, south of the Fuel Farm, Law Engineering understands that automotive maintenance was performed until approximately 4 years ago. Although this building is outside of the study area, activities undertaken there may have had an environmental impact on the area around the Fuel Farm.

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Mr. Anthony Koonce, civilian-in-charge of fuel dispensing at the fuel farm, discussed with Law Engineering an incident which occurred approximately 4 years ago. Mr. Koonce stated that daily inventory-control records at the Fuel Farm were out of balance by approximately 30 gallons per day. After review, this imbalance was attributed to a leak in the gasoline line which carried gasoline from the pump house to the dispensing island. This line was sealed off at both ends and replaced by a line which runs along the eastern side of the Fuel Farm. A subsurface investigation was not undertaken at the time of the possible release to document soil or ground-water contamination which may have resulted from this leak.

Law Engineering identified a UST located behind and adjacent to Building TC-480 which was installed in 1976. This UST has a capacity of 550 gallons and contains #2 fuel oil, which is used to heat Building TC-480.

2.2.2 Operations of the Site

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The Fuel Farm contains aboveground storage tanks (ASTs) which are used to dispense gasoline, diesel and kerosene to government vehicles and to supply USTs in use at Camp Geiger and the Air Station. These ASTs are refilled by trucks which are operated by commercial carrier and which deliver product to fill ports at the southern end of the storage facility. The operation of the Fuel Farm is supervised by two attendants who operate the facility from a small building (Building No. TC-364, Drawing 2.2) at the southern end of the Fuel Farm. There are five ASTs at the Fuel Farm:

- two diesel fuel ASTs, each with a capacity of 15,000 gallons,
- two unleaded gasoline ASTs, each with a capacity of 15,000 gallons, and



one kerosene AST with a capacity of 15,000 gallons.

According to the site drawing referenced in Section 2.2.1, the initial tanks were placed in service in the early 1940's. Mr. Waters stated that the original tanks have never been replaced.

There are six underground lines used to distribute fuel within the fuel farm (Drawing 2.3). These are:

- an unleaded gasoline line approximately 70 feet long which connects the fill port and pump house;
- an unleaded gasoline line approximately 140 feet long which connects the pump house and vehicle dispensing pump;
- a diesel line approximately 70 feet long which connects the fill port and pump house;



- a diesel line approximately 120 feet long which connects the pump house and both the overhead dispensing pump and the vehicledispensing pump on the pump island;
- a kerosene line approximately 80 feet long which connects the fill port and pump house; and
- a kerosene line approximately 110 feet long which connects the pump house and the overhead dispensing pump.

The underground lines now in place are those originally installed, with the exception of the recently-installed gasoline line referenced in Section 2.2.1. Mr. Koonce stated that their standard operating procedures include performing daily inventory-control procedures.

There are also three underground lines at the Fuel Farm which are no longer used and which have been sealed off. These three abandoned lines are:

 a gasoline line approximately 60 feet long which connected an abandoned fill port and the pump house;



- a diesel line approximately 20 feet long which connected an abandoned fill port and the pump house; and
- a gasoline line approximately 120 feet long which connected the pump house and pump island.

Law Engineering has found evidence that there also may be one additional line connecting the Fuel Farm and an underground storage tank (UST). The path of this line is shown on Drawing No. 2.4. As indicated in Section 2.2.1, this line carried No. 6 fuel oil from the Fuel Farm to a UST which may still be located at the site of a former mess hall. Law Engineering could not determine if this line was removed when the UST was abandoned.

2.3 Inventory of Contaminant Sources

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USTs identified in and around the Fuel Farm are listed in Table 2.2. The location of USTs with respect to the site are presented in Drawing 2.5. Please note that Table 2.2 includes only those tanks that have been identified during the course of this investigation. The possibility remains, however, that other unidentified USTs are present near or were in the past located near the Camp Geiger Fuel Farm.



In addition to the USTs listed in Table 2.2, nine active and inactive product transmission lines are or have been located in the study area, as identified in Section 2.2.2. These product lines are also presented in Drawing 2.5.

2.4 Inventory of Water Wells

As part of our survey to identify potential receptors of ground-water contaminants, Law Engineering performed a survey of drinking-water wells in the vicinity of Camp Geiger Fuel Farm by reviewing USGS Report 89-4096 and through discussions with Mr. Morris. This report shows the locations of drinking-water wells in Camp Geiger, all of which are located adjacent to A Street and over 2000 feet west of the Fuel Farm (Drawing 2.6). Our survey of wells targeted those located within one-half mile of the project site in order to provide an adequate area of coverage. A discussion of the results of the survey of potential receptors is provided in Section 6.0 of this report.

We have presented a summary of the well inventory in Table 2.3, which provides information on the well depth, casing diameter, well usage and the well's approximate distance from the Fuel Farm. Each of the wells identified was constructed as an openhole wells in the Castle Hayne Aquifer. The Castle Hayne aquifer and the hydrogeology of the area are introduced and referenced in Section 3.0 of this report.



2.5 <u>Survey of Underground Utilities</u>

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Subsurface utility trenches can often provide preferential pathways for migration of contaminants. Therefore, Law Engineering attempted to identify and locate subsurface utilities in the vicinity of Camp Geiger Fuel Farm. Mr. Morris provided plans and drawings showing the locations of subsurface utilities, the locations of which are shown in Drawings 2.7, 2.8 and 2.9. Typically, underground utility lines are buried 2 to 6 feet below land surface (bls). As previously indicated, underground fuel transmission lines are exhibited in Drawing 2.5.

3.0 SITE HYDROGEOLOGIC CHARACTERIZATION

3.1 <u>Site Topography</u>

As indicated by the Jacksonville South, N.C. topographic quadrangle, published by the United States Geological Survey in 1952 and photorevised in 1971 (Drawing 1.1), the elevation of land surface in the vicinity of Camp Geiger Fuel Farm generally ranges from 3 to 17 feet above mean sea level (msl) and the land surface slopes toward the northeast. Most of the study area is not serviced by storm sewers, and runoff

generally travels by sheet flow before entering natural drainage ditches which discharge into Brinson Creek, to the east and northeast of the study area.

3.2 <u>Regional Geology/Hydrogeology</u>

The study area is located within the Lower Coastal Plain Soil System (Wiscomico and Talbot System) and the Coastal Plain/Castle Hayne Limestone hydrologic area. A brief summary of the geologic/hydrogeologic setting at the Camp Geiger Fuel Farm is provided in Section 2.2 of the CSA Workplan (Appendix A). In general, downward movement of ground water is obstructed by the presence of clay layers in Coastal Plain formations and consequently most of the ground-water recharge migrates laterally toward discharge areas through the surficial aquifer (Heath, 1980). Further details of regional geologic/hydrogeologic characteristics are provided in the USGS Water-Resources Investigation previously cited (Harned 1989).

3.3 Site Soils and Geology

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Law Engineering performed field activities on August 15-30, 1991, which consisted of the following:



Advancing 18 soil borings, which were subsequently used for the installation of monitoring wells;

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- Advancing 5 soil borings to check for the presence of soil contamination;
- Advancing 3 stratigraphic borings to determine the geology of the subsurface in the study area; and
- Advancing 9 shallow hand-auger borings to check for the presence of soil contamination in suspect areas.

The locations of these borings are shown on Drawing 3.1. We were unable to complete boring B-3 as planned. We attempted this boring six times and each time encountered auger refusal due to steel reinforcing wire in the concrete pad or unidentified obstructions just below the pad.

Law Engineering accomplished all drilling using hollow-stem augers and techniques described in ASTM D-1452. We steam-cleaned our down-hole drilling equipment prior to work at each drilling location. We used augers with an inside diameter of either

3.25 or 3.75 inches for the drilling of a "pilot" hole and for the collection of soil samples. After completing the "pilot" hole, we reentered each monitoring-well borehole using augers with an inside diameter of 8.25 inches to allow the placement of two sets of PVC pipe in the well. We grouted to land surface those soil borings not used for the installation of monitoring wells.

Site geologists collected soil samples from each of the soil borings for field classification, headspace testing and chemical testing. We generally obtained soil samples for field classification at depths of 0 to 1.5 feet, 1.5 to 3 feet, 3 to 4.5 feet and on 5-foot centers thereafter to boring termination. We collected these soil samples with a split-spoon sampler 24 inches long and with an inside diameter of 1.375 inches (outside diameter of 2 inches). We obtained each soil sample by repeatedly allowing a 140-pound hammer to fall free for 30 inches, until the sampler was driven 18 inches into the substrate. We performed split-spoon sampling in general accordance with ASTM D-1586 and recorded on the field boring log the number of blows required to drive the sampler each 6-inch increment. After donning laboratory-grade gloves, we placed representative portions of each sample in two, pre-labeled plastic bags and sealed each bag for subsequent headspace testing.



Site geologists examined in the field the soil collected at each interval using visual/manual techniques described in ASTM D-2487 and ASTM D-2488 and classified the soil in general accordance with the United Soil Classification System. We have included a record of each test boring in Appendix B.

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The soil and stratigraphic borings penetrated three distinctive units. The first unit is a fine- to medium-grained, unconsolidated sand. The thickness of this unit ranges from 15 to 30 feet. Law Engineering selected two samples of this unit to be analyzed for grain-size distribution, the results of which are presented in Appendix C. We performed these analyses on samples from MW-23, collected from a depth of 8.5 to 10.5 feet, and from MW-24, collected from a depth of 13.5 to 15.5 feet. These analyses revealed that the samples generally contain 96% sand and 4% silt and clay.

The second unit is a oolitic, fossiliferous limestone which ranges in thickness from 6.5 to 20 feet. The fossils consist of fragments of mollusks; the matrix consists of finegrained sand, fine-grained phosphate grains and lime mud. Under the Folk classification (Blatt et al, 1972), this unit is a biosparite. Mr. Rick Shiver of the Wilmington Regional Office of the DEM stated that this unit is common in the Jacksonville area and is considered part of the unconfined, surficial aquifer. Law Engineering believes this unit is the River Bend Formation.



The third unit is an unconsolidated, dark gray to black silty, clayey sand. Because this unit may be a confining unit separating the surficial and Castle Hayne aquifers, Law Engineering did not attempt to completely penetrate this clayey sand, and therefore, the thickness is not known. We sampled this unit in SB-1, SB-2, SB-3 and MW-19 and observed this unit up to 4 feet thick in SB-2. Law Engineering selected the sample of this unit from SB-1 to be analyzed for grain-size distribution, the results of which are presented in Appendix C. This analysis revealed that the sample contained 79% fine sand, 9% silt and 12% clay.

This clayey sand is probably the same described by Harned et al (1989) as one of many occurring in the surficial aquifer and the Castle Hayne. These units are reportedly not confining units in the Camp Lejeune area because the units are thin and discontinuous. This report noted, however, that the units appears to be thicker and more continuous in the northwestern part of Camp Lejeune, where the Fuel Farm is located. Law Engineering believes that this clayey sand acts as a confining unit in the study area due to its relatively high percentage of silt and clay. We believe that this unit separates the surficial aquifer from the underlying Castle Hayne aquifer.

Law Engineering developed two cross sections from soil-boring records in order to facilitate lithologic interpretation. The locations of these cross sections are exhibited

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in Drawing 3.2; the cross sections are illustrated in Drawings 3.3 and 3.4. As shown in the cross sections, the stratigraphic units encountered within the surficial aquifer consist of the unconsolidated sand, lithified limestone (River Bend Formation) and clayey sand. Law Engineering believes that the upper contact of the River Bend Formation is not a planar surface and we expect its thickness to be highly variable. We observed this variability in SB-3 and MW-19. While only 240 feet apart, the thickness of the River Bend in SB-3 is 20 feet and the thickness in MW-19 is 6.5 feet.

3.4 <u>Site Hydrogeology</u>

Law Engineering installed a total of 18 ground-water monitoring wells, utilizing the materials and installation procedures described in the CSA Workplan. In order to monitor ground water at multiple depths and delineate the vertical extent of ground-water contamination at the Fuel Farm, we installed "paired" monitoring wells in 17 of 18 boreholes, each with a "shallow" screened interval and a "deep" screened interval. There is one well (MW-20) that is not paired; we encountered auger refusal with the large-diameter augers at the top of the River Bend Formation and therefore were not able to set a deep screen. Installing paired wells allowed us to sample the ground water at the water table and at depths of 10 to 20 feet below the water table, thus enabling us to investigate the vertical extent of contamination.

The specifications for each soil boring included decontaminating the drilling equipment and well construction materials with a pressurized steam-cleaning unit, emplacing a silica-sand filter pack and a bentonite seal above the filter pack, grouting the well above the bentonite seal with a cement/bentonite slurry, and developing the well through low-yield pumping. In Tables 3.1 and 3.2, we have listed the approximate volumes of water removed during well development and our observations of turbidity of the development water.

The wells constructed by Law Engineering are protected by a lockable, stick-up cover constructed of steel. This stick-up cover is embedded in a concrete pad and is protected by three steel bollards filled with concrete. Details for the installation of the monitoring wells are included in Appendix D.

During the period September 3-5, 1991, Law Engineering measured depths to ground water in all monitoring wells, the results of which are listed on the Monitoring-well Casing and Water-elevation Worksheets in Appendix E. Elevations of all measuring points were reviewed and certified by a Registered Land Surveyor; these points are also listed in these worksheets.

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Based on ground-water elevations measured in the "shallow" monitoring well of each well pair and several of the pre-existing wells, we prepared a water-table contour map, from which we determined the direction of ground-water flow (Drawing 3.5). Ground water in the surficial aquifer generally flows across the project site to the east. towards Brinson Creek. As indicated by comparing water level elevations recorded on September 3, 1991 between "shallow" and "deep" screened intervals, ground water in the surficial aquifer generally moves laterally across the project site with no significant vertical gradient. However, we observed a slight vertical component of upward movement in MW-23 and MW-25, both of which are located near natural discharge points -- Brinson Creek and the intermittent streams which discharge into At these locations we would normally expect some upward Brinson Creek. component of ground-water flow as ground water seeks to discharge into surface drainage features. We did not use the ground-water elevations measured in EMW-6 and EMW-7 because these wells are screened below the water table and the elevations were inconsistent with measurements obtained from nearby wells. Likewise, we did not use the ground-water elevation measured in MW-24 because the measurement was so dissimilar from nearby wells. Law Engineering cannot determine the reason for this dissimilarity.

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The rate or average linear velocity of ground-water movement across the project site is a function of the hydraulic conductivity (K) of the aquifer medium, the effective porosity (n) of the aquifer medium and the hydraulic gradient (dh/dl) that exists in the surficial aquifer. We calculated the hydraulic conductivity of the unconsolidated sands in the surficial aquifer at the study area based on results of previous studies performed on unconsolidated sands by F.D. Masch and K.J. Denny (in Freeze and Cherry, 1979). We used the data in the grain-size gradation curves (Appendix C) in these calculations for the samples from MW-23 and MW-24. Based on the results of the calculations, we expect the hydraulic conductivity of the unconsolidated sands within the surficial aquifer to be approximately 28 feet/day (Appendix C). Based on the recharge rate of the wells screened over this unit and a review of hydraulic conductivity estimates published by Freeze and Cherry (1979), we expect that the hydraulic conductivity of the River Bend is at least as great as that of the unconsolidated sand.

We calculated the average, linear velocity of ground-water flow in the unconsolidated sands within the surficial aquifer, using the computer program Water-Vel (1989). This program allows us to predict the general direction and average, linear velocity of ground-water flow based on three values: piezometric (water-table elevation) measurements, calculated value of hydraulic conductivity, and estimated values for effective porosity. Water-Vel calculations are based on Darcy's Law (q = K [dh/dl])



and the relationship between Darcy velocity (q) and average, linear, velocity of ground water (v = q/n).

Using Water-Vel, we calculated a range of average, linear velocities of between 0.99 feet/day (n = 25%) and 1.66 feet/day (n = 15%) using values for effective porosity of 15% to 25% for fine sand, as estimated by Walton (1984). These calculations are included in Appendix F. The values for effective porosity are an estimate and are based on the predominant soil types encountered during construction of borings at the project site. Please note that this calculated velocity is an average velocity across the entire project site; the actual rate at a specific location at the site may be more or less than the rate calculated herein.

4.0 ASSESSMENT OF SUBSURFACE CONTAMINATION

4.1 <u>Tracer Tight Leak Testing</u>

Law Engineering subcontracted with Tracer Research Corporation of Tucson, Arizona to perform a tracer test of the underground fuel lines within the Fuel Farm, the report of which is included as Appendix G. This test was accomplished by adding a highlyvolatile liquid tracer to the fuel in the fuel system and allowing approximately two



weeks for the tracer to become distributed throughout the system. On August 19, 1991, personnel from Tracer Research and Law Engineering installed 29 soil-gas probes along the underground fuel transmission lines at the fuel Farm (Drawing 4.1) to detect tracer gas that may have been released to the surrounding soil.

Tracer gas was not detected in samples collected by the probes. Based on this result, Tracer determined that the tank and pipe systems that were tested at the Fuel Farm passed the precision leak test, which is capable of detecting leaks of 0.05 gallons per hour with a probability of detection of 0.97 and a probability of false alarm of 0.029. However, samples collected by the probes did contain volatile hydrocarbons in three locations, as shown in Figure 2 of the Tracer study. The largest vapor "plume" occurs below the fuel-loading pad and may have resulted from the contamination from the leaking gasoline line referenced in Section 2.2.1. There are two smaller plumes under the fuel tanks which may have resulted from surface spills. We used the results of this study to determine locations of soil borings B-2 and B-3 and hand-auger borings HA-3 and HA-4, which are located in two of the three plumes identified in the Tracer study.

4.2 Soil Contamination

4.2.1 Scanning Procedures

Law Engineering monitored all soil-investigation activities with a photoionization detector (PID) manufactured by HNu Systems (Model PI 101) which had been calibrated to isobutylene. We used the PID to qualitatively measure total volatile organics in the borehole, in ambient air, and in the individual soil samples. Values recorded with the PID are qualitative only and are not directly comparable to actual laboratory analytical results. However, the PID is useful in providing a relative indication of the presence of volatile organics in soil samples.

4.2.2 Hand-auger Borings

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Law Engineering advanced hand-auger borings, each to a depth of 5 feet, to accomplish two objectives. The first objective was to check for the presence of USTs in the vicinity of the geophysical anomaly identified during the ESE investigation (Drawing 3.1) at the site of the former gasoline station. We advanced 16 hand-auger borings in this area but did not detect evidence of USTs or soil contamination by volatile organics.



The second objective of the hand-auger borings was to check for the presence of soil contamination and USTs in suspect areas. We performed these borings in four areas (Drawing 3.1). In the first area, we advanced hand-auger borings HA-1 and HA-2 where we suspected the presence of the UST associated with the former mess-hall operations. HA-1 encountered auger refusal at a depth of approximately 2 feet, which may have been due to the presence of this UST. HA-2 was advanced approximately 10 feet east of HA-1 and encountered soils with anomalous PID readings. Based on these readings, we drilled boring B-4 to check for soil contamination.

In the second area of hand-auger borings, we advanced HA-3 and HA-4 near the pump house where we identified data anomalies in the soil-gas survey. We collected soil samples for laboratory analysis from each of these borings.

In the third area of hand-auger borings, we advanced HA-5 and HA-6 behind the gasoline station and to the west of the 16 hand-auger borings, in a location where Mr. Morris had suggested that a UST may remain. We observed no indication of USTs or soil contamination in either of these borings.

In the fourth area of hand-auger borings, we advanced HA-7, HA-8 and HA-9 near where the fuel line extending from the Fuel Farm to the mess-hall UST makes a 90°

turn to the west (Drawing 4.2). We chose this location because it was in the vicinity of the contaminant plume identified by the Hydropunch sampling and because pipe joints are particularly susceptible to leakage. We collected one soil sample from HA-7 based on PID readings.

4.2.3 Soil Borings

Locations of the soil borings (B-1 through B-6, SB-1 through SB-3) and wells constructed from soil borings (MW-8 through MW-25) are shown in Drawing 3.1. Depths of the soil-test borings ranged from 15 to 44.5 feet. Moist soil conditions were generally encountered at a depth of 8 to 10 feet bls. None of the soil borings penetrated the Castle Hayne Formation, which supplies drinking water for Camp Lejeune.

We collected soil samples from each boring for headspace testing and laboratory chemical analysis according to the following procedure:

• The decontaminated split-spoon sampler was driven to the desired depth interval.

- The split-spoon sampler was retrieved and immediately opened. Portions of sample aliquots were quickly removed from the split-spoon sampler and placed into two, pre-labeled, airtight plastic bags. Sample handling was executed carefully in an effort to reduce the loss of the volatile organics. The bags were sealed and placed in a warm location.
- After approximately 10 minutes, the headspace gas in one of the two bags was tested with the PID and the peak value was recorded. This procedure was conducted for the soil sample collected at each sample-depth interval.

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From the soil samples collected from the borings, the two samples that exhibited the highest PID reading were targeted for chemical analysis. For those samples, the paired sample was transferred to a laboratory-supplied glass container, placed into a cooler, packed on ice and shipped to the laboratory for chemical analysis. Law Engineering maintained custody of the samples until shipment at the end of each day.



4.2.4 Results of the Soil Sampling

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A summary of headspace analyses are presented in Table 4.1. Results show that volatile organics were detected in samples collected from 19 of the 24 boreholes. In general, concentrations of contamination were greatest in the samples collected at depths of 8.5 to 10 feet, near or just below the water table. Therefore, we suspect that lateral movement of the dissolved-phase plume and seasonal fluctuations of the water table has resulted in adsorbed-hydrocarbon contamination in the capillary-fringe area.

A summary of the results of laboratory analyses of the soil samples are presented in Table 4.2. The laboratory analyses are included in Appendix H. The soil samples were tested for total petroleum hydrocarbons (TPH) using EPA Methods 3550 (semivolatile) and 5030 (volatile) and for lead using EPA Method 6010. We also analyzed 10 soil samples for ignitability using EPA Method 1010. Although the headspace testing indicated the presence of volatile organics in a majority of the boreholes, laboratory testing for total petroleum hydrocarbons (TPH) indicated the presence of primarily high-boiling-point hydrocarbons in samples from 13 of the boreholes. We have combined the measured values of both high- and low-boiling-point hydrocarbons from samples collected above the water table and presented these data in an isopleth

map of total petroleum hydrocarbons (Drawing 4.3). This map illustrates three areas of soil contamination, all of which correlate to areas of known or suspected USTs or transmission lines. These areas are:

- the vicinity of boring no. B-4, which was installed near the location of the UST adjacent to the site of the former mess hall;
- the vicinity of the UST behind Building No. 480 and extending to the northeast towards the ponded stormwater (the area of contamination documented in the NUS report); and
 - the AST and fuel-dispensing area of the Fuel Farm, in support of the results of the tracer testing discussed in Section 4.1 and in concurrence with the verbal report of the 4-year-old release of gasoline. However, soil contamination in this area appears to be concentrated at depths below the water table.

Based on this data, it appears that there have been releases of fuel in at least three separate locations within the study area. The plume of contamination originating behind Building No. 480 may have resulted from two releases, one from the UST



system at Building No. 480 and one from a possible surface release, northeast of that site, which was investigated by NUS (Section 1.3). The pattern of soil contamination corresponds with the direction of ground-water flow. Therefore, it appears that petroleum fuel was released at these source locations and subsequently migrated through the soil towards Brinson Creek partly as a free-phase liquid hydrocarbon prior to dispersion, adsorption and dissolution into the ground water.

Law Engineering also analyzed each soil sample for lead. There was one sample (HA-4) which exhibited concentrations of lead in excess of the laboratory detection limit. This sample was collected from a location adjacent to the pump house. Because this sample was not contaminated with petroleum hydrocarbons, it appears that this lead did not originate from a discharge of leaded fuel.

Law Engineering also analyzed 10 soil samples for ignitibility. Based on the laboratory results, we determined that the flashpoint of each of the ten samples is in excess of 200°F.

4.3 Occurrence of Free Product

The monitoring wells were constructed to allow for detection of free product in the capillary-fringe area. As indicated on the Monitoring-well Casing and Water-elevation Worksheets (Appendix E), we did not detect free product using probe measurement in the wells. Therefore, Law Engineering has no evidence to indicate that free product remains in the subsurface in the study area. However, our experience reveals that, given ample time, free product can accumulate in wells which initially showed no signs of free product.

4.4 <u>Dissolved Ground-Water Contamination</u>

4.4.1 Hydropunch Ground-water Sampling

From August 5-7, 1991, as the initial phase of our investigation, Law Engineering collected ground-water samples using the Hydropunch ground-water sampling system, utilizing the materials and installation procedures described in the CSA Workplan. We collected these ground-water samples at locations indicated on Drawing 4.4 to evaluate the lateral extent of ground-water contamination and to determine the optimal locations for the monitoring wells. This initial phase of investigation indicated



two areas of ground-water contamination, one near the Fuel Farm and one northeast of Building No. 480.

4.4.2 Monitoring-well Sampling Procedures

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As stated in Section 3.4, Law Engineering installed 18 wells during the investigation to complement the seven installed during previous investigations. Prior to sampling each well, Law Engineering measured and recorded the depth to ground water using an electronic, water-level probe. We recorded the data collected and observations made on the Monitoring Well and Sampling Field Data Worksheets (Appendix I).

We evacuated all monitoring wells prior to collecting ground-water samples in order to remove stagnant water from the well casing and sand pack. We performed this task in an effort to collect samples representative of the water quality in the surficial aquifer. To evacuate the wells, we used decontaminated, Teflon bailers attached to new nylon cord. We measured and recorded specific conductance, pH, and water temperature throughout the evacuation process. We evacuated the wells of at least three standing well volumes and until indicator parameters had stabilized (or until the well exhibited dryness).



We collected ground-water samples from the 18 monitoring wells installed by Law Engineering, 17 of which were "paired" wells, and from the seven "single-cased" wells that had been installed during previous investigations. Prior to sampling the wells, Law Engineering personnel donned laboratory-grade gloves. We collected the water samples and immediately decanted the samples from the bailer into pre-labeled sample containers.

We sealed the containers, stored the containers in chilled coolers, and maintained custody of the samples until shipment at the end of each day. Chain-of-custody forms are included in Appendix J.

4.4.3 Results of the Ground-water Sampling

We have presented a summary of laboratory analyses of the ground-water samples from the Hydropunch sampling in Table 4.3. Reports of laboratory analyses are included in Appendix H. The ground-water samples were tested for purgeable aromatics by EPA Method 602, modified to include methyl tertiary butyl ether (MTBE).

We have presented isopleth maps for the combined total concentrations of benzene, toluene, ethylbenzene and total xylenes (BTEX) (Drawing 4.5) and for MTBE



concentrations (Drawing 4.6) documented in the Hydropunch ground-water samples. This map shows two plumes of contamination, one in the vicinity of the Fuel Farm and one extending from the area just north of Building No. 480 to the northeast. This preliminary identification of contaminant plumes allowed us to effectively place permanent monitoring wells.

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We have presented a summary of laboratory analyses of the ground-water samples collected from the monitoring wells in Table 4.4 for the shallow screened intervals and in Table 4.5 for the deep screened intervals. The laboratory analyses are included in Appendix H. We tested these ground-water samples for purgeable halocarbons by EPA Method 601, for purgeable aromatics by EPA Method 602 modified to include MTBE, and for lead by EPA Method 7000. We also tested samples from four wells (MW-8S, MW-14S, MW-24S and MW-25S) for polynuclear aromatic hydrocarbons by EPA Method 610.

The laboratory results, when compared with the results of the soil analyses, show what appears to be at least two separate plumes of ground-water contamination. We have presented an isopleth map (Drawing 4.7) for the combined total concentrations of benzene, toluene, ethylbenzene and total xylenes (BTEX) in the shallow screened interval which shows these two plumes. We have presented a second isopleth map



(Drawing 4.8) for the combined total concentrations of BTEX in the deep screened interval. The isopleth map of the lower screened interval shows significantly lower levels of ground-water contamination, in the areas which generally correspond to the plumes observed in the shallow screened interval.

The first plume of the shallow screened interval is in the vicinity of the Fuel Farm. The ground water has been contaminated with hydrocarbons typically related to petroleum fuel including BTEX. The hydrocarbon contamination appears to be originating within the fuel storage and transmission area, in agreement with the results of the Tracer study, which indicated petroleum vapors beneath the Fuel Farm. Contaminants appear to be migrating to the northeast, the predominant direction of ground-water flow.

The second plume of the shallow screened interval is in the vicinity of the UST located behind Building No. 480 and extends to the northeast, towards the ponded stormwater. The ground water has been contaminated with BTEX and other petroleum-related constituents (heavier hydrocarbons) including fluorene, naphthalene, 1-methylnapthalene and 2-methylnapthalene.

Law Engineering has also identified three areas of ground water contaminated with chlorinated compounds from samples collected over the shallow screened interval. The first is in the vicinity of MW-10 and EMW-5, the second is in the vicinity of EMW-7 and MW-19 and the third is in the vicinity of MW-14 (Drawing 4.9). Laboratory analyses of the ground-water samples from these wells document contamination by trichloroethene and tetrachloroethane, constituents commonly found in solvents and degreasers.

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The source of contamination in MW-10 is apparently outside the study area and is unknown at this time. The contamination found in and downgradient of MW-14 may be related to the gasoline station formerly located adjacent to the ice house. Solvents and degreasers are commonly used at gasoline stations and maintenance facilities, and it is possible that the waste solvents from these sites were disposed of onto the ground. Over an extended period of time, continual disposal of these solvents in this manner could result in ground-water contamination.

Law Engineering could not identify a source of the chlorinated compounds detected in samples collected from EMW-7 and MW-19, although these compounds may be related to activities of the former automotive maintenance shop in Building No. TC-474, south of the study area. Law Engineering recommends identifying the source of this contamination.



Law Engineering also identified ground water contaminated with chlorinated compounds in the deep screened interval (Drawing 4.10). The areas of contamination generally correspond to those observed in the shallow screened intervals of wells.

Law Engineering cannot identify a consistent pattern of lead concentrations in either the shallow or deep screened intervals at the study area (Drawings 4.11 and 4.12). The well with the highest concentration of lead, EMW-5, is upgradient of known or suspected contaminant sources, while wells within the two contaminant plumes (for example, MW-20, MW-21, MW-22, MW-25) often exhibit relatively low levels of lead contamination. We also observed wells near the boundaries of the BTEX plumes with low levels of contamination (for example, MW-17, MW-23, MW-14) and levels of lead contamination similar to those wells with high levels of contamination. In summary, we are not able to draw any conclusions regarding the probable relationship between lead concentrations detected at the Fuel Farm and migration patterns of water-borne lead resulting from petroleum-fuel releases.

Law Engineering has documented concentrations of MTBE, an unleaded gasoline additive, below the state interim standard in five wells, four in the shallow screened interval (Drawing 4.13) and one (MW-18) in the deep screened interval. MTBE is highly soluble in water, and often is the first contaminant observed at the leading edge

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of a plume. The levels of MTBE documented in EMW-6, MW-17 and MW-18, all of which are downgradient of the Fuel Farm, are likely the result of the leaking gasoline line referenced in Section 2.2.1. Law Engineering has not identified a likely source for the MTBE documented in MW-9.

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Law Engineering documented ground water containing levels of chloroform in excess of the state ground-water quality standard in MW-14. Law Engineering collected a sample of the potable water at the base from the spigot adjacent to Building No. TC-364 and tested the sample for purgeable halocarbons and purgeable aromatic hydrocarbons. The laboratory analysis of this water sample (identified as "potable water" in Table 4.4) revealed concentrations of chloroform, bromoform, bromodichloromethane, and dibromochloromthane in excess of the laboratory detection limits and of state ground-water standards. These compounds may often be found in municipal water supplies as a result of the chlorination process.

In summary, Law Engineering has documented ground-water contamination both in the upper portion of the surficial aquifer and, to a lesser extent, at depths 10 to 15 feet below the water table. We have identified a confining layer within the surficial aquifer which may act as a barrier to the vertical migration of these contaminants.



The rate at which these contaminants migrate through the subsurface is affected by several geohydrochemical processes including molecular diffusion, mechanical mixing, sorption-desorption, ion-exchange, hydrolysis and biodegradation. Because the resources involved in attempting to model the effects of these processes at the project site are significant, we have chosen to apply a relatively simple analytical technique (USEPA, 1985b) with which to arrive at conservative (greater than anticipated) estimates of contaminant-migration rates at the study area. This analytical technique takes into account only sorption-desorption of the contaminant constituent (expressed in terms of the "retardation factor") and the average, linear velocity of ground-water flow at the site.

For purposes of these calculations, we selected an average linear velocity of ground-water flow of 1.33 feet/day (the mean value of those reported in Section 3.5). The resulting calculations, contained in Appendix K, show that the rate of benzene movement is estimated at 0.44 feet/day. By comparison, naphthalene (a relatively hydrophobic compound) is estimated to migrate at a rate of 0.029 feet/day. With the exception of MTBE, the migration rates of remaining organic constituents detected in the study area are likely to fall within the range bounded by benzene and naphthalene. Please note that these migration rates are only gross estimates which may vary considerably from actual field-migration rates.

5.0 PROCEDURES FOR QUALITY CONTROL

5.1 Decontamination of Equipment

The CSA Workplan details the quality-control procedures followed for handling and decontaminating equipment in the field. As outlined in the Workplan, we decontaminated our drilling equipment in an open area just south of Fourth Street, opposite the Fuel Farm.

5.2 Collection and Shipment of Samples

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The CSA Workplan details the quality-control procedures followed for collecting, handling and shipping samples. We employed three quality-control measures to provide checks on the integrity and quality of our ground-water sampling program: rinse blanks, trip blanks and duplicate samples.

Law Engineering submitted equipment rinse blanks to the laboratory for evaluation of procedures which we used to decontaminate the Teflon bailers. Law Engineering also submitted trip blanks to the laboratory to check the integrity of the sample containers, to determine if contaminants may have entered the sample containers during shipment



to and from the job site, and to check for laboratory-induced contamination. Each of the blanks was analyzed for purgeable aromatics. The two rinse blanks and four trip blanks submitted with the Hydropunch ground-water samples did not contain contaminant levels above the laboratory detection limit. Six of the ten blanks submitted with the monitoring-well ground-water samples exhibited contamination with xylenes and, in one instance, MTBE in excess of, but near, the laboratory detection limits (Table 5.1).

Law Engineering collected two duplicate ground-water samples as a check on our sampling technique and on the reproducibility of laboratory-testing procedures. For this test, we collected a sample from MW-14S, which we labelled as MW-26S, and a sample from MW-24S, which we labelled as MW-27S. Laboratory analyses of these duplicates are included in Table 4.4.

Analysis of our procedures revealed that bailer decontamination was successful in eliminating the introduction of contaminants through the sampling equipment. Based on the relatively low concentrations of xylenes (2.0 ug/l) detected in the blanks, Law Engineering believes that no significant petroleum-hydrocarbon contamination of ground-water samples occurred as a result of contaminated sampling equipment.



5.3 Evaluation of Chemical Data

In order to assess the quality of laboratory-produced data, our laboratory performed an evaluation of the chemical data. This evaluation included reviews of surrogate failures, calibration verification, holding times, organic-blank contamination, documentation and sample condition. In summary, the evaluation results indicate that reported discrepancies between actual results/procedures and standard results/procedures are not considered to have major impact on the data reported. A copy of the analytical data review report is included in Appendix L.

6.0 SURVEY OF POTENTIAL RECEPTORS

Fuel contamination in any one of four physical states or "phases"' (residual, vapor, liquid, dissolved) may be transmitted to receptors through ingestion, inhalation, or absorption. As petroleum fuel seeps into the subsurface, it will undergo a transformation process that results in adsorption of hydrocarbons onto soil particles (residual phase) and release of volatile hydrocarbons into pore spaces (vapor phase). If any product remains after adsorption and volatilization take place, it will continue to move vertically downward (in the absence of preferred lateral routes of migration)



until reaching the capillary-fringe area or a relatively impermeable barrier if one is located above the capillary fringe. At this point, the fuel (liquid phase) will tend to spread throughout the capillary fringe and the transformation process will continue with the dissolution of hydrocarbons into ground water (dissolved phase). An evaluation of the relationship between contaminated media and exposure pathways at the project site is summarized in Table 6.1.

Receptors may be potentially exposed to the hydrocarbons found in the soil primarily through inhalation of volatilized compounds and dermal contact with soil at sites contaminated with hydrocarbons. However, based on headspace and laboratory tests results, petroleum contamination is not generally present in near-surface soil at the Fuel Farm. As indicated in Section 4.2, soil contamination is generally present only at depths below approximately 4 feet. As a result, exposure to these soils is contingent upon site disturbance through construction or remediation activities.

In the event that soil remediation is required, there may be some inhalation exposure from volatilization of the hydrocarbons found in the soil. Volatile components will be released and the potential for exposure will occur at this time. Dermal exposure from soil contact by personnel may also occur if remediation activities include excavation. Since this is an occupational exposure, the receptor analysis for these exposure pathways should be considered as part of the design plan for site remediation.



Exposure through ingestion most commonly occurs from consumption of drinking water obtained from contaminated wells or contaminated public-water supplies. The active water-supply wells at Camp Geiger supply water from the Castle Hayne aquifer and are located to the west of the Fuel Farm, upgradient of the documented contamination. Due to the presence of an apparent confining unit separating the contaminated surficial aquifer from the Castle Hayne, and the distance between the Fuel Farm and the supply wells, it is unlikely that contamination in the surficial aquifer at the Fuel Farm has affected the water-supply wells at Camp Geiger. The study by Harned et al (1989) did not include chemical testing of water samples from the water-supply wells.

Subsurface contaminants have been known to find their way into buried water-supply lines primarily through direct contact with free product. Law Engineering did not receive a complete set of site maps showing the locations of all the water lines in the study area. However, because free product was not observed in the study area, potential exposure to contaminants in this manner is unlikely.

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Law Engineering observed three access points to the subsurface. The first is the manway providing access to the sanitary sewer, which is located just southeast of the Fuel Farm. The second is the storm sewer and oil/water separator which collects

stormwater on the concrete pad adjacent to the ASTs. The third is a collapsing storm-sewer manway behind the former site of the filling station; due to its condition, this manway appeared inaccessible. Law Engineering performed a vapor-phase survey at these access points using the PID and did not detect volatile organics. Inspection of Building No. 480 revealed no means of access to the subsurface (manways, vaults, etc.) within the buildings. This was confirmed by Mr. Blake, who fills the UST behind this building and who is familiar with its design.

The results of the survey of potential receptors indicate that the presence of contaminants in the subsurface at the Fuel Farm does not constitute an imminent or near-future health threat to potential receptors. However, it is possible that organic vapors may be present along portions of subsurface utilities which may possibly result in exposure during maintenance and repair activities.

7.0 REMEDIAL ALTERNATIVES AND RECOMMENDATIONS

This discussion of remedial alternatives and preliminary recommendations is directed primarily toward the contamination by petroleum hydrocarbons encountered at the Camp Geiger Fuel Farm. However, these alternatives and recommendations may also be applicable to chlorinated hydrocarbon contamination.



Due to the spatial distribution of petroleum-hydrocarbon contamination in the soil (adsorbed phase) and water samples (dissolved phase) collected from the Fuel Farm, it appears that at least two separate releases of petroleum fuel have occurred at the project site. The first release occurred approximately four years ago from the gasoline line in the vicinity of the Fuel Farm. Contamination of the soil and ground-water remain in this area from this release. The second release, from the UST behind Building No. 480, may still be occurring and has resulted in soil and ground-water contamination. Therefore, as an initial step in the remedial process, we recommend thoroughly evaluating the integrity of this UST system.

7.1 <u>Soil Remediation</u>

7.1.1 Overview and Objectives of Soil Remediation

Protection of public health and ground-water quality are the primary reasons for soil remediation at sites involving leaking UST systems. As discussed in Section 6.0 of this report, the potential for exposure to contaminated soil at the Camp Geiger Fuel Farm is minimal as long as the subsurface remains undisturbed. However, guidelines for remediation of soil contaminated by petroleum have been established by the Groundwater Section of the Division of Environmental Management, DEHNR (1990).

TABLES

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TABLE 2.1 LIST OF DRAWINGS					
	REPORT OF UNDERGROUND FUEL INVESTIGATION COMPREHENSIVE SITE ASSESSMENT				
	CAMP GEIGER FUEL FARM CAMP LEJEUNE, NORTH CAROLINA LAW ENGINEERING JOB NO. J47590-6014				
DRAWING NUMBER	DESCRIPTION	DATE			
2816	Filling Station/Fire Station Plans	11/12/47			
161813	Ice Storage House	6/26/41			
161814	Ice Storage House	6/26/41			
161821	Mess Hall UST Fuel Line	10/28/41			
161870	Drinking Water Well Locations	8/25/41			
161873	Fuel Farm/Mess Hall UST	7/17/41			
162072 Fuel Farm		2/2/42			
267402	7402 Storm Sewer/Fire Hydrant/Sanitary Sewer Lines Unknown				
267403	Barracks Plan 10/29				
4009116	Building No. 480	6/18/75			
4714380	Piping Plan/Fuel Farm	Not Dated			
4174381	Demolition Plan/Fuel Farm	Not Dated			
4174383	Fuel Farm	Not Dated			
417439?	Electrical Plan/Fuel Farm Not Da				
Unnumbered	pered Steam Lines 7/31/84				
Unnumbered	Wastewater Lines	7/31/84			
Unnumbered	Electrical Lines	7/31/84			

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	INVENT	TABLE : DRY OF POTENTIAL C	2.2 CONTAMINANT SOURCE	:S	
		RT OF UNDERGROUND COMPREHENSIVE SIT	D FUEL INVESTIGATION		
	LA	CAMP GEIGER I CAMP LEJEUNE, NO W ENGINEERING JOB	RTH CAROLINA		
TANK LOCATION	PRODUCT TYPE	TANK TYPE	INSTALL DATE	SIZE OF TANK	TANK STATUS
TANK LOCATION Building No. 480	PRODUCT TYPE No. 2 Fuel Oil	TANK TYPE UST	INSTALL DATE	SIZE OF TANK 550 Gallons	TANK STATUS Active

Underground lines associated with these tanks, the aboveground tanks and the oil-water separator located southeast of the Fuel Farm are also potential contaminant sources.



TABLE 2.3 LIST OF WATER-SUPPLY WELLS

REPORT OF UNDERGROUND FUEL INVESTIGATION COMPREHENSIVE SITE ASSESSMENT

CAMP GEIGER FUEL FARM CAMP LEJEUNE, NORTH CAROLINA

LAW ENGINEERING JOB NO. J47590-6014

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USGS WELL NO.	CAMP GEIGER WELL LETTER	TOTAL WELL DEPTH (Ft.)	Casing Length (Ft.)	CASING DIAMETER (INCHES)	APPROX. DISTANCE FROM FUEL FARM (FEET)	STATUS
TC104	A	Unknown	Unknown	Unknown	2600	Abandoned
TC100	8	Unknown	Unknown	Unknown	2600	Abandoned
TC202	1	Unknown	Unknown	Unknown	2600	Abandoned
TC325	с	70'	20'	18"	2600	Abandoned
TC502	D	184'	110'	10*	2600	Drinking
TC600	E	170′	21'	20*	2600	Drinking
TC700	F	76'	27.5′	18"	3300	Drinking
TC901	G	76′	25′	18"	3900	Abandoned



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TABLE 3.1
SUMMARY OF DEVELOPMENT OF "SHALLOW" MONITORING WELLS

REPORT OF UNDERGROUND FUEL INVESTIGATION COMPREHENSIVE SITE ASSESSMENT CAMP GEIGER FUEL FARM CAMP LEJEUNE, NORTH CAROLINA

MONITORING WELL IDENTIFICATION NUMBER	FINAL TURBIDITY (SUBJECTIVE)*	APPROXIMATE VOLUME OF WATER REMOVED (GAL)
MW-8S	1	50
MW-9S	1	50
MW-10S	1	45
MW-11S	1 ·	40
MW-12S	1	50
MW-13S	1	60
MW-14S	1	45
MW-155	1	30
MW-16S	1	40
MW-175	1	40
MW-18S	1	45
MW-19S	1	45
MW-20S	1	30
MW-21S	1	60
MW-22S	1	30
MW-23S	1	35
MW-24S	1	30
MW-25S	1	25

Note:

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* (1) Clear; (2) Slight; (3) Moderate; (4) High



SUMMARY OF D	TABLE 3.2 DEVELOPMENT OF "DEEP" MO	NITORING WELLS							
CO	OF UNDERGROUND FUEL INVES MPREHENSIVE SITE ASSESSM CAMP GEIGER FUEL FARM AMP LEJEUNE, NORTH CAROL	ENT							
MONITORING WELL IDENTIFICATION NUMBER									
MW-8D	1	70							
MW-9D	1	60							
MW-10D	1	60							
MW-11D	1	50							
MW-12D	1	50							
MW-13D	1	55							
MW-14D	1	50							
MW-15D	1	60							
MW-16D	1	50							
MW-17D	1	. 55							
MW-18D	1	50							
MW-19D	1	60							
MW-21D	1	55							
MW-22D	1	60							
MW-23D	1	60							
MW-24D	1	50							
MW-25D	1	50							

Note:

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* (1) Clear; (2) Slight; (3) Moderate; (4) High



		LE 4.1 ADSPACE ANALYSES	
	CAMP GEIGER CAMP LEJEUNE,	UND FUEL INVESTIGAT SITE ASSESSMENT AREA FUEL FARM NORTH CAROLINA JOB NO. J47590-6014	
SAMPLE	SAMPLE DEPTH (ft.)	PID READING (ppm)	SAMPLE SELECTED FOR LABORATORY ANALYSIS
	MONITORING W	ELL SOIL BORINGS	
	1.5 - 2	8	
MW-8	3.5 - 4	3	
	5.5 - 6	55	
	7.5 - 8	85	•
	9.5 - 10	42	
	11.5 - 12	4	
	13.5 - 14	32	
	15.5 - 16	65	•
	17.5 - 18	5	
	19.5 - 20	2.5	
	1.5 - 2	0	
	3.5 - 4	0	
	5.5 - 6	0	
	7.5 - 8	0	•
MW-9	9.5 - 10	0	
	11.5 - 12	0	
	13.5 - 14	0	
	15.5 - 16	0	
	17.5 - 18	0	•
	19.5 - 20	0	
	25 - 25.5	0	

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		LE 4.1 ADSPACE ANALYSES	
	CAMP GEIGER CAMP LEJEUNE,	UND FUEL INVESTIGAT SITE ASSESSMENT AREA FUEL FARM NORTH CAROLINA JOB NO. J47590-6014	
SAMPLE LOCATION	SAMPLE DEPTH (ft.)	PID READING (ppm)	SAMPLE SELECTED FOR LABORATORY ANALYSIS
	1.5 - 2	> 2000	•
	3.5 - 4	220	•
	5.5 - 6	105	
MW-10	10 - 10.5	40	
	15 - 15.5	6	
	20 - 20.5	<1	
	1.5 - 2	0	
	3.5 - 4	1.5	
	5.5 - 6	30	•
MW-11	10 - 10.5	31	•
	15 - 15.5	7.3	
	20 - 20.5	<1	
	0 - 1.5	> 2000	•
	1.5 - 3	75	
	3 - 4.5	200	•
MW-12	8.5 - 10	45	
	13.5 - 15	<1	
	18.5 - 20	0	
	1.5 - 2	<1	
	3.5 - 4	<1	
	5.5 - 6	<1	
MW-13	10 - 10.5	<1	•
	15 - 15.5	<1	
	20 - 20.5	<1	•



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		LE 4.1 IDSPACE ANALYSES	
	CAMP GEIGER A CAMP LEJEUNE,	JND FUEL INVESTIGAT SITE ASSESSMENT AREA FUEL FARM NORTH CAROLINA JOB NO. J47590-6014	
SAMPLE	SAMPLE DEPTH (ft.)	PID READING (ppm)	SAMPLE SELECTED FOR LABORATORY ANALYSIS
	0 - 1.5	<1	
	1.5 - 3	3	
	3 - 4.5	60	•
IW-14	8.5 - 10	16	
	13.5 - 15	3	
	18.5 - 20	145	•
	1.5 - 2	<1	
	3.5 - 4	<1	
	5.5 - 6	<1	•
IW-15	10 - 10.5	65	•
	15 - 15.5	<1	
	20 - 20.5	<1	
	0 - 1.5	30	
	1.5 - 3	110	
	3 - 4.5	200	•
MW-16	8.5 - 10	155	
	13.5 - 15	200	
	18.5 - 20	250	•
	1.5 - 2	<1	
	3.5 - 4	<1	
	5.5 - 6	<1	•
MW-17	10 - 10.5	<1	
	15 - 15.5	<1	
	20 - 20.5	<1	•

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		LE 4.1 ADSPACE ANALYSES	
	CAMP GEIGER / CAMP LEJEUNE,	UND FUEL INVESTIGAT SITE ASSESSMENT AREA FUEL FARM NORTH CAROLINA JOB NO. J47590-6014	
SAMPLE LOCATION	SAMPLE DEPTH (ft.)	PID READING (ppm)	SAMPLE SELECTED FOR LABORATORY ANALYSIS
	1.5 - 2	<1	
	3.5 - 4	<1	•
	5.5 - 6	<1	
MW-19	10 - 10.5	<1	•
	15 - 15.5	<1	
	20 - 20.5	<1	-
	25 - 25.5	<1	
	0 - 1.5	40	
	1.5 - 3	65	
	3 - 4.5	300	•
	8.5 - 10	220	•
MW-20	13.5 - 15	75	
	18.5 - 20	55	
	23.5 - 25	110	
	1.5 - 2	<1	
	3.5 - 4	60	•
	5.5 - 6	75	•
	10 - 10.5	35	
MW-21	15 - 15.5	17	
	20 - 20.5	<1	
	25 - 25.5	<1	

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		LE 4.1 ADSPACE ANALYSES	
	CAMP GEIGER / CAMP LEJEUNE,	UND FUEL INVESTIGAT SITE ASSESSMENT AREA FUEL FARM NORTH CAROLINA JOB NO. J47590-6014	
SAMPLE	SAMPLE DEPTH (ft.)	PID READING (ppm)	SAMPLE SELECTED FOR LABORATORY ANALYSIS
	0 - 1.5	10	
	1.5 - 3	2	
	3 - 4.5	150	•
	9.5 - 11	90	•
MW-22	14.5 - 16	5	
	19.5 - 21	4	e -
	24.5 - 26	0	
	29.5 - 31	0	
	1.5 - 2	<1	•
	3.5 - 4	<1	
	5.5 - 6	<1	
MW-23	10 - 10.5	<1	
	15 - 15.5	<1	•
	20 - 20.5	<1	
	1.5 - 2	<1	
	3.5 - 4	<1	•
	5.5 - 6	0	
MW-24	10 - 10.5	3	•
	15 - 15.5	0	
	20 - 20.5	<1	
	1.5 - 2	22	
	3.5 - 4	45	•
MW-25	5.5 - 6	45	•
	10 - 10.5	2.5	
	15 - 15.5	25	

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		LE 4.1 ADSPACE ANALYSES	
	CAMP GEIGER A CAMP LEJEUNE,	UND FUEL INVESTIGAT SITE ASSESSMENT AREA FUEL FARM NORTH CAROLINA JOB NO. J47590-6014	
SAMPLE LOCATION	SAMPLE DEPTH (ft.)	PID READING (ppm)	SAMPLE SELECTED FOR LABORATORY ANALYSIS
<u></u>	SOIL	BORINGS	······································
	0 - 1.5	200	
	1.5 - 3	160	•
	3 - 4.5	40	······································
B-1	8.5 - 10	140	•
	13.5 - 15	4	
	2 - 2.5	3	
	3 - 3.5	2	
	4 - 4.5	8	
B-2 ¥	5 - 5.5	7.5	
	5.5 - 6	12	•
	8.5 - 10	51	•
	13.5 - 15	6.2	
в-3	ATTE	MPTED 6 TIMES, ABAN	IDONED
	0 - 1.5	0	
	1.5 - 3	11	
B-4	3 - 4.5	22	•
U~4	8.5 - 10	50	•
	13.5 - 15	18	
	2" - 1.5′	<1	
	1.5 - 3	0	
B-5	3 - 4.5	20	•
	8.5 - 10	2	•
	13.5 - 15	0	



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		LE 4.1 NDSPACE ANALYSES	
I	CAMP GEIGER A	JND FUEL INVESTIGAT SITE ASSESSMENT AREA FUEL FARM NORTH CAROLINA JOB NO. J47590-6014	
SAMPLE LOCATION	SAMPLE DEPTH (ft.)	PID READING (ppm)	SAMPLE SELECTED FOR LABORATORY ANALYSIS
	2" - 1.5'	2	
	1.5 - 3	<1	
в-6	3 - 4.5	<1	•
D-0	8.5 - 10	50	•
	13.5 - 15	8	
	STRATIGRA	PHIC BORINGS	•
	0 - 20	See MW-8	
F	23.5 - 25	<1	
SB-1	28.5 - 30	150	
	33.5 - 35	<1	
	38.5 - 40	200	
	0 - 1.5	<1	
	1.5 - 3	<1	
	3 - 4.5	9	•
	8.5 - 10	10	•
	13.5 - 15	5	
SB-3	17 - 18	<1	
ormerly MW-18)	18.5 - 20	<1	
	20 - 21.5	<1	
[21.5 - 23	<1	
	23 - 24.5	<1	
	24.5 - 26	<1	
	26 - 27.5	<1	

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		LE 4.1 IDSPACE ANALYSES	
	CAMP GEIGER A CAMP LEJEUNE,	IND FUEL INVESTIGAT SITE ASSESSMENT AREA FUEL FARM NORTH CAROLINA JOB NO. J47590-6014	
SAMPLE LOCATION	SAMPLE DEPTH (ft.)	PID READING (ppm)	SAMPLE SELECTED FOR LABORATORY ANALYSIS
	27.5 - 29	<1	
SB-3	29 - 30.5	<1	
(formerly MW-18)	30.5 - 32	<1	
	32 - 33.5	<1	
	33.5 - 35	<1	
	35 - 36.5	<1	
	36.5 - 38	200	
	38 - 39	155	
	HAND-AUG	SER BORINGS	
	2'	2	•
HA-3	4'	5	
	2'	4	•
HA-4	5′	3	
	3'	10	
HA-7	5′	60	•
HA-8	5'	8	
	3'	<1	
HA-9	5'	8	

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KEY TO SYMBOLS

SUMMARY OF LABORATORY ANALYSES

 Numerical standard has not been established; substances not allowed in detectable concentrations.

** Interim standard

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N.D. = Not detected: see laboratory reports for applicable detection limits.

- = Sample not analyzed for this parameter.



	SUMN		2 (Page 1 of 3) RY ANALYSES OF SOIL S	AMPLES	
	R	COMPREHENSI CAMP GEIGEI CAMP LEJEUNI	OUND FUEL INVESTIGAT /E SITE ASSESSMENT ? AREA FUEL FARM 5, NORTH CAROLINA 3 JOB NO. J47590-6014	ION	
		TOTAL PETROLEU	M HYDROCARBONS		
SAMPLE LOCATION	SAMPLE DEPTH (ft)	VOLATILES (mg/kg)	SEMI-VOLATILES (mg/kg)	IGNITABILITY (Degrees F)	LEAD (ug/L)
HA-3	4	N.D.	17		N.D.
HA-4	2	N.D.	N.D.		42
HA-7	5	N.D.	5700		N.D.
B-1A	1.5 - 3.0	N.D.	N.D.		N.D.
B-1B	8.5 - 10.0	N.D.	N.D.		N.D.
B-2	5.5 - 6.0	N.D.	N.D.		N.D.
B-2	8.5 - 10.5	630	7600		N.D.
B-4A	3 - 4.5	N.D.	8400		N.D.
B-4B	8.5 - 10	N.D.	5100		N.D.
B-5A	3 - 4.5	N.D.	980		N.D.
B-5B	8.5 - 10	· N.D.	280		N.D.
B-6A	3 - 4.5	N.D.	7		N.D.
B-6B	8.5 - 10	N.D.	6200		N.D.
MW-8	6.0 - 8.0	N.D.	9100 /	> 200	N.D.
MW-8	14.0 - 16.0	N.D.	14,600 /	>200	N.D.
MW-9	6.0 - 8.0	N.D.	N.D.	> 200	N.D.
MW-9	16.0 - 18.0	N.D.	N.D.	>200	N.D.
MW-10	0 - 1.5	N.D.	N.D.		N.D.

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		MARY OF LABORATOR	2 (Page 2 of 3) RY ANALYSES OF SOIL S OUND FUEL INVESTIGAT	·	
		COMPREHENSI CAMP GEIGEI CAMP LEJEUNI	/E SITE ASSESSMENT R AREA FUEL FARM E, NORTH CAROLINA G JOB NO. J47590-6014		
<u></u>		TOTAL PETROLEU	IM HYDROCARBONS		
SAMPLE LOCATION	SAMPLE DEPTH (ft)	VOLATILES (mg/kg)	SEMI-VOLATILES (mg/kg)	IGNITABILITY (Degrees F)	LEAD (ug/L)
MW-10	1.5 - 3.0	N.D.	N.D.		N.D.
MW-11	4.0 - 6.0	N.D.	2100	>200	N.D.
MW-11	8.5 - 10.5	N.D.	4	>200	N.D.
MW-12	0 - 1.5	N.D.	N.D.		N.D.
MW-12	3.0 - 4.5	N.D.	N.D.		N.D.
MW-13	8.5 - 10.0	N.D.	N.D.		N.D.
MW-13	18.5 - 20.5	N.D.	N.D.		N.D.
MW-14	3.0 - 4.5	0.3	N.D.		N.D.
MW-14	18.5 - 20.0	N.D.	N.D.		N.D.
MW-15	4.0 - 6.0	N.D.	N.D.		N.D.
MW-15	8.5 - 10.5	N.D.	3500		N.D.
MW-16	3.0 - 4.5	N.D.	N.D.		N.D.
MW-16	18.5 - 20.0	1.	8,	·	N.D.
MW-17	4.0 - 6.0	N.D.	N.D.		N.D.
MW-17	18.5 - 20.5	N.D.	N.D.		N.D.
MW-18	3.0 - 4.5	N.D.	N.D.		N.D.
MW-18	8.5 - 10.0	N.D.	N.D.		N.D.
MW-19	2.0 - 4.0	N.D.	N.D.		N.D.

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	SUMA		2 (Page 3 of 3) }Y ANALYSES OF SOIL S	AMPLES			
	R	COMPREHENSI CAMP GEIGEI CAMP LEJEUN	OUND FUEL INVESTIGAT /E SITE ASSESSMENT ? AREA FUEL FARM E, NORTH CAROLINA & JOB NO. J47590-6014	ION			
TOTAL PETROLEUM HYDROCARBONS							
SAMPLE LOCATION	SAMPLE DEPTH (ft)	VOLATILES (mg/kg)	SEMI-VOLATILES (mg/kg)	IGNITABILITY (Degrees F)	LEAD (ug/L)		
MW-19	8.5 - 10.5	N.D.	N.D.		N.D.		
MW-20	3.0 - 4.5	N.D.	14		N.D.		
MW-20	8.5 - 10.0	N.D.	22,000	>200	N.D.		
MW-21	2.0 - 4.0	N.D.	5,200	>200	N.D.		
MW-21	4.0 - 6.0	N.D.	21,000	>200	N.D.		
MW-22	3.0 - 4.5	N.D.	5		N.D.		
MW-22	9.5 - 11.0	540 ^v	8900	>200	N.D.		
MW-23	0 - 2.0	N.D.	N.D.		N.D.		
MW-23	13.5 - 15.5	N.D.	N.D.		N.D.		
MW-24	2.0 - 4.0	N.D.	N.D.		N.D.		
MW-24	8.5 - 10.5	N.D.	21		N.D.		
MW-25	2.0 - 4.0	N.D.	8700		N.D.		
MW-25	4.0 - 6.0	N.D.	5700		N.D.		



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| ·        |         |                                       | TABLE 4.3 (<br>SUMMARY OF LABO<br>IYDROPUNCH GROU                                         | RATORY ANAL                                   |                    |                         |
|----------|---------|---------------------------------------|-------------------------------------------------------------------------------------------|-----------------------------------------------|--------------------|-------------------------|
|          |         |                                       | RT OF UNDERGROU<br>COMPREHENSIVE S<br>CAMP GEIGEI<br>CAMP LEJEUNE, N<br>AW ENGINEERING JU | Site Assessme<br>R Fuel Form<br>North Carolii | ENT                |                         |
| SAMPLE   | DATE    | · · · · · · · · · · · · · · · · · · · |                                                                                           | LABORATORY                                    | RESULTS (ug/l)     |                         |
| LOCATION | SAMPLED | BENZENE                               | ETHYLBENZENE                                                                              | TOLUENE                                       | XYLENES<br>(TOTAL) | METHYL TERT BUTYL ETHER |
| HP-1     | 8/5/91  | N.D.                                  | N.D.                                                                                      | N.D.                                          | N.D.               | N.D.                    |
| HP-2     | 8/7/91  | N:D.                                  | N.D.                                                                                      | N.D.                                          | N.D.               | N.D.                    |
| HP-3     | 8/7/91  | 0.7                                   | N.D.                                                                                      | N.D.                                          | N.D.               | 0.6                     |
| HP-4     | 8/6/91  | <u></u> ,0.2                          | 1                                                                                         | N.D.                                          | 13                 | N.D.                    |
| HP-5     | 8/6/91  | 610                                   | 520                                                                                       | 130                                           | 1900               | N.D                     |
| HP-6     | 8/7/91  | 240                                   | 14                                                                                        | N.D.                                          | N.D.               | 410                     |
| HP-7     | 8/6/91  | 8                                     | 1                                                                                         | N.D.                                          | 1                  | 83                      |
| HP-8     | 8/7/91  | N.D.                                  | N.D.                                                                                      | N.D.                                          | N.D.               | N.D.                    |
| HP-9     | 8/7/91  | N.D.                                  | N.D.                                                                                      | N.D.                                          | N.D.               | 3                       |
| HP-10    | 8/7/91  | 11                                    | 0.6                                                                                       | N.D.                                          | 2                  | N.D.                    |
| HP-11    | 8/6/91  | 350                                   | 350                                                                                       | N.D.                                          | 540                | N.D.                    |
| HP-12    | 8/6/91  | 100                                   | 350                                                                                       | 170                                           | 820                | N.D.                    |
| HP-13    | 8/6/91  | N.D.                                  | N.D.                                                                                      | N.D.                                          | N.D.               | N.D.                    |
| HP-14    | 8/6/91  | 0.4                                   | 32                                                                                        | N.D.                                          | 24                 | N.D.                    |
| HP-15    | 8/6/91  | N.D.                                  | N.D.                                                                                      | N.D.                                          | N.D.               | N.D.                    |
| HP-16    | 8/6/91  | N.D,                                  | N.D.                                                                                      | N.D.                                          | N.D.               | N.D.                    |
| HP-17    | 8/6/91  | N.D.                                  | N.D.                                                                                      | 2                                             | N.D.               | N.D.                    |
| HP-18    | 8/6/91  | 260                                   | 310                                                                                       | N.D.                                          | 740                | N.D.                    |

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|                                                                     |         |                           | <b>TABLE 4.3 (</b> | Page 2 of 2)  |                    |                         |  |  |  |  |
|---------------------------------------------------------------------|---------|---------------------------|--------------------|---------------|--------------------|-------------------------|--|--|--|--|
| SUMMARY OF LABORATORY ANALYSES<br>HYDROPUNCH GROUND-WATER SAMPLES   |         |                           |                    |               |                    |                         |  |  |  |  |
|                                                                     |         | ł                         | HYDROPUNCH GROU    | ND-WATER SAN  | APLES              |                         |  |  |  |  |
|                                                                     | 1       | REPO                      | ORT OF UNDERGROU   | ND FUEL INVES | TIGATION           |                         |  |  |  |  |
|                                                                     |         |                           | COMPREHENSIVE      |               | INT                |                         |  |  |  |  |
|                                                                     |         |                           |                    |               | NΔ                 |                         |  |  |  |  |
| CAMP LEJEUNE, NORTH CAROLINA<br>LAW ENGINEERING JOB NO. J47590-6014 |         |                           |                    |               |                    |                         |  |  |  |  |
| SAMPLE                                                              | DATE    | LABORATORY RESULTS (ug/l) |                    |               |                    |                         |  |  |  |  |
| LOCATION                                                            | SAMPLED | BENZENE                   | ETHYLBENZENE       | TOLUENE       | XYLENES<br>(TOTAL) | METHYL TERT BUTYL ETHER |  |  |  |  |
| HP-19                                                               | 8/6/91  | N.D.                      | N.D.               | N.D.          | N.D.               | N.D.                    |  |  |  |  |
| HP-20                                                               | 8/6/91  | N.D.                      | N.D.               | N.D.          | N.D.               | N.D.                    |  |  |  |  |
| HP-21                                                               | 8/7/91  | N.D.                      | N.D.               | N.D.          | N.D.               | N.D.                    |  |  |  |  |

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|                                                                                              | <u>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</u> |                                   |                   | SUMMARY OF        | E 4.4 (Page 1 of<br>LABORATORY /<br>LL GROUND-WA<br>/ SCREENED INT | ANALYSES<br>TER SAMPLES<br>ERVAL | <u></u>           |                   |                   |          |          |         |
|----------------------------------------------------------------------------------------------|----------------------------------------------|-----------------------------------|-------------------|-------------------|--------------------------------------------------------------------|----------------------------------|-------------------|-------------------|-------------------|----------|----------|---------|
| REPORT OF UNDERGROUND FUEL INVESTIGATION<br>COMPREHENSIVE SITE ASSESSMENT                    |                                              |                                   |                   |                   |                                                                    |                                  |                   |                   |                   |          |          |         |
| CAMP GEIGER FUEL FARM<br>CAMP LEJEUNE, NORTH CAROLINA<br>LAW ENGINEERING JOB NO. J47590-6014 |                                              |                                   |                   |                   |                                                                    |                                  |                   |                   |                   |          |          |         |
|                                                                                              | WELL<br>NUMBER                               | NC<br>GROUND<br>WATER<br>STANDARD | EMW-1<br>(CGMW-1) | EMW-2<br>(CGMW-2) | EMW-3<br>(CGMW-3)                                                  | EMW-4<br>(CGMW-4)                | EMW-5<br>(35GW-4) | EMW-8<br>(35GW-5) | EMW-7<br>(35GW-8) | MW-85    | MW-95    | MW-10   |
|                                                                                              | DATE<br>SAMPLED                              |                                   | 9/3/91            | 9/5/91            | 9/5/9 t                                                            | 9/5/91                           | 9/4/91            | 9/5/91            | 9/5/91            | 9/4/91   | 9/3/91   | 9/3/91  |
| PARAMETER (ug/l)                                                                             | SCREENED<br>INTERVAL<br>(Feet)               |                                   | .8.5-17.5         | 1.87-10.87        | 3.08-12.08                                                         | 2.61-11.61                       | 10.5-24,5         | 10.5-24.5         | 10.5-24.5         | 4.5-13.5 | 3.5-12.5 | 4.5-13, |
| BENZENE                                                                                      |                                              | 1                                 | ND                | 40                | ND                                                                 | 13                               | 0.4               | 0.3               | ND                | 52       | 45       | 3       |
| TOLUENE                                                                                      |                                              | 1000                              | ND                | 12                | ND                                                                 | ND                               | ND                | ND                | ND                | ND       | ND       | 5       |
| ETHYLBENZENE                                                                                 |                                              | 29                                | ND                | 41                | ND                                                                 | 0.7                              | ND                | ND                | ND                | 73       | ND       | 7       |
| XYLENES TOTAL                                                                                |                                              | 400                               | ND                | 76                | ND                                                                 | 2 ·                              | ND                | ND                | ND                | 420      | 4        | ND      |
| METHYL TERTIARY BUTYL<br>ETHER (MTBE)                                                        |                                              | 50••                              | ND                | ND                | ND ·                                                               | ND                               | ND                | 3                 | ND                | ND       | 46       | ND      |
| LEAD                                                                                         |                                              | 50                                | 14                | ND                | 2                                                                  | 28 '                             | 75                | ND                | 12                | 5        | ND       | 3       |
| TRANS-1,2-DICHLOROETHENE                                                                     |                                              | 70                                | ND                | ND                | 2                                                                  | ND                               | 0.7               | ND                | 18                | ND       | ND       | 17      |
| TRICHLOROETHENE                                                                              | ·······                                      | 2.8                               | ND                | ND                | 8                                                                  | 0,6                              | 3                 | 0.6               | 59                | ND       | ND       | 170     |
| 1-METHYLNAPTHALENE                                                                           |                                              | •                                 | -                 | -                 | -                                                                  | -                                | -                 | -                 |                   | 450      | -        | -       |

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| TABLE 4.4 (Page 2 of 3)<br>MONITORNO VELL GRUNND-VARE RAWLESS<br>SHALLOW SCREENED INTERVAL           CAMP GEIGE TO UNDERATORY VALVESTIGATION<br>COMPREHENSUE GITE ASSESSMENT           CAMP GEIGE TULL SAMMESS SHALLOW SCREENED INTERVAL           CAMP GEIGE TULL SAMMESS SHALLOW SCREENED INTERVAL           CAMP GEIGE TULL SAMMESSMENT           SAMMEDS           SAMMESS MENT SAMESSMENT           SAMMESS MANT SCLASS MANT SAMESS           SAMMESS MANT SCLASS MANT SAMESS           SAMMESS MANT SCLASS MANT SAMESS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |        |            |           |            |            |            |                              |              |                       |            |                 |          |                          |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|------------|-----------|------------|------------|------------|------------------------------|--------------|-----------------------|------------|-----------------|----------|--------------------------|
| COMPREHENSIVE SITE ASSESSMENT           CAMP GEIGE FUEL FARM<br>CAME LEUNE, NORTH CAROLINA<br>LAW ENGINEERING JOB NO. J47590-6014           NUMBER         NC<br>GROUND<br>WATER<br>STANDARD         NW-115<br>9/4/91         MW-125<br>9/4/91         MW-135<br>9/4/91         MW-155<br>9/4/91         MW-165<br>9/4/91         MW-175<br>9/5/91         MW-175<br>9/5/91         MW-175<br>9/5/91         MW-175<br>9/5/91         MW-185<br>9/5/91         MW-195<br>9/5/91           PARAMETER Iup/I)         SCRENED<br>INTERVAL<br>IFFet[         0         9/4/91         9/4/91         9/4/91         9/4/91         9/4/91         9/4/91         9/4/91         9/4/91         9/4/91         9/4/91         9/4/91         9/4/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         <                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |        |            |           |            |            |            | DRY ANALYSES<br>D-WATER SAMP | OF LABORAT   | SUMMARY<br>MONITORING |            |                 |          |                          |
| CAMP LEPUME, NORTH CARCUNA<br>LAW ENGINEERING JOB NJ. JATSGO-6014           WELL<br>NUMBER         NUMBER         NUMBER<br>GROUND<br>STADAARD         MW-11S<br>STADAARD         MW-12S         MW-13S         MW-15S         MW-19S         MW-17S         MW-18S           DATE<br>SAMPLED         DATE<br>SAMPLED         9/4/91         9/4/91         9/4/91         9/4/91         9/4/91         9/4/91         9/6/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5/91         9/5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |        |            |           |            |            | TION       |                              |              |                       | !          |                 |          |                          |
| NUMBER         GROUND<br>STANDARD         GROUND         GROUND        GROU                                                                                                                                                                                                                                                                                                                                                                              |        |            | ·         |            |            | 4          | H CAROLINA                   | EJEUNE, NORT | CAMP I                |            |                 |          |                          |
| $\begin{array}{ c c c c c c c c c c c c c c c c c c c$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | MW-2   | MW-19S     | MW-18S    |            | MW-165     |            |                              |              | MW-125                | MW-115     | GROUND<br>WATER |          |                          |
| INTERVAL<br>(Feet)         INTERVAL<br>(Feet)         INTERVAL<br>(Feet)         IND         ND         ND         0.8         4         40         0.5         52         ND           SENZENE         1         ND         ND         ND         ND         ND         230         ND         ND         ND           TOLUENE         1000         ND         ND         ND         ND         ND         230         ND         ND         ND           ETHYLBENZENE         29         800         ND         ND         ND         3         76         ND         ND         ND           KYLENES TOTAL         400         170         ND         ND         ND         29         800         ND         ND         ND           KYLENES TOTAL         400         170         ND         ND         ND         ND         1         32         ND           METHYL TERTIARY BUTYL         50**         ND         ND         ND         ND         ND         ND         1         32         ND           LEAD         50         ND         16         7         2         5         6         6         9         36           CHLOR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 9/4/9  | 9/4/91     | 9/5/91    | 9/5/91     | 9/5/91     | 9/4/91     | 9/4/91                       | 9/4/91       | 9/4/91                | 9/4/91     |                 |          |                          |
| COLUENC         1000         ND         ND         ND         ND         ND         ND         230         ND         ND         ND           ETHYLBENZENE         29         80         ND         ND         ND         3         76         ND         ND         ND           KYLENES TOTAL         400         170         ND         ND         ND         29         800         ND         ND         ND           METHYL TERTIARY BUTYL         50**         ND         ND         ND         ND         ND         ND         ND         1         32         ND           EEHAR (MTBE)         50**         ND         16         7         2         5         6         6         9         36           EEAD         50         ND         16         7         2         5         6         6         9         36           CHLOROFORM         0.19         ND         ND         ND         3         ND                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 3.0′-1 | 4.5'-13.5' | 3.0'12.0' | 7.5'-18.5' | 5.0'-14.0' | 4.5′-13.5' | 3,5'-12.5'                   | 5.5'-14.5'   | 5'-14'                | 4.5'•13.5' |                 | INTERVAL | PARAMETER (ug/l)         |
| ETHYLBENZENE       29       80       ND       ND       ND       3       76       ND       ND       ND         XXLENES TOTAL       400       170       ND       ND       ND       29       800       ND       ND       ND         METHYL TERTIARY BUTYL       50**       ND       ND       ND       ND       ND       ND       ND       1       32       ND         LEAD       50       ND       16       7       2       5       6       6       9       36         CHLOROFORM       0.19       ND       ND       ND       ND       3       ND       ND       ND       ND         TRANS-1,2-DICHLOROETHENE       70       ND       ND       ND       10       ND       ND       31                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 140    | ND         | 52        | 0,5        | 40         | 4          | 0.6                          | ND           | ND                    | ND         | 1               |          | BENZENE                  |
| KYLENES TOTAL       400       170       ND       ND       ND       29       800       ND       ND       ND         METHYL TERTIARY BUTYL<br>ETHER (MTBE)       50**       ND       ND       ND       ND       ND       ND       ND       ND       1       32       ND         LEAD       50       ND       16       7       2       5       6       6       9       36         CHLOROFORM       0.19       ND       ND       ND       ND       3       ND       ND       ND       ND         TRICHLOROETHENE       7.0       ND       ND       ND       10       ND       ND       ND       ND       ND       ND       ND                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 280    | ND         | ND        | ND         | 230        | ND         | ND                           | ND           | ND                    | ND         | 1000            |          | TOLUENE                  |
| METHYL TERTIARY BUTYL       50**       ND                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 32     | ND         | ND        | ND         | 76         | з          | ND                           | ND           | ND                    | 80         | 29              |          | THYLBENZENE              |
| ETHER (MTBE)       Image: state of the stat | 830    | ND         | ND        | ND         | 800.       | 29         | ND                           | ND           | ND                    | 170        | 400             |          | XYLENES TOTAL            |
| CHLOROFORM       0.19       ND       ND       ND       3       ND                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | ND     | ND         | 32        | 1          | ND         | ND         | ND                           | ND           | ND                    | ND         | 50**            |          |                          |
| TRANS-1,2-DICHLOROETHENE       70       ND       ND       ND       44       ND       ND       ND       ND       5         TRICHLOROETHENE       2.8       ND       ND       ND       110       ND       ND       0.6       ND       31                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | ND     | 38         | . 9       | 6.         | 6          | 5 .        | 2                            | 7            | 16                    | ND         | 50              |          | EAD                      |
| RICHLOROETHENE 2.8 ND ND ND 110 ND ND 0.6 ND 31                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | ND     | ND         | ND        | ND         | ND         | ND         | 3                            | ND           | ND                    | ND         | 0.19            |          | CHLOROFORM               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | NC     | 5          | ND        | ND         | ND         | ND         | 44                           | ND           | ND                    | ND         | 70              |          | RANS-1,2-DICHLOROETHENE  |
| 2-DICHLOROETHANE ND                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | ND     | 31         | ND        | 0.6        | ND         | ND         | 110                          | ND           | ND                    | ND         | 2.8             |          | RICHLOROETHENE           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | ND     | ND         | ND-       | 1          | ND         | ND         | ND                           | ND           | NO                    | ND         | •               |          | ,2-DICHLOROETHANE        |
| 1,2,2-TETRACHLOROETHANE · ND 12                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | ND     | 12         | ND        | ND         | ND         | ND         | ND                           | ND           | ND                    | ND         | •               |          | ,1,2,2-TETRACHLOROETHANE |

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|                                                                                              |                                |                                   | SUMMARY<br>MONITORING | BLE 4.4 (Page )<br>OF LABORATO<br>WELL GROUND<br>OW SCREENED | RY ANALYSES | LES      |          |                    |                    |                   |
|----------------------------------------------------------------------------------------------|--------------------------------|-----------------------------------|-----------------------|--------------------------------------------------------------|-------------|----------|----------|--------------------|--------------------|-------------------|
| REPORT OF UNDERGROUND FUEL INVESTIGATION<br>COMPREHENSIVE SITE ASSESSMENT                    |                                |                                   |                       |                                                              |             |          |          |                    |                    |                   |
| CAMP GEIGER FUEL FARM<br>CAMP LEJEUNE, NORTH CAROLINA<br>LAW ENGINEERING JOB NO, J47590-6014 |                                |                                   |                       |                                                              |             |          |          |                    |                    |                   |
|                                                                                              | WELL<br>NUMBER                 | NC<br>GROUND<br>WATER<br>STANDARD | MW-21S                | MW-22S                                                       | MW-23S      | MW-24S   | MW-25S   | MW-26S<br>(MW-14S) | MW-275<br>(MW-245) | POTABLE<br>WATER  |
|                                                                                              | DATE<br>SAMPLED                |                                   | 9/4/91                | 9/4/91                                                       | 9/5/91      | 9/5/91   | 9/4/91   | 9/4/91             | 9/5/91             | 5/29/91<br>8/5/91 |
| PARAMETER (ug/l)                                                                             | SCREENED<br>INTERVAL<br>(Feet) |                                   | 4.5-13.5              | 5.5'-14.5'                                                   | 2.5-9.5     | 8.5-17.5 | 4.5-13.5 | 3.5-12.5           | 8.5-17,5           | -                 |
| BENZENE                                                                                      |                                | 1                                 | 220                   | 2300                                                         | ND          | 11       | 26       | 0.6                | 12                 | ND                |
| TOLUENE                                                                                      |                                | 1000                              | NÐ                    | NÐ                                                           | ND          | ND       | 160      | ND                 | ND                 | ND                |
| ETHYLBENZENE                                                                                 |                                | 29                                | 590                   | 560                                                          | ND          | 10       | 190      | ND                 | 10                 | ND                |
| XYLENES TOTAL                                                                                |                                | 400                               | 1100                  | 740 -                                                        | ND          | 43 .     | 500      | ND                 | <b>4</b> 3         | ND                |
| METHYL TERTIARY BUTYL<br>ETHER (MTBE)                                                        |                                | 50**                              | ND                    | ND                                                           | ND          | ND       | ND       | ND                 | ND                 | ND                |
| LEAD                                                                                         |                                | 50                                | 4                     | 3                                                            | 2           | 5        | . 1 .    | 2                  | 7                  | ND                |
|                                                                                              |                                |                                   |                       |                                                              |             |          |          |                    |                    |                   |
| CHLOROFORM                                                                                   |                                | 0.19                              | ND                    | ND                                                           | ND          | ND       | ND       | 3 .                | ND.                | 9                 |
| TRANS-1,2-DICHLOROETHENE                                                                     |                                | 70                                | ND                    | ND                                                           | ND          | ND       | ND       | 51                 | ND                 | ND                |
| TRICHLOROETHENE                                                                              |                                | 2.8                               | ND                    | ND                                                           | 0.6         | ND       | ND       | 1.20               | ND                 | ND                |
| TRICHLOROFLUOROMETHANE                                                                       |                                | •                                 | ND                    | ND                                                           | 0.9         | ND       | ND       | ND                 | ND                 | ND                |
| BROMODICHLOROMETHANE                                                                         |                                | •                                 | ND -                  | ND                                                           | ND          | ND       | ND       | ND -               | ND,                | 14                |
| BROMOFORM                                                                                    |                                | 0.19                              | ND                    | NÐ                                                           | ND          | ND .     | ND .     | ND ·               | NÐ                 | 16                |
| DIBROMOCHLOROMETHANE                                                                         |                                | •                                 | ND                    | ND                                                           | ND          | ND       | ND       | ND                 | ND                 | 27                |
| ACENAPTHENE                                                                                  |                                | •                                 | -                     | -                                                            | •           | ND ,     | ND.      | ND                 | 0,7                |                   |
| FLUORENE                                                                                     |                                | •                                 | -                     | -                                                            | -           | 1.       | ND ·     | ND ·               | ND                 |                   |
| 1-METHYLNAPTHALENE                                                                           |                                | · ·                               | -                     | -                                                            | •           | 64       | 190      | ND                 | 42                 |                   |
| 2-METHYLNAPTHALENE                                                                           |                                | •                                 | •                     | •                                                            | -           | 63       | 270      | ND                 | 42                 | •                 |
| NAPTHALENE                                                                                   |                                | •                                 | •                     |                                                              |             | 41       | 220 '    | ND                 | 31                 |                   |

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|                                       |                                |                                   | TA                         | BLE 4.5 (Pa                          | age 1 of 2)   |           |        |           |                |           |
|---------------------------------------|--------------------------------|-----------------------------------|----------------------------|--------------------------------------|---------------|-----------|--------|-----------|----------------|-----------|
|                                       |                                |                                   | SUMMARY<br>NITORING<br>DEE |                                      | UND-WATE      | ER SAMPLE | S      |           |                |           |
|                                       |                                | REPO                              | ORT OF UNI                 | DERGROUN<br>HENSIVE SI               |               |           | DN .   |           |                |           |
|                                       |                                | I                                 |                            | MP GEIGER<br>EJEUNE, NO<br>EERING JO | ORTH CAR      | olina     | ×.     |           |                |           |
|                                       | WELL<br>NUMBER                 | NC<br>GROUND<br>WATER<br>STANDARD | WV-80                      | <b>WW-9</b> D                        | <b>NV-100</b> | Mi-11D    | MW-12D | HN-130    | <b>HU-14</b> D | HN-150    |
|                                       | DATE<br>SAMPLED                |                                   | 9/4/91                     | 9/3/91                               | 9/3/91        | 9/4/91    | 9/4/91 | 9/4/91    | 9/4/91         | 9/4/91    |
| PARAMETER (ug/l)                      | SCREENED<br>INTERVAL<br>(Feet) |                                   | 20.5-29.5                  | 25.5-29.5                            | 25.5-29.5     | 25.5-29.5 | 24-28  | 25.5-29.5 | 24.5-28.5      | 25.5-29.5 |
| BENZENE                               |                                | 1                                 | 1                          | 0.3                                  | 3             | DM        | ND     | ND        | 0.8            | ND        |
| TOLUENE                               |                                | 1000                              | 3                          | ND                                   | 2             | ND        | ND     | ND        | ND             | ND        |
| ETHYLBENZENE                          |                                | 29                                | 26                         | ND                                   | 1             | ND        | ND     | ND        | ND             | ND        |
| XYLENES (TOTAL)                       |                                | 400                               | 52                         | ND                                   | ND            | 9         | ND     | ND        | ND             | ND        |
| METHYL TERTIARY BUTYL<br>Ether (MTBE) |                                | 50**                              | NÐ                         | ND                                   | ND            | ND        | ND     | ND        | ND             | ND        |
| LEAD                                  |                                | 50                                | 8                          | 14                                   | 11            | 10        | 9      | 3         | 14             | 5         |
| TRANS-1,2-DICHLOROETHENE              |                                | 70                                | ND                         | 0.9                                  | 110           | ND        | ND     | ND        | 7              | ND        |
| TRICHLOROETHENE                       |                                | 2.8                               | 0.7                        | 14                                   | 810           | ND        | ND     | ND        | 13             | ND        |
| VINYL CHLORIDE                        |                                | *                                 | ND                         | ND                                   | 6             | ND        | ND     | ND        | ND             | ND        |



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|                                       |                                |                                   | TABI                             | .E 4.5 (Pa | age 2 of 2)                          |               |         | ,              |         |                |         |
|---------------------------------------|--------------------------------|-----------------------------------|----------------------------------|------------|--------------------------------------|---------------|---------|----------------|---------|----------------|---------|
|                                       |                                |                                   | SUMMARY O<br>NITORING WI<br>DEEP | ELL GROU   |                                      | R SAMPLES     |         |                |         |                |         |
|                                       |                                | REPO                              | RT OF UNDE<br>COMPREHE           |            |                                      |               | N       |                |         |                |         |
|                                       |                                | L                                 |                                  | EUNE, NO   | FUEL FARN<br>DRTH CARO<br>B NO. J475 | LINA          |         |                |         |                |         |
|                                       | WELL NUMBER                    | NC<br>GROUND<br>WATER<br>STANDARD | MW-16D                           | HU-170     | <b>W-18</b> D                        | <b>NM-19D</b> | NW-21D  | <b>NJ-22</b> 0 | ₩V-230  | <b>₩</b> ₩-24D | HN-250  |
|                                       | DATE SAMPLED                   |                                   | 9/5/91                           | 9/5/91     | 9/5/91                               | 9/4/91        | 9/4/91  | 9/4/91         | 9/5/91  | 9/5/91         | 9/4/91  |
| PARAMETER (ug/l)                      | SCREENED<br>INTERVAL<br>(Feet) |                                   | 24.51-28.51                      | 25-29      | 20.5-24.5                            | 22.5-24.5     | 25.5-27 | 321-351        | 17.5-20 | 26.5-29        | 27.5-30 |
| BENZENE                               |                                | 1                                 | 12 <sup>,</sup>                  | ND         | ND                                   | ND            | 0.4     | 50             | ND      | 0.7            | ND      |
| TOLUENE                               |                                | 1000                              | 23                               | ND         | ND                                   | ND            | 13      | <u>1</u>       | ND      | ND             | 33      |
| ETHYLBENZENE                          |                                | 29                                | 21                               | ND         | ND                                   | ND            | 17      | 10             | ND      | 1              | 110     |
| XYLENES (TOTAL)                       |                                | 400                               | 100                              | ND         | ND                                   | ND            | 93      | 8              | ND      | 3              | 290     |
| METHYL TERTIARY BUTYL<br>Ether (MTBE) |                                | 50**                              | ND                               | ND         | 1                                    | ND            | ND      | ND             | ND      | ND             | ND      |
| LEAD                                  |                                | 50                                | 9                                | 7          | 5                                    | 9             | 3       | 10             | 2       | 7              | ND      |
| TRANS-1,2-DICHLOROETHENE              |                                | 70                                | ND                               | 0.6        | ND                                   | 92            | 2       | ND             | ND      | ND             | ND      |
| TRICHLOROETHENE                       |                                | 2.8                               | ND                               | ND         | 0.9                                  | 630           | 6       | ND             | 0.7     | 0.6            | ND      |



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|                                                                                              | TABLE 5.1<br>SUMMARY OF LABORATORY ANALYSES<br>RINSE AND TRIP BLANKS      |                   |                   |                           |  |  |  |  |  |  |  |
|----------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|-------------------|-------------------|---------------------------|--|--|--|--|--|--|--|
|                                                                                              | REPORT OF UNDERGROUND FUEL INVESTIGATION<br>COMPREHENSIVE SITE ASSESSMENT |                   |                   |                           |  |  |  |  |  |  |  |
| CAMP GEIGER FUEL FARM<br>CAMP LEJEUNE, NORTH CAROLINA<br>LAW ENGINEERING JOB NO. J47590-6014 |                                                                           |                   |                   |                           |  |  |  |  |  |  |  |
| SAMPLE<br>NUMBER                                                                             | TYPE OF BLANK                                                             | DATE<br>COLLECTED | DATE<br>SUBMITTED | RESULTS (mg/l)            |  |  |  |  |  |  |  |
| HYDROPUNCH SAMPLES                                                                           |                                                                           |                   |                   |                           |  |  |  |  |  |  |  |
| AA11637                                                                                      | Trip                                                                      |                   | 8/6               | ND                        |  |  |  |  |  |  |  |
| AA11677                                                                                      | Trip                                                                      |                   | 8/8               | ND                        |  |  |  |  |  |  |  |
| AA11685                                                                                      | Rinse                                                                     | 8/6               | 8/8               | ND                        |  |  |  |  |  |  |  |
| AA11686                                                                                      | Trip                                                                      |                   | 8/8               | ND                        |  |  |  |  |  |  |  |
| AA11740                                                                                      | Rinse                                                                     | 8/7               | 8/9               | ND                        |  |  |  |  |  |  |  |
| AA11741                                                                                      | Trip                                                                      |                   | 8/9               | ND                        |  |  |  |  |  |  |  |
| MONITORING WELL SAMPLES                                                                      |                                                                           |                   |                   |                           |  |  |  |  |  |  |  |
| AA12927                                                                                      | Trip                                                                      |                   | 9/6               | ND                        |  |  |  |  |  |  |  |
| AA12939                                                                                      | Rinse                                                                     | 9/4               | 9/6               | Total Xylenes 2<br>MTBE 1 |  |  |  |  |  |  |  |
| AA12940                                                                                      | Trip                                                                      |                   | 9/6               | Total Xylenes 2           |  |  |  |  |  |  |  |
| AA12951                                                                                      | Rinse                                                                     | 9/4               | 9/6               | Total Xylenes 2           |  |  |  |  |  |  |  |
| AA12952                                                                                      | Trip                                                                      |                   | 9/6               | Total Xylenes 2           |  |  |  |  |  |  |  |
| AA12985                                                                                      | Rinse                                                                     | 9/5               | 9/6               | Total Xylenes 1           |  |  |  |  |  |  |  |
| AA12986                                                                                      | Rinse                                                                     | 9/5               | 9/6               | ND                        |  |  |  |  |  |  |  |
| AA12987                                                                                      | Trip                                                                      |                   | 9/6               | ND                        |  |  |  |  |  |  |  |
| AA12992                                                                                      | Rinse                                                                     | 9/5               | 9/6               | Total Xylenes 1           |  |  |  |  |  |  |  |
| AA12993                                                                                      | Trip                                                                      |                   | 9/6               | ND                        |  |  |  |  |  |  |  |

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|                                                                                                                                                                           | SUMM                    | TABLE 6.1<br>ARY OF EXPOSURE PATHW | /AYS                  |                         |  |  |  |  |  |  |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|------------------------------------|-----------------------|-------------------------|--|--|--|--|--|--|--|
| REPORT OF UNDERGROUND FUEL INVESTIGATION<br>COMPREHENSIVE SITE ASSESSMENT<br>CAMP GEIGER FUEL FARM<br>CAMP LEJEUNE, NORTH CAROLINA<br>LAW ENGINEERING JOB NO. J47590-6014 |                         |                                    |                       |                         |  |  |  |  |  |  |  |
| CONTAMINATED MEDIUM                                                                                                                                                       | INGESTION (EATING)      | INGESTION (DRINKING)               | INHALATION            | ABSORPTION              |  |  |  |  |  |  |  |
| Free Product                                                                                                                                                              | NA                      | No Exposure (1)                    | NA                    | No Exposure (1)         |  |  |  |  |  |  |  |
| Soil                                                                                                                                                                      | Contingent Exposure (2) | NA                                 | NA                    | Contingent Exposure (2) |  |  |  |  |  |  |  |
| Ground Water                                                                                                                                                              | Exposure Unlikely (3)   | Exposure Unlikely (3)              | NA                    | Exposure Unlikely (3)   |  |  |  |  |  |  |  |
| Surface Water                                                                                                                                                             | No Exposure (4)         | No Exposure (4)                    | NA                    | No Exposure (4)         |  |  |  |  |  |  |  |
| Vapor                                                                                                                                                                     | NA                      | NA                                 | Possible Exposure (5) | NA                      |  |  |  |  |  |  |  |

## Notes:

- (1) No free product detected in surface waters; water supply wells draw from Castle Hayne aquifer.
- (2) Potential for exposure only if subsurface below 8 feet BLS is disturbed.
- (3) Through use of Camp Geiger water-supply wells for drinking, cooking, and bathing.
- (4) Ground-water sampling results indicate that plume does not extend to surface waters.
- (5) Potential for exposure during maintenance/repair work in subsurface utility confinements.

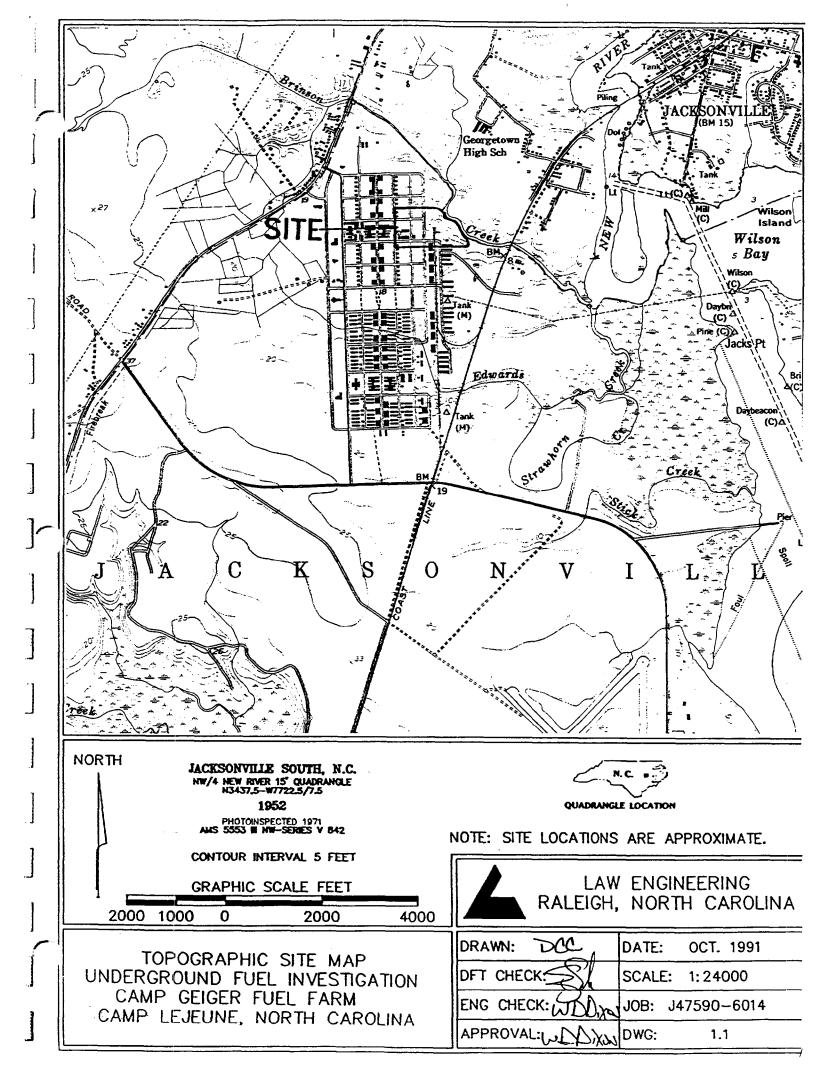


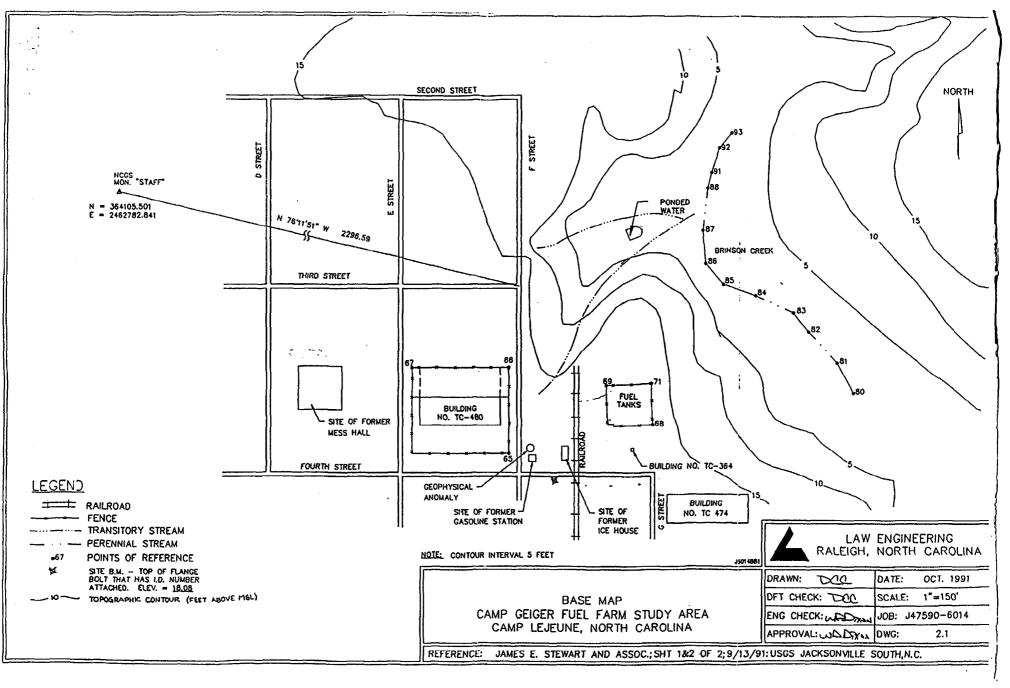
## DRAWINGS

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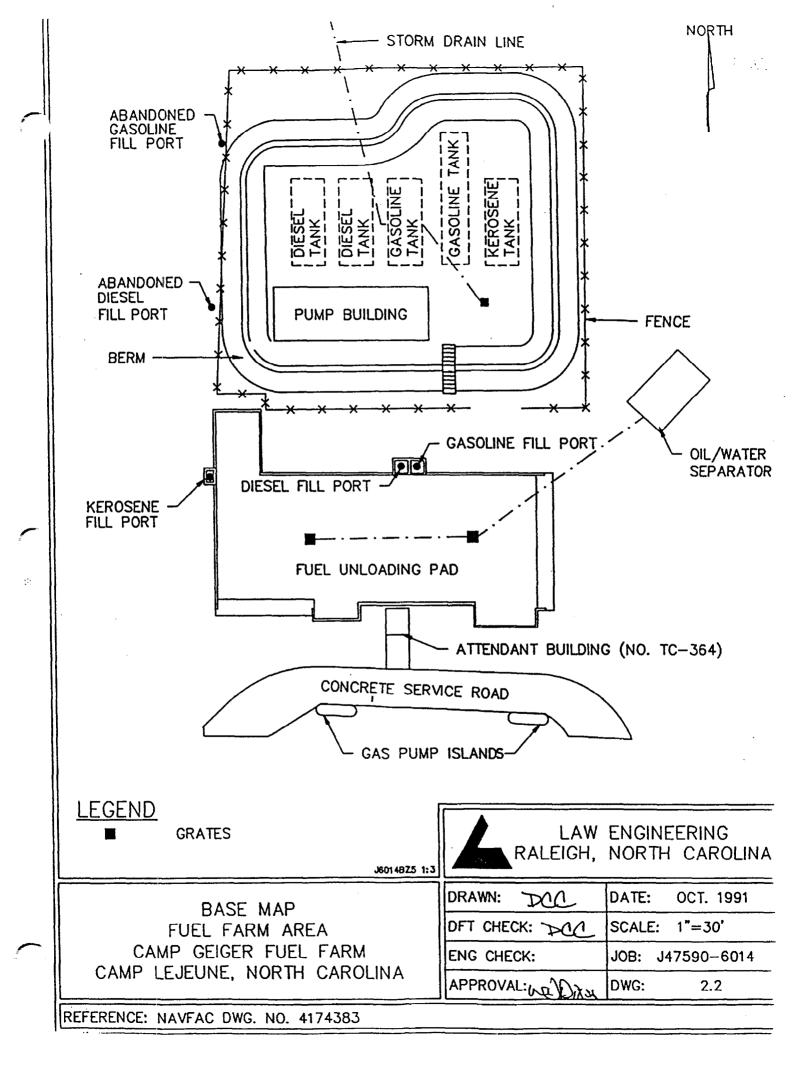


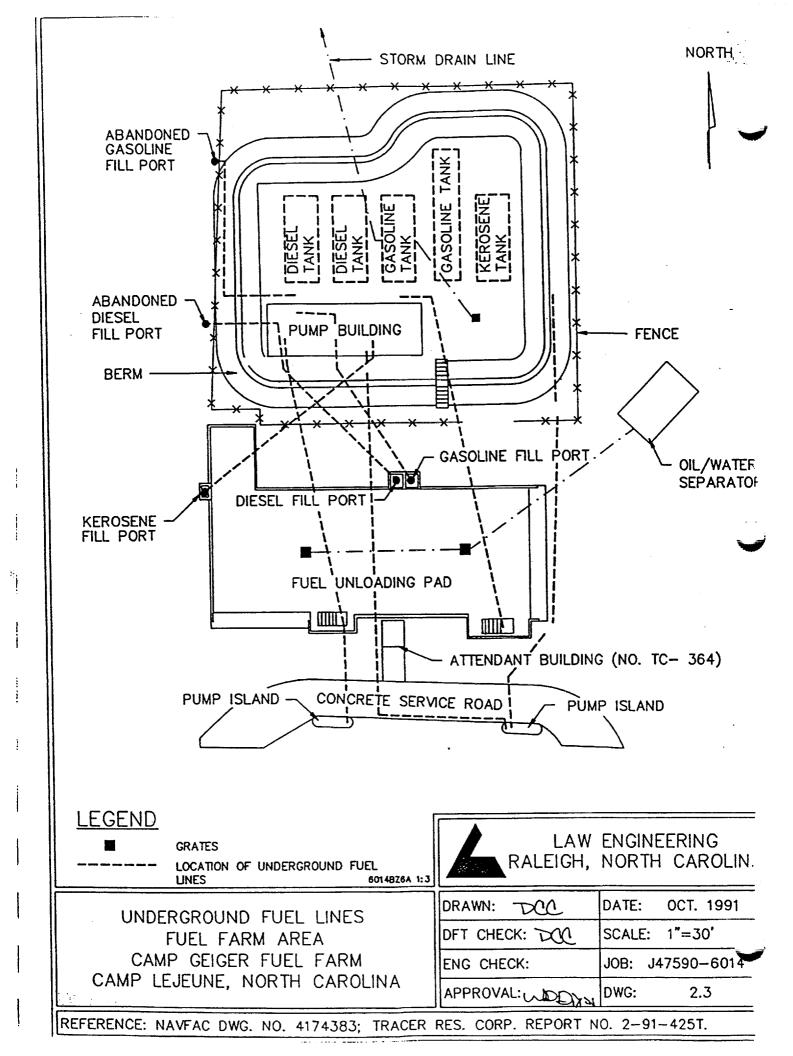
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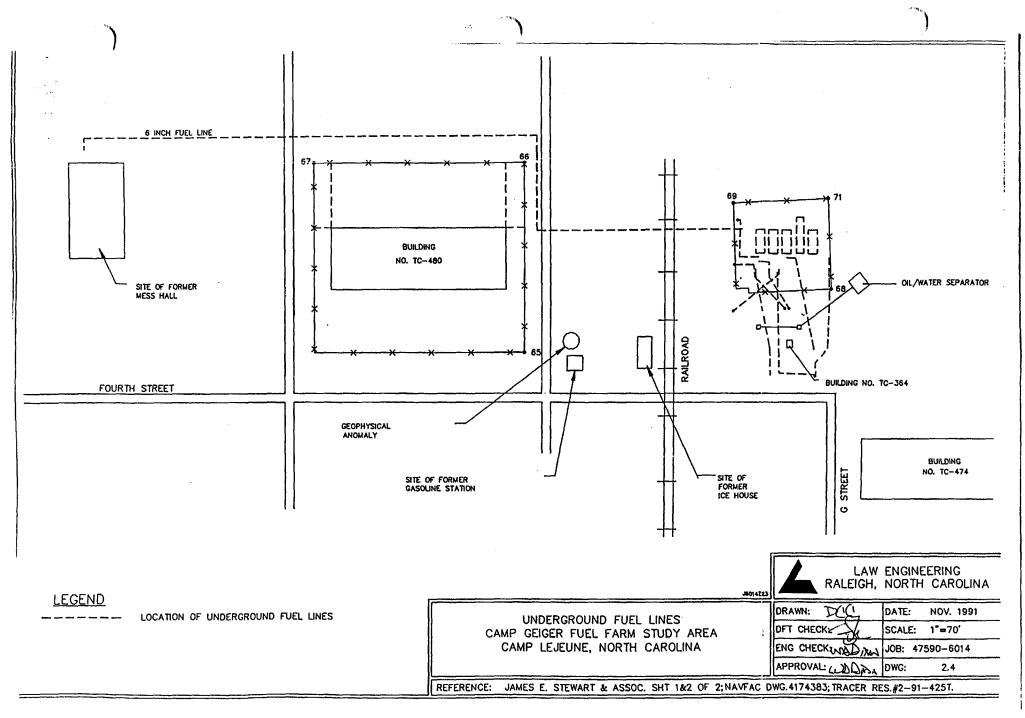




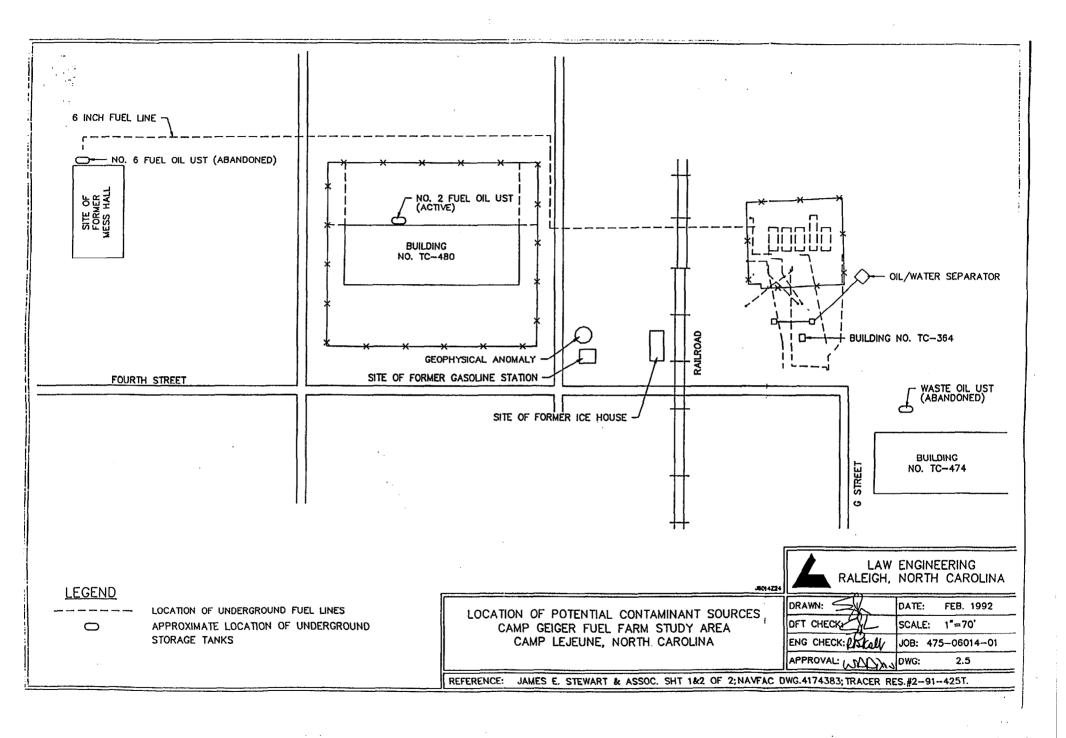
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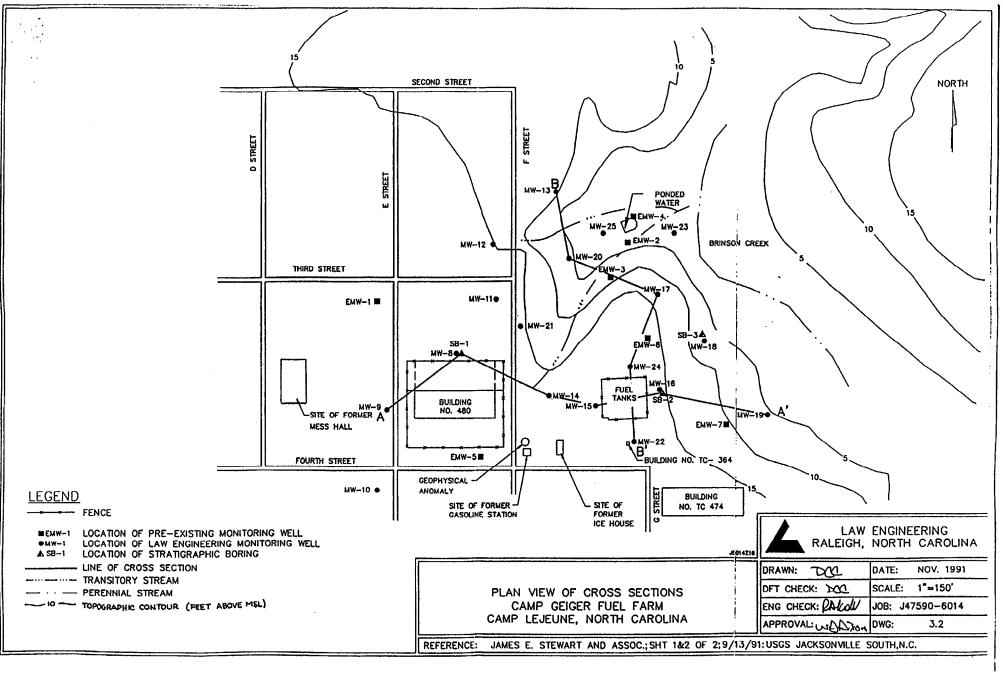




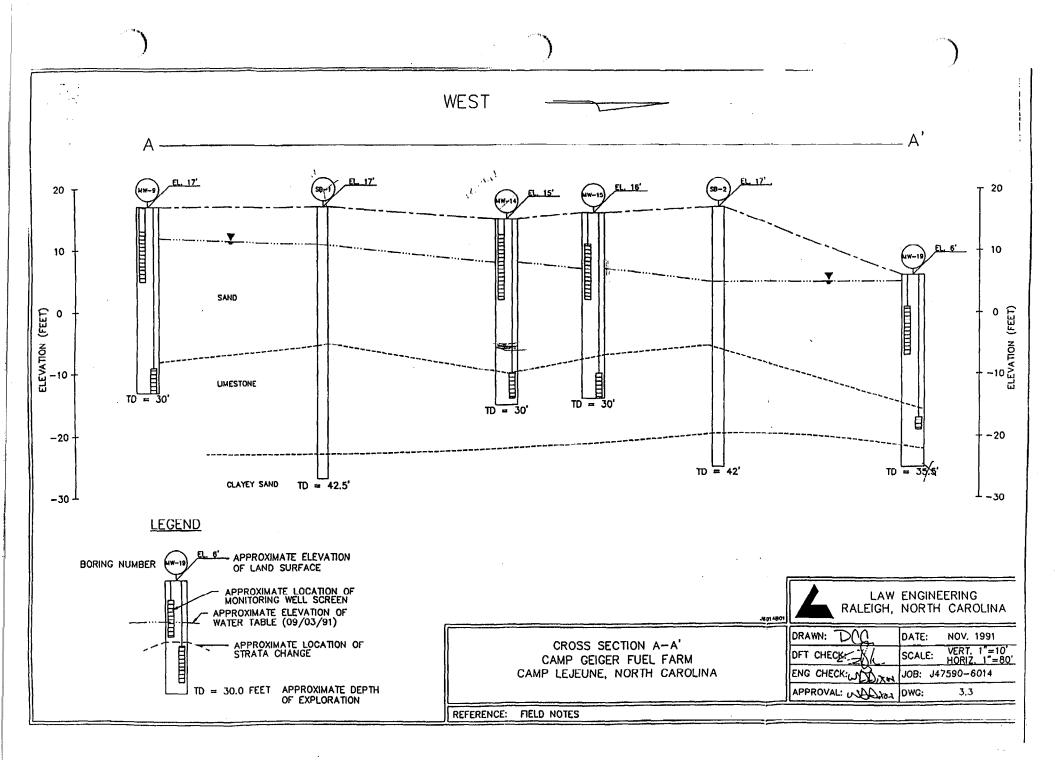
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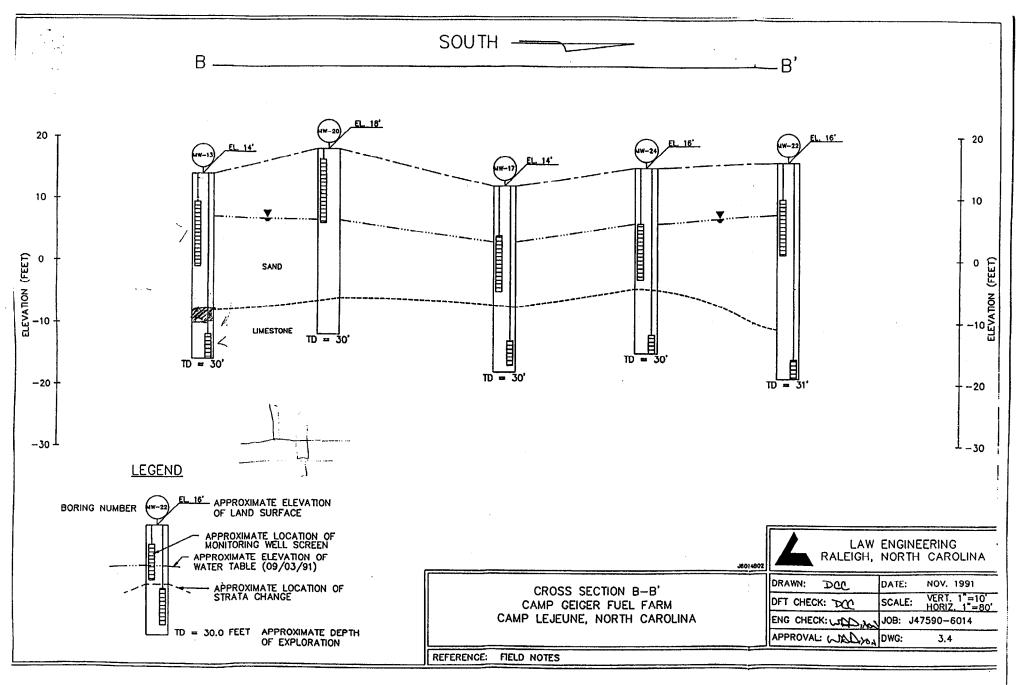
NORTH SECOND STREET STREET 0 STREET MW-13 . PONDED WATER √w\_\_23 ●MW-25 BRINSON CREEK M₩-12 ● ● M₩-20 THIRD STREET MW\_17 MW--110 - 1 C / H ● MW-21 S8-3▲ M₩-18 S9-1 HA--94 HA-8 14-7 MW-8 . ●MW-24 8-6998-5 FUEL TANKS MW-16 ●MW-14 58-2 BUILDING MW--9 HA-J MW-15 NO. TC-480 RA-4 SITE OF FORMER M₩-19● 🛦 HA--5 A HA-6 MESS HALL 8-30 08-2 - BUILDING NO. TC-364 FOURTH STREET 68-1 GEOPHYSICAL MW-10 . ANOMALY BUILDING LEGEND NO. TC-474 SITE OF FORMER -SITE OF FORMER GASOLINE STATION FENCE 69 LOCATION OF LAW ENGINEERING MONITORING WELL ICE HOUSE LAW ENGINEERING RALEIGH, NORTH CAROLINA ●MW--1 A SB-1 LOCATION OF STRATIGRAPHIC BORING LOCATION OF SOIL BORING 68-1 JG014Z21 LOCATION OF HAND-AUGER BORING ▲HA-1 NOV. 1991 DRAWN: 200 DATE: ----- TRANSITORY STREAM ---- PERENNIAL STREAM DET CHECK: DOC SCALE: 1"=150" LOCATION OF SOIL BORINGS ENG CHECK JOB: J47590-6014 CAMP GEIGER FUEL FARM CAMP LEJEUNE, NORTH CAROLINA APPROVAL: WDD DWG: 3.1 REFERENCE: JAMES E. STEWART AND ASSOC.; SHT 1&2 OF 2; 9/13/91: USGS JACKSONVILLE SOUTH, N.C.



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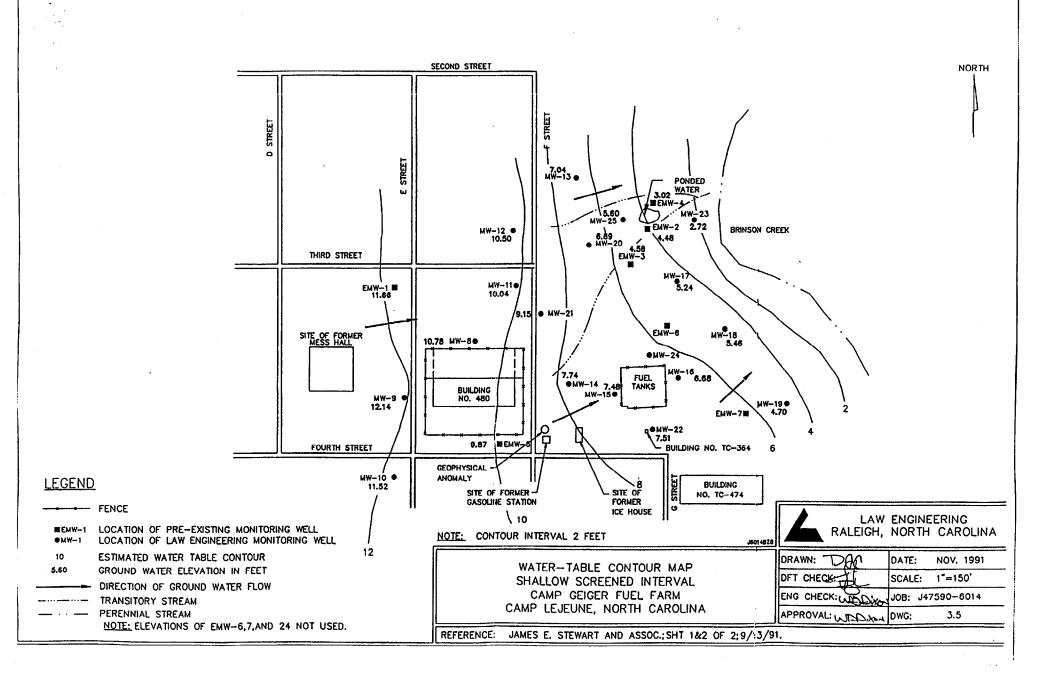


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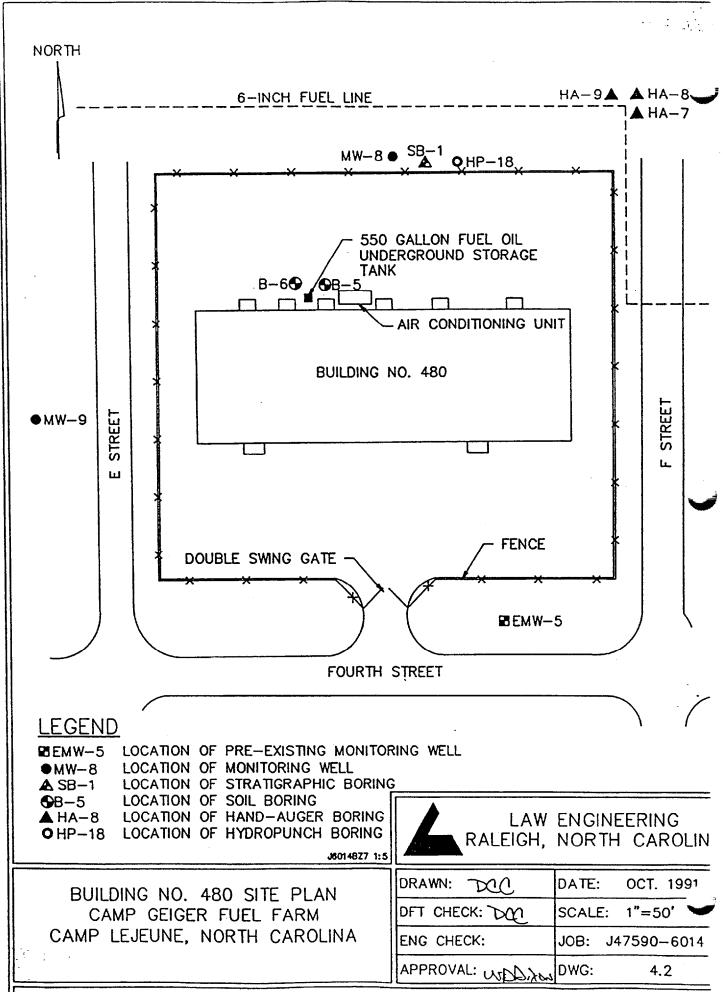


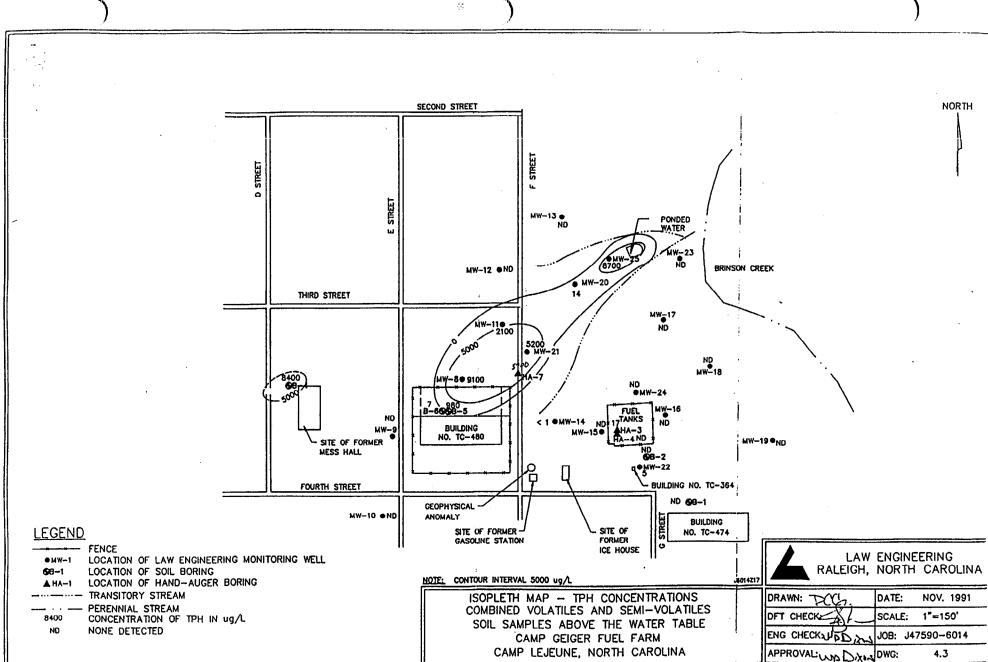
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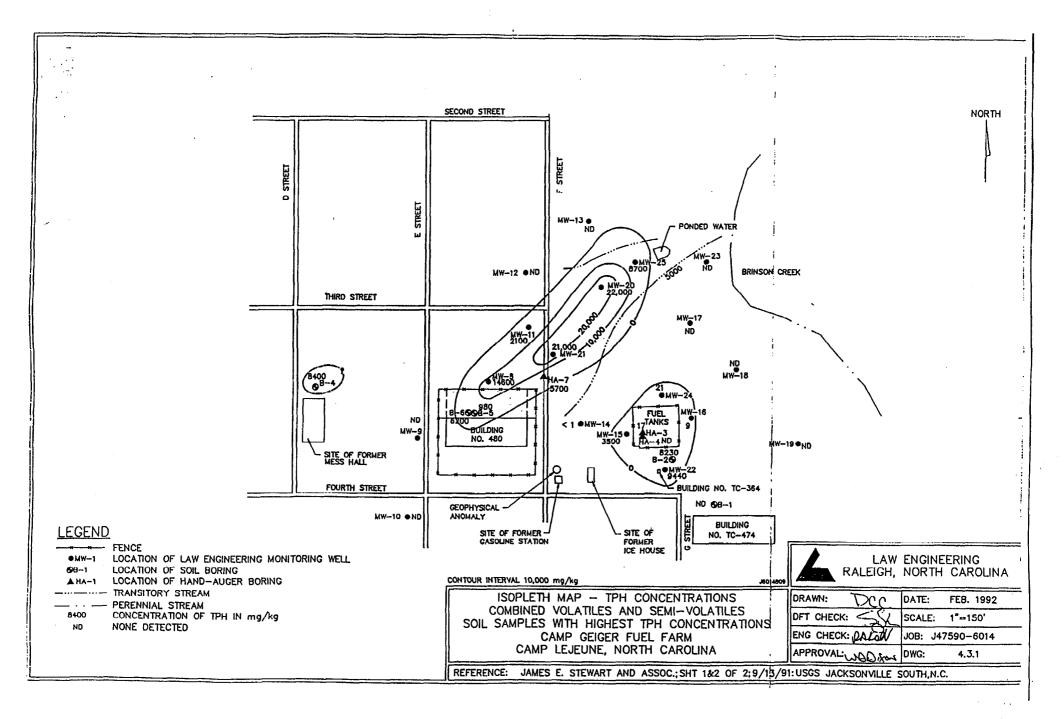


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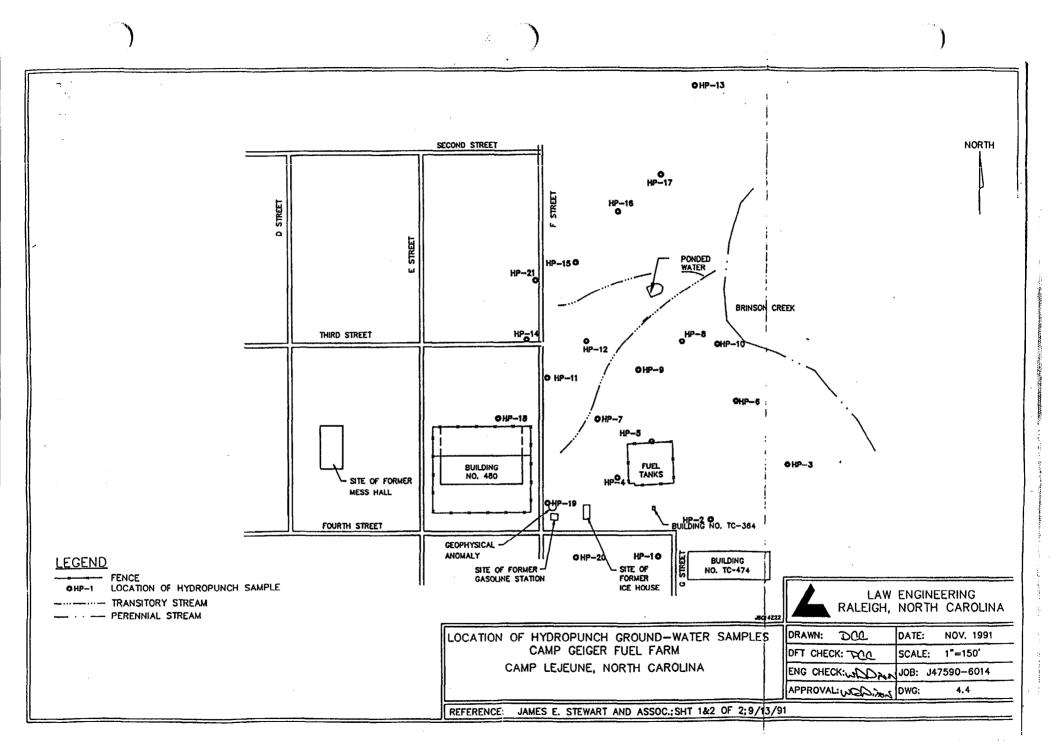




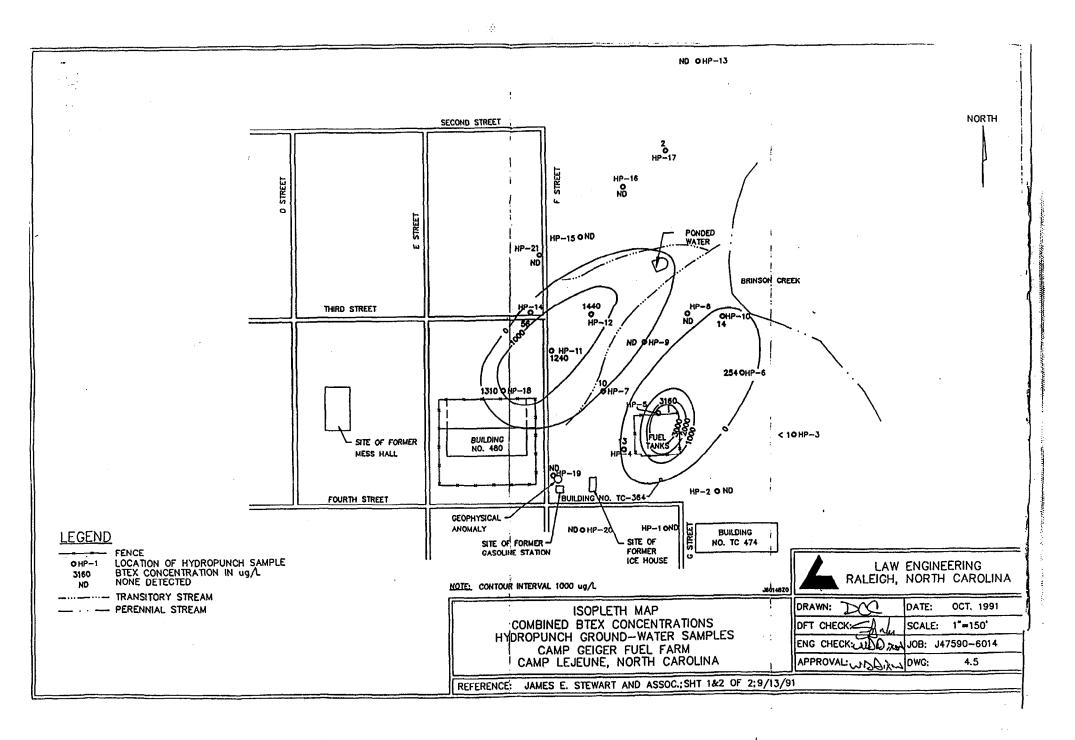
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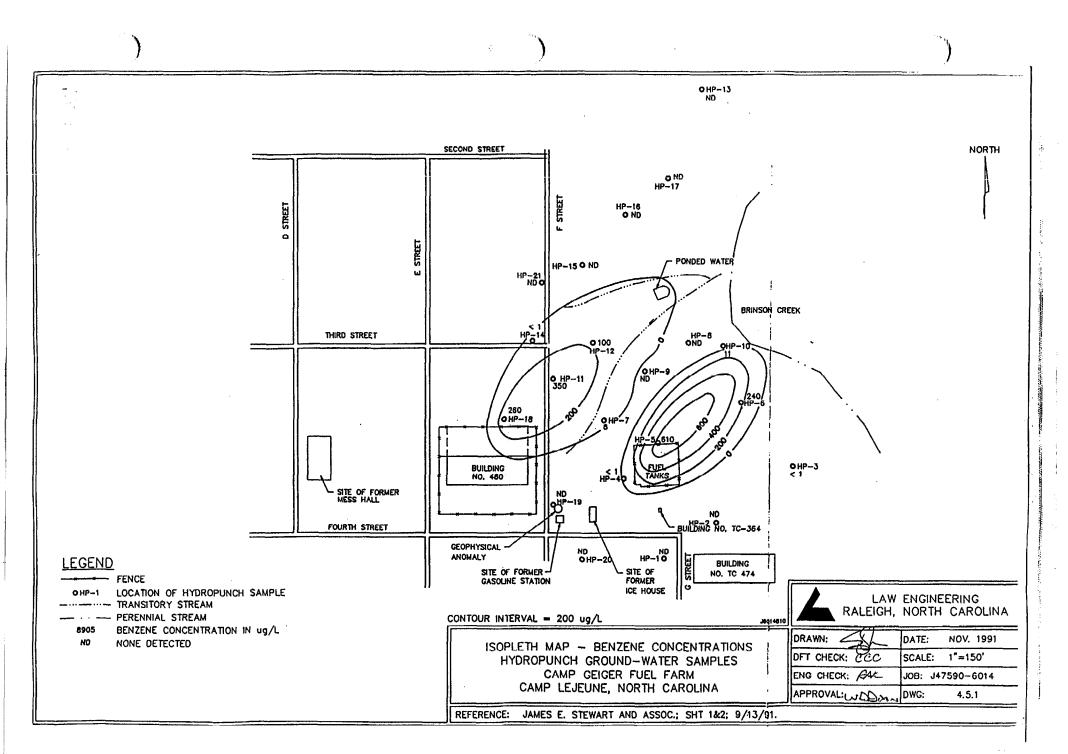


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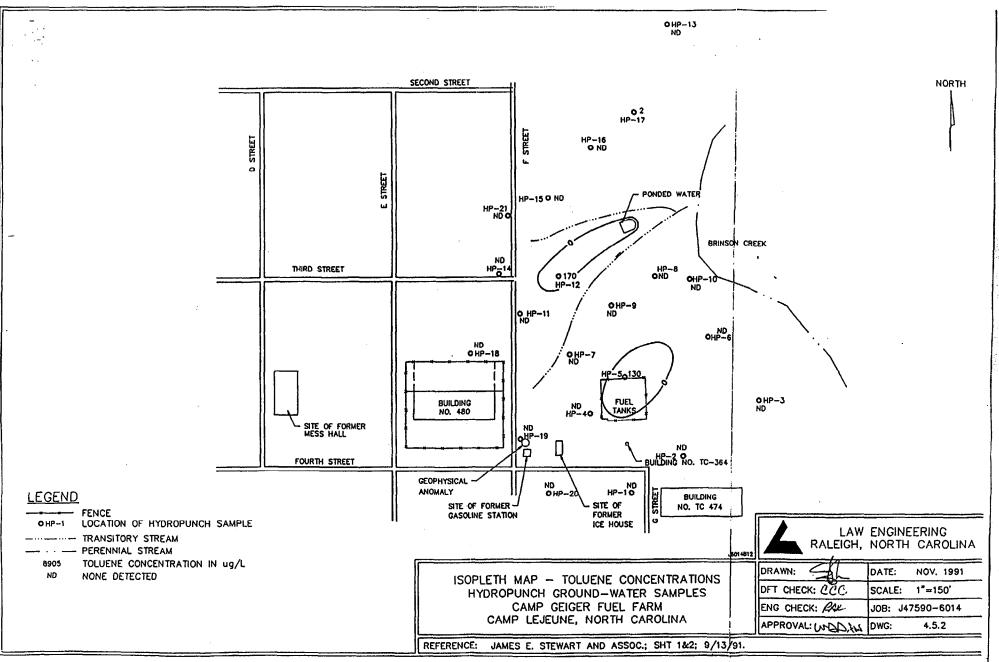


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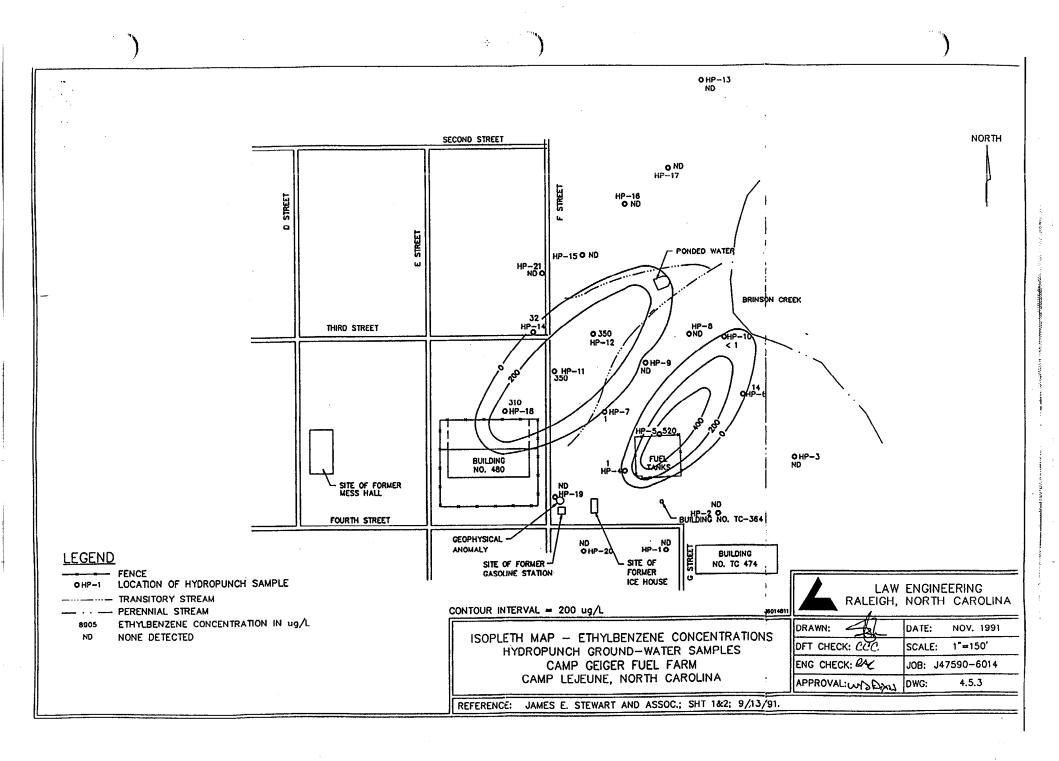


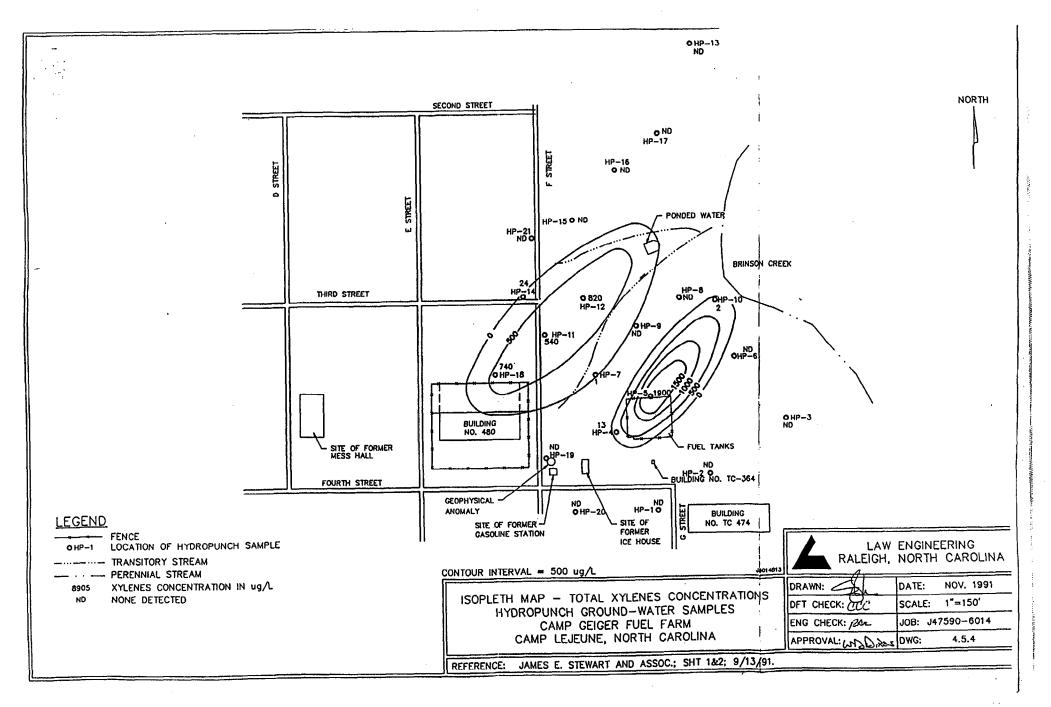


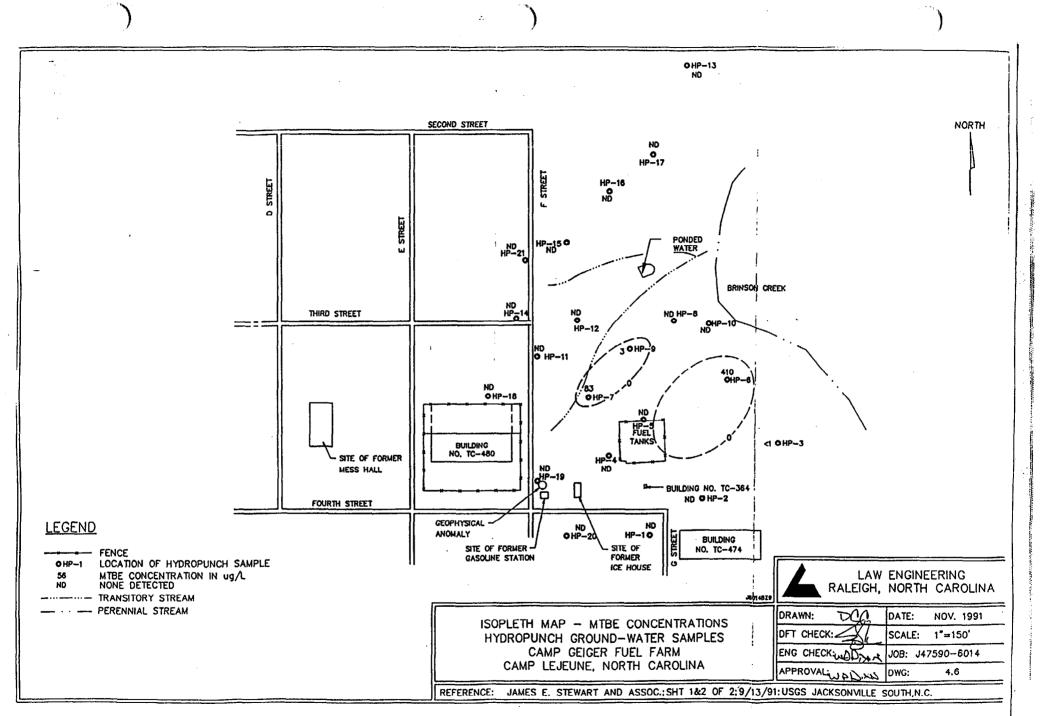
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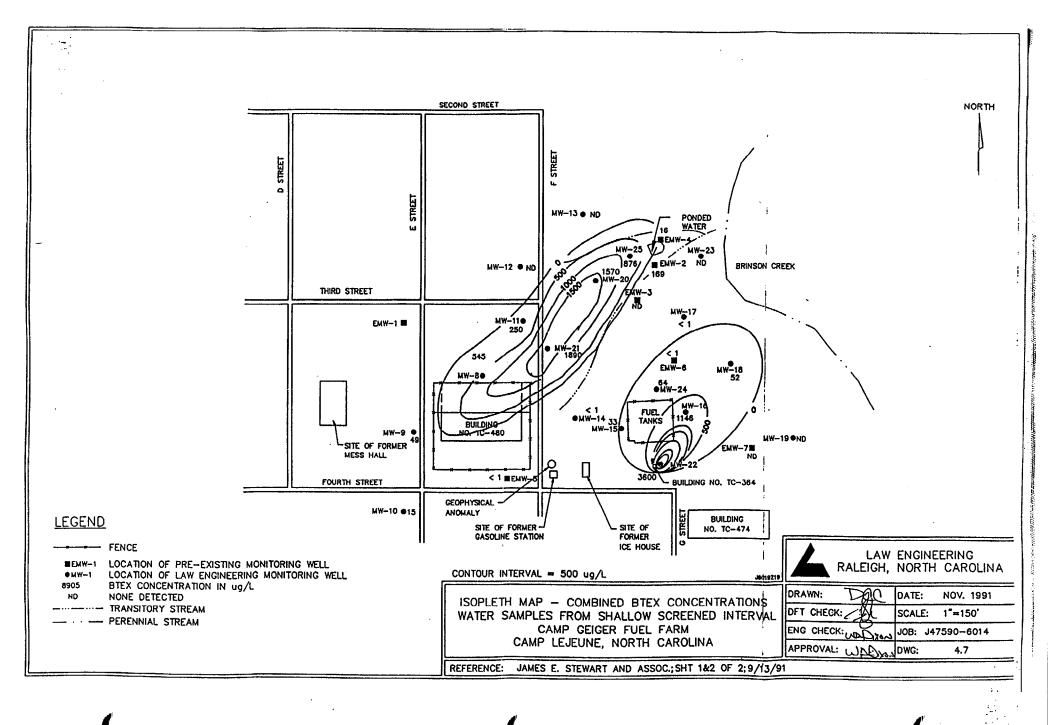
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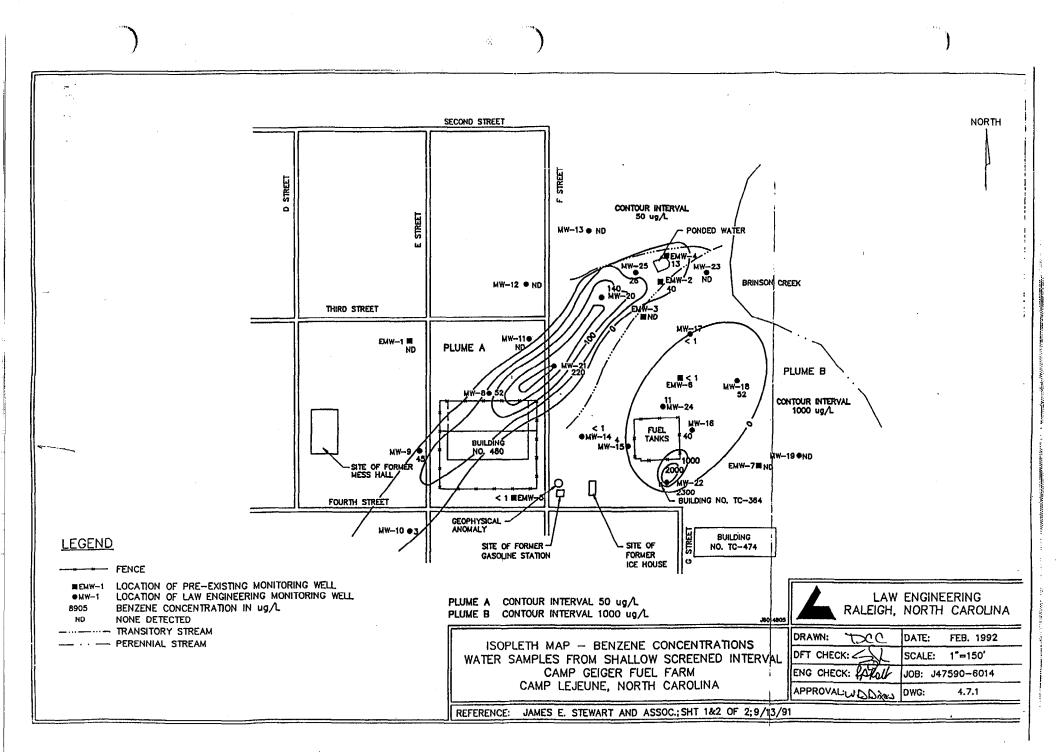




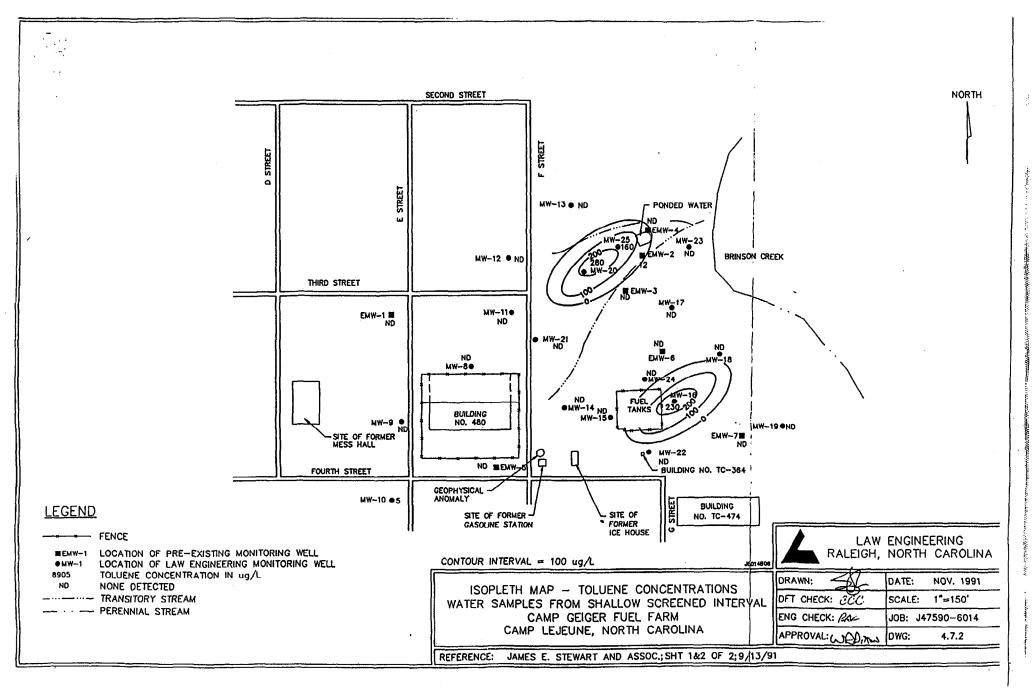


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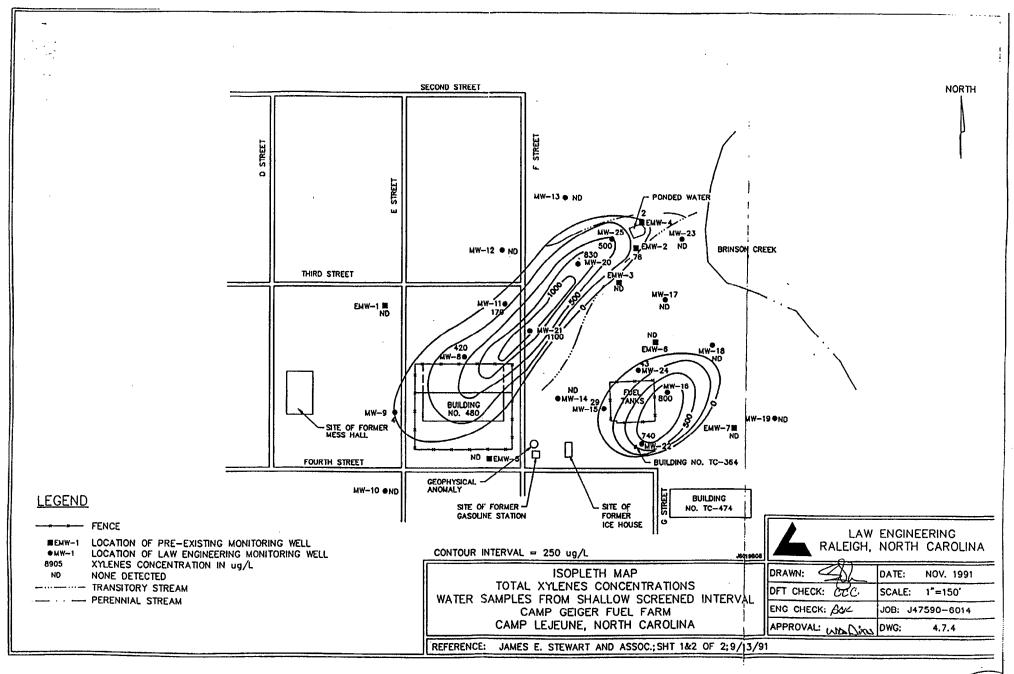


SECOND STREET NORTH Ë STREET MW-13 . ND PONDED WATER < 1 HEMW-4 190 BRINSON CREEK MW-12 . ND 200 • MW-20 40 41 EMW-3 THIRD STREET MW-17 ND MW-110 EMW-1 80 ND ND EMW--6 . MW-18 /13 MW--80 10 •MW-24 MW-16 ND FUEL TANKS •MW-14 3/ BUILDING M₩--15● NO. 480 MM--8 MW-19 OND -SITE OF FORMER MESS HALL ■ EMW-7 NΩ С ND MEMW-5 BUILDING NO. TC-364 FOURTH STREET GEOPHYSICAL ANOMALY MW-10 07 BUILDING LEGEND SITE OF FORMER -SITE OF NO. TC-474 FORMER ICE HOUSE GASOLINE STATION - FENCE LAW ENGINEERING RALEIGH, NORTH CAROLINA ■EMW-1 LOCATION OF PRE-EXISTING MONITORING WELL CONTOUR INTERVAL = 100 ug/L . MW-1 LOCATION OF LAW ENGINEERING MONITORING WELL 36 14807 ETHYLBENZENE CONCENTRATION IN ug/L 8905 DRAWN: DATE: NOV. 1991 NONE DETECTED ISOPLETH MAP - ETHYLBENZENE CONCENTRATIONS ND DFT CHECK: CCC/ SCALE: 1"=150" ------ TRANSITORY STREAM WATER SAMPLES FROM SHALLOW SCREENED INTERVAL ---- PERENNIAL STREAM CAMP GEIGER FUEL FARM ENG CHECK: FAL JOB: J47590-6014 CAMP LEJEUNE, NORTH CAROLINA APPROVAL: UND DAS DWG: 4.7.3 REFERENCE: JAMES E. STEWART AND ASSOC.; SHT 1&2 OF 2;9/13/91

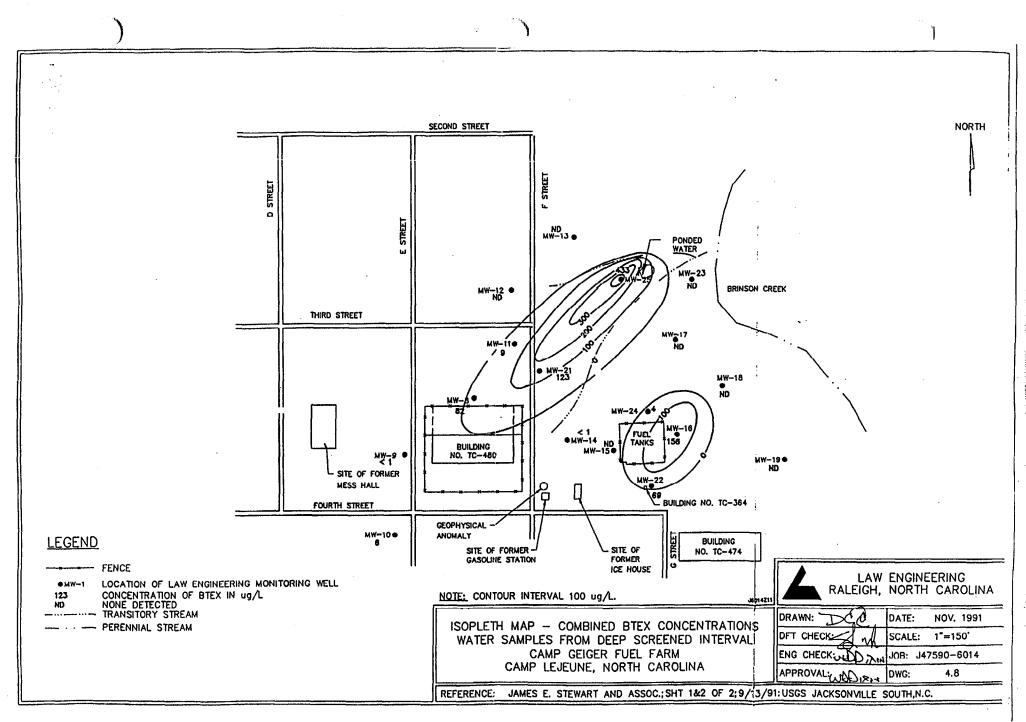
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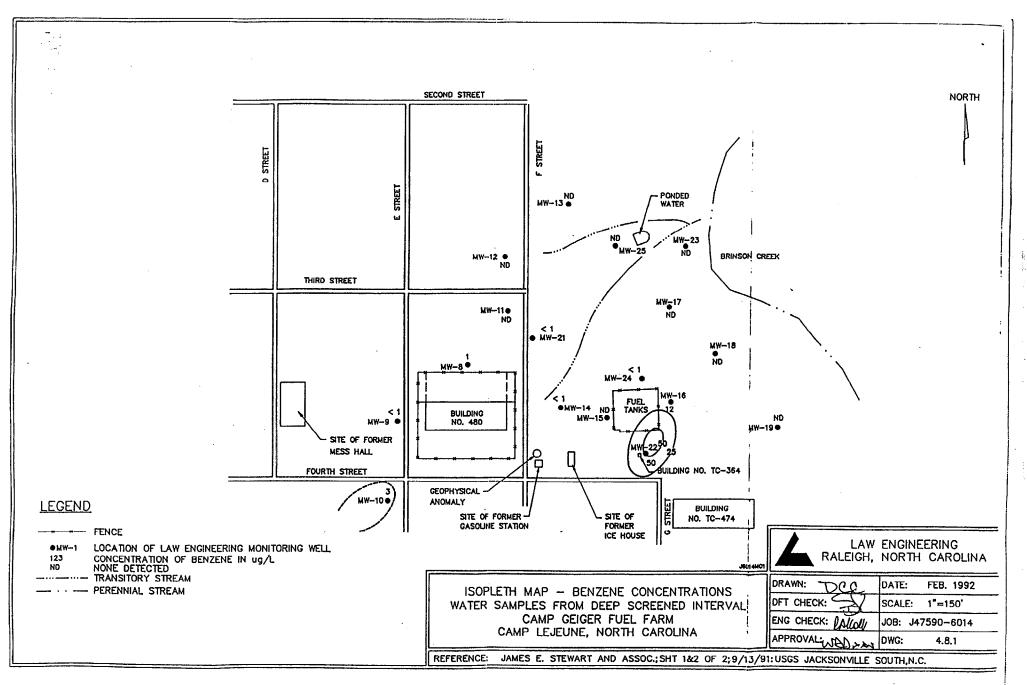
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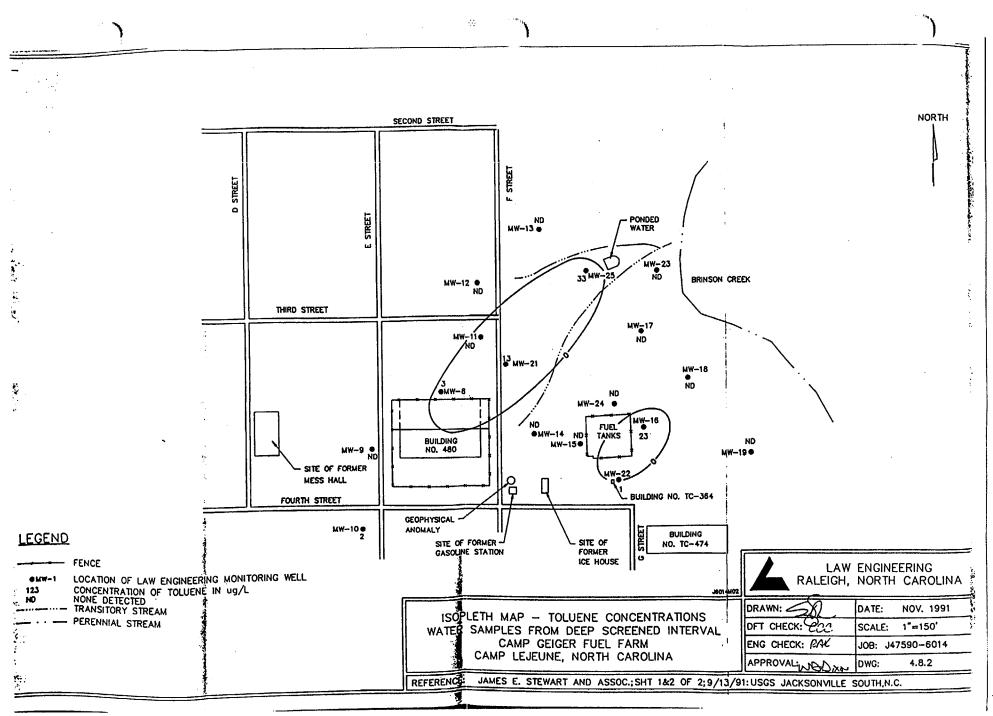


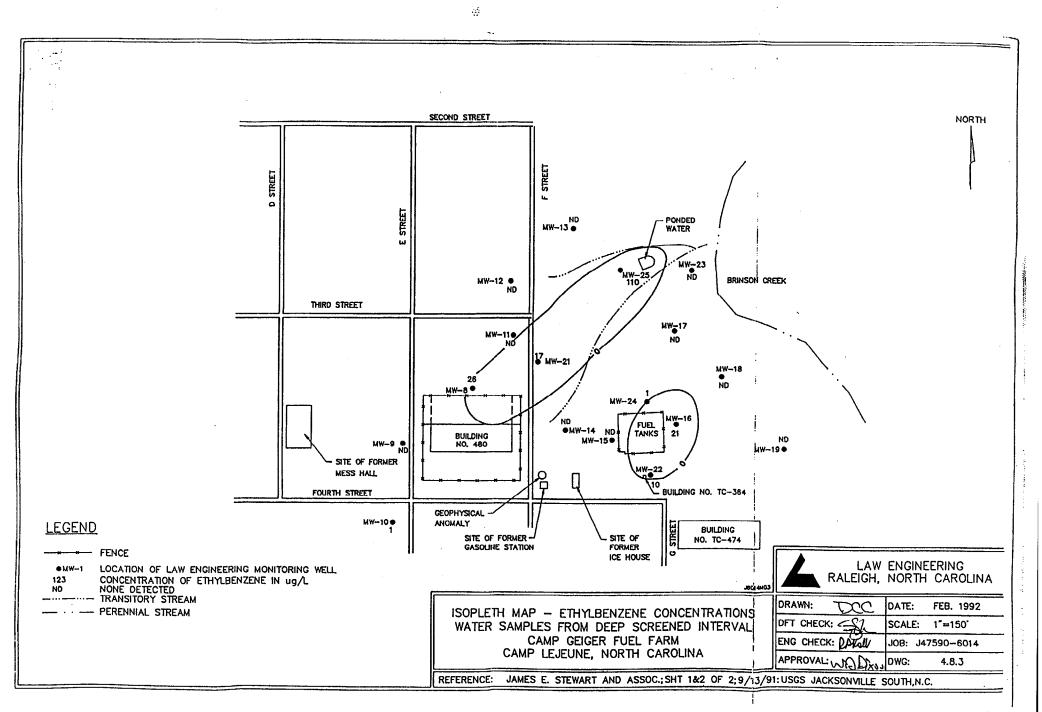
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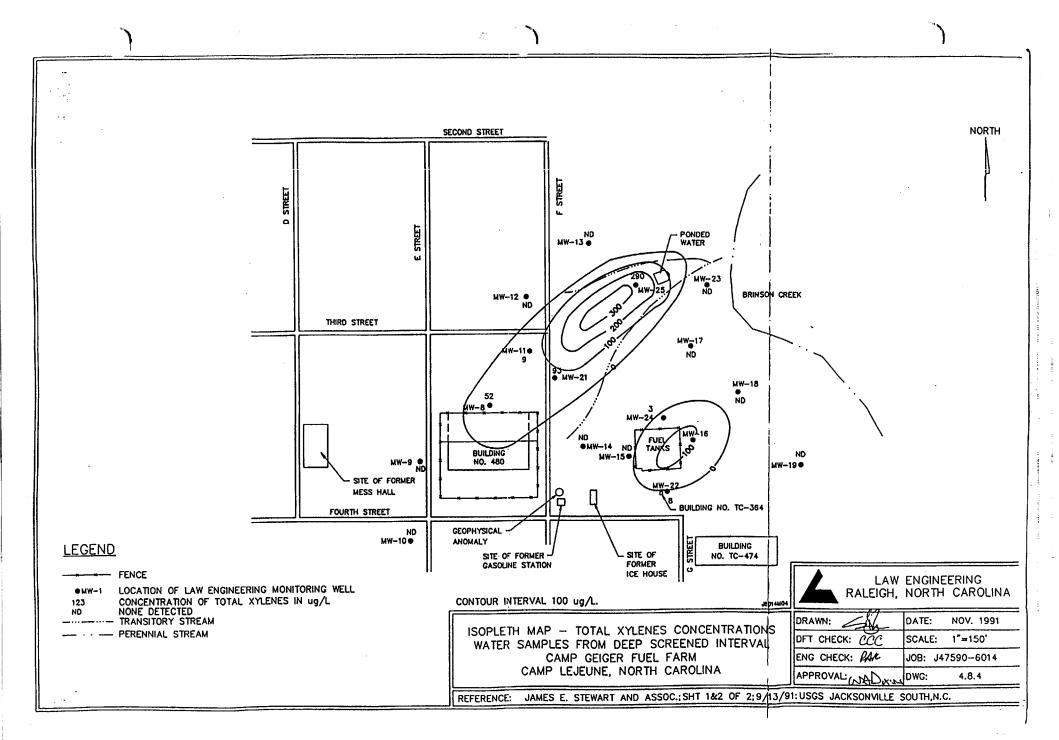


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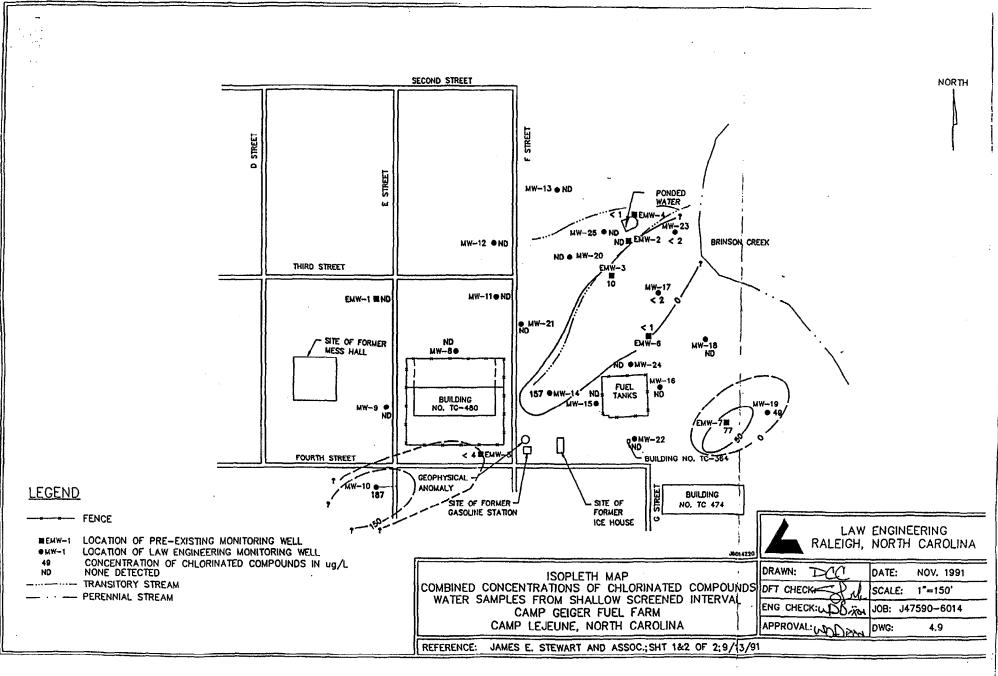






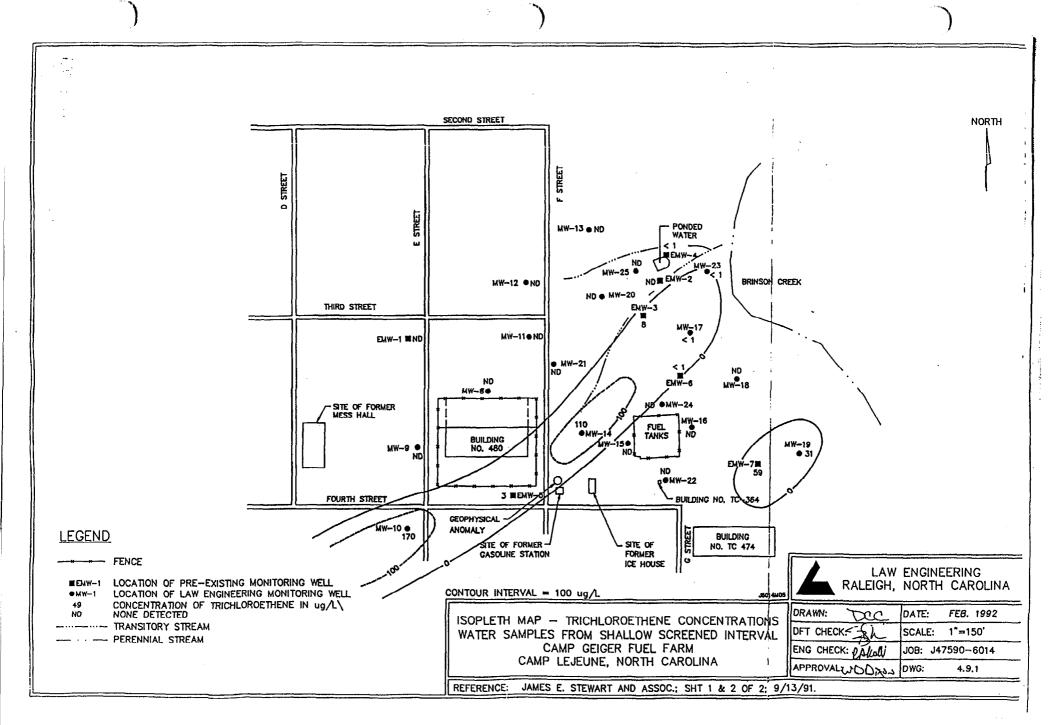


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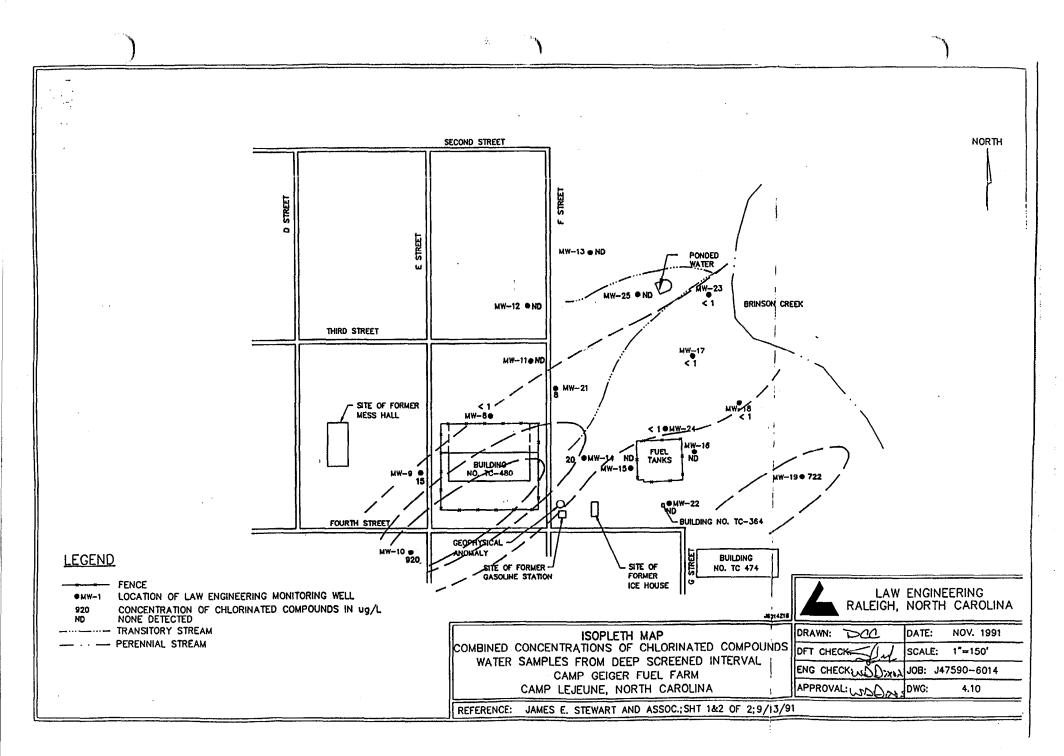


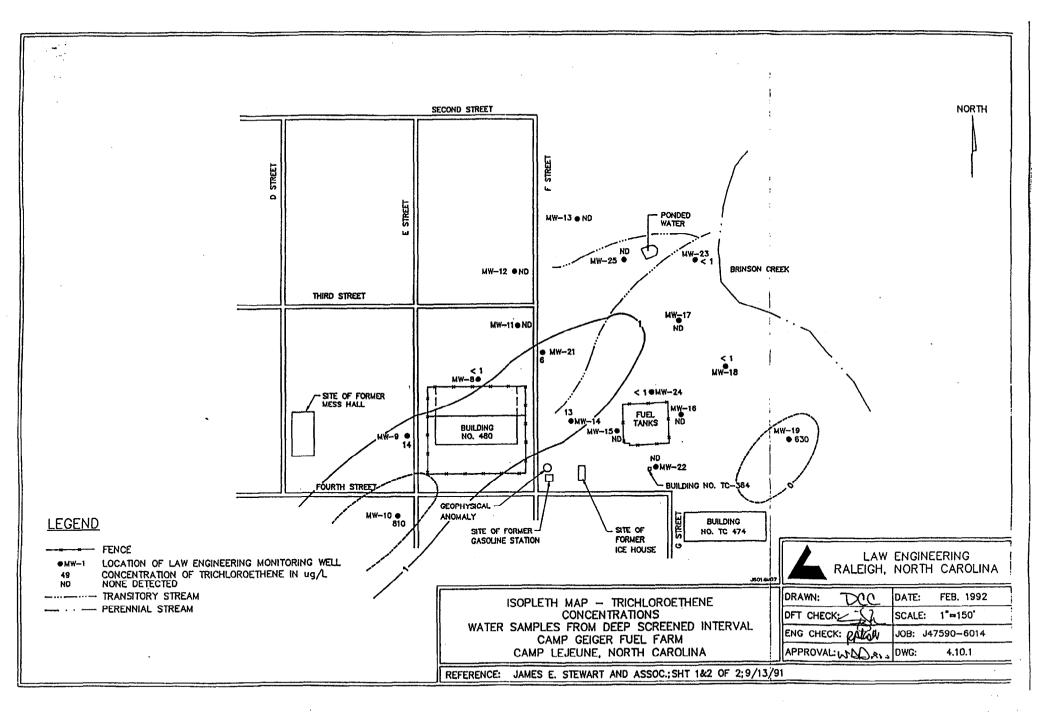
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. . SECOND STREET NORTH STREET PONDED MW-13 . ND WATER ND MW-23 ND MW-25 • ND # EMW-2 BRINSON CREEK MW-12. .ND ND . MW-20 1 THIRD STREET EMW-J ₩**—**17 MW-110 ND EMW-1 NO ND ● MW-21 ND ND ND EMW-6 ND MW-18 MW--80 ND .MW-24 SITE OF FORMER ]M₩\_16 44 ●MW--1 FVEL 1 ND TANKS BUILDING ₩-15● MW--19 MW-9 . NO. 480 ND EMW-7∎ ND 18 0 MW-22 FOURTH STREET BUILDING NO. TC-364 DEOPHYSICAL MW-10 • 17 ANOMALY **LEGEND** BUILDING SITE OF FORMER -SITE OF NO. TC 474 GASOLINE STATION FORMER 0 FENCE ICE HOUSE LAW ENGINEERING RALEIGH, NORTH CAROLINA MEMW-1 LOCATION OF PRE-EXISTING MONITORING WELL LOCATION OF LAW ENGINEERING MONITORING WELL ●MW-1 3805 CONCENTRATION OF TRANS-1,2-DICHLOROETHENE IN ug/L 49 ND NONE DETECTED DRAWN: Drc. DATE: FEB. 1992 ISOPLETH MAP - TRANS-1,2-DICHLOROETHENE ----- TRANSITORY STREAM CONCENTRATIONS DFT CHECK: SCALE: 1"=150' - · · ---- PERENNIAL STREAM WATER SAMPLES FROM SHALLOW SCREENED INTERVAL ENG CHECK: DOLOU JOB: J47590-6014 CAMP GEIGER FUEL FARM APPROVALUSED CAMP LEJEUNE, NORTH CAROLINA DWG: 4.9.2 **REFERENCE:** JAMES E. STEWART AND ASSOC .; SHT 1&2 OF 2; 9/13/91





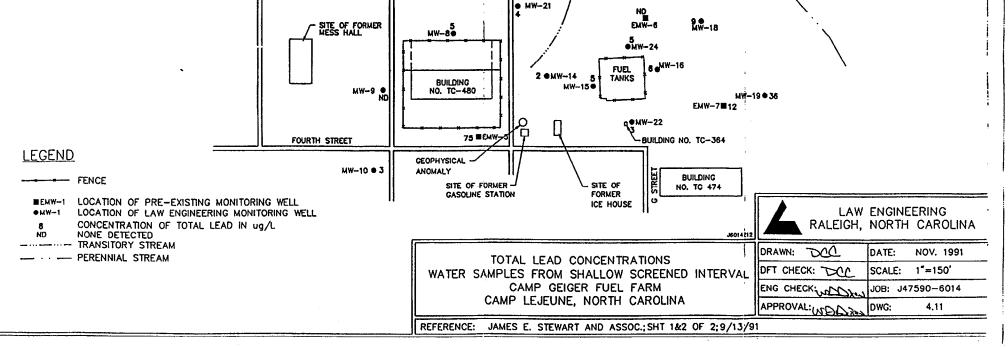
SECOND STREET NORTH STREET 1. STREET PONDED MW-13 . ND ND MW-23 M₩-25 ● ND BRINSON CREEK MW-12 .ND ND . MW-20 THIRD STREET M₩<u>-</u>17 MW-11 ND <1 ● M₩-21 ND MW-18 ND ₩₩~-8● - SITE OF FORMER MESS HALL ND MW-24 MW-16 FUEL ND ●MW-14 TANKS BUILDING ₩₩-15● MW--19 NO. 480 MW--9 . 92 < 1 ND ●HW-22 FOURTH STREET BUILDING NO. TC--38 GEOPHYSICAL -W-10 • ANOMALY

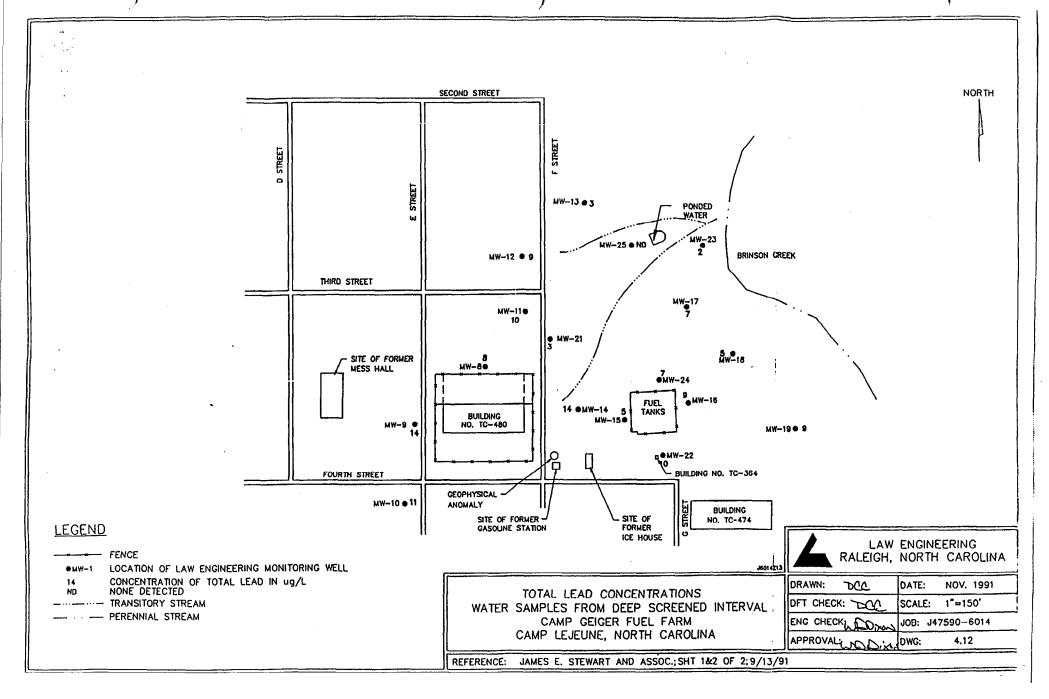
BUILDING LEGEND 110 SITE OF FORMER SITE OF NO. TC 474 FORMER FENCE ICE HOUSE LAW ENGINEERING RALEIGH, NORTH CAROLINA LOCATION OF LAW ENGINEERING MONITORING WELL ●MW-1 CONCENTRATION OF TRANS-1,2-DICHLOROETHENE IN ug/L 49 J60144405 NONE DETECTED ND Drr DRAWN: DATE: FEB. 1992 ------ TRANSITORY STREAM ISOPLETH MAP - TRANS-1,2-DICHLOROETHENE - PERENNIAL STREAM CONCENTRATIONS SCALE: 1"=150' DFT CHECK: WATER SAMPLES FROM DEEP SCREENED INTERVAL ENG CHECK: PATRI JOB: J47590-6014 CAMP GEIGER FUEL FARM CAMP LEJEUNE, NORTH CAROLINA APPROVAL: WODALS 4.10.2 DWG: REFERENCE: JAMES E. STEWART AND ASSOC.; SHT 1&2 OF 2;9/13/91

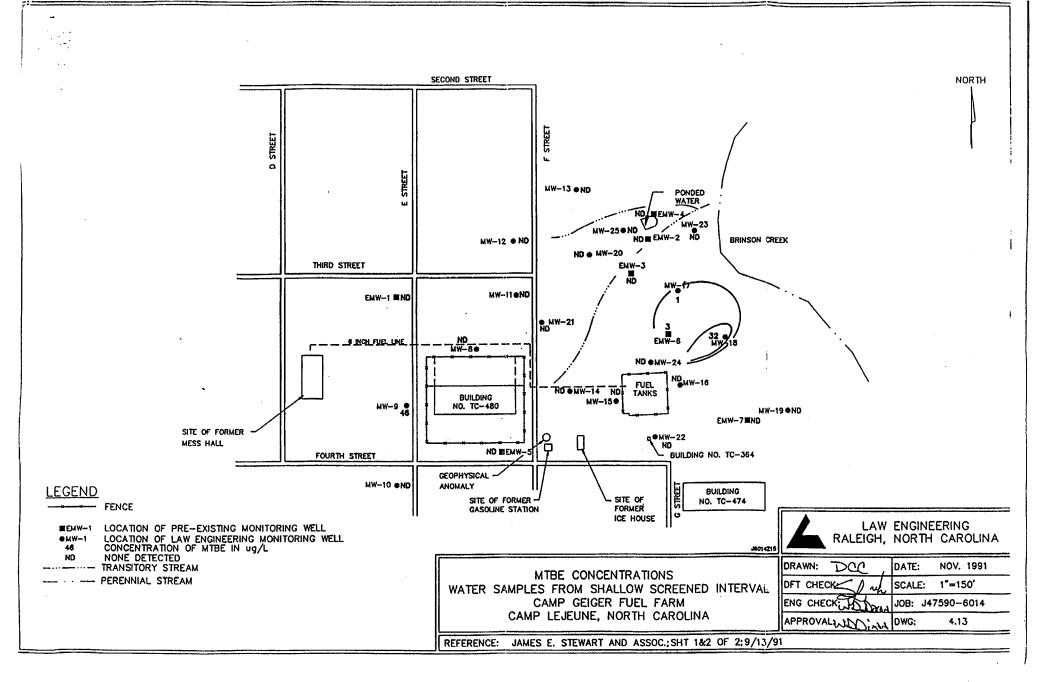
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SECOND STREET STREET STREET L. 0 STREET MW-13 .7 MW--25 @1 NDE EMW-2 2 BRINSON CREEK M₩-12 • 16 ND . MW-20 1 THIRD STREET EMW-3 MW\_17 MW-II OND EMW-1 # 14

NORTH







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## APPENDIX B

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## RECORDS OF SOIL-TEST BORING



| DEPTH<br>(FT.) | DESCRIPTION                                                                                                                                  | E    | LEVATI<br>(FT.) | ON   | • P | ENET | RATIO            | )N - B       | LOW    | 'S/FO | OT        |            |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------|------|-----------------|------|-----|------|------------------|--------------|--------|-------|-----------|------------|
| 0.0            |                                                                                                                                              |      |                 | 0    |     | 10   | 20 3             | 0 40         | 60     | 80    | ) 100     | )          |
| ſ              | TOPSOIL                                                                                                                                      | +++  |                 |      |     |      |                  |              |        |       |           |            |
| 2.6            |                                                                                                                                              | <br> |                 |      |     |      |                  |              |        |       |           | 22         |
| ſ              | Very loose medium brown silty SAND.(SM)                                                                                                      |      | 1               |      | ٠   |      | 1                |              |        |       |           | 3          |
| 4.0            | Firm light brown to light grey SAND.(SC)                                                                                                     |      |                 |      |     |      |                  |              |        |       |           |            |
|                |                                                                                                                                              |      |                 |      |     |      |                  |              |        |       |           | 16         |
|                |                                                                                                                                              |      |                 |      |     |      |                  |              |        |       |           |            |
|                |                                                                                                                                              |      |                 |      |     |      |                  |              |        |       |           | 1 **       |
|                |                                                                                                                                              |      |                 |      |     |      |                  |              |        |       |           | 13         |
| 10.5<br>11.0   | Very loose orange SAND with fine to coarse                                                                                                   |      | <u>8</u> -      | +    |     |      |                  | ╀╌╂╸         |        |       |           |            |
| 12.0           | gravel.(sp)                                                                                                                                  | /IE  | <u>il</u>       |      | -   |      | ļ                |              |        |       |           | 3          |
|                | Very loose orange silty SAND.(SM)                                                                                                            | -11  |                 |      | I   | •    |                  |              |        |       |           | 7          |
|                | Loose to very loose mottled grey and orange fine                                                                                             | - [] |                 |      | •   | ŀ    |                  |              |        |       |           |            |
| 16.5           | SAND.(SP)                                                                                                                                    |      |                 | 1    |     |      |                  |              |        |       |           | 2          |
| 10.5           | Very loose motiled dark brown and black silty                                                                                                |      | Ī               |      | ٠   |      |                  |              |        |       |           | 2          |
|                | SAND.(SM)                                                                                                                                    |      | .]]             |      |     |      |                  |              |        |       |           | 2          |
| 19.6           |                                                                                                                                              |      | 1               |      |     |      |                  |              |        |       |           | 8<br>14    |
|                | Firm grey mottled light brown fine to medium SAND.(SP)                                                                                       |      | ÷[              | T    |     |      | 1                | $\mathbf{T}$ |        |       |           | 1          |
|                |                                                                                                                                              |      |                 |      |     |      |                  |              |        |       |           |            |
|                |                                                                                                                                              |      |                 |      |     |      |                  |              |        |       |           |            |
|                |                                                                                                                                              |      |                 |      |     | 1    |                  |              |        |       |           | ·          |
|                |                                                                                                                                              |      | ÷.              |      |     |      |                  |              |        |       |           |            |
|                |                                                                                                                                              |      |                 | ſ    | •   |      | ·   .            |              |        |       |           | <u> </u> • |
|                |                                                                                                                                              |      |                 |      |     |      |                  |              |        |       |           |            |
| 30.0           |                                                                                                                                              |      |                 |      |     |      |                  |              |        |       |           |            |
|                | Boring terminated at 30 feet.                                                                                                                |      |                 |      |     |      |                  |              |        |       | $\square$ |            |
|                |                                                                                                                                              |      |                 |      |     |      |                  |              |        |       |           |            |
|                |                                                                                                                                              |      |                 |      |     |      |                  |              |        |       |           |            |
|                |                                                                                                                                              |      | L               | _    |     |      |                  |              |        |       |           |            |
|                |                                                                                                                                              |      |                 |      |     |      |                  |              |        |       |           |            |
|                |                                                                                                                                              |      |                 |      |     |      |                  |              |        |       |           |            |
|                |                                                                                                                                              |      |                 | {    |     |      |                  | 1 1          |        |       |           | (          |
|                |                                                                                                                                              |      |                 |      |     |      |                  |              |        |       |           | J          |
|                | REMARKS:                                                                                                                                     |      |                 |      | т   | ESTI | ORIN             | GRE          | COR    | 2     |           |            |
|                | Boring terminated at 30 feet. No split spoon<br>samples obtained beyond 20 feet due to heaving<br>sands. Upon horing completion, paired well |      |                 |      |     |      |                  |              |        |       | _         |            |
|                | sands. Upon boring completion, paired well<br>installed. See well construction records for<br>details.                                       |      | BORIN           |      |     |      | fW-8<br>.ugust : | 15 10        | 91     |       |           |            |
|                |                                                                                                                                              |      | PROJE           | CT N |     | t Jo | 5014             |              | ~ 1    |       |           |            |
|                |                                                                                                                                              |      | PROJE           |      | 1   | C    | amp G            | eiger I      | Fuel F | arm   |           |            |
|                | SEE KEY SHEET FOR EXPLANATION OF                                                                                                             |      | PAGE            |      | 1   |      |                  |              |        |       |           |            |
|                | SYMBOLS AND ABBREVIATIONS USED ABOVE                                                                                                         |      | 1               |      |     | LA   | w en             | GINE         | ERIN   | G     |           |            |

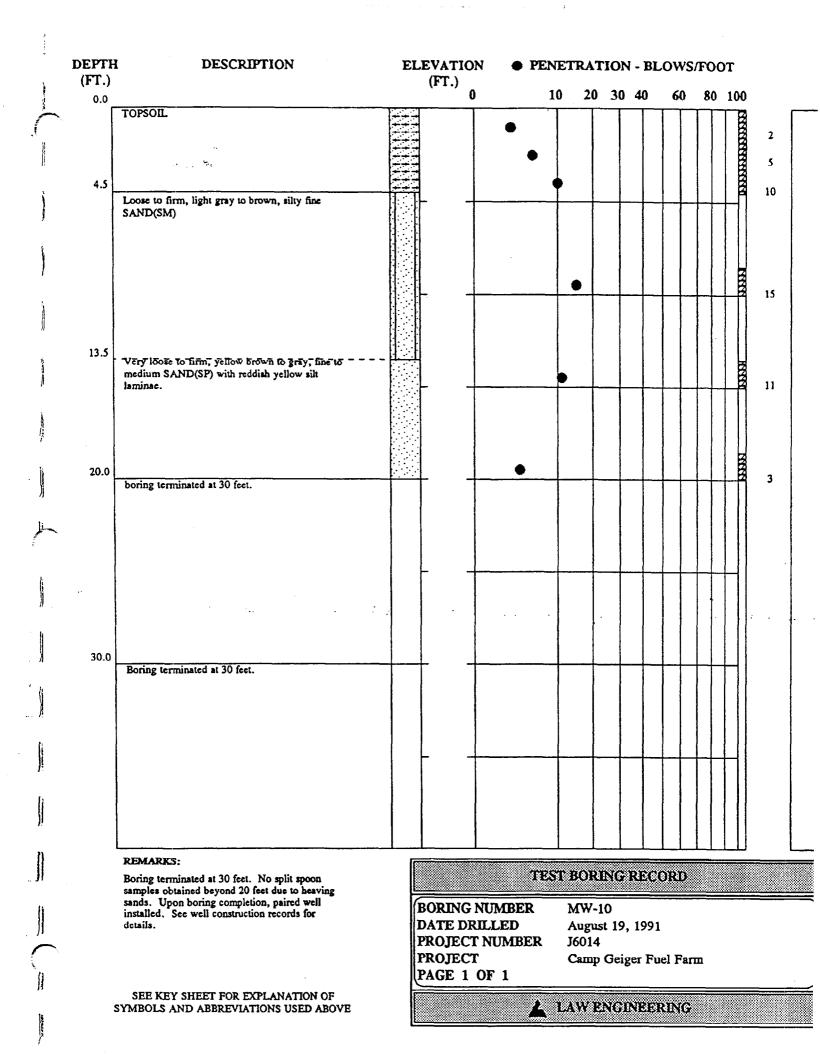
| DEPTH        | DESCRIPTION                                                                                                                                                                            |          | VATION<br>FT.) | • PENI | ETRA                    | TIOI        | ₹ - BL | .ows | S/FOC | T               |          |
|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------------|--------|-------------------------|-------------|--------|------|-------|-----------------|----------|
| (FT.)<br>0.0 |                                                                                                                                                                                        |          | 0              | 10     | 20                      | 30          | 40     | 60   | 80    | 100             |          |
|              | Fill material.(FILL)                                                                                                                                                                   |          |                |        |                         |             |        |      |       | NAMES OF COLUMN | 28       |
|              | Fum nghe giey notice trange into ordinationally                                                                                                                                        |          |                |        |                         |             |        |      |       | 1555            | . 🊩      |
| 3.5<br>4.5   | Firm orange monted light brown sulty CLAY. (CL)                                                                                                                                        |          |                |        |                         |             |        |      |       |                 | 8        |
|              | Very loose to firm light brown mottled grey to<br>light brown mottled orange fine to medium<br>SAND.(sp)                                                                               |          |                |        | •                       |             |        |      |       |                 | 13<br>19 |
|              |                                                                                                                                                                                        | -        |                |        | •                       |             |        |      |       |                 | 16<br>15 |
| 14.3         |                                                                                                                                                                                        |          |                | •      |                         |             |        |      |       | 8111111         | 3        |
|              | Very loose light brown mottled light grey orange<br>slightly silty SAND.(SM)                                                                                                           | -        |                | •      |                         |             |        |      |       |                 | 3<br>WOH |
| 20.0         |                                                                                                                                                                                        |          |                |        |                         |             |        |      |       | TAXA TAXA       | woн      |
| 20.0         |                                                                                                                                                                                        |          | +              |        |                         |             |        |      |       |                 |          |
|              |                                                                                                                                                                                        |          |                |        |                         |             |        |      |       |                 |          |
|              |                                                                                                                                                                                        |          | T              |        |                         |             |        |      |       |                 |          |
|              |                                                                                                                                                                                        |          |                |        |                         |             |        |      |       |                 |          |
| 30.0         | Boring terminated at 30 feet.                                                                                                                                                          | +        |                |        | agung Malakili Inggrapy |             |        | ╉    |       | ++              |          |
|              |                                                                                                                                                                                        |          |                |        |                         |             |        |      |       |                 |          |
|              |                                                                                                                                                                                        |          |                |        |                         |             | _      | +    |       |                 |          |
|              |                                                                                                                                                                                        |          |                |        |                         |             |        |      |       |                 |          |
|              |                                                                                                                                                                                        |          |                |        |                         |             |        |      |       |                 |          |
|              | REMARKS:                                                                                                                                                                               |          |                | TEC    | TRO                     | DINIC       | REC    | 000  |       |                 |          |
|              | Boring terminated at 30 feet. No split spoon<br>samples obtained beyond 20 feet due to heaving<br>sands. Upon boring completion, paired well<br>instituted. Sac sublight and seeds for | B        | ORING N        |        | MW                      |             |        |      |       |                 |          |
|              | installed. See well construction records for details.                                                                                                                                  | D.<br>PI | ATE DRI        |        |                         | ust 10<br>4 | 5, 199 |      |       |                 |          |

SEE KEY SHEET FOR EXPLANATION OF SYMBOLS AND ABBREVIATIONS USED ABOVE

PROJECT PAGE 1 OF 1

Camp Geiger Fuel Farm

LAW ENGINEERING



|                                                                 | RIPTION                                         | EL          | EVATIO<br>(FT.)                                   | N 🔴                  | PENI | ETRA         | TIO          | N -  | BL  | ows    | /FO       | TC               |     |         |
|-----------------------------------------------------------------|-------------------------------------------------|-------------|---------------------------------------------------|----------------------|------|--------------|--------------|------|-----|--------|-----------|------------------|-----|---------|
| FT.)<br>0.0                                                     |                                                 |             | (11.)                                             | •                    | 10   | 2            | 03           | 0 4  | 0   | 60     | 80        | 100              |     |         |
| 0.5 TOPSOIL                                                     |                                                 |             |                                                   |                      | r    | <b></b>      | [            |      |     |        | $\square$ |                  |     | <u></u> |
| Loose medium brown mo                                           | stled arey silty fine                           | 기 : : :     |                                                   |                      |      |              | ł            |      |     |        |           |                  | 8   | ·       |
| SAND.(SM)                                                       | nice groy and the                               |             |                                                   |                      |      |              | ]            |      |     |        |           |                  |     | -       |
| 3.5                                                             |                                                 |             |                                                   |                      | 9    |              | }            |      |     |        |           |                  | 9   |         |
| 5.0 Firm orange motiled light<br>SAND.(SM)                      | t brown fine to medium                          |             |                                                   |                      |      | •            |              |      |     |        |           |                  | 12  |         |
| Firm to loose grey mottle<br>to medium SAND (sp) so             | d light brown to grey fine<br>ome gravel.       |             |                                                   |                      |      |              |              |      |     |        |           | 52               | ••  |         |
| 10.0                                                            |                                                 |             |                                                   |                      | •    |              |              |      |     |        |           | RAMMA            | 7   |         |
| Loose to very loose greet<br>mottled orange silty SAN           | nish grey to light brown<br>D to fine SAND.(SM) |             |                                                   |                      |      |              |              |      |     |        |           | - H              | 1   |         |
| 1 A.                                                            |                                                 |             |                                                   |                      |      |              |              |      |     |        |           | RESERVE          |     |         |
|                                                                 |                                                 |             |                                                   |                      |      |              |              |      |     |        | +         |                  | WOH |         |
| 18.0                                                            |                                                 |             |                                                   |                      |      |              |              |      |     |        |           |                  |     |         |
| Firm to dense medium g<br>to medium SAND (sm) s                 | rey to brownish grey fine<br>some gravel.       |             |                                                   |                      |      |              |              |      |     |        |           | NAMANI<br>NAMANI | 32  |         |
| m≈sm                                                            |                                                 |             | <br>                                              |                      |      |              |              |      |     |        |           |                  |     |         |
|                                                                 |                                                 |             |                                                   |                      |      |              |              |      |     |        |           |                  |     |         |
|                                                                 |                                                 |             |                                                   |                      |      |              | <u> </u>     |      |     |        |           |                  |     | њ.,     |
|                                                                 |                                                 |             |                                                   |                      |      | •            | :            |      |     |        |           |                  |     |         |
|                                                                 |                                                 |             |                                                   | · · .                |      |              |              |      |     |        |           |                  |     |         |
| 30.0                                                            |                                                 |             |                                                   |                      |      |              |              |      |     |        | ++        | +                |     |         |
|                                                                 |                                                 |             |                                                   |                      |      |              |              |      |     |        |           |                  |     |         |
|                                                                 |                                                 |             |                                                   |                      |      |              |              |      |     |        |           |                  |     |         |
|                                                                 |                                                 |             |                                                   |                      |      |              |              |      |     |        | $\prod$   |                  |     |         |
|                                                                 |                                                 |             |                                                   |                      |      |              |              |      |     |        |           |                  |     |         |
| REMARKS:                                                        |                                                 |             |                                                   |                      |      |              |              |      |     |        |           |                  |     |         |
| Boring terminated at 30 f                                       | 20 feet due to heaving                          |             |                                                   |                      | TES  | L BQ         | RIN          | G RI | eco | )RD    |           |                  |     |         |
| sands. Upon boring com<br>installed. See well const<br>details. | pletion, paired well<br>ruction records for     | נ<br>נ<br>נ | BORING<br>DATE DE<br>PROJECT<br>PROJECT<br>PAGE 1 | ULLED<br>I NUME<br>I |      | <b>J60</b> 1 | just 1<br>14 |      |     | el Fai | m         |                  | -   | -       |
| SEE KEY SHEET FOR                                               | EXPLANATION OF                                  |             |                                                   |                      | 2    |              |              |      |     |        |           |                  |     |         |

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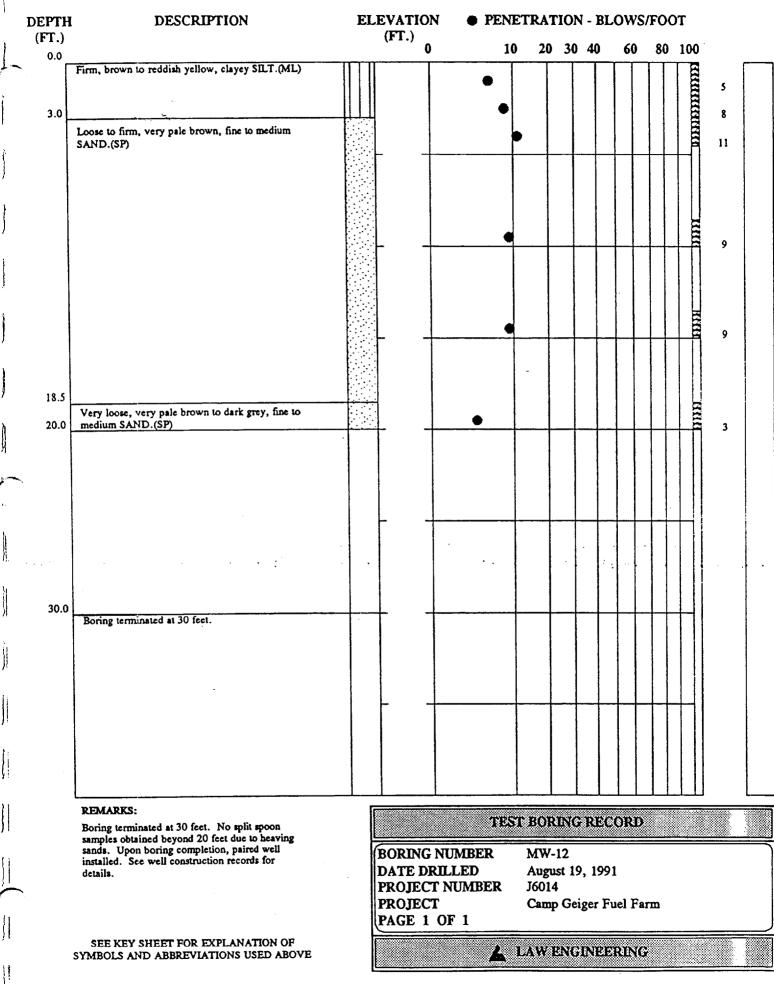
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| DEPTH        | DESCRIPTION                                                                                                                                                                                          | EL | EVATIO<br>(FT.)                                 | N                 | • PEN                | ETR            | ATI                 | ON -  | BLC | ows    | то( | T              |               |  |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|-------------------------------------------------|-------------------|----------------------|----------------|---------------------|-------|-----|--------|-----|----------------|---------------|--|
| (FT.)<br>0.0 |                                                                                                                                                                                                      |    | (F1.)                                           | )                 | 10                   | )              | 20                  | 30 4  | 0   | 60     | 80  | 100            |               |  |
|              | TOPSOIL                                                                                                                                                                                              |    |                                                 | [                 |                      |                | <u> </u>            | Τ     |     |        | ГТ  | B              |               |  |
| 3.5          | Stiff, light brown, clayey SILT.(ML)<br>Firm, light brown to reddish yellow, fine to<br>medium SAND. (SP)                                                                                            |    |                                                 |                   | •                    | •              |                     |       |     |        |     |                | 5<br>14<br>13 |  |
| 8.5          |                                                                                                                                                                                                      |    |                                                 |                   |                      |                |                     |       |     |        |     |                |               |  |
|              | Firm, light brown, medium SAND (SP) with trace<br>pebbles.                                                                                                                                           |    |                                                 |                   | •                    |                |                     |       |     |        |     | KARREN ISSERVE | 6<br>5        |  |
| 18.5         | Very loose, brown to grey, medium SAND.(SP)                                                                                                                                                          |    |                                                 |                   |                      |                |                     |       |     |        |     | NANANAN I      |               |  |
| 30.0         | Boring terminated at 30 feet.                                                                                                                                                                        |    |                                                 |                   |                      |                |                     |       |     |        |     |                |               |  |
|              |                                                                                                                                                                                                      |    |                                                 |                   |                      |                |                     |       |     |        |     |                |               |  |
|              | REMARKS:                                                                                                                                                                                             |    |                                                 |                   | TES                  | T RI           | PIN                 | (C D  | ecr | )RU    |     |                |               |  |
|              | Boring terminated at 30 feet. No split spoon<br>samples obtained beyond 20 feet due to heaving<br>sands. Upon boring completion, paired well<br>installed. See well constructin records for details. |    | BORING<br>DATE DI<br>PROJEC<br>PROJEC<br>PAGE 1 | RILL<br>T NU<br>T | MBER<br>JED<br>JMBER | M<br>Au<br>J6( | W-13<br>gust<br>)14 | 20, 1 | 991 | el Far | m   |                |               |  |
| 5            | SEE KEY SHEET FOR EXPLANATION OF<br>SYMBOLS AND ABBREVIATIONS USED ABOVE                                                                                                                             |    |                                                 |                   | 4                    | LAV            | / EN                | GIN   | ZER | ING    |     |                |               |  |

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| DEPTH<br>(FT.) | H DESCRIPTION                                                                                                                  | ELEVATION<br>(FT.)                                           | • PENETRATION - BLOWS/FOOT                                   |
|----------------|--------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|
| 0.0            |                                                                                                                                |                                                              | 10 20 30 40 60 80 100                                        |
| 0.5            | TOPSOIL<br>Loose, mottled light brown to black, clayey silty<br>SAND.(SM)                                                      |                                                              | 9<br>8<br>8<br>8                                             |
| 13.5           |                                                                                                                                |                                                              | • 12                                                         |
| 15.0           | Loose, light brown to reddish yellow, silty<br>SAND.(SM)<br>Very loose, light brown to grey, silty fine to<br>medium SAND.(SM) |                                                              | • 5                                                          |
| 20.0           |                                                                                                                                |                                                              | • 2                                                          |
| <b>~</b>       |                                                                                                                                |                                                              |                                                              |
| -<br>          |                                                                                                                                |                                                              |                                                              |
| 30.0           | Boring terminated at 30 feet.                                                                                                  |                                                              |                                                              |
|                |                                                                                                                                |                                                              |                                                              |
|                |                                                                                                                                |                                                              |                                                              |
|                | REMARKS:<br>Boring terminated at 30 feet. No split spoon<br>samples obtained beyond 20 feet due to heaving                     |                                                              | TEST BORING RECORD                                           |
|                | sands. Upon boring completion, paired well<br>installed. See well construction records for<br>details.                         | BORING NU<br>DATE DRILI<br>PROJECT N<br>PROJECT<br>PAGE 1 OF | LED August 20, 1991<br>IUMBER J6014<br>Camp Geiger Fuel Farm |
|                | SEE KEY SHEET FOR EXPLANATION OF<br>SYMBOLS AND ABBREVIATIONS USED ABOVE                                                       |                                                              | LAW ENGINEERING                                              |

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| DEPTH<br>(FT.) | DESCRIPTION                                                                                                                                                                                              | E         | LEVA<br>(FI       |                      | N (                          | • PEN    | ETR           | AT                 | ION        | - BL | ows  | /FO | T        |          |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-------------------|----------------------|------------------------------|----------|---------------|--------------------|------------|------|------|-----|----------|----------|
| 0.0            | •                                                                                                                                                                                                        |           |                   | 0                    |                              | 1        | 0             | 20                 | 30         | 40   | 60   | 80  | 100      |          |
| 1.0            | Topsoil and fill material.                                                                                                                                                                               | +<br>+-+- | T T               |                      |                              |          |               |                    |            |      |      |     |          | 1        |
| 2.0<br>3.0     | Dense, reddish-yellow, fine SAND.(SP)<br>Stiff, reddish-yellow, clayey SILT.(ml)                                                                                                                         |           | -                 |                      |                              |          |               |                    |            |      |      |     |          | 28       |
|                | Loose, light grey, fine SAND.(SP)                                                                                                                                                                        |           |                   | _                    |                              |          |               |                    |            | _    |      |     |          | 16<br>17 |
| 7.0            | Firm, brown to grey, sandy to clayey SILT.(ML)                                                                                                                                                           |           |                   | _                    |                              | •        |               |                    |            |      |      |     | KKKKK    | 5        |
| 13.5           | Very loose to loose, reddish yellow to brown, fine                                                                                                                                                       |           |                   |                      |                              |          |               |                    |            |      |      |     |          |          |
|                | to medium SAND(SP) with trace pebbles.                                                                                                                                                                   |           |                   | -                    |                              | <u> </u> | -             |                    |            |      |      |     |          | 13       |
| 20.0           |                                                                                                                                                                                                          |           | +                 | -                    |                              | •        |               | _                  |            |      |      |     | NNNNN    | 3        |
|                | ,                                                                                                                                                                                                        |           |                   | -                    |                              |          |               |                    |            |      |      |     |          | Ý        |
|                |                                                                                                                                                                                                          |           |                   | -                    |                              |          |               |                    |            |      |      |     |          |          |
| 30.0           | Boring terminated at 30 feet.                                                                                                                                                                            |           | +                 | -                    |                              |          |               |                    |            |      |      |     | ┿┥╽      |          |
|                | -                                                                                                                                                                                                        |           |                   |                      |                              |          |               |                    |            |      |      |     |          |          |
|                |                                                                                                                                                                                                          |           |                   |                      |                              |          |               |                    |            |      |      |     |          |          |
|                | REMARKS:                                                                                                                                                                                                 | l<br>     |                   |                      |                              | 494751   | 1             |                    |            |      |      |     | <u> </u> | L_       |
|                | Boring terminated at 30 feet. No split spoon<br>samples obtained beyond 20 feet due to heaving<br>sands. Upon boring completion, paired well<br>installed. See well construction records for<br>details. |           | DAT<br>PRO<br>PRO | E DR<br>JECT<br>JECT | NUME<br>ILLEI<br>NUM<br>OF 1 | BER<br>D | M<br>A1<br>J6 | W-1<br>1gus<br>014 | 5<br>t 21, | 1991 | ORD  |     |          | ~        |
| :              | SEE KEY SHEET FOR EXPLANATION OF<br>SYMBOLS AND ABBREVIATIONS USED ABOVE                                                                                                                                 |           |                   |                      |                              | 4        | LAV           | V E                | NGP        | IEE  | RING |     |          |          |

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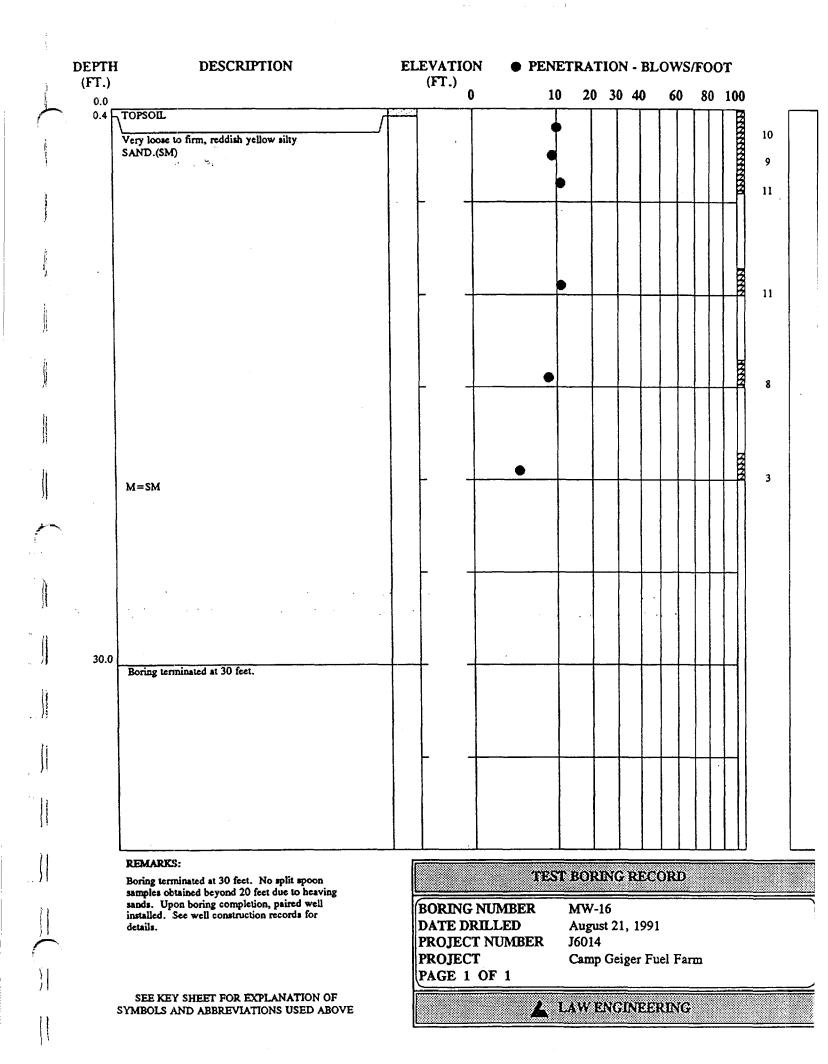
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| EPTH              | DESCRIPTION                                                                                                  |                   | ATION    | • PEN      | ETRA   | TIO         | N - BI | .ows | <b>/FO</b> | TC        |         |
|-------------------|--------------------------------------------------------------------------------------------------------------|-------------------|----------|------------|--------|-------------|--------|------|------------|-----------|---------|
| <b>T.)</b><br>0.0 |                                                                                                              | (F                | T.)<br>0 | 1          | ) 2    | 0 30        | 40     | 60   | 80         | 100       |         |
| 0.4 ि             | TOPSOIL.<br>Very loose to loose, brown to reddish yellow, fine<br>to medium SAND. (SP)                       |                   |          | •          |        |             |        |      |            |           | 4<br>5  |
| 8.5               |                                                                                                              |                   |          | •          |        |             |        |      |            |           | 6       |
|                   | Firm, brown to reddish yellow, silty SAND.(SM)                                                               |                   |          |            |        |             |        |      |            | INVERSE   | 18<br>- |
| 13.5              | Very loose, light brown, fine SAND.(sp)                                                                      |                   |          | •          |        |             |        |      |            | RANKAGE I |         |
| 15.5              | Firm, brown to grey, medium SAND.(SP)                                                                        |                   |          |            |        |             |        |      |            | 2         | 3       |
| 20.0              |                                                                                                              |                   | +        |            |        | •           |        |      |            | KKKKKK    | 23      |
|                   |                                                                                                              |                   | _        |            |        |             |        |      |            |           |         |
|                   | •. •. • • • • •                                                                                              |                   | •        | <b>.</b> . | -<br>- |             |        |      |            |           | - •     |
| 30.0              | Boring terminated at 30 feet.                                                                                |                   | +        |            |        |             |        |      |            |           |         |
|                   |                                                                                                              |                   |          |            |        |             |        |      |            |           |         |
|                   |                                                                                                              |                   |          |            |        |             |        |      |            |           |         |
|                   |                                                                                                              |                   |          |            |        |             |        |      |            |           | Ĺ       |
|                   | REMARKS:<br>Boring terminated at 30 feet. No split spoon<br>samples obtained beyond 20.5 feet due to heaving |                   |          | TES        | T BO   | RINC        | REC    | ORD  |            |           |         |
|                   | sands. Upon boring completion, paired well<br>installed. See well construction records for details.          | DA'<br>PRO<br>PRO | TE DRI   | NUMBER     | J601   | ust 2:<br>4 | l, 199 |      | m          |           |         |

SEE KEY SHEET FOR EXPLANATION OF SYMBOLS AND ABBREVIATIONS USED ABOVE

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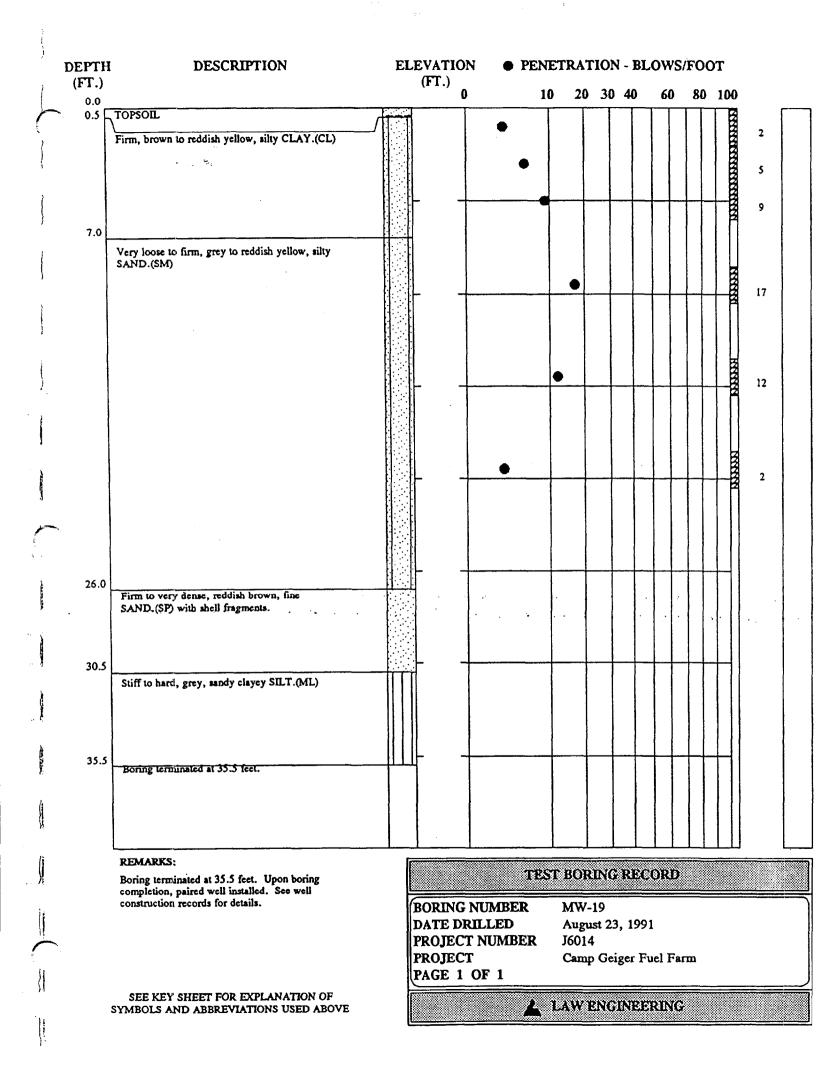
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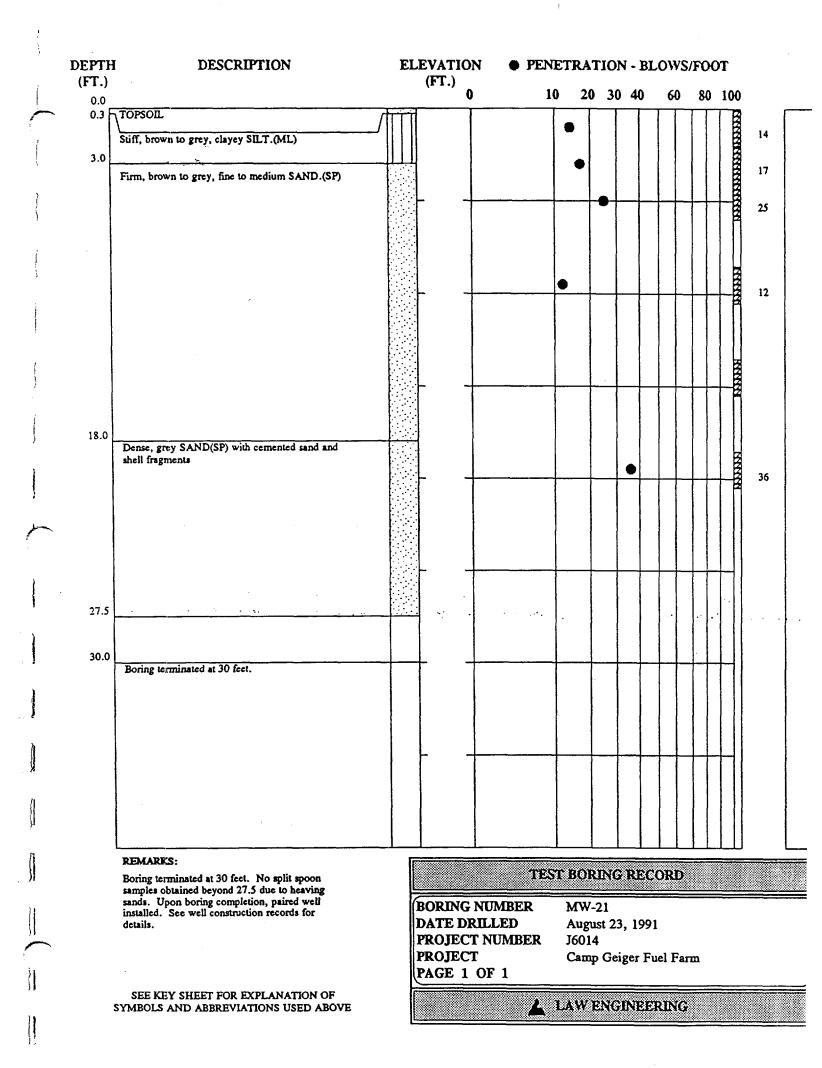
| DEPTH        | DESCRIPTION                                                                                    | E     | LEVATI<br>(FT.) | ON   | • I  | PEN      | ETR                        | ATI    | ON - | BL   | ows        | S/FO | от     |                 |
|--------------|------------------------------------------------------------------------------------------------|-------|-----------------|------|------|----------|----------------------------|--------|------|------|------------|------|--------|-----------------|
| (FT.)<br>0.0 |                                                                                                |       | (f1.)           | 0    |      | 10       | 0 2                        | 20 3   | 30 4 | 10   | 60         | 80   | 100    |                 |
|              | TOPSOIL                                                                                        | di-i- | Ť               | Τ    |      |          |                            |        | T    | T    |            | TT   | B      |                 |
|              | Stiff, light brown, clayey SILT (ML) with trace                                                |       |                 |      |      |          | -                          |        |      |      |            |      |        | 13 <sup>'</sup> |
|              | sand.                                                                                          |       | []              |      |      |          | •                          |        | 1    |      |            |      |        | 12              |
| 4.5          |                                                                                                |       |                 |      |      |          | •                          |        |      |      |            |      |        | 14              |
|              | Loose to dense, dark brown to reddish yellow, silty                                            |       | <u>1</u> -      |      |      | -        |                            |        | +    | +    | ┼╍┼╴       | ++   | -+-1   | 14              |
| 1            | SAND (SM) with shell fragments at 18.5 feet.                                                   |       | i.              |      |      |          |                            |        |      |      |            |      |        |                 |
|              |                                                                                                |       |                 |      |      |          |                            | 1      |      |      |            |      |        |                 |
|              |                                                                                                |       |                 |      |      |          |                            |        | 1    | 1    |            |      |        |                 |
|              |                                                                                                |       |                 |      |      |          | ٠                          |        |      |      |            |      | NNN    | 14              |
|              |                                                                                                |       |                 |      |      |          |                            |        |      |      |            |      |        |                 |
|              |                                                                                                |       |                 |      |      |          |                            |        |      |      |            |      |        |                 |
|              |                                                                                                |       |                 |      |      |          |                            | Ì      |      |      |            |      |        |                 |
|              |                                                                                                |       |                 |      |      |          |                            |        |      |      |            |      | KNNN   |                 |
|              |                                                                                                |       | .[]-            | +    |      |          |                            | +      | +    | +    | $\uparrow$ | +    | - 19   | 5               |
|              |                                                                                                |       |                 |      |      |          |                            |        |      |      |            |      |        |                 |
|              |                                                                                                |       |                 |      |      |          |                            |        |      |      |            |      |        |                 |
|              |                                                                                                |       | ÷[]             |      |      |          |                            |        |      |      |            |      | (1997) |                 |
| 20.0         |                                                                                                | _ 1   | 4               | +-   |      |          |                            | ₽      | 4-   | –    | ┝-┝-       | ++   | ¥      | 22              |
|              |                                                                                                | Ì     |                 |      |      |          |                            |        |      |      |            |      |        |                 |
|              |                                                                                                |       |                 |      |      |          |                            |        |      |      |            |      |        | ł               |
|              |                                                                                                |       |                 |      |      |          |                            |        |      |      |            |      |        | ł               |
|              |                                                                                                |       |                 |      | _    |          |                            |        |      |      |            |      |        | $\sim$          |
|              |                                                                                                |       | ſ               |      |      |          |                            |        | 1    |      |            |      |        |                 |
|              |                                                                                                |       | 1               |      |      |          |                            |        | 1    | 1    |            |      |        |                 |
|              |                                                                                                |       |                 |      |      |          |                            |        |      |      |            |      |        |                 |
| 30.0         |                                                                                                |       |                 |      |      |          |                            |        |      |      |            |      |        |                 |
| 30.0         | Boring terminated at 30 feet.                                                                  | +-    | +               | +-   |      |          | and all dependences of the | +-     | +    |      | ┢╌╄        | ++   | +-     |                 |
|              |                                                                                                |       |                 |      |      |          |                            |        |      |      |            |      |        |                 |
|              |                                                                                                |       |                 |      |      |          |                            |        |      |      |            |      |        |                 |
|              |                                                                                                |       |                 |      |      |          |                            |        |      |      |            |      |        |                 |
|              |                                                                                                |       | -               |      |      |          |                            |        | +    |      | $\square$  | +    |        |                 |
|              |                                                                                                |       |                 |      |      |          |                            |        |      |      |            |      |        |                 |
|              |                                                                                                | 1     |                 |      |      |          |                            |        |      |      |            |      |        |                 |
|              |                                                                                                |       |                 |      |      |          |                            |        |      |      |            |      |        |                 |
|              |                                                                                                |       | <u> </u>        |      |      |          |                            |        |      |      |            |      |        |                 |
|              | REMARKS:                                                                                       |       |                 |      |      |          |                            |        |      |      |            |      |        |                 |
|              | Boring terminated at 30 feet. No split spoon<br>samples obtained beyond 20 feet due to heaving |       |                 |      |      | res      | r bo                       | RIN    | GR   | EC   | ORD        |      |        |                 |
|              | sands. Upon completion, single well installed.<br>See well construction records for details.   |       | BORIN           | G NU | MBER |          | MW                         | V-20   |      |      |            |      |        |                 |
|              |                                                                                                |       | DATE I          | RIL  | LED  |          | Aug                        | gust : |      |      |            |      |        |                 |
|              |                                                                                                |       | PROJE           |      | UMBE | R        |                            | 590-   |      |      |            |      |        |                 |
|              |                                                                                                |       | PROJE<br>PAGE   |      | ' 1  |          | Can                        | np G   | eige | r Fu | el Fa      | m    |        |                 |
|              | SEE KEY SHEET FOR EXPLANATION OF                                                               |       |                 |      |      |          |                            |        |      |      |            |      |        |                 |
| :            | SYMBOLS AND ABBREVIATIONS USED ABOVE                                                           |       |                 |      |      | <u> </u> | LAW                        | 'EN    | GIN  | EEI  | UNG        |      |        |                 |
|              |                                                                                                |       | <b></b>         |      |      |          |                            |        |      |      |            |      |        |                 |

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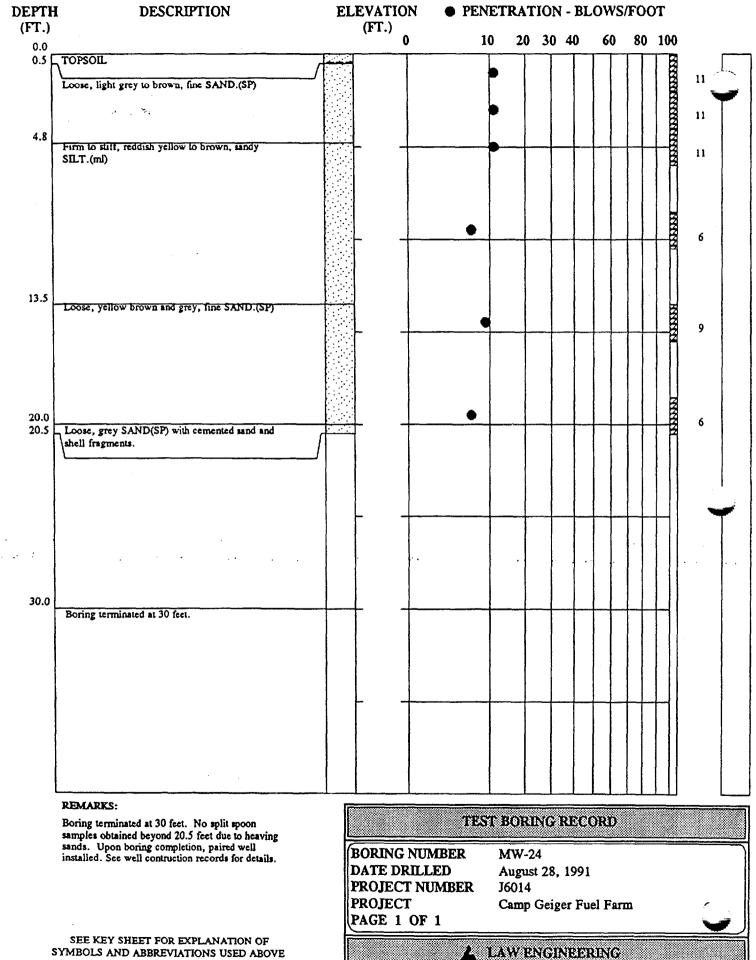
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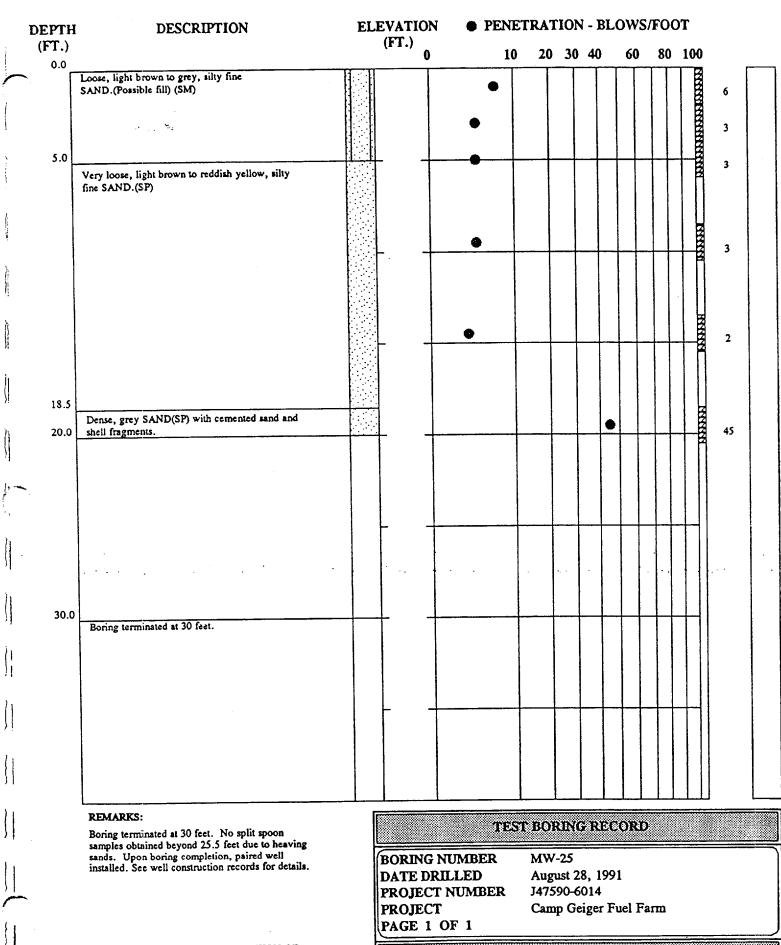


|                                       | DEPTH        | DESCRIPTION                                                                                                                   | ELEVATION • PENETRATION - BLOWS/FOOT                        |                      |                                                                         |           |             |  |
|---------------------------------------|--------------|-------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|----------------------|-------------------------------------------------------------------------|-----------|-------------|--|
| 1.                                    | (FT.)<br>0.0 |                                                                                                                               | (FT.)<br>0                                                  | 10                   | 20 30 40                                                                | 60 80 100 |             |  |
|                                       | 0.4          | TOPSOIL<br>Very loose to loose, brown to grey, silty fine<br>SAND. (SM)                                                       |                                                             | •                    |                                                                         |           | 9<br>5<br>3 |  |
|                                       | 9.5          | Firm, grey, fine SAND.(SP)                                                                                                    |                                                             | •                    |                                                                         |           | 11          |  |
|                                       |              |                                                                                                                               |                                                             |                      |                                                                         |           |             |  |
| · · · · · · · · · · · · · · · · · · · | 14.5         | Loose, brown to reddish yellow, silty SAND.(SM)                                                                               |                                                             | •                    |                                                                         |           | 7           |  |
| · · · · · · · · · · · · · · · · · · · |              |                                                                                                                               |                                                             | •                    |                                                                         |           | 7           |  |
|                                       |              | - · ·                                                                                                                         |                                                             | •                    |                                                                         |           | 8           |  |
|                                       | 29.5         | Very dense, grey to light brown, medium<br>SAND(SP) with shell fragments.                                                     |                                                             |                      |                                                                         |           | 56          |  |
|                                       | 35.0         | Boring terminated at 35 feet.                                                                                                 |                                                             |                      |                                                                         |           |             |  |
| ) <br> }                              |              | REMARKS:                                                                                                                      |                                                             |                      |                                                                         |           |             |  |
|                                       |              | Boring terminated at 35 feet. Upon boring<br>completion, paired well installed. See well<br>construction records for details. | BORING NU<br>DATE DRIL<br>PROJECT N<br>PROJECT<br>PAGE 1 OF | MBER<br>LED<br>UMBER | BORING REC<br>MW-22<br>August 28, 1991<br>J47590-6014<br>Camp Geiger Fu |           |             |  |
| ) I                                   | :            | SEE KEY SHEET FOR EXPLANATION OF<br>SYMBOLS AND ABBREVIATIONS USED ABOVE                                                      |                                                             | LL                   | AW ENGINEEI                                                             | UNG       |             |  |

|                  | DEPTH<br>(FT.) | DESCRIPTION                                                                                                                                  | E        | LEVATIO<br>(FT.) | N • F        | PENET       | RAT                  | ION   | - BI  | .ow   | S/FC  | ют                 |     |
|------------------|----------------|----------------------------------------------------------------------------------------------------------------------------------------------|----------|------------------|--------------|-------------|----------------------|-------|-------|-------|-------|--------------------|-----|
|                  | 0.0            |                                                                                                                                              |          | (11.) 0          | )            | 10          | 20                   | 30    | 40    | 60    | 80    | 0 100              | )   |
| F                | 1.0            | TOPSOIL.                                                                                                                                     |          |                  | •            |             |                      |       |       |       |       |                    |     |
| i.<br>I          |                | Very loose, yellow brown, fine SAND.(SP)                                                                                                     |          |                  | -            |             |                      |       |       |       |       |                    | 3   |
| Ņ                |                | and the second                             |          |                  |              |             |                      |       |       |       |       |                    | 5   |
|                  |                |                                                                                                                                              |          |                  |              |             |                      |       |       |       |       |                    |     |
| ĺ                |                |                                                                                                                                              |          |                  |              |             |                      |       |       |       |       |                    | 4   |
| r                |                |                                                                                                                                              |          |                  |              |             |                      |       |       |       |       |                    |     |
|                  |                |                                                                                                                                              |          |                  |              |             |                      |       |       |       |       |                    |     |
| j,               |                |                                                                                                                                              |          |                  | •            |             |                      |       |       |       |       |                    | 3   |
| · );             |                |                                                                                                                                              |          |                  |              |             |                      |       |       |       |       | P                  |     |
| H<br>A           |                |                                                                                                                                              |          | ·<br>·           |              |             |                      |       |       |       |       | •                  |     |
|                  | 13.5           | Dense, brown, silty SAND.(SM)                                                                                                                |          | ÷                |              |             |                      |       |       |       |       |                    |     |
| (                |                | Dense, blown, any Shire (Shir)                                                                                                               |          |                  |              |             |                      |       | •     |       |       |                    | 37  |
| ņ                |                |                                                                                                                                              |          |                  |              |             |                      |       |       |       |       |                    |     |
| h                |                |                                                                                                                                              |          |                  |              |             |                      |       |       |       |       |                    |     |
| ji               | 18.5           |                                                                                                                                              |          |                  |              |             |                      |       |       |       |       |                    |     |
| li               |                | Very dense, brown SAND.(SP)                                                                                                                  |          |                  | •            |             |                      |       |       |       |       |                    | 1   |
| }                | 21.0           |                                                                                                                                              |          |                  |              |             |                      |       |       |       |       |                    |     |
| 1.               |                |                                                                                                                                              |          |                  |              |             |                      |       |       |       |       |                    |     |
| $\Gamma$         |                |                                                                                                                                              |          |                  |              |             |                      |       |       |       |       |                    |     |
| •                |                |                                                                                                                                              |          |                  |              |             |                      |       |       |       |       |                    |     |
|                  |                |                                                                                                                                              |          |                  |              |             |                      |       |       |       |       |                    |     |
|                  |                | · · · · · · · · · · · · · · · · · · ·                                                                                                        |          | · .              | •            |             |                      |       |       |       |       |                    | · . |
| )1               |                |                                                                                                                                              |          |                  |              |             |                      |       |       |       |       |                    |     |
|                  | 30.0           | Boring terminated at 30 feet.                                                                                                                |          |                  |              |             |                      |       |       |       | _     |                    |     |
| •                |                | boing childrand at 50 rott.                                                                                                                  |          |                  |              |             |                      |       |       |       |       |                    |     |
|                  |                |                                                                                                                                              |          |                  |              |             |                      |       |       |       |       |                    |     |
|                  |                |                                                                                                                                              |          |                  |              |             |                      |       |       |       |       |                    |     |
| Ì                |                |                                                                                                                                              |          |                  |              |             |                      |       |       |       |       | $\left  - \right $ |     |
| <u>,</u> }}      |                |                                                                                                                                              |          |                  |              |             |                      |       |       |       |       |                    |     |
| 1                |                |                                                                                                                                              |          |                  |              |             |                      |       |       |       |       |                    |     |
|                  |                |                                                                                                                                              |          |                  |              |             |                      |       |       |       |       |                    |     |
| ) i              |                | REMARKS:                                                                                                                                     | <b>I</b> |                  | 1            |             |                      | I.    |       |       |       |                    |     |
|                  |                | Boring termianted at 30 feet. No split spoon                                                                                                 |          |                  |              | TEST        | BOR                  | ING   | REC   | ORI   | >     |                    |     |
|                  |                | samples obtained beyond 21 feet due to heaving<br>sands. Upon boring completion, paired well<br>installed. See well construction records for |          | BORING           | NUMBER       |             | MW-2                 | 23    |       |       |       |                    |     |
|                  |                | installed. See well construction records for details.                                                                                        |          | DATE DI          | RILLED       |             | Augu                 | st 27 | , 199 | 1     |       |                    |     |
| $\sum_{i=1}^{n}$ |                |                                                                                                                                              |          | PROJEC<br>PROJEC | T NUMBE<br>T |             | <b>J6014</b><br>Camp |       | oer F | nel F | arm   |                    |     |
| 21               |                |                                                                                                                                              |          | PAGE 1           |              |             | ապ                   | 500   | 501 1 |       | ***** |                    | j   |
| )]               |                | SEE KEY SHEET FOR EXPLANATION OF<br>SYMBOLS AND ABBREVIATIONS USED ABOVE                                                                     |          |                  |              | <u>L</u> 1. | AWF                  | NCI   | NFF   | RIN   | c     |                    |     |
| 11               |                | STRIBULS AND ADDREVIATIONS USED ADOVE                                                                                                        |          |                  |              |             |                      | - 10) |       |       |       |                    |     |
| \ ŧ              |                |                                                                                                                                              |          |                  |              |             |                      |       |       |       |       |                    |     |

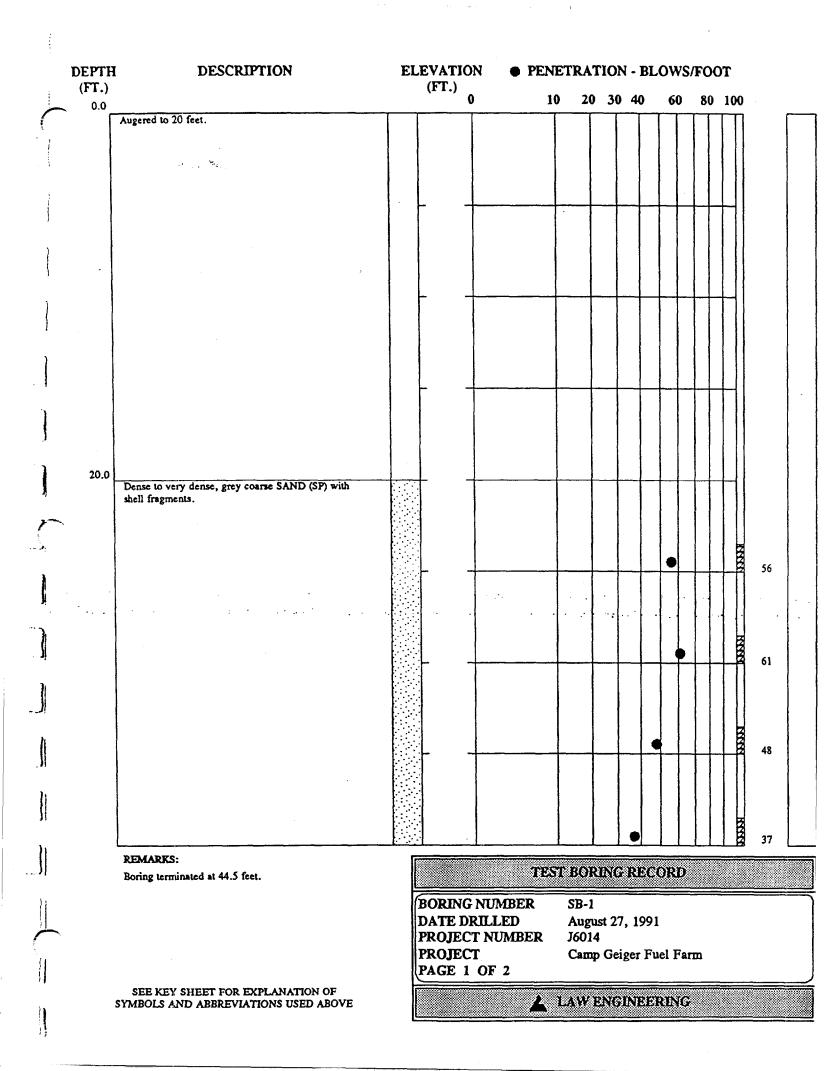
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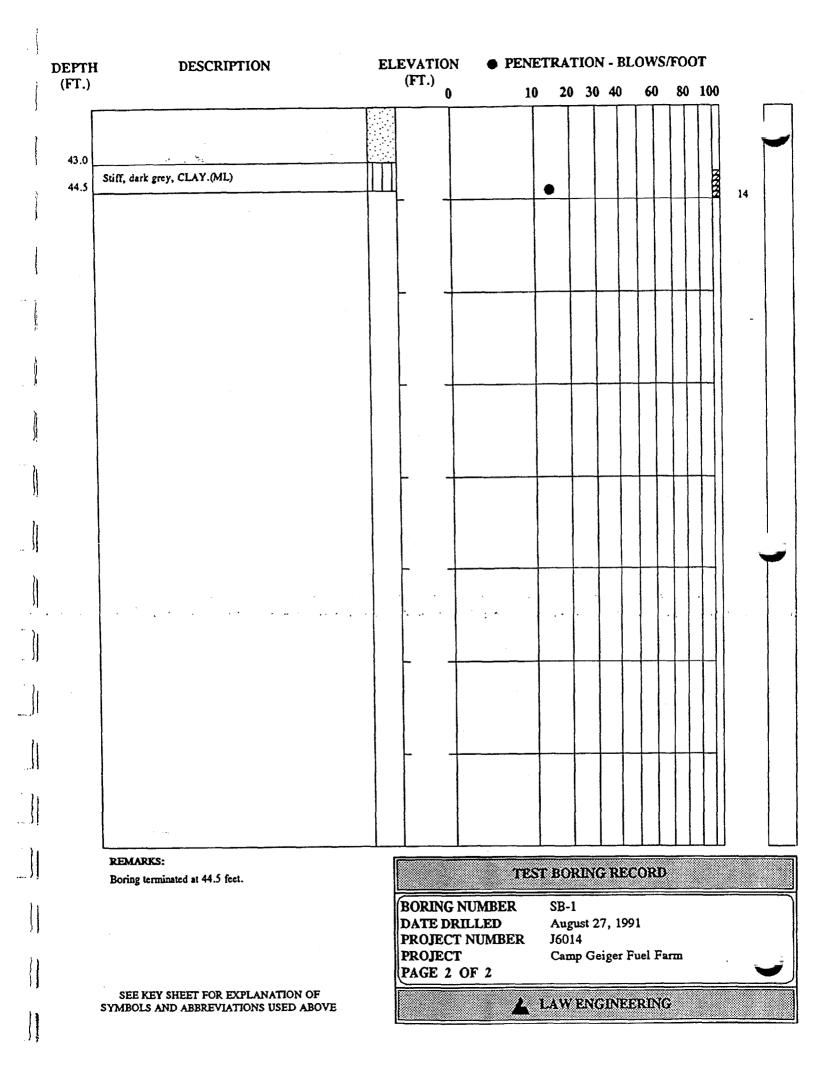




SEE KEY SHEET FOR EXPLANATION OF SYMBOLS AND ABBREVIATIONS USED ABOVE

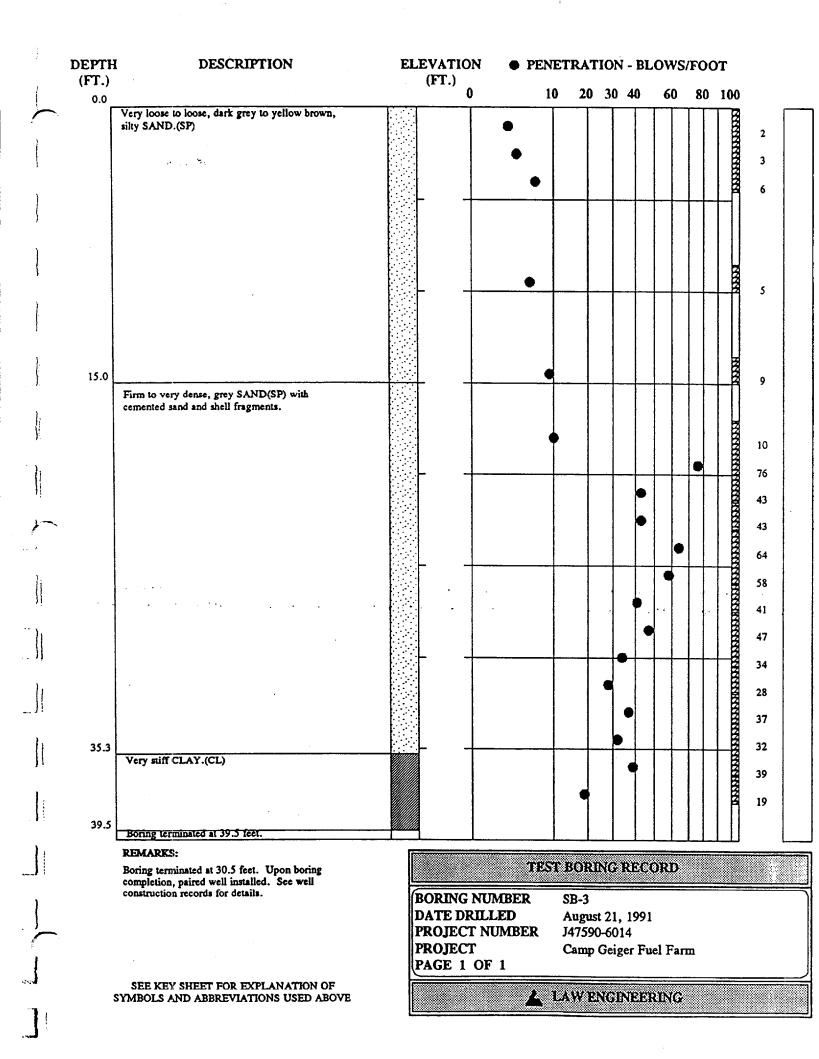
#### LAW ENGINEERING





|                                          | DEPTH        | DESCRIPTION                                                              | ELEVATION<br>(FT.) |           |      | • PENETRATION - BLOWS/FOOT |            |          |             |      |     |        |     |         |
|------------------------------------------|--------------|--------------------------------------------------------------------------|--------------------|-----------|------|----------------------------|------------|----------|-------------|------|-----|--------|-----|---------|
|                                          | (FT.)<br>0.0 |                                                                          |                    | (F1.)     | 0    | 1                          | 0 2        | 0 30     | 40          | 60   | 80  | 100    |     |         |
|                                          | Γ            | Augered to 20 feet.                                                      |                    |           |      |                            |            |          |             |      | Π   | $\Box$ |     |         |
|                                          |              |                                                                          |                    |           |      |                            |            |          |             |      |     |        |     |         |
| 1                                        |              |                                                                          |                    |           |      |                            |            |          |             |      |     |        |     |         |
| 5<br>1<br>1                              |              | •                                                                        |                    |           |      |                            |            |          |             | ╋╋   | ++- | +      |     |         |
| i                                        |              |                                                                          |                    |           |      |                            |            |          |             |      |     |        |     |         |
|                                          |              |                                                                          |                    |           |      |                            |            |          |             |      |     |        |     |         |
| J                                        |              |                                                                          |                    |           |      |                            |            |          |             | ++   |     | +      |     |         |
|                                          |              |                                                                          |                    |           |      |                            |            |          |             |      |     |        |     |         |
| ·                                        |              |                                                                          |                    |           |      |                            |            |          |             |      |     |        |     |         |
|                                          |              |                                                                          |                    |           |      |                            |            |          |             |      |     |        |     |         |
|                                          |              |                                                                          |                    |           |      |                            |            |          |             |      |     |        |     |         |
| Ì                                        |              |                                                                          |                    |           |      |                            |            |          |             |      |     |        |     |         |
| · .                                      |              |                                                                          |                    |           |      |                            |            |          |             |      |     |        | 1   |         |
| ļ,                                       | 20.0         | Very dense, grey SAND.(SP)                                               |                    |           |      |                            |            |          |             | ++   |     | +-     |     |         |
| b                                        |              |                                                                          |                    | -<br><br> |      |                            |            |          |             |      |     |        |     |         |
|                                          |              |                                                                          |                    |           |      |                            |            |          |             |      |     | NVN C  |     |         |
| ),                                       |              |                                                                          |                    |           |      | ·                          |            |          |             |      | ++  |        | 58  |         |
|                                          |              |                                                                          |                    |           |      |                            |            |          |             |      |     |        |     |         |
| 'n                                       |              | · · · · · · · · · · · · · · · · · · ·                                    |                    |           |      |                            |            |          |             |      |     |        | • • |         |
|                                          |              |                                                                          |                    | -         |      |                            | <u> </u>   | <u> </u> |             |      |     |        |     |         |
| }}                                       |              |                                                                          |                    |           |      |                            |            |          |             |      |     |        |     |         |
| ļ                                        |              |                                                                          |                    |           |      |                            |            |          |             |      |     |        |     |         |
| 11                                       |              |                                                                          |                    |           |      |                            |            |          |             |      |     |        |     |         |
|                                          | 36.0         | Grey CLAY.(CL)                                                           |                    |           |      |                            |            |          |             |      |     |        |     |         |
| 1                                        |              |                                                                          |                    |           |      |                            |            |          |             |      |     |        |     |         |
|                                          |              |                                                                          |                    |           |      |                            |            |          |             |      |     |        |     |         |
| ))                                       |              | REMARKS:                                                                 |                    |           |      |                            |            |          | · · · · · · |      |     | L      |     |         |
| <u> </u>                                 |              | Boring terminated at 42.5 feet.                                          |                    |           |      |                            | ST BO      |          | Y KE        | .UKI | ,   |        |     |         |
|                                          |              |                                                                          |                    | BORINO    |      |                            | SB-<br>Auj |          | 7, 199      | 91   |     |        |     |         |
|                                          |              |                                                                          |                    |           | CT N | NUMBER                     | J60        | 14       | eiger H     |      | arm |        |     |         |
| 11                                       |              |                                                                          |                    | PAGE      |      | F 2                        |            |          |             |      |     |        |     |         |
| en e |              | SEE KEY SHEET FOR EXPLANATION OF<br>SYMBOLS AND ABBREVIATIONS USED ABOVE |                    |           |      | 7                          | LAW        | EN       | SINE        | ERIN | G   |        |     |         |
|                                          |              |                                                                          | 1                  |           |      |                            |            |          |             |      |     |        |     | <u></u> |
|                                          |              |                                                                          |                    |           |      |                            |            |          |             |      |     |        |     |         |

| DEPTH  | DESCRIPTION                                                              | EI      | LEVATI                 | ON | • P                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | ENEI | [RA]        | 101   | N - I | BLO   | ws.   | FO                       | TC           |            |   |
|--------|--------------------------------------------------------------------------|---------|------------------------|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|-------------|-------|-------|-------|-------|--------------------------|--------------|------------|---|
| (FT.)  |                                                                          |         | (FT.)                  | 0  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 10   | 20          | 30    | 40    | )     | 60    | 80                       | 100          | <b>)</b> . |   |
| , [    |                                                                          |         |                        |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |      |             |       |       |       |       |                          |              |            |   |
| 42.5   | Boring terminated at 42.5 feet.                                          |         |                        |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |      |             |       |       |       |       |                          |              |            |   |
| )<br>} |                                                                          |         | _                      | +  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |      |             |       |       |       | _     |                          | $\downarrow$ |            |   |
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| · ·    |                                                                          |         | <br> -                 | +  | and a state of the |      |             |       |       |       | _     |                          | +            |            |   |
|        |                                                                          |         |                        |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |      |             |       |       |       |       |                          |              |            |   |
| i      |                                                                          |         |                        |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |      |             |       |       |       |       |                          |              |            |   |
|        |                                                                          |         | $\vdash$               | +  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |      |             |       |       |       |       | $\left\{ \cdot \right\}$ |              |            |   |
|        |                                                                          |         |                        |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |      |             |       |       |       |       |                          |              |            |   |
| )      |                                                                          |         |                        |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |      |             |       |       |       |       |                          |              |            |   |
| }      |                                                                          |         | -                      | +  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |      |             |       |       |       |       |                          |              |            |   |
| ).     |                                                                          |         |                        |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |      |             |       |       |       |       |                          |              |            |   |
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| }.     | · · · ·                                                                  |         |                        |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |      |             |       |       |       |       |                          |              |            |   |
| ]      |                                                                          | ·   · · | ·. :                   | ·  | •                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |      |             |       |       |       |       | -                        | •            |            | - |
| . )    |                                                                          |         | -                      | 4  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |      |             |       |       |       |       |                          | _            |            |   |
| )      |                                                                          |         |                        |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |      |             |       |       |       |       |                          |              |            |   |
| )      |                                                                          |         |                        |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |      |             |       |       |       |       |                          |              |            |   |
| ł      |                                                                          |         | +                      | -  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |      |             |       |       |       |       | +                        |              |            |   |
| }      |                                                                          |         |                        |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |      |             |       |       |       |       |                          |              |            |   |
|        |                                                                          |         |                        |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |      |             |       |       |       |       |                          |              |            |   |
| 1      | REMARKS:                                                                 | 1       |                        |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |      |             |       |       |       |       |                          |              |            |   |
| !      | Boring terminated at 42.5 feet.                                          | ;       |                        |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |      | BO)         |       | G R   | ECC   | )RD   |                          |              |            |   |
|        |                                                                          |         | DATE                   | DR | NUMBER<br>ILLED                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |      | SB-2<br>Aug | ust 2 | 27, 1 | 991   |       |                          |              |            |   |
|        |                                                                          |         | PROJE<br>PROJE<br>PAGE | CT | OF 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | R    | J601<br>Cam |       | eige  | r Fue | el Fa | rm                       |              |            | Ī |
| . /:   | SEE KEY SHEET FOR EXPLANATION OF<br>SYMBOLS AND ABBREVIATIONS USED ABOVE |         |                        |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 4 1  | .AW         | ENG   | CIN   | eer   |       | 2                        |              |            |   |
|        |                                                                          |         |                        |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |      |             |       |       |       |       |                          |              |            |   |



| .)         |                                                              |      | (FT.)                                | 0              |             | 10   | 2           | 0 3      | 0 40 | )   | 60  | 80 | 100                  |         |
|------------|--------------------------------------------------------------|------|--------------------------------------|----------------|-------------|------|-------------|----------|------|-----|-----|----|----------------------|---------|
| .0<br>.3 F | TOPSOIL                                                      | 1    | 7                                    | 1              |             |      |             |          | Π    |     |     |    |                      |         |
|            | Very loose to loose, light brown to grey, silty<br>SAND.(SM) | J    |                                      |                | •           | •    |             | •        |      |     |     |    | CERCENCER CONTRACTOR | 23<br>9 |
|            |                                                              |      |                                      |                | 1           |      |             |          |      |     |     |    |                      | -       |
| .5         | Loose to firm, brown to grey, silty SAND.(SM)                | -    |                                      |                |             | •    |             |          |      |     |     |    | 10000                | 8       |
|            |                                                              |      |                                      |                |             |      | •           |          |      |     |     |    | 19355A               |         |
| 5.0        | Boring terminated 15 feet.                                   | - 11 | <u>-</u> -                           | +              |             |      |             |          |      |     |     | ++ |                      | 15      |
|            | -                                                            |      |                                      |                |             |      |             |          |      |     |     |    |                      |         |
|            |                                                              |      |                                      |                |             |      |             |          |      |     |     |    |                      |         |
|            |                                                              | 1    |                                      |                |             |      |             |          |      |     |     |    |                      |         |
|            |                                                              |      |                                      |                |             |      |             |          |      |     |     |    |                      |         |
|            |                                                              |      |                                      |                |             |      |             |          |      |     |     |    |                      |         |
| 1          |                                                              |      |                                      |                |             |      |             |          |      |     |     |    |                      |         |
|            |                                                              |      | - ·                                  |                |             |      |             |          |      |     |     | ┽┼ | +                    | •       |
|            |                                                              |      |                                      |                |             |      |             |          |      |     |     |    |                      |         |
|            | · · · · · ·                                                  |      | •                                    | 1.             | •           | ••   |             |          |      |     |     | -  | •                    | •       |
|            |                                                              |      |                                      |                |             |      |             |          |      |     |     |    |                      |         |
|            |                                                              |      | F                                    | +              |             |      |             |          | 1    |     |     |    |                      |         |
|            |                                                              |      |                                      |                |             |      |             |          |      |     |     |    |                      |         |
|            |                                                              |      |                                      |                |             |      |             |          |      |     |     |    |                      |         |
|            |                                                              |      | L                                    |                |             |      |             | <u> </u> |      |     |     |    |                      |         |
|            |                                                              |      |                                      |                |             |      |             |          |      |     |     |    |                      |         |
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|            |                                                              |      |                                      |                |             |      |             |          |      |     |     |    |                      |         |
|            |                                                              |      |                                      |                |             |      |             |          |      |     |     |    | Ш                    |         |
|            | REMARKS:<br>Boring terminated at 15 feet.                    |      |                                      |                |             | rest | <b>`B</b> ( | RIN      | GRI  | ecc | ORD |    |                      |         |
|            |                                                              |      | BORING                               |                | MREP        |      | B-1         |          |      |     |     |    |                      |         |
|            |                                                              |      | DATE D<br>PROJEC<br>PROJEC<br>PAGE 1 | RIL<br>TN<br>T | LED<br>UMBE |      | Au<br>J60   | gust 2   |      |     |     | m  |                      |         |
|            | SEE KEY SHEET FOR EXPLANATION OF                             |      |                                      |                |             | 41   |             |          |      |     |     |    |                      |         |

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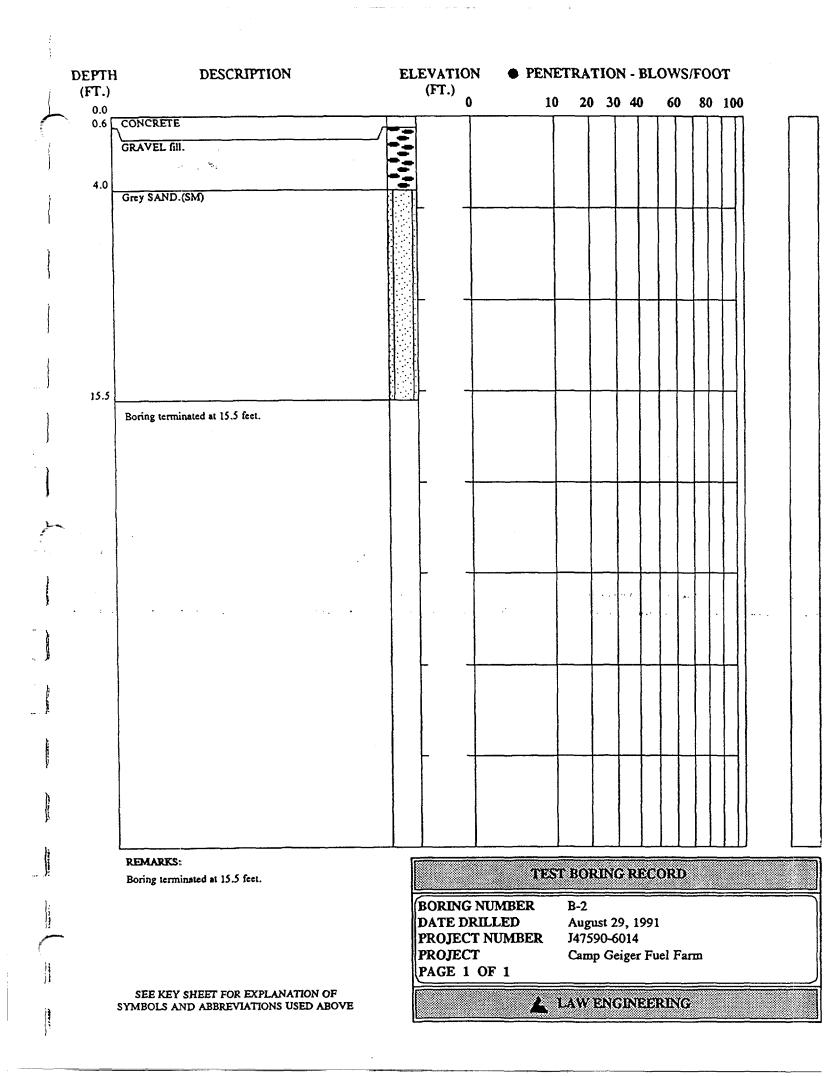
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| DEPTH<br>(FT.) | DESCRIPTION                                                              | EI | LEVATI<br>(FT.)                              | ON                     | • PENI    | ETRA     | TION                   | - BL | ows  | /FOC | т              |              |  |
|----------------|--------------------------------------------------------------------------|----|----------------------------------------------|------------------------|-----------|----------|------------------------|------|------|------|----------------|--------------|--|
| 0.0            |                                                                          |    | ()                                           | 0                      | 10        | 20       | ) 30                   | 40   | 60   | 80   | 100            |              |  |
| 1.5            | TOPSOIL<br>Very 10052 to firm, light brown to grey silty<br>SAND.(SM)    |    |                                              |                        | •         | •        |                        |      |      |      | Reconstruction | 14<br>3<br>7 |  |
|                |                                                                          |    |                                              |                        |           |          |                        |      |      |      | NAKK           | 8            |  |
| 15.0           |                                                                          |    |                                              |                        |           |          |                        |      |      |      |                | 2000n Dr-    |  |
|                | Boring terminated at 15 feet.                                            |    |                                              |                        |           |          |                        |      |      | •    |                |              |  |
|                |                                                                          |    |                                              |                        |           |          |                        |      |      |      |                |              |  |
|                | <br>                                                                     |    | -                                            |                        | • • •     | <u>.</u> |                        |      |      |      |                |              |  |
|                |                                                                          |    |                                              |                        |           | :        |                        |      |      |      |                |              |  |
|                |                                                                          |    |                                              |                        |           |          |                        |      |      |      |                |              |  |
|                | REMARKS:<br>Boring terminated at 15 feet.                                |    |                                              |                        | TES       | l boj    | RING                   | REC  | ORD  |      |                |              |  |
|                | · · · · · · · · · · · · · · · · · · ·                                    |    | BORING<br>DATE I<br>PROJEG<br>PROJEG<br>PAGE | ORILLE<br>CT NUN<br>CT | D<br>MBER | J601     | ust 30,<br>4<br>p Geig |      |      | m    |                |              |  |
| S              | SEE KEY SHEET FOR EXPLANATION OF<br>SYMBOLS AND ABBREVIATIONS USED ABOVE |    |                                              |                        | 4         | LAW      | ENGI                   | NEEI | RING |      |                |              |  |

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| DEPTH      | DESCRIPTION                                                                                                                      | EL                                                                       | EVATI<br>(FT.) | ON       | • | PENI    | ETRA  | TIO          | N - BI            | .OW | S/FO | OT       |             |
|------------|----------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|----------------|----------|---|---------|-------|--------------|-------------------|-----|------|----------|-------------|
| (FT.)      |                                                                                                                                  |                                                                          | (1.1.)         | 0        |   | 10      | ) 20  | ) 30         | 40                | 60  | 80   | 100      |             |
| 0.2        | PAVEMENT<br>Loose, dark grey to brown, silty clayey<br>SAND.(SM)<br>Firm, grey, clayey SILT.(ML)<br>Firm, grey, clayey SILT.(ML) |                                                                          |                |          |   | •       |       |              |                   |     |      |          | 9<br>7<br>6 |
|            |                                                                                                                                  |                                                                          |                |          |   | •       |       |              |                   |     |      |          | 9           |
| 13.5       | Loose, reddish yellow, fine SAND.(SP)                                                                                            |                                                                          |                |          |   |         |       |              |                   |     |      | - HINKIN | 10          |
|            | Boring terminated at 15 feet.                                                                                                    |                                                                          |                |          |   |         |       |              |                   |     |      |          |             |
| }          |                                                                                                                                  |                                                                          |                | +        |   |         |       |              |                   |     |      |          |             |
| · ),<br> } |                                                                                                                                  |                                                                          | -              | -        |   |         |       |              |                   |     |      |          |             |
|            |                                                                                                                                  |                                                                          | .<br> <br> -   | ۰ ۱<br>۱ | - |         |       |              |                   |     |      |          |             |
|            |                                                                                                                                  |                                                                          |                |          |   |         |       |              |                   |     |      |          |             |
|            |                                                                                                                                  |                                                                          |                | -        |   | <u></u> |       |              |                   |     |      |          |             |
|            | REMARKS:<br>Boring terminated at 15 feet.                                                                                        |                                                                          |                |          |   | TE      | ST BC | ORIN         | G RE              | COR | D    |          |             |
|            |                                                                                                                                  | BORING NUMBER<br>DATE DRILLED<br>PROJECT NUMBE<br>PROJECT<br>PAGE 1 OF 1 |                |          |   |         | J60   | gust 1<br>14 | 30, 19<br>eiger ] |     | Farm |          |             |
|            | SEE KEY SHEET FOR EXPLANATION OF<br>SYMBOLS AND ABBREVIATIONS USED ABOVE                                                         |                                                                          |                |          |   | 4       | LAW   | /EN          | GINE              | ERI | IG   |          |             |

| )            |                                       |          | (FT.)                        |       | 10   | 20            | ) 30         | 40    | 60      | 80                 | 100           |    |
|--------------|---------------------------------------|----------|------------------------------|-------|------|---------------|--------------|-------|---------|--------------------|---------------|----|
| PAVEMEN      | т                                     |          | <u>г</u>                     |       |      |               |              | Τ     |         | T                  | - Internet    |    |
| Firm, dark   | grey to brown, silty clayey SAND.(SM) | ╶╜╢┼╴    |                              |       |      |               |              |       |         |                    | 1 EEEE        | 1  |
| Soft, grey', | clayey SILT.(ML)                      | ╶┛╢╢     | H                            |       | •    |               |              |       |         |                    | SECTORESISTER | 3  |
| Very loose   | to loose, grey, silty SAND.(SM)       |          |                              |       | •    |               |              |       |         |                    |               | 4  |
|              |                                       |          |                              |       |      |               |              |       | ┼╌┼╌    | ╂╌┠╴               | +             |    |
|              |                                       |          |                              |       |      |               |              |       |         |                    |               |    |
|              |                                       |          | ł                            |       |      |               |              |       |         |                    |               |    |
|              |                                       |          |                              |       | •    |               |              |       |         |                    | 1999          | 3  |
|              |                                       |          |                              |       |      |               |              |       |         |                    |               | 2  |
|              |                                       |          |                              |       |      |               |              |       |         |                    |               |    |
|              |                                       | []       | ļ                            |       | 1    |               |              | Î     |         |                    | []            |    |
| Loose, redd  | lish yellow, fine SAND.(SP)           |          |                              |       | •    |               |              |       |         |                    | NNNN          | 10 |
| Boring term  | inated at 15 feet.                    |          |                              |       |      |               |              |       |         |                    |               |    |
|              |                                       |          |                              |       |      |               |              |       |         |                    |               |    |
|              |                                       |          |                              |       |      |               |              |       |         |                    |               |    |
|              |                                       |          |                              | <br>  |      |               |              |       | ++-     | $\left  - \right $ | +11           |    |
|              |                                       |          |                              |       |      |               |              |       |         |                    |               |    |
|              |                                       |          |                              |       |      |               |              |       |         |                    |               |    |
|              |                                       |          |                              |       |      |               |              |       |         |                    |               |    |
|              |                                       |          | + -                          |       |      |               |              |       | ┼╌┼╌    | ┼╌┼╴               | +-1           |    |
|              | • .                                   |          |                              |       |      |               |              |       |         |                    |               |    |
|              |                                       |          |                              | -     |      |               |              |       |         |                    |               |    |
|              |                                       |          |                              |       |      |               |              |       |         |                    |               |    |
|              |                                       |          |                              |       |      |               |              |       |         | ╆╆                 | +1            |    |
|              |                                       |          |                              |       |      |               |              |       |         |                    |               |    |
|              |                                       |          | 1                            |       |      |               |              |       |         |                    |               |    |
|              |                                       |          |                              |       |      |               |              |       |         |                    |               |    |
|              |                                       |          |                              |       |      |               |              |       |         |                    |               |    |
|              |                                       |          |                              |       |      |               |              |       |         |                    |               |    |
|              |                                       |          |                              |       |      | ļ             |              |       |         |                    |               |    |
| REMARKS      |                                       | <u>_</u> |                              | l     |      |               |              |       |         |                    |               |    |
|              | :<br>inated at 15 feet.               |          |                              |       | TEST | BOR           | INGI         | EC(   | ORD     |                    |               |    |
|              |                                       |          | BORING                       | NIMP  | ER   | B-6           |              |       |         |                    |               |    |
|              |                                       |          | DATE DE                      | ILLED | )    | Augu          | lst 30,      | 1991  |         |                    |               |    |
|              |                                       |          | PROJECT<br>PROJECT<br>PAGE 1 | 7     | BER  | J6014<br>Camj | 4<br>9 Geige | er Fu | el Fari | n                  |               |    |
| SEE KEY      | SHEET FOR EXPLANATION OF              |          |                              | *     |      |               |              |       |         |                    |               |    |

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### APPENDIX D

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## WELL-CONSTRUCTION RECORDS AND

## **GROUND-WATER MONITORING-WELL INSTALLATION DETAILS**



|                  |         | North Carolina - Department of Environment, Health, and Natural F<br>Division of Environmental Management - Groundwater Sect<br>P.O. Box 29535 - Raleigh, N.C. 27626-0535<br>Phone (919) 733-3221<br>WELL CONSTRUCTION RECORD                              |                 | QUAD NO                                | FFICE USE ONLY<br>SERIAL NOPo          |
|------------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------------------------------|----------------------------------------|
|                  | DRI     | LLING CONTRACTOR: Law Engineering                                                                                                                                                                                                                          | _               | Header Brit                            | GW-1 Enby                              |
|                  |         | LLER REGISTRATION NUMBER: 332                                                                                                                                                                                                                              |                 | ELL CONSTRUCTION<br>UMBER: 66-0237-    | W:1-0232                               |
| ]                | 1.      | WELL LOCATION: (Show sketch of the location below)<br>Nearest Town: <u>Jacksonville</u> County:                                                                                                                                                            | Onslow          | MW-8                                   |                                        |
|                  | Ca      | mp Geiger Fuel Farm                                                                                                                                                                                                                                        |                 |                                        |                                        |
|                  | 2       | (Road, Community, or Subdivision and Lot No.)                                                                                                                                                                                                              |                 | DEPTH                                  | DRILLING LÓG                           |
| }                | 2.      | OWNER <u>*See Address Below</u>                                                                                                                                                                                                                            |                 | From To                                | Formation Description                  |
| }                |         | (Street or Route No.)                                                                                                                                                                                                                                      |                 | <u></u>                                | See attached test                      |
|                  |         |                                                                                                                                                                                                                                                            |                 |                                        | boring records                         |
| -                | ~       | City or Town State Zip Code                                                                                                                                                                                                                                |                 |                                        |                                        |
| )**              | 3.<br>⊿ | DATE DRILLED <u>8/15/91</u> USE OF WELL <u>Monitori</u><br>TOTAL DEPTH <u>S=14.0'</u> <u>D</u> =30.0'                                                                                                                                                      | <u>ing</u>      |                                        |                                        |
| ļ.               |         | CUTTINGS COLLECTED YES X NO                                                                                                                                                                                                                                |                 |                                        |                                        |
|                  | 6.      | DOES WELL REPLACE EXISTING WELL? YES NO                                                                                                                                                                                                                    | <u>س</u> الآياد |                                        | ······································ |
| **               | 7.      | STATIC WATER LEVEL Below Top of Casing: <u>S=8,24</u> FT                                                                                                                                                                                                   | D=8.24'         |                                        |                                        |
| }<br>**          | 8.      | (Use *+* if Above Top of Casing)<br>TOP OF CASING IS <u>S=2.35</u> FT. Above Land Surface* p                                                                                                                                                               | )=2501          |                                        |                                        |
| ħ                | • Ca    | ising Terminated at/or below land surface is illegal unless a variance is                                                                                                                                                                                  |                 |                                        |                                        |
| Į.               |         | accordance with 15A NCAC 2C .0118<br>YIELD (gpm)N/A METHOD OF TEST                                                                                                                                                                                         | ·               |                                        |                                        |
| ~                |         | WATER ZONES (depth): <u>N/A</u>                                                                                                                                                                                                                            |                 |                                        |                                        |
| <u>_</u>         |         |                                                                                                                                                                                                                                                            |                 | ······································ |                                        |
|                  |         | CHLORINATION: Type <u>N/A</u> Amount<br>CASING:                                                                                                                                                                                                            |                 | If additional space is nee             | eded use back of form                  |
| Ì                |         | Wall Thickness                                                                                                                                                                                                                                             |                 | LOCATIO                                | N SKETCH                               |
| ]}               |         | Depth Diameter or Weight/Ft. Ma                                                                                                                                                                                                                            |                 | how direction and distance             | from at least two State                |
| ъ                |         | From         0         To         4.0         Ft         2"         SCH         40         PVC           From         0         To         20.0         Ft         2"         SCH         40         PVC                                                   | ~               | Roads, or other map ref                |                                        |
|                  |         | From To Ft Sch rvc                                                                                                                                                                                                                                         | <u> </u>        | ee attached site                       | location map.                          |
| *)               | 13      | . GROUT:                                                                                                                                                                                                                                                   | *               | *S = Shallow moni                      | toring woll                            |
| j) -             | .5      | Depth Material Meth                                                                                                                                                                                                                                        |                 | D = Deep monitor                       |                                        |
|                  |         | From <u>1.0</u> To <u>2.0</u> Ft Bentonite Pou                                                                                                                                                                                                             | ir              |                                        | J.                                     |
|                  |         | From 15.0 To 18.0 Ft. Bentonite Por                                                                                                                                                                                                                        | 17              | Commander                              |                                        |
| ]]               | 14      | . SCREEN:                                                                                                                                                                                                                                                  |                 | Atlantic Division<br>Naval Facilities  | Engineering Command                    |
| }}               |         | Depth Diameter Slot Size Mate                                                                                                                                                                                                                              |                 | Norfolk, Virginia                      |                                        |
| ·                |         | From <u>4.5</u> To <u>13.5</u> Ft <u>2</u> in. <u>010</u> in. <u>PVC</u>                                                                                                                                                                                   |                 |                                        | Mr. Trueman Seamans                    |
|                  |         | From 20.5 To 29.5 Ft. 2 in. 010 in. PVC                                                                                                                                                                                                                    |                 |                                        |                                        |
| 1)               | 15      | From To Ft in |                 |                                        |                                        |
| H                | 10      | Depth Size Material                                                                                                                                                                                                                                        |                 |                                        |                                        |
|                  |         | From <u>2.0</u> To <u>15.0</u> Ft <u>Torpedo</u> <u>Sand</u>                                                                                                                                                                                               |                 |                                        |                                        |
|                  |         | From <u>18.0</u> To <u>30.0</u> Ft Torpedo <u>Sand</u>                                                                                                                                                                                                     | ······          |                                        |                                        |
| I                | 16      | S. REMARKS: Concrete from 0' to 1.0'                                                                                                                                                                                                                       |                 |                                        |                                        |
| 1                |         |                                                                                                                                                                                                                                                            |                 |                                        | · · · · · · · · · · · · · · · · · · ·  |
| $\left( \right)$ |         | I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTE<br>CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS F                                                                                                                                                     |                 |                                        |                                        |
|                  |         |                                                                                                                                                                                                                                                            |                 |                                        |                                        |
|                  |         | Richard A                                                                                                                                                                                                                                                  | Kall            |                                        | 19/14/91                               |
|                  | G       | N-1 REV. 5/91 SIGNATURE OF (                                                                                                                                                                                                                               |                 | OR AGENT<br>ronmental Management and c | DATE                                   |

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|                                              | North Carolina - Department of Environment, Health, and Natural Resource<br>Division of Environmental Management - Groundwater Section<br>P.O. Box 29535 - Raleigh, N.C. 27626-0535<br>Phone (919) 733-3221<br>WELL CONSTRUCTION RECORD                                                                                                                                                                                                                                                                                                                                                                                                                   | OUAD HO. SERIAL NO. Po<br>Lat Long Basin<br>Basin Cons<br>Header End                           |                                                                                         |  |  |  |  |  |
|----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|--|--|--|--|--|
| <u> </u>                                     | LING CONTRACTOR: Law Engineering STATE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | WELL CONSTRUCTION<br>IT NUMBER: 66-0237-W                                                      | $\sim$                                                                                  |  |  |  |  |  |
|                                              | WELL LOCATION: (Show sketch of the location below) MW-9<br>Nearest Town: <u>Jacksonville</u> County: Onsl                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Low                                                                                            | n a sha ka ka ka sa na a ga ga sa sa ka ka sa ka sa |  |  |  |  |  |
|                                              | <u>Camp Geiger Fuel Farm</u><br>(Road, Community, or Subdivision and Lot No.)<br>OWNER <u>*See Address Below</u><br>ADDRESS<br>(Street or Route No.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | DEPTH<br>From To                                                                               | DRILLING LOG<br>Formation Description<br>See attached test<br>boring records            |  |  |  |  |  |
| 3.<br>**4.<br>5.<br>6.<br>**7.<br>**8.<br>in | City or Town       State       Zip Code         DATE DRILLED       8/16/91       USE OF WELL Monitoring       -         TOTAL DEPTH       S=13.0'       D=30.0'       -         CUTTINGS COLLECTED       YES       NO       -         DOES WELL REPLACE EXISTING WELL?       YES       NO       -         STATIC WATER LEVEL Below Top of Casing:       S=6.95       FT.       D=6         (Use *+* if Above Top of Casing)         TOP OF CASING IS       S=2.12       FT. Above Land Surface*         sing Terminated at/or below land surface is lilegal unless a variance is issued       -         accordance with 15A NCAC 2C .0118       -       - |                                                                                                |                                                                                         |  |  |  |  |  |
| 9.<br>10.                                    | YIELD (gpm): N/A       METHOD OF TEST         WATER ZONES (depth): N/A       .         CHLORINATION: Type       N/A         Amount       .         CASING:       .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | If additional space is nee                                                                     |                                                                                         |  |  |  |  |  |
|                                              | Depth         Diameter         Wall Thickness<br>or Weight/Ft,         Material           From         0         To         3.0         Ft.         2"         SCH 40         PVC           From         0         To         25.0         Ft.         2"         SCH 40         PVC           From         To         25.0         Ft.         2"         SCH 40         PVC                                                                                                                                                                                                                                                                             | <u>LOCATIC</u><br>(Show direction and distance<br>Roads, or other map ref<br>See attached site | erence points)                                                                          |  |  |  |  |  |
|                                              | GROUT:<br>Depth Material Method<br>From <u>1.0</u> To <u>2.0</u> Ft. <u>Bentonite</u> Pour<br>From <u>13.0</u> To <u>16.0</u> Ft. <u>Bentonite</u> Pour<br>SCREEN:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Norfolk, Virgini                                                                               | Engineering Command                                                                     |  |  |  |  |  |
|                                              | Depth         Diameter         Slot Size         Material           From         3.5         To         12.5         Ft         2         in.         .010         in.         PVC           From         25.5         To         29.5         Ft.         2         in.         .010         in.         PVC           From          To          ft.          in.                                                                                                                                                                                                                                                                                        | **S=Shallow monito<br>D=Deep monitorin                                                         |                                                                                         |  |  |  |  |  |
|                                              | SAND/GRAVEL PACK:       Depth       Size       Material         From       2.0       To       13.0       Ft. Torpedo       Sand         From       16.0       To       30.0       Ft. Torpedo       Sand         REMARKS:       Concrete from 0' to 1.0'                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                |                                                                                         |  |  |  |  |  |
| ) ·                                          | I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN AC<br>CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                |                                                                                         |  |  |  |  |  |

Richard A. Kell

10/14/91

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SIGNATURE OF CONTRACTOR OR AGENT DATE Submit original to Division of Environmental Management and copy to well owner.

| Division of Environmental Management - Groundwater Section<br>P.O. Box 29535 - Raleigh, N.C. 27626-0535<br>Phone (919) 733-3221<br>WELL CONSTRUCTION RECORD<br>DRILLING CONTRACTOR: <u>Law Engineering</u><br>STAT | OUAD. NO.                              | R OFFICE USE ONLY<br>SERIAL NO.<br>Pro<br>Po<br>Cartes<br>GW-1 Enb H |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|----------------------------------------------------------------------|
| DRILLER REGISTRATION NUMBER: 332 PERI                                                                                                                                                                              | MIT NUMBER: 66-023                     |                                                                      |
| Nearest Town: <u>Jacksonville</u> County:                                                                                                                                                                          | Onslow                                 |                                                                      |
| Camp Geiger Fuel Farm                                                                                                                                                                                              |                                        |                                                                      |
| (Road, Community, or Subdivision and Lot No.)                                                                                                                                                                      | DEPTH                                  | DRILLING LOG                                                         |
| 2. OWNER <u>*See address below</u><br>ADDRESS                                                                                                                                                                      | From To                                | Formation Description                                                |
| (Street or Route No.)                                                                                                                                                                                              |                                        | See attached test                                                    |
|                                                                                                                                                                                                                    | •••••••••••••••••••••••••••••••••••••• | boring_records                                                       |
| City or Town State Zip Code                                                                                                                                                                                        |                                        |                                                                      |
| 3. DATE DRILLED <u>8/19/91</u> USE OF WELL Monitoring                                                                                                                                                              |                                        | ·····                                                                |
| **4. TOTAL DEPTH <u>S=14.0 D=30.0</u>                                                                                                                                                                              | ·                                      |                                                                      |
| 5. CUTTINGS COLLECTED YES X NO                                                                                                                                                                                     |                                        |                                                                      |
| 6. DOES WELL REPLACE EXISTING WELL? YES NOX<br>**7. STATIC WATER LEVEL Below Top of Casing: <u>S=7.05</u> FT. D=6                                                                                                  | 701                                    |                                                                      |
| (Use *+* if Above Top of Casing)                                                                                                                                                                                   |                                        |                                                                      |
| **8. TOP OF CASING IS <u>S=2.49</u> FT. Above Land Surface* D=2.1                                                                                                                                                  |                                        |                                                                      |
| <ul> <li>Casing Terminated at/or below land surface is lilegal unless a variance is issued<br/>in accordance with 15A NCAC 2C .0118</li> </ul>                                                                     |                                        |                                                                      |
| 9. YIELD (gpm):N/AMETHOD OF TEST                                                                                                                                                                                   |                                        |                                                                      |
| 10. WATER ZONES (depth):N/A                                                                                                                                                                                        |                                        |                                                                      |
|                                                                                                                                                                                                                    |                                        |                                                                      |
| 11. CHLORINATION: Type _N/A Amount                                                                                                                                                                                 | If additional space is                 | needed use back of form                                              |
| 12. CASING:                                                                                                                                                                                                        |                                        |                                                                      |
| Wall Thickness                                                                                                                                                                                                     | LOCA                                   | TION SKETCH                                                          |
| Depth Diameter or Weight/Ft. Material                                                                                                                                                                              | (Show direction and dista              | nce from at least two State                                          |
| From To4_0 Ft. 2" SCH 40 PVC                                                                                                                                                                                       | Roads, or other map                    | reference points)                                                    |
| From_0 To 25.0 Ft_2" SCH 40PVC                                                                                                                                                                                     | Son attached a                         | ite location map                                                     |
| From To Ft                                                                                                                                                                                                         | see attached s                         | ice iocation map                                                     |
| 13. GROUT:                                                                                                                                                                                                         | * Commander                            |                                                                      |
| Depth         Material         Method           From         1         To         2         Ft         Bentonite         Pour                                                                                      | Atlantic Div                           | rision                                                               |
|                                                                                                                                                                                                                    |                                        | ties Engineering Command                                             |
| From 16 To 19Ft. Bentonite Pour<br>14. SCREEN:                                                                                                                                                                     |                                        | ginia 23511-6287                                                     |
|                                                                                                                                                                                                                    | Attn: Code                             | 181, Mr. Trueman Seamans                                             |
| Depth Diameter Slot Size Material<br>Frcm 4.5 To 13.5 Ft 2 in010 in. PVC                                                                                                                                           | **S=Shallow mo                         | nitoring vell                                                        |
| From <u>25.5</u> To <u>29.5</u> Ft <u>2</u> in. <u>.010 in. PVC</u>                                                                                                                                                | D=Deep monit                           | -                                                                    |
| From To Ft in in in.                                                                                                                                                                                               | • •                                    |                                                                      |
| 15. SAND/GRAVEL PACK:                                                                                                                                                                                              |                                        |                                                                      |
|                                                                                                                                                                                                                    |                                        |                                                                      |
| Denth Size Material                                                                                                                                                                                                |                                        |                                                                      |
| Depth Size Material<br>From 2 To 14 Et Torpedo Sand                                                                                                                                                                |                                        |                                                                      |
| From _2 To _14 Ft Torpedo Sand                                                                                                                                                                                     |                                        |                                                                      |
| From <u>2</u> To <u>14</u> Ft. <u>Torpedo</u> <u>Sand</u><br>From <u>19</u> To <u>30</u> Ft. <u>Torpedo</u> <u>Sand</u>                                                                                            | -<br>-                                 |                                                                      |
| From _2 To _14 Ft Torpedo Sand                                                                                                                                                                                     | -<br>                                  |                                                                      |

Richard A. Koll

10/14/91

SIGNATURE OF CONTRACTOR OR AGENT DATE Submit original to Division of Environmental Management and copy to well owner.

|                                                                                                        | WELL CONSTRUCTION                                                                                               | 7-WM-0232                         |
|--------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-----------------------------------|
| 1. WELL LOCATION: (Show sketch of the location below) MW-11<br>Nearest Town: Jacksonville County: Ons  | low                                                                                                             |                                   |
| Camp Geiger Fuel Farm                                                                                  |                                                                                                                 | ·                                 |
| (Road, Community, or Subdivision and Lot No.)                                                          | DEPTH                                                                                                           | DRILLING LOG                      |
| 2. OWNER <u>*See Address Below</u>                                                                     | From To                                                                                                         | Formation Description             |
| ADDRESS                                                                                                |                                                                                                                 | See Attached Test                 |
| (Streét or Route No.)                                                                                  |                                                                                                                 | boring records                    |
| City or Town State Zip Code -                                                                          |                                                                                                                 |                                   |
| 3. DATE DRILLED <u>8/19/91</u> USE OF WELL Monitoring —                                                |                                                                                                                 |                                   |
| **4. TOTAL DEPTH <u>S=14.0' D=3</u> 0.0'                                                               |                                                                                                                 |                                   |
| 5. CUTTINGS COLLECTED YES X NO                                                                         | - <u></u>                                                                                                       |                                   |
| 6. DOES WELL REPLACE EXISTING WELL? YES NO                                                             |                                                                                                                 |                                   |
| **7. STATIC WATER LEVEL Below Top of Casing: <u>S=8.27</u> FT. D=8.6                                   | 50                                                                                                              | ······                            |
| (Use "+" if Above Top of Casing)<br>**8. TOP OF CASING IS <u>S=2.51</u> FT. Above Land Surface* D=2.59 |                                                                                                                 |                                   |
| *Casing Terminated at/or below land surface is litegal unless a variance is issued                     |                                                                                                                 |                                   |
| in accordance with 15A NCAC 2C .0118                                                                   |                                                                                                                 |                                   |
| 9. YIELD (gpm):N/A METHOD OF TEST                                                                      |                                                                                                                 |                                   |
| 10. WATER ZONES (depth) <u>N/A</u>                                                                     |                                                                                                                 |                                   |
|                                                                                                        |                                                                                                                 |                                   |
| 11. CHLORINATION: Type <u>N/A</u> Amount                                                               | If additional space is ne                                                                                       | eded use back of form             |
| 12. CASING:                                                                                            |                                                                                                                 | ON SKETCH                         |
| Wall Thickness<br>Depth Diameter or Weight/FL Material                                                 | (Show direction and distanc                                                                                     | · · · ·                           |
| Depth Diameter or Weight/FL Material<br>From 0 To 4.0 Ft. 2" SCH 40 PVC                                | Roads, or other map re                                                                                          | • •                               |
| From 0 To 25.0 Ft. 2" SCH 40 PVC                                                                       | hoads, or other map re-                                                                                         | lerence points)                   |
| From To Ft                                                                                             | See attached                                                                                                    | site location map                 |
| 13. GROUT:                                                                                             |                                                                                                                 |                                   |
| Depth Material Method                                                                                  | *Commander                                                                                                      |                                   |
| From <u>1.0</u> To <u>2.0</u> Ft. <u>Bentonite</u> <u>Pour</u>                                         | Atlantic Div<br>Noval Facili                                                                                    | ision<br>ties Engineering Command |
| From 19.5 To 22.5 Ft Bentonite Pour                                                                    |                                                                                                                 | ginia 23511-6287                  |
| 14. SCREEN:                                                                                            | HOLLOLK, VIL                                                                                                    | Brure 1991                        |
| Depth Diameter Slot Size Material                                                                      | **S=Shallow mo                                                                                                  | nitoring well                     |
| From <u>4.5 To 13.5 Ft 2</u> in <u>.010 in PVC</u>                                                     | D=Deep monit                                                                                                    | oring well                        |
| From <u>25.5</u> To <u>29.5</u> Ft. <u>2</u> in. <u>.010</u> in. <u>PVC</u>                            |                                                                                                                 | 1001                              |
| From To Ft in in                                                                                       | Attn: Code                                                                                                      | 1821, Mr. Trueman Seaman          |
| 15. SAND/GRAVEL PACK:                                                                                  |                                                                                                                 |                                   |
| Depth Size Material                                                                                    |                                                                                                                 |                                   |
| From <u>2.0</u> To <u>19.5</u> Ft <u>Torpedo</u> <u>Sand</u>                                           |                                                                                                                 |                                   |
| From <u>22.5</u> To <u>30.0</u> Ft Torpedo Sand                                                        |                                                                                                                 |                                   |
| 16. REMARKS: Concrete from 0' to 1.0'                                                                  |                                                                                                                 |                                   |
|                                                                                                        | ing big a second quality and a second data and a second second second second second second second second second |                                   |

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SIGNATURE OF CONTRACTOR OR AGENT DATE Submit original to Division of Environmental Management and copy to well owner.

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | POR OFFICE USE ONLY<br>OUAD. NOSERIAL NOSERIAL NO<br>LatLongPe<br>Minor Basin<br>Basin Code<br>Header Bat<br>E WELL CONSTRUCTION<br>IIT NUMBER:66-0237-WM-0232                                                                                                |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. WELL LOCATION: (Show sketch of the location below)<br>Nearest Town: <u>Jacksonville</u> County:Onslo                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | MW-12<br>w                                                                                                                                                                                                                                                    |
| Camp Geiger Fuel Farm<br>(Road, Community, or Subdivision and Lot No.)<br>2. OWNER <u>*See address below</u><br>ADDRESS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | DEPTH DRILLING LOG<br>From To Formation Description<br>See attached test<br>boring records                                                                                                                                                                    |
| City or Town       State       Zip Code         3. DATE DRILLED                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | =10.34 <sup>1</sup>                                                                                                                                                                                                                                           |
| 11. CHLORINATION: Type N/A Amount                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | If additional space is needed use back of form                                                                                                                                                                                                                |
| Depth       Diameter       or Weight/FL       Material         From       0       To       4.5       Ft       2"       SCH 40       PVC         From       0       To       23.5       Ft       2"       SCH 40       PVC         From       0       To       23.5       Ft       2"       SCH 40       PVC         From       0       To       23.5       Ft       2"       SCH 40       PVC         From       To       25.5       Ft       2"       SCH 40       PVC         From       To       2.0       Ft       Ft       90       90         13. GROUT:       Depth       Material       Method       90       90         From       2.0       To       3.0       Ft       Bentonite       Pour         From       15.5       To       19.0       Ft       Bentonite       Pour | LOCATION SKETCH<br>(Show direction and distance from at least two State<br>Roads, or other map reference points)<br>See attached site location map<br>*Commander<br>Atlantic Division<br>Naval Facilities Engineering Command<br>Norfolk, Virginia 23511-6287 |
| 14. SCREEN:         Depth       Diameter       Slot Size       Material         From        5.0       To       14.0       Ft        in.        PVC         From        To        ft.        in.        PVC         From        To        ft.        in.          15.       SAND/GRAVEL PACK:        In.        In.                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <pre>**S=Shallow monitoring well D=Deep monitoring well Attn: Code 1821, Mr. Trueman Seamans</pre>                                                                                                                                                            |
| Depth       Size       Material         From _3.0 To _14.5_ Ft. Torpedo                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                               |

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SIGNATURE OF CONTRACTOR OR AGENT Submit original to Division of Environmental Management and copy to well owner.

|               |                                                                                                   | QUAD. NO Long<br>Lat Long<br>Minor Basin<br>Basin Code<br>Header Ent<br>WELL CONSTRUCTION |                                                                                                                 |
|---------------|---------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| 1.            | WELL LOCATION: (Show sketch of the location below) MW-13                                          | - 1                                                                                       |                                                                                                                 |
|               |                                                                                                   | slow                                                                                      | ده: «بيديدون                                                                                                    |
|               | Camp Geiger Fuel Farm                                                                             | DEPTH                                                                                     | DRILLING LÓG                                                                                                    |
| 2             | OWNER <u>*See address below</u>                                                                   | From To                                                                                   | Formation Description                                                                                           |
| • •           | ADDRESS                                                                                           |                                                                                           | See attached test                                                                                               |
|               | (Street or Route No.)                                                                             |                                                                                           | boring records                                                                                                  |
|               |                                                                                                   |                                                                                           |                                                                                                                 |
| •             | City or Town State Zip Code - DATE DRILLED 8/19/91 USE OF WELL Monitoring -                       |                                                                                           |                                                                                                                 |
|               | TOTAL DEPTH S=15.0' D=30.0' -                                                                     | ·                                                                                         |                                                                                                                 |
| 5.            | CUTTINGS COLLECTED YES X NO                                                                       |                                                                                           |                                                                                                                 |
|               | DOES WELL REPLACE EXISTING WELL? YES NO X                                                         |                                                                                           | a the second state of the second s |
| **7.          |                                                                                                   | 96                                                                                        |                                                                                                                 |
| * <b>*8</b> . | (Use *+* if Above Top of Casing)<br>TOP OF CASING IS <u>S=2.50</u> FT. Above Land Surface* D=2.55 | 3+                                                                                        |                                                                                                                 |
| , •C          | asing Terminated at/or below land surface is illegal unless a variance is issued —                |                                                                                           |                                                                                                                 |
|               | n accordance with 15A NCAC 2C .0118                                                               |                                                                                           |                                                                                                                 |
|               | MELD (gpm): METHOD OF TEST                                                                        |                                                                                           |                                                                                                                 |
| )             |                                                                                                   |                                                                                           | · · · · · · · · · · · · · · · · · · ·                                                                           |
| 11            | . CHLORINATION: Type N/A Amount                                                                   | If additional space is ne                                                                 | eded use back of form                                                                                           |
|               | 2. CASING:                                                                                        |                                                                                           |                                                                                                                 |
| .             | Wall Thickness                                                                                    | LOCATIO                                                                                   | ON SKETCH                                                                                                       |
| ۱.            | Depth Diameter or Weight/FL Material                                                              | (Show direction and distanc                                                               | <u> </u>                                                                                                        |
|               | From 0 To 5.0 Ft. 2" SCH 40 PVC                                                                   | Roads, or other map re                                                                    | ference points)                                                                                                 |
| }             | From 0 To 25.0 Ft. 2" SCH 40 PVC                                                                  |                                                                                           | <b>1</b>                                                                                                        |
| ļ             | From To Ft                                                                                        | See attached sit                                                                          | te location map                                                                                                 |
| ຸ 1:          | 3. GROUT:                                                                                         | *Commander                                                                                |                                                                                                                 |
| l             | Depth Material Method                                                                             | Atlantic Divis:                                                                           | lon                                                                                                             |
| 3             | From <u>2.0</u> To <u>3.0</u> Ft. Bentonite Pellets                                               |                                                                                           | es Engineering Command                                                                                          |
| 1 -           | From 18.5 To 22.5 Ft. Bentonite Pellets                                                           | Norfolk, Virgin                                                                           | nia 23511-6287                                                                                                  |
| 1             | 4. SCREEN:                                                                                        |                                                                                           | and a second                                                                                                    |
| •             | Depth Diameter Slot Size Material<br>From <u>5.5 To 14.5Ft 2 in .010 in PVC</u>                   | **S=Shallow monit<br>D=Deep monitor:                                                      | -                                                                                                               |
| ,             | From 25.5 To 29.5Ft2 in010 inVC                                                                   | D-Deep monitor.                                                                           | rug wett                                                                                                        |
| ļ             | From To Ft in in                                                                                  | Attn: Code 1821,                                                                          | Mr. Trueman Seamans                                                                                             |
| 1:            | 5. SAND/GRAVEL PACK:                                                                              |                                                                                           |                                                                                                                 |
| 1             | Depth Size Material                                                                               |                                                                                           |                                                                                                                 |
| ļ             | From <u>3.0</u> To 18.5 Ft. Torpedo Sand                                                          |                                                                                           |                                                                                                                 |
|               | From <u>22.5</u> To <u>30.0</u> Ft. <u>Torpedo</u> Sand                                           |                                                                                           |                                                                                                                 |
| 1             | 6. REMARKS: Concrete from 0' to 1.0'                                                              |                                                                                           |                                                                                                                 |
| 1             |                                                                                                   |                                                                                           |                                                                                                                 |

Richard A. Koll

10/14/91 DATE

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SIGNATURE OF CONTRACTOR OR AGENT DAT Submit original to Division of Environmental Management and copy to well owner.

| North Carolina - Department of Environment, Health, and Natural Resourd<br>Division of Environmental Management - Groundwater Section<br>P.O. Box 29535 - Raleigh, N.C. 27626-0535<br>Phone (919) 733-3221<br>WELL CONSTRUCTION RECORD                           | COS CUAD. NO. FOR OFFICE USE ON COS SERVIL NO. SERVIL N |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DRILLING CONTRACTOR: <u>Law Engineering</u>                                                                                                                                                                                                                      | United and an and a second                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|                                                                                                                                                                                                                                                                  | TE WELL CONSTRUCTION<br>MIT NUMBER: 66-0237-WM-0232                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 1. WELL LOCATION: (Show sketch of the location below) MW-14                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Nearest Town:Jacksonville County:C                                                                                                                                                                                                                               | nslow                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Camp Geiger Fuel Farm                                                                                                                                                                                                                                            | •                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| (Road, Community, or Subdivision and Lot No.)                                                                                                                                                                                                                    | DEPTH DRILLING LÓG                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 2. OWNER <u>*See address below</u>                                                                                                                                                                                                                               | From To Formation Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| ADDRESS                                                                                                                                                                                                                                                          | See Attached Test                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| (Street or Route No.)                                                                                                                                                                                                                                            | Boring Records                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| City or Town State Zip Code                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 3. DATE DRILLED 8/20/91 USE OF WELL Monitoring                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 4. TOTAL DEPTH <u>S=13.0 D=30.0'</u>                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 5. CUTTINGS COLLECTED YES X NO                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 6. DOES WELL REPLACE EXISTING WELL? YES NO X<br>7. STATIC WATER LEVEL Below Top of Casing: S=9.58 FT. D=                                                                                                                                                         | 0.511                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| (Use *+* if Above Top of Casing)                                                                                                                                                                                                                                 | -9.51                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <ol> <li>TOP OF CASING IS <u>S=2.51</u> FT. Above Land Surface* D=2.</li> <li>* Casing Terminated at/or below land surface is lilegal unless a variance is issued in accordance with 15A NCAC 2C .0118</li> <li>YIELD (gpm): <u>N/A</u> METHOD OF TEST</li></ol> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 11. CHLORINATION: Type N/A Amount                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 12. CASING:                                                                                                                                                                                                                                                      | If additional space is needed use back of form                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|                                                                                                                                                                                                                                                                  | LOCATION SKETCH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Wall Thickness<br>Depth Diameter or Weight/Ft Material                                                                                                                                                                                                           | (Show direction and distance from at least two State                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| From 0 To 3.0 Ft. 2" SCH 40 PVC                                                                                                                                                                                                                                  | Roads, or other map reference points)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| From 0 To 24.0 Ft. 2" SCH 40 PVC                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| From To Ft                                                                                                                                                                                                                                                       | See attached site location map                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 13. GROUT:                                                                                                                                                                                                                                                       | *Commander                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Depth Material Method                                                                                                                                                                                                                                            | Atlantic Division                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| From <u>1.0</u> To <u>2.0</u> Ft Bentonite Pour                                                                                                                                                                                                                  | Naval Facilities Engineering Command                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| From <u>18.0</u> To <u>21.0</u> Ft. <u>Bentonite</u> Pour                                                                                                                                                                                                        | Norfolk, Virginia 23511-6287                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 14. SCREEN:                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Depth Diameter Slot Size Material<br>From <u>3.5</u> To <u>12.5</u> Ft <u>2</u> in. <u>.010</u> in. <u>PVC</u>                                                                                                                                                   | **S=Shallow monitoring well<br>D=Deep monitoring well                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| From 24.5 To 28.5Ft 2 in010 in. PVC                                                                                                                                                                                                                              | Attn: Code 1821, Mr. Trueman Seamans                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| From To Ft in in                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 15. SAND/GRAVEL PACK:                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Depth Size Material                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| From <u>2.0</u> To <u>13.0</u> Ft. Torpedo <u>Sand</u>                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| From <u>21.0</u> To <u>29.0</u> Ft. Torpedo <u>Sand</u>                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 16. REMARKS: <u>Concrete</u> from 0' to 1.0'                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

Richard A. Kall

10/14/91 DATE

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SIGNATURE OF CONTRACTOR OR AGENT DAT Submit original to Division of Environmental Management and copy to well owner.

| DRILLING LOG<br>Formation Description<br>See attached test                                                                                                      |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <u>horing records</u>                                                                                                                                           |
|                                                                                                                                                                 |
| e is needed use back of form                                                                                                                                    |
| CATION SKETCH<br>istance from at least two State<br>map reference points)<br>I site location map<br>ivision<br>Lities Engineering Command<br>irginia 23511-6287 |
| monitoring well<br>itoring well<br>1821, Mr. Trueman Seamans                                                                                                    |
|                                                                                                                                                                 |
|                                                                                                                                                                 |

Richard A. Kall

10/18/91

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SIGNATURE OF CONTRACTOR OR AGENT DATE Submit original to Division of Environmental Management and copy to well owner.

|              | North Carolina - Department of Environment, Health, and Natural Resource<br>Division of Environmental Management - Groundwater Section<br>P.O. Box 29535 - Raleigh, N.C. 27626-0535<br>Phone (919) 733-3221<br>WELL CONSTRUCTION RECORD<br>LLING CONTRACTOR: Law Engineering | OUAD. NO.                    | ACE USE ONLY          |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-----------------------|
| ļ.           | STAT                                                                                                                                                                                                                                                                         | E WELL CONSTRUCTION          | -WM-0232              |
| 1.           | WELL LOCATION: (Show sketch of the location below) MW-16<br>Nearest Town: Jacksonville County: 0                                                                                                                                                                             | nslow                        |                       |
|              | Camp Geiger Fuel Farm                                                                                                                                                                                                                                                        |                              |                       |
| ł            | (Road, Community, or Subdivision and Lot No.)                                                                                                                                                                                                                                | DEPTH                        | DRILLING LÓG          |
| 2.           | OWNER <u>*See address below</u>                                                                                                                                                                                                                                              | From To                      | Formation Description |
| 3            | ADDRESS                                                                                                                                                                                                                                                                      |                              | See attached test     |
| l l          | (Street of House No.)                                                                                                                                                                                                                                                        |                              | boring records        |
| :            | City or Town State Zip Code -                                                                                                                                                                                                                                                |                              |                       |
| } <b>3</b> . | DATE DRILLED USE OF WELL Monitoring -                                                                                                                                                                                                                                        |                              | ·····                 |
|              | TOTAL DEPTH <u>S=14.5' D</u> =29.0'                                                                                                                                                                                                                                          |                              |                       |
|              |                                                                                                                                                                                                                                                                              |                              |                       |
| 1 7          | DOES WELL REPLACE EXISTING WELL? YES NO STATIC WATER LEVEL Below Top of Casing: S=12.87FT. D=12                                                                                                                                                                              | 0.02                         |                       |
| ~~/.         | (Use *+* if Above Top of Casing)                                                                                                                                                                                                                                             |                              |                       |
| **8.         | TOP OF CASING IS <u>S=2.62</u> FT. Above Land Surface* D=2.58                                                                                                                                                                                                                |                              |                       |
| ) • Ca       | asing Terminated at/or below land surface is lilegal unless a variance is issued<br>accordance with 15A NCAC 2C .0118                                                                                                                                                        | ······                       |                       |
| in 9.        | YIELD (gpm):N/A METHOD OF TEST                                                                                                                                                                                                                                               |                              |                       |
|              | WATER ZONES (depth):                                                                                                                                                                                                                                                         |                              |                       |
| F            |                                                                                                                                                                                                                                                                              |                              |                       |
| 5.<br>11.    | CHLORINATION: Type <u>N/A</u> Amount                                                                                                                                                                                                                                         | If additional space is nee   | ded use back of form  |
|              | . CASING:                                                                                                                                                                                                                                                                    |                              |                       |
| 1            | Wall Thickness                                                                                                                                                                                                                                                               | LOCATIO                      | N SKETCH              |
| 1            | Depth Diameter or Weight/FL Material                                                                                                                                                                                                                                         | (Show direction and distance | •                     |
|              | From 0 To 4.5 Ft. 2" SCH 40 PVC                                                                                                                                                                                                                                              | Roads, or other map refe     | arence points)        |
|              | From 0 To24.0 Ft. 2" SCH 40 PVC                                                                                                                                                                                                                                              | *Commander                   |                       |
|              | From To Ft                                                                                                                                                                                                                                                                   | Atlantic Divisio             |                       |
|              | . GROUT:                                                                                                                                                                                                                                                                     |                              | Engineering Command   |
|              | Depth Material Method                                                                                                                                                                                                                                                        | Norfolk, Virgini             | a 23511-6287          |
| .U)          | From 1.0 To 2.0 Ft Bentonite Pour                                                                                                                                                                                                                                            | **S=Shallow monito           | ring well             |
| 1            | From 17.5 To20.5 Ft Bentonite Pour                                                                                                                                                                                                                                           | D=Deep monitorin             | ÷                     |
| 14           | . SCREEN:                                                                                                                                                                                                                                                                    | monacoran                    |                       |
| J)           | Depth Diameter Slot Size Material                                                                                                                                                                                                                                            | See attached site            | e location map        |
| 1            | From <u>5.0</u> To <u>14.0</u> Ft <u>2</u> in <u>010</u> in <u>PVC</u><br>From <u>24.0</u> To <u>28.5</u> Ft <u>2</u> in <u>010</u> in <u>PVC</u>                                                                                                                            |                              |                       |
| ]i           | From To Ft in in                                                                                                                                                                                                                                                             | Attn: Code 1821,             | Mr. Trueman Seamans   |
|              | 5. SAND/GRAVEL PACK:                                                                                                                                                                                                                                                         | ,                            |                       |
|              | Depth Size Material                                                                                                                                                                                                                                                          |                              |                       |
|              | From 2.0 To 17.5 Ft Torpedo Sand                                                                                                                                                                                                                                             |                              |                       |
|              | From 20.0 To 24.5 Ft. Torpedo Sand                                                                                                                                                                                                                                           |                              |                       |
| 1 16         | 5. REMARKS: Concrete from 0' to 1.0'                                                                                                                                                                                                                                         |                              |                       |
| 16           |                                                                                                                                                                                                                                                                              |                              |                       |
|              | I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN A<br>CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD                                                                                                                                                            |                              |                       |

Richard A. Kall

10/14/91

SIGNATURE OF CONTRACTOR OR AGENT DATE Submit original to Division of Environmental Management and copy to well owner.

| North Carolina - Department of Environment, Health, and Natural Resource<br>Division of Environmental Management - Groundwater Section<br>P.O. Box 29535 - Raleigh, N.C. 27626-0535<br>Phone (919) 733-3221<br>WELL CONSTRUCTION RECORD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | OUAD NO                                                                       | FRCE USE ONLY                                                                |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Basin Code                                                                    |                                                                              |
| j                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | E WELL CONSTRUCTION<br>IT NUMBER: 66-0237-                                    | WM-0232                                                                      |
| 1. WELL LOCATION: (Show sketch of the location below) MW-17<br>Nearest Town:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | low                                                                           |                                                                              |
| <u>Camp Geiger Fuel Farm</u><br>(Road, Community, or Subdivision and Lot No.)<br>2. OWNER <u>*See address below</u><br>ADDRESS<br>(Street or Route No.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | DEPTH<br>From To                                                              | DRILLING LOG<br>Formation Description<br>See attached test<br>boring records |
| City or Town       State       Zip Code         3. DATE DRILLED <u>8/21/91</u> USE OF WELL <u>Monitoring</u> ** 4. TOTAL DEPTH <u>S=17.0' D=29.5'</u> 5. CUTTINGS COLLECTED YES <u>NO</u> 6. DOES WELL REPLACE EXISTING WELL? YES <u>NO</u> ** 7. STATIC WATER LEVEL Below Top of Casing:S=11.07 FT. D=1         (Use *+* if Above Top of Casing)         ** 8. TOP OF CASING IS <u>S=2.56</u> FT. Above Land Surface* D=2.5         * Casing Terminated at/or below land surface is lillegal unless a variance is issued         in accordance with 15A NCAC 2C .0118         9. YIELD (gpm): <u>N/A</u> METHOD OF TEST         10. WATER ZONES (depth): <u>N/A</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 50'                                                                           |                                                                              |
| 11. CHLORINATION: Type <u>N/A</u> Amount                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | If additional space is nee                                                    | eded use back of form                                                        |
| Wall ThicknessDepthDiameteror Weight/FLMaterialFrom0To7.0Ft.2"SCH40PVCFrom0To24.5Ft.2"SCH40PVCFromToFt.2"SCH40PVCFromToFt.2"SCH40PVCIn the second | (Show direction and distance<br>Roads, or other map refe<br>See attached site | erence points)                                                               |
| Depth     Material     Method       From     3.5     To     4.5     Ft.     Bentonite     Pour       From     19.5     To     22.5     Ft.     Bentonite     Pour       14.     SCREEN:     Depth     Diameter     Slot Size     Material                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | *Commander<br>Atlantic Division<br>Naval Facilities<br>Norfolk, Virginia      | Engineering Command                                                          |
| From                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | **S=Shallow monitor<br>D=Deep monitoring<br>Attn: Code 1821                   |                                                                              |
| DepthSizeMaterialFrom4.5To19.5FtTorpedoSandFrom22.5To30.0FtTorpedoSand16. REMARKS:Concrete from 0 to 3.5'                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                               |                                                                              |

fi'chand A. Kell

10/14/91

SIGNATURE OF CONTRACTOR OR AGENT DATE
Submit original to Division of Environmental Management and copy to well owner.

| Division of Environmenta<br>P.O. Box 29535<br>Phor            | Environment, Health, and Natural Res<br>Il Management - Groundwater Section<br>5 - Raleigh, N.C. 27626-0535<br>ne (919) 733-3221<br>STRUCTION RECORD | SOUTCOS SAL FAMILY OF          |                                         |
|---------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----------------------------------------|
| $\frown$                                                      |                                                                                                                                                      |                                | OW Ene                                  |
| DRILLING CONTRACTOR:                                          |                                                                                                                                                      | TATE WELL CONSTRUCTIO          |                                         |
| DRILLER REGISTRATION NUN                                      |                                                                                                                                                      | PERMIT NUMBER: 66-023          |                                         |
| 1. WELL LOCATION: (Show sk<br>Nearest Town: Jacksonvi         | County:                                                                                                                                              | MW-18<br>Onslow                |                                         |
| <u>Camp Geiger Fuel Fa</u><br>(Road, Community, or Subdivisio |                                                                                                                                                      | DEPTH                          | DRILLING LOG                            |
|                                                               | s below                                                                                                                                              |                                | Formation Description                   |
| ADDRESS                                                       | 0 00401                                                                                                                                              |                                | See attached test                       |
|                                                               | et or Route No.)                                                                                                                                     |                                |                                         |
|                                                               | · · · · · · · · · · · · · · · · · · ·                                                                                                                |                                | boring_records                          |
| City or Town                                                  | State Zip Code                                                                                                                                       | =/                             |                                         |
|                                                               | USE OF WELL Monitoring                                                                                                                               | g                              |                                         |
| **4. TOTAL DEPTHS=12.5'                                       |                                                                                                                                                      |                                |                                         |
| 5. CUTTINGS COLLECTED                                         |                                                                                                                                                      |                                |                                         |
| 6. DOES WELL REPLACE EX                                       |                                                                                                                                                      |                                |                                         |
| **7. STATIC WATER LEVEL Be                                    | (Use *+* if Above Top of Casing)                                                                                                                     | D= <u>7.96</u>                 |                                         |
| **8. TOP OF CASING IS <u>S=2.6</u>                            |                                                                                                                                                      | =2.67                          |                                         |
|                                                               | surface is illegal unless a variance is is                                                                                                           |                                |                                         |
| In accordance with 15A NCAC 2C J                              | 0118                                                                                                                                                 |                                |                                         |
| 9. YIELD (gpm):N/A ME                                         | THOD OF TEST                                                                                                                                         |                                | ·····                                   |
| 10. WATER ZONES (depth):                                      | N/A                                                                                                                                                  | ·······                        |                                         |
| <u> </u>                                                      |                                                                                                                                                      |                                |                                         |
| 11. CHLORINATION: Type _                                      | N/A Amount                                                                                                                                           | If additional space is         | needed use back of form                 |
| 12. CASING:                                                   |                                                                                                                                                      |                                |                                         |
|                                                               | Wall Thickness                                                                                                                                       | LOCA                           | TION SKETCH                             |
| Depth                                                         | Diameter or Weight/Ft. Mate                                                                                                                          | rial (Show direction and dista | ince from at least two State            |
| From To                                                       | - Ft                                                                                                                                                 |                                | reference points)                       |
| From 0 To 20.0                                                | Ft2"SCH_40PV(                                                                                                                                        | <u>c</u>                       | . ,                                     |
| From To                                                       |                                                                                                                                                      |                                | ite location map                        |
| 13. GROUT:                                                    |                                                                                                                                                      |                                | -                                       |
| Depth                                                         | Material Method                                                                                                                                      | t *Commander                   |                                         |
| From 0.5 To 1.5                                               |                                                                                                                                                      | Atlantic Divi                  |                                         |
| From 14.0 To 17.0                                             |                                                                                                                                                      |                                | ies Engineering Command                 |
| 14. SCREEN:                                                   |                                                                                                                                                      | Norfolk, Virg                  | inia 23511-6287                         |
|                                                               | Diamatas Clat Siza Matari                                                                                                                            |                                | 2 · · · · · · · · · · · · · · · · · · · |
|                                                               | Diameter Slot Size Materia                                                                                                                           |                                | •                                       |
|                                                               | <u>2</u> in. <u>.010</u> in. <u>PVC</u>                                                                                                              | D=Deep monito                  | ring well                               |
| 4 1                                                           | t in in PVC                                                                                                                                          | LAN . 0-1. 10                  | 21, Mr. Trueman Seamans                 |
|                                                               | t in in                                                                                                                                              |                                |                                         |
| 15. SAND/GRAVEL PACK:                                         | _                                                                                                                                                    |                                |                                         |
| Depth                                                         | Size Material                                                                                                                                        |                                |                                         |
|                                                               | Ft. Torpedo Sand                                                                                                                                     |                                |                                         |
|                                                               | _ Ft. <u>Torpedo</u> <u>Sand</u>                                                                                                                     |                                |                                         |
| 16. REMARKS: <u>Concret</u>                                   | e from 0 to 0.5'                                                                                                                                     |                                |                                         |
|                                                               |                                                                                                                                                      |                                |                                         |
|                                                               | AT THIS WELL WAS CONSTRUCTED                                                                                                                         |                                |                                         |
|                                                               | DS, AND THAT A COPY OF THIS RE                                                                                                                       | ECORD HAS BEEN PROVIDED TO     | U THE WELL OWNER.                       |
| 1                                                             | _                                                                                                                                                    |                                |                                         |

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Richard A. Kell

10/14/91

SIGNATURE OF CONTRACTOR OR AGENT D Submit original to Division of Environmental Management and copy to well owner. DATE

|                |          | North Carolina - Department of Environment, Health, and Natural Resourd<br>Division of Environmental Management - Groundwater Section<br>P.O. Box 29535 - Raleigh, N.C. 27626-0535<br>Phone (919) 733-3221<br><u>WELL CONSTRUCTION RECORD</u><br>LING CONTRACTOR: Law Engineering<br>STAT |             | CUAD. NO.                             | OR OFFICE USE ONLY<br>SERIAL NO PO |
|----------------|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|---------------------------------------|------------------------------------|
| <sup>1</sup> C | RI       |                                                                                                                                                                                                                                                                                           |             |                                       | 237-WM-0232                        |
| 1              | . '      | WELL LOCATION: (Show sketch of the location below) MW-19                                                                                                                                                                                                                                  | 9           | <u></u>                               |                                    |
| i              |          | Nearest Town: <u>lacksonville</u> County: <u>0</u> n                                                                                                                                                                                                                                      | slow.       |                                       |                                    |
| ĩ              |          | Camp Geiger Fuel Farm                                                                                                                                                                                                                                                                     |             |                                       |                                    |
|                |          | (Road, Community, or Subdivision and Lot No.)                                                                                                                                                                                                                                             |             | DEPTH                                 | DRILLING LOG                       |
|                |          | OWNER <u>*See address below</u>                                                                                                                                                                                                                                                           |             | From To                               | Formation Description              |
|                |          | ADDRESS(Street or Route No.)                                                                                                                                                                                                                                                              |             | · · · · · · · · · · · · · · · · · · · | See attached test                  |
| ]              |          |                                                                                                                                                                                                                                                                                           | <del></del> | ·····                                 | boring records                     |
| 1              |          | City or Town State Zip Code                                                                                                                                                                                                                                                               |             | • • • • • • • • • • • • • • • • • • • |                                    |
| P 7            | 3.       | DATE DRILLED _8/22/91 USE OF WELL Monitoring                                                                                                                                                                                                                                              | <del></del> |                                       | ·····                              |
|                |          | TOTAL DEPTH <u>S=14.0' D=25.0'</u>                                                                                                                                                                                                                                                        |             | <u>.</u> .                            |                                    |
|                |          | CUTTINGS COLLECTED YES NO DOES WELL REPLACE EXISTING WELL? YES NO NO                                                                                                                                                                                                                      |             | ······                                |                                    |
| **             | 5.<br>7. | DOES WELL REPLACE EXISTING WELL? YES NO $\times$<br>STATIC WATER LEVEL Below Top of Casing:S=3.54 FT. D=3                                                                                                                                                                                 | 02          |                                       |                                    |
| ļ              |          | (Use "+" if Above Top of Casing)                                                                                                                                                                                                                                                          | .02         | · · · · · · · · · · · · · · · · · · · |                                    |
|                |          | TOP OF CASING IS <u>S=2.62</u> FT. Above Land Surface* D=2.5                                                                                                                                                                                                                              |             |                                       |                                    |
| ŀ              | Ca<br>in | sing Terminated at/or below land surface is illegal unless a variance is issued<br>accordance with 15A NCAC 2C .0118                                                                                                                                                                      |             | ·····                                 |                                    |
| ij,            |          | YIELD (gpm):N/AMETHOD OF TEST                                                                                                                                                                                                                                                             |             |                                       |                                    |
|                |          | WATER ZONES (depth):N/A                                                                                                                                                                                                                                                                   |             |                                       |                                    |
|                |          |                                                                                                                                                                                                                                                                                           |             | · · · · · · · · · · · · · · · · · · · |                                    |
| <u> </u>       | 11.      | CHLORINATION: Type Amount                                                                                                                                                                                                                                                                 |             | If additional space i                 | s needed use back of form          |
|                | 12.      | CASING:                                                                                                                                                                                                                                                                                   |             |                                       |                                    |
| ļ.             |          | Wall Thickness                                                                                                                                                                                                                                                                            |             | LOC                                   | ATION SKETCH                       |
|                |          | Depth Diameter or Weight/Ft. Material                                                                                                                                                                                                                                                     | (Sh         | ow direction and dis                  | tance from at least two State      |
| 1,             |          | From 0 To 4.0 Ft. 2" SCH 40 PVC                                                                                                                                                                                                                                                           |             | Roads, or other ma                    | p reference points)                |
|                |          | From 0 To 22.0 Ft. 2" SCH 40 PVC                                                                                                                                                                                                                                                          | See         | attached sit                          | e location map                     |
|                |          | From To Ft                                                                                                                                                                                                                                                                                |             |                                       | •                                  |
| h              | 13.      | GROUT:                                                                                                                                                                                                                                                                                    |             | mander                                |                                    |
|                |          | Depth Material Method                                                                                                                                                                                                                                                                     |             | lantic Divisi                         |                                    |
|                |          | From <u>1.0</u> To <u>2.0</u> Ft. Bentonite Pour                                                                                                                                                                                                                                          |             |                                       | s Engineering Command              |
| łi             | • •      | From 17.0 To 20.0 Ft. Bentonite Pour                                                                                                                                                                                                                                                      | NO          | LIOIK, VIIGIN                         | ia 23511-6287                      |
| Ì              | 14.      | SCREEN:                                                                                                                                                                                                                                                                                   | **S=3       | Shallow monit                         | oring well                         |
|                |          | From <u>4.5</u> To <u>13.5</u> Ft <u>2</u> in. <u>.010</u> in. <u>PVC</u>                                                                                                                                                                                                                 |             | Deep monitori:                        | -                                  |
| J)             |          | From _22_5 To _24_5 Ft2 in010 inPVC                                                                                                                                                                                                                                                       |             |                                       |                                    |
| N.             |          | From To Ft in in in                                                                                                                                                                                                                                                                       | At          | tn: Code 1821                         | , Mr. Trueman Seamans              |
|                | 15       | SAND/GRAVEL PACK:                                                                                                                                                                                                                                                                         |             |                                       |                                    |
|                |          | Depth Size Material                                                                                                                                                                                                                                                                       |             |                                       |                                    |
| ]]             |          | From <u>2.0</u> To <u>15.0</u> Ft. <u>Torpedo</u> <u>Sand</u>                                                                                                                                                                                                                             |             |                                       |                                    |
|                |          | From <u>20.0</u> To <u>25.0</u> Ft. <u>Torpedo</u> <u>Sand</u>                                                                                                                                                                                                                            |             |                                       |                                    |
| ]              | 16.      | REMARKS: <u>Concrete from 0 to 1.0</u>                                                                                                                                                                                                                                                    |             |                                       | 1                                  |
| []             |          |                                                                                                                                                                                                                                                                                           |             |                                       |                                    |

Richard A. Koll

10/14/91

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SIGNATURE OF CONTRACTOR OR AGENT DATE Submit original to Division of Environmental Management and copy to well owner.

| North Carolina - Department of Environment, Health, and Natural Resources<br>Division of Environmental Management - Groundwater Section<br>P.O. Box 29535 - Raleigh, N.C. 27626-0535<br>Phone (919) 733-3221<br>WELL CONSTRUCTION RECORD<br>DRILLING CONTRACTOR: Law Engineering                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | OUAD NO SERIAL NO SERIAL NO NO SER |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | WELL CONSTRUCTION<br>TNUMBER:66-0237-WM-0232                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 1. WELL LOCATION: (Show sketch of the location below) MW-20<br>Nearest Town: Jacksonville County: Onslo                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Ψ                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Camp Geiger Fuel Farm (Road, Community, or Subdivision and Lot No.) 2. OWNER*See address below ADDRESS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | DEPTH DRILLING LOG<br>From To Formation Description<br>See attached test<br>boring records                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| City or Town       State       Zip Code         3. DATE DRILLED 8/23/91       USE OF WELL Monitoring         **44. TOTAL DEPTH12.5'       -         5. CUTTINGS COLLECTED YES NO       -         6. DOES WELL REPLACE EXISTING WELL? YES       NO X         **7. STATIC WATER LEVEL Below Top of Casing: 9.08       FT.         (Use *+* if Above Top of Casing)       -         **8. TOP OF CASING IS 2.38       FT. Above Land Surface*         * Casing Terminated at/or below land surface is litegal unless a variance is issued         in accordance with 15A NCAC 2C .0118                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 9. YIELD (gpm):N/AMETHOD OF TEST                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | If additional space is needed use back of form                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 12. CASING:       =         Depth       Diameter         From       0         To       2.5         Ft       2"         SCH       40         PVC         From       To         From       To         From       To         Ft          From       To         Ft                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | LOCATION SKETCH<br>(Show direction and distance from at least two State<br>Roads, or other map reference points)<br>See attached site location map                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 13. GROUT:       Depth       Material       Method         From To Ft. Bentonite       Pour         From To Ft                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | *Commander<br>Atlantic Division<br>Naval Facilities Engineering Command<br>Norfolk, Virginia 23511-6287                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Depth         Diameter         Slot Size         Material           From         3.0         To         12.0Ft         2         in.         .010         in.         PVC           From         To         Ft.         in.         in.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Attn: Code 1821, Mr. Trueman Seamans                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 15. SAND/GRAVEL PACK:         Depth       Size       Material         From       12.5       To       1.5       Ft. Torpedo       Sand         From       To       Ft.       To       Sand       Sand         In the second se |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN AC<br>CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

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Ridard A. Koll

10/14/91 DATE

SIGNATURE OF CONTRACTOR OR AGENT DAT Submit original to Division of Environmental Management and copy to well owner.

| Camp Ceiger Fuel Farm         County County, or Suddivision and LotNo.)         DEPTH       DRILLING LOG         County, or Suddivision and LotNo.)         ADDRESS         See attached test         See attached test         County of Town       State       DEPTH       DRILLING LOG         Colspan="2">See attached test         County of Town       State       Depth Image County of the Casing Teacords         County of Town       State       See attached test         See Attached Test         See Attached Test         See Attached Test         Count Route No.)         Depth See Attached Test         OC Casing Teacords         NO (X)         See Attached See Allegal unless avariance is issued         Image Colspan="2">See Attached Test         Count Sected Colspan= Teacords         Count Sected Colspan="2">Depth Casing Teacords         Image Colspan= Colspan="2">See Attached Sected Colspan= Colspan="2">Sected Colspan= Colspan="2">See Attached Sected form <td< th=""><th></th><th></th><th>es FOR OFRICE USE ONLY<br/>QUAD NO<br/>Lat Long Pe-<br/>Minor Bash<br/>Bash Code<br/>Heavier Ere<br/>E WELL CONSTRUCTION<br/>ATT NUMBER: 66-0237-WM-0232</th></td<>                                                                                                                                                                   |                     |                                                                                                                                                                                                                                                                                                              | es FOR OFRICE USE ONLY<br>QUAD NO<br>Lat Long Pe-<br>Minor Bash<br>Bash Code<br>Heavier Ere<br>E WELL CONSTRUCTION<br>ATT NUMBER: 66-0237-WM-0232 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| Camp Geiger Fuel Farm         (Road: Community, or Suddivision and Lot No.)       DEPTH       DIBLLING LOG         2. OWNER       Assee address below       See attached test         ADDRESS       (Suetor Route No.)       See attached test         City or Town       State       Zip Code       See attached test         0. DATE DRILLED 8/232/91       USE OF WELL       Monitoring       See attached test         5. DOTE DRILLED 8/232/91       USE OF WELL       Monitoring       See attached test         5. DOTEN BELL REPLACE EXISTING WELL? YES [] NO[X]       See attached test       See attached test         6. DOES WELL REPLACE EXISTING WELL? YES [] NO[X]       See attached test       See attached test         7. STATIC WATER LEVEL Below Top of Casing: S=8.50 FT. D=8.62'       See attached test       See attached test         ** 8. TOP OF CASING IS SE2.42.1       FT. Above Land Surface'       See attached test       See attached test         ** 0. To 2.4.5 Ft. 2''       SCH 40       PYC       See attached test woy State       Roads, or other map reference points)         11. CHLORINATION: Type N/A       Amount       If additional space is needed use back of form       See attached site location map         12. CASING       Norf 14.0       FT. Bentonite       Pour       See attached site location map         1 | 1                   | TELE LOOPTHON: (Diren Sheren of the location below)                                                                                                                                                                                                                                                          | •                                                                                                                                                 |
| 3. DATE DRILLED8/23/91USE OF WELL_Monitoring         *** 4. TOTAL DEPTH_S=14.0_D=27.5'         5. CUTTINGS COLLECTED YESK NO_         6. DOES WELL REPLACE EXISTING WELL? YES NO_         *** 7. STATIC WATER LEVEL Below Top of Casing: S=8.50 FT. D=8.62'         *** 8. TOP OF CASING IS S=2.42. FT. Above Land Surface*         Cost if Maxber Top of Casing)         *** 8. TOP OF CASING IS S=2.42. FT. Above Land Surface*         Cost if Maxber Top of Casing)         *** 8. TOP OF CASING IS S=2.42. FT. Above Land Surface*         Cost if Maxber Top of Casing)         *** 8. TOP OF CASING IS S=2.42. FT. Above Land Surface*         Cost if Maxber Top of Casing)         *** 8. TOP OF CASING IS S=2.42. FT. Above Land Surface*         Cost if Maxber Top of Casing)         *** 8. TOP OF CASING IS S=2.42. FT. Above Land Surface*         Cost if Maxber Top of Casing)         *** 8. TOP OF CASING IS S=2.42. FT. Above Land Surface*         10. WATER ZONES (depth):         N/A         11. CHLORINATION:         Type M/A         From _0 To _4.0. Ft. 2'''         SCH 40       PVC         From _10. To 2.2.0. Ft. Bentonite       Pour         From _10. To _2.0. Ft. Bentonite       Pour         From _10. To _2.1.0. Ft. Bentonite       Pour         Naval Facilities Engineering Comm                                                  | )  2<br>            | Camp Geiger Fuel Farm<br>(Road, Community, or Subdivision and Lot No.)<br>OWNER <u>*see address below</u><br>ADDRESS                                                                                                                                                                                         | From To Formation Description See attached test                                                                                                   |
| *** 8. TOP OF CASING IS=2_47_FT. Above Land Surface*         *** 8. TOP OF CASING IS=2_47_FT. Above Land Surface*         *** 8. TOP OF CASING IS         ************************************                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | )/ ** 4<br>5<br>, 6 | DATE DRILLED 8/23/91 USE OF WELL Monitoring<br>TOTAL DEPTH <u>S=14.0 D</u> =27.5'<br>CUTTINGS COLLECTED YES NO<br>DOES WELL REPLACE EXISTING WELL? YES NO<br>STATIC WATER LEVEL Below Top of Casing: <u>S=8.50</u> FT. D=8                                                                                   | .621                                                                                                                                              |
| 12. CASING:         Wall Thickness<br>or WeighUFL       Material<br>or WeighUFL       Material<br>or WeighUFL       Material<br>Sch 40         From       O       To       4.0       Ft. 2"       SCH 40       PVC         From       O       To       4.0       Ft. 2"       SCH 40       PVC         From       O       To       24.5       Ft. 2"       SCH 40       PVC         From       O       To       24.5       Ft. 2"       SCH 40       PVC         From       To       Ft. 2"       SCH 40       PVC       Roads, or other map reference points)         See attached site location map       See attached site location map         13. GROUT:       Depth       Material       Method       Pour         I14. SCREEN:       Depth       Diameter       Slot Size       Material       PVC         I14. SCREEN:       Depth       Diameter       Slot Size       Material       PVC         I15. SAND/GRAVEL PACK:       Depth       Size       Material       PVC         I15. SAND/GRAVEL PACK:       Depth       Size       Material       Attn:       Code 1821, Mr.       Mrueman         Depth       Size                                                                                                                                                                                                                                               | )  ·                | . TOP OF CASING IS $\underline{S=2.47}$ FT. Above Land Surface <sup>*</sup><br>Casing Terminated allor below land surface is lilegal unless a variance is issued<br>in accordance with 15A NCAC 2C .0118<br>. YIELD (gpm): <u>N/A</u> METHOD OF TEST                                                         |                                                                                                                                                   |
| DepthDiameter<br>or Weight/FLMaterial<br>PVCLOCATION SKETCH<br>(Show direction and distance from at least two State<br>Roads, or other map reference points)FromTo24.5Ft.2"SCH 40PVCFromTo24.5Ft.2"SCH 40PVCFromTo24.5Ft.2"SCH 40PVCFromTo24.5Ft.2"SCH 40PVCFromTo24.5Ft.2"SCH 40PVCFromTo2.0Ft.BentonitePourRoads, or other map reference points)13. GROUT:DepthMaterialMethod*CommanderFrom1.0To2.0Ft.BentonitePourFrom19.0To22.0Ft.BentonitePour14. SCREEN:DepthDiameterSlot SizeMaterialFrom4.5To13.5Ft2in010From25.5To27.0Ft2in010FromTo.14.0FtTorpedoSandAttn:Code 1821, Mr.Trueman SeamansSizeMaterialSandAttn:Code 1821, Mr.Trueman Seamans                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                     |                                                                                                                                                                                                                                                                                                              | If additional space is needed use back of form                                                                                                    |
| 13. GROUT:       See attached site location map         13. GROUT:       Depth       Material       Method         From 1.0       To 2.0       Ft. Bentonite       Pour         From 19.0       To 22.0       Ft. Bentonite       Pour         Atlantic Division       Naval Facilities Engineering Command         Norfolk, Virginia       23511-6287         Material       PVC         From 4.5       To 13.5         From 25.5       To 27.0         From _ To       in.         Material       PVC         From _ To       in.         See attached site location map         *Commander         Attached site         Attached site         See attached site         Norfolk         Norfolk, Virginia         Norfolk, Virginia         Depth       Size         Material         From _ 2.0       To 14.0         From _ 22.0       To 28.5         From _ 22.0       To 28.5         Size       Material         From _ 22.0       To 28.5         From _ 22.0       To 28.5         From _ 22.0       To 28.5         From _ 22.0                                                                                                                                                                                                                                                                                                                                 |                     | Wall Thickness<br>Depth Diameter or Weight/Ft. Material<br>From 0 To Ft SCH 40 PVC                                                                                                                                                                                                                           | (Show direction and distance from at least two State                                                                                              |
| DepthMaterialMethod*CommanderFrom 10.0To 2.0Ft.BentonitePourAtlantic DivisionFrom 19.0To 22.0Ft.BentonitePourNaval Facilities Engineering Command14. SCREEN:DepthDiameter Slot SizeMaterialNorfolk, Virginia 23511-6287From 4.5To 13.5Ft2in010in.From 25.5To 27.0Ft2in010in.FromToFt2in010in.FromToFt2in010in.FromToFt2in010in.FromToFtin010DepthSizeMaterialMaterialAttn:Code 1821, Mr.Trueman SeamansFrom2.0To _14.0FtTorpedoSandFromToSandSandSandSand                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                     | From To Ft                                                                                                                                                                                                                                                                                                   | See attached site location map                                                                                                                    |
| Depth       Diameter       Slot Size       Material       **S=Shallow monitoring well         From                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <b>}</b> ]          | DepthMaterialMethodFrom 1.0To 2.0Ft. BentonitePourFrom 19.0To 22.0Ft. BentonitePour                                                                                                                                                                                                                          | Atlantic Division<br>Naval Facilities Engineering Command                                                                                         |
| 15. SAND/GRAVEL PACK:         Depth       Size         Material         From       2.0         To       14.0         From       22.0         To       28.5         Ft.       Torpedo         Sand                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | -                   | Depth         Diameter         Slot Size         Material           From         4.5         To         13.5         Ft         2         in.         .010         in.         PVC           From         25.5         To         27.0         Ft         2         in.         .010         in.         PVC | D=Deep monitoring well                                                                                                                            |
| From <u>22.0</u> To <u>28.5</u> Ft. <u>Torpedo</u> <u>Sand</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | )                   | 15. SAND/GRAVEL PACK:<br>Depth Size Material                                                                                                                                                                                                                                                                 |                                                                                                                                                   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                     | From _22_0 To _28.5 _ FtTorpedo Sand                                                                                                                                                                                                                                                                         |                                                                                                                                                   |

Richend A. Koll

10/14/91

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SIGNATURE OF CONTRACTOR OR AGENT DATE
Submit original to Division of Environmental Management and copy to well owner.

| North Carolina - Department of Environment, Health, and Natural Resource<br>Division of Environmental Management - Groundwater Section<br>P.O. Box 29535 - Raleigh, N.C. 27626-0535<br>Phone (919) 733-3221<br>WELL CONSTRUCTION RECORD | FOR OFFICE USE ONLY<br>OUAD NO PARTIES SERIAL NOT PARTIES<br>Long Serial NOT Parties<br>Minor Basin<br>Basin Dide Serial Serial Conj Enc. |                                        |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|--|
| DRILLING CONTRACTOR: Law Engineering                                                                                                                                                                                                    |                                                                                                                                           |                                        |  |
| STAT                                                                                                                                                                                                                                    | E WELL CONSTRUCTION                                                                                                                       |                                        |  |
| 1. WELL LOCATION: (Show sketch of the location below) MW-22                                                                                                                                                                             |                                                                                                                                           |                                        |  |
|                                                                                                                                                                                                                                         | Onslow                                                                                                                                    |                                        |  |
| Camp Geiger Fuel Form                                                                                                                                                                                                                   | <b>.</b>                                                                                                                                  |                                        |  |
| (Road, Community, or Subdivision and Lot No.)                                                                                                                                                                                           | DEPTH                                                                                                                                     | DRILLING LOG                           |  |
| 2. OWNER <u>*See address below</u>                                                                                                                                                                                                      | From To                                                                                                                                   | Formation Description                  |  |
| ADDRESS                                                                                                                                                                                                                                 |                                                                                                                                           | See attached test                      |  |
| (Street or Route No.)                                                                                                                                                                                                                   | ······                                                                                                                                    | boring records                         |  |
| City or Town State Zip Code                                                                                                                                                                                                             |                                                                                                                                           | • •••••••••••••••••••••••••••••••••••• |  |
| 3. DATE DRILLED 8/28/91 USE OF WELL Monitoring                                                                                                                                                                                          | · · · · · · · · · · · · · · · · · · ·                                                                                                     |                                        |  |
| 4. TOTAL DEPTH <u>S=15.0'</u> D=35.0'                                                                                                                                                                                                   |                                                                                                                                           |                                        |  |
| 5. CUTTINGS COLLECTED YES X NO                                                                                                                                                                                                          |                                                                                                                                           |                                        |  |
| 6. DOES WELL REPLACE EXISTING WELL? YES NOF                                                                                                                                                                                             | 1 051                                                                                                                                     |                                        |  |
| 7. STATIC WATER LEVEL Below Top of Casing: S=11.67 FT. D=1                                                                                                                                                                              | 1.85                                                                                                                                      |                                        |  |
| (Use *+" if Above Top of Casing)<br>8. TOP OF CASING IS <u>S=2.91</u> FT. Above Land Surface D=2.                                                                                                                                       | 911                                                                                                                                       | -                                      |  |
| <ul> <li>Costing Terminated at/or below land surface is litegal unless a variance is issued.</li> </ul>                                                                                                                                 |                                                                                                                                           |                                        |  |
| in accordance with 15A NCAC 2C .0118                                                                                                                                                                                                    |                                                                                                                                           | •                                      |  |
| 9. YIELD (gpm):N/A_ METHOD OF TEST                                                                                                                                                                                                      |                                                                                                                                           |                                        |  |
| 10. WATER ZONES (depth):                                                                                                                                                                                                                |                                                                                                                                           |                                        |  |
|                                                                                                                                                                                                                                         |                                                                                                                                           | • • • • • • • • • • • • • • • • • • •  |  |
| 11. CHLORINATION: Type N/A Amount                                                                                                                                                                                                       | If additional space is n                                                                                                                  | eeded use back of form                 |  |
| 12. CASING:                                                                                                                                                                                                                             |                                                                                                                                           |                                        |  |
| Wall Thickness                                                                                                                                                                                                                          | LOCAT                                                                                                                                     | ON SKETCH                              |  |
| Depth Diameter or Weight/Ft. Material                                                                                                                                                                                                   | (Show direction and distance from at least two State                                                                                      |                                        |  |
| From To Ft. 2" SCH 40_ PVC                                                                                                                                                                                                              | Roads, or other map reference points)                                                                                                     |                                        |  |
| From To Ft SCH 40 PVC                                                                                                                                                                                                                   |                                                                                                                                           |                                        |  |
| FromTo Ft                                                                                                                                                                                                                               | See attached site                                                                                                                         | incation map                           |  |
| 13. GROUT:                                                                                                                                                                                                                              | *Commander                                                                                                                                |                                        |  |
| Depth Material Method                                                                                                                                                                                                                   | Atlantic Divisio                                                                                                                          | n                                      |  |
| From 2.0 To 3.0 Ft Bentonite Pour                                                                                                                                                                                                       | Naval Facilities Engineering Command                                                                                                      |                                        |  |
| From 25.5 To 29.0 Ft Bentonite Pour                                                                                                                                                                                                     | Norfolk, Virgini                                                                                                                          |                                        |  |
| 14. SCREEN:                                                                                                                                                                                                                             | . 0                                                                                                                                       |                                        |  |
| Depth Diameter Slot Size Material                                                                                                                                                                                                       | **S=Shallow monito                                                                                                                        | ring well                              |  |
| From $5.5$ To $14.5$ Ft 2 in $-010$ in PVC                                                                                                                                                                                              | D=Deep monitorin                                                                                                                          | ig well                                |  |
| From <u>32.5</u> To <u>35.0Ft</u> <u>2</u> in <u>.010</u> in <u>PVC</u>                                                                                                                                                                 |                                                                                                                                           |                                        |  |
| From To Ft in in                                                                                                                                                                                                                        | Attn: Code 1821,                                                                                                                          | Mr. Trueman Seamans                    |  |
| 15. SAND/GRAVEL PACK:                                                                                                                                                                                                                   |                                                                                                                                           |                                        |  |
|                                                                                                                                                                                                                                         |                                                                                                                                           |                                        |  |
| Depth Size Material<br>From 3.0 To 25.5 Ft Torpedo Sand                                                                                                                                                                                 |                                                                                                                                           |                                        |  |
|                                                                                                                                                                                                                                         |                                                                                                                                           |                                        |  |
| From <u>29.0</u> To <u>35.0</u> Ft. <u>Torpedo</u> <u>Sand</u>                                                                                                                                                                          |                                                                                                                                           |                                        |  |
| 16. REMARKS: <u>Concrete from 0 to 2.0'</u>                                                                                                                                                                                             |                                                                                                                                           |                                        |  |
|                                                                                                                                                                                                                                         |                                                                                                                                           |                                        |  |
| I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN AC<br>CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD                                                                                                                      |                                                                                                                                           |                                        |  |
| · · · · · · · · · · · · · · · · · · ·                                                                                                                                                                                                   |                                                                                                                                           |                                        |  |

Richard A. Kell

10/14/4 DATE

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SIGNATURE OF CONTRACTOR OR AGENT Submit original to Division of Environmental Management and copy to well owner.

| P.O. Box 295<br>Ph                                                    | of Environment, Health, and N<br>Ital Management - Groundwa<br>35 - Raleigh, N.C. 27626-05<br>Ione (919) 733-3221<br>NSTRUCTION RECOR | ater Section<br>35 | PS<br>QUAD NO.<br>Lat<br>Minor Basin<br>Basin Code | FFICE USE ONLY        |
|-----------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------------------------------------------------|-----------------------|
| DRILLING CONTRACTOR:                                                  | Law Engineering                                                                                                                       | ·                  | Header En                                          | OK1 PA                |
| DRILLER REGISTRATION NU                                               | IMBER: 332                                                                                                                            |                    | E WELL CONSTRUCTION<br>IIT NUMBER: 66-01           | 237-WM-0232           |
| 1. WELL LOCATION: (Show a Nearest Town; Jackson                       |                                                                                                                                       | · •                | slow                                               |                       |
| Camp Geiger Fuel Fa                                                   |                                                                                                                                       | . ooonty           | , , ,                                              |                       |
| (Road, Community, or Subdivis                                         |                                                                                                                                       |                    | DEPTH                                              | DRILLING LOG          |
| 2. OWNER <u>*See addres</u>                                           | <u>s below</u>                                                                                                                        |                    | From To                                            | Formation Description |
| ADDRESS                                                               |                                                                                                                                       |                    |                                                    | See attached test     |
|                                                                       | reet or Route No.)                                                                                                                    | -                  |                                                    | boring records        |
| City or Town                                                          | State                                                                                                                                 | Zip Code           |                                                    |                       |
| 3. DATE DRILLED 8/27/9                                                |                                                                                                                                       | itoring -          |                                                    |                       |
| **4. TOTAL DEPTH <u>S=9.5'</u><br>5. CUTTINGS COLLECTED               | D=20.0'<br>YES X NO                                                                                                                   |                    |                                                    |                       |
| 6. DOES WELL REPLACE E                                                |                                                                                                                                       |                    | <u> </u>                                           |                       |
| **7. STATIC WATER LEVEL B                                             |                                                                                                                                       |                    | .02                                                |                       |
|                                                                       | (Use "+" if Above Top of                                                                                                              |                    |                                                    |                       |
| **8. TOP OF CASING IS <u>s=2</u>                                      |                                                                                                                                       |                    |                                                    |                       |
| * Casing Terminated at/or below lan<br>in accordance with 15A NCAC 2C | id surface is lilegal unless a va<br>0118                                                                                             | ariance is issued  |                                                    |                       |
| 9. YIELD (gpm): N/A M                                                 |                                                                                                                                       |                    |                                                    |                       |
| 10. WATER ZONES (depth)'N                                             |                                                                                                                                       |                    |                                                    |                       |
|                                                                       |                                                                                                                                       |                    |                                                    |                       |
| 11. CHLORINATION: Type<br>12. CASING:                                 |                                                                                                                                       |                    | If additional space is needed use back of form     |                       |
|                                                                       | 1.1.1.1. <b>T</b> L'-1                                                                                                                |                    | LOCATIO                                            | ON SKETCH             |
| Depth                                                                 | Wall Thickn<br>Diameter or Weight                                                                                                     |                    | (Show direction and distance                       |                       |
| From 0 To 2.0                                                         | - Ft. 2" SCH 40                                                                                                                       |                    | Roads, or other map re                             |                       |
| From 0 To 17.0                                                        | - Ft. <u>2"</u> <u>SCH 40</u>                                                                                                         | <u>PVC</u>         |                                                    |                       |
| ' FromTo                                                              | - Ft                                                                                                                                  |                    | See attached sit                                   | e location map        |
| 13. GROUT:                                                            |                                                                                                                                       |                    | *Commander                                         |                       |
| Depth                                                                 | Material                                                                                                                              | Method             | Atlantic Divisi                                    | n                     |
| From <u>0.5</u> To <u>1.0</u>                                         |                                                                                                                                       | Pour               |                                                    | s Engineering Command |
| From 10.0 To13.0                                                      | Ft.Bentonite                                                                                                                          | Pour               | Norfolk, Virgin                                    |                       |
| 14. SCREEN:                                                           |                                                                                                                                       |                    |                                                    |                       |
| Depth                                                                 | Diameter Slot Size                                                                                                                    | Material<br>PVC    | **S=Shallow monit                                  | -                     |
| From <u>2.5</u> To <u>9.5</u> I                                       |                                                                                                                                       |                    | D=Deep monitori                                    | ng well               |
| From <u>17.5</u> To <u>20.0</u>                                       |                                                                                                                                       |                    | Attn. Code 1821                                    | Mr. Trueman Seamans   |
| From 10 1                                                             | Ft in in.                                                                                                                             | • ·                | meen. ovue 1021,                                   |                       |
| 15. SAND/GRAVEL PACK:                                                 | <b>^.</b>                                                                                                                             |                    |                                                    |                       |
| Depth                                                                 |                                                                                                                                       | aterial            |                                                    |                       |
| From <u>1.0</u> To <u>10.0</u>                                        |                                                                                                                                       | Sand               |                                                    |                       |
| From <u>13.0</u> To <u>21.0</u>                                       |                                                                                                                                       | Sand               |                                                    |                       |
| 16. REMARKS: <u>Concret</u>                                           | te from 0 to 0.5'                                                                                                                     |                    |                                                    |                       |
| I DO HEREBY CERTIFY TH                                                | IAT THIS WELL WAS CONS                                                                                                                |                    | CORDANCE WITH 15A NCA                              | C 2C, WELL            |

CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

Richard'A. Koll

10/14/91 DATE

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SIGNATURE OF CONTRACTOR OR AGENT DAT Submit original to Division of Environmental Management and copy to well owner.

| North Carolina - Department of Environment, Health, and N<br>Division of Environmental Management - Groundwa<br>P.O. Box 29535 - Rateigh, N.C. 27626-053<br>Phone (919) 733-3221<br>WELL CONSTRUCTION RECOR                                                                                                           | iter Section<br>35                            | QUAD. NO.                             | OFFICE USE ONLY<br>SERIAL NO            |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|---------------------------------------|-----------------------------------------|
|                                                                                                                                                                                                                                                                                                                       | -                                             | Ilador Bre                            | OWI DA                                  |
| DRILLING CONTRACTOR:       Law Engineering         DRILLER REGISTRATION NUMBER:       332                                                                                                                                                                                                                             |                                               | VELL CONSTRUCTION                     | N<br>0237-WM-0232                       |
|                                                                                                                                                                                                                                                                                                                       |                                               |                                       |                                         |
| 1. WELL LOCATION: (Show sketch of the location belo<br>Nearest Town: <u>Jacksonville</u>                                                                                                                                                                                                                              | ow) MW-24<br>. County:                        | 2                                     |                                         |
| Camp Geiger Fuel Farm<br>(Road, Community, or Subdivision and Lot No.)                                                                                                                                                                                                                                                |                                               | DEPTH                                 | DRILLING LOG                            |
| (Road, Community, or Subdivision and Lot No.)<br>2. OWNER <u>*see address below</u>                                                                                                                                                                                                                                   |                                               | From To                               | Formation Description                   |
| ADDRESS                                                                                                                                                                                                                                                                                                               |                                               |                                       | See attached tes                        |
| (Street or Route No.)                                                                                                                                                                                                                                                                                                 |                                               |                                       | boring records                          |
| City or Town State                                                                                                                                                                                                                                                                                                    | Zip Code                                      |                                       |                                         |
| <ol> <li>DATE DRILLED <u>8/28/91</u> USE OF WELL <u>Mon</u></li> <li>TOTAL DEPTH <u>S=18.0'</u> D=29.0'</li> <li>CUTTINGS COLLECTED YES <u>NO</u></li> <li>DOES WELL REPLACE EXISTING WELL? YES<br/>7. STATIC WATER LEVEL Below Top of Casing: <u>S=7</u><br/>(Use '+' if Above Top of Casing: <u>S=7</u>)</li> </ol> | NO x                                          | 12'                                   |                                         |
| 8. TOP OF CASING IS <u>S=2.20</u> FT. Above Land Su                                                                                                                                                                                                                                                                   |                                               | 1                                     |                                         |
| * Casing Terminated at/or below land surface is lilegal unless a v                                                                                                                                                                                                                                                    | variance is issued                            |                                       | ····                                    |
| In accordance with 15A NCAC 2C .0118<br>9. YIELD (gpm):N/AMETHOD OF TEST                                                                                                                                                                                                                                              |                                               | <u></u>                               |                                         |
|                                                                                                                                                                                                                                                                                                                       |                                               |                                       |                                         |
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| 11. CHLORINATION: Type <u>N/A</u> Amou                                                                                                                                                                                                                                                                                | nt                                            | If additional space is                | needed use back of form                 |
| 12. CASING:                                                                                                                                                                                                                                                                                                           |                                               | 1.000                                 | TION SKETCH                             |
| Wall Thick<br>Depth Diameter or Weigh                                                                                                                                                                                                                                                                                 |                                               |                                       | ince from at least two State            |
| From 0 To 8.0 Ft 2" SCH 4                                                                                                                                                                                                                                                                                             | O_ PVC                                        | Roads, or other map                   | • • •                                   |
| From 0 To 26.0 Ft 2" SCH 4                                                                                                                                                                                                                                                                                            | O PVC                                         |                                       | te location map                         |
| FromTo Ft                                                                                                                                                                                                                                                                                                             |                                               | see allached SI                       | ice rocation map                        |
| 13. GROUT:                                                                                                                                                                                                                                                                                                            |                                               | *Commander                            |                                         |
| Depth Material                                                                                                                                                                                                                                                                                                        | Method<br>Pour                                | Atlantic Divisi                       |                                         |
| From 0 To 3.0 Ft. Bentonite<br>From 20.0 To 23.0 Ft. Bentonite                                                                                                                                                                                                                                                        | Pour                                          | Norfolk, Virgin                       | es Engineering Comman<br>Mia 23511-6287 |
| 14. SCREEN:                                                                                                                                                                                                                                                                                                           | • <u>•</u> •••••••••••••••••••••••••••••••••• |                                       |                                         |
| Depth Diameter Slot Size                                                                                                                                                                                                                                                                                              | material                                      | *S=Shallow monit                      |                                         |
| From <u>8.5</u> To <u>17.5</u> Ft <u>2</u> in <u>.010</u> ir                                                                                                                                                                                                                                                          | n. <u>PVC</u>                                 | D=Deep monitori                       | ing well                                |
| From 26_5_To ft in010_ ir                                                                                                                                                                                                                                                                                             | n. <u>PVC</u>                                 | Attn: Code 1821                       | , Mr. Trueman Seamans                   |
| From To Ft in ii                                                                                                                                                                                                                                                                                                      | n                                             |                                       |                                         |
| 15. SAND/GRAVEL PACK:                                                                                                                                                                                                                                                                                                 | Interiol                                      |                                       | •                                       |
| Bopa                                                                                                                                                                                                                                                                                                                  | Material<br>Sand                              |                                       |                                         |
| From <u>4.0</u> To <u>20.0</u> Ft. <u>Torpedo</u><br>From <u>23.0</u> To <u>29.0</u> Ft. <u>Torpedo</u>                                                                                                                                                                                                               | Sand                                          |                                       |                                         |
| 16. REMARKS: Concrete from 0 to 3.0                                                                                                                                                                                                                                                                                   |                                               |                                       |                                         |
| ······································                                                                                                                                                                                                                                                                                |                                               |                                       |                                         |
| I DO HEREBY CERTIFY THAT THIS WELL WAS CON                                                                                                                                                                                                                                                                            | ISTRUCTED IN ACC                              | ORDANCE WITH 15A N                    | ICAC 2C, WELL                           |
| CONSTRUCTION STANDARDS, AND THAT A COPY                                                                                                                                                                                                                                                                               | OF THIS RECORD I                              |                                       |                                         |
|                                                                                                                                                                                                                                                                                                                       |                                               |                                       |                                         |

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SIGNATURE OF CONTRACTOR OR AGENT Submit original to Division of Environmental Management and copy to well owner.

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DATE

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | OUAD NO<br>Lat<br>Minor Basin<br>Basin Code<br>Header Ent<br>E WELL CONSTRUCTION                                      |                                                                            |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|
| 1. WELL LOCATION: (Show sketch of the location below) MW-2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                       |                                                                            |
| Nearest Town: <u>Jacksonville</u> County: <u>On</u> s                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | slow                                                                                                                  | _ <del></del>                                                              |
| Camp Geiger Fuel Farm<br>(Road, Community, or Subdivision and Lot No.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | DEPTH                                                                                                                 | DRILLING LOG                                                               |
| 2. OWNER <u>*See address below</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | From To                                                                                                               | Formation Description                                                      |
| ADDRESS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                       | See attached test                                                          |
| (Street or Route No.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                       | boring records                                                             |
| City or Town State Zip Code                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                       | ••••••••••••••••••••••••••••••••••••••                                     |
| 3. DATE DRILLED _ 8/29/91 USE OF WELL Monitoring -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                       |                                                                            |
| 4. TOTAL DEPTH <u>S=14.0 D=30.0'</u><br>5. CUTTINGS COLLECTED YES X NO                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | , , , , , , , , , , , , , , , , , , ,                                                                                 | <b></b>                                                                    |
| 6. DOES WELL REPLACE EXISTING WELL? YES NO X                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                       |                                                                            |
| 7. STATIC WATER LEVEL Below Top of Casing: S=7.65 FT. D=7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | .13                                                                                                                   |                                                                            |
| (Use "+" if Above Top of Casing)<br>8. TOP OF CASING IS <u>S=2.21</u> FT. Above Land Surface*D=2.19                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                       |                                                                            |
| * Casing Terminated attor below land surface is lilegal unless a variance is issued                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                       |                                                                            |
| In accordance with 15A NCAC 2C .0118                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <u>، مېلى بې دې د الله د د الله د الله د الله د الله د الله د الله د الله</u> |                                                                            |
| 9. YIELD (gpm):N/AMETHOD OF TEST<br>10. WATER ZONES (depth):N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                       | an a                                   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                       |                                                                            |
| 11. CHLORINATION: Type <u>N/A</u> Amount                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | If additional space is r                                                                                              | needed use back of form                                                    |
| 12. CASING:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                       |                                                                            |
| Wall Thickness                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | • •                                                                                                                   | ION SKETCH                                                                 |
| Depth Diameter or Weight/Ft, Material                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | • •                                                                                                                   | nce from at least two State                                                |
| From         0         To         4.0         Ft         2"         SCH         40         PVC           From         0         To         27.0         Ft         2"         SCH         40         PVC                                                                                                                                                                                                                                                                                                                                                                                                                               | Roads, or other map                                                                                                   | reference points)                                                          |
| From To Ft Sch 40                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                       |                                                                            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | See attached sit                                                                                                      | te location map                                                            |
| 13. GROUT:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                       | te location map                                                            |
| 13. GROUT:<br>Depth Material Method                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | *Commander                                                                                                            | -                                                                          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | *Commander<br>Atlantic Divis:                                                                                         | ion                                                                        |
| Depth Material Method                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | *Commander<br>Atlantic Divis:<br>Naval Facilitie                                                                      | -                                                                          |
| Depth Material Method<br>From <u>1.0</u> To <u>2.0</u> Ft Bentonite Pour                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | *Commander<br>Atlantic Divis:<br>Naval Facilitic<br>Norfolk, Virgin                                                   | ion<br>es Engineering Command<br>nia 23511-6287                            |
| DepthMaterialMethodFrom1.0To2.0FtBentonitePourFrom22.0To25.0FtBentonitePour14. SCREEN:DepthDiameterSlot SizeMaterial                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | *Commander<br>Atlantic Divis:<br>Naval Facilitic<br>Norfolk, Virgin<br>**S=Shallow monit                              | ion<br>es Engineering Command<br>nia 23511-6287<br>toring well             |
| DepthMaterialMethodFrom1.0To2.0FtBentonitePourFrom22.0To25.0FtBentonitePour14. SCREEN:DepthDiameterSlot SizeMaterialFrom_4.5To_13.5Ft2in010in.PVC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | *Commander<br>Atlantic Divis:<br>Naval Facilitic<br>Norfolk, Virgin                                                   | ion<br>es Engineering Command<br>nia 23511-6287<br>toring well             |
| DepthMaterial<br>BentoniteMethod<br>PourFrom1.0To2.0FtBentonitePourFrom22.0To25.0FtBentonitePour14. SCREEN:DepthDiameterSlot SizeMaterialFrom4.5To13.5Ft2in.010in.PVCFrom27.5To30.0Ft2in.010in.PVC                                                                                                                                                                                                                                                                                                                                                                                                                                     | *Commander<br>Atlantic Divis:<br>Naval Facilitie<br>Norfolk, Virgin<br>**S=Shallow monit<br>D=Deep monitor:           | ion<br>es Engineering Command<br>nia 23511-6287<br>toring well<br>ing well |
| Depth         Material         Method<br>Pour           From         1.0         To         2.0         Ft         Bentonite         Pour           From         22.0         To         25.0         Ft         Bentonite         Pour           14.         SCREEN:         Depth         Diameter         Slot Size         Material           From        13.5         Ft        1in.        010         in.         PVC           From        5        30.0         Ft.        1in.                                                                                                                                               | *Commander<br>Atlantic Divis:<br>Naval Facilitie<br>Norfolk, Virgin<br>**S=Shallow monit<br>D=Deep monitor:           | ion<br>es Engineering Command<br>nia 23511-6287<br>toring well             |
| Depth         Material         Method           From         1.0         To         2.0         Ft.         Bentonite         Pour           From         22.0         To         25.0         Ft.         Bentonite         Pour           14.         SCREEN:         Depth         Diameter         Slot Size         Material           From        15.5         Ft         2         in.        010         in.         PVC           From        7.5         To        20.0         Ft.        10         in.         PVC           From          To        17.5        10.00         in.         PVC           From          To | *Commander<br>Atlantic Divis:<br>Naval Facilitie<br>Norfolk, Virgin<br>**S=Shallow monit<br>D=Deep monitor:           | ion<br>es Engineering Command<br>nia 23511-6287<br>toring well<br>ing well |
| Depth         Material         Method<br>Pour           From         1.0         To         2.0         Ft.         Bentonite         Pour           From         22.0         To         25.0         Ft.         Bentonite         Pour           14.         SCREEN:         Depth         Diameter         Slot Size         Material           From             Moderial           From                From                From                From                15.         SAND/GRAVEL PACK:          Material                                                                                                                | *Commander<br>Atlantic Divis:<br>Naval Facilitie<br>Norfolk, Virgin<br>**S=Shallow monit<br>D=Deep monitor:           | ion<br>es Engineering Command<br>nia 23511-6287<br>toring well<br>ing well |
| Depth         Material         Method<br>Pour           From         1.0         To         2.0         Ft.         Bentonite         Pour           From         22.0         To         25.0         Ft.         Bentonite         Pour           14.         SCREEN:         Depth         Diameter         Slot Size         Material           From           13.5Ft         2         in.            From          30.0Ft.         2         in.          PVC           From          To          in.                                                                                                                            | *Commander<br>Atlantic Divis:<br>Naval Facilitie<br>Norfolk, Virgin<br>**S=Shallow monit<br>D=Deep monitor:           | ion<br>es Engineering Command<br>nia 23511-6287<br>toring well<br>ing well |

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A INCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

fichard A. Kall

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SIGNATURE OF CONTRACTOR OR AGENT DATE Submit original to Division of Environmental Management and copy to well owner.

APPENDIX C ADDENDUM TO REPORT OF UNDERGROUND FUEL INVESTIGATION AND COMPREHENSIVE SITE ASSESSMENT (LAW, 1993)

APPENDIX E UST REPORT, FORMER MESS HALL HEATING PLANT (ATEC, 1992)

# Environmental Consulting Services



UST REPORT FORMER MESS HALL HEATING PLANT CAMP GEIGER AREA FUEL FARM CAMP LEJERNE, NC

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## UNDERGROUND STORAGE TANK (UST) SITE CHECK INVESTIGATION REPORT FORMER MESS HALL HEATING PLANT UST MARINE CORPS BASE CAMP GEIGER, NORTH CAROLINA ATEC PROJECT NUMBER: 26-07-92-00142

#### **1.0 INTRODUCTION**

ATEC Associates, Inc. was contracted to perform an underground storage tank (UST) Site Check of the Former Mess Hall Heating Plant UST located at the Camp Geiger area of Marine Corps Base (MCB), Camp Lejeune, North Carolina. Site Checks are to be conducted at various Marine facilities at UST locations where releases are suspected to have occurred. The Site Checks are needed to comply with both the U.S. Environmental Protection Agency (EPA) and North Carolina UST regulations. This investigation report details the work performed at the project site and the information obtained through this investigation.

The project site is located adjacent to Building TC-341 at Camp Geiger MCB (Figure 1). ATEC installed three wells around the Former Mess Hall Heating Plant UST. The three wells were installed under Well Construction Permit No. 66-0264-WM-0274, which was issued on May 20, 1992 by the State of North Carolina Department of Environment, Health, and Natural Resources (DEHNR). A copy of this permit and copies of the completed Well Construction Records are included in Appendix A.

The now abandoned UST was used to supply number six heating fuel to the boilers of an adjacent heating plant which is now demolished (Figure 2). The size and construction of the UST are unknown. The installation date of the tank is approximately 1941. A suspected release from the UST was documented by a subsurface investigation performed by Law Engineering in November of 1991. Laboratory analysis of a soil sample for Total Petroleum Hydrocarbons obtained adjacent to the UST quantified a contaminant level of 8400 ppm.

#### 2.0 SITE ASSESSMENT

To obtain the information necessary to describe and evaluate the project site geology and the extent of contamination, ATEC installed three groundwater monitoring wells and analyzed soil samples from the three well locations. Prior to the installation of the monitoring wells, the well locations were cleared for underground utilities by MCB personnel.

## 2.1 Area Geology

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The project site is located within the Atlantic Coastal Plain physiographic province, which consists of a wedge of stratified, unconsolidated and semi-consolidated sediments that dip and thicken eastward. These sediments consist primarily of sand, clay, silt and gravel, with variable amounts of shell material, that range in age from Cretaceous to Recent (Holocene). Unconformably underlying the Coastal Plain sediments is a basement rock surface composed of massive igneous rocks and highly deformed metamorphic rocks that range in age from Precambrian to lower Paleozoic. The basement surface forms the basal limit of the Coastal Plain hydrogeologic system, which consists of a surficial, unconfined water table aquifer and seven deeper level confined to semi-confined aquifers separated by intervening aquitards (less permeable units) (Meng and Harsh, 1988; Hamilton and Larson, 1989).

Topographically, the project site is at an elevation of approximately 20 feet above mean sea level (USGS, 1971). Topographic relief across the site is relatively slight. Based on topographic map interpretation, surface drainage at the project site flows to the east, toward Brinson Creek, a tributary of the New River. However, human activities at the site, such as construction and grading may have affected the natural surface water drainage.

## 2.2 Soil Boring and Soil Sampling Program

On June 1 and 2, 1992, ATEC drilled three soil borings at the project site. These borings were converted to monitoring wells (Figure 2). The soil borings were advanced using a Mobil B-57 truck-mounted drill rig with 10-inch diameter hollow stem augers. The augers and sampling tools were decontaminated between borings using a pressure washer to minimize the potential of cross-contamination. During the soil boring activities, soil samples were collected with split spoon samplers at 0 to 2 feet, 2 to 4 feet, 4 to 6 feet, 8 to 10 feet, 13 to 15 feet, and 18 to 20 feet. Soils encountered at each of the well locations consisted of a surficial brown to gray silty sand to 4 feet below the ground surface (BGS), underlain by a brown to gray medium sand to 10 feet BGS. Greenish gray, fine to medium sands were encountered from 13 to 15 feet BGS, followed by greenish gray to gray medium sands from 18 to 20 feet. Soil boring logs are included in Appendix B.

Each split spoon sample was collected in a clean sample jar, leaving ample head space in the jar. The samples were then screened in the field for the presence of petroleum hydrocarbons with a Photoionization Detector (PID). The results of this screening yielded readings that ranged from 0 part per million (ppm) up to a maximum of 119 ppm at the MW-2 location.

A separate soil sample for laboratory analysis was collected from each boring at the approximate depth of the water table. A duplicate soil sample was taken at the MW-2 location and marked "MWS-4". These soil samples were analyzed in the laboratory for Total Petroleum Hydrocarbons (TPH) using EPA Method 8015 (California modified) and for Benzene, Toluene, Ethylbenzene, and Total Xylenes (BTEX) using EPA Method 8020. The limit set by the DEHNR is 10 ppm for TPH in soil. No limits are established for BTEX concentrations in soil. As shown in Table 1, the laboratory results indicate the presence of TPH contamination at all three well locations at levels above the DEHNR action level of 10 ppm (Figure 3).

#### Table 1: Laboratory Results of Soil Analyses

| Sample_No.                    | TPH 8015<br>mg/kg | BTEX<br>ug/kg                                                         |
|-------------------------------|-------------------|-----------------------------------------------------------------------|
| MWS-1                         | 140               | Benzene 6<br>Toluene 52<br>Ethylbenzene 55<br>Total Xylenes 42        |
| MWS-2                         | 2,000             | Benzene <20<br>Toluene 130<br>Ethylbenzene 2300<br>Total Xylenes 3100 |
| MWS-3                         | 110               | Benzene <5<br>Toluene <5<br>Ethylbenzene <5<br>Total Xylenes <5       |
| MWS-4<br>(Duplicate of MWS-2) | 1,200             | Benzene <50<br>Toluene <50<br>Ethylbenzene 750<br>Total Xylenes 1200  |

Note: mg/kg is numerically equivalent to parts per million (ppm) ug/kg is numerically equivalent to parts per billion (ppb)

## 2.3 Monitoring Well Installation

On June 1 and 2, 1992, ATEC installed three groundwater monitoring wells at the project site. The monitoring well locations are shown in Figure 2. During the drilling activities, the water table was encountered at approximately 8 feet BGS.

The wells were constructed with 10 feet of 0.010 inch slotted schedule 40 polyvinyl chloride (PVC) screen and 10 feet of PVC riser. A Number 2 industrial sand was used to create a filter pack around the well casings to 2 feet above the well screen. A one foot thick annular seal of bentonite pellets was placed above the sand filter

pack and concrete grout was placed above the bentonite seal to the surface to protect the wells from infiltrating surface waters. Concrete pads, steel posts and protective covers were set above the wells to protect them from damage. A well identification tag, including construction data, was installed on each well. Well completion data is included with the soil boring logs in Appendix B.

## 2.4 Groundwater Sampling Program

The three groundwater monitoring wells were developed by pumping a minimum of five well bore volumes of groundwater to remove fine silt and clay particles present in the wells and to remove stagnant standing water. New development hose and sampling tubing was used for each well to minimize the potential for crosscontamination between wells. Prior to surveying each well, water levels were measured using an oil/water interface probe, which can detect the presence of free phase product. At the time of the survey, none of the monitoring wells contained free product.

The three wells were sampled on June 6, 1992. The static water table prior to purging was measured between 9.08 feet and 9.88 feet below the top of the well casings. The groundwater samples were collected at a depth of approximately one foot below the water table. A duplicate sample was obtained from MW-2 and labeled as "MW-4". No trip blanks were prepared. The water samples were analyzed in the laboratory for TPH using EPA Method 8015 (California modified) and for BTEX using EPA Method 8020. As shown in Table 2, the results of the TPH analyses for groundwater from the wells ranged from <1 ppm to 5 ppm. The DEHNR has not set limits for TPH in groundwater. Concentrations of the BTEX constituents also were detected in groundwater at MW-2 (Figure 4). Allowable levels of BTEX in groundwater are available in Subchapter 2L, Section 0.200 of the North Carolina Administrative Code, "Classifications and Water Quality Standards

Applicable to the Groundwaters of North Carolina" and are as follows: Benzene 0.001 ppm (1 parts per billion (ppb)), Toluene 1.0 ppm (1,000 ppb), Ethylbenzene 0.029 ppm (29 ppb), and Total Xylenes 0.4 ppm (400 ppb). The benzene limit was exceeded at MW-2.

| Table 2: Laboratory Results of Groundwater Analyse | Table | 2: | Laboratory | Results | of | Groundwater | Analys | es |
|----------------------------------------------------|-------|----|------------|---------|----|-------------|--------|----|
|----------------------------------------------------|-------|----|------------|---------|----|-------------|--------|----|

| Sample No.<br><u>(Well No.)</u> | TPH<br>mg/L_ | BTEX ug/L                                                       |
|---------------------------------|--------------|-----------------------------------------------------------------|
| MW-1                            | 5            | Benzene <1<br>Toluene <1<br>Ethylbenzene <1<br>Total Xylenes <1 |
| MW-2                            | 3            | Benzene 2<br>Toluene 1<br>Ethylbenzene 27<br>Total Xylenes 4    |
| MW-3                            | <1           | Benzene <1<br>Toluene <1<br>Ethylbenzene <1<br>Total Xylenes <1 |
| MW-4 2<br>(Duplicate of MW-2)   |              | Benzene 1<br>Toluene <1<br>Ethylbenzene 25                      |

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Note: mg/L is numerically equivalent to parts per million (ppm) ug/L is numerically equivalent to parts per billion (ppb)

6

Total Xylenes 5

## 2.5 Groundwater Flow Direction

Groundwater flow at the project site was expected to mimic the surface drainage pattern, with groundwater flowing to the east, toward Brinson Creek. A survey of the monitoring wells and groundwater level elevations was conducted to determine the actual direction of groundwater flow at the project site. The wells were surveyed for future reference - survey needs to be tied into established "permanent" benchmarks from the elevation of a fire hydrant (identification tag 6-16-6) located east of the site adjacent to a railroad spur, using mean sea level (MSL) as datum. Table 3 lists the measured elevations. Groundwater flow was determined to be toward the east, as shown in Figure 5.

## Table 3: Monitoring Well Elevations

Benchmark (Fire hydrant) Elevation = 18.08 feet above MSL

| Well<br><u>Number</u> | Casing<br>(feet MSL) | Elevation<br>Water Table (feet) | Water Table<br>Depth To Elevation<br>(feet MSL) |       |
|-----------------------|----------------------|---------------------------------|-------------------------------------------------|-------|
| <b>MW-1</b>           |                      | 20.15                           | 9.08                                            | 1107  |
| MW-2                  |                      | 20.68                           | 9.88                                            | 10.8  |
| MW-3                  |                      | 20.06                           | 9.31                                            | 10.75 |

The velocity of groundwater flow at the project site was calculated to provide a general estimate of how rapidly groundwater, and any associated contamination, would migrate away from the USTs. The following standard equation based on Darcy's law of groundwater flow was used to estimate the groundwater velocity:

V = (K/n) (dh/dl);

where V = rate of groundwater flow (ft/day)

dh/dl = measured water table gradient (0.005 ft/ft)

K = assumed hydraulic conductivity (0.28 ft/day for fine sands)

n = assumed porosity factor (0.30)

The rate of groundwater flow in the water table aquifer was calculated using an assumed porosity of 30 percent, a measured water table gradient of 0.005 ft/ft, and an assumed hydraulic conductivity of 0.28 ft/day for a fine sand aquifer (Fetter, 1980). The calculated velocity is approximately 0.005 ft/day or 2 ft/year. This analysis shows that groundwater contamination would migrate away from the UST area toward the east. However, as an aquifer pumping or slug test was not conducted at this site, this calculated value represents only a rough estimate of the true groundwater flow velocity. This estimated velocity also does not necessarily correspond with the rate of contaminant movement, as contaminant characteristics greatly affect their rate of movement.

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## 3.0 CONCLUSIONS AND RECOMMENDATIONS

The Former Mess Hall Heating Plant UST, which contained number six heating fuel, is located adjacent to Building TC-341. The UST was installed in the early 1940's. Based upon the information gathered during the UST Site Check, high levels of contamination caused by a suspected release of petroleum hydrocarbons from the UST are present at the site. This investigation revealed the presence of both soil and groundwater contamination around the UST.

ATEC recommends that the UST and its associated lines be removed as soon as possible due to the systems age, construction, and inactivity. If UST removal is conducted, soil samples from the UST excavation pit should be analyzed for petroleum hydrocarbon content. Once this investigation is completed, the need for further action can be assessed.

### 4.0 QUALIFICATIONS

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Our professional services have been performed, our findings obtained, and our recommendations prepared in accordance with customary principles and practices in the fields of environmental science and engineering. This warranty is in lieu of all other warranties either expressed or implied. This company is not responsible for the independent conclusions, opinions or recommendations made by others based on the field exploration and laboratory test data presented in this report.

The work performed in conjunction with this assessment and the data developed, are intended as a description of available information at the dates and locations given. This report does not warrant against future operations or conditions nor does it warrant against operations present of a type or at a location not investigated.

#### **5.0 REFERENCES**

Fetter, C. W., 1980. <u>Applied Hydrogeology</u>, Charles E. Merrill Publishing Co.: Columbus, Ohio

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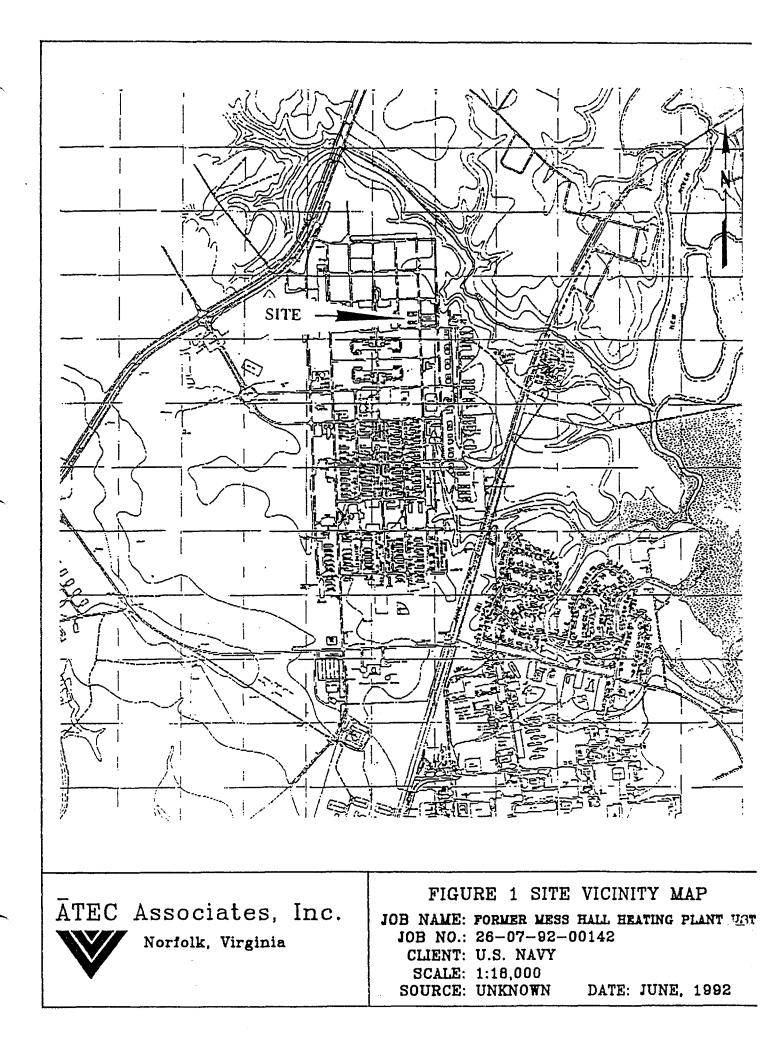
Hamilton, P. A. and J. D. Larson, 1988. <u>Hydrogeology and Analysis of the Ground-</u> <u>Water Flow System in the Coastal Plain of Southeastern Virginia</u>. U. S. Geological Survey, Water-Resources Investigations Report, 87-4240.

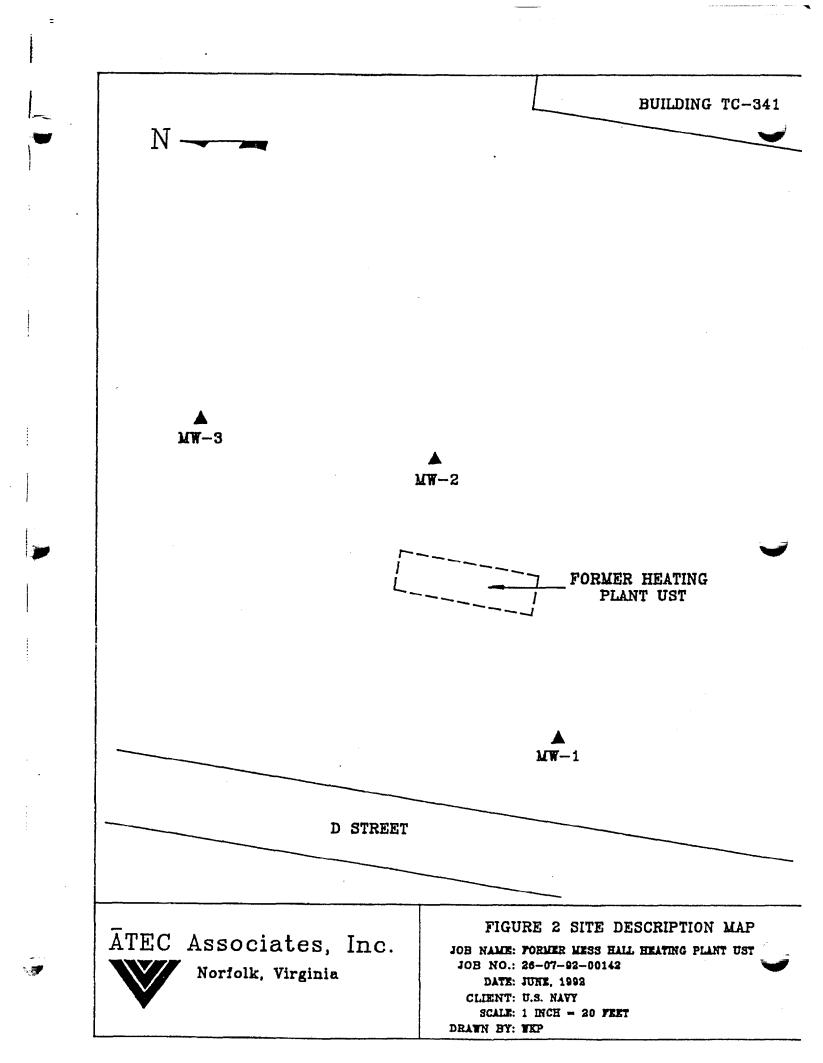
Meng, A. A. and J. G. Harsh, 1988. <u>Hydrogeologic Framework of the Virginia</u> <u>Coastal Plain</u>. U. S. Geological Survey Professional Paper 1404-C.

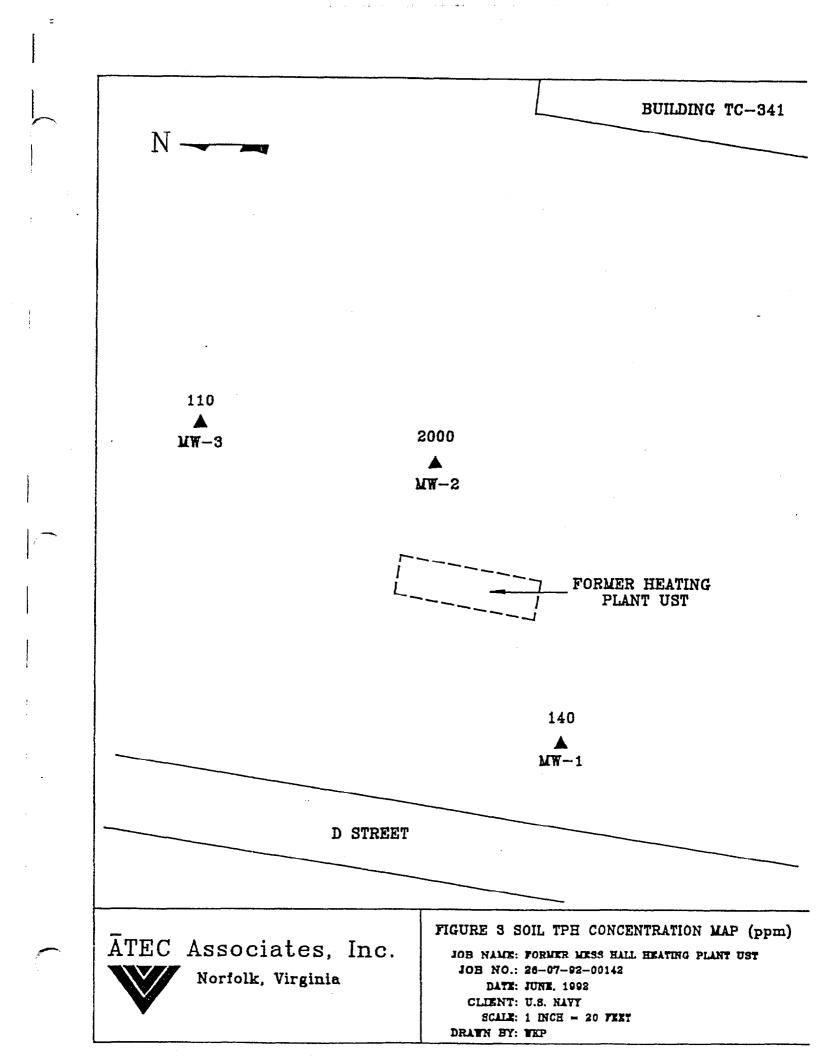
- Mixon, R. B., C. R. Berquist, Jr., W. L. Newell, and F. G. Johnson, 1989. <u>Geologic Map and Generalized Cross Sections of the Coastal Plain and Adjacent Parts of the Piedmont, Virginia</u>. United States Geological Survey, Miscellaneous Investigations Series, Map I-2033.
- U. S. Geological Survey, 7.5 Minute Topographic Map Series, Jacksonville South, North Carolina quadrangle, 1952, photo inspected 1971.

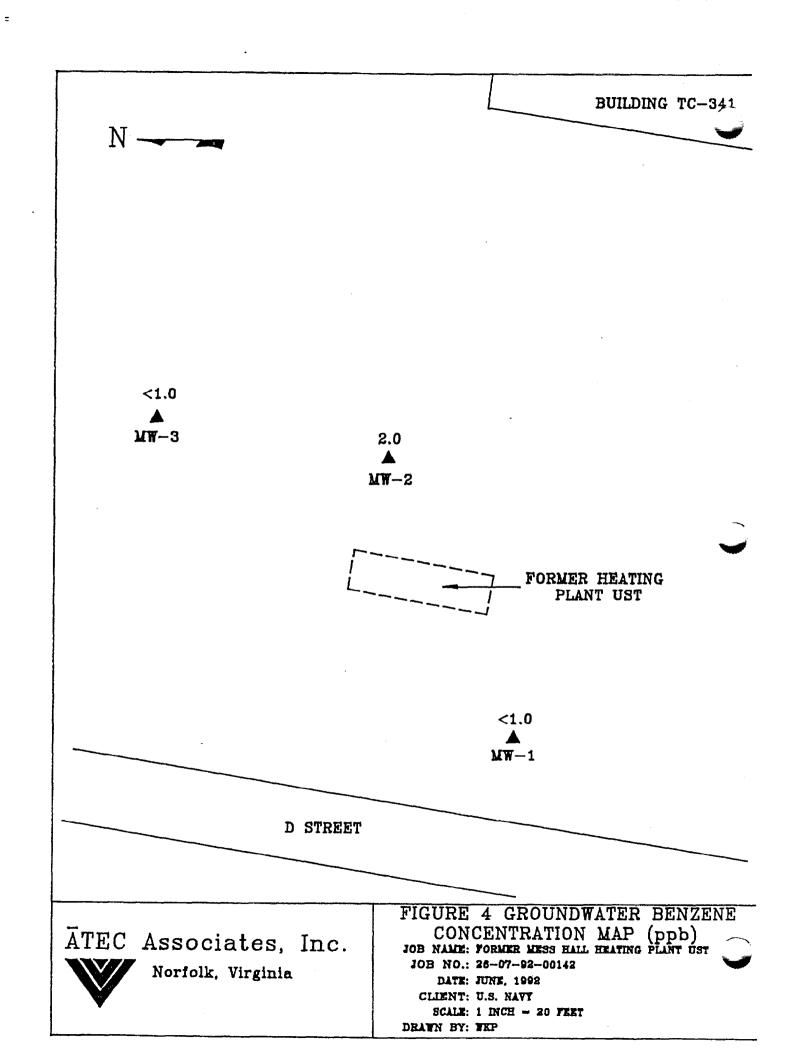
## FIGURES

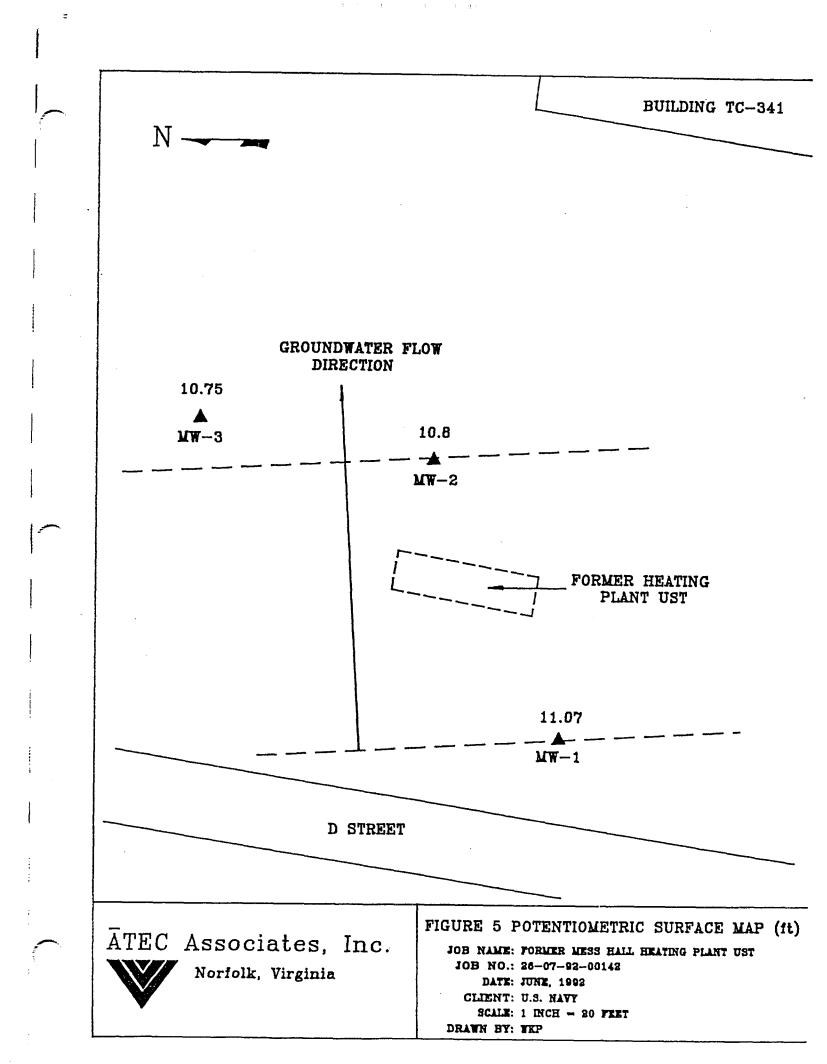
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## APPENDIX B

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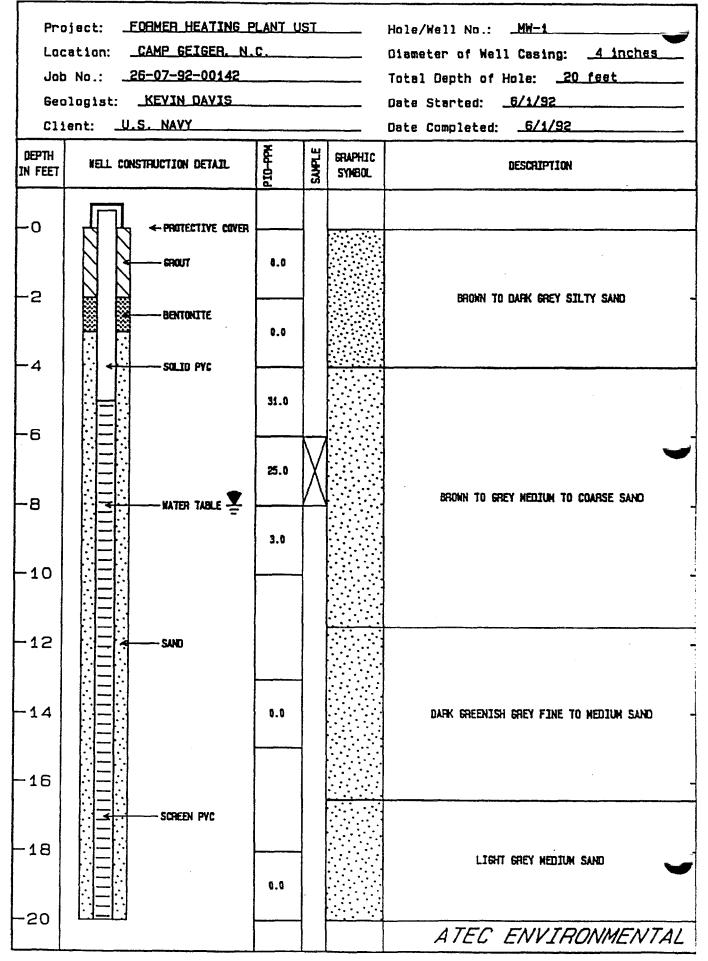
## SOIL BORING AND WELL COMPLETION DATA

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|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|---------------------------------------------------|---------------------------------------|-------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
|                                | WELL                                                                                                                                                                                 | CONSTRUC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | TION RECO                                                                                  | RD                                                |                                       | Basin Code                                                                                            |                                                                                                                 |
|                                | ONTRACTOR                                                                                                                                                                            | R: ATEC AS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | sociates,                                                                                  | Inc.                                              | نا                                    | leader Ent                                                                                            | GW-1 Ent                                                                                                        |
|                                | GISTRATIO                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                            |                                                   |                                       | CONSTRUCTIO                                                                                           | N<br>54-WM-0274                                                                                                 |
|                                |                                                                                                                                                                                      | NOMBER.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 696                                                                                        | PEH                                               |                                       | BEH: 00-020                                                                                           | 34-WM-0274                                                                                                      |
| WELL LO                        | CATION (S)                                                                                                                                                                           | now sketch of                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | the location be                                                                            | low)                                              |                                       | <u>,</u>                                                                                              |                                                                                                                 |
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|                                |                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                            |                                                   |                                       |                                                                                                       |                                                                                                                 |
|                                |                                                                                                                                                                                      | bdivision and Lot                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                            |                                                   | <u> </u>                              | DEPTH                                                                                                 | DRILLING LOG                                                                                                    |
| ADDRES                         | -                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | agement De<br>arine Corps                                                                  |                                                   | Fron                                  | n To                                                                                                  | Formation Description                                                                                           |
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| WATER Z                        | ONES (deptr<br>ATION: Typ<br>Depth<br>To                                                                                                                                             | n): <u>N/A</u><br>pe <u>N/A</u><br>Diame                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Wall Thickr<br>eter or Weight                                                              | nt                                                | lf ac                                 | LOCAT                                                                                                 | ION SKETCH<br>ce from at least two State                                                                        |
| WATER Z                        | ONES (depth<br>ATION: Typ<br>Depth<br>To<br>To                                                                                                                                       | n): <u>N/A</u><br>pe <u>N/A</u><br>Diame<br>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Wall Thickr<br>eter or Weight                                                              | nt<br>ness<br>/Ft. Material                       | lf ac<br>(Show d<br>Rea               | LOCAT<br>frection and distant<br>ids, or other map r                                                  | ION SKETCH<br>ice from at least two State<br>reference points)                                                  |
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| WATER Z                        | ONES (depth<br>ATION: Typ<br>Depth<br>To<br>To<br>To<br>Depth<br>To                                                                                                                  | n):N/A<br>pe<br>Ft<br>Ft<br>Ft<br>Ft                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Wall Thickr<br>Wall Thickr<br>eter or Weight                                               | nt<br>/Fr. Material<br><br>Method                 | (Show d<br>Rea<br>See                 | LOCAT<br>frection and distant<br>ids, or other map r<br>attachments                                   | ION SKETCH<br>ice from at least two State<br>reference points)<br>for well locations,                           |
| WATER Z                        | ONES (depth<br>ATION: Typ<br>Depth<br>To<br>To<br>Depth<br>To<br>To                                                                                                                  | n):N/A<br>pe<br>Ft<br>Ft<br>Ft<br>Ft                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Wall Thickr<br>eter or Weight                                                              | nt<br>/Fr. Material<br><br>Method                 | (Show d<br>Rea<br>See                 | LOCAT<br>frection and distant<br>ids, or other map r<br>attachments                                   | ION SKETCH<br>ice from at least two State<br>reference points)<br>for well locations,                           |
| WATER Z                        | ONES (depth<br>ATION: Typ<br>Depth<br>To<br>To<br>Depth<br>To<br>To                                                                                                                  | n):N/A<br>PeN/A<br>Ft<br>Ft<br>Ft<br>Ft                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Wall Thickr<br>eter or Weight                                                              | nt<br>/Ft_ Material<br><br>Method                 | (Show d<br>Rea<br>See                 | LOCAT<br>frection and distant<br>ids, or other map r<br>attachments                                   | ION SKETCH<br>ice from at least two State<br>reference points)<br>for well locations,                           |
| WATER Z                        | ONES (depth<br>ATION: Typ<br>Depth<br>To<br>To<br>Depth<br>To<br>Depth                                                                                                               | n):N/A<br>Pe<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Diameter                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Wall Thickn<br>eter or Weight<br>Material                                                  | nt<br>/Ft. Material<br><br>Method<br><br>Material | (Show d<br>Rea<br>See                 | LOCAT<br>frection and distant<br>ids, or other map r<br>attachments                                   | ION SKETCH<br>ice from at least two State<br>reference points)<br>for well locations,                           |
| WATER Z                        | ONES (depth<br>ATION: Typ<br>Depth<br>To<br>To<br>Depth<br>To<br>Depth<br>To                                                                                                         | n):N/A<br>peN/A<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft<br>Ft                                   | Wall Thicknessen<br>wall Thicknessen<br>weight<br>Material<br>Slot Size<br>n in.           | Method<br>Material                                | (Show d<br>Rea<br>See                 | LOCAT<br>frection and distant<br>ids, or other map r<br>attachments                                   | ION SKETCH<br>ice from at least two State<br>reference points)<br>for well locations,                           |
| WATER Z                        | ONES (depth<br>ATION: Typ<br>Depth<br>To<br>To<br>Depth<br>To<br>Depth<br>To<br>To                                                                                                   | n):N/A<br>peN/A<br>Ft<br>Ft<br>Ft<br>Diameter<br>Fti<br>Fti                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Wall Thickr<br>eter or Weight<br>Material<br>Slot Size<br>n in.<br>n in.                   | Method                                            | (Show d<br>Rea<br>See                 | LOCAT<br>frection and distant<br>ids, or other map r<br>attachments                                   | ION SKETCH<br>ice from at least two State<br>reference points)<br>for well locations,                           |
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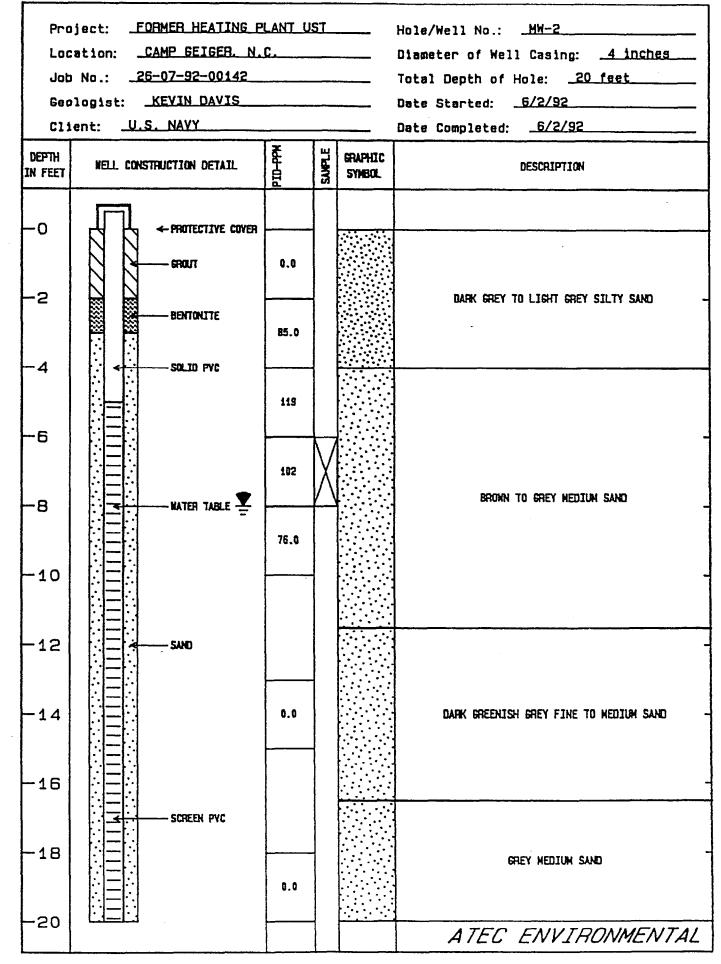
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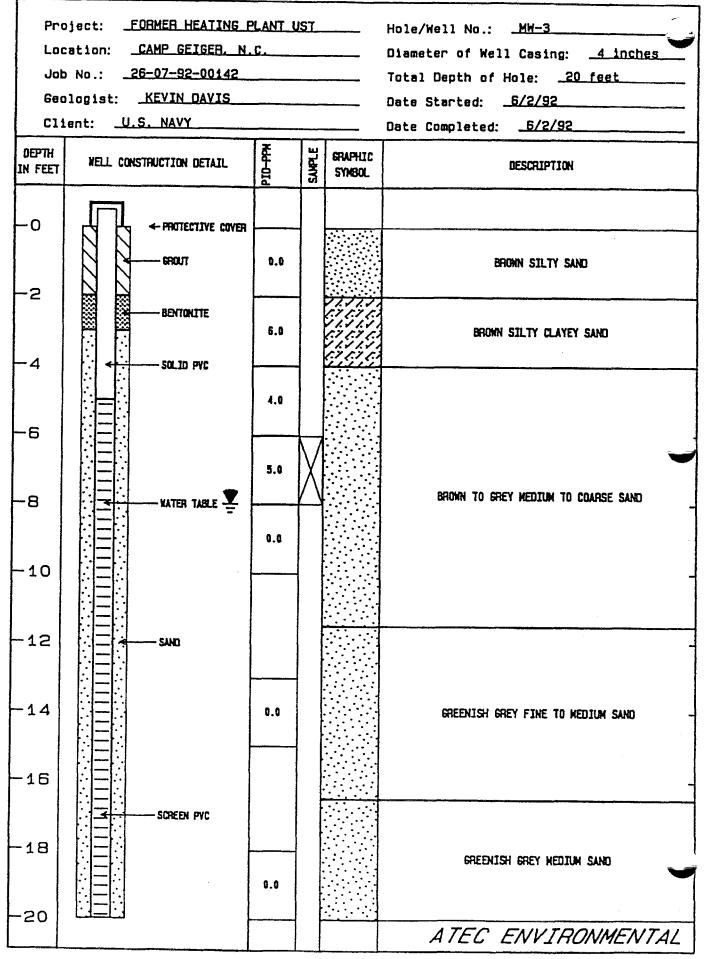
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# BORING LOG



## BORING LOG



**APPENDIX F** LEAKING UNDERGROUND STORAGE TANK SITE ASSESSMENT REPORT (LAW, 1994) 

## LEAKING UNDERGROUND STORAGE TANK SITE ASSESSMENT REPORT

#### **VOLUME I**

Building TC-341 MARINE CORPS BASE CAMP LEJEUNE, NORTH CAROLINA

**Prepared For:** 

Commander Naval Facilities Engineering Command Atlantic Division Norfolk, Virginia 23511-6287

**Prepared By:** 

Law Engineering, Inc. 3301 Atlantic Avenue Raleigh, North Carolina 27604

April 13, 1994

Law Engineering Job No. 475-09183-01

## EXECUTIVE SUMMARY

In accordance with the Naval Facilities Engineering Command Order for Supplies and Services Contract No. N62470-93-D-4020 dated August 29, 1993, Law Engineering preformed a Leaking Underground Storage Tank Comprehensive Site Assessment (CSA) in the vicinity of Heating Plant Building TC-341 at Camp Geiger within the Marine Corps Base (MCB) in Camp Lejeune, North Carolina. The investigation involved the assessment of soil and ground-water quality conditions in the vicinity of Building TC-341, near the former location of a number 6 heating oil underground storage tank (UST) of unknown size and the associated 6-inch diameter fuel supply line which originated at the Camp Geiger fuel farm located east of the site.

The assessment involved the installation of twelve Type II and two Type III monitoring wells and analysis of soil and ground-water samples. Soil samples were tested for total petroleum hydrocarbons (TPH) according to EPA preparation/testing Methods 5030/8015 (volatile fraction), 3550/8015 (semi-volatile fraction) and 9071 (oil and grease), as well as TCLP metals, flash point and pH. Ground-water samples were analyzed for purgeable aromatic hydrocarbons according to EPA Method 602, and polynuclear aromatic hydrocarbons according to EPA Method 610, and also for the eight RCRA metals.

Based upon the results of our investigation, petroleum related contamination is present within soils and ground water within the area of investigation. The majority of soil contamination appears to be located within the immediate vicinity of the underground storage tank (UST) system at the site. Ground-water contamination was detected mainly in the upper portion of the surficial aquifer. Free product is also present in the immediate vicinity of the UST system.

The extent of benzene, ethylbenzene, toluene, total xylenes, methyl-tertiary-butyl ether and polynuclear aromatic hydrocarbons within the shallow ground water has been adequately defined by the sampling network used in this study. Elevated concentrations of PAH compounds at the furthest downgradient well location suggest that other petroleum sources located east of TC-341 have contributed petroleum compounds to the shallow ground water in the area.

Results of this assessment suggest that the majority of soil and ground-water contamination originating from the tank system at Building TC-341 has been adequately defined for the purposes of preparing a Corrective Action Plan.

Based on our assessment of the subject site, soil and ground water both indicated the presence of compounds characteristic of fuel oil that leaked from the UST system at TC-341 and possibly gasoline or Jet fuel from the petroleum source located east of TC-341. The presence of free product in ground-water coupled with elevated concentrations of petroleum constituents requires additional measures to satisfy groundwater requirements set forth by the state.

Our recommendations are as follows:

- Initiate free product recovery activities in the vicinity of the TC-341 UST system.
- Provide a copy of this comprehensive site assessment to the State for their review and files.
- Perform additional investigation to determine the limits of soil and ground-water contamination to the east of Building TC-341.
- Begin preparation of a Corrective Action Plan.

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### **1.0 INTRODUCTION**

### 1.1 <u>Purpose of Investigation</u>

The Commander of the Atlantic Division Naval Facilities Engineering Command in Norfolk, Virginia, contracted with Law Companies Group, Inc. to perform a Leaking Underground Storage Tank Comprehensive Site Assessment (CSA) at Building TC-341, located on Camp Geiger at the Marine Corps Base at Camp Lejeune, North Carolina (Drawing 1.1). The purpose of the investigation was to identify the presence, magnitude and extent of possible free product accumulation and around-water contamination, and assess potential exposure to subsurface contaminants resulting from the release of Number 6 heating oil from an underground storage tank (UST) system at the site. As stated in the Leaking Underground Storage Tank Workplan contained in Appendix A, the objective of the investigation was to provide sufficient data to meet the requirements of Sections 280.63 and 280.65 of 40 CFR Part 280, Federal Technical Standards for Underground Storage Tanks. This data should also be sufficient to meet the requirements of Sections .0704 and .0706 of Title 15A, Chapter 2, Subchapter 2N, North Carolina Criteria and Standards Applicable To Underground Storage Tanks and Comprehensive Site Assessments. This report is designed to include information requested by the North Carolina Department of Environment, Health and Natural Resources in accordance with the document entitled "Groundwater Section Guidelines For The Investigation and Remediation of Soils and Groundwater" dated March 1993 (Revised June 1993).

### 1.2 <u>Scope of Work</u>

Authorization to proceed with the investigation was granted by the Commander of the Atlantic Division Naval Facilities Engineering Command, Norfolk, Virginia, via Contract No. N62470-93-D-4020, Delivery Order No. 0001, dated October 29, 1993. As specified in the contract requirements and outlined in the delivery order, Law Engineering prepared a work plan and health and safety plan to outline a site specific scope of work for field assessment activities.

The investigation involved the advancement of fourteen soil borings from which soil samples were obtained and into which twelve Type II and two Type III monitoring wells were installed. The delivery order also included provisions to sample three of the previously installed Type II monitoring wells.

Soil and ground-water samples were collected from the soil borings and monitoring wells for both on-site and off-site laboratory analysis. The collected data were used to delineate the horizontal and vertical extent of soil and ground-water contamination and to identify potential receptors that could be affected by the release so that a Corrective Action Plan (CAP) for the site can be developed. The specific methods

Draft Leaking Underground Storage Tank Site Assessment Report Building TC-341 MCB, Camp Lejeune, North Carolina

employed during performance of the project activities and the results, conclusions and recommendations of the CSA are described within the appropriate sections of this report.

#### 1.3 Area of Investigation

The site is located east of D Street between Third Street and Fourth Streets at Camp Geiger, Camp Lejeune Marine Corps Base (MCB). The subject UST of this study is located approximately 90 feet west of Building TC-341 and 20 feet east of D Street. The exact location of the UST is not clearly marked or identified on base drawings but can reportedly be identified as a slight cresting of the ground surface. The topography in the vicinity of the site is relatively flat and is at an elevation of approximately 15 feet above mean sea level (msl). Most of the area is not serviced by storm sewers. Runoff generally travels by sheet flow before entering drainage ditches which discharge into Brinson Creek which is located approximately 1000 feet northeast of the site.

#### 2.0 SITE HISTORY AND SOURCE CHARACTERIZATION

2.1 Site History and Operations

Information concerning the history of the project site was provided by Ms. Deborah Pickett with the Installation/Restoration Division of the Environmental Department (EMD/IRD) at Camp Lejeune.

The UST at the subject site was used to supply number 6 heating oil to a former mess hall heating plant which has since been demolished. The UST was reportedly installed around 1941. An underground fuel distribution supply line formerly connected the UST to the Camp Geiger Fuel Farm, located east of the TC-341 site.

#### 2.2 <u>Contaminant Source Inventory</u>

Free product was observed in MW-1 and MW-2 (Drawing 2.1), which are located in close proximity to the UST and the fuel supply line. However, according to EMD/IRD it could not be determined whether the leak occurred from the UST or the associated

Draft Leaking Underground Storage Tank Site Assessment Report Building TC-341 MCB, Camp Lejeune, North Carolina

fuel supply line. Several building structures were once located east of the site which have since been demolished and include an ice house and a gasoline filling station. The Camp Geiger Fuel Farm also is located east of the site. Suspected or known areas of soil and ground-water contamination have been documented for these sites, all of which are located downgradient of the study area with respect to shallow ground-water flow direction and are not expected to affect the subject property.

#### 2.3 <u>Release Incident History</u>

A suspected release from the UST was first documented by Law Engineering, Inc. in September of 1991 during the investigation of the adjacent Camp Geiger Fuel Farm. The study identified the number 6 heating oil UST and associated piping as a potential source of contamination. One soil boring was advanced adjacent to the UST to provide a preliminary determination as to whether or not the tank had leaked. The analysis of two soil samples collected from the boring at 3.0 to 4.5 feet and 8.5 to 10.0 feet below land surface (BLS) (at ground water) detected total petroleum hydrocarbons (TPH) at 8,400 and 5,100 parts per million (ppm), respectively, by EPA preparation/testing Methods 3550/8015 and 5030/8015 (Law Engineering, 1991).

#### 2.4 <u>Previous Investigation</u>

Based upon the findings presented by Law Engineering, Inc. a three well site check was performed at the subject site by ATEC Associates, Inc. in June of 1992. Results of this work are presented in ATEC's report dated September 24, 1993. Each of the three Type II monitoring wells were installed to a depth of 20 feet BLS with 10 feet of 0.010-inch slotted polyvinyl chloride (PVC) screen and 10 feet to PVC riser. Ground water was measured between 9 and 10 feet BLS.

Headspace analysis of soil collected from the three monitor-well soil borings yielded readings ranging from 0 to 119 ppm. Analysis of three soil samples collected from the approximate depth of ground water from each of the three monitoring well borings indicated concentrations of TPH (EPA Method 8015) in each sample ranging from 110 to 2,000 ppm. Analysis of the soil samples for benzene, toluene, ethylbenzene, and xylenes (BTEX) detected total BTEX concentrations in soil samples from monitor-well soil boirngs MW-1 and MW-2 from 155 parts per billion (ppb) to 5,530 ppb, respectively (ATEC, 1992).

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Ground-water samples were collected from each of the three monitoring wells and were also analyzed for BTEX. Analytical results indicated total BTEX concentrations of 34 ppb in MW-2. BTEX was not detected in ground-water samples collected from MW-1 and MW-3 (ATEC, 1992).

Ground-water was determined to flow to the east (ATEC, 1992). The rate of groundwater flow in the surficial aquifer was calculated by assuming a porosity of 30 percent, a measured water table gradient of 0.005 ft/ft, and an assumed hydraulic conductivity of 0.28 ft/day for a fine sand aquifer. Based upon this information, a ground-water flow velocity of 0.005 ft per day was calculated (ATEC, 1992).

#### 2.5 <u>History of Corrective Action</u>

The extent of corrective action has been the in-place abandonment of the UST and the associated fuel supply pipeline.

#### 3.0 MIGRATION PATHWAYS AND POTENTIAL RECEPTORS

#### 3.1 Water-Well Inventory

According to a map of the base water supply system provided by EMD/IRD at Camp LeJeune, the closest water supply well (T-15) appears to be located approximately 1000 feet to the northeast of the site. Other water supply wells located within a onehalf mile radius of the site include wells TC-104, TC-100, TC-202, TC-325, TC-502, NC-52, TC-600 and TC-700. The approximate locations of these wells with respect to Building TC-341 are shown on Drawing 3.1. All of these wells are located to the west of the site. These wells do not appear to be located hydraulically downgradient of the site. According to Mr. Tom Morris of EMD, all water derived from water supply wells in the Camp Geiger area is treated before use. Drinking water for all Camp Geiger residents is provided by the Camp Geiger main water-treatment plant located near the intersection of 6th Street and Church Street.

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#### 3.2 <u>Utility Survey</u>

Subsurface utility trenches can often provide preferential pathways for migration of contaminants. Therefore, an attempt was made to identify and locate subsurface utilities in the vicinity of the site. Information on the location of utilities was provided by MCB Camp LeJeune Facilities Engineering in the form of plans and drawings. Additional information was obtained from interviews with personnel located at the subject site. Based on the information provided, utilities located within the project area include water and wastewater lines, and communication and electrical lines. The approximate locations of underground utility lines located proximal to the site are shown in Drawing 3.2 Typically, underground utilities are buried from 2 to 6 feet BLS. The presence of fill stone, sand or loosely consolidated soils around the below grade utilities could act as potential contaminant migration pathways.

#### 3.3 <u>Potential Receptor Survey</u>

#### **Biological Receptors**

Fuel contamination, in any one of four physical states or "phases"' (residual, vapor, liquid, dissolved), may be transmitted to receptors via ingestion, inhalation, or absorption. As petroleum fuel seeps through the subsurface, it will undergo a transformation process that results in adsorption of hydrocarbons onto soil particles (residual phase) and release of volatile hydrocarbons into pore spaces (vapor phase). If any product remains after adsorption and volatilization takes place, it will continue to move vertically downward (in the absence of preferred lateral routes of migration) until reaching the capillary fringe area or a relatively impermeable barrier if one is located above the capillary fringe. At this point, the fuel (liquid phase) will tend to spread throughout the capillary fringe and the transformation process will continue with the dissolution of hydrocarbons into ground water (dissolved phase). An evaluation of the relationship between contaminated media and exposure pathways at the project site is summarized in Table 3.1.

Receptors may be potentially exposed to the hydrocarbons found in the soil primarily through inhalation of volatilized compounds and dermal contact with soil at hydrocarbon contamination sites. Based on laboratory test results, petroleum contamination is present in near-surface soil at the project site. Exposure to these soils is contingent upon site disturbance via construction or remediation activities. In

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the event that soil remediation is required, there may be some inhalation exposure from volatilization of the hydrocarbons found in the soil. Volatile components will be released and the potential for exposure will occur at this time. Dermal exposure from soil contact by personnel may also occur if remediation activities include excavation. Since this is an occupational exposure, the receptor analysis for these exposure pathways should be considered as part of the site remediation design plan.

Exposure via ingestion most commonly occurs from consumption of drinking water obtained from contaminated wells or contaminated public water supplies. According to our review of available information, the nearest operational water supply well is located approximately 1000 feet northeast of the project site. Since our assessment indicates that the direction of ground-water flow within the surficial aquifer is to the east, the potential for exposure to drinking-water wells from contamination originating from the subject site appears to be minimal.

#### Structural Receptors

Buildings in the vicinity of TC-341 appear to be slab-on-grade types of structures. A 6-inch water main line is located approximately 30 feet to the west of the UST and also approximately 300 feet east of the UST. Due to the close proximity of the water line to the west, and the line to the east being hydraulically down-gradient, they may be considered as possible receptors.

#### Hydrologic Receptors

The nearest surface water body to the site is Brinson Creek which is located approximately 1000 feet (0.4 miles) to the east-northeast. Marsh areas associated with Brinson Creek are located approximately 800 feet to the east-northeast of the site (USGS, 1971).

#### 4.0 SOILS INVESTIGATION

#### 4.1 <u>Site Topography</u>

The project area is at an elevation of approximately 16 to 17 feet above mean sea level (USGS, 1971). The project area is relatively flat, gently sloping to the east towards Brinson Creek. The area surrounding the tank system of TC-341 consists of

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open, grassed area to the north, east and west, with Buildings TC-341 and TC-342 located south-southeast.

#### 4.2 <u>Regional Geology</u>

The study area is located within the Lower Coastal Plain Soil System (Wiscomico and Talbot System) and the Coastal Plain/Castle Hayne Limestone hydrologic area. The sediments of the Coastal Plain consist of interbedded sands, clays, calcareous clays, shell beds, sandstone, and limestone (LeGrand, 1959). These sediments are layered in interfingering beds and lenses that gently dip and thicken to the east and include ten aquifers and nine confining units. In the Camp LeJeune area, the sediments are about 1,500 feet thick and overlie igneous and metamorphic basement rocks. These sediments were deposited in marine or near-marine environments (Brown and others, 1972).

A brief summary of the geologic/hydrogeologic setting at the Building TC-341 site is provided in the CSA Workplan (Appendix A). In general, downward movement of ground water is obstructed by the presence of clay layers in Coastal Plain formations and consequently most of the ground-water recharge migrates laterally toward discharge areas through the surficial aquifer (Heath, 1980). Further details of regional geologic/hydrogeologic characteristics are provided in Section 5.1 of this report.

#### 4.3 Site Soils and Geology

Drilling, soil sampling and monitoring well installation activities were initiated and completed in March, 1994. Locations of these borings/wells, shown in Drawing 4.1, were located in the field based on analysis of previous studies of the site.

All drilling was accomplished using the hollow stem auger (HSA) technique (ASTM D-1452). Augers of 6.25-inch inner diameter (I.D.) were used to advance the boreholes. Prior to work, all down-hole drilling equipment was steam-cleaned. Soil cuttings were disposed of on-site in a roll-off box provided by Waste Industries, Inc. for off-site disposal. Soil samples were collected from each of the boreholes. Soil samples collected for classification during the drilling operation were generally obtained at depths of 0.0 to 1.5 feet, 3.5 to 5.0 feet, 8.5 to 10.0 feet and on 5-foot centers thereafter to boring termination. Boring depths ranged from 13.0 feet BLS for Type II monitoring wells, to 32 feet BLS for Type III monitoring wells. Soil samples

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were collected with a 24 inch long, 1.375-inch I.D. (2-inch outer diameter) split spoon sampler. Split spoon sampling was performed in general accordance with ASTM D-1586 and the number of blows required to drive the sampler each six-inch increment was recorded on the field boring log. The soil samples were identified in the field using visual/manual techniques described in ASTM D-2487 and ASTM D-2488. The soil was classified in accordance with the Unified Soil Classification System and a record of each test boring was produced. The soil test boring records are presented in Appendix B. Representative portions of each sample were placed in pre-labeled plastic bags and sealed for subsequent headspace testing.

Near-surface soils within 6.0 to 11.0 feet BLS generally consist of fine silty sands with occasional clayey fine sands and fine sandy clay lenses. Beneath these surficial materials, soils generally consist of slightly silty to silty fine to coarse sands to a depth of approximately 32 feet. This type of deposit appears to comprise much of the surficial aquifer at the subject site. Soils classified in the field as gray slightly silty fine sand with generally lower penetration resistance were encountered at depths of approximately 13.5 to 15.0 feet in borings completed for both the Type II wells and Type III wells. Sampling was stopped at approximately 30 feet in borings for monitoring wells MW-9 and MW-15. Moist soil conditions were generally encountered at depths of approximately 4 to 6 feet BLS.

Two cross-sections, the locations of which are shown in Drawing 4.2, were developed for the site to present lithologic interpretations. The cross-sections, as developed from the boring records, are illustrated in Drawings 4.3 and 4.4.

Representative soil samples collected at depths of 8.5 to 10.0 feet and 20.0 to 21.5 feet BLS from MW-7 and MW-9, respectively, were submitted for laboratory grain-size distribution tests. The results of the grain-size distribution tests, presented in Appendix C, reveal that the samples collected from 8.5 to 10.0 feet contained 59.0% fine to medium sand and 41.0% silt and clay, and that the sample from 20.0 to 21.5 feet contained 85.5% sand, 14.2% silt and clay, and .3% gravel.

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#### 4.4 Soil Contamination

The soil investigation activities were monitored with an HNu Photoionization Detector (PID) calibrated to 99.6 percent isobutylene, to determine the relative quantities of total volatile ionizable compounds in the borehole, in ambient air, and in the headspace of individual soil sample containers. Values recorded with the PID are qualitative only and are not directly comparable to actual laboratory analytical results. However, a PID is useful in providing a relative indication of the presence of total volatile ionizable compounds in soil samples.

Soil samples for headspace analysis were collected from each boring according to the following procedure:

- The decontaminated split-spoon sampler was driven to the desired depth interval.
- The split-spoon sampler was retrieved and immediately opened. A small portion of the sample was quickly removed from the split-spoon sampler and placed into a pre-labeled, airtight, plastic bag in a warm location. The remainder of the sample was placed in a second airtight, pre-labeled, laboratory container and stored on ice. Sample handling was executed carefully so as to minimize the loss of potential trace gases.
- At the conclusion of each sampling event, the headspace gas in the bags was measured for total ionizable compounds with the HNu, and the peak value was recorded for each bag sample.

Headspace sampling results are presented in Table 4.1. Results show elevated readings in soil samples collected from a depth of 3.5 to 15.0 feet BLS at location MW-14 and from a depth of 3.5 to 30.0 feet BLS at location MW-15. Results also show a slightly elevated reading in the 13.5 to 15.0 foot soil sample at location MW-16.

Two soil samples were retained from each soil boring for either on-site or off-site laboratory analysis. The on-site laboratory is owned and operated by Geochem Laboratories, Inc. of Morrisville, North Carolina. All off-site samples were submitted to Law Environmental National Laboratories in Pensacola, Florida. Approximately the

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first fifty percent of soil samples collected from the monitoring well soil borings were packed on ice and submitted to the on-site lab to aid in locating the remaining borings. The remaining fifty percent of the soil samples were placed in a cooler, packed on ice and shipped to the off-site laboratory. The distribution of samples submitted to each respective laboratory is shown in Table 4.2. The soil samples submitted to both the on-site and off-site laboratories were analyzed for total petroleum hydrocarbons (TPH) according to EPA preparation/testing Methods 5030/8015 (volatile fraction), 3550/8015 (semi-volatile fraction) and 9071 (oil and grease). Selected soil samples were also analyzed for pH, flashpoint, TCLP metals and total lead. Custody of the samples was maintained by Law Engineering field staff until shipment or delivery to the on-site laboratory.

Chemical testing results for the soil samples collected are summarized in Table 4.3. The laboratory testing indicated the presence of detectable TPH-gasoline in soil samples collected at a depth of 3.5 to 5.0 feet at locations MW-14 and MW-15. The concentration of 4100 mg/Kg in MW-14 and 200 mg/Kg in MW-15 for TPH-gasoline at these locations is well above the State's action level of 10 mg/Kg. Laboratory testing also indicated the presence of detectable TPH-diesel in soil samples collected at a depth of 3.5 to 5.0 feet at locations MW-14 and MW-15. Concentration levels of 800 and 490 mg/Kg, which are above the State's action level of 40 mg/Kg for TPH-diesel, were detected respectively. Also, a concentration level of 11 of TPH diesel was detected in MW-11 and MW-17 at a depth of 0.0 to 1.5 feet. This level is below the State's action level of 40 mg/Kg. Drawing 4.5 shows the distribution of TPH results within the vadose zone soils at the site. Headspace analysis of soil samples analyzed by the on-site and off-site laboratories generally show a good correlation.

Laboratory testing indicated the presence of TCLP barium in soil samples collected from MW-11 and MW-14 at a depth of 3.5 to 5.0 feet at a concentration of 400 ug/L and 250 ug/L respectively, which are below the State's action level of 100,000 ug/L.

Laboratory results indicate that the pH of site soils falls generally in a range between 5.53 to 7.48 suggesting that the soils are slightly acidic to near neutral. TCLP metals barium, chromium, and cadmium were detected in two samples at concentrations below TCLP limits for the respective metals. Results of flashpoint analyses suggest that site soils are not flammable.

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#### 5.0 GROUND-WATER INVESTIGATION

#### 5.1 <u>Regional Hydrogeology</u>

In the Camp Lejeune area, sediments deposited in marine or near-marine environments are about 1,500 feet thick and overlie igneous and metamorphic basement rocks. The aquifers of the Camp Lejeune area are the surficial, Castle Hayne, Beaufort, Peedee, Black Creek, and upper and lower Cape Fear aquifers. They are separated by less permeable clay and silt beds (confining units) that serve to impede the flow of ground water between the aquifers (Harned, 1989).

The surficial aquifer is a series of sediments, primarily sand and clay, which commonly extend to depths of 50 to 100 feet. This unit is not used for water supply on the Base. The principal water-supply aquifer for the Base is the series of sand and limestone beds that occur between 50 and 300 feet below land surface. This series of sediments generally is known as the Castle Hayne aquifer. The Castle Hayne aquifer is about 150 to 350 feet thick in the area and is the most productive aquifer in North Carolina. It is a critical water-supply source, not only for Camp Lejeune but also for the southern coast and east-central Coastal Plain of North Carolina (Harned, 1989).

Camp Lejeune is situated in an area where the Castle Hayne aquifer contains freshwater, although the proximity of saltwater in deeper layers just below the aquifer and in the New River estuary is of concern in managing water withdrawals from the aquifer. The aquifers that lie below the Castle Hayne consist of a thick sequence of sand and clay. Although some of these aquifers are used for water supply elsewhere in the Coastal Plain, they contain saltwater in the Camp Lejeune area (Harned, 1989).

Water levels in wells tapping the surficial aquifer vary seasonally. The surficial aquifer receives more recharge in the winter than in the summer when much of the water evaporates or is transpired by plants before it can reach the water table. Therefore, the water table generally is highest in the winter months and lowest in summer or early fall. The hydraulic head in a confined aquifer, such as the Castle Hayne, shows a different pattern of variation over time than that in an unconfined aquifer. Some seasonal variation also is common in the water levels of the Castle Hayne aquifer, but the changes tend to be slower and over a smaller range than for water-table wells (Harned, 1989).

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#### 5.2 <u>Site Hydrogeology</u>

Site specific data used to characterize the local hydrogeology was obtained through the installation of ground-water monitoring wells. A total of twelve Type II and two Type III ground-water monitoring wells were constructed during this investigation utilizing the materials and installation procedures described in the Workplan (Appendix A). These specifications included decontamination of the drilling equipment and well construction materials with a pressure steam cleaning unit. All monitoring well heads are protected by concrete pads and well head covers. Monitoring well installation details for the Type II and Type III wells are included in Appendix D.

Depths to ground water were measured in all monitoring wells on March 30, 1994. The measurements are included on the Monitoring Well Casing and Water Elevation Worksheets contained in Appendix E. Elevations of the monitoring wells installed by Law Engineering were determined by McKim and Creed Engineers and are also included in the Worksheets contained in Appendix E.

Based on measured ground-water elevations in the monitoring wells, a water-table elevation contour map was constructed to determine ground-water flow direction as shown in Drawing 5.1. A horizontal hydraulic gradient of approximately 0.006 within the surficial aquifer was determined from this map (see Appendix F). In general, ground-water within the surficial aquifer flows to the east toward Brinson Creek, which discharges into the New River. The stabilized ground-water table at the time of our field work appears to have been between 10.50 feet and 13.50 feet BLS within the area of investigation. The average hydraulic conductivity of the surficial aquifer as determined through recovery tests is estimated to be approximately 1.5 feet per day (see Appendix G).

As indicated by a comparison of water-level elevations in the following paired Type II and Type III monitoring wells: MW-9 (screened from 27.0 to 32.0 feet BLS) and MW-10 (screened from 3.0 to 13.0 feet BLS); MW-14 (screened from 3.0 to 13.0 feet BLS) and MW-15 (screened from 25.0 to 30.0 feet BLS); the direction of ground water flow within the surficial aquifer appears have a slight downward component in the vicinity of both pairs locations.

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#### 5.3 Extent of Free Product

In conformance with regulations promulgated by the North Carolina Department of Environment, Health and Natural Resources, the estimated extent of free product was delineated for the site. Free product is defined as a regulated substance that is present as a non-aqueous phase liquid (e.g., liquid not dissolved in water).

Type II monitoring wells were constructed to allow for detection of free product in the surficial aquifer. As indicated on the Monitoring Well Casing and Water Elevation Worksheet presented in Appendix E, free product thicknesses were measured in two on-site wells during this investigation. Free product was detected in monitoring wells MW-1 and MW-2, which were installed prior to this investigation. The estimated extent of free product is shown in Drawing 5.2.

#### 5.4 Dissolved Ground-Water Contamination

Ground-water samples were collected from each of the fourteen newly installed monitoring wells. Prior to sampling, personnel donned laboratory grade gloves. These gloves were replaced after sampling each well to minimize the potential for cross-contamination. Prior to well sampling, the depths to ground water were determined using an electronic water-level meter. The distance from the measuring point to each respective depth was measured and recorded. The data collected and observations made were recorded on the Monitoring Well and Sampling Field Data Worksheets (Appendix H).

Approximate volumes of water removed during development and observations of turbidity are listed in Table 5.1. The development water, approximately 166 gallons total, was temporarily containerized on-site and then taken off-site to P & W Oil Company, Inc. in Leland, North Carolina.

All monitoring wells were purged prior to sample collection to remove stagnant water from the well casing and sand pack in an effort to collect samples representative of the water quality in the surficial aquifer. Each well was purged using a pre-cleaned teflon bailer. Specific conductance, pH, and water temperature were measured and recorded throughout the purging process. Well purging continued until three standing well volumes were removed and indicator parameters had stabilized. Water samples were then collected and immediately decanted gently from the bailer into pre-labeled

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sample containers. These containers were sealed, and stored in chilled coolers. Custody of the samples was maintained by Law Engineering field staff until samples were relinquished for laboratory analysis. Water generated during the well purging and development process was temporarily containerized on-site and then disposed of at an off-site disposal facility.

Ground-water samples were analyzed for purgeable aromatic hydrocarbons according to EPA Method 602 for monitoring wells MW-1, MW-4, MW-7, MW-8 and MW-10. Samples from the monitoring wells were submitted to both the on-site and off-site laboratories for analysis. Table 5.2 shows the distribution of samples submitted to each of the laboratories. A summary of ground-water analytical results is presented in Table 5.3. Results suggest that dissolved phase purgeable aromatic hydrocarbons are present in the upper portion of the surficial aquifer.

The concentrations of constituents detected within shallow ground water were plotted on site maps to illustrate their spatial distribution in the vicinity of the site. Maps showing the extent of free product detected and concentrations of benzene, toluene, ethylbenzene, total xylenes, methyl-tertiary-butyl ether (MTBE), and total polynuclear aromatic hydrocarbon (PAH) compounds are presented in Drawings 5.2 through 5.8 respectively. Drawings 5.2, 5.3, 5.4, 5.5, 5.6 and 5.7 illustrate that the horizontal and vertical extent of free product, benzene, toluene, ethylbenzene, total xylenes and MTBE has been defined by the sampling network. Similarly, Drawing 5.8 suggests that the horizontal and vertical extent of total PAH compounds within shallow ground water in the vicinity of the subject UST has also been defined adequately by the network.

The distribution of of PAH compounds in groundwater shown in Drawing 5.8 illustrates that the extent of PAH contamination has been defined to the north, south and west of the subject tank system, and to levels of 10's of a ug/l, 300 feet downgradient of that tank system.

Laboratory testing of the ground-water sample collected from MW-14 indicates the presence of total PAH compounds at a concentration of 5240 ug/L. MW-14 is located approximately 350 feet east of the leaking UST. Concentrations of only 14.6 ug/L were detected in MW-8. In light of these data and the fact that other potential contaminant sources have been identified downgradient of the subject site, it does not appear that the contamination found in MW-14 is solely a result of the TC-341 UST.

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#### 5.5 <u>Vertical Gradient Determinations</u>

Ground water exhibits both horizontal and vertical components of flow within an aquifer. The hydraulic gradient is the difference in hydraulic head along a flow path divided by the distance between those points. The vertical component of the gradient may be either upward or downward within the aquifer. At the project site there are two well clusters which pair a shallow Type II monitoring well with a deeper Type III monitoring well. These well clusters are identified below:

| Shallow Well | Deep Well |  |
|--------------|-----------|--|
| MW-10        | MW-9      |  |
| MW-14        | MW-15     |  |

The vertical gradient is calculated by first determining the difference in the static water level elevations at each well. Second, the relative elevation of the middle of the screened interval is determined for each well. Finally, the difference in the static water-level elevations is divided by the difference in the midscreen elevations. This value is arbitrarily assigned a positive value if the ground water is moving vertically downward and a negative value if the ground water is moving vertically upward. Vertical gradients determined for the site and values used to calculate the gradient are summarized in Table 5.4. According the these data, the vertical gradient at both locations is downward.

#### 5.6 Rate of Contaminant Migration

The rate at which contaminants migrate through the subsurface is affected by several geohydrochemical processes including molecular diffusion, mechanical mixing, sorption-desorption, ion-exchange, hydrolysis and biodegradation. Because the resources involved in attempting to model the effects of these processes at the project site are significant, we have chosen to apply a relatively simple analytical technique (USEPA, 1985) with which to arrive at a conservative (greater than anticipated) estimate of contaminant migration rates at the site. The analytical technique takes into account only sorption-desorption of the contaminant constituent (expressed in terms of the "retardation factor") and the average linear ground-water flow velocity at the site.

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For purposes of these calculations, we used the average hydraulic conductivity of the surficial aquifer as determined by on-site recovery tests (1.5 feet/day), and the horizontal hydraulic gradient determined to be approximately 0.006. If an effective porosity of 20% is assumed for the surficial aquifer, a seepage velocity of approximately 0.05 feet per day can be determined using Darcy's Law. The approximate rates of movement for petroleum compounds detected within the surficial aquifer would likely be slower than the ground-water seepage rate due to reasons discussed previously. Below is the expected range of contaminant movement rates at the site.

| Benzo(a)anthracene | 10 <sup>-5</sup>   |
|--------------------|--------------------|
| МТВЕ               | 0.04               |
| COMPOUND           | RATE Vc (Feet/Day) |

It is important to note that these migration rates are only gross estimates and may vary considerably from actual field migration rates.

#### 6.0 QUALITY CONTROL PROCEDURES

#### 6.1 Equipment Decontamination

Quality control procedures for equipment handling and decontamination are detailed in the Workplan (Appendix A). Decontamination of the drilling equipment was performed at the wash rack located at Building FC200 and Building TC-341, where waste soil and water were collected and containerized on-site for subsequent proper disposal.

#### 6.2 Sample Collection and Shipment

Details of quality control procedures for sample collection, handling and shipment are included in the CSA Workplan (Appendix A). To provide checks on the integrity and quality of the field sampling program performed at the project site, two quality control measures were employed. First, equipment rinse blanks were submitted to the laboratory for evaluation of procedures used to decontaminate the Teflon sampling

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bailers. Second, trip blanks were submitted to the laboratory during shipment of the monitoring well samples to perform checks on the integrity of the sample containers and ascertain whether contaminants may have entered the samples during transport to and from the job site. Laboratory quality controls included the use of lab blanks throughout the analytical procedures to check for laboratory induced contamination.

Analysis of the rinse blank collected during the monitoring-well sampling for polynuclear aromatic hydrocarbon compounds did exhibit the presence of such compounds in excess of the laboratory detection limits. This result appears to be inconsequential however, because three of the five detected compounds were not detected in any other samples. Further, the two that were detected in samples from monitoring wells were one to two orders of magnitude greater in concentration than those detected in the rinse blank. It is likely that the rinse blank sample was contaminated by an external source during collection. Duplicate sample analysis produced results that were generally consistent.

#### 7.0 CONCLUSIONS AND RECOMMENDATIONS

Based upon our assessment activities at the site, a spatial distribution of petroleumhydrocarbon contamination at levels exceeding regulatory standards exists within ground water at the site. Preliminary recommendations describe additional activities that will be needed to meet remaining regulatory requirements.

#### 7.1 Overview and Objectives of Soil and Ground-water Remediation

7.1.1 Soil

Results of this investigation indicate that the extent of vadose soil contamination has been defined and occurs within the immediate vicinity of the tank. Protection of public health and ground-water quality are the primary reasons for soil remediation at sites with elevated concentrations of TPH. As discussed in Section 3.0 of this report, the potential for exposure to contaminated soil at the project site is minimal as long as the subsurface remains undisturbed. However, guidelines for remediation of soil contaminated by petroleum have been established by the Groundwater Section of the Division of Environmental Management, DEHNR (1993).

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Within these guidelines, the Groundwater Section has set "action levels" of 10 mg/Kg for soils contaminated with low boiling point hydrocarbons and 40 mg/Kg for soils contaminated with medium boiling point hydrocarbons in contact with ground water. Where petroleum contaminated soil is not in contact with the shallow ground water and other, specific conditions apply, the final clean-up levels for site soils may range up to 300 mg/Kg and 1200 mg/Kg for low and medium boiling point hydrocarbons respectively. Because free product is present on the water table in the vicinity of the UST system, and because TPH was not detected in unsaturated soils at the remaining boring/monitoring well locations, completion of a Site Sensitivity Evaluation was not required. Therefore, the objectives for remediation of contaminated soil at the project site should focus on 1) eliminating the adsorbed hydrocarbons as an ongoing source of ground-water contamination through leaching and desorption and 2) complying with NCDEHNR guidelines which require remediation of all soil containing petroleum hydrocarbons in excess of DEM action levels.

#### 7.1.2 Ground Water

The results of this investigation indicate that ground water flows primarily to the east and that contamination has occurred in mainly the upper portion of the surficial aquifer.

The necessity of remediation efforts designed to restore ground-water quality is often not easily quantified. The decision ultimately rests upon regulatory requirements, the measured and/or perceived present and future utility of the ground-water resource, the risks associated with the potential exposure to the contaminants, and the availability of resources with which to implement and operate a ground-water restoration project. Obviously, remediation is warranted in a situation where the risk to public health or welfare is unavoidable and unacceptable as a result of exposure to ground-water contaminants. As indicated in Section 3.0 and Table 3.1 of this report, present exposure to ground-water contaminants in the vicinity of the project site is considered unlikely.

With respect to regulatory requirements, the North Carolina Environmental Management Commission (EMC) has adopted maximum allowable concentrations for contaminant constituents in ground water. The maximum regulatory concentration for compounds detected in ground water beneath the site are included in Table 5.3. For compounds which do not have a numerical standard, a petition may be filed with

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the North Carolina Division of Environmental Management (DEM) in order to establish such a standard. Otherwise, a maximum allowable concentration for the compound not listed is equal to its laboratory detection limit. As indicted in Table 5.3, Law Engineering has documented the occurrence of several constituents at levels which exceed the maximum allowable concentrations for at the project site.

At sites where ground-water standards have been exceeded, rules adopted by the EMC and enforced by DEM require that a corrective action plan for the restoration of ground-water quality be prepared. The feasibility and justification for alternative remedial options ranging from natural attenuation (no action) to active remediation are addressed in the corrective action plan with the addition of limited confirmation sampling. This comprehensive site assessment will provide the data needed for preparation of such a plan.

#### 7.2 <u>Conclusions</u>

Based upon the results of our investigation, petroleum related contamination is present within soils and ground water within the area of investigation. The majority of soil contamination appears to occur within the immediate vicinity of the UST subject system. Ground-water contamination was detected primarily in the upper portion of the surficial aquifer.

The extent of benzene, ethylbenzene, toluene, total xylenes, methyl-tertiary-butyl ether and polynuclear aromatic hydrocarbons within site ground water has been adequately defined by the sampling network used in this study. Elevated concentrations of PAH compounds at the furthest downgradient well location suggest that other petroleum sources located east of TC-341 have contributed petroleum compounds to the shallow ground water in that area.

Results of this assessment suggest that the majority of soil and ground-water contamination originating from the tank system at Building TC-341 has been adequately defined for the purposes of preparing a Corrective Action Plan.

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#### 7.3 <u>Recommendations</u>

Based on our assessment of the subject site, soil and ground water both indicated the presence of compounds characteristic of fuel oil that leaked from the UST system at TC-341 and possibly gasoline or Jet fuel from the petroleum source located east of TC-341. The presence of free product in ground-water coupled with elevated concentrations of petroleum constituents requires additional measures to satisfy groundwater requirements set forth by the state.

Our recommendations are as follows:

- Initiate free product recovery activities in the vicinity of the TC-341 UST system.
- Provide a copy of this comprehensive site assessment to the State for their review and files.
- Perform additional investigation to determine the limits of soil and ground-water contamination to the east of Building TC-341.
- Begin preparation of a Corrective Action Plan.

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#### 8.0 **REFERENCES**

- ATEC Associates, Inc. <u>Underground Storage Tank (UST) Site Check, Former Mess Hall</u> <u>Heating Plant UST</u>, Marine Corps Base, Camp Geiger, N.C. September 24, 1992.
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### TABLES

| SOURCE ID NO.                  | SOURCE ID NO. PRODUCT TYPE INSTALLATION SIZE OF TANK (GAL.)<br>DATE |         |                          |                       |  |  |
|--------------------------------|---------------------------------------------------------------------|---------|--------------------------|-----------------------|--|--|
| TC-341 TANK                    | NUMBER 6 HEATING OIL                                                | 1941    | UNKNOWN                  |                       |  |  |
| TC341 TANK<br>FUEL SUPPLY LINE | NUMBER 6 HEATING OIL                                                | 1941    | 6" DIAMETER              | ABANDONED<br>IN PLACE |  |  |
| BUILDING NO. TC-480            | NUMBER 2 FUEL OIL                                                   | 1976    | 550 GALLON UST           |                       |  |  |
| BUILDING NO. TC-474            | WASTE OIL                                                           | 1946    | 550 GALLON               | ABANDONED             |  |  |
| FUEL TANK FARM                 | GASOLINE, DIESEL, KEROSENE                                          | 1940'S  | 5-15,000 GALLON<br>TANKS | ACTIVE                |  |  |
| GAS STATION<br>BUILDING 341    | GASOLINE, DIESEL                                                    | UNKNOWN | UNKNOWN                  | DEMOLISHED            |  |  |

NOTE:

Underground lines associated with these tanks, the fuel farm above ground tanks, and the oil-water separator located southeast of the fuel farm are also potential contaminant sources.

|                 | TABLE 3.1<br>WELL INVENTORY SUMMARY<br>SITE ASSESSMENT REPORT<br>BUILDING TC-341<br>MARINE CORPS AIR STATION<br>CAMP LEJEUNE, NORTH CAROLINA<br>LAW ENGINEERING JOB NO. 475-09183-01 |                          |                              |                              |                                                            |                 |  |  |  |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|------------------------------|------------------------------|------------------------------------------------------------|-----------------|--|--|--|
| USGS WELL NO.   | MCB WELL<br>NO.                                                                                                                                                                      | TOTAL WELL<br>DEPTH (FT) | SCREENED<br>INTERVAL<br>(FT) | CASING<br>DIAMETER<br>(INCH) | APPROXIMATE<br>DISTANCE<br>FROM BUILDING<br>TC-341<br>(FT) | WELL USAGE      |  |  |  |
| 3444300772729.1 | TC-104                                                                                                                                                                               | 182.0′                   | 107'-182'<br>(OPEN HOLE)     | 10.0"                        | 2000.0′                                                    | ABANDONED       |  |  |  |
| 3444280772729.1 | TC-100                                                                                                                                                                               | 67.0′                    | OPEN HOLE                    | 18.0"                        | 1950.0′                                                    | ABANDONED       |  |  |  |
| 3444120772755.1 | TC-202                                                                                                                                                                               | 80.0'                    | 35'-80'                      | 8.0"                         | 1950.0'                                                    | ABANDONED       |  |  |  |
| 3444120772755.2 | TC-325                                                                                                                                                                               |                          |                              |                              | 1950.0′                                                    | ABANDONED       |  |  |  |
| 3444070772728.1 | TC-502                                                                                                                                                                               | 184.0′                   | 110'-184'<br>(OPEN HOLE)     | 10.0"                        | 1500.0′                                                    | WATER<br>SUPPLY |  |  |  |
| 3444180772729.1 | NC-52                                                                                                                                                                                | 70.0′                    | 25'-66'<br>(OPEN HOLE)       |                              | 1700.0′                                                    | WATER<br>SUPPLY |  |  |  |
| 3444050772728.1 | TC-600                                                                                                                                                                               | 70.0′                    | 48'-70'                      | 8.0"                         | 1800.0'                                                    | WATER<br>SUPPLY |  |  |  |
| 3443560772727.1 | TC-700                                                                                                                                                                               | 76.0'                    | 27.5'-76'<br>(OPEN HOLE)     | 18.0"                        | 2600.0′                                                    | WATER<br>SUPPLY |  |  |  |
| 3444250772707.1 | T-15                                                                                                                                                                                 | 477.0'                   | OPEN TEST<br>HOLE            |                              | 1000.0′                                                    | WATER<br>SUPPLY |  |  |  |

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-- Not Available

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|                                                                                | TABLE 3.2<br>SUMMARY OF EXPOSURE PATHWAYS<br>SITE ASSESSMENT REPORT<br>BUILDING TC-341<br>MARINE CORPS AIR STATION<br>CAMP LEJEUNE, NORTH CAROLINA<br>LAW ENGINEERING JOB NO. 475-09183-01 |                       |                       |                         |  |  |  |  |
|--------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------|-------------------------|--|--|--|--|
| CONTAMINATED INGESTION INGESTION INHALATION ADSC<br>MEDIUM (EATING) (DRINKING) |                                                                                                                                                                                            |                       |                       |                         |  |  |  |  |
| Free Product                                                                   | NA                                                                                                                                                                                         | Exposure Unlikely (1) | NA                    | Exposure Unlikely (1)   |  |  |  |  |
| Soil                                                                           | Contingent Exposure (2)                                                                                                                                                                    | NA                    | NA                    | Contingent Exposure (2) |  |  |  |  |
| Ground Water                                                                   | Exposure Unlikely (3)                                                                                                                                                                      | Exposure Unlikely (3) | NA                    | Exposure Unlikely (3)   |  |  |  |  |
| Surface Water                                                                  | Surface Water Exposure Unlikely (4) Exposure Likely (4) NA Exposure Likely (4)                                                                                                             |                       |                       |                         |  |  |  |  |
| Vapor                                                                          | NA                                                                                                                                                                                         | NA                    | Exposure Unlikely (5) | NA                      |  |  |  |  |

NOTES:

NA Not Applicable

(1) Free product detected in surficial waters; water supply wells draw from Castle Hayne aquifer.

(2) Potential for exposure only if subsurface below approximately 1.0 foot BLS is disturbed.

(3) Via use of MCAS water supply lines that extend through the project area for drinking, cooking and bathing.

(4) Preliminary ground-water sampling results indicated that petroleum constituents may extend to Brinson Creek that may carry constituents to the New River.

(5) Limited assessment indicates sunsurface vaults, manways, or other exposure routes in vicinity of known soil/product contamination.

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| TABLE AUR (Prov 1 of 2)<br>SUMMARY OF JAEADSPACE MAALYSIS<br>SITE ASSESSMENT REPORT<br>BUILDING TC-341<br>MARINE CORPS AIR STATION<br>CAMP LEJEUNE, NORTH CAROLINA<br>LAW ENGINEERING JOB NO. 475-09183-01 |                       |                      |                                            |  |  |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|----------------------|--------------------------------------------|--|--|--|
| SAMPLE<br>LOCATION<br>I.D. #                                                                                                                                                                               | SAMPLE<br>DEPTH (FT.) | PID<br>READING (PPM) | SAMPLE SELECTED FOR<br>LABORATORY ANALYSIS |  |  |  |
| MW-4 SS1                                                                                                                                                                                                   | 0.0'-1.5'             | ND                   | √                                          |  |  |  |
| MW-4 SS2                                                                                                                                                                                                   | 3.5'-5.0'             | ND                   | $\checkmark$                               |  |  |  |
| MW-4 SS3                                                                                                                                                                                                   | 8.5'-10.0'            | ND                   |                                            |  |  |  |
| MW-4 SS4                                                                                                                                                                                                   | 13.5′-15.0′           | ND                   |                                            |  |  |  |
| MW-5 SS1                                                                                                                                                                                                   | 0.0′-1.5′             | ND                   | ✓                                          |  |  |  |
| MW-5 SS2                                                                                                                                                                                                   | 3.5'-5.0'             | ND                   | √                                          |  |  |  |
| MW-5 SS3                                                                                                                                                                                                   | 8.5'-10.0'            | ND                   |                                            |  |  |  |
| MW-5 SS4                                                                                                                                                                                                   | 13.5′-15.0′           | ND                   |                                            |  |  |  |
| MW-6 SS1                                                                                                                                                                                                   | 0.0′-1.5′             | ND                   | √                                          |  |  |  |
| MW-6 SS2                                                                                                                                                                                                   | 3.5′-5.0′             | ND                   | $\checkmark$                               |  |  |  |
| MW-6 SS3                                                                                                                                                                                                   | 8.5'-10.0'            | ND                   |                                            |  |  |  |
| MW-6 SS4                                                                                                                                                                                                   | 13.5′-15.0′           | ND                   |                                            |  |  |  |
| MW-7 SS1                                                                                                                                                                                                   | 0.0′-1.5′             | ND                   | √                                          |  |  |  |
| MW-7 SS2                                                                                                                                                                                                   | 3.5′-5.0′             | ND                   | ~                                          |  |  |  |
| MW-7 SS3                                                                                                                                                                                                   | 8.5′-10.0′            | ND                   |                                            |  |  |  |
| MW-7 SS4                                                                                                                                                                                                   | 13.5′-15.0′           | ND                   |                                            |  |  |  |
| MW-8 SS1                                                                                                                                                                                                   | 0.0'-1.5'             | ND                   | √                                          |  |  |  |
| MW-8 SS2                                                                                                                                                                                                   | 3.5′-5.0′             | ND                   | √                                          |  |  |  |
| MW-8 SS3                                                                                                                                                                                                   | 8.5'-10.0'            | ND                   |                                            |  |  |  |
| MW-8 SS4                                                                                                                                                                                                   | 13.5′-15.0′           | ND                   |                                            |  |  |  |
| MW-9 SS1                                                                                                                                                                                                   | 0.0′-1.5′             | ND                   | √                                          |  |  |  |
| MW-9 SS2                                                                                                                                                                                                   | 3.5′-5.0′             | ND                   | · •                                        |  |  |  |
| MW-9 SS3                                                                                                                                                                                                   | 8.5'-10.0'            | ND                   |                                            |  |  |  |
| MW-9 SS4                                                                                                                                                                                                   | 13.5′-15.0′           | ND                   |                                            |  |  |  |
| MW-9 SS5-A                                                                                                                                                                                                 | 18.5′-20.0′           | ND                   |                                            |  |  |  |
| MW-9 SS5-B                                                                                                                                                                                                 | 20.0′-21.5′           | ND                   |                                            |  |  |  |
| MW-9 SS6                                                                                                                                                                                                   | 23.5'-25.0'           | ND                   |                                            |  |  |  |
| MW-9 SS7                                                                                                                                                                                                   | 28.5'-30.0'           | ND                   |                                            |  |  |  |
| MW-10 SS1                                                                                                                                                                                                  | 0.0'-1.5'             | ND                   | ~                                          |  |  |  |
| MW-10 SS2                                                                                                                                                                                                  | 3.5′-5.0′             | ND                   | ~                                          |  |  |  |
| MW-10 SS3                                                                                                                                                                                                  | 8.5′-10.0′            | ND                   |                                            |  |  |  |
| MW-10 SS4                                                                                                                                                                                                  | 13.5′-15.0′           | ND                   |                                            |  |  |  |

|                              | TABLE AL (PPS 2 072)<br>SUMMARY OF HEADSPACE ANALYSIS<br>SITE ASSESSMENT REPORT<br>BUILDING TC-341<br>MARINE CORPS AIR STATION<br>CAMP LEJEUNE, NORTH CAROLINA<br>LAW ENGINEERING JOB NO. 475-09183-01 |                      |                                            |  |  |  |  |
|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------------------------------------|--|--|--|--|
| SAMPLE<br>LOCATION<br>I.D. # | SAMPLE<br>DEPTH (FT.)                                                                                                                                                                                  | PID<br>READING (PPM) | SAMPLE SELECTED FOR<br>LABORATORY ANALYSIS |  |  |  |  |
| MW-11 SS1                    | 0.0′-1.5′                                                                                                                                                                                              | ND                   | $\checkmark$                               |  |  |  |  |
| MW-11 SS2                    | 3.5'-5.0'                                                                                                                                                                                              | ND                   | √                                          |  |  |  |  |
| • MW-11 SS3                  | 8.5′-10.0′                                                                                                                                                                                             | ND                   | $\checkmark$                               |  |  |  |  |
| MW-11 SS4                    | 13.5′-15.0′                                                                                                                                                                                            | ND                   |                                            |  |  |  |  |
| MW-12 SS1                    | 0.0'-1.5'                                                                                                                                                                                              | ND                   | $\checkmark$                               |  |  |  |  |
| MW-12 SS2                    | 3.5′-5.0′                                                                                                                                                                                              | ND                   | $\checkmark$                               |  |  |  |  |
| MW-12 SS3                    | 8.5′-10.0′                                                                                                                                                                                             | ND                   | √                                          |  |  |  |  |
| MW-12 SS4                    | 13.5'-15.0'                                                                                                                                                                                            | ND                   |                                            |  |  |  |  |
| MW-13 SS1                    | 0.0'-1.5'                                                                                                                                                                                              | ND                   | ✓                                          |  |  |  |  |
| MW-13 SS2                    | 3.5'-5.0'                                                                                                                                                                                              | ND                   | √                                          |  |  |  |  |
| MW-13 SS3                    | 8.5'-10.0'                                                                                                                                                                                             | ND                   | √                                          |  |  |  |  |
| MW-13 SS4                    | 13.5′-15.0′                                                                                                                                                                                            | ND                   |                                            |  |  |  |  |
| MW-14 SS1                    | 0.0'-1.5'                                                                                                                                                                                              | ND                   | ✓                                          |  |  |  |  |
| MW-14 SS2                    | 3.5′-5.0′                                                                                                                                                                                              | 40                   | ✓                                          |  |  |  |  |
| MW-14 SS3                    | 8.5'-10.0'                                                                                                                                                                                             | 40                   | √                                          |  |  |  |  |
| MW-14. SS4                   | 13.5′-15.0′                                                                                                                                                                                            | 32                   |                                            |  |  |  |  |
| MW-15 SS1                    | 0.0′-1.5′                                                                                                                                                                                              | ND                   | √                                          |  |  |  |  |
| MW-15 SS2                    | 3.5'-5.0'                                                                                                                                                                                              | 42                   | √                                          |  |  |  |  |
| MW-15 SS3                    | 8.5′-10.0′                                                                                                                                                                                             | 60                   | $\checkmark$                               |  |  |  |  |
| MW-15 SS4                    | 13.5′-15.0′                                                                                                                                                                                            | 17                   | √                                          |  |  |  |  |
| MW-15 SS5                    | 18.5'-20.0'                                                                                                                                                                                            | 2                    |                                            |  |  |  |  |
| MW-15 SS6                    | 23.5'-25.0'                                                                                                                                                                                            | 9                    |                                            |  |  |  |  |
| MW-15 SS7                    | 28.5'-30.0'                                                                                                                                                                                            | 10                   | ✓                                          |  |  |  |  |
| MW-16 SS1                    | 0.0'-1.5'                                                                                                                                                                                              | ND                   | √                                          |  |  |  |  |
| MW-16 SS2                    | 3.5′-5.0′                                                                                                                                                                                              | ND                   | √                                          |  |  |  |  |
| MW-16 SS3                    | 8.5′-10.0′                                                                                                                                                                                             | ND                   | √                                          |  |  |  |  |
| MW-16 SS4                    | 13.5′-15.0′                                                                                                                                                                                            | 8                    |                                            |  |  |  |  |
| MW-17 SS1                    | 0.0'-1.5'                                                                                                                                                                                              | ND                   | ✓                                          |  |  |  |  |
| MW-17 SS2                    | 3.5′-5.0′                                                                                                                                                                                              | ND                   | √                                          |  |  |  |  |
| MW-17 SS3                    | 8.5'-10.0'                                                                                                                                                                                             | ND                   |                                            |  |  |  |  |
| MW-17 SS4                    | 13.5′-15.0′                                                                                                                                                                                            | ND                   |                                            |  |  |  |  |

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|             | TABLE 4 2<br>SUMMARTOF OVERTEVELAPORATORT DISTRIBUTION<br>SOU SAMPLES<br>WHINE COUS ARISTATION<br>BUILDING TC-341<br>CAMP LEVEN, NORTH CAROLINA<br>LAW ENGINEERING JOB NO. 475-09183-01 |                             |                                                        |                                  |                              |                |    |  |  |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|--------------------------------------------------------|----------------------------------|------------------------------|----------------|----|--|--|
| ANALYSIS    |                                                                                                                                                                                         |                             |                                                        |                                  |                              |                |    |  |  |
|             | EPA Method 5030<br>(Gasoline)                                                                                                                                                           | EPA Method<br>3550 (Diesei) | EPA Method 9071<br>(OR & Grease)                       | EPA Method 1311<br>(TCLP Metals) | EPA Method 7470<br>(Mercury) | FLASH<br>POINT | рн |  |  |
| MW-4 551    | ×                                                                                                                                                                                       | x                           |                                                        |                                  |                              |                |    |  |  |
| MW-4 SS2    | x                                                                                                                                                                                       | x                           |                                                        |                                  |                              |                |    |  |  |
| MW-5 551    | x                                                                                                                                                                                       | x                           |                                                        |                                  |                              |                |    |  |  |
| MW-5 \$52   | x                                                                                                                                                                                       | x                           |                                                        |                                  |                              |                |    |  |  |
| MW-6 551    | x                                                                                                                                                                                       | X                           |                                                        |                                  |                              |                |    |  |  |
| MW-6 SS2    | ×                                                                                                                                                                                       | X                           |                                                        |                                  |                              |                |    |  |  |
| MW-7 551    | ×                                                                                                                                                                                       | x                           |                                                        |                                  |                              |                |    |  |  |
| MW-7 SS2    | ×                                                                                                                                                                                       | ×                           |                                                        |                                  |                              |                |    |  |  |
| MW-8 551    | x                                                                                                                                                                                       | x                           |                                                        |                                  |                              |                |    |  |  |
| MW-8 552    | x                                                                                                                                                                                       | x                           |                                                        |                                  |                              |                |    |  |  |
| MW-9 SS1    | x                                                                                                                                                                                       | x                           |                                                        |                                  |                              |                |    |  |  |
| MW-9 SS2    | x                                                                                                                                                                                       | x                           |                                                        |                                  |                              |                |    |  |  |
| MW-10 SS1   | ×                                                                                                                                                                                       | x                           |                                                        |                                  |                              |                |    |  |  |
| MW-10 SS2   | ×                                                                                                                                                                                       | x                           |                                                        |                                  |                              |                |    |  |  |
| MW-10 SS2*  | x                                                                                                                                                                                       | x                           |                                                        |                                  |                              |                |    |  |  |
| MW-11 SS1   | 0                                                                                                                                                                                       | 0                           |                                                        |                                  |                              |                |    |  |  |
| MW-11 SS2   | o                                                                                                                                                                                       | 0                           |                                                        | 0                                | 0                            | 0              | 0  |  |  |
| MW-11 SS3   |                                                                                                                                                                                         |                             | o                                                      |                                  |                              |                |    |  |  |
| MW-12 SS1   | 0                                                                                                                                                                                       | 0                           | o                                                      |                                  |                              | 0              |    |  |  |
| MW-12 SS2   | o                                                                                                                                                                                       | 0                           |                                                        |                                  |                              | 0              | o  |  |  |
| MW-12 SS3   |                                                                                                                                                                                         |                             | o                                                      |                                  |                              |                |    |  |  |
| MW-13 551   | o                                                                                                                                                                                       | 0                           |                                                        |                                  |                              | o              | o  |  |  |
| MW-13 552   | 0                                                                                                                                                                                       | 0                           |                                                        |                                  |                              |                | 0  |  |  |
| MW-13 553   |                                                                                                                                                                                         | -                           | 0                                                      |                                  |                              |                |    |  |  |
| MW-14 SS1   | o                                                                                                                                                                                       | o                           |                                                        |                                  |                              | 0              | 0  |  |  |
| MW-14 SS2   | 0                                                                                                                                                                                       | 0                           | 0                                                      | 0                                | o                            | 0              |    |  |  |
| MW-14 553   |                                                                                                                                                                                         |                             | 0                                                      |                                  |                              |                |    |  |  |
| MW-15 SS1   | 0                                                                                                                                                                                       | 0                           | 4-53- <b>7</b> -11-11-11-11-11-11-11-11-11-11-11-11-11 |                                  |                              |                |    |  |  |
| MW-15 SS2   | 0                                                                                                                                                                                       | 0                           |                                                        |                                  |                              | 0              | o  |  |  |
| MW-15 SS3   |                                                                                                                                                                                         |                             |                                                        |                                  |                              | 0              | 0  |  |  |
| MW-15 SS4   |                                                                                                                                                                                         |                             | 0                                                      |                                  |                              |                |    |  |  |
| MW-15 SS7   |                                                                                                                                                                                         |                             | 0                                                      |                                  |                              |                |    |  |  |
| MW-16 SS1   | 0                                                                                                                                                                                       | 0                           |                                                        |                                  |                              |                | 0  |  |  |
| MW-16 SS2   | 0                                                                                                                                                                                       | 0                           |                                                        |                                  |                              | 0              | 0  |  |  |
| MW-16 SS3   |                                                                                                                                                                                         |                             | 0                                                      |                                  |                              |                |    |  |  |
| MW-17 \$\$1 | 0                                                                                                                                                                                       | o                           | o                                                      |                                  |                              | 0              | 0  |  |  |
| MW-17 SS2   | 0                                                                                                                                                                                       | 0                           |                                                        |                                  |                              |                |    |  |  |
| MW-17 SS2*  | 0                                                                                                                                                                                       | o                           |                                                        |                                  |                              |                |    |  |  |

X = On-Site Laboratory Analysis O = Off-Site Laboratory Analysis

\* Duplicate Sample

|             |            | CA                          | SITE ASSESSMEN<br>BUILDING TC<br>MARINE CORPS AIF<br>MP LEJEUNE, NORT<br>NGINEERING JOB N | -341<br>R STATION<br>FH CAROLINA |     |    |         |  |
|-------------|------------|-----------------------------|-------------------------------------------------------------------------------------------|----------------------------------|-----|----|---------|--|
| SAN<br>LOCA |            | LABORATORY RESULTS          |                                                                                           |                                  |     |    |         |  |
|             |            | TPH-<br>GASOLINE<br>(mg/Kg) | GASOLINE DIESEL OIL & GREASE METALS (DEGREES F)                                           |                                  |     |    |         |  |
| MW-4 S\$1   | 0.0′-1.5′  | ND                          | ND                                                                                        |                                  |     |    |         |  |
| MW-4 SS2    | 3.5'-5.0'  | ND                          | ND                                                                                        |                                  |     |    | **      |  |
| MW-5 SS1    | 0.0′-1.5′  | ND                          | ND                                                                                        |                                  |     |    |         |  |
| MW-5 SS2    | 3.5′-5.0′  | ND                          | ND                                                                                        |                                  |     |    | <b></b> |  |
| MW-6 SS1    | 0.0′-1.5′  | ND                          | ND                                                                                        |                                  |     |    |         |  |
| MW-6 SS2    | 3.5'-5.0'  | ND                          | ND                                                                                        |                                  |     |    |         |  |
| MW-7 SS1    | 0.0′-1.5′  | ND                          | ND                                                                                        |                                  |     |    |         |  |
| MW-7 SS2    | 3.5′-5.0′  | ND                          | ND                                                                                        |                                  | •   |    | •-      |  |
| MW-8 SS1    | 0.0′-1.5′  | ND                          | ND                                                                                        |                                  |     |    |         |  |
| MW-8 SS2    | 3.5′-5.0′  | ND                          | ND                                                                                        |                                  |     |    |         |  |
| MW-9 SS1    | 0.0′-1.5′  | ND                          | ND                                                                                        |                                  | •-  |    |         |  |
| MW-9 SS2    | 3.5′-5.0′  | ND                          | ND                                                                                        |                                  |     |    |         |  |
| MW-10 SS1   | 0.0'-1.5'  | ND                          | ND                                                                                        |                                  | ÷-  |    |         |  |
| MW-10 SS2   | 3.5'-5.0'  | ND                          | 100                                                                                       |                                  |     |    |         |  |
| MW-10 SS2*  | 3.5′-5.0'  | ND                          | ND                                                                                        |                                  |     |    | ••      |  |
| MW-11 SS1   | 0.0'-1.5'  | ND                          | 11                                                                                        |                                  |     |    | ••      |  |
| MW-11 SS2   | 3.5′-5.0′  | ND                          | ND                                                                                        |                                  | 400 | NF | 6.52    |  |
| MW-11 SS3   | 8.5'-10.0' | ••                          |                                                                                           | ND                               |     |    |         |  |
| MW-12 SS1   | 0.0'-1.5'  | ND                          | ND                                                                                        | ND                               |     | NF |         |  |

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ND Not detected; see laboratory reports for applicable detection limit NF No Flash  $\rightarrow$ 

-- Not analyzed

\* Duplicate Sample

Shaded Area = Concentrations detected above NC soil remediation guidelines

NC Action Level for:

Low Boiling Point Hydrocarbons (Gasoline) = 10 mg/Kg Medium Boiling Point Hydrocarbons (Diesel) = 40 mg/Kg High Boiling Point Hydrocarbons (Oil & Grease) = 250 mg/Kg

I and Action Level 1

| TABLE 4 ge 2 of 2)<br>SUMMARY OF LABORATORY ANALYTICAL RESULTS<br>SOIL SAMPLES<br>SITE ASSESSMENT REPORT<br>BUILDING TC-341<br>MARINE CORPS AIR STATION<br>CAMP LEJEUNE, NORTH CAROLINA<br>LAW ENGINEERING JOB NO. 475-09183-01 |             |                                                                                                                                                                                                |     |     |     |    |      |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|-----|-----|----|------|
| SAM<br>LOCA                                                                                                                                                                                                                     |             | LABORATORY RESULTS       TPH-     TPH-     TCLP-     FLASH POINT     pH       GASOLINE     DIESEL     OIL & GREASE     METALS     (DEGREES F)       (mg/Kg)     (mg/Kg)     (mg/Kg)     (ug/l) |     |     |     |    |      |
| MW-12 SS2                                                                                                                                                                                                                       | 3.5'-5.0'   | ND                                                                                                                                                                                             | ND  |     |     | NF | 7.62 |
| MW-12 SS3                                                                                                                                                                                                                       | 8.5'-10.0'  |                                                                                                                                                                                                |     | ND  |     |    |      |
| MW-13 SS1                                                                                                                                                                                                                       | 0.0′-1.5′   | ND                                                                                                                                                                                             | ND  |     |     | NF | 6.02 |
| MW-13 SS2                                                                                                                                                                                                                       | 3.5′-5.0′   | ND                                                                                                                                                                                             | ND  |     |     |    | 5.93 |
| MW-13 SS3                                                                                                                                                                                                                       | 8.5'-10.0'  |                                                                                                                                                                                                |     | ND  |     |    |      |
| MW-14 551                                                                                                                                                                                                                       | 0.0'-1.5'   | ND                                                                                                                                                                                             | ND  |     |     | NF | 7.48 |
| MW-14 SS2                                                                                                                                                                                                                       | 3.5′-5.0′   | 4100                                                                                                                                                                                           | 800 | ND  | 260 | NF |      |
| MW-14 SS3                                                                                                                                                                                                                       | 8.5'-10.0'  |                                                                                                                                                                                                |     | 350 |     |    |      |
| MW-15 SS1                                                                                                                                                                                                                       | 0.0′-1.5′   | ND                                                                                                                                                                                             | ND  |     |     |    |      |
| MW-15 SS2                                                                                                                                                                                                                       | 3.5′-5.0′   | 200                                                                                                                                                                                            | 490 |     |     | NF | 5.53 |
| MW-15 SS3                                                                                                                                                                                                                       | 8.5'-10.0'  |                                                                                                                                                                                                |     |     | ••  | NF | 5.53 |
| MW-15 SS4                                                                                                                                                                                                                       | 13.5'-15.0' | ·                                                                                                                                                                                              |     | ND  |     |    |      |
| MW-15 SS7                                                                                                                                                                                                                       | 28.5'-30.0' |                                                                                                                                                                                                |     | ND  |     |    |      |
| MW-16 SS1                                                                                                                                                                                                                       | 0.0'-1.5'   | ND                                                                                                                                                                                             | ND  |     |     |    | 5.56 |
| MW-16 SS2                                                                                                                                                                                                                       | 3.5'-5.0'   | ND                                                                                                                                                                                             | ND  |     |     | NF | 6.55 |
| MW-16 SS3                                                                                                                                                                                                                       | 8.5'-10.0'  |                                                                                                                                                                                                |     | ND  |     |    |      |
| MW-17 SS1                                                                                                                                                                                                                       | 0.0'-1.5'   | ND                                                                                                                                                                                             | ND  | 11  |     | NF | 7.23 |
| MW-17 SS2                                                                                                                                                                                                                       | 3.5'-5.0'   | ND                                                                                                                                                                                             | ND  |     |     |    |      |
| MW-17 SS2*                                                                                                                                                                                                                      | 3.5'-5.0'   | ND                                                                                                                                                                                             | ND  |     |     |    |      |

 $\Box$ Ð رس 

ND Not detected; see laboratory reports for applicable detection limit NF No Flash

Not analyzed

Duplicate Sample Schaded Area = Concentrations detected above NC soil remediation guidelines

#### NC Action Level for:

Low Boiling Point Hydrocarbons (Gasoline) = 10 mg/Kg Medium Boiling Point Hydrocarbons (Diesel) = 40 mg/Kg High Boiling Point Hydrocarbons (Oil & Grease) = 250 mg/Kg

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| TABLE 5.1         SUMMARY OF MONITORING WELL DEVELOPMENT         SITE ASSESSMENT REPORT         BUILDING TC-341         MARINE CORPS AIR STATION         CAMP LEJEUNE, NORTH CAROLINA         LAW ENGINEERING JOB NO. 475-09183-01 |                                  |                                                  |  |  |  |  |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|--------------------------------------------------|--|--|--|--|--|
| MONITORING WELL<br>IDENTIFICATION NO.                                                                                                                                                                                              | FINAL TURBIDITY<br>(SUBJECTIVE)* | APPROXIMATE VOLUME<br>OF WATER REMOVED<br>(GAL.) |  |  |  |  |  |
| MW-1**                                                                                                                                                                                                                             | FREE PF                          | ODUCT IN WELL                                    |  |  |  |  |  |
| MW-2**                                                                                                                                                                                                                             | FREE PF                          | ODUCT IN WELL                                    |  |  |  |  |  |
| MW-3**                                                                                                                                                                                                                             | 4 29.1                           |                                                  |  |  |  |  |  |
| MW-4                                                                                                                                                                                                                               | 4                                | 10                                               |  |  |  |  |  |
| MW-5                                                                                                                                                                                                                               | 4                                | 7.7                                              |  |  |  |  |  |
| MW-6                                                                                                                                                                                                                               | 4                                | 6.9                                              |  |  |  |  |  |
| MW-7                                                                                                                                                                                                                               | 4                                | 10                                               |  |  |  |  |  |
| MW-8                                                                                                                                                                                                                               | 4                                | 7.2                                              |  |  |  |  |  |
| MW-9                                                                                                                                                                                                                               | 3                                | 21.2                                             |  |  |  |  |  |
| MW-10                                                                                                                                                                                                                              | 4                                | 10                                               |  |  |  |  |  |
| MW-11                                                                                                                                                                                                                              | 4                                | 7.2                                              |  |  |  |  |  |
| MW-12                                                                                                                                                                                                                              | 4                                | 7.4                                              |  |  |  |  |  |
| MW-13                                                                                                                                                                                                                              | 4                                | 7.2                                              |  |  |  |  |  |
| MW-14                                                                                                                                                                                                                              | 4                                | 3.5                                              |  |  |  |  |  |
| MW-15                                                                                                                                                                                                                              | 3                                | 21.0                                             |  |  |  |  |  |
| MW-16                                                                                                                                                                                                                              | 4                                | 7.4                                              |  |  |  |  |  |
| MW-17                                                                                                                                                                                                                              | 4                                | 7.1                                              |  |  |  |  |  |
| NOTES:                                                                                                                                                                                                                             |                                  |                                                  |  |  |  |  |  |

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\* (1) Clear; (2) Slight; (3) Moderate; (4) High
\*\* Existing Wells Ŧ

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| TABLE 5.2<br>SUMMARY OF ON-SITE/OFF-SITE LABORATORY DISTRIBUTION<br>GROUND WATER SAMPLES (MONITORING WELLS)<br>BUILDING TC-341<br>MARINE CORPS AIR STATION<br>CAMP LEJEUNE, NORTH CAROLINA<br>LAW ENGINEERING JOB NO. 475-09183-01 |                    |   |     |   |  |  |  |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|---|-----|---|--|--|--|--|
|                                                                                                                                                                                                                                    | EPA Method<br>6010 |   |     |   |  |  |  |  |
| MW-1                                                                                                                                                                                                                               | 0                  | x | x   | 0 |  |  |  |  |
| MW-2                                                                                                                                                                                                                               |                    |   | x   |   |  |  |  |  |
| MW-3                                                                                                                                                                                                                               |                    |   | х   |   |  |  |  |  |
| MW-4                                                                                                                                                                                                                               | 0                  | x | x   | 0 |  |  |  |  |
| MW-5                                                                                                                                                                                                                               |                    |   | х   |   |  |  |  |  |
| MW-6                                                                                                                                                                                                                               |                    |   | х   |   |  |  |  |  |
| MW-7                                                                                                                                                                                                                               |                    | × | Х,О |   |  |  |  |  |
| MW-8                                                                                                                                                                                                                               |                    | х | 0   |   |  |  |  |  |
| MW-9                                                                                                                                                                                                                               |                    |   | 0   |   |  |  |  |  |
| MW-10                                                                                                                                                                                                                              |                    | x | x   |   |  |  |  |  |
| MW-11                                                                                                                                                                                                                              |                    |   | x   |   |  |  |  |  |
| MW-12                                                                                                                                                                                                                              |                    |   | x   |   |  |  |  |  |
| MW-13                                                                                                                                                                                                                              |                    |   | 0   |   |  |  |  |  |
| MW-14                                                                                                                                                                                                                              |                    |   | 0   |   |  |  |  |  |
| MW-15                                                                                                                                                                                                                              |                    |   | 0   |   |  |  |  |  |
| MW-16                                                                                                                                                                                                                              |                    |   | 0   |   |  |  |  |  |
| MW-17                                                                                                                                                                                                                              |                    |   | 0   |   |  |  |  |  |
| RINSE BLANK                                                                                                                                                                                                                        |                    | x | X   |   |  |  |  |  |
|                                                                                                                                                                                                                                    |                    |   | 0   |   |  |  |  |  |

X = Sample analyzed at On-site laboratory O = Sample analyzed at Off-site laboratory

|                                | -                                     |         | MMARY OF LAE<br>ROUND WATER<br>B<br>MARINI<br>CAMP LEJ |         | LYTICAL RESUL<br>NITORING WELL<br>1<br>FATION<br>CAROLINA |            |            |          |          | , <u>1</u>       |            |
|--------------------------------|---------------------------------------|---------|--------------------------------------------------------|---------|-----------------------------------------------------------|------------|------------|----------|----------|------------------|------------|
| PARAMETER                      | WELL #                                | MW-1    | MW-2                                                   | MW-3    | MW-4                                                      | MW-5       | MW-6       | MW       | .7**     | N.C. GROUNDWATER |            |
|                                | SCREENED INTERVAL (FT.)               | 19.0'1  | 20.0'1                                                 | 19.5'1  | 3.0'-13.0'                                                | 3.0'-13.0' | 3.0'-13.0' | 3.0'-    | 13.0′    | STANDARDS        |            |
|                                | DATE SAMPLED                          | 3/22/94 | 3/22/94                                                | 3/22/94 | 3/16/94                                                   | 3/22/94    | 3/22/94    | 3/10     | 6/94     |                  |            |
| EPA METHOD 6010                |                                       |         | ·····                                                  |         |                                                           |            |            |          |          |                  |            |
| Arsenic                        | · · · · · · · · · · · · · · · · · · · | 44      |                                                        | ••      | ND                                                        | ·····      |            | · ·      |          | 50               | 1          |
| Barium                         |                                       | 390     |                                                        |         | 590                                                       |            |            |          |          | 2000             |            |
| Cadmium                        |                                       | ND      |                                                        |         | 11                                                        |            |            | · · ·    | ·        | 5                |            |
| Chromium                       |                                       | ND      |                                                        |         | 31                                                        |            |            |          |          | 50               |            |
| Lead                           |                                       | ND      |                                                        |         | 60                                                        |            |            |          | -        | 15               |            |
| EPA METHOD 602                 |                                       | <b></b> |                                                        |         |                                                           |            |            | r        |          |                  |            |
| Benzene                        |                                       | ND      |                                                        | ••      | ND                                                        |            |            |          | .6       | 1                |            |
| Toluene                        |                                       | ND      |                                                        |         | 0.7                                                       |            |            | N        | D        | 1000             | Þ          |
| Ethylbenzene                   |                                       | 4.0     | ••                                                     | ••      | ND                                                        |            |            | <u> </u> | D        | 29               | 5-         |
| Xvienes (Total)                | <u></u>                               | 1.8     |                                                        | ••      | ND                                                        |            | <u> </u>   | N        | <u>р</u> | 530              | <b>f</b> - |
| Methyl tert-butyl ether (MTBE) |                                       | NA      |                                                        | ••      | NA                                                        |            |            | <u> </u> | A        | 200              | <b>4</b>   |
| EPA METHOD 610                 |                                       |         |                                                        |         |                                                           | ·          |            | r        |          |                  |            |
| Acenaphthene                   |                                       | 247     | 108                                                    | ND      | ND                                                        | ND         | ND         | ND       | ND       | *                |            |
| Anthracene                     |                                       | 114     | ND                                                     | ND      | ND                                                        | ND         | ND         | ND       | ND       |                  | 4          |
| Benzo (a) anthracene           |                                       | ND      | ND                                                     | ND      | NR                                                        | ND         | ND         | _ND      | ND       | *                | -          |
| Benzofluoranthenes             |                                       | ND      | ND                                                     | ND      | ND                                                        | ND         | ND         | ND       | ND       | <b>A</b>         | 4          |
| Chrysene                       |                                       | ND      | ND                                                     | ND      | ND                                                        | ND         | ND         | ND       | _ND      | •                | -          |
| Fluoranthene                   |                                       | 45.5    | 52.2                                                   | ND      | ND                                                        | ND         | ND         | ND       | ND       | •                | -          |
| Fluorene                       |                                       | 326     | 166                                                    | ND      | ND                                                        | ND         | ND         | ND       | ND       | 280              | -          |
| 1-Methylnaphthalene            |                                       | ND      | NDND                                                   | ND      | ND                                                        | ND         | ND         | ND       | ND       |                  | 1          |
| 2-Methvinaphthalene            |                                       | ND      | ND                                                     | ND      | ND                                                        | ND         | ND         | ND       | ND       | •                |            |
| Nachthalene                    |                                       | 214     | 457                                                    | ND      | ND                                                        | ND         | ND         | ND       | ND       | 21               | 1          |
| Phenanthrene                   |                                       | ND      | ND                                                     | ND      | ND                                                        | ND         | ND         | ND       | _ND      | 210              | ļ          |
| Pyrene                         |                                       | 133     | 138                                                    | ND      | ND                                                        | ND         | ND         | ND       | ND       | •                | 1          |

#### All results are ug/l

Shaded Area = Concentrations detected above NC groundwater standards

Maximum detection limit is equal to laboratory detection limit

\*\* Split Sample; 610 analysis for sample done by both on-site and off-site laboratories

ND Not Detected; see laboratory reports for applicable detection limits

-- Sample not analyzed for this parameter

NA Not Analyzed: MTBE is not included in on-site laboratory EPA 602 analysis

NOTES:

<sup>1</sup> Indicates existing well depth

|                         | •                       |            | MMARY OF LAB<br>ROUND WATER<br>B<br>MARINI<br>CAMP LEJ | LE 5.3 (Page 2 o<br>BORATORY ANAI<br>SAMPLES (MON<br>UILDING TC-341<br>E CORPS AIR ST<br>JEUNE, NORTH C<br>RING JOB NO. 4 | LYTICAL RESUL<br>ITORING WELL<br>ATION<br>AROLINA |            |            |            |                  |              |
|-------------------------|-------------------------|------------|--------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|------------|------------|------------|------------------|--------------|
| PARAMETER               | WELL #                  | MW-8       | MW-9                                                   | MW-10                                                                                                                     | MW-11                                             | MW-12      | MW-13      | MW-14      | N.C. GROUNDWATER |              |
|                         | SCREENED INTERVAL (FT.) | 3.0'-13.0' | 27.0'-32.0'                                            | 3.0'-13.0'                                                                                                                | 3.0'-13.0'                                        | 3.0'-13.0' | 3.0'-13.0' | 3.0'-13.0' | STANDARDS        |              |
|                         | DATE SAMPLED            | 3/22/94    | 3/22/94                                                | 3/16/94                                                                                                                   | 3/22/94                                           | 3/22/94    | 3/22/94    | 3/22/94    | 25               |              |
| EPA METHOD 6010         |                         | r          |                                                        |                                                                                                                           |                                                   |            |            | 1          | 1                | -            |
| Arsenic                 |                         |            |                                                        |                                                                                                                           |                                                   |            |            |            | 50               | 4            |
| Barlum                  |                         |            |                                                        |                                                                                                                           |                                                   |            |            |            | 2000             | -            |
| Cadmium                 |                         |            |                                                        |                                                                                                                           |                                                   |            |            |            | 5                | -            |
| Chromium                |                         |            |                                                        |                                                                                                                           |                                                   | <u> </u>   | ••         |            | 50               | -            |
| Lead                    |                         |            |                                                        |                                                                                                                           |                                                   |            |            |            | 15               | 4            |
| EPA METHOD 602          |                         | 1          | r                                                      |                                                                                                                           |                                                   | 1          | I          | T          |                  | 6            |
| Benzene                 |                         | ND         |                                                        | ND                                                                                                                        |                                                   |            |            | <u> </u>   |                  | ╔            |
| Toluene                 |                         | ND         |                                                        | ND                                                                                                                        |                                                   | <u> </u>   |            |            | 1000             |              |
| Ethylbenzene            |                         | ND         |                                                        | ND                                                                                                                        | ••                                                | ·          |            |            | 29               |              |
| Xvienes (Total)         |                         | ND         |                                                        | 1.6                                                                                                                       |                                                   | <u> </u>   |            |            | 530              | ₫⋍           |
| Methyl tert-butyl ether | (MTBE)                  | NA         | <u> </u>                                               | NA                                                                                                                        |                                                   | <u> </u>   |            |            | 200              | ᠊ᢩᡰᠴ         |
| EPA METHOD 610          |                         | 1          | r                                                      |                                                                                                                           | ·····                                             | T          | <b>I</b>   | 1          |                  | -   ~        |
| Acenaphthene            |                         | ND         | ND                                                     | 19.3                                                                                                                      | ND                                                | ND         | ND         | ND         | *                | <b>d</b> === |
| Anthracene              |                         | 3.1        | ND                                                     | 2.1                                                                                                                       | ND                                                | ND         | ND         | 520        | •                | -            |
| Benzo (a) anthracene    |                         | ND         | ND                                                     | ND                                                                                                                        | ND                                                | NP         | ND         | ND         | •                | -            |
| Benzofluoranthenes      |                         | ND         | ND                                                     | ND                                                                                                                        | ND                                                | ND         | ND         | ND         | •                | -            |
| Chrysene                |                         | NP         | ND                                                     | ND                                                                                                                        | ND                                                | ND         | ND         | ND         | •                | -            |
| Fluoranthene            |                         | ND         | ND                                                     | ND                                                                                                                        | ND                                                | ND         | ND         | ND         | •                | -            |
| Fluorene                |                         | ND         | ND                                                     | ND                                                                                                                        | ND                                                | ND         | ND         | ND         | 280              | -            |
| 1-Methvinaphthalene     |                         | 1.4        | ND                                                     | ND                                                                                                                        | ND                                                | ND         | ND         | 990        | •                | _            |
| 2-Methvinaphthalene     |                         | 4.3        | ND                                                     | ND                                                                                                                        | ND                                                | ND         | ND         | 2500       | · · · · ·        | 4            |
| Naphthalene             | ·                       | ND         | ND                                                     | 32.6                                                                                                                      | ND.                                               | ND         | ND         | 620        | 21               |              |
| Phenanthrene            |                         | 5.8        | ND                                                     | 8,9                                                                                                                       | ND                                                | ND         | ND         | 610        | 210              | _            |
| Pyrene                  |                         | ND         | ND                                                     | ND                                                                                                                        | ND                                                | ND         | ND         | ND         | •                |              |

All results are ug/i

Shaded Area = Concentrations detected above NC groundwater standards

٠ Maximun detection limit is equal to laboratory detection limit

\*\* Split Sample; 610 analysis for sample done by both on-site and off-site laboratories
 Not Detected; see laboratory reports for applicable detection limits
 Sample not analyzed for this parameter
 NA Not Analyzed; MTBE is not included in on-site laboratory EPA 602 analysis

NOTES:

<sup>1</sup> Indicates existing well depth

| TABLE Jage 3 of 3)<br>SUMMARY OF LABORATORY ANALYTICAL RESULTS<br>GROUND WATER SAMPLES (MONITORING WELLS)<br>BUILDING TC-341<br>MARINE CORPS AIR STATION<br>CAMP LEJEUNE, NORTH CAROLINA<br>LAW ENGINEERING JOB NO. 475-09183-01 |                         |                                       |            |                                       |             |                                        |                                        |  |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|---------------------------------------|------------|---------------------------------------|-------------|----------------------------------------|----------------------------------------|--|--|
| PARAMETER                                                                                                                                                                                                                        | WELL #                  | MW-15                                 | MW-16      | MW-17                                 | RINSE BLANK |                                        | N.C. GROUNDWATER                       |  |  |
|                                                                                                                                                                                                                                  | SCREENED INTERVAL (FT.) | 25.0'-30.0'                           | 3.0'-13.0' | 3.0'-13.0'                            |             |                                        | STANDARDS                              |  |  |
|                                                                                                                                                                                                                                  | DATE SAMPLED            | 3/22/94                               | 3/22/94    | 3/22/94                               | 3/22/94     | 3/22/94                                | 8                                      |  |  |
| EPA METHOD 6010                                                                                                                                                                                                                  |                         | <b>.</b>                              |            | ·····                                 |             |                                        |                                        |  |  |
| Arsenic                                                                                                                                                                                                                          |                         | <u> </u>                              |            |                                       |             |                                        | 50                                     |  |  |
| Barium                                                                                                                                                                                                                           |                         |                                       |            |                                       | ·           |                                        | 2000                                   |  |  |
| Cadmium                                                                                                                                                                                                                          |                         |                                       |            |                                       | ·····       |                                        | 5                                      |  |  |
| Chromium                                                                                                                                                                                                                         |                         |                                       |            |                                       |             |                                        | 50                                     |  |  |
| Lead                                                                                                                                                                                                                             |                         | L                                     | <u> </u>   | <u> </u>                              |             |                                        | 15                                     |  |  |
| EPA METHOD 602                                                                                                                                                                                                                   |                         |                                       | ·····      | · · · · · · · · · · · · · · · · · · · | ·····       | ······································ | <b>[</b>                               |  |  |
| Benzene                                                                                                                                                                                                                          |                         | ļ                                     |            |                                       | ND          |                                        |                                        |  |  |
| Toluene                                                                                                                                                                                                                          |                         |                                       |            | <u> </u>                              | ND          |                                        | 1000                                   |  |  |
| Ethvibenzene                                                                                                                                                                                                                     |                         |                                       |            |                                       | ND          |                                        | 29                                     |  |  |
| Xylenes (Total)                                                                                                                                                                                                                  |                         |                                       |            | <u> </u>                              | ND          |                                        | 530                                    |  |  |
| Methyl tert-butyl ether (MTBE)                                                                                                                                                                                                   |                         |                                       |            |                                       | NA          |                                        | 200                                    |  |  |
| EPA METHOD 610                                                                                                                                                                                                                   |                         | · · · · · · · · · · · · · · · · · · · | 1          | T                                     | 1           | rr-                                    |                                        |  |  |
| Acenaphthene                                                                                                                                                                                                                     |                         | ND                                    | ND         | ND                                    | ND          | ND                                     | ······································ |  |  |
| Anthracene                                                                                                                                                                                                                       |                         | ND                                    | ND         | ND                                    | ND          | ND                                     | •                                      |  |  |
| Benzo (a) anthracene                                                                                                                                                                                                             | <u> </u>                | ND                                    | ND         | ND                                    | 1.4         | ND                                     |                                        |  |  |
| Benzofluoranthenes                                                                                                                                                                                                               |                         | ND.                                   | ND         | ND                                    | 20          | ND                                     | •                                      |  |  |
| Chrysene                                                                                                                                                                                                                         |                         | ND                                    | ND         | ND                                    | 1.0         | ND                                     | •                                      |  |  |
| Fluoranthene                                                                                                                                                                                                                     |                         | ND                                    | ND         | ND                                    | 0.7         | ND                                     | •                                      |  |  |
| Fluorene                                                                                                                                                                                                                         |                         | ND                                    | ND         | ND                                    | ND          | ND                                     | 280                                    |  |  |
| 1-Methylnaphthalene                                                                                                                                                                                                              |                         | ND                                    | ND         | ND                                    | ND          | ND                                     | 8                                      |  |  |
| 2-Methvinaphthalene                                                                                                                                                                                                              |                         | ND                                    | ND         | ND                                    | ND          | ND                                     | •                                      |  |  |
| Naphthalene                                                                                                                                                                                                                      |                         | ND                                    | ND         | ND                                    | ND          | ND                                     | 21                                     |  |  |
| Phenanthrene                                                                                                                                                                                                                     |                         | ND                                    | ND         | ND                                    | ND          | ND                                     | 210                                    |  |  |
| Pyrane                                                                                                                                                                                                                           |                         | ND                                    | ND         | ND                                    | 0.9         | ND                                     | •                                      |  |  |

All results are ug/l

Shaded Area = Concentrations detected above NC groundwater standards

\* Maximun detection limit is equal to laboratory detection limit

\*\* Split Sample; 610 analysis for sample done by both on-site and off-site laboratories

ND Not Detected; see laboratory reports for applicable detection limits

-- Sample not analyzed for this parameter

NA Not Analyzed; MTBE is not included in on-site laboratory EPA 602 analysis

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<sup>1</sup> Indicates existing well depth

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|                                    | TABLI<br>/ERTICAL HYDRAU<br>SITE ASSESSM<br>BUILDING<br>MARINE CORPS<br>CAMP LEJEUNE, N<br>V ENGINEERING JO | LIC GRADIENT DE<br>MENT REPORT<br>TC-341<br>AIR STATION<br>MORTH CAROLINA |       |        |  |  |  |  |  |
|------------------------------------|-------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|-------|--------|--|--|--|--|--|
|                                    | WELL PAIR                                                                                                   |                                                                           |       |        |  |  |  |  |  |
|                                    | MW-10                                                                                                       | MW-9                                                                      | MW-14 | MW-15  |  |  |  |  |  |
| TOCE (ft.)                         | 19.31                                                                                                       | 19.36                                                                     | 16.31 | 16.20  |  |  |  |  |  |
| Approx. Mid-Screen Depth (ft.)     | 8.00                                                                                                        | 29.50                                                                     | 8.00  | 27.50  |  |  |  |  |  |
| Approx. Mid-Screen Elevation (ft.) | 11.31                                                                                                       | -10.14                                                                    | 8.31  | -11.30 |  |  |  |  |  |
| SWLE (ft.)                         | 12.46                                                                                                       | 12.04                                                                     | 10.79 | 10.51  |  |  |  |  |  |
| ∆SWLE (ft.)                        | .4                                                                                                          | 2                                                                         | .28   |        |  |  |  |  |  |
| ⊾Mid-Screen Elevation (ft.)        | 21.                                                                                                         | 45                                                                        | 19.61 |        |  |  |  |  |  |
| Vertical Gradient                  | .0                                                                                                          | 2                                                                         | .01   |        |  |  |  |  |  |

NOTES:

TOCE Top of Casing Elevation SWLE Static Water Level Elevation Negative gradient indicates upward movement Positive gradient indicates downward movement



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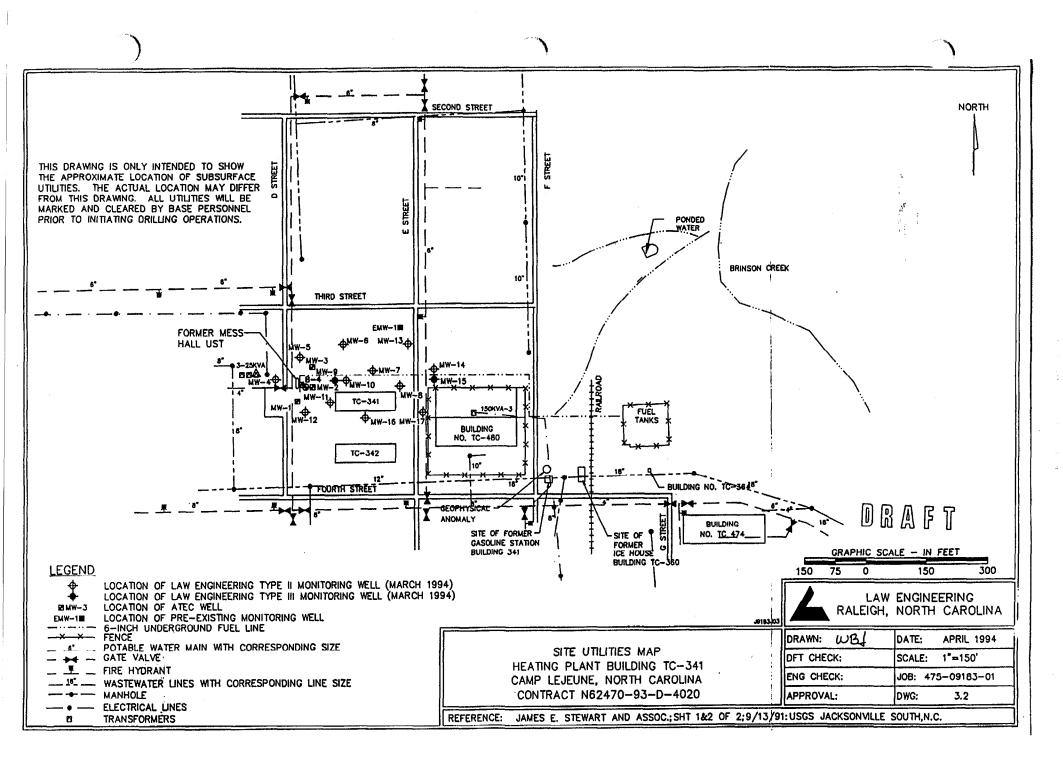
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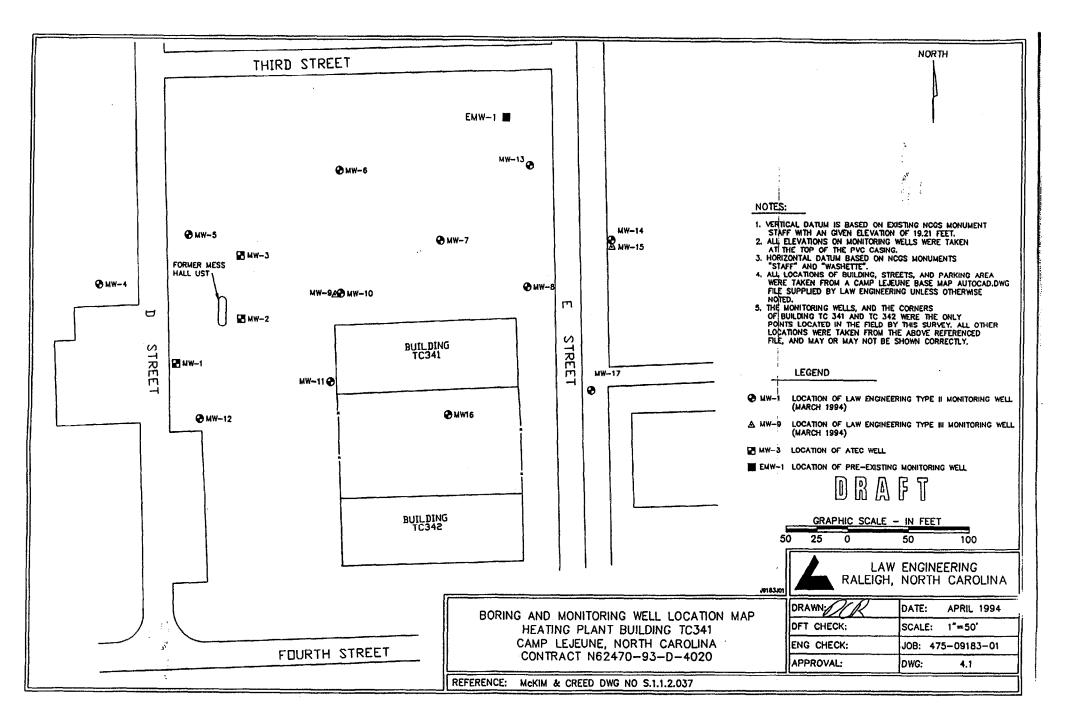
#### DRAWINGS

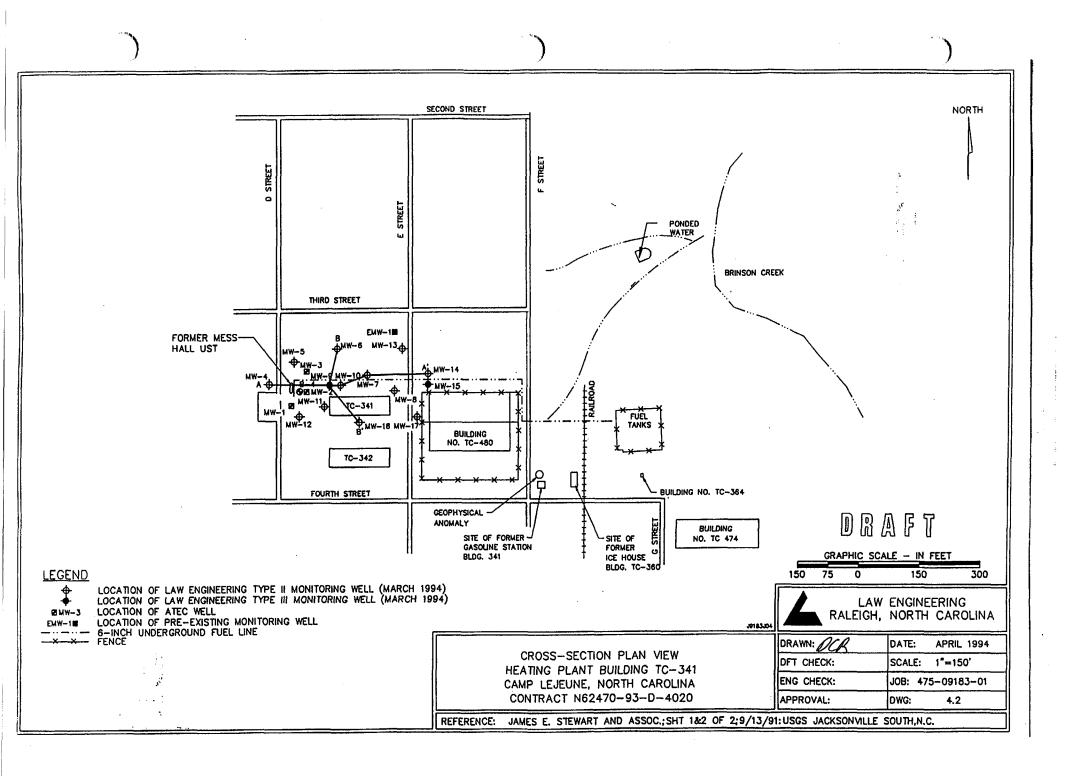
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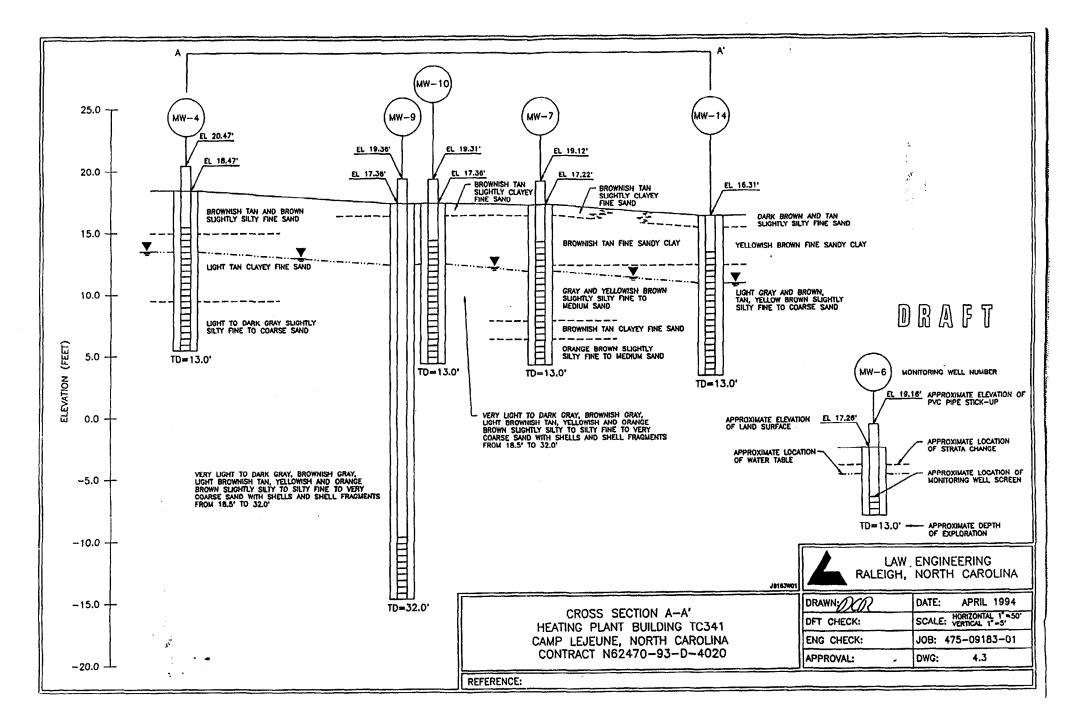
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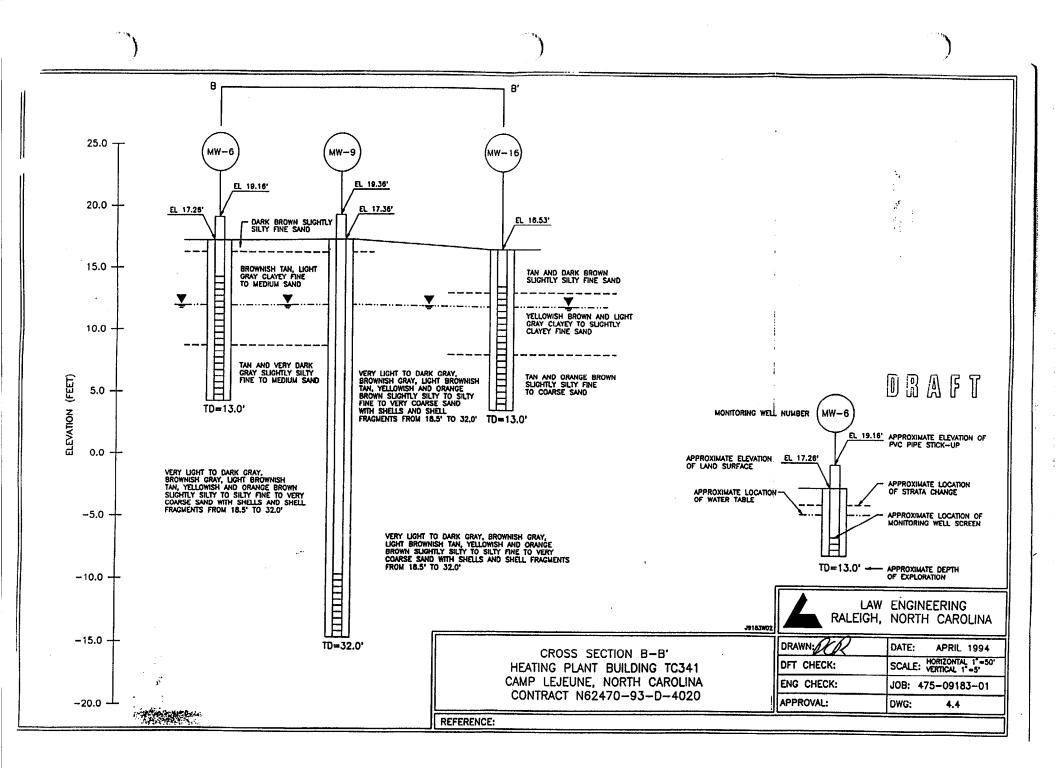


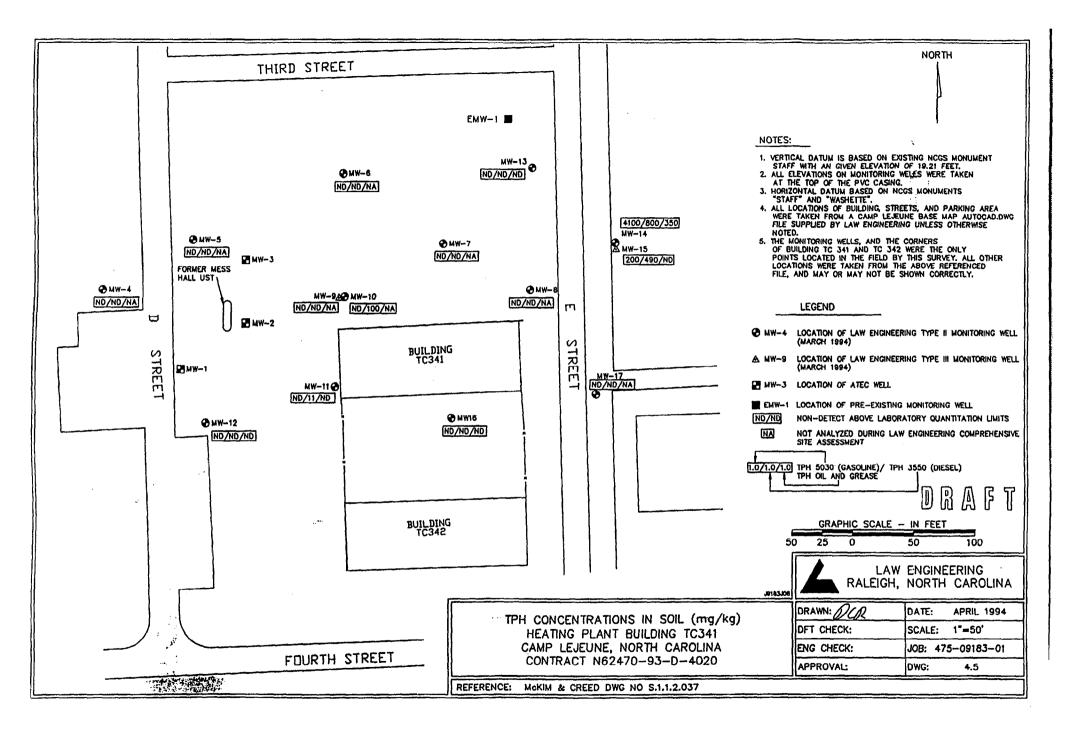


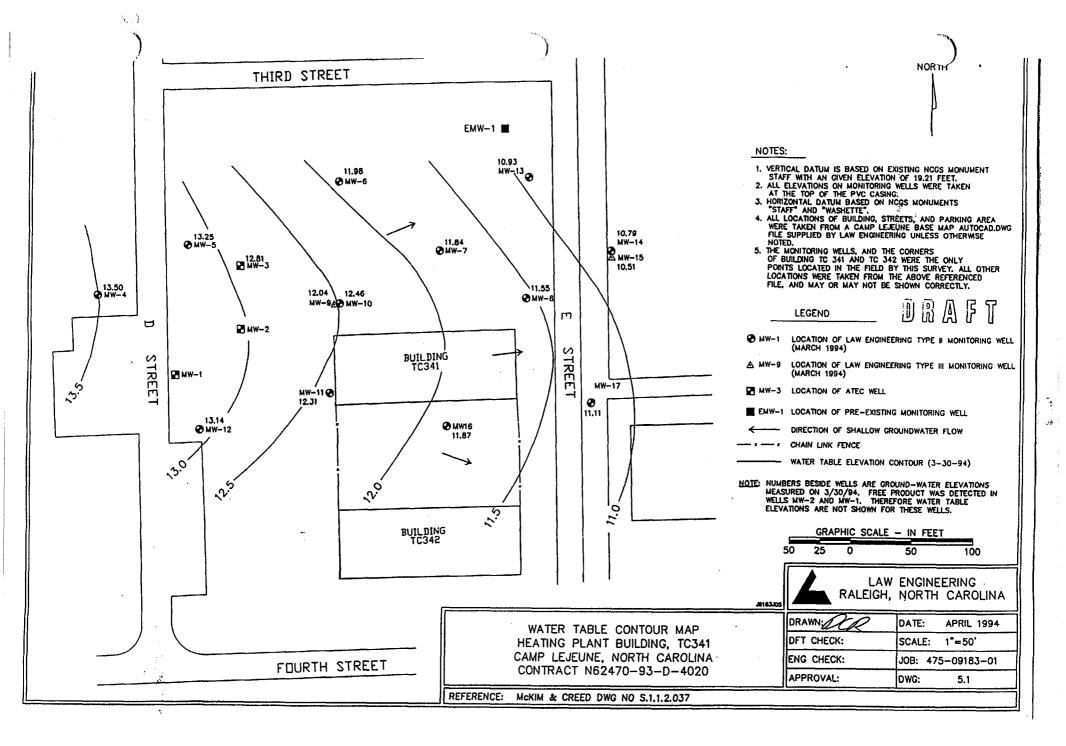


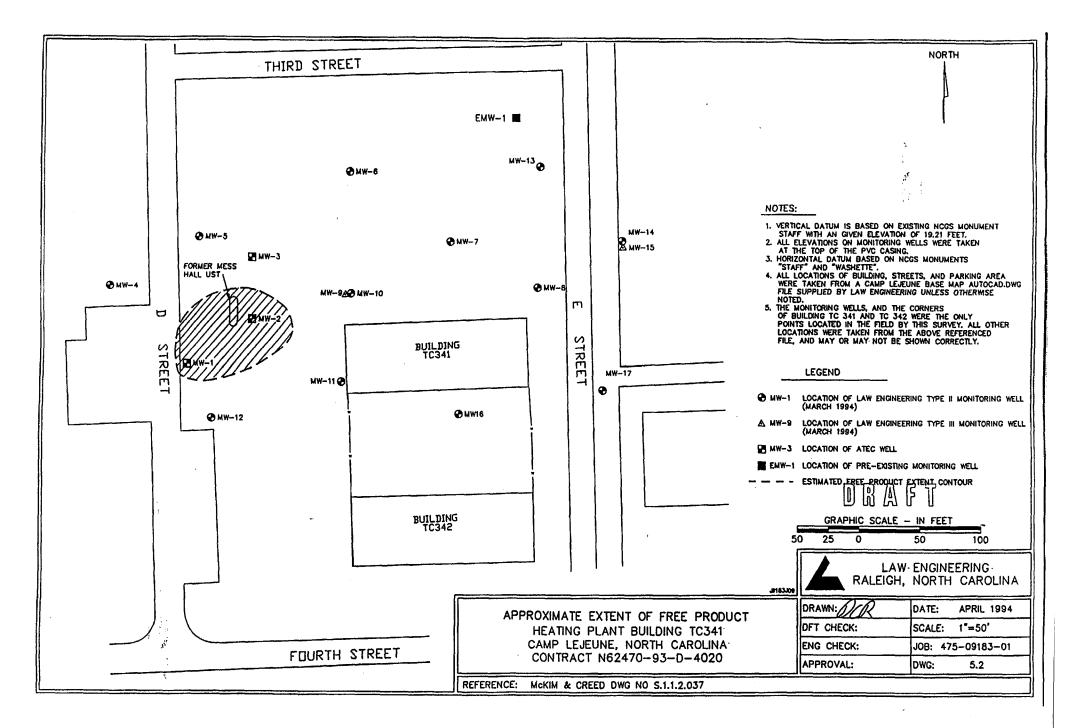


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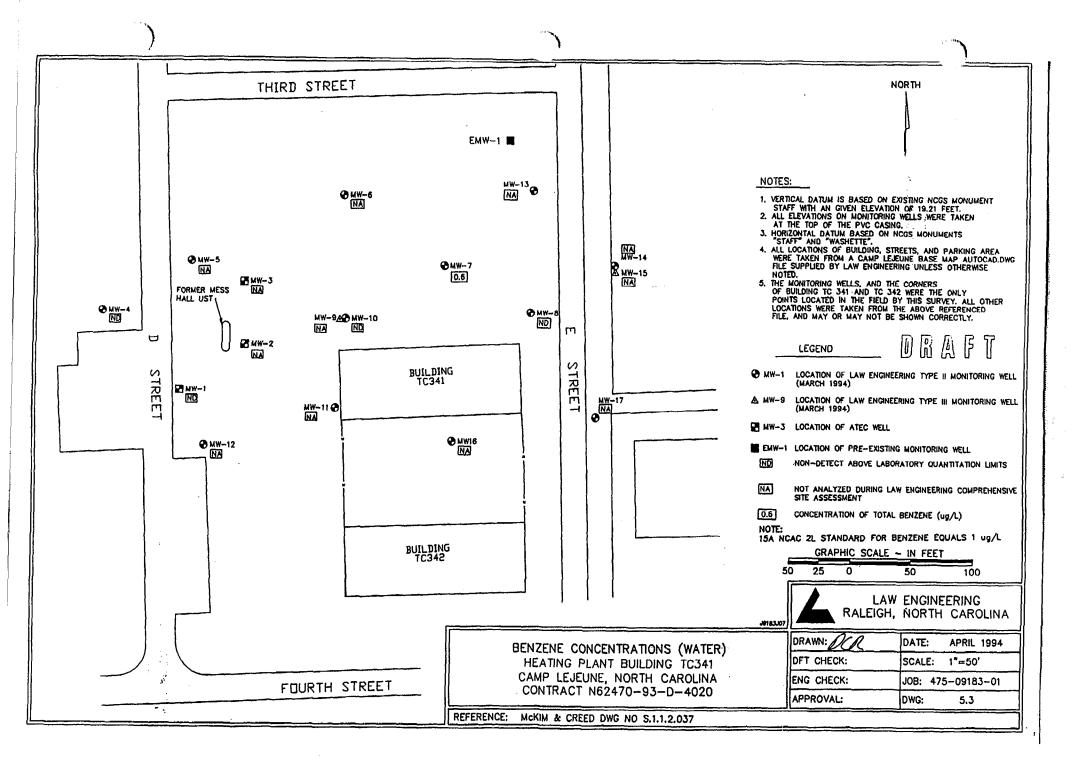


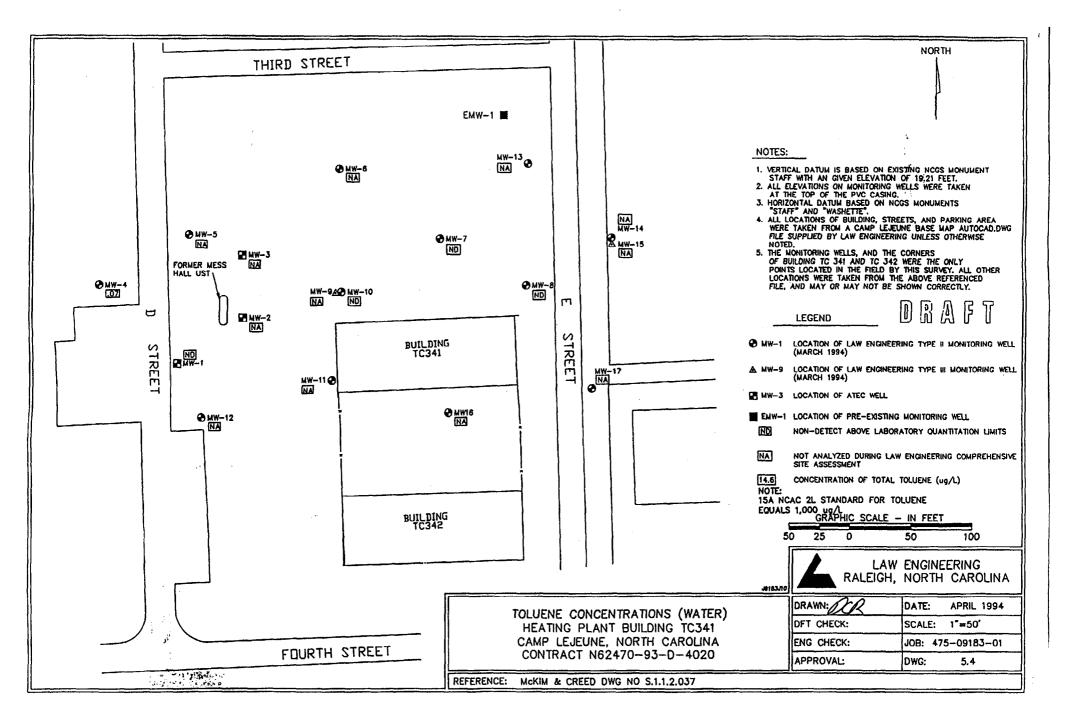




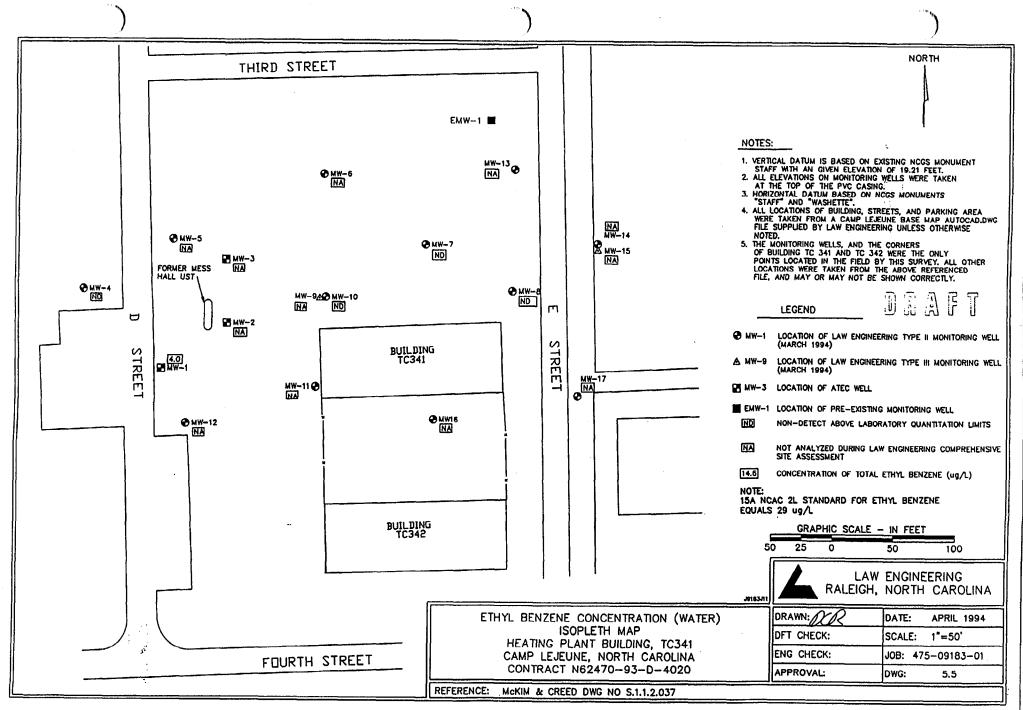


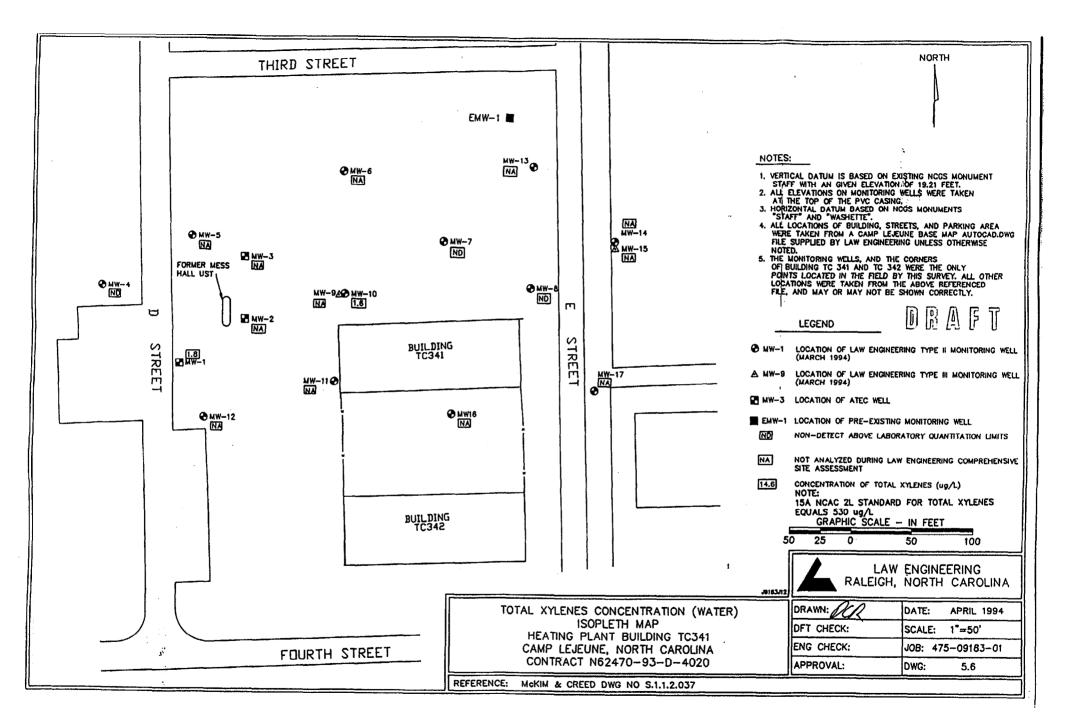
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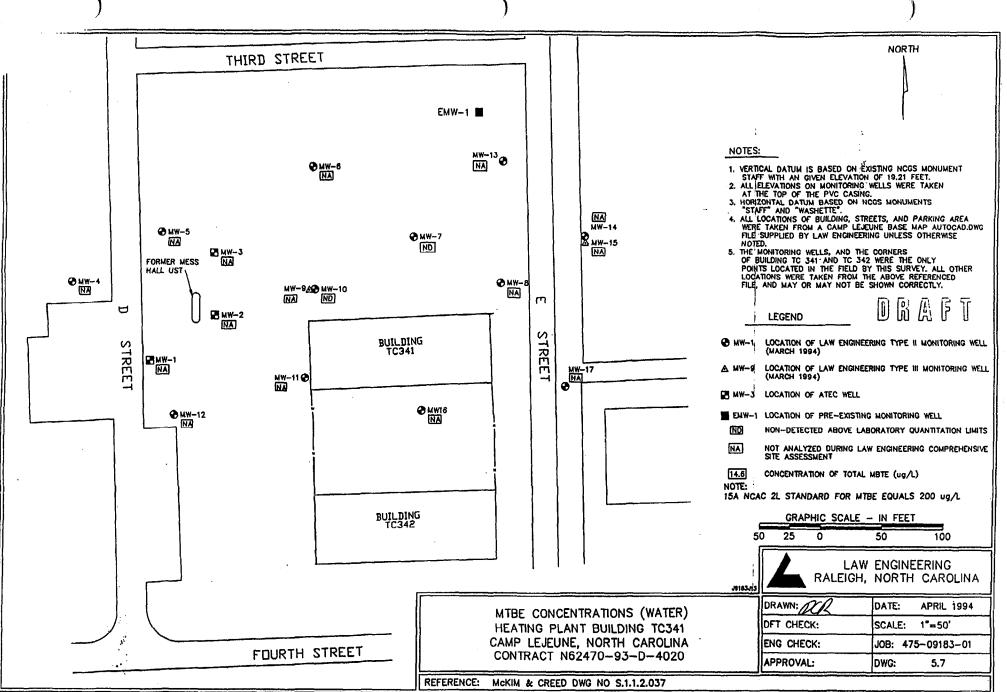


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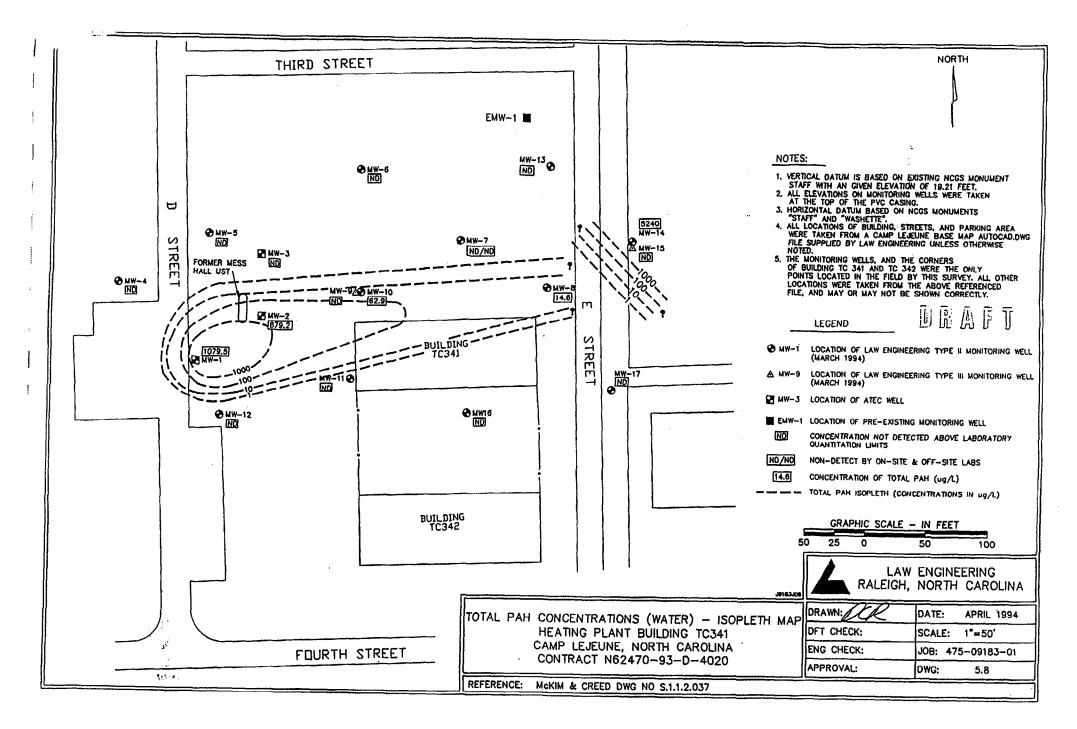


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MCKIM & CREED DWG NO S.1.1.2.037



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LAW

ENGINEERING AND ENVIRONMENTAL SERVICES

### LEAKING UNDERGROUND STORAGE TANK SITE ASSESSMENT REPORT

### VOLUME II APPENDICES

Building TC-341 MARINE CORPS BASE CAMP LEJEUNE, NORTH CAROLINA

**Prepared For:** 

Commander Naval Facilities Engineering Command Atlantic Division Norfolk, Virginia 23511-6287

**Prepared By:** 

Law Engineering, Inc. 3301 Atlantic Avenue Raleigh, North Carolina 27604

#### April 13, 1994

Law Engineering Job No. 475-09183-01

APPENDIX B

a (a. a)

DRAFT

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## SOIL TEST BORING RECORDS

| DEPI<br>(FT. |                                                                                           |            | ELAVATION              | • PENET | RATION - BL  | OWS/FOOT  |     |
|--------------|-------------------------------------------------------------------------------------------|------------|------------------------|---------|--------------|-----------|-----|
| 0.0          |                                                                                           |            |                        | 10      | 20 30 40     | 60 80 100 |     |
| 1.0          | Topsoil (medium to dark brown slightly silty fi                                           | ne         |                        |         |              |           |     |
| •••          | - SAND). (SM)<br>Brownish tan slightly silty fine SAND. (SM)                              | ·/#        |                        | •       |              |           | 11  |
|              | Brownish tan signuy suty fine SAND. (SM)                                                  |            |                        |         |              |           |     |
| 3.5          | ·                                                                                         |            |                        |         |              |           |     |
|              | Light tan with orange brown mottling clayey fi<br>SAND to slightly clayey fine sand. (SC) | ne         |                        | •       |              |           | 7   |
|              |                                                                                           |            |                        |         |              |           |     |
|              |                                                                                           |            |                        |         |              |           |     |
|              |                                                                                           |            |                        |         |              |           |     |
| 8.5<br>8.8   | Light tan clayey fine SAND. (SC)                                                          | ·  2       |                        |         |              |           |     |
| 9.2          | Light gray slightly silty medium to coarse SAN                                            | D. (]:     |                        | •       |              |           | 8   |
|              | (SM)<br>Orange slightly silty medium to coarse SAND.                                      |            |                        |         |              |           |     |
|              | (SM)                                                                                      |            |                        |         |              |           |     |
| 13.5         |                                                                                           |            |                        |         |              |           |     |
|              | Medium to dark gray slightly silty fine SAND.                                             |            |                        |         |              |           |     |
| 15.0         | (SM)                                                                                      | [ <u>]</u> | <u></u>                |         |              |           | *WH |
|              |                                                                                           |            |                        |         |              |           | 1   |
|              |                                                                                           |            |                        |         |              |           |     |
|              |                                                                                           |            |                        |         |              |           |     |
|              |                                                                                           |            |                        |         |              |           |     |
|              |                                                                                           |            | F +                    |         |              | ╾┼┼┼┼┥╿   |     |
|              |                                                                                           |            |                        |         |              |           |     |
| ~~           |                                                                                           |            |                        |         |              |           |     |
|              |                                                                                           |            |                        |         |              |           |     |
|              |                                                                                           |            |                        |         |              |           |     |
|              |                                                                                           |            | F -                    |         |              |           |     |
|              |                                                                                           |            |                        |         |              |           |     |
|              |                                                                                           |            |                        |         |              |           |     |
|              |                                                                                           |            |                        |         |              |           |     |
|              |                                                                                           |            |                        |         |              |           |     |
|              |                                                                                           |            |                        |         |              |           |     |
|              |                                                                                           |            |                        |         |              |           |     |
|              |                                                                                           |            |                        |         |              |           |     |
|              |                                                                                           |            |                        |         |              |           |     |
|              |                                                                                           |            | ╞ -                    |         |              |           |     |
|              |                                                                                           |            |                        |         |              |           |     |
|              |                                                                                           |            |                        |         |              |           |     |
|              |                                                                                           |            |                        |         |              |           |     |
|              |                                                                                           |            |                        | .       |              |           |     |
|              |                                                                                           | <b>_</b>   |                        | l       |              |           |     |
|              | REMARKS:<br>Boring terminated at 15.0 feet. Type II                                       |            |                        | TESTR   | ORING RECO   | RD        |     |
|              | monitoring well installed upon boring completion                                          | 1.         |                        |         |              |           |     |
|              | See Well Construction Records for details.<br>*Weight of hammer                           |            | BORING NUM             |         | W-4          |           | J   |
|              | - <u> </u>                                                                                |            | DATE DRILLE            |         | arch 1, 1994 |           |     |
|              |                                                                                           |            | PROJECT NUM            |         | 75-09183-01  |           |     |
|              |                                                                                           |            | PROJECT<br>PAGE 1 OF 1 |         | C-341        |           |     |
|              | SEE KEY SHEET FOR EXPLANATION OF                                                          |            |                        |         |              |           |     |
| :            | SYMBOLS AND ABBREVIATIONS USED ABO                                                        | VE         |                        | L LA    | W ENGINEER   | ING       |     |
|              |                                                                                           |            | <u> </u>               |         |              |           |     |

| ГН<br>.) | DESCRIPTION                                                                                           |          |        | ALVA FIC                                          | Frc                 | • PEI     | NETI | RATI | ON -            | BL  | ows | /FO | ют   |   |    |   |
|----------|-------------------------------------------------------------------------------------------------------|----------|--------|---------------------------------------------------|---------------------|-----------|------|------|-----------------|-----|-----|-----|------|---|----|---|
| .0       |                                                                                                       | <u> </u> |        | 3 WAL 20/                                         | 0                   |           | 10   | 20   | 30 4            | 0   | 60  | 80  | ) 10 | 0 |    |   |
| .0 🗌     | Topsoil                                                                                               |          |        |                                                   |                     |           |      |      |                 |     | T   | TT  |      |   |    | Γ |
| .5       | Dark brown slightly silty fine SAND. (SM)                                                             |          |        |                                                   |                     |           |      |      |                 |     |     |     |      |   | 16 |   |
|          | Light to medium gray clayey fine SAND. (SC)                                                           |          |        |                                                   |                     | •         |      | _    |                 |     |     |     |      |   | 7  |   |
| .5       |                                                                                                       |          |        |                                                   |                     |           |      |      |                 |     |     |     |      |   |    |   |
| I        | Light to medium gray clayey fine SAND. (SC)                                                           |          |        |                                                   |                     |           | •    |      |                 |     |     |     |      |   | 10 |   |
| .5       |                                                                                                       |          |        |                                                   |                     |           |      |      |                 |     |     |     |      |   |    |   |
| ~        | Very dark gray clayey fine SAND. (SC)<br>Very dark gray slightly silty fine SAND. (SM)                |          |        |                                                   | .                   |           |      |      |                 |     |     |     |      |   | 16 |   |
|          |                                                                                                       |          |        | -                                                 |                     |           |      |      |                 |     |     |     |      |   |    |   |
|          |                                                                                                       |          |        |                                                   |                     |           |      |      |                 |     |     |     |      |   |    | , |
|          |                                                                                                       |          |        |                                                   |                     |           |      |      |                 |     |     |     |      |   |    |   |
|          |                                                                                                       |          |        |                                                   |                     |           |      |      |                 |     |     |     |      |   |    |   |
|          |                                                                                                       |          |        |                                                   |                     |           |      |      |                 |     |     |     |      |   |    |   |
|          |                                                                                                       |          |        |                                                   |                     |           |      |      |                 |     |     |     |      |   |    |   |
|          |                                                                                                       |          |        |                                                   |                     |           |      |      |                 |     |     |     |      |   |    |   |
|          |                                                                                                       |          |        |                                                   |                     |           | -    |      |                 |     |     |     |      |   |    |   |
| Bo       | EMARKS:<br>oring terminated at 15.0 feet. Type II<br>onitoring well installed upon boring completion. |          |        |                                                   |                     | TES       | твc  | RIN  | <b>GRE</b>      | co  | 811 |     |      |   |    |   |
|          | onitoring well installed upon boring completion.<br>e Well Construction Record for details.           |          | ]<br>] | BORING<br>DATE DR<br>PROJECI<br>PROJECI<br>PAGE 1 | RILLE<br>F NUN<br>F | D<br>1BER | 475  |      | , 1994<br>33-01 |     |     |     |      |   |    |   |
| S<br>SYM | SEE KEY SHEET FOR EXPLANATION OF<br>BOLS AND ABBREVIATIONS USED ABOV                                  | Е        |        |                                                   |                     |           | LA¥  | EN   | INK             | ERI | NG. |     |      |   |    |   |

| DEPTI<br>(FT.) |                                                                                                                                          |      |             | AVATO                                               | ۶Ţ          | • PE     |                 |     | ON - E         |      |    |     |    |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------|------|-------------|-----------------------------------------------------|-------------|----------|-----------------|-----|----------------|------|----|-----|----|
| 0.0            | Topsoil, dark brown slightly silty fine SAND.                                                                                            | ···· |             | C                                                   | )           |          | 10              | 20  | 30 40          | 60   | 80 | 100 |    |
| 1.0            | ¬(SM)                                                                                                                                    |      | أبراك       |                                                     |             | ٠        |                 |     |                |      |    |     | 5  |
|                | Brownish tan clayey fine SAND. (SC)                                                                                                      |      |             |                                                     |             |          |                 |     |                |      |    |     |    |
| 3.5            | Brownish tan to light gray clayey fine sand to<br>silty clayey fine to medium SAND. (SC)                                                 |      |             |                                                     |             | •        |                 |     |                | -    |    |     | 4  |
| 8.5            |                                                                                                                                          |      |             |                                                     |             |          |                 |     |                |      |    |     |    |
| . د.ه          | Tan slightly clayey, slightly silty fine to medium SAND. (SM)                                                                            | n    |             |                                                     |             | <u>.</u> |                 |     |                |      |    |     | 16 |
| 13.5           | Very dark gray slightly silty fine SAND. (SM)                                                                                            |      | -           |                                                     | <u></u>     | ٠        |                 |     |                |      |    |     | 3  |
|                |                                                                                                                                          |      |             |                                                     |             |          |                 |     |                |      |    |     |    |
|                |                                                                                                                                          |      |             |                                                     |             |          | ÷               |     |                |      |    |     |    |
|                | REMARKS:                                                                                                                                 |      |             |                                                     |             |          | STRO            |     | <b>FREC</b>    | OPI  |    |     |    |
|                | Boring terminated at 15.0 feet. Type II<br>monitoring well installed upon boring completion<br>See Well Construction Record for details. | L.   | D<br>P<br>P | ORING N<br>DATE DRI<br>ROJECT<br>ROJECT<br>PAGE 1 ( | LLEI<br>NUM | ER       | MV<br>M2<br>47: | ₩-6 | . 1 <b>994</b> |      |    |     |    |
| ST             | SEE KEY SHEET FOR EXPLANATION OF<br>YMBOLS AND ABBREVIATIONS USED ABOV                                                                   | Æ    | (XXXX)      |                                                     |             |          | LAY             | ENC | inee           | RING |    |     |    |

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| DEPTH<br>(FT.) | H DESCRIPTION                                                                                |    | }   | AVATO               |     | • PEN | ETR         | ATIC | )N - B       | LOW  | S/FO     | от     |    |  |
|----------------|----------------------------------------------------------------------------------------------|----|-----|---------------------|-----|-------|-------------|------|--------------|------|----------|--------|----|--|
| 0.0            |                                                                                              |    |     | ( <b>uru</b> )<br>0 | ) . | 1     | 0 2         | 0 3  | 0 40         | 60   | 80       | 100    |    |  |
| 0.5            | Topsoil                                                                                      | ~  |     | 4                   |     |       | [           | T    |              |      |          | N      |    |  |
| 1.0            | Brownish tan slightly clayey fine SAND. (SM)                                                 |    |     |                     |     |       | •           |      |              |      |          |        | 11 |  |
|                | Brownish tan fine sandy CLAY. (CL)                                                           |    |     |                     |     |       |             |      |              |      |          |        |    |  |
| 3.5            |                                                                                              |    |     |                     |     |       |             |      |              |      |          |        |    |  |
| 4.0            | Brownish tan fine sandy CLAY. (CL)                                                           |    |     |                     |     |       |             |      |              |      |          |        |    |  |
|                | Gray and yellowish brown slightly silty fine to medium SAND. (SM)                            |    |     |                     |     |       |             |      |              | ┽╌┼  |          |        | 22 |  |
|                | menum SAND. (SM)                                                                             |    |     |                     |     |       |             |      |              |      |          |        |    |  |
|                |                                                                                              |    |     | :                   |     |       |             |      |              |      |          |        |    |  |
| 8.5            |                                                                                              |    |     |                     |     |       |             |      |              |      |          |        |    |  |
| ſ              | Brownish tan clayey fine SAND. (SC)                                                          |    | /// |                     |     |       |             |      |              |      |          |        |    |  |
| 9.8            |                                                                                              | 1  | /// | <u>}_</u>           |     |       | •           |      |              |      |          |        | 16 |  |
|                | Orange slightly silty fine to medium SAND. (SM                                               | 4) |     |                     |     |       |             |      |              |      |          |        |    |  |
|                |                                                                                              |    |     | ]                   |     |       |             |      |              |      |          |        |    |  |
| 13.5           |                                                                                              |    |     | ! [                 |     |       |             |      |              |      |          |        |    |  |
| 13.5           | Orange brown slightly silty fine SAND. (SM)                                                  |    |     | 4                   |     |       |             |      |              |      |          |        |    |  |
| 15.0           |                                                                                              |    |     |                     |     | •     |             |      |              |      |          |        | 7  |  |
|                |                                                                                              |    |     |                     |     |       |             |      |              |      |          |        |    |  |
|                |                                                                                              |    |     |                     |     |       |             | 1    |              |      |          |        |    |  |
|                |                                                                                              |    |     |                     |     |       |             |      |              |      |          |        |    |  |
|                |                                                                                              |    |     |                     |     |       |             |      |              |      |          |        |    |  |
|                |                                                                                              |    |     |                     |     |       |             |      |              |      |          |        |    |  |
|                |                                                                                              |    |     | F 7                 |     |       |             |      |              | ++   | ++       | +      |    |  |
|                |                                                                                              |    |     |                     |     |       |             |      |              |      |          |        |    |  |
|                |                                                                                              |    |     |                     |     |       |             |      |              |      |          |        |    |  |
|                |                                                                                              |    |     |                     |     |       |             |      |              |      |          |        |    |  |
|                |                                                                                              |    |     |                     |     |       |             |      |              |      |          |        |    |  |
|                |                                                                                              |    |     | ┝──┤                |     |       |             |      |              |      |          |        |    |  |
|                |                                                                                              |    |     |                     |     |       |             |      |              |      |          |        |    |  |
|                |                                                                                              |    |     |                     |     |       | :           |      |              |      |          |        |    |  |
|                |                                                                                              |    |     |                     |     |       |             |      |              |      |          |        |    |  |
|                |                                                                                              |    |     |                     |     | Ì     |             |      |              |      |          |        |    |  |
|                |                                                                                              |    |     |                     |     |       |             |      |              |      |          |        |    |  |
|                |                                                                                              |    |     | ΓΤ                  |     |       |             |      |              |      |          | $\top$ |    |  |
|                |                                                                                              |    |     |                     |     |       |             |      |              |      |          |        |    |  |
|                |                                                                                              |    |     |                     |     |       |             |      |              |      |          |        |    |  |
|                |                                                                                              |    |     |                     |     |       |             |      |              |      |          |        |    |  |
| •              |                                                                                              |    |     |                     |     |       |             |      |              |      |          |        |    |  |
|                |                                                                                              |    |     | ├ ┼                 |     |       |             |      |              | ++   | ╈        | ++     |    |  |
|                |                                                                                              |    |     |                     |     |       |             |      |              |      |          |        |    |  |
|                |                                                                                              |    |     |                     |     |       |             |      |              |      |          |        |    |  |
|                |                                                                                              |    |     |                     |     |       |             |      |              |      |          |        |    |  |
|                |                                                                                              |    |     |                     |     |       | :           |      |              |      |          |        |    |  |
| L              | NT / A NT 6                                                                                  | l  |     |                     |     |       |             |      | L_           |      |          |        |    |  |
|                | REMARKS:                                                                                     |    |     |                     |     |       | · 20        |      | REC          | 027  |          |        |    |  |
|                | Boring terminated at 15.0 feet. Type II<br>monitoring well installed upon boring completion. |    |     |                     |     |       | DUN         |      |              |      |          |        |    |  |
|                | See Well Construction Record for details.                                                    |    | 6   | BORING N            | IIM | BER   | MW          | .7   |              |      |          |        |    |  |
|                |                                                                                              |    |     | DATE DRI            |     |       |             |      | 1 <b>994</b> |      |          |        |    |  |
|                |                                                                                              |    |     | PROJECT             |     |       | 475-        |      |              |      |          |        |    |  |
|                |                                                                                              |    |     | PROJECT             |     |       | TC-3        |      |              |      |          |        |    |  |
|                |                                                                                              |    |     | PAGE 1 (            |     |       |             | ••   |              |      |          |        |    |  |
|                | SEE KEY SHEET FOR EXPLANATION OF                                                             |    |     |                     |     |       |             |      |              |      |          | ·····  |    |  |
| ST             | YMBOLS AND ABBREVIATIONS USED ABOV                                                           | Е  |     |                     |     |       | . <b>A₩</b> | ENG  | INFE         | RINC |          |        |    |  |
|                |                                                                                              |    |     |                     |     |       |             |      | <u> </u>     |      | <u> </u> |        |    |  |

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| DEPTI<br>(FT.) |                                                                                                        |    |       | AVA                        | ION             | • PE | NET   | RAT            | ION           | - BI | lows | S/FO     | от                 |    |   |
|----------------|--------------------------------------------------------------------------------------------------------|----|-------|----------------------------|-----------------|------|-------|----------------|---------------|------|------|----------|--------------------|----|---|
| 0.0            |                                                                                                        | -  |       |                            | 0               |      | 10    | 20             | 30            | 40   | 60   | 80       | 100                | )  |   |
| 0.5            | Topsoil                                                                                                |    | A     |                            | <u> </u>        |      |       |                |               | T    |      |          |                    | 1  |   |
|                | Dark brown slightly silty fine SAND. (SM)                                                              |    |       |                            |                 |      |       |                |               |      |      |          |                    | 13 | 1 |
| 3.5            |                                                                                                        |    |       |                            |                 |      |       |                |               |      |      |          |                    |    |   |
| 4.0            | Gray and orange slightly fine sandy CLAY. (CL)<br>Light gray slightly silty fine SAND. (SM)            | }  | -///  |                            |                 |      |       |                |               |      |      |          |                    | 15 |   |
|                |                                                                                                        |    |       |                            |                 |      |       |                |               |      |      |          |                    |    |   |
| 8.5            |                                                                                                        |    |       |                            |                 |      |       |                |               |      |      |          |                    |    |   |
| 9.3            | Grayish brown slightly silty fine sandy CLAY.<br>(CL)                                                  |    |       |                            |                 | ۲    | _     |                |               |      |      |          |                    | 6  |   |
|                | Dark gray to tan to black slightly silty fine SANE<br>(SM)                                             | ). |       |                            |                 |      |       |                |               |      |      |          |                    |    |   |
| 13.5<br>14.0   | Grayish brown slightly silty fine to coarse SAND                                                       |    | -     | ·<br>·                     |                 |      |       |                |               |      |      |          |                    |    |   |
| 15.0           | (SM)<br>Grayish brown slightly silty fine to very coarse                                               |    |       | <u> -</u>                  | _               |      | •     | _              |               |      |      |          |                    | 10 |   |
|                | SAND. (SM)                                                                                             |    | _   L |                            |                 |      |       |                |               |      |      |          |                    |    |   |
|                |                                                                                                        |    |       |                            |                 |      |       |                |               |      |      |          |                    |    |   |
|                |                                                                                                        |    |       |                            |                 |      |       |                | -             |      |      |          |                    |    |   |
| -              |                                                                                                        |    |       |                            |                 |      |       |                |               |      |      |          |                    |    |   |
|                |                                                                                                        |    |       |                            |                 |      |       |                |               |      |      |          |                    |    |   |
|                |                                                                                                        |    |       |                            |                 |      |       |                |               |      |      |          |                    |    |   |
|                |                                                                                                        |    |       |                            |                 |      |       |                |               |      |      |          |                    |    |   |
|                |                                                                                                        |    |       | -                          |                 |      |       |                |               |      |      |          | ┶┥╽                |    |   |
|                |                                                                                                        |    |       |                            |                 |      |       |                |               |      |      |          |                    |    |   |
|                |                                                                                                        |    |       |                            |                 |      |       |                |               |      |      |          |                    |    |   |
|                |                                                                                                        |    |       | -                          |                 |      |       | _              |               |      |      |          | $\left  - \right $ |    |   |
|                |                                                                                                        |    |       |                            |                 |      |       |                |               |      |      |          |                    |    |   |
|                | · · · ·                                                                                                |    |       |                            |                 |      |       |                |               |      |      |          |                    | •  |   |
| L              |                                                                                                        |    |       | L                          |                 |      |       |                |               |      |      | <u> </u> |                    | 1  |   |
|                | REMARKS:<br>Boring terminated at 15.0 feet. Type II<br>manipring well installed upon baring completion |    |       |                            |                 | TE:  | ST BC | жn             | GR            | BCC  | RD   |          |                    |    |   |
| -              | monitoring well installed upon boring completion.<br>See Well Construction Record for details.         |    |       | BORINO<br>DATE I<br>PROJEC | RILLE<br>CT NUM | D    | 475   | rch 1<br>5-091 | , 199<br>83-0 |      |      | <u></u>  |                    |    |   |
|                |                                                                                                        |    |       | PROJEC                     |                 |      | TC    | -341           |               |      |      |          |                    |    |   |
| S              | SEE KEY SHEET FOR EXPLANATION OF<br>YMBOLS AND ABBREVIATIONS USED ABOVE                                | ;  |       |                            |                 |      | LAW   | EN             | GIN           | ER   | ING  |          |                    |    |   |

|              | DESCRIPTION                                                                                               |            |      | Ę | Av A               | जित          | • PE                                   | NET | RAT           | ION  | - BI       | .ow: | S/FO       | от               |     |  |
|--------------|-----------------------------------------------------------------------------------------------------------|------------|------|---|--------------------|--------------|----------------------------------------|-----|---------------|------|------------|------|------------|------------------|-----|--|
| FT.)         |                                                                                                           | ٣          | ШЦ   | L | л(FЦ)              | ູ່ປ          |                                        | 10  | 20            | 30   | <u>4</u> 0 | 60   | <b>6</b> U | 100              | 1   |  |
| 0.0<br>0.3 F | Topsoil                                                                                                   |            |      |   |                    | <del>,</del> |                                        | 10  |               |      | -10        |      | 00         | 100              |     |  |
| 0.5          | Medium to dark gray slightly silty fine SAND.<br>(SM)                                                     |            | /  i |   |                    |              | ٠                                      |     |               |      |            |      |            |                  | 6   |  |
| 3.5          |                                                                                                           |            | [!   |   |                    |              |                                        |     |               |      |            |      |            |                  |     |  |
|              | Brownish gray slightly silty fine SAND. (SM)                                                              |            |      |   | -<br> -<br>        |              | •                                      |     |               | _    |            |      |            |                  | 5   |  |
|              |                                                                                                           |            |      |   | •<br>•<br>•        |              |                                        |     |               |      |            |      |            |                  |     |  |
| 8.5          | Light brownish tan silty fine to medium SAND.                                                             | ;          |      |   |                    |              |                                        |     |               |      |            |      |            |                  |     |  |
|              | (SM)                                                                                                      |            |      |   |                    |              | ·                                      |     |               |      |            |      |            |                  | 10  |  |
| 13.5         | Dade arrest allelate sites Grand (SAD)                                                                    |            |      |   |                    |              |                                        |     |               |      |            |      |            |                  |     |  |
|              | Dark gray slightly silty fine SAND. (SM)                                                                  |            |      |   | -                  | •            |                                        |     |               |      |            |      |            |                  | *WH |  |
|              |                                                                                                           |            |      |   |                    |              |                                        |     |               |      |            |      |            |                  |     |  |
| 18.5<br>20.0 | Very light gray slightly silty to silty fine SAND (SM) with shell fragments.                              |            |      |   |                    |              |                                        |     |               |      |            |      |            |                  | 28  |  |
| [`           | Very light gray slightly silty to silty fine SAND<br>(SM) with shell fragments.                           |            |      |   |                    |              | <u> </u>                               |     |               |      | •          |      |            |                  | 40  |  |
| 3.5          | Light gray slightly silty fine to very coarse SAN                                                         | <br>D      |      | - |                    |              |                                        |     |               |      |            |      |            | P                |     |  |
|              | (SM) with shell fragments.                                                                                | -          |      |   |                    | <u> </u>     |                                        |     |               |      | •          |      |            |                  | 47  |  |
| 28.5         |                                                                                                           |            |      |   | •                  |              |                                        |     |               |      |            |      |            |                  |     |  |
| 30.0         | Light gray slightly silty fine to coarse SAND (SM with shells/shell fragments.                            | <i>A</i> ) |      |   |                    |              |                                        |     |               |      |            |      |            | Ĕ                | 39  |  |
|              |                                                                                                           |            |      |   |                    |              |                                        |     |               |      |            |      |            |                  |     |  |
|              |                                                                                                           |            |      |   |                    |              |                                        |     |               |      |            |      |            |                  |     |  |
|              |                                                                                                           |            |      |   |                    |              | <u></u>                                |     | _             |      |            |      |            | $\left  \right $ |     |  |
|              |                                                                                                           |            |      |   |                    |              |                                        |     |               |      |            |      |            |                  |     |  |
|              |                                                                                                           |            |      |   |                    |              |                                        |     |               |      |            |      |            |                  |     |  |
| E            | REMARKS:<br>Boring terminated at 30.0 feet. Type III<br>nonitoring well installed upon boring completion. |            |      |   |                    |              | TES                                    | ŦB  | )RIN          | GR   | RCC        | RD   |            |                  |     |  |
| S            | Weight of hammer                                                                                          |            |      |   | BORING<br>DATE DR  |              |                                        |     | W-9<br>arch 3 | 100  | <u></u>    |      |            |                  |     |  |
|              |                                                                                                           |            |      |   | PROJECT<br>PROJECT | r NUN<br>[   | ÍBER                                   | 47  | 5-091<br>-341 |      |            |      |            |                  |     |  |
| SVI          | SEE KEY SHEET FOR EXPLANATION OF<br>MBOLS AND ABBREVIATIONS USED ABOV                                     | F          |      |   | PAGE 1             |              |                                        |     | EN            | CINI | 37D        | INIC |            |                  |     |  |
|              |                                                                                                           | -          |      | Ľ |                    |              | ······································ |     |               |      |            |      |            |                  |     |  |

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| DEPTH<br>(FT.)<br>0.0 | DESCRIPTION                                                                                                        |     |                                                 |                     | • PEN.     |       | TION -              |           | OWS<br>60 | ут<br>100 |     |
|-----------------------|--------------------------------------------------------------------------------------------------------------------|-----|-------------------------------------------------|---------------------|------------|-------|---------------------|-----------|-----------|-----------|-----|
| 3.5                   | Tan and brown silty to slightly silty fine SAND.<br>(SM)                                                           | _ · |                                                 |                     | •          |       |                     |           |           |           | 9   |
|                       | Yellowish brown to tan silty to slightly silty fine<br>SAND. (SM)                                                  |     |                                                 |                     |            | •     |                     |           |           |           | 12  |
| 8.5                   | Orange brown silty fine to coarse SAND (SM) trace of pebbles.                                                      |     |                                                 |                     | •          |       |                     |           |           | 5         | 7   |
| 13.5<br>15.0          | Dark gray slightly silty fine SAND. (SM)                                                                           |     |                                                 | •                   |            |       |                     |           |           |           | *WH |
|                       |                                                                                                                    |     |                                                 |                     |            |       |                     |           |           |           |     |
|                       |                                                                                                                    |     |                                                 |                     |            |       |                     |           | -         |           |     |
|                       |                                                                                                                    |     |                                                 |                     |            |       |                     |           |           |           |     |
|                       |                                                                                                                    |     |                                                 |                     |            |       |                     |           |           |           |     |
|                       |                                                                                                                    |     |                                                 |                     |            |       |                     |           |           |           |     |
|                       |                                                                                                                    |     |                                                 |                     |            |       |                     |           |           |           |     |
|                       | REMARKS:<br>Boring terminated at 15.0 feet. Type II                                                                | -   |                                                 |                     | TES        | r Boj | LING R              | RCC       | RD        |           |     |
| <b>-</b> .            | monitoring well installed upon boring completion<br>See Well Construction Record for details.<br>*Weight of hammer | -   | BORING<br>DATE DI<br>PROJEC<br>PROJEC<br>PAGE 1 | RILLE<br>T NUI<br>T | ED<br>MBER |       | :h 3, 19<br>09183-0 |           |           |           |     |
| S                     | SEE KEY SHEET FOR EXPLANATION OF<br>YMBOLS AND ABBREVIATIONS USED ABOV                                             | Æ   |                                                 |                     |            | LAW.  | engin               | <b>FF</b> | ING       |           |     |

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| ГН<br>.) | DESCRIPTION                                                                               |   |                 | AVALEO            | ן<br>איז | • PEN       | TR       | ATIC  | )N - I | LO         | WS/                | FOC | T                  |    |   |
|----------|-------------------------------------------------------------------------------------------|---|-----------------|-------------------|----------|-------------|----------|-------|--------|------------|--------------------|-----|--------------------|----|---|
| .)<br>0  |                                                                                           | Ú |                 | עטעישטיט<br>(     | )        | 1           | 0 2      | 20 3  | 0 40   | 6          | 0                  | 80  | 100                |    |   |
| 55       | Topsoil                                                                                   |   |                 | Н                 |          |             | 1        |       | ΓΓ     | Ī          |                    |     |                    |    | ŗ |
|          | Tan and dark brown silty to slightly silty fine                                           |   | - []            | 3                 |          | •           | 1        |       |        |            |                    |     |                    | 7  | ľ |
|          | SAND. (SM)                                                                                |   |                 |                   |          |             |          |       |        |            |                    |     |                    |    |   |
| s 🗋      |                                                                                           |   |                 |                   |          |             |          |       |        |            |                    |     | $  \square$        |    |   |
|          | Medium gray, yellowish brown and dark brown                                               |   |                 |                   |          |             |          |       |        |            |                    |     |                    |    |   |
|          | clayey fine SAND. (SC)                                                                    |   |                 | 1 -               |          |             | <b>F</b> | +     | -+     | _          | $\left  - \right $ |     |                    | 11 |   |
|          |                                                                                           |   |                 |                   |          |             |          |       |        |            |                    |     |                    |    |   |
|          |                                                                                           |   |                 |                   |          |             | 1        |       |        |            |                    |     |                    |    |   |
| 5        |                                                                                           |   |                 |                   |          |             |          |       |        |            |                    |     |                    |    |   |
|          | Tan and dark brown slightly clayey fine SAND.                                             |   | ·-{//           |                   |          |             |          |       |        |            |                    |     |                    |    |   |
|          | (SC)                                                                                      |   |                 |                   |          | •           |          |       |        |            |                    |     |                    | 7  |   |
|          | Orange brown and tan slightly silty to silty fine to                                      | ) | - []            | •                 |          |             |          |       |        |            |                    |     |                    |    |   |
|          | very coarse SAND. (SM)                                                                    |   |                 | •                 |          |             |          |       |        |            |                    |     |                    |    |   |
|          |                                                                                           |   |                 |                   |          |             |          |       |        |            |                    |     |                    |    |   |
| 5        |                                                                                           |   |                 | 9                 |          |             |          | 1     |        |            |                    |     |                    |    |   |
| 3        | Orange brown and tan slightly silty medium to very coarse SAND. (SM)                      |   | , <del>  </del> | •                 |          | ٠           |          |       |        |            |                    |     |                    | 6  |   |
| -μ,      | Very dark grayish brown slightly silty fine SANI                                          | 5 | · //            | <u>-</u>          |          |             |          | 1     |        |            | ╞╼┼                |     |                    |    |   |
|          | (SM)                                                                                      |   |                 |                   |          |             |          |       |        |            |                    |     |                    |    |   |
|          |                                                                                           |   |                 |                   |          |             |          |       |        |            |                    |     |                    |    |   |
|          |                                                                                           |   |                 |                   |          |             |          |       |        |            |                    |     |                    |    |   |
|          |                                                                                           |   |                 |                   |          |             |          |       |        |            |                    |     |                    |    |   |
|          |                                                                                           |   |                 |                   |          | Antonia     |          | +     |        |            | ┝╌┤                |     | $\left  + \right $ |    |   |
|          |                                                                                           |   |                 |                   |          |             |          |       |        |            |                    |     |                    |    |   |
|          |                                                                                           |   |                 |                   |          |             |          |       |        |            |                    |     |                    |    | 1 |
|          |                                                                                           |   | 1               |                   |          |             |          |       |        |            |                    |     |                    |    |   |
|          |                                                                                           |   |                 |                   |          |             |          |       |        |            |                    |     |                    |    |   |
|          |                                                                                           |   |                 | $\vdash$ $\dashv$ |          |             |          |       |        |            |                    |     | <b>↓</b>           |    |   |
|          |                                                                                           |   |                 |                   |          |             |          |       |        |            |                    |     |                    |    |   |
|          |                                                                                           |   | 1               |                   |          |             |          |       |        |            |                    |     |                    |    |   |
|          |                                                                                           |   |                 |                   |          |             |          |       |        | 1          |                    |     |                    |    |   |
|          |                                                                                           |   |                 |                   |          | i           |          |       |        |            |                    |     |                    |    |   |
|          |                                                                                           |   |                 |                   |          |             |          |       |        |            |                    |     |                    |    |   |
|          |                                                                                           |   |                 | 1                 |          |             |          |       |        |            | T                  |     |                    |    |   |
|          |                                                                                           |   |                 |                   |          |             |          |       |        | ľ          |                    |     |                    |    |   |
|          |                                                                                           |   |                 |                   |          |             |          |       |        |            |                    |     |                    |    |   |
|          |                                                                                           |   |                 |                   |          |             |          |       |        |            |                    |     |                    |    | 1 |
|          |                                                                                           |   |                 |                   |          |             |          |       |        |            |                    |     |                    |    |   |
|          |                                                                                           |   |                 | + +               |          |             |          |       |        |            |                    |     |                    |    |   |
|          |                                                                                           |   |                 |                   |          |             |          |       |        |            |                    |     |                    |    |   |
|          |                                                                                           |   |                 |                   |          |             |          |       |        |            |                    |     |                    |    |   |
|          |                                                                                           |   |                 |                   |          |             |          |       |        |            |                    |     |                    |    |   |
|          | •                                                                                         |   |                 |                   |          |             |          |       |        |            |                    |     |                    |    |   |
| Ļ        |                                                                                           |   |                 |                   |          |             |          |       |        |            |                    |     |                    |    | L |
|          | REMARKS:                                                                                  |   | F               |                   |          | TES         |          | on a  |        | <b>A</b> m |                    |     |                    |    |   |
| B        | soring terminated at 15.0 feet. Type II nonitoring well installed upon boring completion. |   |                 |                   |          | TRO         | 1.00     |       |        |            |                    |     |                    |    |   |
| S        | ee Well Construction Record for details.                                                  |   | 7               | BORING I          | NTIME    | REP         | MW       | -11   |        |            |                    |     |                    |    |   |
|          |                                                                                           |   |                 | DATE DR           |          |             |          |       | 1994   |            |                    |     |                    |    |   |
|          |                                                                                           |   |                 | PROJECT           |          |             |          | 0918  |        |            |                    |     |                    |    |   |
|          |                                                                                           |   |                 | PROJECT           |          |             | TC-      |       | - •*   |            |                    |     |                    |    | - |
|          |                                                                                           |   |                 | PAGE 1            |          |             | ~ ~ - ·  | - • • |        |            |                    |     |                    |    |   |
|          | SEE KEY SHEET FOR EXPLANATION OF                                                          |   |                 |                   |          |             |          |       |        |            |                    |     |                    |    |   |
|          | MBOLS AND ABBREVIATIONS USED ABOVI                                                        | 3 |                 |                   |          | <b>*</b> ** | <b>₩</b> | ËNG   | INF    | REN        | Ç.                 |     |                    |    |   |
|          |                                                                                           |   | E               |                   |          |             | •••••    |       |        |            |                    |     |                    |    |   |

| DEPTI<br>(FT.) | H DESCRIPTION                                                                                                  |   |          | AVATIO  | T    | • PE              | NETR     |        |      |           | WS/                | FOO | т   |     |
|----------------|----------------------------------------------------------------------------------------------------------------|---|----------|---------|------|-------------------|----------|--------|------|-----------|--------------------|-----|-----|-----|
| 0.0            |                                                                                                                |   |          | (       |      |                   | 10       | 20 3   | 0 40 | )         | 60                 | 80  | 100 |     |
| `> 0.5         | – Topsoil<br>Black and dark tan slightly silty fine SAND. (SM                                                  | ) |          |         |      | · · · · · · · · · | •        |        |      |           |                    |     | ł   | 12  |
|                | and a second |   |          |         |      |                   |          |        |      |           |                    |     | Π   |     |
| 3.5            |                                                                                                                |   | • -      |         |      |                   |          |        |      |           |                    |     |     |     |
|                | Medium to dark gray slightly silty fine SAND.<br>(SM)                                                          |   |          |         |      | ٠                 |          |        |      |           |                    |     | ł   | 4   |
|                |                                                                                                                |   |          |         |      |                   |          |        | ĪT   |           |                    |     |     |     |
|                |                                                                                                                |   |          |         |      |                   |          |        |      |           |                    |     |     |     |
| 8.5            |                                                                                                                |   |          |         |      |                   |          |        |      |           |                    |     |     |     |
|                | Tan to yellowish brown slightly silty to silty fine<br>to coarse SAND. (SM)                                    |   |          |         | (    | •                 |          |        |      |           |                    |     |     | 2   |
|                |                                                                                                                |   |          |         |      |                   |          |        |      |           | $\dagger$          |     | -#  | -   |
|                |                                                                                                                |   |          |         |      |                   |          |        |      |           |                    |     |     |     |
| 13.5           |                                                                                                                |   |          |         |      |                   |          |        |      |           |                    |     |     |     |
| 15.0           | Dark gray slightly silty fine SAND. (SM)                                                                       |   |          |         |      |                   |          |        |      |           |                    |     |     | *WH |
| 15.0           |                                                                                                                |   | <u> </u> |         |      |                   |          | +      |      |           | ┼┼                 | ++  | -1  | -wn |
|                |                                                                                                                |   |          |         |      |                   |          |        |      |           |                    |     |     |     |
|                |                                                                                                                |   |          |         |      |                   |          |        |      |           |                    |     |     |     |
|                |                                                                                                                |   |          |         |      |                   |          |        |      |           |                    |     |     |     |
|                |                                                                                                                |   |          |         |      |                   |          | +      |      |           | +                  | +   |     |     |
|                |                                                                                                                |   |          |         |      |                   |          |        |      |           |                    |     |     |     |
| .              |                                                                                                                |   |          |         |      |                   |          |        |      |           |                    |     |     |     |
|                |                                                                                                                |   |          |         |      |                   |          |        |      |           |                    |     |     |     |
|                |                                                                                                                |   |          |         |      |                   |          |        |      |           | $\left  - \right $ |     | _   |     |
|                |                                                                                                                |   |          |         |      |                   |          |        |      |           |                    |     |     |     |
|                |                                                                                                                |   |          |         |      |                   |          |        |      |           |                    |     |     |     |
|                |                                                                                                                |   |          | А.      |      |                   |          |        |      |           |                    |     |     |     |
|                |                                                                                                                |   |          | - 4     |      |                   | <u> </u> | ┞      |      |           |                    | ++  |     |     |
|                |                                                                                                                |   |          |         |      |                   |          |        |      |           |                    |     |     |     |
|                |                                                                                                                |   |          |         |      |                   |          |        |      |           |                    |     |     |     |
|                |                                                                                                                |   |          |         |      |                   |          |        |      |           |                    |     |     |     |
| ·              |                                                                                                                |   |          |         |      |                   |          |        |      |           |                    |     |     |     |
|                |                                                                                                                |   |          |         |      |                   |          |        |      |           |                    |     |     |     |
|                |                                                                                                                |   |          |         |      |                   |          |        |      |           |                    |     |     |     |
|                |                                                                                                                |   |          |         |      |                   |          |        |      |           |                    |     |     |     |
|                |                                                                                                                |   |          |         |      |                   | 1        |        |      |           |                    |     |     |     |
| -              | REMARKS:                                                                                                       |   |          |         |      |                   |          |        |      |           |                    |     |     | -   |
| ÷              | Boring terminated at 15.0 feet. Type II monitoring well installed upon boring completion.                      |   |          |         |      | TE                | ST BO    | RING   | RE   | COR       | D                  |     |     |     |
|                | See Well Construction Record for details.                                                                      |   |          | ORING N | IUME | BER               | MŴ       | /-12   |      |           |                    |     |     |     |
|                | *Weight of hammer                                                                                              |   |          | ATE DR  | LLE  | D                 | Mar      | ch 7,  | 1994 |           |                    |     |     |     |
| •              |                                                                                                                |   |          | ROJECT  |      | BER               |          | -09183 | 3-01 |           |                    |     |     |     |
|                |                                                                                                                |   |          | ROJECT  |      |                   | TC-      | 541    |      |           |                    |     |     |     |
|                | SEE KEY SHEET FOR EXPLANATION OF                                                                               |   |          |         |      |                   |          |        |      |           |                    |     |     |     |
| S              | YMBOLS AND ABBREVIATIONS USED ABOVE                                                                            |   |          |         |      |                   | LAW      | ENG    | INE  | <b>RP</b> | ſĢ                 |     |     |     |
|                |                                                                                                                |   |          |         |      |                   |          |        |      |           |                    |     |     |     |

| DEPTH<br>(FT.) | I DESCRIPTION                                                                                 |        |               | Ę       | ILVA LI          |            | • PEN | ET.  | RAI          | 101  | N - B | LO  | ws     | /FO       | т                     | •  |       |
|----------------|-----------------------------------------------------------------------------------------------|--------|---------------|---------|------------------|------------|-------|------|--------------|------|-------|-----|--------|-----------|-----------------------|----|-------|
| 0.0            |                                                                                               | Ľ      | uu            | Ц       |                  | 0 <b>u</b> | 1     | 0    | 20           | 30   | 40    |     | 60     | 80        | 100                   |    |       |
|                | Yellowish brown slightly clayey fine SAND. (S                                                 | C)     | - K           | 77      | 1                | 1          |       | 1    |              |      |       | Τ   | Τ      |           |                       |    |       |
|                | Yellowish brown fine sandy CLAY. (CL)                                                         |        |               |         |                  |            | •     |      |              |      |       |     |        |           |                       | 7  |       |
| 3.5            |                                                                                               |        |               |         |                  |            |       |      |              |      |       |     |        |           |                       |    |       |
| 5.5            | Brownish tan slightly silty fine to medium SAN                                                | D.     |               |         | 1                |            |       |      |              |      |       |     |        |           |                       |    |       |
| ľ              | (SM)                                                                                          |        |               |         |                  |            | •     | ļ    |              |      |       |     |        |           |                       | 7  |       |
| Í              |                                                                                               |        |               |         | •                |            |       |      |              |      | 1     |     |        |           |                       |    |       |
|                |                                                                                               |        |               |         | •                |            |       |      |              |      |       |     |        |           |                       |    |       |
| 8.5            |                                                                                               |        |               |         |                  |            |       |      |              |      |       |     |        |           | $\parallel \parallel$ |    |       |
| 9.0<br>9.5     | Brownish tan slightly silty fine to coarse SAND                                               | •      | Ŕ             | $Z_{i}$ |                  |            |       |      |              |      |       |     |        |           |                       | 10 |       |
|                | Brownish orange fine sandy CLAY. (SC)                                                         |        | -/[]          |         | · [              |            |       |      |              |      | _     |     | $\top$ |           |                       |    |       |
|                | Dark gray slightly silty fine SAND. (SM)                                                      |        |               |         |                  |            | i     |      |              |      |       |     |        |           |                       |    |       |
| 13.5           |                                                                                               |        |               |         |                  |            |       |      |              |      |       |     |        |           |                       |    |       |
| ſ              | Light gray to dark gray slightly silty fine SAND                                              | <br>). |               |         |                  |            |       |      |              |      |       |     |        |           |                       | -  |       |
| 15.0           | (SM)                                                                                          |        | <sup>[]</sup> |         |                  |            | •     |      | _            |      |       | _   |        | _         | ┞                     | 2  |       |
|                |                                                                                               |        |               |         |                  | Í          |       | ĺ    |              | Í    |       |     |        |           |                       |    |       |
| -              |                                                                                               |        |               |         |                  |            |       |      |              |      |       |     |        |           |                       |    |       |
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|                |                                                                                               |        |               |         |                  |            |       |      |              |      |       |     |        |           |                       |    |       |
|                |                                                                                               |        |               |         | Γ ·              |            |       |      |              |      |       |     |        | $\square$ |                       |    |       |
|                |                                                                                               |        |               |         |                  |            |       |      |              |      |       |     |        |           |                       |    |       |
|                |                                                                                               |        |               |         |                  | 1          |       |      |              |      | ļ     |     |        |           |                       |    |       |
|                |                                                                                               |        |               |         |                  |            |       |      |              |      |       |     |        |           |                       |    |       |
| i              |                                                                                               |        |               |         |                  |            |       |      |              | -+-  |       | +   | ┼      | ┼╌┽╼      | $\left  \right $      |    |       |
|                |                                                                                               |        |               |         |                  |            |       |      |              |      |       |     |        |           |                       |    |       |
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| l              |                                                                                               |        |               |         |                  |            |       |      |              |      |       |     |        |           |                       |    |       |
|                |                                                                                               |        |               |         |                  |            |       |      |              |      |       |     |        |           |                       |    |       |
|                |                                                                                               |        |               |         |                  |            |       | :    |              |      |       |     |        |           |                       |    |       |
| _              | REMARKS:                                                                                      |        |               | F       |                  |            |       |      |              |      |       |     |        |           |                       |    |       |
|                | Boring terminated at 15.0 feet. Type II<br>monitoring well installed upon boring completion   |        |               |         |                  |            | TES   | F B( | жI           | ¥G.  | REC   | OR  | 6      |           |                       |    |       |
|                | monitoring well installed upon boring completion<br>See Well Construction Record for details. | •      |               | 6       | BORING           | NUM        | BER   | м    | W-13         | 3    |       |     |        |           |                       |    |       |
|                |                                                                                               |        |               | I       | )ATE DI          | RILLE      | D     | Ma   | arch         | 7, 1 |       |     |        |           |                       |    |       |
|                |                                                                                               |        |               |         | ROJEC            |            | IBER  |      | 5-09         |      | -01   |     |        |           |                       |    |       |
|                |                                                                                               |        |               | - 24    | PROJEC<br>PAGE 1 |            |       | TC   | -341         | l    |       |     |        |           |                       |    | '<br> |
|                |                                                                                               |        |               | 14      | AUE I            |            |       |      |              |      |       |     |        |           |                       |    |       |
| ST             | SEE KEY SHEET FOR EXPLANATION OF<br>MBOLS AND ABBREVIATIONS USED ABOV                         | Æ      |               |         |                  |            |       | ДŸ   | ¥ <b>E</b> 2 | ici  | NEE   | REN | Ģ      |           |                       |    |       |
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|                                                          | (SM)<br>Yellowish brown fine sandy CLAY. (CL)<br>Yellowish brown fine sandy CLAY. (CL)<br>Yellowish brown and tan slightly silty fine SANE | Topsoil         Dark brown and tan slightly silty fine SAND.         (SM)         Yellowish brown fine sandy CLAY. (CL)         Yellowish brown fine sandy CLAY. (CL)         Yellowish brown and tan slightly silty fine SAND.         (SM)         Light gray to light brown slightly silty fine to coarse SAND. (SM) | Topsoil         Dark brown and tan slightly silty fine SAND.         (SM)         Yellowish brown fine sandy CLAY. (CL)         Yellowish brown fine sandy CLAY. (CL)         Yellowish brown and tan slightly silty fine SAND.         (SM)         Light gray to light brown slightly silty fine to coarse SAND. (SM)         Light brown slightly silty fine SAND. (SM) | Topsoil         Dark brown and tan slightly silty fine SAND.         (SM)         Yellowish brown fine sandy CLAY. (CL)         Yellowish brown fine sandy CLAY. (CL)         Yellowish brown and tan slightly silty fine SAND.         (SM)         Light gray to light brown slightly silty fine to coarse SAND. (SM)         Light brown slightly silty fine SAND. (SM) | Topsoil       Dark brown and tan slightly silty fine SAND.         (SM)       Yellowish brown fine sandy CLAY. (CL)         Yellowish brown fine sandy CLAY. (CL)       Yellowish brown and tan slightly silty fine SAND.         (SM)       Light gray to light brown slightly silty fine to coarse SAND. (SM)         Light brown slightly silty fine SAND. (SM)       Light brown slightly silty fine SAND. (SM) | Topsoil         Dark brown and tan slightly silty fine SAND.         (SM)         Yellowish brown fine sandy CLAY. (CL)         Yellowish brown fine sandy CLAY. (CL)         Yellowish brown and tan slightly silty fine SAND.         (SM)         Light gray to light brown slightly silty fine to coarse SAND. (SM)         Light brown slightly silty fine SAND. (SM) | Topsoil       It         Dark brown and tan slightly silty fine SAND.       (SM)         Yellowish brown fine sandy CLAY. (CL)       Yellowish brown and tan slightly silty fine SAND.         Yellowish brown and tan slightly silty fine SAND.       (SM)         Light gray to light brown slightly silty fine to coarse SAND. (SM)       It         Light brown slightly silty fine SAND. (SM)       It | Topsoil     Image: Constraint of the second se | Topsoil     Topsoil       Dark brown and tan slightly silty fine SAND.<br>(SM)       Yellowish brown fine sandy CLAY. (CL)       Yellowish brown and tan slightly silty fine SAND.<br>(SM)       Light gray to light brown slightly silty fine to coarse SAND. (SM)       Light brown slightly silty fine SAND. (SM) | Topsoil     Topsoil       Dark brown and tan slightly silty fine SAND.<br>(SM)       Yellowish brown fine sandy CLAY. (CL)       Yellowish brown and tan slightly silty fine SAND.<br>(SM)       Light gray to light brown slightly silty fine to<br>coarse SAND. (SM)       Light brown slightly silty fine SAND. (SM) | Topsoil     Topsoil       Dark brown and tan slightly silty fine SAND.<br>(SM)       Yellowish brown fine sandy CLAY. (CL)       Yellowish brown and tan slightly silty fine SAND.<br>(SM)       Light gray to light brown slightly silty fine to<br>coarse SAND. (SM)       Light brown slightly silty fine SAND. (SM) | Topsoil     Dark brown and tan slightly silty fine SAND.       (SM)       Yellowish brown fine sandy CLAY. (CL)       Yellowish brown fine sandy CLAY. (CL)       Yellowish brown and tan slightly silty fine SAND.       (SM) | Topsoil     Dark brown and tan slightly silty fine SAND.       (SM)       Yellowish brown fine sandy CLAY. (CL)       Yellowish brown and tan slightly silty fine SAND.       (SM) |

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#### REMARKS:

Boring terminated at 15.0 feet. Type II monitoring well installed upon boring completion. See Well Construction Record for details.

## SEE KEY SHEET FOR EXPLANATION OF SYMBOLS AND ABBREVIATIONS USED ABOVE

## TEST BORING RECORD

BORING NUMBER DATE DRILLED PROJECT NUMBER PROJECT PAGE 1 OF 1

MW-14 March 8, 1994 475-09183-01 TC-341

LAW ENGINEERING

| тн<br>Г.) | I DESCRIPTION                                                                                  | מינט<br>הו    | TFIS                                                | ▼ PEI    | NETR  | ATIC             | /N - 1         | BLO     | 1001     | OU  | 1         |    |
|-----------|------------------------------------------------------------------------------------------------|---------------|-----------------------------------------------------|----------|-------|------------------|----------------|---------|----------|-----|-----------|----|
| .0        |                                                                                                |               | <u>, 1</u> , 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, | l j      | 10 2  | 20 3             | 0 40           | 6       | 0        | 80  | 100       |    |
| .s [      | _ Topsoil                                                                                      | 4             | 1                                                   |          | 1     | Т                |                |         |          | Τ   | H         |    |
|           | Orange brown clayey fine SAND. (SC)                                                            |               |                                                     | •        |       |                  |                |         |          |     |           | 8  |
|           |                                                                                                | $\langle / /$ |                                                     |          |       |                  |                |         |          |     | ΙΠ        |    |
| .5        |                                                                                                |               |                                                     |          |       |                  |                |         |          |     |           |    |
|           | Yellowish brown fine sandy CLAY. (CL)                                                          | 111           |                                                     |          |       |                  |                |         |          |     |           |    |
|           | Yellowish brown and tan slightly silty fine SAND.                                              | ′   . ·       |                                                     |          |       |                  |                |         |          |     |           | 14 |
|           | (SM)                                                                                           |               |                                                     |          |       |                  |                |         |          |     | $\square$ |    |
|           |                                                                                                |               |                                                     |          |       |                  |                |         |          |     |           |    |
|           |                                                                                                |               |                                                     |          |       |                  |                |         |          |     |           |    |
| .5        |                                                                                                |               |                                                     |          |       |                  |                |         |          |     |           |    |
| Γ         | Light gray slightly silty fine to coarse SAND.                                                 |               |                                                     |          |       |                  |                |         |          |     |           | _  |
|           | (SM)                                                                                           |               | ╞╴╶┼┈                                               |          |       |                  |                |         | ┝╌┠      |     | L n       | 9  |
|           |                                                                                                |               |                                                     |          |       | 1                |                |         |          |     |           |    |
|           |                                                                                                |               |                                                     |          |       |                  |                |         |          |     |           |    |
|           |                                                                                                |               | ] [                                                 |          |       |                  |                |         |          |     |           |    |
| .5        |                                                                                                | ·H÷-H         |                                                     |          |       |                  |                |         |          |     | H         |    |
|           | Reddish brown slightly silty fine SAND. (SM)                                                   |               | 1                                                   | ٠        |       |                  |                |         |          |     |           | 2  |
|           |                                                                                                |               | <u>+</u> +−                                         |          | 1     |                  |                |         |          |     | H         |    |
|           |                                                                                                |               |                                                     |          |       |                  |                |         |          |     |           |    |
|           |                                                                                                |               | -                                                   |          |       |                  |                |         |          |     |           |    |
| .5        |                                                                                                |               | -                                                   |          |       |                  |                |         |          |     |           |    |
| 3         | Dark gray slightly silty fine SAND. (SM)                                                       |               |                                                     |          |       |                  |                |         |          |     |           |    |
|           | Light gray slightly silty fine SAND (SM) with                                                  |               | 1                                                   |          |       |                  |                |         |          |     |           | 14 |
|           | shell fragments.                                                                               |               | :                                                   |          |       |                  |                |         |          |     |           |    |
|           |                                                                                                |               | :                                                   |          |       |                  |                |         |          |     |           |    |
|           |                                                                                                |               | 1                                                   |          |       |                  |                |         |          |     |           |    |
| .5        |                                                                                                |               |                                                     |          |       |                  |                |         |          |     |           |    |
|           | Light gray slightly silty fine to coarse SAND (SM)                                             |               |                                                     |          |       |                  |                |         |          |     |           | 34 |
|           | with shell fragments.                                                                          |               | }                                                   | <u>.</u> | +     |                  | -              |         | ┝╼╄╸     | +   |           | 5. |
|           |                                                                                                |               |                                                     |          |       |                  |                |         |          |     |           |    |
|           |                                                                                                |               |                                                     |          |       |                  |                |         |          |     |           |    |
| 5         |                                                                                                | [] : ]        |                                                     |          |       |                  |                |         |          |     |           |    |
| <b>"</b>  | Light gray slightly silty fine to coarse SAND (SM)                                             |               |                                                     |          |       |                  |                |         |          |     | , H       |    |
| 0         | with shell fragments.                                                                          |               |                                                     |          |       |                  |                | •       |          |     |           | 49 |
| Γ         |                                                                                                |               | T T                                                 |          |       |                  | T              |         |          |     |           |    |
|           |                                                                                                |               |                                                     |          |       |                  |                |         |          |     |           |    |
|           |                                                                                                |               |                                                     |          |       |                  |                |         |          |     |           |    |
|           |                                                                                                | İ             |                                                     |          |       |                  |                |         |          | ľ   |           |    |
|           |                                                                                                |               |                                                     |          |       |                  |                |         |          |     |           |    |
|           |                                                                                                |               | ⊢ ∔                                                 |          | +     | $\left  \right $ |                |         | $\vdash$ | +-+ |           |    |
|           |                                                                                                | 1             |                                                     |          |       |                  |                |         |          |     |           |    |
|           |                                                                                                |               | ]                                                   |          | 1     |                  |                |         |          |     |           |    |
|           |                                                                                                |               | Į –                                                 |          | 1     |                  |                |         |          |     |           |    |
|           |                                                                                                |               |                                                     |          |       |                  |                |         |          |     |           |    |
|           |                                                                                                |               |                                                     |          | :     |                  |                |         |          |     |           |    |
| _         | REMARKS:                                                                                       | 2             |                                                     |          |       |                  | 00000          |         |          |     |           |    |
|           | Boring terminated at 30.0 feet. Type III                                                       |               |                                                     | ŦES      | T BOI | RING             | RE             | ORI     | 3        |     |           |    |
|           | monitoring well installed upon boring completion.<br>See Well Construction Record for details. |               |                                                     |          |       | <u></u>          | <u>ئىتىتىن</u> | <u></u> | ينبب     |     |           |    |
|           |                                                                                                |               | BORING NU                                           |          | MW    |                  |                |         |          |     |           |    |
|           |                                                                                                |               | DATE DRIL                                           |          |       | ch 8,            |                |         |          |     |           |    |
|           |                                                                                                |               | PROJECT N                                           | UMBER    |       | 0918             | 3-01           |         |          |     |           |    |
|           |                                                                                                | - 111         | PROJECT                                             |          | TC-3  | 241              |                |         |          |     |           |    |

SEE KEY SHEET FOR EXPLANATION OF SYMBOLS AND ABBREVIATIONS USED ABOVE

NATION OF USED ABOVE

| DEPTH<br>(FT.) | DESCRIPTION                                                                                   |                  | ) EARVATIO                                               | T • 1          | PENETI    | RATIO                              | N - BI | ows | /FOC | т   |    |
|----------------|-----------------------------------------------------------------------------------------------|------------------|----------------------------------------------------------|----------------|-----------|------------------------------------|--------|-----|------|-----|----|
| 0.0            |                                                                                               |                  | 0 <u>1 1 1 1 1 1</u>                                     | U I            | 10        | 20 30                              | 40     | 60  | 80   | 100 |    |
| 0.4            | Gravel                                                                                        | /                |                                                          |                |           |                                    |        |     |      |     | [  |
|                | Tan and dark brown slightly silty fine SAND.<br>(SM)                                          |                  |                                                          |                | •         |                                    |        |     |      |     | 7  |
| 3.5<br>4.0 - 、 | Yellowish brown clayey fine SAND. (SC)                                                        |                  |                                                          |                |           |                                    |        |     |      |     |    |
|                | Light gray and yellowish brown slightly clayey<br>fine SAND. (SC)                             |                  |                                                          |                | •<br>•    |                                    | _      |     |      |     | 9  |
| 8.5            |                                                                                               |                  |                                                          |                |           |                                    |        |     |      |     |    |
|                | Tan slightly silty fine to coarse SAND. (SM)                                                  |                  |                                                          | <u></u>        | •         |                                    |        |     |      |     | 11 |
| 13.5           | Orange brown slightly silty fine SAND. (SM)                                                   | ;<br>;<br>;<br>; |                                                          |                |           |                                    |        |     |      |     |    |
| 15.0           |                                                                                               |                  |                                                          | •              |           |                                    |        |     |      |     | 4  |
|                | ·                                                                                             |                  |                                                          |                |           |                                    |        |     |      |     |    |
|                |                                                                                               |                  |                                                          |                | :         |                                    |        |     |      |     |    |
| F              | CEMARKS:<br>Boring terminated at 15.0 feet. Type II                                           |                  |                                                          | T              | LST BC    | RING                               | RECC   | RD  |      |     |    |
| n<br>S         | nonitoring well installed upon boring completion<br>see Well Construction Record for details. |                  | BORING N<br>DATE DRI<br>PROJECT I<br>PROJECT<br>PAGE 1 0 | LLED<br>NUMBER | Ma<br>475 | V-16<br>rch 8, 1<br>-09183<br>-341 |        |     |      |     |    |

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SEE KEY SHEET FOR EXPLANATION OF SYMBOLS AND ABBREVIATIONS USED ABOVE

## LAW ENGINEERING

| TH<br>`.)        | DESCRIPTION                                                                         |           |                 |        | זאכ | • PEN      | ETR     | ATIO  | N - B   | LOW | S/FO | от  |    |
|------------------|-------------------------------------------------------------------------------------|-----------|-----------------|--------|-----|------------|---------|-------|---------|-----|------|-----|----|
| •)<br>.0         |                                                                                     |           |                 | שישת   | 0 4 | 1          | 0 2     | :0 30 | 40      | 60  | 80   | 100 |    |
| .5 Topso         |                                                                                     |           | 1               | 1      | T   |            |         |       |         |     | T    | N   |    |
| Light<br>SANI    | brown to dark brown slightly silty fine<br>D. (SM)                                  |           |                 |        |     |            |         |       |         |     |      |     | 10 |
| .5               |                                                                                     |           |                 |        |     |            |         |       |         |     |      |     |    |
| Light<br>silty f | gray and yellowish brown slightly silty to<br>ine to medium SAND. (SM)              |           |                 |        |     | 16.6037-47 | •       |       |         |     |      |     | 12 |
| 5                |                                                                                     |           |                 |        |     |            |         |       |         |     |      |     |    |
| Light            | tan slightly silty fine to coarse SAND. (SM                                         | <b>[)</b> |                 |        |     | •          |         |       |         |     |      |     | 7  |
| 5<br>Light       | brown slightly silty fine SAND. (SM)                                                |           |                 |        |     |            |         |       |         |     |      |     | e  |
| 0                |                                                                                     |           | <u>91 - 1</u> - |        |     | U          |         |       |         | +   | +    | + M | 5  |
|                  |                                                                                     |           |                 | -      |     |            |         |       |         |     |      |     |    |
|                  |                                                                                     |           |                 |        |     |            | <u></u> |       |         |     |      | +   |    |
|                  |                                                                                     |           |                 |        |     |            |         |       |         |     |      |     |    |
|                  |                                                                                     |           |                 |        |     |            |         |       |         |     |      |     |    |
|                  |                                                                                     |           |                 |        |     |            |         |       |         |     |      |     |    |
|                  |                                                                                     |           |                 |        |     |            |         |       |         |     |      |     |    |
|                  |                                                                                     |           |                 |        |     |            |         |       |         |     |      |     |    |
|                  |                                                                                     |           |                 |        |     |            |         |       |         |     |      |     |    |
|                  |                                                                                     |           |                 |        |     |            |         |       |         |     | ++   | ┿┥╽ |    |
|                  |                                                                                     |           |                 |        |     |            |         |       |         |     |      |     |    |
|                  | ·                                                                                   |           |                 |        |     |            | •_      |       |         |     |      |     |    |
| REMA<br>Boring   | terminated at 15.0 feet. Type II                                                    |           |                 |        |     | TES        | F BØ    | k ING | REC     | ord |      |     |    |
| monito           | ring well installed upon boring completion.<br>ell Construction Record for details. |           |                 | BORING | NUM | BER        | MW      | -17   | فتغنيته |     |      |     |    |
|                  |                                                                                     |           |                 | DATE D |     |            |         | ch 8, | 1994    |     |      |     |    |

SEE KEY SHEET FOR EXPLANATION OF SYMBOLS AND ABBREVIATIONS USED ABOVE

# PROJECT NUMBER 475-09183-01 PROJECT TC-341

## PAGE 1 OF 1

🛓 LAW ENGINEERING

|                   | North Carolina - Department of Environment, Health and Natural Resol<br>Division of Environmental Management - Groundwated Section<br>P.O. Box 29535 - Raleigh, N.Q. 27628-0535 -<br>Phone (919) 733-3221                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |            | 1                                                          |                                                                  |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|------------------------------------------------------------|------------------------------------------------------------------|
|                   | WELL CONSTRUCTION RECORD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                                                            |                                                                  |
|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |            | Header Ent                                                 |                                                                  |
| DR                | ILLING CONTRACTOR: <u>Law Engineering</u> ST                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | TE WEL     | L CONSTRUCTION                                             |                                                                  |
| DR                | ILLER REGISTRATION NUMBER: 332 PEI                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | RMIT NUI   | MBER:M                                                     | W-4                                                              |
| 1                 | WELL LOCATION: (Show sketch of the location below)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |            |                                                            |                                                                  |
| 1.                | Nearest Town:Jacksonville County:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Onslo      | N                                                          |                                                                  |
|                   | TC-341 Camp Gieger                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |            |                                                            |                                                                  |
|                   | (Road, Community, or Subdivision and Lot No.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | •          | DEPTH                                                      | DRILLING LOG                                                     |
| 2.                | OWNERILS_ Marine Corps                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |            | rom To                                                     | Formation Descriptio                                             |
|                   | ADDRESS Camp LeJeune                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 0          | .0 13.0                                                    | ·                                                                |
|                   | (Street or Route No.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |            |                                                            |                                                                  |
|                   | Jacksonville         NC           City or Town         State         Zip Code                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | ·          |                                                            | See attached                                                     |
| 3.                | DATE DRILLED USE OF WELL Monitoring                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |            |                                                            |                                                                  |
|                   | TOTAL DEPTH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |            |                                                            |                                                                  |
|                   | CUTTINGS COLLECTED YES X NO                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |            |                                                            |                                                                  |
|                   | DOES WELL REPLACE EXISTING WELL? YES NOX<br>STATIC WATER   EVEL Below Top of Casing:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |            |                                                            |                                                                  |
| 7.                | STATIC WATER LEVEL Below Top of Casing: FT.<br>(Use "+" if Above Top of Casing)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |            |                                                            | <u> </u>                                                         |
| 8.                | TOP OF CASING IS 2.0 FT. Above Land Surface*                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |            |                                                            |                                                                  |
|                   | asing Terminated at/or below land surface is illegal unless a variance is issue                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 1          |                                                            |                                                                  |
| in                | accordance with 15A NCAC 2C .0118                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |            |                                                            |                                                                  |
|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |            |                                                            | — <u>u,                                    </u>                  |
| 10.               | WATER ZONES (depth):N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |            |                                                            | <u></u>                                                          |
|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |            |                                                            |                                                                  |
| 44                | CHLOBINATION: Type N/A Amount N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | lf         | additional space is ne                                     | eded use back of form                                            |
|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | if         | additional space is ne                                     | eded use back of form                                            |
|                   | CASING:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | if         |                                                            | eded use back of form                                            |
|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |            | LOCATIO                                                    |                                                                  |
|                   | CASING:<br>Wall Thickness<br>Depth Diameter or Weight/Ft. Material                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | (Show      | LOCATIO                                                    | DN SKETCH<br>e from at least two State                           |
|                   | CASING: Wall Thickness                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | (Show      | LOCATIC                                                    | DN SKETCH<br>e from at least two State                           |
|                   | CASING:<br>Depth Diameter or Weight/Ft. Material<br>From 0.0 To 3.0 Ft. 2" SCH 40 PVC.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | (Show      | LOCATIC                                                    | DN SKETCH<br>e from at least two State                           |
| 12.               | CASING:<br>Depth Diameter or Weight/Ft. Material<br>From 0.0 To Ft. 2'' SCH 40 PVC.<br>From To Ft                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | (Show      | LOCATIC                                                    | DN SKETCH<br>e from at least two State                           |
| 12.               | CASING:<br>Depth Diameter or Weight/FL Material<br>From 0.0 To 3.0 Ft. 2" SCH 40 PVC.<br>From To Ft. Control Ft. SCH 40 PVC.<br>From From To Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. Control Ft. C | (Show<br>R | LOCATIO<br>direction and distanc<br>loads, or other map re | <u>DN SKETCH</u><br>e from at least two State<br>ference points) |
| 12.               | Depth         Diameter         Wall Thickness<br>or Weight/FL         Material           From         0.0         To         3.0         Ft.         2''         SCH_40         PVC.           From         To         Ft.         2''         SCH_40         PVC.           From         To         Ft.              From         To         Ft.              GROUT:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | (Show<br>R | LOCATIO<br>direction and distanc<br>loads, or other map re | DN SKETCH<br>e from at least two State                           |
| 12.               | CASING:<br>Depth Diameter or Weight/Ft. Material<br>From 0.0 To 3.0 Ft. 2" SCH 40 PVC.<br>From To Ft. Control Ft. SCH 40 PVC.<br>From To Ft. Control Ft. SCH 40 PVC.<br>From Depth Material Method                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | (Show<br>R | LOCATIO<br>direction and distanc<br>loads, or other map re | <u>DN SKETCH</u><br>e from at least two State<br>ference points) |
| 12.               | CASING:         Wall Thickness<br>or Weight/Ft.       Material         From       0.0       To       3.0       Ft.       2"       SCH_40       PVC.         From       To       To       Ft.       SCH_40       PVC.         From       To       SCH_40       PVC.       SCH_40       PVC.         From       To       Ft.       SCH_40       PVC.       SCH_40       PVC.         From       To       2.0       Ft.       Concrete       Cast-in-F                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | (Show<br>R | LOCATIO<br>direction and distanc<br>loads, or other map re | <u>DN SKETCH</u><br>e from at least two State<br>ference points) |
| 12.               | CASING:<br>Depth Diameter or Weight/Ft. Material<br>From 0.0 To 3.0 Ft. 2" SCH 40 PVC.<br>From To Ft. Concrete Cast-in-F<br>From 0.0 To 2.0 Ft. Concrete Cast-in-F<br>From To Ft. Concrete Cast-in-F<br>From To Ft. Concrete Cast-in-F<br>From Depth Diameter Slot Size Material                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | (Show<br>R | LOCATIO<br>direction and distanc<br>loads, or other map re | <u>DN SKETCH</u><br>e from at least two State<br>ference points) |
| 12.               | CASING:<br>Depth Diameter or Weight/Ft. Material<br>From 0.0 To 3.0 Ft. 2" SCH 40 PVC.<br>From To Ft. SCH 40 PVC.<br>From To Ft. SCH 40 PVC.<br>From Concept Material Method<br>From 0.0 To 2.0 Ft. Concrete Cast-in-F<br>From To Ft. SCREEN:<br>Depth Diameter Slot Size Material<br>From $3.0$ To $13.0$ Ft 2" in. $0.010$ in. PVC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | (Show<br>R | LOCATIO<br>direction and distanc<br>loads, or other map re | <u>DN SKETCH</u><br>e from at least two State<br>ference points) |
| 12.               | Wall Thickness         Wall Thickness         To                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | (Show<br>R | LOCATIO<br>direction and distanc<br>loads, or other map re | <u>DN SKETCH</u><br>e from at least two State<br>ference points) |
| 12.               | CASING:<br>Depth Diameter or Weight/Ft. Material<br>From 0.0 To 3.0 Ft. 2" SCH 40 PVC.<br>From To Ft. SCH 40 PVC.<br>From To Ft. SCH 40 PVC.<br>From Concept Material Method<br>From 0.0 To 2.0 Ft. Concrete Cast-in-F<br>From To Ft. SCREEN:<br>Depth Diameter Slot Size Material<br>From $3.0$ To $13.0$ Ft 2" in. $0.010$ in. PVC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | (Show<br>R | LOCATIO<br>direction and distanc<br>loads, or other map re | <u>DN SKETCH</u><br>e from at least two State<br>ference points) |
| 12.               | Wall Thickness<br>or Weight/Ft. Material         From       0.0       To       3.0       Ft.       2''       SCH 40       PVC.         From       To       To       Ft.       2''       SCH 40       PVC.         From       To       Ft.       2''       SCH 40       PVC.         From       To       Ft.       2''       SCH 40       PVC.         From       To       Ft.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | (Show<br>R | LOCATIO<br>direction and distanc<br>loads, or other map re | <u>DN SKETCH</u><br>e from at least two State<br>ference points) |
| 12.               | Wall Thickness         Wall Thickness         To                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | (Show<br>R | LOCATIO<br>direction and distanc<br>loads, or other map re | <u>DN SKETCH</u><br>e from at least two State<br>ference points) |
| 12.               | Wall Thickness<br>or Weight/Ft. Material         From       0.0       To       3.0       Ft.       2"       SCH_40       PVC.         From       To       3.0       Ft.       2"       SCH_40       PVC.         From       To       Ft.       2"       SCH_40       PVC.         From       To       Ft.       2"       SCH_40       PVC.         From       To       Ft.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | (Show<br>R | LOCATIO<br>direction and distanc<br>loads, or other map re | <u>DN SKETCH</u><br>e from at least two State<br>ference points) |
| 12.<br>13.<br>14. | Wall Thickness         Wall Thickness         To                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | (Show<br>R | LOCATIO<br>direction and distanc<br>loads, or other map re | <u>DN SKETCH</u><br>e from at least two State<br>ference points) |

tekens SIGNATURE OF CONTRACTOR OR AGENT

11-94 DATE

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| North Carolina - Department of Environment, Health, and Natitral P<br>Division of Environmental Management - Proupowatel Sect<br>P.O. Box 29535 - Raleigh, N.O2762645357 | CUAD. NO: SERIAL NO:                                                |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|
| Phone (919) 733-3221                                                                                                                                                     | Minor Basin                                                         |
| WELL CONSTRUCTION RECORD                                                                                                                                                 | Basin Code                                                          |
|                                                                                                                                                                          | Header EntGW-1 Ent:                                                 |
| RILLING CONTRACTOR: Law Engineering                                                                                                                                      | STATE WELL CONSTRUCTION                                             |
|                                                                                                                                                                          | PERMIT NUMBER: <u>MW-5</u>                                          |
| WELL LOCATION: (Show sketch of the location below)                                                                                                                       |                                                                     |
| Nearest Town: Jacksonville County:                                                                                                                                       | Onslow                                                              |
| . TC-341 Camp Gieger                                                                                                                                                     |                                                                     |
| (Road, Community, or Subdivision and Lot No.)                                                                                                                            | DEPTH DRILLING LOG                                                  |
| OWNER U.S. Marine Corps                                                                                                                                                  |                                                                     |
| ADDRESSCamp LeJeune                                                                                                                                                      | 0.0 13.0 See attached                                               |
| (Street or Route No.)<br>Jacksonville NC                                                                                                                                 |                                                                     |
| City or Town State Zip Code                                                                                                                                              |                                                                     |
| DATE DRILLED 3-1-94 USE OF WELL Monitorin                                                                                                                                | 1g                                                                  |
| TOTAL DEPTH 13.0                                                                                                                                                         | مید میکند.<br>بین این این بین این این این این این این این این این ا |
|                                                                                                                                                                          |                                                                     |
| DOES WELL REPLACE EXISTING WELL? YES NO                                                                                                                                  | X                                                                   |
| STATIC WATER LEVEL Below Top of Casing: FT.                                                                                                                              |                                                                     |
| (Use "+" if Above Top of Casing)                                                                                                                                         |                                                                     |
| TOP OF CASING IS FT. Above Land Surface"                                                                                                                                 |                                                                     |
| Casing Terminated at/or below land surface is illegal unless a variance is is<br>In accordance with 15A NCAC 2C .0118                                                    |                                                                     |
| YIELD (gpm): N/A METHOD OF TESTN/A                                                                                                                                       |                                                                     |
| NT / A                                                                                                                                                                   |                                                                     |
|                                                                                                                                                                          |                                                                     |
| 1. CHLORINATION: TypeN/AAmountN/                                                                                                                                         | /If additional space is needed use back of form                     |
| 2. CASING:                                                                                                                                                               |                                                                     |
|                                                                                                                                                                          | LOCATION SKETCH                                                     |
| Wall Thickness<br>Depth Diameter or Weight/Ft. Mater                                                                                                                     |                                                                     |
| Depth Diameter or Weight/Ft. Mater<br>From 0.0 To 3.0 Ft. 2" SCH 40 PV                                                                                                   |                                                                     |
| From To Ft Con +                                                                                                                                                         |                                                                     |
|                                                                                                                                                                          |                                                                     |
| From To Ft                                                                                                                                                               |                                                                     |
| B. GROUT:                                                                                                                                                                | See Report.                                                         |
| Depth Material Method                                                                                                                                                    | Place                                                               |
| From 0.0 To 2.0 Ft. Concrete Cast-in                                                                                                                                     |                                                                     |
| From ToFt                                                                                                                                                                | <u> </u>                                                            |
| 4. SCREEN:                                                                                                                                                               |                                                                     |
| Depth Diameter Slot Size Material                                                                                                                                        |                                                                     |
| From <u>3.0 To 13.0 Ft 2</u> in. <u>0.010 in. PVC</u>                                                                                                                    |                                                                     |
| From To Ft in in                                                                                                                                                         | :                                                                   |
| From To Ft in in                                                                                                                                                         | ,                                                                   |
| S. SAND/GRAVEL PACK:                                                                                                                                                     |                                                                     |
| Depth Size Material                                                                                                                                                      | · .                                                                 |
| From 2.0 Tol4.0 Ft. Torpedo PVC                                                                                                                                          |                                                                     |
| From To Ft                                                                                                                                                               |                                                                     |
|                                                                                                                                                                          |                                                                     |
| B. REMARKS:                                                                                                                                                              | · · · · · · · · · · · · · · · · · · ·                               |
| I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED                                                                                                                       | N ACCORDANCE WITH 15A NCAC 2C. WELL                                 |
|                                                                                                                                                                          |                                                                     |
| CONSTRUCTION STANDARDS AND THAT A COPY OF THIS REC                                                                                                                       | ORD HAS BEEN PROVIDED TO THE WELL OWNER.                            |
| CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS REC                                                                                                                      | ORD HAS BEEN PROVIDED TO THE WELL OWNER.                            |
| CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS REC                                                                                                                      | CORD HAS BEEN PROVIDED TO THE WELL OWNER.                           |

DATE

| Ŭ.                     |                                   | one (919) 733-   |                                 |                      | U             | Lat<br>Minor Bas |              | SERIAL.NO:<br>ngROT     |
|------------------------|-----------------------------------|------------------|---------------------------------|----------------------|---------------|------------------|--------------|-------------------------|
|                        |                                   |                  |                                 | -                    |               | Basin Coo        | 10           | GW-1 Ent:               |
| DRILLING C             | ONTRACTOR:                        | Law Eng          | ineering                        | OTA                  | ן<br>דב אבו ו |                  | RUCTION      |                         |
| DRILLER RE             | GISTRATION NUI                    | MBER:            | 332                             |                      | MIT NUM       |                  |              | <u>MW-6</u>             |
|                        | CATION: (Show s                   | ketch of the in  | ocation below                   |                      |               |                  |              |                         |
| Nearest To             | Talabaan                          | ville            | C                               | ,<br>ounty:          | Onslow        | w                |              |                         |
| TC-                    | 341 Camp Geige                    | er               |                                 |                      |               |                  |              |                         |
| (Road, C               | mmunity, or Subdivisio            | n and Lot No.)   |                                 |                      |               | DEPTH            | -            | DRILLING LOG            |
| 2. OWNER               |                                   | ine Corps        |                                 |                      | Fro           | m T              | 0            | Formation Description   |
| ADDRES                 |                                   |                  |                                 |                      | 0.0           | 0 1              | 3.0          | See attached            |
|                        | •                                 | et or Route No.) |                                 |                      |               |                  |              |                         |
| <u>Jacl</u><br>City or | <u>tsonville</u>                  | NC<br>State      |                                 | p Code               | <u> </u>      |                  |              |                         |
|                        | ILLED 3-1-94                      |                  |                                 | •                    |               |                  |              |                         |
|                        | EPTH                              |                  |                                 |                      |               |                  |              |                         |
| 5. CUTTING             | S COLLECTED                       |                  | NO                              |                      |               |                  |              | ·                       |
|                        | LL REPLACE EX                     |                  |                                 | NO                   |               |                  |              |                         |
| 7. STATIC V            | ATER LEVEL Be                     |                  | ISING:<br>Above Top of Ca       | FT.                  | <u></u>       |                  |              |                         |
|                        | ASING IS 1.9                      |                  | Above Top of Ca                 | sing)<br>Ce <b>f</b> |               |                  |              |                         |
|                        | ited at/or below land             |                  |                                 |                      |               |                  |              |                         |
| in accordance          | with 15A NCAC 2C .0               | 118              |                                 |                      |               |                  |              |                         |
| 3. YIELD (gr           | m):N/AME                          |                  | SIN/A_                          |                      |               |                  |              |                         |
| IO. WATER Z            | ONES (depth):                     | N/A_             |                                 |                      |               |                  |              |                         |
| 1. CHLORIN             | ATIONI: Tura                      | N / A            | Amount                          | N/A                  | lf a          | dditional        | space is ne  | eded use back of form   |
| 12. CASING:            |                                   |                  | Amount                          |                      |               |                  |              |                         |
| IZ. CASING.            |                                   |                  |                                 |                      |               |                  | LOCATIC      | N SKETCH                |
|                        | Depth                             | Diameter         | Wall Thickness<br>or Weight/Ft. | Material             | (Show o       | direction a      | and distance | from at least two State |
| From 0                 | To                                |                  |                                 | PVC                  | Roa           | ads, or ot       | her map refe | arence points)          |
|                        | To                                |                  |                                 |                      |               |                  |              |                         |
|                        | To                                |                  |                                 |                      |               |                  | See Rep      | ort.                    |
| 3. GROUT:              |                                   |                  |                                 |                      |               |                  |              |                         |
|                        | Depth                             | Mate             |                                 | lethod               |               |                  |              |                         |
| From 0                 | <u>0</u> To <u>2.0</u>            | Ft. Concre       | teCast                          | -in-Plac             | e             |                  |              |                         |
|                        | -                                 | Ft               |                                 |                      |               |                  |              |                         |
| 4. SCREEN:             |                                   |                  |                                 |                      |               |                  |              |                         |
|                        | Depth C                           | )iameter Slo     | ot Size N                       | laterial             |               |                  |              |                         |
| From3                  | 0 To 13.0 Ft                      | <u>2"</u> in     | 0.010 <sub>in. PV</sub>         | 7C                   |               |                  |              |                         |
|                        | To Ft                             |                  |                                 |                      |               | .*               |              |                         |
| From                   | To Ft                             | in               | in                              |                      |               |                  |              |                         |
| 5. SAND/GR             | AVEL PACK:                        |                  |                                 |                      |               |                  |              | • _                     |
|                        |                                   | Size             | Materi<br>lo Sand               | al                   |               |                  |              |                         |
| ⊢rom                   | $\frac{.0}{}$ To $\frac{.14.0}{}$ |                  | lo Sano                         | 1                    |               |                  |              |                         |
| _                      | To                                | Ft               |                                 |                      |               |                  |              |                         |
| From                   | 3:                                |                  |                                 |                      |               |                  |              |                         |
|                        |                                   |                  |                                 |                      |               |                  |              |                         |
| 6. REMARK              |                                   |                  |                                 |                      |               | 18/1 T L         | 1            |                         |
| 6. REMARK              | BY CERTIFY THAT                   | THIS WELL W      | AS CONSTRU                      | CTED IN AC           | HAS REE       | N PROVI          | DED TO TH    | E WELL OWNER.           |

|             | Carolina - Department<br>Division of Environme<br>P.O. Box 29<br>F | ental Management<br>9535 - Raleigh, N.O<br>Phone (919) 733-32 | -IGroundwater Fee                  |              | QUAD. NO:                                                                                                        |                         |
|-------------|--------------------------------------------------------------------|---------------------------------------------------------------|------------------------------------|--------------|------------------------------------------------------------------------------------------------------------------|-------------------------|
|             |                                                                    | •                                                             |                                    |              |                                                                                                                  |                         |
|             | WELL CO                                                            | ONSTRUCTION                                                   |                                    |              | Basin Code                                                                                                       | GW-1-Ent:               |
| RILLING     | CONTRACTOR:                                                        | Law Engin                                                     | eering                             |              | Header Ent                                                                                                       |                         |
| RILLER      | REGISTRATION N                                                     | UMBER:                                                        | 332                                |              |                                                                                                                  | W-7                     |
|             | LOCATION: (Show                                                    | sketch of the loc                                             | cation below)                      | • Onslo      | ω.                                                                                                               |                         |
|             |                                                                    |                                                               | County                             | •            |                                                                                                                  |                         |
|             | 341 Camp Giege<br>, Community, or Subdivi                          |                                                               |                                    |              | DEPTH                                                                                                            | DRILLING LOG            |
| . OWNE      |                                                                    | rine Corps                                                    |                                    |              | оп То                                                                                                            | Formation Description   |
| ADDR        | SS Camp LeJ                                                        | eune                                                          |                                    | 0.0          | 13.0                                                                                                             | See attached            |
| To          | (S<br>ksonville                                                    | treet or Route No.)<br>NC                                     |                                    |              |                                                                                                                  |                         |
|             | or Town                                                            | State                                                         | Zip Cod                            |              |                                                                                                                  |                         |
| •           | DRILLED <u>3-1-</u>                                                |                                                               |                                    |              | and the second second second second second second second second second second second second second second second |                         |
|             | DEPTH <u>13.0</u>                                                  |                                                               |                                    | <u>~</u>     |                                                                                                                  |                         |
|             | NGS COLLECTED                                                      | YESIX                                                         |                                    |              |                                                                                                                  |                         |
| DOES        | WELL REPLACE E                                                     | XISTING WELL                                                  |                                    |              |                                                                                                                  |                         |
| STATIC      | WATER LEVEL B                                                      | •                                                             |                                    |              | and the second state of the second second second second second second second second second second second second  |                         |
|             |                                                                    |                                                               | bove Top of Casing)                |              |                                                                                                                  |                         |
|             | F CASING IS <u>1.</u>                                              |                                                               |                                    | icened       |                                                                                                                  |                         |
| in accordan | ninated at/or below lan<br>ce with 15A NCAC 2C                     | .0118                                                         |                                    |              |                                                                                                                  |                         |
| YIELD       | (gpm):N/AM                                                         | ETHOD OF TES                                                  | T <u>N/A</u>                       |              |                                                                                                                  |                         |
| O. WATEF    | ZONES (depth): _                                                   | N/A                                                           |                                    |              |                                                                                                                  |                         |
|             | -                                                                  | •                                                             |                                    |              |                                                                                                                  |                         |
| 1. CHLOF    | INATION: Type                                                      | <u>N/A</u>                                                    | _ AmountN/                         | <u>A</u> If  | additional space is nee                                                                                          | ided use back of form   |
| 2. CASING   | G:                                                                 |                                                               |                                    |              |                                                                                                                  |                         |
|             |                                                                    | ,                                                             | Wall Thickness                     |              |                                                                                                                  | N SKETCH                |
|             | Depth                                                              | Diameter                                                      |                                    |              |                                                                                                                  | from at least two State |
|             | <u> </u>                                                           |                                                               |                                    |              | bads, or other map refe                                                                                          | arence points)          |
| -           | To                                                                 |                                                               |                                    |              |                                                                                                                  |                         |
| From        | To                                                                 | - Ft                                                          | <u> </u>                           |              | See P                                                                                                            | eport.                  |
| 3. GROUT    | :                                                                  |                                                               |                                    |              | Jee N                                                                                                            | cpure.                  |
|             | Depth                                                              | Materia                                                       | al Metho                           | d            |                                                                                                                  |                         |
|             | 0.0 To 2.0                                                         |                                                               |                                    |              |                                                                                                                  |                         |
|             | To                                                                 | Ft                                                            |                                    |              |                                                                                                                  |                         |
| . SCREE     | N:                                                                 |                                                               |                                    |              |                                                                                                                  |                         |
|             |                                                                    |                                                               | Size Materia                       |              |                                                                                                                  |                         |
| From        | 3.0ToFI                                                            | t <u>2"</u> in. <u>0.</u>                                     | <u>010</u> i <b>n</b> . <u>PVC</u> |              |                                                                                                                  |                         |
| From _      | To Fi                                                              | t in                                                          | in                                 |              | <i>i</i>                                                                                                         |                         |
| From _      | To Fl                                                              | t in                                                          | i <b>n.</b>                        |              |                                                                                                                  |                         |
| 5. SAND/C   | RAVEL PACK:                                                        |                                                               |                                    |              |                                                                                                                  |                         |
|             | Depth                                                              | Size                                                          | Material                           |              |                                                                                                                  | •                       |
| From 🗳      | <u> </u>                                                           | _ Ft. <u></u>                                                 | Sand                               |              |                                                                                                                  |                         |
|             | То                                                                 |                                                               |                                    |              |                                                                                                                  |                         |
|             | KS:                                                                |                                                               |                                    |              |                                                                                                                  |                         |
|             |                                                                    |                                                               |                                    |              |                                                                                                                  |                         |
|             | REBY CERTIFY THAT                                                  | T THIS WELL WA                                                | S CONSTRUCTED                      | IN ACCORDAN  | CE WITH 15A NCAC                                                                                                 |                         |
|             | UCTION STANDARI                                                    | DS. AND THAT A                                                | COPY OF THIS RE                    | CORD HAS BEE | N PROVIDED TO THE                                                                                                | TYELL OWNER.            |
| CONSTR      |                                                                    |                                                               |                                    |              | /                                                                                                                |                         |
| CONSTR      |                                                                    |                                                               |                                    | . //         | $\sim$                                                                                                           | /                       |
| CONSTR      |                                                                    |                                                               |                                    | 2.1-1        | )<br>Γ.                                                                                                          | Lusa                    |

|                                             | WE                                                                                                                                                                                                                                                                                                        | LL CONST                                                                                                                            |                                                                         |                                                                                | D                                                                                   |             | 1          | Code                                           | GW-1 Ent:                                              |
|---------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|--------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------|------------|------------------------------------------------|--------------------------------------------------------|
| DF                                          | ILLING CONTRACT                                                                                                                                                                                                                                                                                           | TOR:                                                                                                                                | aw Engi                                                                 | ineering                                                                       |                                                                                     | TEMEL       |            | STRUCTION                                      |                                                        |
| ne                                          | ILLER REGISTRAT                                                                                                                                                                                                                                                                                           |                                                                                                                                     | R:                                                                      | 332                                                                            |                                                                                     | MIT NUM     |            |                                                | MW-8                                                   |
|                                             |                                                                                                                                                                                                                                                                                                           |                                                                                                                                     |                                                                         |                                                                                |                                                                                     |             |            |                                                |                                                        |
| 1.                                          | WELL LOCATION:                                                                                                                                                                                                                                                                                            | (Show sketch<br>Jacksonv:                                                                                                           | n of the lo<br>ille                                                     |                                                                                |                                                                                     | 0ns1        | ow         |                                                |                                                        |
|                                             | Nearest Town:                                                                                                                                                                                                                                                                                             |                                                                                                                                     |                                                                         | I                                                                              | County:                                                                             |             |            |                                                |                                                        |
|                                             | TC-341 C                                                                                                                                                                                                                                                                                                  | amp Gieger                                                                                                                          |                                                                         |                                                                                |                                                                                     |             | DEPT       | гн                                             | DRILLING LOG                                           |
| 2.                                          |                                                                                                                                                                                                                                                                                                           | . Marine (                                                                                                                          |                                                                         |                                                                                |                                                                                     | Fr          |            | To                                             | Formation Description                                  |
|                                             |                                                                                                                                                                                                                                                                                                           | p LeJeune                                                                                                                           |                                                                         |                                                                                |                                                                                     | 0.0         |            | 13.0                                           | Seeattached                                            |
|                                             |                                                                                                                                                                                                                                                                                                           | (Street or F                                                                                                                        | Route No.)                                                              |                                                                                |                                                                                     |             |            |                                                |                                                        |
|                                             | Jacksonville                                                                                                                                                                                                                                                                                              | State                                                                                                                               | NC                                                                      | <u> </u>                                                                       | Zip Code                                                                            |             |            |                                                |                                                        |
| •                                           | City or Town                                                                                                                                                                                                                                                                                              | 3-1-94                                                                                                                              | -                                                                       |                                                                                | <u>Monitorip</u>                                                                    |             |            | <u>_</u>                                       | <u></u>                                                |
| 3.<br>4.                                    | DATE DRILLED                                                                                                                                                                                                                                                                                              | 13.0                                                                                                                                | USE OF                                                                  | **GLL                                                                          |                                                                                     | - <u></u>   |            |                                                |                                                        |
| 5.                                          | CUTTINGS COLLE                                                                                                                                                                                                                                                                                            |                                                                                                                                     | S I                                                                     | 10                                                                             |                                                                                     |             |            |                                                |                                                        |
| 6.                                          | DOES WELL REPL                                                                                                                                                                                                                                                                                            | ACE EXISTIN                                                                                                                         |                                                                         |                                                                                | NOIX                                                                                |             |            |                                                |                                                        |
| 7.                                          | STATIC WATER LE                                                                                                                                                                                                                                                                                           |                                                                                                                                     |                                                                         |                                                                                | FT.                                                                                 | - <u></u> - |            |                                                |                                                        |
| 0                                           | TOP OF CASING IS                                                                                                                                                                                                                                                                                          |                                                                                                                                     |                                                                         | Above Top of C<br>re i and Surf                                                |                                                                                     |             |            |                                                |                                                        |
|                                             | sing Terminated at/or b                                                                                                                                                                                                                                                                                   |                                                                                                                                     |                                                                         |                                                                                |                                                                                     | ·           |            |                                                |                                                        |
| • Cs                                        |                                                                                                                                                                                                                                                                                                           | CAC 2C .0118                                                                                                                        |                                                                         |                                                                                |                                                                                     |             |            |                                                |                                                        |
| in                                          | accordance with 15A N                                                                                                                                                                                                                                                                                     |                                                                                                                                     | -                                                                       | N                                                                              | /Δ                                                                                  |             |            |                                                |                                                        |
| in                                          | YIELD (gpm): N/                                                                                                                                                                                                                                                                                           | A METHO                                                                                                                             | D OF TE                                                                 |                                                                                | /A                                                                                  | <u> </u>    |            | <u></u>                                        |                                                        |
| in<br>9.                                    | YIELD (gpm):N/<br>WATER ZONES (do                                                                                                                                                                                                                                                                         |                                                                                                                                     | N                                                                       | STN                                                                            |                                                                                     |             | <u>_</u>   |                                                |                                                        |
| in<br>9.<br>10.                             | YIELD (gpm): <u>N/</u><br>WATER ZONES (de                                                                                                                                                                                                                                                                 | AMETHO<br>(epth):                                                                                                                   | N                                                                       | 1/A                                                                            |                                                                                     |             | 1.174      |                                                |                                                        |
| in<br>9.<br>10.<br>11.                      | YIELD (gpm): <u>N/</u><br>WATER ZONES (de<br>CHLORINATION:                                                                                                                                                                                                                                                | AMETHO<br>(epth):                                                                                                                   | N                                                                       | N/A                                                                            |                                                                                     | if          | addition   | nal space is nee                               | eded use back of form                                  |
| in<br>9.<br>10.<br>11.                      | YIELD (gpm): <u>N/</u><br>WATER ZONES (de                                                                                                                                                                                                                                                                 | AMETHO<br>(epth):                                                                                                                   | N                                                                       | 1/A                                                                            |                                                                                     | if          | addition   |                                                |                                                        |
| in<br>9.<br>10.<br>11.                      | YIELD (gpm): <u>N/</u><br>WATER ZONES (de<br>CHLORINATION:<br>CASING:                                                                                                                                                                                                                                     | AMETHO<br>epth):<br>TypeN                                                                                                           | N                                                                       | Amount .<br>Wall Thicknes                                                      | N/A                                                                                 |             |            | LOCATIC                                        | N SKETCH                                               |
| in<br>9.<br>10.<br>11.                      | YIELD (gpm): <u>N/</u><br>WATER ZONES (de<br>CHLORINATION:<br>CASING:<br>Dept                                                                                                                                                                                                                             | AMETHO<br>epth):<br>TypeN                                                                                                           | A<br>Diameter                                                           | Wall Thicknes                                                                  | N/A<br>N/A                                                                          | (Show       | , directio | LOCATIC                                        | N SKETCH<br>from at least two State                    |
| in<br>9.<br>10.<br>11.                      | YIELD (gpm): N/<br>WATER ZONES (de<br>CHLORINATION:<br>CASING:<br>Prom 0.0 To <sup>3</sup>                                                                                                                                                                                                                | AMETHO<br>epth):<br>TypeN<br>hft                                                                                                    | /A<br>Diameter<br>2''                                                   | Mail Thicknes<br>or Weight/Ft<br>SCH 40                                        | N/A<br>ss<br>Material<br>PVC                                                        | (Show       | , directio | LOCATIC                                        | N SKETCH<br>from at least two State                    |
| in<br>9.<br>10.<br>11.                      | YIELD (gpm): N/<br>WATER ZONES (do<br>CHLORINATION:<br>CASING:<br>Prom 0.0 To <sup>3</sup><br>From To                                                                                                                                                                                                     | AMETHO<br>epih):<br>TypeN<br>h<br>5_0Ft                                                                                             | /A<br>Diameter<br>2''                                                   | Wall Thicknes<br>or Weight/Ft<br>SCH 40                                        | N/A<br>ss<br>Material<br>PVC                                                        | (Show       | , directio | LOCATIC<br>on and distance<br>r other map refe | IN SKETCH<br>from at least two State<br>erence points) |
| in<br>9.<br>10.<br>11.<br>12.               | YIELD (gpm): N/<br>WATER ZONES (de<br>CHLORINATION:<br>CASING:<br>Prom 0.0 To <sup>3</sup><br>From To<br>From To                                                                                                                                                                                          | AMETHO<br>epih):<br>TypeN<br>h<br>5_0Ft                                                                                             | /A<br>Diameter<br>2''                                                   | Wall Thicknes<br>or Weight/Ft<br>SCH 40                                        | N/A<br>ss<br>Material<br>PVC                                                        | (Show       | , directio | LOCATIO                                        | IN SKETCH<br>from at least two State<br>erence points) |
| in<br>9.<br>10.<br>11.<br>12.               | YIELD (gpm): N/<br>WATER ZONES (dd<br>CHLORINATION:<br>CASING:<br>From 0.0 To <sup>3</sup><br>From To<br>From To<br>GROUT:                                                                                                                                                                                | AMETHO<br>epth):<br>TypeN<br>h Ft<br>Ft                                                                                             | /A<br>Diameter<br>2''                                                   | Wall Thickness<br>or Weight/Ft<br>SCH 40                                       | N/A<br>ss<br>Material<br>PVC                                                        | (Show       | , directio | LOCATIC<br>on and distance<br>r other map refe | IN SKETCH<br>from at least two State<br>erence points) |
| in<br>9.<br>10.<br>11.<br>12.               | YIELD (gpm): N/<br>WATER ZONES (do<br>CHLORINATION:<br>CASING:<br>From 0.0 To <sup>3</sup><br>From To<br>From To<br>GROUT:                                                                                                                                                                                | AMETHO<br>epth):<br>TypeN<br>h<br>h<br>h<br>h<br>Ft<br>Ft<br>pth                                                                    | /A<br>Diameter<br>2"                                                    | Wall Thickness<br>or Weight/Ft<br><u>SCH 40</u>                                | N/A<br>Material<br>PVC<br>Method                                                    | (Show<br>Re | , directio | LOCATIC<br>on and distance<br>r other map refe | IN SKETCH<br>from at least two State<br>erence points) |
| in<br>9.<br>10.<br>11.<br>12.               | YIELD (gpm): N/<br>WATER ZONES (de<br>CHLORINATION:<br>CASING:<br>From 0.0 To <sup>3</sup><br>From To<br>From To<br>GROUT:<br>From 0.0 To                                                                                                                                                                 | <u>A</u> METHO<br>epth):<br>TypeN<br><u>b</u><br><u>b</u><br><u>c</u><br>Ft<br>Ft<br><u>c</u><br>Ft<br><u>c</u><br>Ft               | /A<br>Diameter<br>2"<br>Mate<br>Concr                                   | Wall Thicknes<br>or Weight/Ft<br><u>SCH 40</u>                                 | N/A<br>Material<br>PVC<br>Method                                                    | (Show<br>Re | , directio | LOCATIC<br>on and distance<br>r other map refe | IN SKETCH<br>from at least two State<br>erence points) |
| in<br>9.<br>10.<br>11.<br>12.               | YIELD (gpm): N/<br>WATER ZONES (dd<br>CHLORINATION:<br>CASING:<br>From 0.0 To <sup>3</sup><br>From To<br>From To<br>GROUT:<br>From 0.0 To<br>From 0.0 To<br>From To                                                                                                                                       | <u>A</u> METHO<br>epth):<br>TypeN<br><u>b</u><br><u>b</u><br><u>c</u><br>Ft<br>Ft<br><u>c</u><br>Ft<br><u>c</u><br>Ft               | /A<br>Diameter<br>2"<br>Mate<br>Concr                                   | Wall Thicknes<br>or Weight/Ft<br><u>SCH 40</u>                                 | N/A<br>Material<br>PVC<br>Method                                                    | (Show<br>Re | , directio | LOCATIC<br>on and distance<br>r other map refe | IN SKETCH<br>from at least two State<br>erence points) |
| in<br>9.<br>10.<br>11.<br>12.               | YIELD (gpm): N/<br>WATER ZONES (de<br>CHLORINATION:<br>CASING:<br>Dept<br>From 0.0 To<br>From To<br>GROUT:<br>From 0.0 To<br>From To<br>SCREEN:                                                                                                                                                           | A METHO<br>epth):<br>TypeN<br>h B_0 Ft<br>h Ft<br>Ft<br>2.0_ Ft<br>Ft                                                               | A<br>Diameter<br>2"<br>Mater<br>Concr                                   | Wall Thicknes<br>or Weight/Ft<br>SCH 40                                        | N/A<br>Material<br>PVC<br>Method<br>Cast-in-P                                       | (Show<br>Re | , directio | LOCATIC<br>on and distance<br>r other map refe | IN SKETCH<br>from at least two State<br>erence points) |
| in<br>9.<br>10.<br>11.<br>12.               | YIELD (gpm): N/<br>WATER ZONES (dd<br>CHLORINATION:<br>CASING:<br>From 0.0 To <sup>3</sup><br>From To<br>GROUT:<br>From 0.0 To<br>From To<br>SCREEN:<br>Depth                                                                                                                                             | AMETHO<br>epth):<br>TypeN<br>hFt<br>bth<br>Ft<br>Diam                                                                               | A<br>Diameter<br>2"<br>Mater<br>Concr                                   | Wall Thicknes<br>or Weight/Ft<br>SCH 40<br>                                    | N/A<br>Material<br>PVC<br>Method<br>Cast-in-P                                       | (Show<br>Re | , directio | LOCATIC<br>on and distance<br>r other map refe | IN SKETCH<br>from at least two State<br>erence points) |
| in<br>9.<br>10.<br>11.<br>12.               | YIELD (gpm): N/<br>WATER ZONES (dd<br>CHLORINATION:<br>CASING:<br>From 0.0 To <sup>3</sup><br>From To<br>From To<br>GROUT:<br>From 0.0 To<br>From 0.0 To<br>From 0.0 To<br>From 0.0 To<br>From 10.0 To<br>From 10.0 To<br>From 10.0 To<br>From 10.0 To                                                    | <u>A</u> METHO<br>epth):<br>TypeN<br><u>h</u> ft<br><u>h</u> Ft<br><u>2.0</u> Ft<br><u>2.0</u> Ft<br><u>Diam</u><br><u>3.0</u> Ft2" | /A<br>Diameter<br>2"<br>Mater<br>Concr<br>eter Sk                       | Mall Thickness<br>or Weight/Ft<br><u>SCH 40</u><br>rial<br>cete                | N/A<br>Material<br>PVC<br>Method<br>Cast-in-P<br>Material<br>PVC                    | (Show<br>Re | , directio | LOCATIC<br>on and distance<br>r other map refe | IN SKETCH<br>from at least two State<br>erence points) |
| in<br>9.<br>10.<br>11.<br>12.               | YIELD (gpm): N/<br>WATER ZONES (dd<br>CHLORINATION:<br>CASING:<br>From 0.0 To <sup>3</sup><br>From To<br>From To<br>GROUT:<br>From 0.0 To<br>From 0.0 To<br>From 0.0 To<br>From 10.0 To                   | A METHO<br>epth):<br>TypeN<br>th<br>ft<br>ft<br>ft<br>ft<br>ft<br>ft<br>Diam<br>3.0 Ft''<br>Ft                                      | A<br>Diameter<br>2"<br>Mater<br>Concr                                   | Mail Thicknes<br>or Weight/Ft<br>SCH 40<br>rial<br>cete<br>ot Size<br>.010 in. | N/A<br>Material<br>PVC<br>Method<br>Cast-in-P<br>Material<br>PVC                    | (Show<br>Re | , directio | LOCATIC<br>on and distance<br>r other map refe | IN SKETCH<br>from at least two State<br>erence points) |
| in<br>9.<br>10.<br>11.<br>12.               | YIELD (gpm): N/<br>WATER ZONES (dd<br>CHLORINATION:<br>CASING:<br>From 0.0 To <sup>3</sup><br>From To<br>GROUT:<br>From 0.0 To<br>From 0.0 To<br>From 0.0 To<br>From 10 To<br>From 3.0 To 13<br>From To 15                                                                                                | A METHO<br>epth):<br>TypeN<br>h ft<br>h Ft<br>bin<br>2.0 Ft<br>Diam<br>3.0 Ft_2''<br>Ft<br>Ft                                       | A<br>Diameter<br>2"<br>Mater<br>Concr                                   | Mail Thicknes<br>or Weight/Ft<br>SCH 40<br>rial<br>cete<br>ot Size<br>.010 in. | N/A<br>Material<br>PVC<br>Method<br>Cast-in-P<br>Material<br>PVC                    | (Show<br>Re | , directio | LOCATIC<br>on and distance<br>r other map refe | IN SKETCH<br>from at least two State<br>erence points) |
| in<br>9.<br>10.<br>11.<br>12.               | YIELD (gpm): N/<br>WATER ZONES (dd<br>CHLORINATION:<br>CASING:<br>Prom 0.0 To <sup>3</sup><br>From To<br>From To<br>GROUT:<br>Prom 0.0 To<br>From 0.0 To<br>From 10.0 To<br>From 10.0 To<br>From 10.0 To<br>From 10.0 To<br>SCREEN:<br>Depth<br>From 3.0 To 13<br>From To 5<br>SAND/GRAVEL PA             | A METHO<br>epth):<br>TypeN<br>th<br>ft<br>ft<br>ft<br>ft<br>ft<br>ft<br>Diam<br>3.0 Ft _2"<br><br>Ft<br>CK:                         |                                                                         | Wall Thickness         or Weight/Ft         SCH 40                             | N/A<br>Material<br>PVC<br>Method<br>Cast-in-P<br>Material<br>PVC                    | (Show<br>Re | , directio | LOCATIC<br>on and distance<br>r other map refe | IN SKETCH<br>from at least two State<br>erence points) |
| in<br>9.<br>10.<br>11.<br>12.               | YIELD (gpm): N/<br>WATER ZONES (dd<br>CHLORINATION:<br>CASING:<br>Prom 0.0 To <sup>3</sup><br>From To<br>From To<br>GROUT:<br>Prom 0.0 To<br>From 0.0 To<br>From 10.0 To<br>From 10.0 To<br>From 10.0 To<br>From 10.0 To<br>SCREEN:<br>Depth<br>From 3.0 To 13<br>From 10 Depth<br>From 10 Depth          | A METHO<br>epth):<br>TypeN<br>b Ft<br>b Ft<br>b Ft<br>c Ft<br>Diamu<br>3.0 Ft _2''<br>Ft<br>CK:<br>h                                | Mater<br>2"<br>Mater<br>Concr                                           | Mall Thicknes<br>or Weight/Ft<br>SCH 40<br>                                    | N/A<br>Material<br>PVC<br>Method<br>Cast-in-F<br>Material<br>PVC<br>material        | (Show<br>Re | , directio | LOCATIC<br>on and distance<br>r other map refe | IN SKETCH<br>from at least two State<br>erence points) |
| in<br>9.<br>10.<br>11.<br>12.               | YIELD (gpm): N/<br>WATER ZONES (dd<br>CHLORINATION:<br>CASING:<br>From 0.0 To <sup>3</sup><br>From To<br>GROUT:<br>From 0.0 To<br>From To<br>SCREEN:<br>Depth<br>From 3.0 To 13<br>From To SAND/GRAVEL PA<br>Deptt<br>From 2.0 To                                                                         | A METHO<br>epth):<br>TypeN<br>th<br>TypeN<br>h<br>Ft<br>Diam<br>3.0 Ft'<br>Diam<br>3.0 Ft'<br>CK:<br>1<br>14.0 Ft                   | Mater<br><u>Concr</u><br>eter Sko<br>in. 0-<br>in<br>Size<br>Torpedo    | Mall Thickness<br>or Weight/Ft<br>SCH 40                                       | N/A<br>Material<br>PVC<br>Method<br>Cast-in-F<br>Material<br>PVC<br>material<br>PVC | (Show<br>Re | , directio | LOCATIC<br>on and distance<br>r other map refe | IN SKETCH<br>from at least two State<br>erence points) |
| in<br>9.<br>10.<br>11.<br>12.<br>13.<br>14. | YIELD (gpm): N/<br>WATER ZONES (dd<br>CHLORINATION:<br>CASING:<br>Prom 0.0 To <sup>3</sup><br>From To<br>From To<br>GROUT:<br>Prom 0.0 To<br>From 0.0 To<br>From 10.0 To<br>From 10.0 To<br>From 10.0 To<br>From 10.0 To<br>SCREEN:<br>Depth<br>From 3.0 To 13<br>From To 2000<br>SAND/GRAVEL PA<br>Depth | A METHO<br>epth):<br>TypeN<br>b Ft<br>b Ft<br>b Ft<br>c Ft<br>Diamu<br>3.0 Ft _2"<br>Ft<br>CK:<br>14.0 Ft<br>Ft                     | Mater<br>2"<br>Mater<br>Concr<br>eter Sk<br>in<br>in<br>Size<br>Torpedo | Mall Thicknes<br>or Weight/Ft<br>SCH 40<br>                                    | N/A<br>Material<br>PVC<br>Method<br>Cast-in-F<br>Material<br>PVC<br>mial<br>d       | (Show<br>Re | , directio | LOCATIC<br>on and distance<br>r other map refe | IN SKETCH<br>from at least two State<br>erence points) |

4 A second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second se

Shanne ASteching

| North Carolina - Department of Environment. Health and Nat<br>Division of Environmental Management - Groundwater<br>P.O. Box 29535 - Raleigh, N.C27628-05351 | Secular               | QUAD. NO:              | I OFFICE USE ONLY '                                                                                            |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|------------------------|----------------------------------------------------------------------------------------------------------------|
| Phone (919) 733-3221                                                                                                                                         |                       |                        | ng Ro:                                                                                                         |
| WELL CONSTRUCTION RECORD                                                                                                                                     |                       | 1                      |                                                                                                                |
|                                                                                                                                                              |                       |                        | GW-1 Ent:                                                                                                      |
| RILLING CONTRACTOR:Law Engineering                                                                                                                           |                       |                        |                                                                                                                |
| RILLER REGISTRATION NUMBER: 332                                                                                                                              | PERMIT NU             | L CONSTRUCTION         | MW-9                                                                                                           |
| WELL LOCATION: (Show sketch of the location below)                                                                                                           |                       |                        |                                                                                                                |
| Nearest Town:JacksonvilleCou                                                                                                                                 | unty:0ns1             | <u>ow</u>              |                                                                                                                |
| TC-341 Camp Gieger                                                                                                                                           |                       |                        |                                                                                                                |
| (Road, Community, or Subdivision and Lot No.)                                                                                                                |                       | DEPTH                  | DRILLING LOG                                                                                                   |
| OWNER U.S. Marine Corps                                                                                                                                      |                       | rom To                 | Formation Description                                                                                          |
| ADDRESS Camp LeJeune                                                                                                                                         | 0.0                   | 32.0                   | See attached                                                                                                   |
| (Street or Route No.)<br>Jacksonville NC                                                                                                                     | ·                     |                        | ·····                                                                                                          |
|                                                                                                                                                              | Code                  |                        |                                                                                                                |
| DATE DRILLED 3-3-94 USE OF WELL Moni                                                                                                                         |                       |                        | Anna an an an Andri Martin an an Milana an Anna an Angara an Angara an Angara an Angara an Angara an Angara an |
| TOTAL DEPTH 32.0                                                                                                                                             | ······                |                        | ••••••••••••••••••••••••••••••••••••••                                                                         |
| CUTTINGS COLLECTED YES X NO                                                                                                                                  |                       |                        |                                                                                                                |
|                                                                                                                                                              |                       |                        |                                                                                                                |
|                                                                                                                                                              |                       |                        | • <del>•••</del>                                                                                               |
| (Use "+" if Above Top of Casin<br>TOP OF CASING IS FT. Above Land Surface                                                                                    |                       |                        |                                                                                                                |
| TOP OF CASING IS <u>2+0</u> Fi. Above Land Surface<br>asing Terminated at/or below land surface is illegal unless a variance                                 |                       |                        |                                                                                                                |
| accordance with 15A NCAC 2C .0118                                                                                                                            |                       |                        |                                                                                                                |
| YIELD (gpm): N/A METHOD OF TEST N/A                                                                                                                          |                       |                        | • — · · · · · · · · · · · · · · · · · ·                                                                        |
| . WATER ZONES (depth):N/A                                                                                                                                    |                       |                        |                                                                                                                |
| · · · ·                                                                                                                                                      |                       |                        |                                                                                                                |
| . CHLORINATION: Type AmountN                                                                                                                                 | <u>I/A</u> If         | additional space is ne | eded use back of form                                                                                          |
| . CASING:                                                                                                                                                    |                       |                        |                                                                                                                |
| Wall Thickness                                                                                                                                               |                       | LOCATIO                | ON SKETCH                                                                                                      |
|                                                                                                                                                              | Material (Show        | direction and distance | from at least two State                                                                                        |
| From 0.0 To 22.0 Ft. 6" SCH 40 _                                                                                                                             | PVC R                 | oads, or other map ref | erence points)                                                                                                 |
| From 0.0 To 27.0 Ft. 2" SCH 40 _                                                                                                                             | <u>PVC</u>            |                        |                                                                                                                |
| FromTo Ft                                                                                                                                                    |                       | See Report             | :                                                                                                              |
| . GROUT:                                                                                                                                                     |                       |                        |                                                                                                                |
|                                                                                                                                                              | thod                  |                        |                                                                                                                |
| From 0.0 To 3.0 Ft. Concrete Cast-                                                                                                                           |                       |                        |                                                                                                                |
| From 0.0 To <sup>22.0</sup> Ft.Portland Cement T                                                                                                             |                       |                        |                                                                                                                |
| SCREEN: and Bentonite                                                                                                                                        |                       |                        |                                                                                                                |
| Depth Diameter Slot Size Mai                                                                                                                                 | terial                |                        |                                                                                                                |
| From <u>27.0</u> To <u>32.0</u> Ft <u>2"</u> in. <u>0.010</u> in. <u>P</u>                                                                                   |                       |                        |                                                                                                                |
| From To Ft in in                                                                                                                                             |                       |                        |                                                                                                                |
| From To Ft in in                                                                                                                                             |                       |                        |                                                                                                                |
| SAND/GRAVEL PACK:                                                                                                                                            |                       |                        | •                                                                                                              |
|                                                                                                                                                              |                       |                        | · .                                                                                                            |
| DepthSizeMaterialFrom <u>24.5</u> To <u>33.0</u> Ft. TorpedoSand                                                                                             |                       |                        |                                                                                                                |
|                                                                                                                                                              |                       |                        |                                                                                                                |
| From To Ft                                                                                                                                                   |                       |                        |                                                                                                                |
| REMARKS:                                                                                                                                                     |                       |                        |                                                                                                                |
| I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCT                                                                                                             |                       | CE WITH 15A NCAC       | 2C. WELL                                                                                                       |
|                                                                                                                                                              |                       |                        |                                                                                                                |
| CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS                                                                                                              | <b>RECORD HAS BEE</b> | EN PROVIDED TO TH      | E WELL OWNER.                                                                                                  |
| CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS                                                                                                              | RECORD HAS BEE        | EN PROVIDED TO TH      | E WELL OWNER.                                                                                                  |
| CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS                                                                                                              | RECORD HAS BEE        |                        | E WELL OWNER.                                                                                                  |

| North Carolina - Department of Environment<br>Division of Environmental Manageme<br>P.O. Box 29535 - Raleigh, I<br>Phone (919) 733<br>WELL CONSTRUCTION | -3221                                 |                                        |                       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|----------------------------------------|-----------------------|
| DRILLING CONTRACTOR: Law Engi                                                                                                                           | ineering                              | Header Ent                             | GW-1 Ent:             |
| DRILLING CONTRACTOR:                                                                                                                                    | STA                                   | TE WELL CONSTRUCTION                   |                       |
| DRILLER REGISTRATION NUMBER:                                                                                                                            | 332 PER                               | MIT NUMBER:M                           | <u>N-10</u>           |
|                                                                                                                                                         |                                       |                                        |                       |
| . WELL LOCATION: (Show sketch of the<br>Jacksonville                                                                                                    | location below)                       | elow                                   |                       |
|                                                                                                                                                         | County: <u>0n</u>                     | <u></u>                                |                       |
| TC-341 Camp Gieger                                                                                                                                      |                                       | DEPTH                                  | DRILLING LOG          |
| (Road, Community, or Subdivision and Lot No.)<br>OWNER U. S. Marine Corps                                                                               |                                       | From To                                | Formation Description |
| ADDRESS Camp LeJeune                                                                                                                                    | · · · · · · · · · · · · · · · · · · · | 0.0 13.0                               | See attached          |
| (Street or Route No.                                                                                                                                    | )                                     |                                        |                       |
| Jacksonville, NC                                                                                                                                        | 3                                     | ************************************** |                       |
| City or Town State                                                                                                                                      | Zip Code                              |                                        |                       |
| . DATE DRILLED <u>3-3-94</u> USE OF                                                                                                                     | FWELL Monitoring                      |                                        |                       |
| CUTTINGS COLLECTED YES X                                                                                                                                | NO                                    |                                        |                       |
| 5. CUTTINGS COLLECTED YES [X]<br>5. DOES WELL REPLACE EXISTING WEI                                                                                      |                                       |                                        |                       |
| STATIC WATER LEVEL Below Top of C                                                                                                                       |                                       |                                        |                       |
| (Use *+* i                                                                                                                                              | f Above Top of Casing)                | ······                                 |                       |
| TOP OF CASING IS 1.95 FT. Abo                                                                                                                           |                                       |                                        | ·····                 |
| Casing Terminated at/or below land surface is illeg<br>in accordance with 15A NCAC 2C .0118                                                             | jai uniess a variance is issued       |                                        |                       |
| ). YIELD (gpm):_N/AMETHOD OF T                                                                                                                          | ESTN/A                                |                                        | · <u> </u>            |
| 0. WATER ZONES (depth):N/A                                                                                                                              |                                       |                                        |                       |
|                                                                                                                                                         | Amount N/A                            |                                        |                       |
| T. CHLORINATION: Type                                                                                                                                   | AmountN/A                             | If additional space is nee             | ided use back of form |
| 2. CASING:                                                                                                                                              |                                       |                                        | N SKETCH              |
|                                                                                                                                                         | Wall Thickness                        | (Show direction and distance           |                       |
| Depth Diameter<br>From 0.0 To 3.0 Ft. 2"                                                                                                                | or Weight/Ft. Material                | Roads, or other map refe               |                       |
| From 10 Ft                                                                                                                                              |                                       |                                        | ,                     |
| From To Ft                                                                                                                                              |                                       | See. 1                                 | Report.               |
|                                                                                                                                                         |                                       |                                        |                       |
| 3. GROUT: Depth Mat                                                                                                                                     | erial Method                          |                                        |                       |
|                                                                                                                                                         | ncrete Cast-in-Pl                     | ace                                    |                       |
| From ToFt                                                                                                                                               |                                       |                                        | ,                     |
| 4. SCREEN:                                                                                                                                              |                                       |                                        |                       |
| Depth Diameter S                                                                                                                                        | Slot Size Material                    |                                        |                       |
| From <u>3.0.</u> To <u>13.0</u> Ft <u>2"</u> in.                                                                                                        | 0.010n PVC                            |                                        |                       |
| From To Ft in.                                                                                                                                          |                                       | i                                      |                       |
| From To Ft in.                                                                                                                                          |                                       |                                        |                       |
| 5. SAND/GRAVEL PACK:                                                                                                                                    |                                       |                                        | •                     |
| Depth Size                                                                                                                                              | Material                              |                                        | ·                     |
| From 2.0 To 14.0 Ft. Torped                                                                                                                             | lo <u>Sand</u>                        |                                        |                       |
| From To Ft                                                                                                                                              |                                       |                                        |                       |
|                                                                                                                                                         |                                       |                                        |                       |
|                                                                                                                                                         |                                       |                                        |                       |
| 6. REMARKS:                                                                                                                                             |                                       |                                        | AC WELL               |

| Hann | hp | reken |
|------|----|-------|
|      |    |       |

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| P.O. Box 29535 - Raleigh, N.C. 27620-635<br>Phone (919) 733-3221                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                               | SERIAL NO."<br>_ Long RO."            |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------------|
| WELL CONSTRUCTION RECORD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                               |                                       |
| WELL CONSTRUCTION RECORD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Basin Code                    | GW-1 Ent:                             |
| ILLING CONTRACTOR: Law Engineering                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | STATE WELL CONSTRUCT          |                                       |
| ILLER REGISTRATION NUMBER: 332                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | PERMIT NUMBER:                | <u>MW-11</u>                          |
| WELL LOCATION: (Show sketch of the location below)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                               |                                       |
| Nearest Town: Jacksonville Cou                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | inty:Onslow                   |                                       |
| TE-341 Camp Gieger                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                               |                                       |
| (Road, Community, or Subdivision and Lot No.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | DEPTH                         | DRILLING LOG                          |
| OWNER U.S. Marine Corps                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                               | Formation Description                 |
| ADDRESS Camp LeJeune (Street or Route No.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 0.0 13.0                      | <u>See_attached</u>                   |
| Jacksonville NC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                               |                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Code                          |                                       |
| DATE DRILLED <u>3-4-94</u> USE OF WELL Monito                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | pring                         |                                       |
| TOTAL DEPTH 13.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                               |                                       |
| CUTTINGS COLLECTED YES NO                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | NO                            |                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | FT.                           |                                       |
| (Lise "+" if Above Top of Casin                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | g)                            |                                       |
| TOP OF CASING IS FT. Above Land Surface                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                               |                                       |
| sing Terminated at/or below land surface is illegal unless a variance<br>accordance with 15A NCAC 2C .0118                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | tis issued                    | · · · · · · · · · · · · · · · · · · · |
| YIELD (gpm): N/A METHOD OF TESTN/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                               |                                       |
| WATER ZONES (depth):N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                               |                                       |
| · · · ·                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                               |                                       |
| CHLORINATION: TypeN/AAmount                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | N/A If additional space is    | s needed use back of form             |
| CASING:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                               |                                       |
| Wall Thickness                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                               | TION SKETCH                           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | •                             | ance from at least two State          |
| From 0.0 To 3.0 Ft. 2" SCH 40                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | PVC Roads, or other map       | reterence points)                     |
| From To Ft                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | See                           | Report                                |
| From To Ft                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                               |                                       |
| GROUT:<br>Depth Material Met                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | thod                          |                                       |
| Depth Material Met<br>From 0.0 To 2.0 Ft. Concrete Cas                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                               |                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                               |                                       |
| From To Et                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                               |                                       |
| From To Ft                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                               |                                       |
| SCREEN:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                               |                                       |
| SCREEN:<br>Depth Diameter Slot Size Mai                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | terial                        |                                       |
| SCREEN:<br>Depth Diameter Sict Size Mat<br>From <u>3.0</u> To <u>13.0</u> Ft <u>2"</u> in. <u>0.010</u> in. <u>P</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | terial                        |                                       |
| SCREEN:         Diameter         Slot Size         Mail           From 3.0         To 13.0         Ft 2" in.         0.010         in.         P           From                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | erial<br>VC                   |                                       |
| SCREEN:         Diameter         Stot Size         Mathematical           FromTo         13.0         Ft _2"in.         0.010         in           FromToToFtin.        in.        in.        in.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | erial<br>VC                   |                                       |
| SCREEN:         Depth         Diameter         Slot Size         Mail           From 3.0         To 13.0         Ft 2" in.         0.010 in.         P           From To Ft.         in.         0.010 in.         P           From To Ft.         in.         in.            From To Ft.         in.          in.            SAND/GRAVEL PACK:         In.         In.         In.         In.         In.         In.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | erial<br>VC                   | · .                                   |
| SCREEN:         Depth         Diameter         Slot Size         Mail           From To To To Ft in in         Mail         Prom In         Prom In         Prom In         Prom In         Prom         Prom         In         Prom         In         Prom         In         Prom         In                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | erial<br>VC                   | <br>                                  |
| Depth         Diameter         Sit Size         Mathematic           From         3.0         To         13.0         Ft         2"         in.         0.010         in.         P           From          To          Ft.          in.            From          To          Ft.          in.            From          To          Ft.          in.            SAND/GRAVEL PACK:          Depth         Size         Material           From          To          To                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | terial<br>VC                  | · .                                   |
| SCREEN:         Depth         Diameter         Slot Size         Mail           From To To To Ft in in         Mail         Prom In         Prom In         Prom In         Prom In         Prom         Prom         In         Prom         In         Prom         In         Prom         In                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 2erial<br>12VC                | · .                                   |
| Depth         Diameter         Slot Size         Mathematical           From         3.0         To         13.0         Ft         2"         in.         0.010         in.         P           From          To          Ft.          in.          P           From          To          Ft.          in.          P           From          To          Ft.          in.           P         P         P         P         P         P         P         P         P         P         P         P         P         P         P         P         P         P         P         P         P         P         P         P         P         P         P         P         P         P         P         P         P         P         P         P         P         P         P         P         P         P         P         P         P         P         P         P         P         P         P         P         P         P | terial<br>VC                  |                                       |
| Depth         Diameter         Slot Size         Mathematical           From         3.0         To         13.0         Ft         2"         in.         0.010         in.         P           From          To          Ft.          in.            From          To          Ft.          in.            From          To          Ft.          in.            SAND/GRAVEL PACK:         Depth         Size         Material           From          To                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | TED IN ACCORDANCE WITH 15A NO | AC 2C, WELL                           |

| Divisi                                                | on of Environmental Managen<br>P.O. Box 29535 - Raleigh,<br>Phone (919) 73 | N.C. 2762610536711 1                   |               | Lor                | SERIAL NO<br>19 RO        |
|-------------------------------------------------------|----------------------------------------------------------------------------|----------------------------------------|---------------|--------------------|---------------------------|
|                                                       | WELL CONSTRUCT                                                             | ION RECORD                             |               |                    |                           |
|                                                       |                                                                            |                                        |               | der Ent            | GW-1 Ent:                 |
| DRILLING COM                                          | TRACTOR: Law En                                                            | gineering                              | STATE WELL CO | ONSTRUCTION        |                           |
|                                                       | STRATION NUMBER:                                                           | 332                                    | PERMIT NUMBE  | R:                 | MW-12                     |
|                                                       | ATION: (Show sketch of the                                                 |                                        | Onalar        |                    |                           |
|                                                       | n:Jacksonville                                                             |                                        | Onslow        |                    |                           |
|                                                       | -341 Camp Gieger<br>munity, or Subdivision and Lot No                      |                                        | DE            | PTH                | DRILLING LOG              |
|                                                       | U.S. Marine Corns                                                          |                                        |               | То                 | Formation Description     |
|                                                       | Camp LeJeune                                                               |                                        | 0.0           | 13.0               | See_attached              |
|                                                       | (Street or Route N                                                         | 0.)                                    |               |                    |                           |
|                                                       | ksonville No                                                               | C Zip Code                             |               |                    |                           |
| City or To                                            | wn State<br>LED <u>3-7-94</u> USE (                                        | •                                      | ing           |                    |                           |
|                                                       | <u>иери озес</u><br>тн <u>13.0</u>                                         | F WELL <u>Homitor</u>                  | <u></u>       |                    |                           |
|                                                       | COLLECTED YES X                                                            | NO                                     |               |                    |                           |
| 5. DOES WEL                                           | L REPLACE EXISTING WE                                                      | ELL? YES 🚺 NO                          | x             |                    |                           |
| 7. STATIC WA                                          | TER LEVEL Below Top of                                                     |                                        |               | . <u></u>          |                           |
|                                                       | SING IS 2.0 FT. Ab                                                         | ' if Above Top of Casing)              |               |                    |                           |
|                                                       | d at/or below land surface is ille                                         |                                        | sued          |                    | <u>_</u>                  |
| 1                                                     | th 15A NCAC 2C .0118<br>):N/AMETHOD OF,                                    |                                        |               |                    |                           |
| 3. YIELD (gpm                                         | NES (depth): N/A                                                           | 1651 <u>- MA</u>                       |               |                    | <u></u>                   |
| U. WATER 20                                           | NES (depth):N/1                                                            |                                        |               |                    |                           |
| 1. CHI ORINA                                          | TION: Type <u>N/A</u>                                                      | AmountN/A                              | If additi     | ional space is nee | ded use back of form      |
| 2. CASING:                                            | , , , , , , , , , , , , , , , , , , ,                                      |                                        |               |                    |                           |
|                                                       |                                                                            | Wall Thickness                         |               | LOCATIO            | N SKETCH                  |
|                                                       | Depth Diamete                                                              | r or Weight/FL Mate                    |               |                    | from at least two State   |
|                                                       | To <u>3.0</u> Ft2"                                                         |                                        | C Roads.      | or other map refe  | rence points)             |
|                                                       | To Ft                                                                      |                                        |               | Sec. P             | eport.                    |
|                                                       | To Ft                                                                      |                                        |               | JEE K              | eport.                    |
| 3. GROUT:                                             |                                                                            |                                        |               |                    |                           |
| - 0.0                                                 |                                                                            | nterial Method<br>crete <u>Cast-in</u> |               |                    |                           |
|                                                       | To <u>2.0</u> Ft. <u>Conc</u>                                              |                                        |               |                    |                           |
|                                                       | ToFt                                                                       | <u> </u>                               |               |                    |                           |
| 4. SCREEN:                                            | Depth Diameter                                                             | Slot Size Materia                      | l             |                    |                           |
| From 3.0                                              | $_{\rm To} \frac{13.0}{13.0}$ Ft $\frac{2"}{13.0}$ in.                     |                                        |               |                    |                           |
|                                                       | _ To Ft in.                                                                |                                        |               |                    |                           |
|                                                       | _ To Ft in.                                                                |                                        |               |                    |                           |
|                                                       |                                                                            |                                        |               |                    | · .                       |
| From                                                  |                                                                            | Material                               |               |                    | ••••                      |
|                                                       | Depth Size                                                                 |                                        |               |                    |                           |
| From                                                  | Depth Size                                                                 | edo <u>Sand</u>                        |               |                    |                           |
| From<br>5. SAND/GRAV                                  |                                                                            |                                        |               |                    |                           |
| From<br>5. SAND/GRAV<br>From2<br>From                 | 14_0 FtTorp                                                                |                                        |               |                    |                           |
| From2<br>5. SAND/GRAY<br>From2<br>From<br>6. REMARKS: | <u>.0</u> To <u>14.0</u> Ft. <u>Torp</u><br>To <u>Ft.</u>                  |                                        |               |                    |                           |
| From2<br>5. SAND/GRAY<br>From2<br>From<br>6. REMARKS: | .0 To Ft<br>To Ft                                                          |                                        |               | VITH 15A NCAC      | 2C, WELL<br>E WELL OWNER. |

the second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second secon

| Division of Environmental Management - Groundwater Sectors<br>P.O. Box 29535 - Raleigh, N.C. 27626-0535171<br>Phone (919) 733-3221                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                               | SERIAL NO:<br>.ong RO:                                                                                          |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| WELL CONSTRUCTION RECORD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Minor Basin<br>Besin Code                                                                                                     |                                                                                                                 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Header Ent.                                                                                                                   | GiW-1-Ent:                                                                                                      |
| LLING CONTRACTOR: Law Engineering                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | TE WELL CONSTRUCTIO                                                                                                           | N                                                                                                               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                               | <u>MW-13</u>                                                                                                    |
| WELL LOCATION: (Show sketch of the location below)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                               |                                                                                                                 |
| Nearest Town:Jacksonville County:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Onslow                                                                                                                        |                                                                                                                 |
| TC-341 Camp Gieger                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                               |                                                                                                                 |
| (Road, Community, or Subdivision and Lot No.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | DEPTH                                                                                                                         | DRILLING LOG                                                                                                    |
| OWNER U.S. Marine Corps                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | From To                                                                                                                       | Formation Description                                                                                           |
| ADDRESS Camp LeJeune                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 0.0 13.0                                                                                                                      | <u>See attached</u>                                                                                             |
| (Street or Route No.)<br>Jacksonville NC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                               | · · · · · · · · · · · · · · · · · · ·                                                                           |
| City or Town State Zip Code                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                               |                                                                                                                 |
| DATE DRILLEDUSE OF WELL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                               |                                                                                                                 |
| TOTAL DEPTH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                               | -                                                                                                               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                               | ······································                                                                          |
| DOES WELL REPLACE EXISTING WELL? YES NO STATIC WATER LEVEL Below Top of Casing:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                               | en an The second standard stan |
| STATIC WATER LEVEL Below Top of Casing: FT.<br>(Use "+" if Above Top of Casing)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | مىرىيى <sup>ىىرى</sup> مەككى <u>مەككى بىرىنى بىرىمى /u> |                                                                                                                 |
| TOP OF CASING IS FT. Above Land Surface*                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                               |                                                                                                                 |
| ing Terminated at/or below land surface is illegal unless a variance is issued                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                               |                                                                                                                 |
| ocordance with 15A NCAC 2C .0118                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                               |                                                                                                                 |
| YIELD (gpm): N/A METHOD OF TEST N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                               |                                                                                                                 |
| WATER ZONES (depth):N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                               | • • • • • • • • • • • • • • • • • • • •                                                                         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                               | eeded use back of form                                                                                          |
| CHLORINATION: Type <u>N/A</u> Amount <u>N/A</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                               |                                                                                                                 |
| CASING:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                               | ON SKETCH                                                                                                       |
| Wall Thickness<br>Depth Diameter or Weight/Ft. Material                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | (Show direction and distan                                                                                                    | · · · · ·                                                                                                       |
| Depth         Diameter         or Weight/FL         Material           FromToToFtSCH 40PVC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Roads, or other map r                                                                                                         |                                                                                                                 |
| -rom 10 Ft                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                               | ·····                                                                                                           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                               | C. D. D. L.                                                                                                     |
| From To Ft                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                               | See Report.                                                                                                     |
| FromTo Ft                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                               |                                                                                                                 |
| FromTo Ft                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                               |                                                                                                                 |
| FromTo Ft GROUT:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | lace                                                                                                                          |                                                                                                                 |
| FromTo Ft<br>GROUT:<br>Depth Material Method<br>FromToFtConcreteCast_in_P                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | lace                                                                                                                          |                                                                                                                 |
| FromTo Ft<br>GROUT:<br>Depth Material Method<br>FromToFt<br>FromToFt                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | lace                                                                                                                          |                                                                                                                 |
| FromTo Ft<br>GROUT:<br>Depth Material Method<br>FromToFtConcreteCast-in-P<br>FromToFt<br>SCREEN:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | lace                                                                                                                          |                                                                                                                 |
| FromTo Ft Material Method<br>GROUT:<br>FromToFtConcreteCast_in_P<br>FromToFt<br>SCREEN:<br>Depth Diameter Slot Size Material                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | lace                                                                                                                          |                                                                                                                 |
| From         To         Ft.         Material         Method           GROUT:         Depth         Material         Method           From         0.0         To         2.0         Ft.         Concrete         Cast-in-P           From         To         To         Ft.         Concrete         Cast-in-P           From         To         Ft.         Concrete         Cast-in-P           SCREEN:         SCREEN:         Material         Material           From         3.0         To         13.0         Ft         2"         in.         0.010         in.         PVC                                                                                                                                                                                                                                                                                                                        | lace                                                                                                                          |                                                                                                                 |
| From         To         Ft.         Material         Method           GROUT:         Depth         Material         Method           From         0.0         To         2.0         Ft.         Concrete         Cast-in-P           From          To          Concrete         Cast-in-P           From          To                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | lace                                                                                                                          |                                                                                                                 |
| From         To         Ft.         Material         Method           GROUT:         Depth         Material         Method           From         0.0         To         2.0         Ft.         Concrete         Cast-in-P           From         To         To         Ft.         Concrete         Cast-in-P           From         To         Ft.         Concrete         Material           SCREEN:         Depth         Diameter         Slot Size         Material           From         3.0         To         13.0         Ft         2"         in.         PVC           From         To         To         Ft.         in.         in.         PVC           From         To         Ft.         in.         in.         in.         In.                                                                                                                                                        | lace                                                                                                                          |                                                                                                                 |
| From       To       Ft.       Material       Method         GROUT:       Depth       Material       Method         From       0.0       To       2.0       Ft.       Concrete       Cast-in-P         From       To       To       Ft.       Concrete       Cast-in-P         From       To       Ft.       Concrete       Cast-in-P         SCREEN:       Depth       Diameter       Slot Size       Material         From       3.0       To       13.0       Ft       2"       in.       0.010       in.       PVC         From       To       13.0       Ft       2"       in.       0.010       in.       PVC         From       To       Ft.       in.       in.       in.       SAND/GRAVEL PACK:                                                                                                                                                                                                       | lace                                                                                                                          |                                                                                                                 |
| From         To         Ft.         Material         Method           GROUT:         Depth         Material         Method           From         0.0         To         2.0         Ft.         Concrete         Cast-in-P           From          To          Concrete         Cast-in-P           From          To          Ft.            SCREEN:         Depth         Diameter         Slot Size         Material           From         3.0         To         13.0         Ft         2"         in.         0.010         in.         PVC           From          To          in.                                                                                                                                                                                                                                                                                                                     | lace                                                                                                                          |                                                                                                                 |
| From       To       Ft.       Material       Method         GROUT:       Depth       Material       Method         From       0.0       To       2.0       Ft.       Concrete       Cast-in-P         From       To       To       Ft.       Concrete       Cast-in-P         From       To       To       Ft.       Concrete       Cast-in-P         SCREEN:       Depth       Diameter       Slot Size       Material         From       3.0       To       13.0       Ft       2"       in.       PVC         From       3.0       To       13.0       Ft       2"       in.       PVC         From       To       Ft.       in.       0.010       in.       PVC         From       To       Ft.       in.       in.       In.       In.         SAND/GRAVEL PACK:       Depth       Size       Material       In.       Sand         From       2.0       To       14.0       Ft.       Torpedo       Sand | lace                                                                                                                          |                                                                                                                 |
| From       To       Ft.       Material       Method         GROUT:       Depth       Material       Method         From       0.0       To       2.0       Ft.       Concrete       Cast-in-P         From       To       To       Ft.       Concrete       Cast-in-P         From       To       Ft.       Concrete       Cast-in-P         SCREEN:       Depth       Diameter       Slot Size       Material         From       3.0       To       13.0       Ft       2"       in.       0.010       in.       PVC         From       3.0       To       13.0       Ft       2"       in.       0.010       in.       PVC         From       To       Ft.       in.       in.       in.       In.       In.         SAND/GRAVEL PACK:       Depth       Size       Material       From       Sand       In.         From                                                                                    | lace                                                                                                                          |                                                                                                                 |
| From       To       Ft.       Material       Method         GROUT:       Depth       Material       Method         From       0.0       To       2.0       Ft.       Concrete       Cast-in-P         From       To       To       Ft.       Concrete       Cast-in-P         From       To       To       Ft.       Concrete       Cast-in-P         SCREEN:       Depth       Diameter       Slot Size       Material         From       3.0       To       13.0       Ft       2"       in.       PVC         From       3.0       To       13.0       Ft       2"       in.       PVC         From       To       Ft.       in.       0.010       in.       PVC         From       To       Ft.       in.       in.       In.       In.         SAND/GRAVEL PACK:       Depth       Size       Material       In.       Sand         From       2.0       To       14.0       Ft.       Torpedo       Sand | lace                                                                                                                          |                                                                                                                 |
| From       To       Ft.       Material       Method         GROUT:       Depth       Material       Method         From       0.0       To       2.0       Ft.       Concrete       Cast-in-P         From       To       To       Ft.       Concrete       Cast-in-P         From       To       Ft.       Concrete       Cast-in-P         SCREEN:       Depth       Diameter       Slot Size       Material         From       3.0       To       13.0       Ft       2"       in.       0.010       in.       PVC         From       3.0       To       13.0       Ft       2"       in.       0.010       in.       PVC         From       To       Ft.       in.       in.       in.       In.       In.         SAND/GRAVEL PACK:       Depth       Size       Material       From       Sand       In.         From                                                                                    |                                                                                                                               |                                                                                                                 |

DATE

| North Carolina - Department of Environment, Health and Natural<br>Division of Environmental Management - Groupdwater Sec<br>P.O. Box 29535 - Raleigh, N.C. 27628-05391                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | CUAD. NO: SERIAL NO:                             |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|
| Phone (919) 733-3221                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Minor Basin                                      |
| WELL CONSTRUCTION RECORD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Basin Code                                       |
| RILLING CONTRACTOR: Law Engineering                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Header EntGW-1 Ent:                              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | STATE WELL CONSTRUCTION                          |
| RILLER REGISTRATION NUMBER:332                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                  |
| WELL LOCATION: (Show sketch of the location below)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                  |
| Nearest Town: Jacksonville County:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Onslow                                           |
| TC-341 Camp Gieger                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                  |
| (Road, Community, or Subdivision and Lot No.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | DEPTH DRILLING LOG                               |
| OWNER U.S. Marine Corps                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                  |
| ADDRESS Camp LeJeune                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0.013.0See attached.                             |
| (Street or Route No.)<br>Jacksonville NC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                  |
| City or Town State Zip Code                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                  |
| DATE DRILLED 3-8-94 USE OF WELL Monitorin                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ng                                               |
| TOTAL DEPTH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                  |
| DOES WELL REPLACE EXISTING WELL? YES NO                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                  |
| STATIC WATER LEVEL Below Top of Casing: FT.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | ·                                                |
| (Use *+* if Above Top of Casing)<br>TOP OF CASING IS <u>flush</u> FT. Above Land Surface*                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                  |
| Casing Terminated at/or below land surface is illegal unless a variance is it                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | issued                                           |
| in accordance with 15A NCAC 2C _0118                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                  |
| D. WATER ZONES (depth):N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                  |
| 1. CHLORINATION: Type <u>N/A</u> Amount <u>N/</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | A If additional space is needed use back of form |
| 2. CASING:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                  |
| Wall Thickness                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | LOCATION SKETCH                                  |
| Depth Diameter or Weight/Ft. Mate                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                  |
| From 0.0 To 3.0 Ft 2" SCH 40 PVC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                  |
| From To Ft                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                  |
| From To Ft                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | See attached.                                    |
| B. GROUT:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                  |
| Depth Material Method                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                  |
| From 0.0 To 2.0 Ft. Concrete Cast-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                  |
| From To Ft                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                  |
| 4. SCREEN:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                  |
| Depth Diameter Slot Size Materia                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                  |
| From 3.0 To 13.0 Ft 2" in. 0.010 in. PVC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                  |
| From 3.0 To 13.0 Ft 2" in. 0.010 in. PVC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                  |
| From 3.0       To 13.0       Ft 2"       in. 0.010       in         From To Ft in in       From In       In                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                  |
| From 3.0         To 13.0         Ft 2"         in.         0.010         in.         PVC           From To Ft.         in.         in.             From To Ft.         in.         in.            From To Ft.         in.         in.            5. SAND/GRAVEL PACK:         Depth         Size         Material                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <br>                                             |
| From 3.0 To 13.0 Ft 2"       in. 0.010 in. PVC         From To Ft in in         From To Ft in in         SAND/GRAVEL PACK:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <br>                                             |
| From 3.0       To 13.0       Ft 2"       in. 0.010       in. PVC         From To Ft.       in in       in       in         From To Ft.       in in       in       in         5. SAND/GRAVEL PACK:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                  |
| From 3.0 To 13.0 Ft 2"       in. 0.010 in. PVC         From To Ft in in         From To Ft in in         5. SAND/GRAVEL PACK:         Depth       Size         Material         From 2.0       To 14.0         Ft         To Ft                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                  |
| From 3.0 To 13.0 Ft 2"       in. 0.010 in. PVC         FromToFt inin         FromToFt inin         FromToFtinin         From 2.0 To 14.0 Ft. Torpedo Sand         FromToFt         From                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                  |
| From 3.0 To 13.0 Ft 2"       in. 0.010 in. PVC         FromToFt inin         FromToFt inin         FromToFt inin         5. SAND/GRAVEL PACK:         Depth       Size         Material         From 2.0 To 14.0 Ft         Sand         FromToFt         Sand         FromToFt         Sand         FromToFt                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | IN ACCORDANCE WITH 15A NCAC 2C, WELL             |
| From 3.0       To 13.0       Ft 2"       in. 0.010       in. PVC         From To Ft.       in in in       in         From To Ft.       in in       in         SAND/GRAVEL PACK:       Depth       Size       Material         From 2.0       To 14.0       Ft       Sand         From To       Ft                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | IN ACCORDANCE WITH 15A NCAC 2C, WELL             |
| From 3.0 To 13.0 Ft 2" in. 0.010 in. PVC         From To Ft. in. in. in.         From To Ft. in. in. in.         From To Ft. in. in. in.         SAND/GRAVEL PACK:         Depth       Size         Material         From 2.0 To 14.0 Ft. Torpedo         Sand         From To Ft.         Amount of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state | IN ACCORDANCE WITH 15A NCAC 2C, WELL             |

|                | Phone (919) 733-3                                                                                                                                        |                                   |            |                                                                                                                  | _Long ROT                             |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|------------|------------------------------------------------------------------------------------------------------------------|---------------------------------------|
|                | WELL CONSTRUCTION                                                                                                                                        | NRECORD                           |            |                                                                                                                  |                                       |
| R              | ILLING CONTRACTOR: Law Enginee                                                                                                                           | ring                              |            | Header Ent                                                                                                       | GW-1 Ent:                             |
| R              | ILLER REGISTRATION NUMBER:                                                                                                                               | 332                               |            | NUMBER:                                                                                                          |                                       |
|                | WELL LOCATION: (Show sketch of the lo                                                                                                                    | cation below)                     |            |                                                                                                                  |                                       |
|                | Nearest Town: Jacksonville                                                                                                                               | Count                             | y:0ns      | low                                                                                                              |                                       |
|                | TC-341 Camp Gieger                                                                                                                                       | ······                            |            | OFRE                                                                                                             | DRILLING LOG                          |
|                | (Road, Community, or Subdivision and Lot No.)                                                                                                            |                                   |            | DEPTH<br>From To                                                                                                 | Formation Description                 |
| •              | OWNER U.S. Marine Corps                                                                                                                                  |                                   |            |                                                                                                                  | See attached.                         |
|                | ADDRESS <u>Camp LeJeune</u><br>(Street or Route No.)                                                                                                     |                                   |            | .0                                                                                                               |                                       |
|                | Jacksonville NC                                                                                                                                          |                                   |            |                                                                                                                  |                                       |
|                | City or Town State                                                                                                                                       | Zip Co                            | de         |                                                                                                                  |                                       |
|                | DATE DRILLED 3-8-94_ USE OF                                                                                                                              | WELL Monitor                      | ing        |                                                                                                                  |                                       |
|                | TOTAL DEPTH                                                                                                                                              |                                   |            |                                                                                                                  |                                       |
| i.             | CUTTINGS COLLECTED YES X N                                                                                                                               |                                   |            |                                                                                                                  |                                       |
| •              | DOES WELL REPLACE EXISTING WELL                                                                                                                          |                                   |            |                                                                                                                  |                                       |
| •              | STATIC WATER LEVEL Below Top of Ca                                                                                                                       | Sung                              |            |                                                                                                                  |                                       |
|                | (Use *+* if A<br>TOP OF CASING IS <u>flush</u> FT. Above                                                                                                 | bove Top of Casing)               |            |                                                                                                                  |                                       |
|                | IOP OF CASING IS <u>ush</u> F1. ADOV<br>sing Terminated at/or below land surface is illegal                                                              |                                   | e issued   | and the second second second second second second second second second second second second second second second |                                       |
| in             | accordance with 15A NCAC 2C .0118                                                                                                                        |                                   |            |                                                                                                                  |                                       |
|                | VIELD (apm): N/A METHOD OF TES                                                                                                                           | STN/A                             |            |                                                                                                                  |                                       |
| n<br>N         | WATER ZONES (depth):N/A                                                                                                                                  |                                   |            | ······································                                                                           |                                       |
| ••             |                                                                                                                                                          |                                   |            |                                                                                                                  |                                       |
| 1              | CHLORINATION: Type                                                                                                                                       | AmountN/A                         |            | If additional space i                                                                                            | s needed use back of form             |
|                | CASING:                                                                                                                                                  |                                   |            |                                                                                                                  |                                       |
|                |                                                                                                                                                          |                                   |            | LOCA                                                                                                             | ATION SKETCH                          |
|                | Depth Diameter                                                                                                                                           | wall Thickness<br>or Weight/Ft. M | aterial (  | Show direction and dist                                                                                          | ance from at least two State          |
|                | From 0.0 To 22.0 Ft 6"<br>From 0.0 To 25.0 Ft 2"                                                                                                         | SCH_40P                           | <u>vc</u>  | Roads, or other ma                                                                                               |                                       |
|                | $r_{10} = 0.0$ $r_{2} = 25.0$ $r_{1} = 2''$                                                                                                              | SCH 40 P                          | VC         |                                                                                                                  |                                       |
|                | From To Ft                                                                                                                                               |                                   |            | Se                                                                                                               | ee Report.                            |
|                |                                                                                                                                                          |                                   |            |                                                                                                                  | <b>A</b>                              |
| 3.             | GROUT: /Cement                                                                                                                                           |                                   | <b>a d</b> |                                                                                                                  |                                       |
|                | Depth Mater                                                                                                                                              |                                   |            |                                                                                                                  |                                       |
|                | From 0.0 To 22.0 Ft. <u>Cement/</u>                                                                                                                      | bentonite II                      | emite      |                                                                                                                  |                                       |
|                | From 0.0 To 2.0 Ft. Concret                                                                                                                              | e Cast-                           | in-Place   |                                                                                                                  |                                       |
|                | SCREEN:                                                                                                                                                  |                                   |            |                                                                                                                  |                                       |
|                |                                                                                                                                                          | t Size Mate                       |            |                                                                                                                  |                                       |
| 4.             | From 25.0 To 30.0 Ft 2" in. 0                                                                                                                            | <u>.010</u> in. <u>PVC</u>        |            |                                                                                                                  |                                       |
| 4.             |                                                                                                                                                          |                                   |            |                                                                                                                  |                                       |
| 4.             | From To Ft in                                                                                                                                            | in                                |            |                                                                                                                  |                                       |
| 4.             | From To Ft in<br>From To Ft in                                                                                                                           | in                                |            |                                                                                                                  |                                       |
| 4.             | From To Ft in                                                                                                                                            | in                                |            |                                                                                                                  | . ·                                   |
| 4.             | From To Ft in<br>From To Ft in<br>SAND/GRAVEL PACK:                                                                                                      | in<br>in                          |            |                                                                                                                  |                                       |
| 4.             | From To Ft in<br>From To Ft in<br>SAND/GRAVEL PACK:<br>Depth Size                                                                                        | in<br>in<br>Material              |            |                                                                                                                  | ·<br>· ·                              |
| 4.<br>5.       | From         To         Ft.         in.                                                                                                                  | in<br>in<br>Material<br>pSand     |            |                                                                                                                  |                                       |
| 4.<br>5.       | From         To         Ft.         in.                                                                                                                  | in<br>in<br>Material<br>Sand      |            |                                                                                                                  | · · · · · · · · · · · · · · · · · · · |
| 4.<br>5.<br>6. | From To Ft in         From To Ft in         SAND/GRAVEL PACK:         Depth       Size         From To 30.0       Ft         From To Ft         REMARKS: | in<br>in<br>Material<br>Sand      |            |                                                                                                                  | · · · · · · · · · · · · · · · · · · · |
| 4.<br>5.       | From To Ft in         From To Ft in         SAND/GRAVEL PACK:         Depth       Size         From To 30.0       Ft         From To Ft         REMARKS: | in<br>Material<br>Sand            |            | IDANCE WITH 15A N                                                                                                | CAC 2C, WELL                          |
| 4.<br>5.       | From To Ft in         From To Ft in         SAND/GRAVEL PACK:         Depth       Size         From To 30.0       Ft         From To Ft         REMARKS: | in<br>Material<br>Sand            |            | DANCE WITH 15A N                                                                                                 | CAC 2C, WELL<br>D THE WELL OWNER.     |
| ч.<br>5.       | From To Ft in         From To Ft in         SAND/GRAVEL PACK:         Depth       Size         From To 30.0       Ft         From To Ft         REMARKS: | in<br>Material<br>Sand            |            | DANCE WITH 15A NG                                                                                                | CAC 2C, WELL<br>D THE WELL OWNER.     |
| 5.             | From To Ft in         From To Ft in         SAND/GRAVEL PACK:         Depth       Size         From To 30.0       Ft         From To Ft         REMARKS: | in<br>Material<br>Sand            |            | DANCE WITH 15A NG<br>BEEN PROVIDED TO                                                                            | CAC 2C, WELL<br>D THE WELL OWNER.     |

| <br>m. |  | <u>v</u> |  |
|--------|--|----------|--|
|        |  |          |  |
|        |  | ACC      |  |

|                   | t - Department of Environm<br>of Environmental Manage<br>P.O. Box 29535 - Raleigi<br>Phone (919) 7 | 33-3221               |                 | - <u> </u>             | Long RO                      |
|-------------------|----------------------------------------------------------------------------------------------------|-----------------------|-----------------|------------------------|------------------------------|
|                   | WELL CONSTRUC                                                                                      |                       | )               |                        |                              |
|                   |                                                                                                    |                       | -               | Header Ent.            | GW-1 Ent:                    |
|                   | RACTOR: Law Eng                                                                                    | gineering             | STATE WI        | LL CONSTRUCT           | ION                          |
| RILLER REGIS      | TRATION NUMBER:                                                                                    | 332                   |                 |                        | MW-16                        |
|                   |                                                                                                    |                       | ·)              |                        |                              |
| Nearest Town:     | TION: (Show sketch of the Jacksonville                                                             |                       | ounty:Onsl      | ow                     | <u></u>                      |
|                   | 341 Camp Giege                                                                                     | ~~                    | - ,             |                        |                              |
| (Road, Comm       | unity, or Subdivision and Lot N                                                                    | 0.)                   |                 | DEPTH                  | DRILLING LOG                 |
| 2. OWNER          | U.S. Marine Corp                                                                                   | DS                    |                 | From To                | Formation Description        |
| ADDRESS_          |                                                                                                    |                       | 0.              | 0 13.0                 | See attached                 |
| Tack              | (Street or Route )<br>sonville <u>NC</u>                                                           | NO.)                  |                 |                        |                              |
| City or Tow       |                                                                                                    | Z                     | ip Code         |                        |                              |
|                   | ED <u>3-8-94</u> USE                                                                               | OF WELL Monis         | toring          | <u> </u>               |                              |
| 4. TOTAL DEP      |                                                                                                    |                       | <u></u>         |                        |                              |
|                   | OLLECTED YES X                                                                                     |                       |                 |                        |                              |
|                   | ER LEVEL Below Top of                                                                              |                       | FT.             |                        |                              |
|                   | (Use *                                                                                             | +" if Above Top of Ca | using)          |                        |                              |
|                   | ING IS FT. A                                                                                       |                       |                 |                        |                              |
| Casing Terminated | at/or below land surface is il<br>15A NCAC 2C .0118                                                | iegai uniess s varis  | nce is issued   |                        |                              |
| . YIELD (apm)     | <u>N/A</u> METHOD OF                                                                               | TESTN/                | A               |                        | ·                            |
| 0. WATER ZON      | ES (depth):N                                                                                       | /A                    |                 |                        |                              |
|                   |                                                                                                    |                       |                 |                        |                              |
| 1. CHLORINAT      | ON: Type <u>N/A</u>                                                                                | Amount _              | <u> </u>        | If additional space is | needed use back of form      |
| 12. CASING:       |                                                                                                    |                       |                 |                        | TION SKETCH                  |
| •                 | <b>O</b>                                                                                           | Wall Thickness        |                 |                        | ance from at least two State |
| - 0.0             | Depth Diame<br>                                                                                    |                       |                 | Roads, or other map    |                              |
|                   | 18 Ft<br>To Ft                                                                                     |                       |                 |                        |                              |
|                   | Ft<br>To Ft                                                                                        |                       |                 |                        | See Report.                  |
|                   | 10 Fl                                                                                              |                       |                 |                        |                              |
| 3. GROUT:         | Depth N                                                                                            | lateriai N            | Viethod         |                        |                              |
| From 0.0          | To Ft                                                                                              |                       |                 |                        |                              |
| From              | •                                                                                                  |                       |                 |                        |                              |
| 4. SCREEN:        |                                                                                                    |                       |                 |                        |                              |
|                   | epth Diameter                                                                                      | Slot Size             | <b>Naterial</b> |                        |                              |
|                   | To 13.0 Ft _2" in                                                                                  |                       |                 |                        |                              |
|                   | To Ft in                                                                                           |                       |                 | ·.                     |                              |
|                   | To Ft in                                                                                           |                       |                 |                        |                              |
| 5. SAND/GRAV      |                                                                                                    |                       |                 |                        |                              |
|                   | Depth Size                                                                                         | Mater                 | ial             |                        |                              |
| From              | _ To 14.0 Ft. To                                                                                   | rpedo <u>San</u>      | <u>d</u>        |                        |                              |
| From              | _ To Ft                                                                                            |                       |                 |                        |                              |
|                   | ·                                                                                                  |                       |                 |                        |                              |
|                   |                                                                                                    |                       |                 |                        | AC 2C WELL                   |
| I DO HEREBY       | CERTIFY THAT THIS WEL<br>ON STANDARDS, AND TH                                                      | L WAS CONSTRU         | ILIED IN ACCORD | EEN PROVIDED TO        | THE WELL OWNER               |
|                   |                                                                                                    |                       |                 | ~                      |                              |
| CONSTRUCT         |                                                                                                    |                       | Λ               | $\square$              |                              |
| CONSTRUCT         |                                                                                                    |                       |                 | D n                    | (                            |

| North Carolina - Department of Environment, Health, and Natural F<br>Division of Environmental Management - Giounniversed Sect<br>P.O. Box 29535 - Raleigh, N.C. 276260535                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | . NO: Long.                                                       |                                        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|----------------------------------------|
| WELL CONSTRUCTION RECORD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Basin<br>Code                                                     |                                        |
| RILLING CONTRACTOR: Law Engineering                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Head                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | r Ent                                                             | GW-1 Ent:                              |
| ELENG CONTRACTOR. <u>Daw Engineerine</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | STATE WELL CON                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | ISTRUCTION                                                        |                                        |
| RILLER REGISTRATION NUMBER:332                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | PERMIT NUMBER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | м                                                                 | W-17                                   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                   |                                        |
| WELL LOCATION: (Show sketch of the location below)<br>Nearest Town: Jacksonville County:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Onslow                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                   |                                        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                   |                                        |
| TC-341 Camp Gieger                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | DEP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | กม                                                                | DRILLING LOG                           |
| (Road, Community, or Subdivision and Lot No.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | From                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <u>та</u>                                                         | Formation Description                  |
| OWNER U.S. Marine Corps                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Prom<br>0.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 13.0                                                              | See attached                           |
| ADDRESS Camp LeJeune<br>(Street or Route No.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                   |                                        |
| Jacksonville NC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <u></u>                                                           |                                        |
| City or Town State Zip Code                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                   |                                        |
| DATE DRILLED 3-8-94 USE OF WELL Monitoria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | ng                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                   |                                        |
| TOTAL DEPTH 13.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                   | ·····                                  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                   |                                        |
| DOES WELL REPLACE EXISTING WELL? YES NO                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | terror and the second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second se |                                                                   | ······································ |
| STATIC WATER LEVEL Below Top of Casing: FT.<br>(Use "+" if Above Top of Casing)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                   |                                        |
| accordance with 15A NCAC 2C .0118                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | SSUED                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                   |                                        |
| VIELD (gpm):N/A_METHOD OF TESTN/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                   |                                        |
| NATER ZONES (depth): N/A N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                   | ed use back of form                    |
| NACOORDANCE WITH 15A NCAC 2C .0118<br>YIELD (gpm): N/A METHOD OF TEST N/A<br>. WATER ZONES (depth): N/A<br>. CHLORINATION: Type N/A Amount N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                   | od use back of form                    |
| Nectordance with 15A NCAC 2C .0118<br>YIELD (gpm): N/A METHOD OF TEST N/A<br>WATER ZONES (depth): N/A<br>. CHLORINATION: Type N/A Amount N/A<br>. CASING:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                   |                                        |
| A accordance with 15A NCAC 2C .0118<br>YIELD (gpm): N/A METHOD OF TEST N/A<br>WATER ZONES (depth): N/A<br>. CHLORINATION: Type N/A Amount N/A<br>. CASING: Wall Thickness<br>Depth Diameter of Weight/Ft. Mate                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | A If additio                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | LOCATION                                                          |                                        |
| A accordance with 15A NCAC 2C .0118<br>YIELD (gpm): N/A METHOD OF TEST N/A<br>WATER ZONES (depth): N/A<br>. CHLORINATION: Type N/A Amount N/A<br>. CASING: Wall Thickness<br>Depth Diameter of Weight/Ft. Mate                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | A If additio                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | LOCATION                                                          | SKETCH                                 |
| Note: Secondance with 15A NCAC 2C .0118         YIELD (gpm):       N/A         MATER ZONES (depth):       N/A         N/A       N/A         Open to the second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second sec | A If additio                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | LOCATION<br>LOCATION<br>on and distance fro<br>r other map refere | SKETCH                                 |
| Note: Secondance with 15A NCAC 2C .0118         YIELD (gpm):       N/A         MATER ZONES (depth):       N/A         . WATER ZONES (depth):       N/A         . CHLORINATION:       Type         . CASING:       N/A         Depth       Diameter         From       0.0         To       3.0         Ft.       2''                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | A If addition<br>rial (Show direction<br>VC Roads, o                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | hal space is neede<br>LOCATION                                    | SKETCH                                 |
| Depth         Diameter         Wall Thickness<br>or Weight/Ft.         Mater           From         0.0         To         3.0         Ft.         2''         SCH 40         P'           From         To         Ft.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | A If addition<br>rial (Show direction<br>VC Roads, o                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | LOCATION<br>LOCATION<br>on and distance fro<br>r other map refere | SKETCH                                 |
| Depth         Diameter         Or Weight/Ft.         Material           From         To         Ft.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | A If additio                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | LOCATION<br>LOCATION<br>on and distance fro<br>r other map refere | SKETCH                                 |
| Decordance with 15A NCAC 2C .0118         YIELD (gpm):       N/A         WATER ZONES (depth):       N/A         . WATER ZONES (depth):       N/A         . CHLORINATION:       Type         . CHLORINATION:       Type         . CASING:       Wall Thickness         . CASING:       Diameter         . From       0.0         . To       3.0         . Ft.       2"         SCH 40       P'         . From       To         . Ft.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | A If additio                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | LOCATION<br>LOCATION<br>on and distance fro<br>r other map refere | SKETCH                                 |
| Depth       Diameter       N/A         N/A       MATER ZONES (depth):       N/A         WATER ZONES (depth):       N/A       N/A         CHLORINATION:       Type       N/A       Amount       N/A         CASING:       Depth       Diameter       or Weight/Ft.       Material         From       0.0       To       3.0       Ft.       2''       SCH 40       P'         From       To       Ft.       2''       SCH 40       P'         From       To       Ft.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | A If additio                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | LOCATION<br>LOCATION<br>on and distance fro<br>r other map refere | SKETCH                                 |
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| WATER ZONES (depth):       N/A         . CHLORINATION:       Type       N/A         . CASING:       Depth       Diameter         . CASING:       Depth       Diameter         From       0.0       To       3.0         From       To       3.0       Ft.       2"         SCH 40       PY         From       To       Ft.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | A if addition<br>rial (Show direction<br>VC Roads. or<br>n-Place                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | LOCATION<br>LOCATION<br>on and distance fro<br>r other map refere | SKETCH                                 |

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

APPENDIX G SHALLOW SOIL GAS AND GROUNDWATER INVESTIGATION (TRACER, 1994)

**Tracer Research Corporation** 



Shallow Soil Gas and Groundwater Investigation

CAMP GEIGER AREA FUEL FARM Jacksonville, North Carolina

April 13 thru 16, 1994

>



Shallow Soil Gas and Groundwater Investigation

#### CAMP GEIGER AREA FUEL FARM Jacksonville, North Carolina

April 13 thru 16, 1994.

Prepared for:

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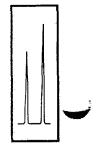
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Tracer Research Corporation



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# 1.0 CAMP GEIGER AREA FUEL FARM SITE INVESTIGATION

Tracer Research Corporation (Tracer Research) performed a shallow soil gas and groundwater investigation at the Camp Geiger Area Fuel Farm, Camp Geiger, Jacksonville, North Carolina. The investigation was conducted April 13 through 16, 1994 for Baker Environmental of Coraopolis, Pennsylvania.

### 1.1 Objective

The purpose of the investigation was to evaluate and delineate possible subsurface contamination by screening shallow soil gas and groundwater for the presence of volatile organic compounds (VOCs). Soil gas and groundwater samples were collected and analyzed for the following analyte classes and compounds:

Analyte Class: Hydrocarbon: benzene

Analyte Class: Halocarbon: trichloroethene (TCE)

## 1.2 Overview of Results

For this investigation, sixty-seven soil gas and seventy-two groundwater samples were collected from seventy-three sample locations. Soil gas samples were collected at 2 to 7 feet below ground surface (bgs). Groundwater samples were collected at 1 to 10 feet bgs. A summary of the results of the soil gas and groundwater investigation is presented in Table 1 and Table 2 on the following page.



| Compound | # of samples in<br>which compound<br>was detected | Low<br>conc.<br>µg/L | High<br>conc.<br>µg/L | Sample(s)<br>with<br>high conc. |
|----------|---------------------------------------------------|----------------------|-----------------------|---------------------------------|
| Benzene  | 11                                                | 0.01                 | 2                     | 35-SG61-4'                      |
| TCE      | 19                                                | 0.00009              | 0.8                   | 35-SG13-5'                      |

 Table 1. Soil Gas Sample Summary

Table 2. Groundwater Sample Summary

| Compound | # of samples in<br>which compound<br>was detected | Low<br>conc.<br>µg/L | High<br>conc.<br>µg/L | Sample(s)<br>with<br>high conc. |
|----------|---------------------------------------------------|----------------------|-----------------------|---------------------------------|
| Benzene  | 13                                                | 0.06                 | 16,000                | 35-SGW56-10'                    |
| TCE      | 32                                                | 0.0004               | 160                   | 35-SGW69-6'                     |

#### 2.0 SITE DESCRIPTION

The investigation was conducted near various buildings and along Brinson Creek at the Camp Geiger Area Fuel Farm. Samples were collected through asphalt and grass cover.

The subsurface of the site was characterized by sand and silt. Groundwater was reported to be approximately 6 to 8 feet bgs. The direction of groundwater flow was not reported.

#### 3.0 SOIL GAS SAMPLING PROCEDURES

Soil gas sampling probes consisted of 7-foot lengths of 3/4-inch diameter hollow steel pipe. The probes were fitted with detachable drive tips and hydraulically pushed and/or pounded to a depth of 2 to 7 feet bgs. An electric rotary hammer was used to drill through the asphalt.

The aboveground end of each probe was fitted with an aluminum reducer (manifold) and a length of polyethylene tubing leading to a vacuum pump. Soil gas was pulled by the vacuum pump into the probe. Samples were collected in a glass syringe by inserting a syringe needle through a silicone rubber segment in the evacuation line and down into the steel probe. The vacuum was monitored by a vacuum gauge to ensure an adequate gas flow from the vadose zone was maintained.



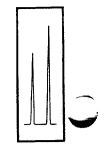
The volume of air within the probe was purged by evacuating 2 to 5 probe volumes of gas. The evacuation time in minutes versus the vacuum in inches of mercury (Hg) was used to calculate the necessary evacuation time. The vacuum in inches Hg was recorded at each sampling location. Probe vacuums ranged from 2 to 12 inches Hg. The maximum capacity of the pump was approximately 22 inches Hg.

## 4.0 GROUNDWATER SAMPLING PROCEDURES

When groundwater was encountered, water samples were collected. Sampling probes consisted of 7- to 14-foot lengths of 3/4-inch diameter hollow steel pipe. Groundwater samples were collected at 1 to 10 feet bgs. The hollow probes with detachable drive points were advanced below the water table. Once at the desired depth, the probes were withdrawn several inches to permit water to flow into the resulting hole. The aboveground end of the sampling probes were fitted with a vacuum adaptor (metal reducer) and a length of polyethylene tubing leading to a vacuum pump. A vacuum of up to 22 inches Hg was applied to the interior of the probe for 10 to 15 minutes or until water was drawn up the probe. The water accumulated in the hole was removed by vacuum through a 1/4-inch polyethylene tube inserted down into the probe to the bottom of the hole. Because the water is induced to flow into a very narrow hole, it can be sampled with little exposure to air and, consequently, the loss of volatile compounds by evaporation is reduced. The polyethylene tubing was used only once and discarded to avoid cross contamination.

Groundwater samples were collected in 40 milliliter (mL) VOA vials that were filled to exclude air and capped with Teflon-lined septa caps. Approximately half of the liquid in the bottle was decanted, the vials were shaken vigorously, and a sample of the headspace from the container was injected into the gas chromatograph (GC).

Indirect (headspace) analysis is the preferred technique when a large number of water samples are to be performed daily. The method is more time efficient for the measurement of volatile organics than direct injection of the water sample into the GC because there is less chance of semi-volatile and non-volatile organics contaminating the system. Depending upon the partitioning coefficient of a given compound, the



indirect analysis method may be more sensitive than the direct injection method. The precision and accuracy of both methods are similar.

#### 5.0 ANALYTICAL PARAMETERS

Up to 10 mL of soil gas and 40 mL of groundwater were collected for immediate analyses in the Tracer Research analytical van. Analytical instruments were calibrated daily using fresh working standards made from National Institute of Sciences and Technology traceable standards and reagent blanked solvents.

The GC was calibrated for indirect analysis by decanting 20 mL of the known standard, leaving approximately the same amount of headspace as in the water headspace samples. The standard bottle was resealed and shaken vigorously for 30 seconds. An analysis of the headspace in the bottle determined the Response Factor (RF) which was then used to calculate the sample concentrations.

#### 5.1 Chromatographic System

A Hewlett Packard 5890 Series II gas chromatograph, equipped with a flame ionization detector (FID), electron capture detector (ECD) and two computing integrators, was used for the soil gas and groundwater headspace analyses. Compounds were separated on two 6 foot by 1/8 inch OD packed analytical column (10% OV101 stationary phase bonded to 80/100 mesh Chromosorb W support) in a temperature controlled oven. Benzene was detected on the FID and TCE was detected on the ECD. Nitrogen was used as the carrier gas. The following paragraphs explain the GC, FID, and ECD processes.

#### **GC Process**

The soil gas and groundwater headspace vapor is injected into the GC where it is swept through the analytical column by the carrier gas. The detector senses the presence of a component different from the carrier gas and converts that information to an electrical signal. The components of the sample pass through the column at different rates, according to their individual properties, and are detected by the detector. Compounds are identified by the time it takes them to pass through the column (retention time).

### FID Process

The FID utilizes a flame produced by the combustion of hydrogen and air. When a component, which has been separated on the GC analytical column, is introduced into the flame, a large increase in ions occurs. A collector with a polarizing voltage is applied near the flame and the ions are attracted and produce a current, which is proportional to the amount of the sample compound in the flame. The electrical current causes the computing integrator to record a peak on a chromatogram. By measuring the area of the peak and comparing that area to the integrator response of a known aqueous standard, the concentration of the analyte in the sample is determined.

#### **ECD** Process

The ECD captures low energy thermal electrons that have been ionized by beta particles. The flow of these captured electrons into an electrode produces a small current, which is collected and measured. When the halogen atoms (halocarbons) are introduced into the detector, electrons that would otherwise be collected at the electrode are captured by the sample, resulting in decreased current. The current causes the computing integrator to record a peak on a chromatogram. The area of the peak is compared to the peak generated by a known standard to determine the concentration of the analyte.

### 5.2 Analyses

Subsamples (replicate injections) of each soil gas and groundwater headspace sample were injected into the GC in volumes of 1 to 1,000 microliters ( $\mu$ L). The detection limits for target compounds depend on the sensitivity of the detector to the individual compound as well as the volume of the injection. The detection limits of the target compounds were calculated from the response factor, the sample size, and the calculated minimum peak size (area) observed under the conditions of the analyses. If any compound was not detected in an analysis, the detection limit is given as a "less than" value, e.g., <0.1  $\mu$ g/L. The following table presents the approximate detection limits of the soil gas and groundwater targeted compounds.



| Compound | Detection Lir | Detection Limits (µg/L)     |  |  |  |  |
|----------|---------------|-----------------------------|--|--|--|--|
| Benzene  | 0.01 sg       | 0.06 gr. water              |  |  |  |  |
| TCE      | 0.00009 sg    | 0.00009 sg 0.0004 gr. water |  |  |  |  |

#### And The The Com T-L1- 2 n

sg = Soil Gas

gr. water = Ground Water

#### 6.0 QUALITY ASSURANCE AND QUALITY CONTROL

Tracer Research's Quality Assurance (QA) and Quality Control (QC) program was followed to maintain data that was reproducible through the investigation. An overview presenting the significant aspects of this program is presented below.

#### Soil Gas/Groundwater Sampling Quality Assurance

To ensure consistent collection of samples, the following procedures are performed.

#### - Sampling Manifolds

Tracer Research's custom designed sampling manifold connects the sample probe to the vacuum line and pump. The manifold is designed to eliminate sample exposure to the polymeric (plastic) materials that connect the probe to the vacuum pump.

The sampling manifold is attached to the end of the probe, forming an air tight union between the probe and the silicone tubing septum. The septum connects the manifold to the pump vacuum line and permits syringe sampling.

This sampling system allows the sample to be taken upstream of the sampling pump, manifold, and septum. Since cross contamination of sampling equipment can be a major problem, Tracer Research replaces the materials (probe and syringe), between sampling points, that contact the soil gas before or during sampling.



#### -Sampling Probes

Steel probes are used only once each day. To eliminate the possibility of cross contamination, they are washed with high pressure soap and hot water spray, or steam-cleaned. Enough sampling probes are carried on each van to avoid the need to re-use any during the day.

#### -Glass Syringes

Glass syringes are used for only one sample a day and are washed and baked out at night. If they must be used twice, they are purged with carrier gas (nitrogen) and baked out between probe samplings.

#### - Polyethylene Tubing and VOA Vials

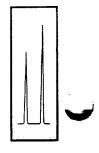
Polyethylene tubing and VOA vials used for the collection of groundwater samples are used only once and then discarded to avoid cross contamination.

#### -Sampling Efficiency

Soil gas/groundwater pumping is monitored by a vacuum gauge to ensure that an adequate flow of gas from the soil is maintained. A reliable gas sample can be obtained if the sample vacuum gauge reading is at least 2 inches Hg less than the maximum measured vacuum of the vacuum pump.

#### Analytical Quality Assurance Samples

Quality assurance samples are performed at the listed, or greater, frequencies in Table 4. The frequency depends on the number of samples analyzed and the length of time of the survey.



| Sample type                  | Frequency                           |
|------------------------------|-------------------------------------|
| Ambient Air Samples          | 3 per day or 1 per site             |
| Analytical Method Blanks     | 5% (1 per 20 samples or 1 a day)    |
| Continuing Calibration Check | 20% (1 every 5 samples)             |
| Field System Blank           | 10% (1 every 10 samples or 1 a day) |
| Reagent Blank                | 1 per set of working standards      |
| Replicate Samples            | 10 to 100% of samples collected     |

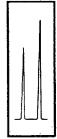
#### Table 4. Quality Assurance Samples

The ambient air samples are obtained on site by sampling the air immediately outside the mobile analytical van and directly injecting it into the GC. Analytical method blanks are taken to demonstrate that the analytical instrumentation is not contaminated. These are performed by injecting carrier gas (nitrogen) into the GC with the sampling syringe. Subsampling syringes are also checked in this fashion.

The injector port septa through which samples are injected into the GC are replaced daily to prevent possible gas leaks from the chromatographic column. All sampling and subsampling syringes are decontaminated after use and are not used again until they have been decontaminated by washing in anionic detergent and baking at 90°C.

Continuing calibration checks are analyzed to verify the detector response for the target VOCs. If the response changes by more than 25 percent, the gas chromatograph is recalibrated and new response factors are calculated.

Field system blanks are analyzed to check for contamination of the sampling apparatus, e.g., probe and sampling syringe. A sample is collected using standard soil gas sampling procedures, but without putting the probe into the ground. The results are compared to those obtained from a concurrently sampled ambient air analysis.



If the blanks detect compounds of interest at concentrations that indicate equipment contamination or concentrations that exceed normal background levels (ambient air analysis), corrective actions are performed. If the problem cannot be corrected, an out-of-control event is documented and reported.

A reagent blank is performed to ensure the solvent used to dilute the stock standards is not contaminated. Analytical instruments are calibrated daily using fresh working standards made from National Institute of Sciences and Technology (NIST) traceable standards and reagent blanked solvents.

Quantitative precision is assured by replicating analysis of 10 to 100 percent of the samples. The percentage is based upon sample analysis time. Replicate analyses are performed by subsampling vapors from the original syringe and VOA.

#### 7.0 RESULTS

The analytical results from this soil gas and groundwater investigation are condensed in Appendix A. The data are presented by location and by analyte concentration. When the compound was not detected, the detection limit is presented as a "less than" value, e.g.,  $<0.1 \mu g/L$ .

Samples are identified by sample type, sample location, and sampling depth. For example, 35-SG46-7' represents a soil gas sample collected from location 46 at a depth of 7 feet bgs. Sample 35-SGW56-10' represents a groundwater sample collected from location 56 at a depth of 10 feet bgs.

#### **Tracer Research Corporation**

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# APPENDIX A Condensed Data

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#### TRACER RESEARCH CORPORATION - ANALYTICAL RESULTS

BAKER ENVIRONMENTAL/ CAMP GEIGER AREA FUEL FARM/ JACKSONVILLE, NORTH CAROLINA/ 124-0169-S 04/13/94

| SAMPLE     | BENZENE<br>µg/L | TCE<br>µg/I. |  |    |      |  |
|------------|-----------------|--------------|--|----|------|--|
| AIR        | 0.1             | <0.00004     |  |    | <br> |  |
| 35-SG46-7' | <0.02           | <0.00009     |  |    |      |  |
| 35-SG47-7' | 0.01            | <0.00009     |  |    |      |  |
| 35-SG48-7' | 0.05            | <0.00009     |  |    |      |  |
| 35-SG49-7  | <0.01           | 0.00009      |  |    |      |  |
| 35-SG44-7' | <0.01           | <0.00009     |  |    |      |  |
| 35-SG42-6' | <0.01           | <0.00009     |  |    |      |  |
| 35-SG41-6' | <0.01           | 0.0003       |  |    |      |  |
| 35-SG40-6' | <0.01           | 0.05         |  |    |      |  |
| 35-SG39-6' | <0.01           | 0.03         |  |    |      |  |
| 35-SG38-6' | <0.01           | <0.0004      |  |    |      |  |
| 35-SG37-6' | <0.01           | <0.00009     |  | ۰. |      |  |
| 35-SG36-6' | < 0.01          | 0.006        |  |    |      |  |
| 35-SG28-6' | <0.01           | <0.00009     |  |    |      |  |
| AIR        | <0.01           | <0.00004     |  |    |      |  |

Analyzed by: D. Bonner Proofed by: <u>M. SHJELS</u>

#### TRACER RESEARCH CORFORATION - ANALYTICAL RESULTS BAKER ENVIRONMENTAL/ CAMP GEIGER AREA FUEL FARM/ JACKSONVILLE, NORTH CAROLINA/ 124-0169-S 04/13/94

| SAMPLE       | BENZENE<br>µg/L | TCE<br>µg/L |
|--------------|-----------------|-------------|
| 35-\$GW46-9` | <0.06           | <0.0004     |
| 35-SGW47-9'  | 0.06            | < 0.0004    |
| 35-SGW48-9'  | 0.06            | < 0.0004    |
| 35-SGW49-9'  | <0.06           | 0.0004      |
| 35-SGW44-9'  | <0.06           | 0.0004      |
| 35-SGW42-9'  | <0.2            | 0.1         |
| 35-SGW41-8'  | <0.05           | <0.002      |
| 35-SGW40-8'  | <1              | 0.02        |
| 35-SGW39-8'  | 0.1             | 0.002       |
| 35-SGW38-8'  | <0.06           | 0.01        |
| 35-SGW37-8'  | <0.06           | <0.0004     |
| 35-SGW36-8'  | <0.06           | 0.005       |
| 35-SGW/28-8' | <0.06           | 0.4         |

Analyzed by: D. Bonner Proofed by: <u>M. ShiJua</u> ١

# TRACER RESEARCH CORPORATION - ANALYTICAL RESULTS

BAKER ENVIRONMENTAL/ CAMP GEIGER AREA FUEL FARM/ JACKSONVILLE, NORTH CAROLINA/ 124-0169-S 04/14/94

| SAMPLE       | BENZENE<br>µg/L | ΤCE<br>μg/L |  |  |   | <br> |
|--------------|-----------------|-------------|--|--|---|------|
| AIR          | <0.01           | <0.00004    |  |  |   |      |
| 35-SG33-5*   | <0.01           | <0.00009    |  |  |   |      |
| 35-SG32-4.5' | <0.4            | <0.00009    |  |  |   |      |
| 35-SG31-5'   | <0.01           | 0.0003      |  |  |   |      |
| 35-SG30-5'   | <0.01           | <0.00009    |  |  |   |      |
| 35-SG29-5'   | <0.01           | <0.00009    |  |  |   |      |
| 35-SG23-5'   | <0.01           | <0.00009    |  |  |   |      |
| 35-SG24-5'   | 0.04            | <0.00009    |  |  |   |      |
| 35-SG25-4'   | 0.02            | 0.0005      |  |  |   |      |
| 35-SG18-4'   | 0.03            | 0.0004      |  |  |   |      |
| 35-SG17-5'   | 0.05            | <0.00009    |  |  |   |      |
| 35-SG26-2'   | <0.01           | <0.00009    |  |  |   |      |
| AIR          | <0.01           | <0.00004    |  |  |   |      |
| 35-SG27-5'   | <0.01           | <0.00009    |  |  |   |      |
| 35-SG20-3'   | <0.01           | <0.00009    |  |  |   |      |
| 35-SG19-4'   | <0.01           | <0.00009    |  |  | , |      |
| 35-SG14-3'   | <0.01           | <0.00009    |  |  |   |      |
| 35-SG15-5'   | <0.01           | <0.00009    |  |  |   |      |
| AIR          | 0.02            | <0.00004    |  |  |   |      |

Analyzed by: D. Bonner Proofed by: M. Stilus

### TRACER RESEARCH CORPORATION - ANALYTICAL RESULTS BAKER ENVIRONMENTAL/ CAMP GEIGER AREA FUEL FARM/ JACKSONVILLE, NORTH CAROLINA/ 124-0169-5 04/14/94

| SAMPLE      | BENZENE<br>µg/L | TCE<br>µg/L |   |       |      |  |
|-------------|-----------------|-------------|---|-------|------|--|
| AIR.        | <0.06           | <0.0004     |   |       | <br> |  |
|             | 0.07            | 0.0004      | • |       |      |  |
| 35-SGW33-6' | <0.06           | <0.0004     |   |       |      |  |
| 35-SGW32-7' | <2              | <0.0004     |   |       |      |  |
| 35-SGW31-6' | <0.06           | 0.0009      |   |       |      |  |
| 35-SGW30-7' | <0.06           | 0.002       |   |       |      |  |
| 35-SGW29-7' | <0.2            | <0.002      |   |       |      |  |
| 35-SGW23-7' | 9               | <0.0004     |   |       |      |  |
| 35-SGW24-7' | INT             | < 0.0004    |   |       |      |  |
| 35-SGW25-7' | 0.2             | 0.0008      |   |       |      |  |
| 35-SGW18-6' | <0.06           | < 0.0004    |   |       |      |  |
| 35-SGW17-7' | <0.06           | <0.0004     |   |       |      |  |
| 35-SGW16-6' | <0.06           | <0.0004     |   | البوة |      |  |
| AIR         | <0.06           | <0.0002     |   |       |      |  |
| 35-SGW26-7' | <0.06           | <0.0004     |   |       |      |  |
| 35-SGW27-7' | <0.06           | < 0.0004    |   |       |      |  |
| 35-SGW20-6' | <0.06           | < 0.0004    |   |       |      |  |
| 35-SGW19-6' | <0.06           | <0.0004     |   |       |      |  |
| 35-SGW14-5' | <0.06           | <0.0004     |   |       |      |  |
| AIR         | <0.06           | <0.0002     |   |       |      |  |

INT = Interference

Analyzed by: D. Bonner Proofed by: <u>M. SHULLA</u>

**Tracer Research Corporation** 

#### TRACER RESEARCH CORPORATION - ANALYTICAL RESULTS BAKER ENVIRONMENTAL/ CAMP GEIGER AREA FUEL FARM/ JACKSONVILLE, NORTH CAROLINA/ 124-0169-S 04/15/94

| SAMPLE                | BENZENE<br>µg/L | TCE<br>µg/L |
|-----------------------|-----------------|-------------|
| AIR                   | <0.01           | <0.00005    |
| 35-SG13-5'            | <0.01           | 0.8         |
| 35-SG21-4'            | <0.01           | <0.0001     |
| 35-SG22-5'            | <0.01           | 0.002       |
| 35-SG7-4'             | <0.01           | < 0.002     |
| 35-807-4<br>35-866-5' | < 0.01          | < 0.0001    |
| 77-200-2              | <b>\J.UI</b>    | NU.UUU1     |
| 35-SG5 <b>-5</b> '    | INT             | <0.0001     |
| 35-SG1-4'             | <0.01           | <0.0001     |
| 35-SG2-5'             | <0.01           | <0.0001     |
| 35-\$03-4'            | <0.01           | < 0.0001    |
| 35-SG4-5'             | <0.01           | < 0.0001    |
|                       |                 |             |
| AIR                   | < 0.01          | <0.00005    |
| 35-SG8-5'             | <0.01           | <0.0001     |
| 35 <b>-</b> \$G9-4'   | <0.01           | < 0.0001    |
| 35-SG10-4'            | <0.01           | <0.0001     |
| 35-SG11-4'            | <0.01           | <0.0001     |
| 35-SG12-5'            | <0.01           | <0.0001     |
| 35-SG45-6'            | <0.01           | 0.003       |
| 35-SG43-6'            | <0.01           | 0.0005      |
| 35-SG35-6'            | <0.01           | <0.0001     |
| AIR                   | <0.01           | <0.0001     |

INT = Interference

Analyzed by: D. Bonner Proofed by: <u>M. Stilles</u>

#### TRACER RESEARCH CORPORATION - ANALYTICAL RESULTS

BAKER ENVIRONMENTAL/ CAMP GEIGER AREA FUEL FARM/ JACKSONVILLE, NORTH CAROLINA/ 124-0169-S 04/15/94

| SAMPLE      | BENZENE<br>µg/L | TCE<br>µg/L | . •  |   |  |
|-------------|-----------------|-------------|------|---|--|
| 25 803115 7 | ~1              | <0.0004     |      |   |  |
| 35-SGW15-7' | <1              |             |      |   |  |
| 35-SGW13-7' | 0.6             | 4           |      |   |  |
| 35-SGW21-7' | <0.06           | 0.003       |      |   |  |
| 35-SGW22-7' | <0.06           | 0.003       |      |   |  |
| 35-SGW7-6'  | <2              | <0.0004     |      |   |  |
| 35-SGW6-9'  | <35             | 0.006       |      |   |  |
| 35-SGW5-8'  | <0.06           | 0.008       |      |   |  |
| 35-SGW1-7'  | <0.06           | 0.0009      |      | , |  |
| 35-SGW2-7'  | <0.06           | < 0.0004    |      |   |  |
| 35-SGW3-7'  | <0.06           | 0.0009      |      |   |  |
|             |                 |             |      |   |  |
| 35-SGW4-8'  | <0.06           | < 0.0004    |      |   |  |
| 35-SGW8-8'  | <0.06           | < 0.0004    |      |   |  |
| 35-SGW9-8'  | <0.06           | < 0.0004    | 1 at |   |  |
| 35-SGW10-8' | <0.96           | <0.0004     |      |   |  |
| 35-SGW11-8' | <0.06           | < 0.0004    |      |   |  |
|             |                 |             |      |   |  |
| 35-SGW12-8' | <0.06           | <0.0004     |      |   |  |
| 35-SGW45-8' | 0.8             | 0.5         |      |   |  |
| 35-SGW43-8' | <0.06           | 0.01        |      |   |  |
| 35-SGW35-8' | <0.06           | < 0.0004    |      |   |  |

Analyzed by: D. Bonner Proofed by: M. Stiles

#### TRACER RESEARCH CORPORATION - ANALYTICAL RESULTS

BAKER ENVIRONMENTAL/ CAMP GEIGER AREA FUEL FARM/ JACKSONVILLE, NORTH CAROLINA/ 124-0169-S 04/16/94

| SAMPLE          | BENZENE<br>µg/L | TCE<br>µg/L          |      |           |      |      |
|-----------------|-----------------|----------------------|------|-----------|------|------|
|                 | -0.01           | -0.00004             | <br> | <br>      | <br> | <br> |
| AIR             | <0.01           | <0.00004             |      |           |      |      |
| 35-\$G56-6'     | <370            | <0.00009             |      |           |      | ,    |
| 35-SG58-4'      | 0.06            | 0.0004               |      |           |      |      |
| 35-SG57-6'      | <0.01           | 0.0004               |      |           |      |      |
| 35-SG59-4'      | <0.01           | <0.00009             |      |           |      |      |
| 35-SG60-4'      | <0.01           | 0.01                 |      |           |      |      |
| 35-SG61-4'      | 2               | 0.0009               |      |           |      |      |
| 35-SG63-4'      | < 0.03          | <0.0009              |      |           |      |      |
| 35-SG64-5'      | <0.03           | <0.00009             |      |           |      |      |
| 35-SG65-5'      | 0.04            | < 0.00009            |      |           |      |      |
|                 | <0.04           | <0.00009             |      |           |      |      |
| 35-SG66-5'      | <0.01           | <0.0009              |      |           |      |      |
| 35-SG62-6'      | <0.01           | <0.00009             |      | * <b></b> |      |      |
| 35-SG50-4'      | <0.01           | <0.00009             |      |           |      |      |
| 35-SG34-2'      | <0.01           | <0.00009             |      |           |      |      |
| AIR             | <0.01           | <0.00004             |      |           |      |      |
| 35-SG67-4'      | <0.01           | <0.0004              |      |           |      |      |
| 35-SG68-4'      | <0.01           | 0.002                |      |           |      |      |
| 35-SG69-4'      | 0.03            | 0.2                  |      |           |      |      |
| 35-SG70-4'      | 0.3             | 0.1                  |      |           |      |      |
| 35-SG71-4'      | <0.01           | <0.00009             |      |           |      |      |
| 35-SG72-4'      | <0.01           | <0.00009             |      |           |      |      |
| 35-SG73-4'      | < 0.01          | <0.00009<br><0.00009 |      |           |      |      |
| +               | <0.01           | <0.000 <i>9</i>      |      |           |      |      |
| AIR             | <0.01           | <0.00004             |      |           |      |      |
|                 | _               |                      |      |           |      |      |
| Analyzed by: D. | Bonner          |                      |      |           |      |      |

Proofed by: M. Stivus

### TRACER RESEARCH CORPORATION - ANALYTICAL RESULTS BAKER ENVIRONMENTAL/ CAMP GEIGER AREA FUEL FARM' JACKSONVILLE, NORTH CAROLINA/ 124-0169-S 04/16/94

|                      | BENZENE | TCE      |      |           |  |
|----------------------|---------|----------|------|-----------|--|
| SAMPLE               | μg/L    | µg/L     | <br> |           |  |
| 35-SGW56-10          | 16000   | 0.004    |      |           |  |
| 35-SGW58-6'          | <0.06   | 0.0008   |      |           |  |
| 35-SGW57-8'          | <0.06   | < 0.0004 |      |           |  |
| 35-SGW60-6'          | <0,06   | 0.0006   |      |           |  |
| 35-SGW59 <b>-6'</b>  | <0.06   | <0.002   |      |           |  |
| 35-SGW61-6'          | <0.06   | <0.0004  |      |           |  |
| 35-SGW63-7'          | <0.06   | <0.0004  |      |           |  |
| 35-SGW64-7'          | <0.06   | <0.0004  |      |           |  |
| 35-\$GW6 <b>5-7'</b> | 0.2     | <0.0004  |      |           |  |
| 35-SGW66-7'          | <0.06   | 0.0008   |      |           |  |
| 35-SGW62-8'          | <0.06   | <0.0004  |      |           |  |
| 35-\$GW55-1'         | 7       | 0.05     |      |           |  |
| 35-SGW54-1'          | <0.1    | 2        |      |           |  |
| 35-SGW52-1'          | <0.1    | 0.008    |      |           |  |
| 35-\$GW53-1'         | <0.1    | 0.3      |      |           |  |
| 35-SGW50-6'          | 0.2     | <0.0004  |      |           |  |
| 35-SGW51-3'          | 0.1     | <0.0004  |      |           |  |
| 35-SGW67-6'          | <0.06   | <0.0004  |      |           |  |
| 35-SGW68-6'          | <0.06   | <0.0004  |      |           |  |
| 35-SGW69-6'          | <0.06   | 160      |      | 5-14<br>1 |  |
| 35-SGW70-7'          | <0.06   | 1        |      |           |  |
| 35-SGW71-9'          | 0.1     | 0.9      |      |           |  |
| 35-SGW72-7'          | <0.06   | 0.04     |      |           |  |
| 35-SGW73-7'          | <0.06   | <0.0004  |      |           |  |

Analyzed by: D. Bonner Proofed by: M. Stills

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Tracer Research Corporation appreciates the opportunity of being of service to your organization. Because we are constantly striving to improve our service to you, we welcome any comments or suggestions you may have about how we can be more responsive to the needs of your organization. If you have any questions about the field work, analytical results, or this report, please give Mike Gervasini a call at (908) 274-1888.

APPENDIX H RI/FS TEST BORING AND WELL CONSTRUCTION RECORDS

# TEST BORING LOG AND WELL CONSTRUCTION LEGEND

| _ |                                                                           | DESCRIPTIONS                                                                                                     | · · · · · · · · · · · · · · · · · · ·                             | LLSYMBO                                |                          |                          |                                                                             |
|---|---------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|----------------------------------------|--------------------------|--------------------------|-----------------------------------------------------------------------------|
|   | GRAIN SIZ                                                                 | E IDENTIFICATION                                                                                                 |                                                                   |                                        | ··                       |                          |                                                                             |
| ( | NAME<br>Boulder<br>Cobbles<br>Coarse Gravel<br>Fine Gravel<br>Coarse Sand | <u>SIZE LIMITS</u><br>12" OR MORE<br>3" - 12"<br>3/4" - 3"<br>4.76 mm (#4) - 3/4"<br>2 mm (#10) - 4.76 mm (#4)   |                                                                   | Cement<br>(#1)<br>Cement/<br>Bentonite |                          |                          | Rubber<br>Packer<br>(#4)                                                    |
| : | Medium Sand<br>Fine Sand<br>Silt<br>Clay                                  | 0.42 mm (#40) - 2 mm (#10)<br>0.074 mm (#200)-0.42 mm<br>(#40)<br>0.002 mm-0.074 mm (#200)<br>Less than 0.002 mm | Backfill<br>Key                                                   | (#0)<br>Bentonite<br>(#2)              |                          |                          | Sand<br>(#5)                                                                |
|   | RELA <sup>4</sup>                                                         | TIVE DENSITY                                                                                                     |                                                                   |                                        |                          |                          |                                                                             |
| - | TERM                                                                      | <u>COHESIVE SOIL</u><br>SPT (Blows/ft)                                                                           |                                                                   | Drill<br>Cuttings                      | Ш                        |                          | Gravel                                                                      |
|   | Very Loose<br>Loose<br>Medium Dense<br>Dense<br>Very Dense                | BELOW 4<br>4-10<br>10-30<br>30-50<br>OVER 50                                                                     |                                                                   | (#3)                                   |                          |                          | (#6)                                                                        |
|   | COH<br>TERM                                                               | ESIVE SOILS<br>SPT (Blows/ft)                                                                                    |                                                                   |                                        |                          |                          |                                                                             |
|   | Very Soft<br>Soft<br>Medium Stiff<br>Stiff<br>Very Stiff<br>Hard          | BELOW 2<br>2-4<br>4-8<br>8-15<br>15-30<br>OVER 30                                                                |                                                                   | Well<br>Key                            |                          |                          | Solid<br>Casing<br>(#7)                                                     |
|   | MOISTURE                                                                  | DESCRIPTIVE<br>TERMS                                                                                             |                                                                   |                                        |                          | 1111                     | Slotted                                                                     |
|   | Dry<br>Damp<br>Moist<br>Wet                                               | Trace         0-10%           Little         10-20%           Some         20-35%           And         35-50%   |                                                                   |                                        |                          |                          | Screen<br>(#8)                                                              |
|   | <u>C(</u>                                                                 | DNTACTS:                                                                                                         |                                                                   |                                        |                          |                          |                                                                             |
|   | = DEFINI'                                                                 | FE                                                                                                               |                                                                   |                                        |                          |                          |                                                                             |
|   | = INDEF                                                                   | INITE                                                                                                            | SAMPLE TYPE                                                       | •                                      | ABBRE                    |                          |                                                                             |
|   | ••••••                                                                    | = GRADATIONAL                                                                                                    | S=Split Spoon<br>T=Shelby Tube<br>R=Air Rotary<br>D=Denison       | NI<br>-PI<br>PI                        | L = At                   | n Pla<br>low tl<br>the P | stic<br>he Plastic Limit<br>Plastic Limit                                   |
|   |                                                                           |                                                                                                                  | A=Auger<br>W=Wash (Roller<br>C=Core<br>P=Piston<br>N=No Sample Ta | Bit) +L<br>SP                          | $L = Ah$ $T = State{Te}$ | ove ti<br>andar<br>st    | he Plastic Limit<br>he Liquid Limit<br>rd Penetration<br>uality Designation |
| l |                                                                           |                                                                                                                  |                                                                   |                                        | J- NO                    |                          | Lanty Designation                                                           |



# **TEST BORING AND WELL CONSTRUCTION RECORD**

PROJECT: Site 35 - Camp Geiger Area Fuel Farm

S.O. NO.: <u>62470-232</u> COORDINATES: EAST: <u>2464369.4100</u> ELEVATION: SURFACE: <u>18.0</u> BORING NO.: <u>35GWD-1</u> NORTH: <u>363751.2360</u> TOP OF STEEL CASING: <u>19.95</u>

|                                         | SPLIT<br>SPOON                     | CASING            | AUGERS                | BIT<br>SIZE         | DATE                                         | PROGRESS<br>(FT)                      | WEATHE                | WATER<br>DEPTH<br>R (FT) | TIME                    |
|-----------------------------------------|------------------------------------|-------------------|-----------------------|---------------------|----------------------------------------------|---------------------------------------|-----------------------|--------------------------|-------------------------|
| SIZE (DIAM.)                            | 2"                                 |                   |                       | 8"                  | 4-15-94                                      | 46.0                                  | OVERCAST,             | COOL                     |                         |
| LENGTH                                  | 2'                                 |                   |                       |                     | 4.25-94                                      | 7.0'                                  | HOT, HUMID,<br>BREEZY |                          |                         |
| ГҮРЕ                                    | STD.                               |                   |                       | ROLLER              | 4-26-94                                      | 14.0'                                 | HOT, BREEZY<br>(85+)  |                          | · · · ·                 |
| AMMER WT.                               | 140#                               |                   |                       |                     | <b>·</b>                                     |                                       |                       |                          | 1                       |
| ALL                                     | 30"                                |                   |                       |                     |                                              |                                       | <u> </u>              |                          |                         |
|                                         |                                    |                   | · ·                   |                     | -                                            |                                       |                       |                          | -                       |
| REMARKS: AU                             | WELL                               | CONSTR            | UCTION                | BETAIL              | S ALE                                        | BASED 01                              | V FIELD               | MEASUR                   | EMENT                   |
| S = Split Sp<br>T = Shelby              | SAMPLE TYPE<br>con A<br>Tube W     | = Auger<br>= Wash | V<br>INFO             | ELL<br>RMATION      | DIAM                                         | ТҮР                                   | E                     | TOP<br>DEPTH<br>(FT)     | BOTTON<br>DEPTH<br>(FT) |
| R= Air RotaryC= CoreD= DenisonP= Piston |                                    | Riser 1           |                       | 2"                  | Schedule 40, PV(                             |                                       | +1,95                 | - 57.0                   |                         |
|                                         | N = No Samp                        |                   | Screer                | 1                   | 2"                                           | .10 Slot, Schedul                     | e 40 PVC              | - 57.0                   | - 61.0                  |
| Samp<br>Depth Type<br>(Ft.) and<br>No.  | Ft. or                             | or                |                       | Visual [            | Descriptio                                   | 'n                                    | Insta                 | /ell<br>llation<br>tail  | Elevatio                |
| 1                                       | 1.9<br>2.0<br>95%                  | 2                 | damp<br>13            | »,                  |                                              | trace roots,<br>edium dense,          |                       | 0                        | -<br><br>17.1           |
| 3 - S-2                                 | 1 1 4                              |                   | SILTY                 | SAND, find          | inea, son<br>lium dens<br>grained<br>, MOIST | ne silet,<br>Se, damp<br>, dark brown |                       |                          | -<br>- 15.0             |
| 35-<br>GWDS-                            |                                    | 0                 | NOTE                  | Sample              | Collected                                    | from 4-6:                             |                       |                          |                         |
| 5 – 03 S-3                              |                                    |                   |                       |                     |                                              |                                       |                       | 1                        |                         |
| 6<br>7 5-4                              | 2.0                                |                   | 7.0                   | Meanum<br>Sile. Mcd | grained,                                     | well gradea                           | -<br>-<br>-<br>,<br>* |                          |                         |
| 6                                       | 2.0<br>2.0<br>100% 8<br>1.0<br>1.0 | 3                 | 7.0<br>SAND,<br>LIHLL |                     | arained, j                                   | well graded<br>se, wet.               |                       |                          | - II.o<br>              |

Baker

# **TEST BORING AND WELL CONSTRUCTION RECORD**

Baker Environmental, Inc

PROJECT: Site 35 - Camp Geiger Area Fuel Farm

S.O. NO.: 62470-232

BORING NO .: 35GWD-1

| T =<br>R =             | Split Spoo<br>Shelby Tu<br>Air Rotar<br>Denison | be                               | A =<br>W =<br>C =<br>P =    | Auger<br>Wash<br>Core<br>Piston      | <u>DEFINITIONS</u><br>SPT = Standard Penetration Test (ASTM D-1586) (Blows/0.5')<br>RQD = Rock Quality Designation (%)<br>Lab. Class. = USCS (ASTM D-2487) or AASHTO (ASTM D-3282)<br>Lab. Moist. = Moisture Content (ASTM D-2216) Dry Weight Basis |                             |                |  |  |  |  |
|------------------------|-------------------------------------------------|----------------------------------|-----------------------------|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|----------------|--|--|--|--|
| Depth<br>(Ft.)         | Sample<br>Type<br>and<br>No.                    | Samp.<br>Rec.<br>(Ft.<br>&<br>%) | SPT<br>or<br>RQD            | Lab.<br>Class.<br>or<br>Pen.<br>Rate | Visual Description                                                                                                                                                                                                                                  | Well Installation<br>Detail | Elevation      |  |  |  |  |
| -<br>11-<br>-<br>12    | 5-6                                             | 1.0<br>2.0<br>50%                | 17081J                      |                                      | Continued from Sheet 1<br>SAND, Medium grained, weil graded,<br>trace gravel, trace shell fragment<br>trace sile, light gray, medium dense<br>12.0 wet 12.0                                                                                         | ,                           | 6.0            |  |  |  |  |
| -<br>13<br>-<br>14     | 5-7                                             | 1.0<br>2.0<br>50%                | 444 M                       |                                      | <br>SAND, Coarse grained, well grudedy<br>light gray, Loose, wet<br>13.3<br>SAND, fine grained, poorly graded,<br>trace sult, dark gray, Loose to very<br>Loose, wet                                                                                |                             | 4.7            |  |  |  |  |
| -<br>15<br>-<br>16     | 5-8                                             | 1 <u>1</u><br>2,0<br>55%         | <br> <br>2                  |                                      | NOTE: 2" SILT Stringer, trace sand at                                                                                                                                                                                                               |                             |                |  |  |  |  |
| -<br>17_<br>-<br>18    | 5-9                                             | 1.0<br>2.0<br>50%                | 22-2                        |                                      | Note: light brown                                                                                                                                                                                                                                   |                             | ° I            |  |  |  |  |
| -<br>19_<br>-<br>20    | 5-10                                            | 1.4<br>2.0<br>70%                | 4<br>5<br>3<br>4            |                                      | SAND and GRAVEL, Coarse grained,<br>light gray, Loose, Let                                                                                                                                                                                          | ייש                         |                |  |  |  |  |
| 21                     | 5-11                                            | 10<br>20<br>50%                  | 1<br>1<br>1<br>WOH          |                                      | 20.5<br>SAND, fine grained, poorly graded,<br>trace sile, derk grey, loose to<br>Very Loose, wet                                                                                                                                                    |                             | - 2.5          |  |  |  |  |
| 23                     | S-12                                            | 1.5<br>2.0<br>75%                | 2<br>3<br>18<br>34          |                                      | 23.0 23.0<br>GRAVEL, trace sand, light gray,<br>23.5 medium dense, wet. 23.5                                                                                                                                                                        |                             | - 5.0<br>- 5.5 |  |  |  |  |
| 24 —                   | S-13                                            | 1.3<br>2.0<br>65%                | 29<br>40<br>29<br><b>30</b> |                                      | SAND, fine grained, poorly graded,<br>trace gravel, trace sile, light<br>gray, very dense, wet, concided<br>with calcium carbonate                                                                                                                  |                             |                |  |  |  |  |
| 27                     | 5-14                                            | 1.2<br>2.0<br>65%                | 5<br>15<br>21               |                                      | <br>Note: Partially Cemented -<br>Note: LOST Circulation of Drilling _<br>funds                                                                                                                                                                     | o                           |                |  |  |  |  |
| 28<br><br>29<br><br>30 | 5-15                                            | 2.0<br>7.0<br>100%               | 17<br>25<br>A1<br>43        |                                      | -                                                                                                                                                                                                                                                   |                             |                |  |  |  |  |

DRILLING CO.: Hardin Huber Incorporated DRILLER: Brian Van Doren

BAKER REP.: James Culp

BORING NO .: 356WD-1

Baker Baker Environmental, 🔤

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# **TEST BORING AND WELL CONSTRUCTION RECORD**

PROJECT: SITE 35 - CAMP GEIGER AREA FUEL FARM S.O. NO.: 62470-232 BORING NO.: 356WD-1

| T =<br>R =                 | Split Spoo<br>Shelby Tu<br>Air Rotar<br>Denison | ibe                              | A =<br>W =<br>C =<br>P = | Auger<br>Wash<br>Core<br>Piston      |              | DEFINITIONS<br>SPT = Standard Penetration Test (ASTM D-1586) (Blows/0.5')<br>RQD = Rock Quality Designation (%)<br>Lab. Class. = USCS (ASTM D-2487) or AASHTO (ASTM D-3282)<br>Lab. Moist. = Moisture Content (ASTM D-2216) Dry Weight Basis<br>PID = Photoionization Detector |                |          |   |            |                  |           |
|----------------------------|-------------------------------------------------|----------------------------------|--------------------------|--------------------------------------|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|----------|---|------------|------------------|-----------|
| Depth<br>(Ft.)             | Sample<br>Type<br>and<br>No.                    | Samp.<br>Rec.<br>(Ft.<br>&<br>%) |                          | Lab.<br>Class.<br>or<br>Pen.<br>Rate | PID<br>(ppm) | Visual Description                                                                                                                                                                                                                                                             |                | We       |   | nst<br>Dei | allation<br>tail | Elevation |
| 31                         | 5-16                                            | 2.0                              | 1953                     |                                      |              | Continued from Sheet 2<br><u>SAND</u> , fine grained, poorly graded_<br>trace gravel, trace silt, light gray,<br>dense. Wet, Partially cemented<br>with calcium carbonate.                                                                                                     |                |          |   |            | -                |           |
| 33                         | 5-17                                            | 2.0                              | 20<br>22<br>20<br>21     |                                      |              | with calcium carbonate.                                                                                                                                                                                                                                                        |                |          |   | 0<br>10    | -                |           |
| 35<br>-                    | 5-18                                            | 1.0 00%                          | 21<br>30<br>22<br>39     |                                      |              | Note: Verydense.                                                                                                                                                                                                                                                               |                |          |   | o<br>tr    | -                |           |
| 36                         | 5-19                                            | 1.0                              | 9552                     |                                      |              | NOTE: dense                                                                                                                                                                                                                                                                    |                | ,<br>#   |   |            | -<br>-<br>-      |           |
| 38<br>-<br>39              | 5-20                                            | 2.0                              | 9<br>11<br>12            |                                      |              | Note: medium dense                                                                                                                                                                                                                                                             |                |          |   |            | -<br>-<br>-      |           |
| 40                         | 5-21                                            | 1:0<br>2:0<br>50%                | 7<br>10<br>10<br>20      |                                      |              |                                                                                                                                                                                                                                                                                |                | \$<br>\$ |   |            | -<br>-<br>       |           |
| 42 <u>-</u><br>43 <u>-</u> | 5-22                                            | 1.0                              | 20<br>21<br>25<br>26     |                                      |              | Note: dense -                                                                                                                                                                                                                                                                  |                |          |   |            | -<br>-<br>-      | - 25.7    |
| 44<br>45                   | 5-23                                            | 2.0 2.0                          | 12<br>15<br>17           |                                      |              | 43.7<br>SAND, fine grainea, little clay, trace-<br>Shell I ragments, light gray,<br>yte dense, wet<br>SAND, fine grained, some sile, trace-<br>Clay, trace to little shell fragments,<br>greenish gray, dense, wet<br>460                                                      | 242            | _        |   |            |                  | -25.7     |
| 46<br>47                   | A.N.                                            |                                  |                          |                                      |              | END OF LOG FOR 4-15-94, SET 6" CASIN                                                                                                                                                                                                                                           | 1              |          |   | ₽2<br>#2   | -                | - 28      |
| 48 -<br>49 -               | ABCAEN                                          | 1.75<br>2.0<br>87.5%             | N/A                      |                                      |              | NOTE: PUSHED SHELDY TUBE FROM 47-99."<br>SAMPLE Collected for grain Size, -<br>permeability, Alterburg Limits, ctc.                                                                                                                                                            | - #<br>- <br>- | 2        | • |            | -                |           |
| J0                         | S-25                                            | 2.0                              | 65                       |                                      |              | SAND, fine grained, some sice, trace shell<br>fragments, trace clay, greenish gray,<br>medium dense, moist Match to Sheet _                                                                                                                                                    | -              |          |   |            |                  |           |

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PROJECT: SHE 35- CAMP GEIGER AREA FUEL FARM S.O. NO.: 62470-232 BORING

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BORING NO .: 356WD -1

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| T =<br>R =           | Split Spoo<br>Shelby Tu<br>Air Rotar<br>Denison | ıbe                              | A =<br>W =<br>C =<br>P = | Auger<br>Wash<br>Core<br>Piston      |              | DEFINITIONS<br>SPT = Standard Penetration Test (<br>RQD = Rock Quality Designation (<br>Lab. Class. = USCS (ASTM D-2487)<br>Lab. Moist. = Moisture Content (A<br>PID = Photoionization Detector        | %)<br>or A/ | ASHT       | D (AST | M D-3282)         |                            |
|----------------------|-------------------------------------------------|----------------------------------|--------------------------|--------------------------------------|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|------------|--------|-------------------|----------------------------|
| Depth<br>(Ft.)       | Sample<br>Type<br>and<br>No.                    | Samp.<br>Rec.<br>(Ft.<br>&<br>%) | SPT<br>or<br>RQD         | Lab.<br>Class.<br>or<br>Pen.<br>Rate | PID<br>(ppm) | Visual Description                                                                                                                                                                                     | V           | Vell       |        | tallation<br>tail | Elevation                  |
| 51                   | S-25                                            | 100%                             | 69                       |                                      |              | Continued from Sheet 3 _                                                                                                                                                                               |             |            |        |                   | -                          |
| 52<br>53             | S-26                                            | 1.4<br>2.0<br>70%                | 66 6 M                   |                                      |              |                                                                                                                                                                                                        |             |            | -      | -                 |                            |
| -<br>-<br>-          | \$-27                                           | 2.0<br>2.0<br>100%               | 59240                    |                                      |              | END OF BORING FOR 4-25-94<br>SAND, fine grained, some sile, trace<br>Shell fragments, trace Clay, grechist<br>grav. dense, moist                                                                       | #2<br>3     | #          | ⊭2     | -                 | - 35.0                     |
| 55<br>56             |                                                 |                                  |                          |                                      |              | SAND, fine to measuring vained, lettle<br>Shell + raque nts, trace silt, Gray,<br>Very dense, wet.                                                                                                     |             | 1          |        | -                 | - 37.9<br>- 37.0<br>-      |
| 7                    |                                                 |                                  |                          |                                      |              |                                                                                                                                                                                                        | #5          | #8         | u≉     | -                 | - 39.0<br>-                |
| 9_<br>0_<br>1_<br>1_ | 5-28                                            | 1.6<br>2.0<br>80%                | 25<br>30<br>48<br>503    |                                      |              | 61.3 61.3-<br>CLAYEV SILT, SOME She il fragments                                                                                                                                                       |             | <u>р</u> и |        | -                 | - 43.0<br>- 43.3<br>- 43.8 |
| 2<br>3<br>4          |                                                 |                                  |                          |                                      |              | CLAYEV SILT, SOME Shell fragments<br>trace sand, greenish gray,<br>Usery stiff, wet U.8<br>SAND AND SILT, frace clay, greenish<br>gray, very stiff, wet, partially<br>CLAYEV SILT, Some Clay, greenish |             | #5         |        | -                 | -44.0                      |
| 5<br>6<br>7          | 5-29                                            | 2.0<br>2.0<br>100%               | 10<br>13<br>8<br>50/.3   |                                      |              | 67.0 67.0                                                                                                                                                                                              | #5          |            | #<br>5 | -                 |                            |
| /<br>8<br>9          |                                                 |                                  |                          |                                      |              | END OF BOZING AT 67.0, SET<br>WELL AT 62.0                                                                                                                                                             |             |            |        | -                 | - 49.0<br>-                |
| 0                    |                                                 |                                  |                          |                                      |              | <br>Match to Sheet                                                                                                                                                                                     |             |            |        | -                 |                            |
| DRILLING<br>DRILLER: | CO.:<br>Bria                                    | HARD<br>n Va                     | n Der                    | lubee.<br>En                         | Inco         | prporated BAKER REP.: James<br>BORING NO.: 3560                                                                                                                                                        |             | LP.        |        | SHEE              | T <u>4</u> OF <u>4</u>     |



PROJECT: <u>Site 35 - Camp Geiger Area Fuel Farm</u> S.O. NO.: <u>62470-232</u>BO

S.O. NO.: <u>62470-232</u> COORDINATES: EAST: <u>2465479.1200</u> ELEVATION: SURFACE: <u>17.5</u> BORING NO.: <u>35GWD-2</u> NORTH: <u>3634-79, 0820</u> TOP OF STEEL CASING: <u>20.10</u>

|                                |                                    | SPLIT<br>SPOO                  |                  | CASING                               | AU   | GERS    | BIT<br>SIZE    | DATE                              | PROGRESS<br>(FT) | WEATHE           | DE                        | TER<br>PTH<br>T) | TIME                    |
|--------------------------------|------------------------------------|--------------------------------|------------------|--------------------------------------|------|---------|----------------|-----------------------------------|------------------|------------------|---------------------------|------------------|-------------------------|
| IZE (DIAN                      | 1.)                                | 2"                             |                  |                                      |      |         | 8″             | 4-16-94                           | 46.0             | OVERCAST, Y      | I UGGY                    |                  |                         |
| ENGTH                          |                                    | 2'                             |                  |                                      |      |         |                | 4-20-94                           | + 17.0           | Cook, Sunn       | 4                         |                  |                         |
| YPE                            |                                    | STD                            |                  |                                      |      |         | ROLLER         |                                   |                  |                  |                           |                  | -                       |
| AMMER                          | WT.                                | 140#                           | ŧ                |                                      |      |         |                |                                   |                  |                  |                           |                  |                         |
| ALL                            |                                    | 30"                            |                  |                                      |      |         |                |                                   |                  | -                |                           |                  |                         |
| TICK UP                        |                                    |                                |                  |                                      |      |         |                |                                   |                  |                  |                           |                  |                         |
| REMARKS                        | AU                                 | . WE                           | u                | CONSTR                               | EVCT | TON D   | ETAILS         | ARE BI                            | ASED ON FR       | IELD MEA         | SUREM                     | EN1              | 'র                      |
|                                | <u>SA</u><br>plit Spoo<br>helby Tu |                                | A =              | Auger<br>Wash                        |      |         | ELL<br>RMATION | DIAM                              | TY               | PE               | TOP<br>DEPTH<br>(FT)      | 1                | BOTTOI<br>DEPTI<br>(FT) |
| R = A                          | kir Rotar<br>Denison               |                                | C =              | Core<br>Piston                       |      | Riser I | ripe           | 2"                                | Schedule 40, PV  | Ċ                | +2.6                      |                  | - 57.1                  |
| <b>D</b> = L                   |                                    | = No Sa                        |                  | Fillon                               |      | Screen  |                | 2"                                | .10 Slot, Schedu | le 40 PVC        | -57.1                     |                  | -61.0                   |
| Depth<br>(Ft.)                 | Sample<br>Type<br>and<br>No.       | Samp.<br>Rec.<br>Ft.<br>&<br>% | SPT<br>or<br>RQD | Lab.<br>Class.<br>or<br>Pen.<br>Rate | -    |         | Visual [       | Descriptio                        | n                | Insta            | /ell<br>Illation<br>etail |                  | Elevati                 |
| -<br>1<br>2                    | 5-1                                | 1.5                            | 4500             |                                      |      | trace   | SILT. br       | uned, tra<br>own to l<br>im dense | ight             |                  | e<br>t                    | -                | -                       |
| 3                              | 5-2                                | 1.1<br>2.0<br>55%              | 4569             |                                      |      | -       |                |                                   |                  |                  | 6"stee                    | i.               |                         |
| - 35-<br>5 - Gwid<br>- 03<br>6 | s-3                                | 1.1<br>7.0<br>55%              | 7777             |                                      |      |         | Monot          | watwater                          | - encountere     |                  | Casin                     | -<br>5           | - 11.5                  |
| 7                              | 5-4                                | 1.3<br>5.0<br>65%              | 66157            |                                      |      | NOTE    | at 6.0 fee     | ŧ                                 | - encountere     | - <del>   </del> |                           |                  | -                       |
| 8 <u></u><br>-<br>9 <u>-</u>   | 5-5                                | 1.5<br>2.0<br>75%              | 5538             |                                      |      |         |                |                                   |                  | - 0<br>- *       |                           |                  | 4                       |
| 10                             |                                    | 11/0                           | 10               |                                      |      |         |                |                                   | atch to Sheet 2  |                  |                           |                  |                         |

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PROJECT: Site 35 - Camp Geiger Area Fuel Farm S.O. NO.: 62470-232 BOR

BORING NO .: 356WD-2

| T =<br>R =           | Split Spoo<br>Sheiby Tu<br>Air Rotar<br>Denison | ıbe                              | A =<br>W =<br>C =<br>P = | Auger<br>Wash<br>Core<br>Piston      | <u>DEFINITIONS</u><br>SPT = Standard Penetration Test (/<br>RQD = Rock Quality Designation (<br>Lab. Class. = USCS (ASTM D-2487)<br>Lab. Moist. = Moisture Content (A | %)<br>or A | ASHT | O (AS | TM D-32          | 82)         |               |
|----------------------|-------------------------------------------------|----------------------------------|--------------------------|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|------|-------|------------------|-------------|---------------|
| Depth<br>(Ft.)       | Sample<br>Type<br>and<br>No.                    | Samp.<br>Rec.<br>(Ft.<br>&<br>%) | SPT<br>or<br>RQD         | Lab.<br>Class.<br>or<br>Pen.<br>Rate | Visual Description                                                                                                                                                    |            | Well |       | stallat<br>etail | ion         | Elevation     |
| -<br>11<br>12        | 5-6                                             | 0.9<br>2.0<br>45%                | 5 4 5 5                  |                                      | Continued from Sheet 1<br>11.0<br>SAND, fine grained, trace sile,<br>gray, Loose, wet                                                                                 |            |      |       |                  | -<br>-<br>- | 6.5           |
| -<br>13_<br>-<br>14  | 5-7                                             | 1.8<br>2.0<br>90%                | 1,23                     |                                      | <br>12.6<br>JAND AND SILT, finegrained, brown -<br>(with grey streaks), Loose, Wet<br>14.0<br>14.0                                                                    |            |      |       |                  | -<br>-<br>- | 4.4           |
| 15<br>16             | 5-8                                             | 1.8<br>2.0<br>90%                | 3223)                    |                                      | <br>SAND, finegrained, little sill, trace<br>bravel, reddish brown, Loose,<br>Wet.                                                                                    |            |      | ٩     |                  | -<br><br>   |               |
| -<br>17_<br>-<br>18_ |                                                 |                                  |                          |                                      | -<br>-<br>-                                                                                                                                                           |            |      | 3     | 6"5              | -<br>tecl - |               |
| 19<br>20             |                                                 |                                  | 7                        |                                      | <br>-                                                                                                                                                                 |            | *    |       | oute<br>Cas      | teel -      | •             |
| 21<br>22             | 5-9                                             | 1.4<br>7.0<br>70%                | mq 515                   |                                      | <br>21.0<br>SAND, fine grained, trace silt,<br>greenish brown, Loose, wet,<br>hydrocarbon odors.                                                                      |            |      |       |                  | -<br><br>-  | - <b>3</b> .5 |
| 23<br>24             |                                                 |                                  |                          |                                      | <u>23</u> <u>5</u> <u>23</u> <u>5</u> <u>-</u> <u>23</u> <u>5</u> <u>-</u>           |            | 6    |       |                  | -           | - 4.0         |
| 25<br>26             | 5-10                                            | .85<br>2.0<br>42.5%              | 2335                     |                                      | <br>SAND, fine grained, little silt, -<br>Some shell fragments, gray to<br>grayish brown, loose, wet, hydro-<br>Bartially Cemented, wet, hydro-<br>Carbon odors       |            |      |       |                  | -           |               |
| 27<br>28             |                                                 | 10.34                            |                          |                                      | <br>                                                                                                                                                                  | 04         |      |       |                  | -<br>-      | -             |
| 29<br>_<br>30        |                                                 |                                  |                          |                                      |                                                                                                                                                                       |            |      |       |                  | -<br>-<br>- |               |

DRILLING CO.: <u>Hardin Huber Incorporated</u> DRILLER: <u>Brian Van Doren</u> BAKER REP.: James Culp BORING NO.: <u>356wD-2</u>

SHEET 2 OF 4



# **TEST BORING AND WELL CONSTRUCTION RECORD**

PROJECT: SITE 35- CAMP GEIGER AREA FUEL FARM S.O. NO.: 62410-232 BORING NO.: 35400-2

| T =                     | Split Spoo<br>Shelby Tu<br>Air Rotar<br>Denison | ibe                              | A =<br>W =<br>C =<br>P = | Auger<br>Wash<br>Core<br>Piston      |              | DEFINITIONS<br>SPT = Standard Penetration Test (/<br>RQD = Rock Quality Designation ('<br>Lab. Class. = USCS (ASTM D-2487)<br>Lab. Moist. = Moisture Content (A<br>PID = Photoionization Detector | %)<br>or AASHTO (ASTM D-3282)         |
|-------------------------|-------------------------------------------------|----------------------------------|--------------------------|--------------------------------------|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|
| Depth<br>(Ft.)          | Sample<br>Type<br>and<br>No.                    | Samp.<br>Rec.<br>(Ft.<br>&<br>%) | SPT<br>or<br>RQD         | Lab.<br>Class.<br>or<br>Pen.<br>Rate | PID<br>(ppm) | Visual Description                                                                                                                                                                                | Well Installation<br>Detail Elevation |
| 31 -<br>-<br>32 -       | S-11                                            | 1.6<br>2.0<br>80%                | ሪጵያወ                     |                                      |              | Continued from Sheet 3<br><u>SAND</u> , fine grained, well graded,<br>Some Shell fragments, trace sile,<br>gray, very dense, wee, partially                                                       |                                       |
| -<br>33<br>-<br>34<br>- | AN                                              |                                  |                          |                                      |              | Comented.                                                                                                                                                                                         |                                       |
| 35<br>36                | 5-12                                            | 1.4<br>2.0<br>70%                | 4<br>17<br>22<br>25      |                                      |              |                                                                                                                                                                                                   | o<br>d<br>b b"Steel-                  |
| -<br>38<br>39           | ÀN                                              |                                  |                          |                                      |              |                                                                                                                                                                                                   | in a start                            |
| 40<br>41                | S-13                                            | 2.0<br>2.0<br>100%               | 9<br>15<br>15<br>17      |                                      |              |                                                                                                                                                                                                   |                                       |
| 43 _<br>44              | S-14                                            | 2.0<br>2.0<br>100%               | 21<br>25<br>27<br>29     | -                                    |              | NOTE: Little sict, trace clay -<br>43.9 43.9                                                                                                                                                      |                                       |
| 45                      | 5-15                                            | 1.8<br>2.0<br>90%                | 17<br>15<br>14<br>16     |                                      |              | SAND, fine grained, Some Silt, -<br>trace Shell Fragments, trace -<br>Clay, greenistigray, medium -<br>dense, wet.<br>260 46.0                                                                    |                                       |
| 47                      | S-16                                            | 1.9<br>2.0<br>95%                |                          |                                      |              | END OF BOEING FOR 4-16-94<br>SET 6" CASING<br>                                                                                                                                                    |                                       |
| 49_                     | 5-17                                            | 2.0                              | 3569                     |                                      |              | -<br>                                                                                                                                                                                             |                                       |

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PROJECT: SITE 35 - LAMP GEIGER AREA FUEL FARM S.O. NO.: 62470-232 BORING NO.: 35600-2

| T = :<br>R = ;                  | Split Spoo<br>Shelby Tu<br>Air Rotar<br>Denison | ıbe                              | A =<br>W =<br>C =<br>P = | Auger<br>Wash<br>Core<br>Piston      |              | RQD = Rock Quality Designation (<br>Lab. Class. = USCS (ASTM D-2487)        | SPT = Standard Penetration Test (ASTM D-1586) (Blows/0.5')<br>RQD = Rock Quality Designation (%)<br>Lab. Class. = USCS (ASTM D-2487) or AASHTO (ASTM D-3282)<br>Lab. Moist. = Moisture Content (ASTM D-2216) Dry Weight Basis |      |       |                   |                             |
|---------------------------------|-------------------------------------------------|----------------------------------|--------------------------|--------------------------------------|--------------|-----------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|-------|-------------------|-----------------------------|
| Depth<br>(Ft.)                  | Sample<br>Type<br>and<br>No.                    | Samp.<br>Rec.<br>(Ft.<br>&<br>%) | SPT<br>or<br>RQD         | Lab.<br>Class.<br>or<br>Pen.<br>Rate | PID<br>(ppm) | Visual Description                                                          | ١                                                                                                                                                                                                                             | Vell |       | tallation<br>tail | Elevation                   |
| 51-<br>52                       | 5-1B                                            | 2.0<br>2.0                       | 31577                    |                                      |              | Continued from Sheet 3                                                      |                                                                                                                                                                                                                               |      | *.    | -                 | -                           |
| 53-                             | 5-19                                            | 2.0<br>2.0<br>100%               | 69<br>27<br>45           |                                      |              | 53.5<br>SAND, COARSE TO MEDIUM -                                            | ¥۲                                                                                                                                                                                                                            |      | -     | <br>              | -<br>- 36.0<br>- 36.5       |
| 55-<br>56-<br>57-<br>58-<br>59- | AN                                              |                                  |                          |                                      |              | grained, SDme Sheil fragments, -<br>trace Silt, Gray, Very dense, -<br>wet. | *5                                                                                                                                                                                                                            | ¥1   |       | -                 |                             |
| 0<br>1                          | 5-20                                            | 2.0<br>2.0<br>100%               | 41<br>31<br>47<br>45     |                                      |              | Note: Partial Cementation.                                                  | -<br>-<br>-<br>-                                                                                                                                                                                                              | ЪJ   | +     | -                 | -<br>-<br>43.5<br>-<br>44.5 |
| .2                              | AN                                              |                                  |                          |                                      |              | END OF BORING AT 63.0', SET WELL                                            | <br>                                                                                                                                                                                                                          | #5   | -<br> |                   | - 45.5                      |
| 4<br>5<br>6                     |                                                 |                                  |                          |                                      |              | At 62'                                                                      |                                                                                                                                                                                                                               |      |       |                   |                             |
| ,7                              |                                                 |                                  |                          |                                      |              | -<br>-<br>-                                                                 |                                                                                                                                                                                                                               |      |       |                   |                             |
| .9<br>9<br>0                    |                                                 |                                  |                          |                                      |              | <br><br>Match to Sheet                                                      |                                                                                                                                                                                                                               |      |       |                   | -                           |
| DRILLING<br>DRILLER:            |                                                 |                                  |                          |                                      |              | boring No.: 356                                                             |                                                                                                                                                                                                                               |      |       | SHEE              | т <u>4</u> оғ <u>4</u>      |



PROJECT: Site 35 - Camp Geiger Area Fuel Farm

S.O. NO.: <u>62470-232</u> COORDINATES: EAST: <u>24-64783. 4800</u> ELEVATION: SURFACE: <u>/6.7</u> BORING NO.: <u>35600-3</u> NORTH: <u>363189.8380</u> TOP OF STEEL CASING: /9.03

|                                                                                                                                                                       |                                                       | SPLI<br>SPOC      |                  | CASING         | i Al | JGERS                  | BIT<br>SIZE                       | DATE                 | PROGRESS<br>(FT)         | WEATHE               | R (FT)                  |                         |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|-------------------|------------------|----------------|------|------------------------|-----------------------------------|----------------------|--------------------------|----------------------|-------------------------|-------------------------|
| SIZE (DIAN                                                                                                                                                            | 1.)                                                   | 2"                |                  |                |      |                        | 8"                                | 4-17-90              | 1 17.0                   | Cloudy, Ho           | Γ                       | -                       |
| ENGTH                                                                                                                                                                 |                                                       | 2'                |                  |                |      |                        |                                   | 4-18-94              | 28.0                     | Sunny, Co            | 06                      |                         |
| ГҮРЕ                                                                                                                                                                  |                                                       | STD               |                  |                |      |                        | ROTARY                            | 4-27-94              | 22.0                     | Sunny, Hor<br>breezy | -                       | -                       |
| HAMMER                                                                                                                                                                | wτ.                                                   | 1407              | ¥                |                |      |                        |                                   |                      |                          |                      |                         |                         |
| ALL                                                                                                                                                                   |                                                       | 30"               |                  |                |      |                        |                                   |                      |                          | -                    |                         |                         |
| STICK UP                                                                                                                                                              |                                                       |                   |                  |                |      |                        |                                   |                      |                          |                      |                         |                         |
| REMARKS                                                                                                                                                               | AU                                                    | - W               | ĔU               | CONS           | STRU | ICTION                 | J DETAL                           | LS ARE               | BASED IN                 | FIELD ME             | EASUREM                 | ENTS.                   |
|                                                                                                                                                                       | <u>SA</u><br>plit Spoo<br>helby Tu                    |                   | A =              | Auger<br>Wash  |      |                        | 'ELL<br>RMATION                   | DIAM                 | ТҮР                      | E                    | TOP<br>DEPTH<br>(FT)    | BOTTON<br>DEPTH<br>(FT) |
|                                                                                                                                                                       | ir Rotar<br>Jenison                                   | у                 |                  | Core<br>Piston |      | Riser F                | ripe                              | 2"                   | Schedule 40, PV(         | 2                    | +2.33                   | - 6Z.0                  |
|                                                                                                                                                                       | N :                                                   | = No Sa           |                  |                |      | Screen                 |                                   | 2"                   | .10 Slot, Schedul        | e 40 PVC             | -62.0.                  | -66.0                   |
| Depth<br>(Ft.)                                                                                                                                                        | N = No Sample<br>Sample Rec.<br>Type Ft. SPT Class. L |                   |                  |                |      |                        |                                   | Descriptio           |                          | Insta                | rell<br>llation<br>tail | Elevatio                |
| -<br>1<br>2                                                                                                                                                           | 5-1                                                   | 1.6<br>Z.0<br>80% | 50700            |                |      | SAND,<br>trace<br>dens | fine grai<br>troots, c<br>e, damp | ned, tra<br>tark bro | ce Silt,<br>won, medium_ |                      |                         | -                       |
| 2 35-                                                                                                                                                                 | S-2                                                   | 1.6<br>2.0<br>80% | 3<br>4<br>6<br>6 |                |      | NOTE                   | trace (                           | elay                 | -                        | -                    | 6"steel                 |                         |
| 3 - Gwos                                                                                                                                                              |                                                       | 1.8               | 2                |                |      |                        |                                   |                      | -                        |                      | puter                   | 1                       |
| 3 - Gwos<br>4                                                                                                                                                         | s-3                                                   | 1.8<br>2.0<br>90% | 468              |                |      | NOTE<br>NOTE           | : No clay<br>Geoundu<br>5.5 feet  | Later Erv            | countered of -           |                      | Casing                  |                         |
| $   \begin{array}{c}     3 \\     - & 3 \\     - & 35 \\     - & 6 \\     - & 5 \\     - & 7 \\     - & 6 \\     - & 35 \\     - & 7 \\     - & 0z \\   \end{array} $ | s-3                                                   |                   | 6                |                |      | NOTE<br>NOTE           | Geoundu                           | Later Erv            | countered ot -<br>-      |                      | Casing                  |                         |
| 3 - GWDS<br>- C3<br>4                                                                                                                                                 | s-3                                                   | 90%<br>1.5<br>2.0 | 6 90 5 = 2       |                |      | NOTE                   | Geoundu                           | latee Erv            | -<br>-<br>-              |                      | Zasing                  |                         |



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PROJECT: Site 35 - Camp Geiger Area Fuel Farm 5.O. NO.: 62470-232

BORING NO .: 356WD-3

| T = 9<br>R = /      | iplit Spoo<br>ihelby Tu<br>Air Rotar<br>Denison | be                               | A =<br>W =<br>C =<br>P = | Auger<br>Wash<br>Core<br>Piston      | DEFINITIONS<br>SPT = Standard Penetration Test (/<br>RQD = Rock Quality Designation (<br>Lab. Class. = USCS (ASTM D-2487)<br>Lab. Moist. = Moisture Content (A | %)<br>or AASHTO (ASTM D-3282)                                                                    |           |
|---------------------|-------------------------------------------------|----------------------------------|--------------------------|--------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|-----------|
| Depth<br>(Ft.)      | Sample<br>Type<br>and<br>No.                    | Samp.<br>Rec.<br>(Ft.<br>&<br>%) |                          | Lab.<br>Class.<br>or<br>Pen.<br>Rate | Visual Description                                                                                                                                             | Well Installation<br>Detail                                                                      | Elevation |
| -<br> 1<br>-<br> 2  | 5-6                                             | 1.7 2.0                          | 4507                     |                                      | Continued from Sheet 1                                                                                                                                         |                                                                                                  | -         |
| -<br> 3<br> 4<br>-  | AN                                              |                                  |                          |                                      |                                                                                                                                                                |                                                                                                  |           |
| 15<br>-<br>16<br>17 | 5-7                                             | 0.85<br>2.0<br>42.5              | 4650                     |                                      | Nore: Dark red/brown staining -<br>at 16.8'                                                                                                                    | 0 6" steel -<br>Buter -<br>Casing -                                                              |           |
| -<br>18<br>19<br>20 | AN                                              |                                  |                          |                                      | -<br>-<br>-<br>-<br>-<br>-                                                                                                                                     |                                                                                                  |           |
| 21<br>22            | 5-8                                             | 2.0                              | <br> <br>1<br>Шон        |                                      | NOTE: DAER GREY, LOOSE -                                                                                                                                       |                                                                                                  |           |
| 23<br>24<br>-       | AN                                              |                                  |                          | -                                    | 23.5 (est)                                                                                                                                                     |                                                                                                  | - 6.8     |
| 25<br>26            | 5-9                                             | 1.5<br>2.0<br>75%                | 27<br>17<br>32<br>35     |                                      | SAND, fine grained, trace -<br>Shell fragments, trace Silt,<br>Light Grey, Dense to very<br>dense, wet, partially cemented                                     |                                                                                                  |           |
|                     | AN                                              |                                  |                          |                                      |                                                                                                                                                                | 8<br>8<br>8<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1 |           |

DRILLER: Brian Van Doren

BORING NO .: 35600-3

SHEET <u>2</u> OF ...

Baker Baker Environmental, Inc

## **TEST BORING AND WELL CONSTRUCTION RECORD**

PROJECT: SITE 35- CAMP GEIGER AREA FUEL FARM S.O. NO.: 62470-232 BORING NO.: 356WD-3

| T =<br>R =           | Split Spoo<br>Shelby Tu<br>Air Rotan<br>Denison | be                               | A =<br>W =<br>C =<br>P = | Auger<br>Wash<br>Core<br>Piston      |              | DEFINITIONS<br>SPT = Standard Penetration Test (ASTM D-1586) (Blows/0.5')<br>RQD = Rock Quality Designation (%)<br>Lab. Class. = USCS (ASTM D-2487) or AASHTO (ASTM D-3282)<br>Lab. Moist. = Moisture Content (ASTM D-2216) Dry Weight Basis<br>P(D = Photoionization Detector |     |      |           |                            |           |
|----------------------|-------------------------------------------------|----------------------------------|--------------------------|--------------------------------------|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|------|-----------|----------------------------|-----------|
| Depth<br>(Ft.)       | Sample<br>Type<br>and<br>No.                    | Samp.<br>Rec.<br>(Ft.<br>&<br>%) | SPT<br>or<br>RQD         | Lab.<br>Class.<br>or<br>Pen.<br>Rate | PID<br>(ppm) | Visual Description                                                                                                                                                                                                                                                             | v   | Vell |           | tallation<br>tail          | Elevation |
| -<br>31-<br>32-      | 5-10                                            | 1.6<br>2.0<br>80%                | 373273                   |                                      |              | Continued from Sheet 3 -<br>NOTE: Cementation increasing                                                                                                                                                                                                                       |     |      |           | -                          |           |
| -<br>33-<br>-<br>34- | À,N.                                            |                                  |                          |                                      |              |                                                                                                                                                                                                                                                                                |     |      | -<br>0)\$ |                            |           |
| 35<br>               | 5-11                                            | 1.8<br>2.0<br>90%                | 14<br>15<br>13<br>11     |                                      |              | Note: Cementation decreasing,<br>increasing silt                                                                                                                                                                                                                               | - 0 |      |           | b"steet<br>outer<br>Casing | -         |
| -<br>38<br>-<br>39   | A.N.                                            |                                  |                          |                                      |              | -<br><br>                                                                                                                                                                                                                                                                      | 0*  |      |           |                            |           |
| 40<br>41_<br>42      | 5-12                                            | 1.9<br>2.0<br>95%                |                          |                                      |              |                                                                                                                                                                                                                                                                                |     | <*   |           | ¢                          |           |
| 43                   | 5-13                                            | 1.9<br>2.0<br>95%                | 20<br>20<br>15<br>20     |                                      |              | 43.8<br>SAND, fine grained, some Silt, +race                                                                                                                                                                                                                                   |     | ×    |           |                            |           |
| 45<br>46             | AN                                              |                                  |                          |                                      |              | Shell fragments, greenish gray,<br><u>dense</u> , moist <u>450</u><br>END OF BORING FOR 4-18-94 -SET<br>CASING (6")                                                                                                                                                            |     |      | ₹<br>₩    |                            | 28.3      |
| 47                   | 5-14                                            | 95%                              |                          |                                      |              | SAND, fine grained, Some Silt,<br>Frace Shells, greenish grey,<br>Meduim dense, wet                                                                                                                                                                                            |     |      |           |                            |           |
| 49                   | 5-15                                            | 2.0                              | 460 0                    |                                      |              | Match to Sheet                                                                                                                                                                                                                                                                 |     |      |           |                            |           |



Baker Environmental, me

PROJECT: SITE 35 - CAMP GEIGER AREA FUEL FARM

S.O. NO.: 62470-232 BORING NO.: 35600-3

| T =<br>R =            | Split Spoo<br>Shelby Tu<br>Air Rotar<br>Denison | ıbe                              | A =<br>W =<br>C =<br>P = | Auger<br>Wash<br>Core<br>Piston                                                                                |              | DEFINITIONS<br>SPT = Standard Penetration Test (<br>RQD = Rock Quality Designation (<br>Lab. Class. = USCS (ASTM D-2487)<br>Lab. Molst. = Moisture Content (A<br>PID = Photoionization Detector | %)<br>or A | ASHTO          | ) (AST | M D-3282)        |                          |
|-----------------------|-------------------------------------------------|----------------------------------|--------------------------|----------------------------------------------------------------------------------------------------------------|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------------|--------|------------------|--------------------------|
| Depth<br>(Ft.)        | Sample<br>Type<br>and<br>No.                    | Samp.<br>Rec.<br>(Ft.<br>&<br>%) | SPT<br>or<br>RQD         | Lab.<br>Class.<br>or<br>Pen.<br>Rate                                                                           | PiD<br>(ppm) | Visual Description                                                                                                                                                                              | \          | Veil           |        | allation<br>tail | Elevation                |
| -<br>1<br>2           | 5-16                                            | 1 <u>.7</u><br>2.0<br>85%        | 441012                   |                                                                                                                |              | Continued from Sheet 3                                                                                                                                                                          |            |                |        | -                |                          |
| -<br>-<br>-<br>-<br>+ | 5-17                                            | 1.8<br>2.0<br>98%                | 4525                     | We Persent Concernent Concernent                                                                               |              | NOTE: MOIST -                                                                                                                                                                                   |            |                | **     |                  | -                        |
| -<br>5<br>5           | 5-18                                            | 1.8<br>2.0<br>90%                | 451018                   |                                                                                                                |              | Note: Moist                                                                                                                                                                                     | *          |                |        | -                |                          |
| 7<br>3                | 5-19                                            |                                  | 9-13-779-                |                                                                                                                |              | 56.3 56.3<br>SAND, fine grained, Little shell<br>fragments, trace Silt, trace<br>Clay, gray, dense, wet, partially<br>Cemented                                                                  |            |                |        |                  | - 39.6<br>- 40.3         |
|                       | À.N                                             |                                  |                          | and to prove the second second second second second second second second second second second second second se |              | -Cemented<br>53.0                                                                                                                                                                               |            |                | e.s.   |                  | - 42.3                   |
|                       | 5-20                                            | 2:0<br>2:0<br>100%               | 213 14 25                |                                                                                                                |              | Grach, mealum dense, wet, partially<br>cemented -                                                                                                                                               |            | 4              |        |                  |                          |
|                       | A.N.                                            |                                  |                          |                                                                                                                |              | 63.5 63.5<br>SAND, fine grained, poorly graded,<br>Some shell fragments, trace silt,<br>gray, very dense, wet                                                                                   |            | 1 <sup>B</sup> |        | -                | - 45.3<br>-<br>46.8<br>- |
|                       | 5-21                                            | 1.3 2.0                          | 33552                    |                                                                                                                |              | (do.8)<br>(do.8)<br>(do.8)                                                                                                                                                                      |            | 57             |        |                  | 49.3                     |
| -                     | A.N.                                            |                                  |                          |                                                                                                                |              | SILT, Some Shell fragments, trace<br>Band, trace Clay, green, very<br>dense, MOIST<br>END OF BORING AT 68.0; SET WELL<br>AT 67.0'                                                               |            | #5             |        |                  | - 51.3                   |
| )                     |                                                 |                                  |                          |                                                                                                                |              | Match to Sheet                                                                                                                                                                                  |            |                |        |                  |                          |

DRILLER: BRIAN VAN Doren

BORING NO .: 356WD-3

SHEET 4 OF 4



PROJECT: Site 35 - Camp Geiger Area Fuel Farm

S.O. NO.: <u>62470-232</u> COORDINATES: EAST: <u>2465316.7200</u> ELEVATION: SURFACE: <u>11.9</u> BORING NO.: <u>35GwD-4</u> NORTH: <u>363820, 2500</u> TOP OF STEEL CASING: <u>13,58</u>

|                                         | SPLIT<br>SPOON                                    | CASING             | 5 AL               | JGERS                             | BIT<br>SIZE                      | DATE                          | PROGRESS<br>(FT)   | WEATHEI                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | WATER<br>DEPTH<br>R (FT)   | ТІМЕ                                                                                        |
|-----------------------------------------|---------------------------------------------------|--------------------|--------------------|-----------------------------------|----------------------------------|-------------------------------|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|---------------------------------------------------------------------------------------------|
| SIZE (DIAM.)                            | 2"                                                |                    |                    |                                   | 8"                               | 4-19-94                       | 42.0               | clear, coo                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | L I                        |                                                                                             |
| LENGTH                                  | 2'                                                |                    |                    |                                   |                                  | 4-29-94                       |                    | overcast,<br>humid                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                            |                                                                                             |
| ГҮРЕ                                    | STD.                                              |                    |                    |                                   | ROTARY                           |                               |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                            | -                                                                                           |
| HAMMER WT.                              | 140#                                              |                    |                    |                                   |                                  |                               |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                            |                                                                                             |
| FALL                                    | 30"                                               |                    |                    |                                   |                                  | :                             |                    | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                            |                                                                                             |
| STICK UP                                |                                                   |                    |                    |                                   |                                  |                               |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                            |                                                                                             |
| remarks: A                              | 'L WEL                                            | L CONE             | STRI               | ICTION                            | l det                            | AILS AN                       | LE BASED           | IN FIELD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | MEASUR                     | EMENT                                                                                       |
| <u>S</u> = SplitSp<br>T = Shelby1       |                                                   | = Auger<br>= Wash  |                    |                                   | ELL<br>RMATION                   | DIAM                          | TYP                | E                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | TOP<br>DEPTH<br>(FT)       | BOTTON<br>DEPTH<br>(FT)                                                                     |
| R = Air Rota<br>D = Denisor             | ry C                                              | = Core<br>= Piston |                    | Riser P                           | ipe                              | 2"                            | Schedule 40, PVC   | 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | +1.68                      | -47.0                                                                                       |
|                                         | i = No Samp                                       |                    |                    | Screen .10 Slot, Scho             |                                  |                               | .10 Slot, Schedule | e 40 PVC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | -47.0                      | -51.0                                                                                       |
| Sampi<br>Depth Type<br>(Ft.) and<br>No. | Ft. or                                            |                    | Lab.<br>Moist<br>% |                                   | Visual [                         | Descriptio                    | n                  | Insta                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 'ell<br>llation<br>tail    | Elevatio                                                                                    |
| 1                                       | 62.5                                              |                    |                    | 1 60                              | A                                |                               | ed gravel          | 111111<br>111111                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                            |                                                                                             |
| 3 - 5-2                                 |                                                   |                    |                    |                                   |                                  |                               |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                            |                                                                                             |
| 4                                       | 65% 2<br><u>N.R.</u> 1                            | 2                  |                    | 6.0                               | NO TRECON                        |                               |                    | in the second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second se | 6"steel<br>outer<br>Casing |                                                                                             |
|                                         | 65% 2<br><u>N.R.</u><br>2.0<br>1<br>0% 1<br>1.9 2 | 2                  |                    | 6.0'<br>SHND,<br>(1ght a<br>hydro | fine gro<br>group Loc<br>carbons | ma, tra<br>se, wet,<br>stors. | CL SHLL,           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 6"steel<br>outer<br>Casing | -<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>- |

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PROJECT: <u>Site 35 - Camp Geiger Area Fuel Farm</u> S.O. NO.: <u>62470-232</u> BOR

BORING NO .: 35600-4

| T =<br>R =                                                                                                                                                                                     | Split Spoo<br>Shelby Tu<br>Air Rotar<br>Denison | ıbe                                                         | A =<br>W =<br>C =<br>P =                                               | Auger<br>Wash<br>Core<br>Piston      |                    | <u>DEFINITIONS</u><br>SPT = Standard Penetration Test (<br>RQD = Rock Quality Designation (<br>Lab. Class. = USCS (ASTM D-2487)<br>Lab. Moist. = Moisture Content (A                       | %)<br>or AASHTO (A <b>STM D-3282</b> )                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|-------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|
| Depth<br>(Ft.)                                                                                                                                                                                 | Sample<br>Type<br>and<br>No.                    | Samp.<br>Rec.<br>(Ft.<br>&<br>%)                            | SPT<br>or<br>RQD                                                       | Lab.<br>Class.<br>or<br>Pen.<br>Rate | Lab.<br>Moist<br>% | Visual Description                                                                                                                                                                         | Well Installation<br>Detail <sup>Elevation</sup>                             |
| $ \begin{array}{c} 11 \\ 12 \\ 13 \\ 14 \\ 14 \\ 15 \\ 16 \\ 17 \\ 18 \\ 19 \\ 20 \\ 21 \\ 22 \\ 21 \\ 22 \\ 23 \\ 24 \\ 23 \\ 24 \\ 25 \\ 26 \\ 27 \\ 27 \\ 27 \\ 27 \\ 27 \\ 27 \\ 27 \\ 27$ | A.N.<br>5-6<br>A.N.<br>5-7<br>A.N.<br>5-8       | 1.9<br>2.0<br>85%<br>1.5<br>2.0<br>75%<br>1.4<br>2.0<br>75% | 1 8 24<br>16<br>30 232<br>34<br>35<br>34<br>35<br>34<br>35<br>34<br>20 |                                      |                    | Continued from Sheet 1<br>NOTE: STRONG hydrocarbon odors<br>16.7<br>SAND, fine grained, trace Shell<br>fragments, trace Silt, gray,<br>dense, wet, partially comented.<br>NOTE: Light gray | 0<br>0<br>1<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>- |
| 28<br>29<br>30                                                                                                                                                                                 |                                                 |                                                             | U                                                                      |                                      |                    |                                                                                                                                                                                            |                                                                              |
| DRILLIN                                                                                                                                                                                        | -                                               |                                                             |                                                                        |                                      | 1 porat            | edBAKER REP.: James C<br>BORING NO.: 3560                                                                                                                                                  |                                                                              |



PROJECT: SITE 35 - CAMP GEIGER AREA FUEL FARM S.O. NO.: 62470-232 BORING NO.: 35GWD-4

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|      | S<br>T<br>R<br>D       | = : | Split Spoo<br>Shelby Tu<br>Air Rotan<br>Denison | ıbe                              | A =<br>W =<br>C =<br>P = | Auger<br>Wash<br>Core<br>Piston      |              | DEFINITIONS<br>SPT = Standard Penetration Test (<br>RQD = Rock Quality Designation<br>Lab. Class. = USCS (ASTM D-2487)<br>Lab. Moist. = Moisture Content (4<br>PID = Photoionization Detector | (%)<br>or A/  | ASHTO   | (AST       | M D-3282)                    |                                                                                             |   |
|------|------------------------|-----|-------------------------------------------------|----------------------------------|--------------------------|--------------------------------------|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------|------------|------------------------------|---------------------------------------------------------------------------------------------|---|
|      | Dept<br>(Ft.           |     | Sample<br>Type<br>and<br>No.                    | Samp.<br>Rec.<br>(Ft.<br>&<br>%) |                          | Lab.<br>Class.<br>or<br>Pen.<br>Rate | PID<br>(ppm) | Visual Description                                                                                                                                                                            |               | Vell    | Inst<br>De | allation<br>tail             | Elevation                                                                                   | n |
|      | 51                     |     | 5-9                                             | 1.4<br>2.0<br>70%                | 26<br>29<br>24<br>29     |                                      |              | Continued from Sheet 2<br><u>SAND</u> , five orained, trace sile,<br>trace shell tragments, light gray<br>Very dense, wet                                                                     |               |         | 20         |                              |                                                                                             |   |
| 3    | -<br>                  |     | A.N.                                            |                                  |                          |                                      |              | -                                                                                                                                                                                             |               |         | 40         | 6"steel<br>- outer<br>Casing |                                                                                             |   |
| 3 ار | 5<br>6<br>             |     | S-10                                            | 1.8<br>2.0<br>90%                | 21<br>20<br>24<br>21     |                                      |              |                                                                                                                                                                                               |               | ~       |            | Casing                       |                                                                                             |   |
| 3    | 8                      |     | A.N.                                            |                                  |                          |                                      |              | <u>38.5</u>                                                                                                                                                                                   |               |         |            |                              | -<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>- |   |
| 4    |                        |     | 5-11                                            | 1.7<br>2.0<br>85%                | 4000                     |                                      |              | SAND, fine grained, Little Sill,<br>trace Clay, greenish gray, medium<br>dense, moist<br>42.0 42.0                                                                                            |               |         |            |                              | 30,1                                                                                        |   |
|      | 3                      |     | A.N.                                            |                                  |                          |                                      |              | END OF BORING FOR 4-19-94 - SET<br>6" CASING.<br>SAND, fine grained, some sile, trace                                                                                                         |               |         | v<br>≯     |                              |                                                                                             |   |
| 4    | -<br>-<br>-<br>-<br>-  |     | S-12                                            | 2.0<br>2.0<br>100%               | 15<br>21<br>31<br>37     |                                      | .<br>        | Shell fragments, greenish gray, very<br>44.8<br>SAND, fine grained, some shell fragment<br>trace sict, gray, very dense, wet,<br>partially cerviented with calcium                            | -             | ~<br>≱  |            |                              | - 32.9<br>33.1<br>-                                                                         |   |
| 4    | -<br>17<br>-<br>-<br>8 |     | A.N.                                            |                                  | <br>                     |                                      |              | Carbonate.<br>47.0<br>LIMESTONE FEAGMENTS (GRAVEL SIZE)<br>GRAVI, VERY DENSE, WET.                                                                                                            | - <u>``</u> * | <br>    | 6          |                              | -<br>35.1<br>-                                                                              | ı |
|      | 9<br>9<br>0            |     | S-13                                            | 2.0<br>2.0<br>100%               | 24<br>28<br>30<br>31     |                                      |              | -<br>Match to Sheet _                                                                                                                                                                         | -             | 40<br>À | ð          |                              |                                                                                             |   |
|      |                        |     | GCO.:<br>BRII                                   |                                  |                          |                                      | Incor        | porated BAKER REP.: Jan<br>BORING NO.: 356                                                                                                                                                    |               |         | 2          | SHE                          | ET <u>3</u> OF                                                                              | 4 |

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PROJECT: SITE 35-CAMP GEIGEIL AREA FUEL FARM S.O. NO.: 62470-232 BORING NO.: 356WD-4

| $\begin{array}{c ccccccccccccccccccccccccccccccccccc$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |           |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| 51 - 52 - 53.0 - 53.0 + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 10% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 100% + 10% + 10% + 100% + 10% + 100% + 100% + 100% + 100% + 100% + 1 | Elevation |
| 52 - 53 - 53 - 53 - 53 - 53 - 53 - 53 -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 39.1      |
| 54 - S-14 2.0 15<br>54 - S-14 2.0 16<br>100% 21 55.0 550                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 40.1      |
| 54- S-14 2.0 16 trace shell tragments, greenish<br>gray, dense, Moist 550                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | - 41.1    |
| 55.0 550                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 43.1      |
| 56- AT 52.0'                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |           |
| 57                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |           |
| 58-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |           |
| 59-]             -]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |           |
| 60-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |           |
| 61-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |           |
| 70 Match to Sheet                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |           |
| DRILLING CO.: <u>HARDIN HUGER INCORDONATED</u> BAKER REP.: JAMES CULP<br>DRILLER: <u>BRIAN VAN DOREN</u> BORING NO.: <u>35GWD-4</u> SHEET.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |           |



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## **TEST BORING AND WELL CONSTRUCTION RECORD**

PROJECT: Site 35 - Camp Geiger Area Fuel Farm

S.O. NO.: <u>62470-232</u> COORDINATES: EAST: <u>2465810,3100</u> ELEVATION: SURFACE: <u>7,7</u> BORING NO.: <u>35600 -5</u> NORTH: <u>363296.4980</u> TOP OF STEEL CASING: <u>10.23</u>

|                                          | SPLIT<br>SPOO                    |                  | CASING                               | AL   | JGERS                        | BIT<br>SIZE                                    | DATE                                         | PROGRESS<br>(FT)               | WEATHE     |                            | ТІМЕ                    |
|------------------------------------------|----------------------------------|------------------|--------------------------------------|------|------------------------------|------------------------------------------------|----------------------------------------------|--------------------------------|------------|----------------------------|-------------------------|
| IZE (DIAM.)                              | 2"                               |                  |                                      |      |                              | 8"                                             | 4-28-94                                      | 27.0                           | Warm, Humi | d                          |                         |
| ENGTH                                    | 2'                               |                  |                                      |      |                              |                                                |                                              |                                |            |                            |                         |
| YPE                                      | STD                              |                  |                                      |      |                              | POTARY                                         |                                              |                                |            |                            | -                       |
| AMMER WT.                                | 140#                             | ŧ                |                                      |      |                              |                                                |                                              |                                |            |                            |                         |
| ALL                                      | 30"                              |                  |                                      |      |                              |                                                |                                              |                                |            |                            |                         |
| TICK UP                                  |                                  |                  |                                      |      |                              |                                                |                                              |                                |            |                            |                         |
| EMARKS: AU                               | . Well                           | Cor              | VSTEL                                | CTIO | N DE                         | TAILS AN                                       | LE BASE                                      | D ON FIELD                     | MEASURE    | MENTS                      |                         |
| <u>s</u> = Split Sp<br>T = Shelby        |                                  | A =              | Auger<br>Wash                        |      |                              | /ELL<br>RMATION                                | DIAM                                         | ТҮР                            | ۲ <b>E</b> | TOP<br>DEPTH<br>(FT)       | BOTTON<br>DEPTH<br>(FT) |
| R = Air RotaD = Denisor                  | iry                              | C =              | Core<br>Piston                       |      | Riser I                      | Pipe                                           | 2"                                           | Schedule 40, PV(               | 3          | + 2.53                     | -49.0                   |
|                                          | i ≕ No Sa                        |                  | riscon                               |      | Screer                       | L                                              | 2"                                           | .10 Slot, Schedul              | e 40 PVC   | -49.0                      | -53.0                   |
| Samp<br>Depth Type<br>(Ft.) and<br>No.   | Samp.<br>e Rec.<br>Ft.<br>&<br>% | SPT<br>or<br>RQD | Lab.<br>Class.<br>or<br>Pen.<br>Rate | 4    |                              |                                                | Descriptio                                   |                                | Insta      | /ell<br>Ilation<br>etail   | Elevatio                |
| 1                                        | 1.7<br>2.0<br>85%                | 5 6 7 10         |                                      |      | SANC<br>Trac<br>Med<br>Note: | e, fine gri<br>c roots,<br>ium dur<br>@1.0'-Li | ained, Se<br>dark b<br>ise, dan<br>ight brou | ome silt,<br>rown,<br>np<br>un |            | 07                         |                         |
| 3 - S-2<br>4 - S-2                       | 1.4<br>2.0<br>70%                | 5556             |                                      |      | NOTE                         | :Light g                                       | raci                                         | -                              |            | 8"steel<br>outer<br>CASING |                         |
| 5 - 35-<br>03 S-3                        | 1.5<br>2.0<br>75%                | 51056            |                                      |      | 5.5<br>CLAY                  | , L1++LL                                       | silt, br                                     | 5.5<br>own and<br>um dense,    |            | Couter<br>Casing           | - 2.2                   |
| 35-<br>GWDS-<br>7 -03 MS/ 5-<br>MSD<br>8 | 4 1.8<br>2.0<br>90%              | 9-69000          |                                      |      | 1 1 2 2 4 4                  | •                                              | a medi                                       |                                |            | Casing                     |                         |
| 9 - 5-5                                  | 1.5<br>2.0<br>75%                | 22234            |                                      |      | 9.8                          | SAND, fin                                      |                                              | 9.8                            | - 0        |                            |                         |

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PROJECT: Site 35 - Camp Geiger Area Fuel Farm

S.O. NO.: 62470-232 BORING NO.: 356WD-5

| T =<br>R =            | Split Spoo<br>Shelby Tu<br>Air Rotan<br>Denison | ibe                              | A =<br>W =<br>C =<br>P = | Auger<br>Wash<br>Core<br>Piston      | <u>DEFINITIONS</u><br>SPT = Standard Penetration Test (ASTM D-1586) (Blows/0.5')<br>RQD = Rock Quality Designation (%)<br>Lab. Class. = USCS (ASTM D-2487) or AASHTO (ASTM D-3282) |                     |
|-----------------------|-------------------------------------------------|----------------------------------|--------------------------|--------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| Depth<br>(Ft.)        | Sample<br>Type<br>and<br>No.                    | Samp.<br>Rec.<br>(Ft.<br>&<br>%) | SPT<br>or<br>RQĐ         | Lab.<br>Class.<br>or<br>Pen.<br>Rate | Well Installation<br>Visual Description Detail                                                                                                                                     | Elevation           |
| -<br>1<br>2<br>3<br>4 | A.N.                                            |                                  |                          |                                      | Continued from Sheet 1<br>+race clay brown and gray<br>motiled, iloose, wet<br>12.5(cst) 12.5<br><br>casing                                                                        | 4.8                 |
|                       | 5-6                                             | 2.0<br>2.0<br>100%               | N N N N N                |                                      | CLAY, trace SILE, gray,<br>Medium Stiff, Wet.<br>Note: gray Sand Stringer 22".<br>Set B" casing because drilling<br>funds were not recirculating                                   | - 8.3               |
| 3                     | AN                                              |                                  |                          |                                      | 18.0(est) 18.0                                                                                                                                                                     | - 10.3              |
| -<br><br>-            | 5-7                                             | 2.0<br>2.0<br>100%               | NN 195                   |                                      | SILT, Some Clay, trace wood -<br>fragments, dark brown, Medium-<br>Stiff, wet                                                                                                      |                     |
|                       | AN                                              |                                  |                          |                                      | $24.0(e_{5+})$ $24.0$                                                                                                                                                              | -<br>-<br>16.3      |
|                       | 5-B                                             | 1.0<br>2.0<br>50%                | 2234                     |                                      | SAND, fine to medium grained,<br>trace Sict, REDDISH brown, Wose,<br>Wet<br>27.0<br>27.0<br>27.0                                                                                   | -<br>-<br>-<br>19.3 |
|                       |                                                 |                                  |                          |                                      | END OF BORING FOR 4-28-94<br>                                                                                                                                                      |                     |

DRILLING CO.: <u>Hardin Huber Incorporated</u> DRILLER: <u>Brian Van Doren</u>

BORING NO .: 356WD-5

SHEET <u>2</u> OF <u>4</u>



PROJECT: SITE 35 - LAMP GEIGER AREA FUEL FARM S.O. NO.: 62470-232 BORING NO.: 356WD-5

| T ==<br>R =            | Split Spoo<br>Shelby Tu<br>Air Rotan<br>Denison | be                               | A =<br>W =<br>C =<br>P = | Auger<br>Wash<br>Core<br>Piston      |              | DEFINITIONS<br>SPT = Standard Penetration Test (/<br>RQD = Rock Quality Designation ('<br>Lab. Class. = USCS (ASTM D-2487)<br>Lab. Moist. = Moisture Content (A<br>PID = Photoionization Detector | %)<br>or Al | ASHTO (ASTM D         | -3282)                       |                  |
|------------------------|-------------------------------------------------|----------------------------------|--------------------------|--------------------------------------|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------------|------------------------------|------------------|
| Depth<br>(Ft.)         | Sample<br>Type<br>and<br>No.                    | Samp.<br>Rec.<br>(Ft.<br>&<br>%) | SPT<br>or<br>RQD         | Lab.<br>Class.<br>or<br>Pen.<br>Rate | PID<br>(ppm) | Visual Description                                                                                                                                                                                |             | Well Install<br>Detai |                              | Elevation        |
| 31<br>32               | 5-9                                             | 1.8<br>2.0<br>90%                | 15 72 12<br>12 12<br>13  |                                      |              | Continued from Sheet 2<br>SAND, fine grained, poorly graded,<br>Utto shell fragments, trace SILT,<br>gray, medium dense, wet,<br>partially Comented with calcium                                  |             | 0*                    | -                            | -23.1            |
| 33-<br>34-             | A.N.                                            |                                  |                          |                                      |              | Carbonate.                                                                                                                                                                                        | ×.          | 2                     | ". STEEL<br>TER.<br>SING<br> |                  |
| 35                     | 5-10                                            | 1.9<br>2.0<br>95%                | 5597                     |                                      |              | 35.0<br>SAND, finc grained, Some Silt,<br>trace shell fragments, greenish<br>gray, medium dense, wet<br>37.0<br>37.0<br>37.0                                                                      |             |                       |                              | - 27. 3          |
| 57<br>38               |                                                 | 13 16                            |                          |                                      |              | 37.0 37.0<br>END IF BORING FOR 4-29-94 -<br>SET 6ª CASING                                                                                                                                         |             |                       | -                            | - 29.3<br>- 30.3 |
| 39_<br>40_<br>41_      | A.N.                                            | 2.0                              | 47                       |                                      |              | SAND, fine grained, trace she il -<br>Fragments, trace silt, greenish<br>gray, Medium dense, Moist                                                                                                | -<br>-<br>  |                       | -<br>-<br>-                  |                  |
| 42<br>43               | 5-11                                            | 100%                             | 10<br>12<br>4<br>7       |                                      |              | Nore: Little silt, wet                                                                                                                                                                            | N<br>*      | N 4<br>N 4<br>N 1     | <br>                         |                  |
| 44                     | 5-12                                            | 100%                             | 7<br>8<br>8<br>12        |                                      |              | _                                                                                                                                                                                                 |             |                       | -<br>-                       |                  |
| 5_<br> 6               | 5-13                                            | 100%                             | 29                       |                                      |              | 45.0<br>SAND, fine grained, Some Snill<br>Fragments, trace Silt, gray<br>Dense, Wet.                                                                                                              |             |                       | -                            | - 37.3           |
| 47 -<br>-<br>-<br>49 - |                                                 |                                  |                          |                                      |              | 48.0(est) 48.0<br>LIMESTONC Fragments, SOME Shell<br>Fragments, Frace Sand, gray                                                                                                                  |             | 1 1 1 1               | -                            | 40.3<br>41.3     |
| 0                      |                                                 |                                  |                          |                                      |              | dense, wet                                                                                                                                                                                        | -           | \$¢                   | =                            | -                |



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Baker Environmental, 🔤

PROJECT: <u>SITE 35 - CAMP GEIGER AREIA FUEL FARM</u> S.O. NO.: <u>62470-232</u> BORING NO.: <u>35600-5</u>

| T = 1<br>R = 1 | Split Spoo<br>Shelby Tu<br>Air Rotar<br>Denison | be                               | A =<br>W =<br>C =<br>P = | Auger<br>Wash<br>Core<br>Piston      |              | <u>DEFINITIONS</u><br>SPT = Standard Penetration Test (<br>RQD = Rock Quality Designation (<br>Lab. Class. = USCS (ASTM D-2487)<br>Lab. Moist. = Moisture Content (A<br>PID = Photoionization Detector | %)<br>or A/ | ASHTO   | ) (AST | M D-3282)        |      |          |
|----------------|-------------------------------------------------|----------------------------------|--------------------------|--------------------------------------|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|---------|--------|------------------|------|----------|
| Depth<br>(Ft.) | Sample<br>Type<br>and<br>No.                    | Samp.<br>Rec.<br>(Ft.<br>&<br>%) | spt<br>or<br>RQD         | Lab.<br>Class.<br>or<br>Pen.<br>Rate | PiD<br>(ppm) | Visual Description                                                                                                                                                                                     | V           | Vell    |        | allation<br>tail | E    | levation |
| 51-<br>52      | 5-14-                                           | 2.0<br>2.0<br>100%               | 24543                    |                                      |              | Continued from Sheet 3 50.5<br>SAND, fine grained, little Shell -<br>Fragments, gray, Verydense,<br>Net, partially Cemented With<br>Calcium Carbonate                                                  | (.          | e<br>S≫ |        |                  |      | 42.8     |
| -<br>53-       |                                                 |                                  |                          |                                      |              | Calcium Carbonate.                                                                                                                                                                                     | \$<br>S     |         | 5      |                  | 1.   | 45.3     |
| 54-            | A. N.                                           |                                  |                          |                                      |              |                                                                                                                                                                                                        |             | *       | ą      |                  | 1.   | 46.3     |
| 55             |                                                 |                                  |                          |                                      |              | -                                                                                                                                                                                                      |             |         |        |                  | 1    |          |
| 56-            |                                                 | 1.6                              | 35<br>50                 |                                      |              | -                                                                                                                                                                                                      |             | 5       |        |                  | 1    |          |
| 57             | 5-15                                            | 80%                              | 50/.4                    |                                      |              | 56.5 56.5<br>SAND, fine grained, Some Silt,                                                                                                                                                            |             |         |        |                  |      | - 48.8   |
|                |                                                 |                                  |                          |                                      |              | Cittle Shell fragments, greenish 7<br>gray, very dense, wet 57.0                                                                                                                                       |             |         |        |                  | ]    | - 48.5   |
| 58-            |                                                 |                                  |                          |                                      |              | ENDOF BORING AT 57.0', SET<br>WELL AT 54.0'                                                                                                                                                            | 1           |         |        |                  |      |          |
| <i>5</i> 9_    |                                                 |                                  |                          |                                      |              |                                                                                                                                                                                                        |             |         |        |                  |      |          |
| 60_            |                                                 |                                  |                          |                                      |              | -                                                                                                                                                                                                      |             |         |        |                  |      |          |
| 61_            |                                                 |                                  |                          |                                      |              |                                                                                                                                                                                                        |             |         |        |                  | -    |          |
| 62_            |                                                 |                                  |                          |                                      |              | -                                                                                                                                                                                                      | }           |         |        |                  | -    |          |
| 63_            |                                                 |                                  |                          |                                      |              | -                                                                                                                                                                                                      |             |         |        |                  | -    |          |
| 64             |                                                 |                                  |                          |                                      |              | -                                                                                                                                                                                                      |             |         |        |                  | -    |          |
| <b>65</b> _    |                                                 |                                  |                          |                                      |              | -                                                                                                                                                                                                      | 1           |         |        |                  | -    |          |
| -<br>66        |                                                 |                                  |                          |                                      |              | -                                                                                                                                                                                                      | 1           |         |        |                  | 1    |          |
| 67_            |                                                 |                                  |                          |                                      |              | ·                                                                                                                                                                                                      | 1           |         |        |                  | 1    |          |
| 68-            |                                                 |                                  |                          |                                      |              |                                                                                                                                                                                                        | 1           |         |        |                  | 1    |          |
| 69             |                                                 |                                  |                          |                                      |              |                                                                                                                                                                                                        |             |         |        |                  |      |          |
| 70_            |                                                 |                                  |                          |                                      |              | Match to Sheet                                                                                                                                                                                         |             |         |        |                  | -    | -        |
|                |                                                 |                                  |                          |                                      | Inco         | eporated BAKER REP.: JAME<br>BORING NO.: 3560                                                                                                                                                          |             |         | )<br>  | SHE              | ET 4 | 4 OF 4   |



PROJECT: Site 35 - Camp Geiger Area Fuel Farm

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 S.O. NO.:
 62470-232
 BORING NO.:
 35 MW-26 B

 COORDINATES:
 EAST:
 2465390.3200
 NORTH:
 3632.00.1290

 ELEVATION:
 SURFACE:
 15.4
 TOP OF STEEL CASING:
 15.05

|                                           | SPLIT<br>SPOON    |                             | ASING                                | 5 AL               | JGERS                        | BIT<br>SIZE                         | DATE                  | PROGRESS<br>(FT)       | v        | VEAT   | THER               | 11     | VATER<br>DEPTH<br>(FT) | TIME                    |
|-------------------------------------------|-------------------|-----------------------------|--------------------------------------|--------------------|------------------------------|-------------------------------------|-----------------------|------------------------|----------|--------|--------------------|--------|------------------------|-------------------------|
| SIZE (DIAM.)                              | 2"                |                             |                                      |                    |                              | 8"                                  | 5-13-94               | 42.0                   | 50       | NNY,   | C00                | 6      | <u> </u>               | -                       |
| LENGTH                                    | 2'                |                             |                                      |                    |                              |                                     |                       |                        |          |        |                    |        |                        |                         |
| ГҮРЕ                                      | STD.              |                             |                                      |                    | ·                            | EOTARY                              |                       |                        |          |        |                    |        |                        | <u>-</u>                |
| HAMMER WT.                                | 140#              |                             |                                      |                    |                              |                                     |                       |                        |          |        |                    |        |                        |                         |
| FALL                                      | 30"               |                             | ·                                    |                    |                              |                                     |                       |                        |          |        | -                  |        |                        |                         |
| STICK UP                                  |                   |                             |                                      |                    |                              | •                                   |                       |                        |          |        |                    |        |                        |                         |
| REMARKS: A                                | L WEI             | LC                          | ONST                                 | RUC                | TION                         | DETAIL                              | SAREF                 | SASED ON F             | TEL.     | DM     | EA                 | SURE   | MEN                    | 13.                     |
| <u>S</u><br>S = Split Spc<br>T = Shelby T |                   | <u>Pe</u><br>A = A<br>W = W |                                      |                    | W<br>INFO                    | ELL<br>RMATION                      | DIAM                  | TYP                    | E        |        |                    | DEF    | DP<br>PTH<br>T)        | BOTTOM<br>DEPTH<br>(FT) |
| R = Air Rota<br>D = Denison               | ry (              | C = C<br>P = Pi             | -                                    |                    | Riser I                      | ripe                                | 2"                    | Schedule 40, PVC       | ;        |        |                    | -0.    | 35                     | - 37.                   |
|                                           | = No Sam          |                             |                                      |                    | Screen                       |                                     | 2"                    | .10 Slot, Schedule     | 40 P     | vc     |                    | - 37   | 7.3                    | - 41.2                  |
| Sampi<br>Depth Type<br>(Ft.) and<br>No.   | Ft                | SPT<br>or<br>RQD            | Lab.<br>Class.<br>or<br>Pen.<br>Rate | Lab.<br>Moist<br>% |                              | Visual D                            | escriptio             | n                      |          | Ir     | Wa<br>nstal<br>Def | lation | I                      | Elevation               |
| 1 - 5-/<br>2                              | 2.0               | 5<br>10<br>10<br>8          |                                      |                    | 03<br><u>Sano</u> ,<br>MCAIU | ASPHALT<br>fine grains<br>im dense, | a, trace              | 0.3/<br>SILE, brown, _ | *0<br>*0 |        |                    |        |                        | - 15.1                  |
| 3 - 5-2<br>4 - 5-2                        | 2.0               | 5<br>11<br>12<br>14         |                                      |                    | Nore:                        | GRAY                                |                       | -<br>-<br>-            |          |        |                    |        |                        |                         |
| 5 - 5-3<br>6 - 5-3                        | 2.0               | 24610                       |                                      |                    |                              |                                     |                       | -                      |          | ₹<br>¥ |                    |        |                        |                         |
| - 35-<br>7 - MW2485-<br>64 5-4<br>8 -     | 1.1<br>2.0<br>55% | 6 10<br>12<br>14            |                                      |                    | Nore: ,<br>Nore: ,           | Nedium qr<br>Geovniow A             | ained at<br>the AT 7. | 1,3 FEET<br>1 FEET     |          |        |                    |        |                        |                         |
| 9 5-5                                     | 1.0<br>2.0        | 454                         |                                      |                    | 9.0<br>50 F 1                |                                     | Juaro A               | 9.0<br>lay, Orange,    |          |        | \$                 |        |                        | - 6.4                   |

DRILLER: Brian Van Doren

BORING NO .: 35 MW - 268

SHEET 1 OF 3



PROJECT: Site 35 - Camp Geiger Area Fuel Farm

S.O. NO.: <u>62470-232</u>

BORING NO .: 35 MW-268

| T =<br>R =               | Split Spoo<br>Shelby Tu<br>Air Rotar<br>Denison | ıbe                              | A =<br>W =<br>C =<br>P = | Auger<br>Wash<br>Core<br>Piston      |                    | <u>DEFINITIONS</u><br>SPT = Standard Penetration Test (<br>RQD = Rock Quality Designation (<br>Lab. Class. = USCS (ASTM D-2487)<br>Lab. Moist. = Moisture Content (4                       | (%)<br>or A/ | ASHTO | ) (AS | TM D-3282)        |                    |
|--------------------------|-------------------------------------------------|----------------------------------|--------------------------|--------------------------------------|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-------|-------|-------------------|--------------------|
| Depth<br>(Ft.)           | Sample<br>Type<br>and<br>No.                    | Samp.<br>Rec.<br>(Ft.<br>&<br>%) |                          | Lab.<br>Class.<br>or<br>Pen.<br>Rate | Lab.<br>Moist<br>% | Visual Description                                                                                                                                                                         |              | Vell  |       | tallation<br>tail | Elevation          |
| -<br>11-<br>-<br>12-     |                                                 |                                  |                          |                                      |                    | Continued from Sheet 1                                                                                                                                                                     |              |       |       |                   | -                  |
| -<br>13<br>-<br>14       | <b>Д.</b> М.                                    |                                  |                          |                                      |                    | <u> 2.5/est)</u>                                                                                                                                                                           | 0<br>¥       |       | -     | -                 | - 2.9              |
| 15<br>-<br>16<br>-<br>17 | 5-6                                             | 1.6<br>2.0<br>80%                | 2232                     | •                                    |                    | SAND, fine grained, trace silt,<br>brown, loose, wet<br>Nore: C16.7'- prange in color with -<br>Bray Clay balls.                                                                           |              |       | -     |                   |                    |
| -<br>18<br>19<br>-       | A.N.                                            |                                  |                          |                                      |                    | <br>                                                                                                                                                                                       | •            | *     |       |                   | -<br>-<br>-<br>4.1 |
| 20<br>21<br>22<br>22     | 5-7                                             | 1.9<br>7.0<br>95%                | 15<br>25<br>10<br>15     |                                      |                    | SAND, fine grained, little Shell<br>fragments, little silt, trace gravely<br>gray, dense, wet, partially demension<br>with Calculum Carbonate. 21.3<br>SILT, little Shell fragments, trace |              |       |       |                   | - 5.9              |
| -<br>23<br>-<br>24       | Å.N.                                            |                                  |                          | -                                    |                    | Sand, Light brown, dense, moist -<br>-<br>-<br>-                                                                                                                                           |              |       | *0    |                   |                    |
| 25<br>26<br>27           | 5-8                                             | 2.0<br>2.0<br>100%               | 15<br>30<br>20<br>35     |                                      |                    | Nore: Some shell fragments,<br>Partially cemented with Calcius<br>Carbonate, becoming gray.                                                                                                |              |       |       |                   |                    |
| 28<br>28<br>29           |                                                 |                                  |                          |                                      |                    | -                                                                                                                                                                                          |              |       |       |                   | -                  |
| 30-                      |                                                 |                                  |                          |                                      |                    |                                                                                                                                                                                            | 1            |       |       |                   |                    |

DRILLING CO.: <u>Hardin Huber Incorporated</u> DRILLER: <u>Brian Van Doren</u> BAKER REP.: James Culp

BORING NO.: <u>35MW-26B</u>

SHEET 2 OF 3

Baker

Baker Environmental, Inc

## **TEST BORING AND WELL CONSTRUCTION RECORD**

PROJECT: Site 35 - Camp Geiger Area Fuel Farm

S.O. NO.: 62470-232

BORING NO .: 35MW-26B

| T<br>R         | = Split Spoo<br>= Shelby Tu<br>= Air Rotar<br>= Denison | be                               | A =<br>W =<br>C =<br>P = | Auger<br>Wash<br>Core<br>Piston      |                    | DEFINITIONS<br>SPT = Standard Penetration Test (<br>RQD = Rock Quality Designation (<br>Lab. Class. = USCS (ASTM D-2487)<br>Lab. Moist. = Moisture Content (A | %)<br>or A | ASHTO | D (AST | M D-3282)         |                |
|----------------|---------------------------------------------------------|----------------------------------|--------------------------|--------------------------------------|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-------|--------|-------------------|----------------|
| Depth<br>(Ft.) | Sample<br>Type<br>and<br>No.                            | Samp.<br>Rec.<br>(Ft.<br>&<br>%) | SPT<br>or<br>RQD         | Lab.<br>Class.<br>or<br>Pen.<br>Rate | Lab.<br>Moist<br>% | Visual Description                                                                                                                                            | \          | Vell  |        | tallation<br>tail | Elevation      |
| 31<br>32       | 5-9                                                     | 2.0<br>2.0<br>100%               | 20<br>32<br>22<br>28     |                                      |                    | Continued from Sheet 2<br>SAND, fine grained, some shell<br>Aragments, frace Silt, Gray and<br>brown, Partially Cemented with<br>Calcium Carbonate.           | #2<br>#2   |       | #2     | -                 | - 15.6         |
| 33-<br>34-     | A.N.                                                    |                                  |                          |                                      |                    | NOTE: gray                                                                                                                                                    |            | #1    | -      | <br>-<br>-        |                |
| 35             | 5-10                                                    | 2:0<br>2:0<br>100%               | 10<br>12<br>14<br>12     |                                      |                    | Note: gray                                                                                                                                                    |            |       | #5.    |                   | -20.6          |
| 38-<br>39-     | <b>.</b> A. N.                                          |                                  |                          |                                      |                    |                                                                                                                                                               | ¥5         | #8    | 85     | -                 | -<br>-<br>24.1 |
| 4:0<br>4-1     | 5-11                                                    | 2.0<br>2.0                       | IZ 13<br>18<br>16        |                                      |                    | SILT, Some Sand, Little shell<br>fragments, trace clay, greenish<br>gray, dense, Moist to bet<br>12.6 42.6                                                    |            | #7    |        | -                 | -25.6          |
| 42             |                                                         |                                  |                          |                                      |                    | END OF BORING AT 42.0 FEES;<br>WELL SET AT 42.0 FEET.                                                                                                         |            |       |        | -                 |                |
| 4-5_           |                                                         |                                  |                          |                                      |                    | -                                                                                                                                                             |            |       |        | -                 |                |
| 41_<br>48_     |                                                         |                                  |                          |                                      |                    |                                                                                                                                                               |            |       |        | -                 |                |
| 49-<br>50-     |                                                         |                                  |                          |                                      |                    | -                                                                                                                                                             | -          |       |        | -                 | -              |

DRILLER: Brian Van Doren

BORING NO.: 35MW-Z6B

SHEET 3 OF 3



PROJECT: Site 35 - Camp Geiger Area Fuel Farm

S.O. NO.: 62470-232 COORDINATES: EAST: 2464566.1200 ELEVATION: SURFACE: 18.5

BORING NO .: 35MW-29B NORTH: 363109.0400 TOP OF STEEL CASING: 20.28

|                                        | SPLI<br>SPOO       |                  | CASING                               | AL  | JGERS                                   | BIT<br>SIZE                                        | DATE                                       | PROGRESS<br>(FT)                                      | WEATHE                     | R                        | WATER<br>DEPTH<br>(FT) | TIME                                 |
|----------------------------------------|--------------------|------------------|--------------------------------------|-----|-----------------------------------------|----------------------------------------------------|--------------------------------------------|-------------------------------------------------------|----------------------------|--------------------------|------------------------|--------------------------------------|
| SIZE (DIAM.)                           | 2"                 |                  |                                      |     |                                         | 8"                                                 | 4-26-94                                    | 46.0                                                  | Hot, breez                 | cy                       |                        | -                                    |
| LENGTH                                 | 2'                 |                  |                                      |     |                                         |                                                    |                                            |                                                       |                            |                          |                        |                                      |
| ГҮРЕ                                   | STD                | ).               |                                      |     |                                         | ROTARY                                             |                                            |                                                       |                            |                          |                        | -                                    |
| HAMMER WT.                             | 1407               | #                |                                      |     |                                         |                                                    |                                            |                                                       |                            |                          |                        |                                      |
| FALL                                   | 30"                | · .              |                                      |     |                                         |                                                    |                                            |                                                       | -                          |                          |                        |                                      |
| STICK UP                               |                    |                  |                                      |     |                                         |                                                    |                                            |                                                       |                            |                          |                        |                                      |
| remarks: A                             | ll WE              | U (              | INSTR                                | UCI | TON                                     | DETAILS                                            | ARE F                                      | SASED AN T                                            | FIELD ME                   | ASU                      | remen                  | ÎTS.                                 |
| S = Split Sp<br>T = Shelby             |                    | A =              | Auger<br>Wash                        |     | W<br>INFO                               | /ELL<br>RMATION                                    | DIAM                                       | TYP                                                   | E                          | D                        | TOP<br>EPTH<br>(FT)    | BOTTOM<br>DEPTH<br>(FT)              |
| R = Air Rot<br>D = Deniso              | ary                | -                | Core<br>Piston                       |     | Riser l                                 | Pipe                                               | 2"                                         | Schedule 40, PV                                       | C                          | +1.                      |                        | -40.0                                |
|                                        | i = No Sa          |                  |                                      |     | Screen                                  | <b>)</b>                                           | 2"                                         | .10 Slot, Schedul                                     | e 40 PVC                   | -                        | 40.0                   | - 44.0                               |
| Samp<br>Depth Type<br>(Ft.) and<br>No. | Ft.                | SPT<br>or<br>RQD | Lab.<br>Class.<br>or<br>Pen.<br>Rate |     |                                         | Visual D                                           | Descriptio                                 | n                                                     | Inst                       | Vell<br>allatic<br>etail | n                      | Elevatio                             |
| 1 - AN<br>2                            | 65%                | 5578             |                                      |     | SILT,<br>dark<br>SILT,<br>Light<br>dens | Little Sav<br>brown,<br>Trace<br>brown<br>S. Moist | nd, track<br>Medium<br>Clay, to<br>and gra | i gravel,<br>dinse, damp<br>racc sand,<br>a.y, medium | -<br>-<br>-<br>-<br>-<br>- |                          | -                      | -<br>-<br>-<br>-<br>-<br>-<br>-<br>- |
| 5 - 5-2<br>6                           | 100%               | かからのしか           |                                      |     | 5.3<br>SAND<br>Hrace                    | , medium<br>sile, lig                              | n to Fine d                                | 5.3                                                   |                            |                          |                        | - 13.2                               |
| 7 - MU1295-5-3<br>03 5-3<br>8 -        | 100%               | 69 15            |                                      |     | Nore                                    | e, wee<br>Geound.                                  | water l                                    | incountered                                           |                            |                          | •                      | 10.5                                 |
| 9 - 5-4                                | 2.0<br>2.0<br>100% | 5679             |                                      |     | NOTE                                    | SAND 15 F                                          |                                            |                                                       | -<br>0<br>- }              |                          | •                      |                                      |
| 10                                     |                    |                  |                                      |     |                                         |                                                    |                                            | atch to Sheet 2                                       |                            |                          |                        |                                      |



PROJECT: Site 35 - Camp Geiger Area Fuel Farm \_

S.O. NO.: 62470-232

BORING NO .: 35MW-298

|   | T =<br>R =                 | Split Spoo<br>Shelby Tu<br>Air Rotar<br>Denison | ıbe                              | A =<br>W =<br>C =<br>P = | Auger<br>Wash<br>Core<br>Piston      |                    | DEFINITIONS<br>SPT = Standard Penetration Test (A<br>RQD = Rock Quality Designation (S<br>Lab. Class. = USCS (ASTM D-2487) (<br>Lab. Moist. = Moisture Content (A   | %)<br>or AA | SHTC | ) (AST | M D-3282)         |           |
|---|----------------------------|-------------------------------------------------|----------------------------------|--------------------------|--------------------------------------|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|------|--------|-------------------|-----------|
|   | Depth<br>(Ft.)             | Sample<br>Type<br>and<br>No.                    | Samp.<br>Rec.<br>(Ft.<br>&<br>%) | SPT<br>or<br>RQD         | Lab.<br>Class.<br>or<br>Pen.<br>Rate | Lab.<br>Moist<br>% | Visual Description                                                                                                                                                  | v           | Vell |        | tallation<br>tail | Elevation |
|   | -<br>11                    |                                                 |                                  |                          |                                      |                    | Continued from Sheet 1 -                                                                                                                                            |             |      |        | -                 | -         |
|   | 12<br>-<br>13              |                                                 |                                  |                          |                                      |                    | 12.5(est)12.5                                                                                                                                                       |             |      | -      |                   | 6.0       |
| · | 14                         |                                                 |                                  |                          |                                      |                    | SILT, frace Sand, black, Loose,                                                                                                                                     |             |      |        | -                 |           |
| C | -<br>  16<br>  17          | 5-5                                             | 2.0<br>2.0<br>100%               | 4956                     |                                      |                    | SILT, frace Sand, black, LOOSE,<br>WEL, UNIDENTIFYABLE ODDE TO<br>THE SOILS.<br>Sand, fine grained, frace Silt,<br>black, medium dense, wet,<br>Same odor as above. |             |      |        | -                 | 2.4       |
|   | 18<br>18<br>19             | AN                                              |                                  |                          |                                      |                    | Same odor as above.                                                                                                                                                 |             |      | 0<br>¥ | -                 | -         |
|   | 20                         |                                                 | 1.5                              | 1                        |                                      |                    | -                                                                                                                                                                   |             |      |        | -                 |           |
|   | 21 <u>-</u><br>22 <u>-</u> | 5-6                                             | 2.0<br>15%                       |                          |                                      |                    | -                                                                                                                                                                   |             | 2    |        | -                 |           |
|   | 23<br>24                   | AN                                              |                                  |                          |                                      |                    |                                                                                                                                                                     | 0           |      |        | -                 |           |
|   | 25<br>26                   | 5-7                                             | 20                               | <br> 3<br>24             |                                      |                    | 25.1<br>SAND, fine grained, Well graded,<br>Frace SILT, gray, dense, Wet, f                                                                                         |             |      |        | -                 | -6.6      |
|   | 27<br>28                   |                                                 | 100%                             | 38                       |                                      |                    | SAND, time grained, well gratter,<br>Frace SILT, gray, dense, wet, f<br>partiality cemented with<br>Calcium Carbo nate<br>SILT, frace sand, gray, dense,<br>Moist   |             |      |        | -                 |           |
| C | 29                         |                                                 |                                  |                          |                                      |                    |                                                                                                                                                                     | -           |      |        | -                 | -         |

DRILLING CO.: <u>Hardin Huber Incorporated</u> BORING NO .: 35HW-29B SHEET 2 OF 2 DRILLER: Brian Van Doren



PROJECT: Site 35 - Camp Geiger Area Fuel Farm

S.O. NO.: 62470-232

BORING NO .: 35MW-29B

| T =<br>R =         | Split Spoo<br>Shelby Tu<br>Air Rotar<br>Denison | ıbe                              | A =<br>W =<br>C =<br>P =  | Auger<br>Wash<br>Core<br>Piston      |                    | DEFINITIONS<br>SPT = Standard Penetration Test (<br>RQD = Rock Quality Designation (<br>Lab. Class. = USCS (ASTM D-2487)<br>Lab. Moist. = Moisture Content (A       | (%)<br>) or AASHTO (ASTM D-3282)                      |   |
|--------------------|-------------------------------------------------|----------------------------------|---------------------------|--------------------------------------|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|---|
| Depth<br>(Ft.)     | Sample<br>Type<br>and<br>No.                    | Samp.<br>Rec.<br>(Ft.<br>&<br>%) |                           | Lab.<br>Class.<br>or<br>Pen.<br>Rate | Lab.<br>Moist<br>% | Visual Description                                                                                                                                                  | Well Installation<br>Detail Elevation                 | n |
| 31<br>32           | 5-8                                             | 1.5<br>3.0<br>75%                | 18<br>22<br>27<br>25      |                                      |                    | Continued from Sheet 2<br><u>SAND</u> , fine grained, trace shell<br>fragments, trace suce, gray,<br>Very dense, wet, partially climente<br>with Calcium Carbonate. | × × -                                                 |   |
| -<br>33-<br>34-    | A.N.                                            |                                  |                           |                                      |                    | • • • • • • • • • • • • • • • • • • •                                                                                                                               |                                                       |   |
| 35<br>36<br>37     | 5-9                                             | 1.3<br>20<br>45%                 | 813115                    |                                      |                    | NOTE: CAVING & 86.0'                                                                                                                                                |                                                       |   |
| -<br>38<br>-<br>39 | A:N.                                            |                                  |                           |                                      |                    | -                                                                                                                                                                   |                                                       |   |
| 40<br>41<br>42     | 5-10                                            | 2.0<br>2.0<br>100%               |                           |                                      |                    |                                                                                                                                                                     |                                                       |   |
| 43<br>44           | 5-11                                            | 2.0<br>2.0<br>10%                | 2<br>20<br>25<br>26<br>10 |                                      |                    |                                                                                                                                                                     | → <sup>5</sup> × <sup>6</sup>                         | 5 |
| 45 -<br>46         | 5-1z                                            | Z.0<br>Z.0<br>100%               | 11 12                     |                                      |                    | 44.6<br><u>SANO</u> , finegrained, Some selt, -<br>Frace shell fragments,<br>greenish gray, medium dense,<br>MOIST 46.67                                            | $\frac{\mathbf{v}^{\Lambda}}{\mathbf{k}^{6}} = -26.3$ |   |
| 47 -<br>48<br>-    |                                                 |                                  |                           |                                      |                    | END OF BORING @ 46.0 FEET                                                                                                                                           |                                                       |   |
| 49_<br>50_         |                                                 |                                  |                           |                                      |                    |                                                                                                                                                                     |                                                       |   |

DRILLING CO.: <u>Hardin Huber Incorporated</u> DRILLER: <u>Brian Van Doren</u>

BAKER REP.: <u>James Culp</u> BORING NO.: <u>35MW-29B</u>

SHEET 3 OF 3



PROJECT: Site 35 - Camp Geiger Area Fuel Farm

\_\_\_\_\_ S.O. NO.: 62470-232 COORDINATES: EAST: 2464566.0500 NORTH: 363103.4520 ELEVATION: SURFACE: 18.6

BORING NO .: 35 MW-29A TOP OF STEEL CASING: 20.62

|                                                 | SPLIT<br>SPOON | CASING             | AU                 | GERS      | BIT<br>SIZE           | DATE         | PROGRESS<br>(FT)                                                            | WE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | ATHER      | WATEF<br>DEPTH<br>(FT)  | TIME                                                                                        |
|-------------------------------------------------|----------------|--------------------|--------------------|-----------|-----------------------|--------------|-----------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-------------------------|---------------------------------------------------------------------------------------------|
| SIZE (DIAM.)                                    | 2"             |                    | 6.2                | 5″ID      |                       | 4-27-9       | + 17                                                                        | Ног,                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Breet      | ey                      |                                                                                             |
| LENGTH                                          | 2'             |                    |                    | 5'        |                       |              |                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |            |                         |                                                                                             |
| ТҮРЕ                                            | STD.           |                    | H. :               | 5, 4.     |                       |              |                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |            |                         | -                                                                                           |
| HAMMER WT.                                      | 140#           |                    |                    |           |                       |              |                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |            |                         |                                                                                             |
| FALL                                            | 30"            |                    |                    |           |                       |              |                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | •          |                         |                                                                                             |
| STICK UP                                        |                |                    |                    |           |                       |              |                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |            |                         |                                                                                             |
| remarks: Al                                     | I WELL         | CONSTR             | UCT                | TON       | DETALL                | <u>s Are</u> | BASED 01                                                                    | VA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | ELD        | MEASURI                 | EMENTS                                                                                      |
| S = Split Sp<br>T = Shelby                      |                | = Auger<br>= Wash  |                    |           | VELL<br>RMATION       | DIAM         | ТҮР                                                                         | E                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |            | TOP<br>DEPTH<br>(FT)    | BOTTOM<br>DEPTH<br>(FT)                                                                     |
| R = Air Rota<br>D = Denisor                     | iry C          | = Core<br>= Piston |                    | Riser     | Pipe                  | 2"           | Schedule 40, PVC                                                            | 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |            | + 2.02                  | -7.05                                                                                       |
|                                                 | I = No Sample  |                    |                    | Screen    | 1                     | 2"           | .10 Slot, Schedule                                                          | 40 PV(                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <b>J</b> : | -7.05                   | -16.0                                                                                       |
| Samp<br>Depth Type<br>(Ft.) and<br>No.          | I NOW LEBT     | or                 | Lab.<br>Moist<br>% |           | Visual [              | Descriptio   | n                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Instal     | 'ell<br>llation<br>tail | Elevatior                                                                                   |
| 1<br>2<br>3<br>4<br>5<br>6<br>7<br>8<br>9<br>10 |                |                    |                    | SEE<br>Fo | BORING (<br>R Soil I, |              | -<br>2.5<br><b>3511/10-29B</b> -<br>770N<br>4.5<br>-<br>6.03<br>-<br>-<br>- | *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         *         * | xx xx xx   |                         | -<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>- |



PROJECT: <u>Site 35 - Camp Geiger Area Fuel Farm</u> S.O. NO.: <u>62470-232</u> BORING

BORING NO .: 35MW-29A-

| T =<br>R =                                                                                                                                                                                                                                                                                                                      | Split Spoo<br>Shelby Tu<br>Air Rotar<br>Denison | ibe                              | A =<br>W =<br>C =<br>P = | Auger<br>Wash<br>Core<br>Piston      |                    | <u>DEFINITIONS</u><br>SPT = Standard Penetration Test (<br>RQD = Rock Quality Designation (<br>Lab. Class. = USCS (ASTM D-2487)<br>Lab. Moist. = Moisture Content (A | %}<br>or A | ASHTO | ) (AS     | FM D-3282)        |                       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|----------------------------------|--------------------------|--------------------------------------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-------|-----------|-------------------|-----------------------|
| Depth<br>(Ft.)                                                                                                                                                                                                                                                                                                                  | Sample<br>Type<br>and<br>No.                    | Samp.<br>Rec.<br>(Ft.<br>&<br>%) |                          | Lab.<br>Cíass.<br>or<br>Pen.<br>Rate | Lab.<br>Moist<br>% | Visual Description                                                                                                                                                   | `          | Vell  | Ins<br>De | tallation<br>tail | Elevation             |
| $ \begin{array}{c}     - \\     11 - \\     12 - \\     13 - \\     14 - \\     14 - \\     15 - \\     16 - \\     17 - \\     18 - \\     19 - \\     20 - \\     21 - \\     22 - \\     21 - \\     22 - \\     23 - \\     24 - \\     25 - \\     26 - \\     27 - \\     28 - \\     29 - \\     30 - \\   \end{array} $ |                                                 |                                  |                          |                                      |                    | Continued from Sheet                                                                                                                                                 |            | 20 th |           |                   | <br>3.6<br>2.0<br>1.6 |

DRILLING CO.: <u>Hardin Huber Incorporated</u> DRILLER: <u>Brian Van Doren</u> BAKER REP.: James Culp BORING NO.: <u>35 MW - 29A</u>

SHEET Z OF Z



PROJECT: Site 35 - Camp Geiger Area Fuel Farm

S.O. NO.: <u>62470-232</u> COORDINATES: EAST: <u>2464810.9200</u> ELEVATION: SURFACE: <u>/6.2</u> BORING NO.: <u>35MW-308</u> NORTH: <u>362825,6830</u> TOP OF STEEL CASING: 18.38

| SPLIT<br>SPOON | CASING                                                                                                                                                                                                                                                                                                                                                                                                                                    | i AL                                                                       | IGERS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | BIT<br>SIZE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | DATE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | PROGRESS<br>(FT)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    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| 2"             |                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              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| IWEL           | CONSTR                                                                                                                                                                                                                                                                                                                                                                                                                                    | VCTI                                                                       | WD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           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| ary C          | = Core                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                            | Riser                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        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|                |                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                            | Screer                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       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| Ft. or         | or                                                                                                                                                                                                                                                                                                                                                                                                                                        | Lab.<br>Moist<br>%                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              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                                                                        | , fine grain<br>, fine grain<br>1, lasse, u                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | r, damp<br>ned, littl<br>vet                                                                                                                                                                                                                                                                                                                                                                                                      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|                | SPOON         2"         2"         STD.         140#         30"         LWEU         SAMPLE TYPE         oon         A         Tube         W         No Samp         Ie         Samp.         Ft.         9%         I.8         Z.0         30"         1.8         Z.0         7.7         2.0         7.7         2.0         7.7         2.0         2.0         2.0         2.0         2.0         2.0         2.0         3.00% | SPOONCASING2"2"2"STD.140#30"30" $and and and and and and and and and and $ | SPOONCASINGAL $2"$ $2"$ $2'$ $2'$ STD. $140\#$ $30"$ $30"$ $140\#$ $30"$ $30"$ $2$ $30"$ $2$ $30"$ $2$ $30"$ $2$ $30"$ $2$ $30"$ $2$ $30"$ $2$ $30"$ $2$ $30"$ $2$ $30"$ $2$ $30"$ $2$ $200$ $A$ = Auger $AugerAugeraugeraugeraugeraugeraugeraugeraugeraugeraugeraugeraugeraugeraugeraugeraugeraugeraugeraugeraugeraugeraugeraugeraugeraugeraugeraugeraugeraugeraugeraugeraugeraugeraugeraugeraugeraugeraugeraugeraugeraugeraugeraugeraugeraugeraugeraugeraugeraugeraugeraugeraugeraugeraugeraugeraugeraugeraugeraugeraugeraugeraugeraugeraugeraugeraugeraugerauger$ | SPOONCASINGAUGERS $2"$ $2"$ $2"$ $2'$ $30"$ $30"$ $140 \#$ $30"$ $30"$ $30"$ $30"$ $30"$ $30"$ $30"$ $30"$ $30"$ $30"$ $30"$ $30"$ $30"$ 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SPOONCASINGAUGERSSIZEDATE2"8"5-11-942'8"5-11-942'8"5-11-942'8"5-11-9430"80"80"30"80"80"30"80"80"30"80"80"30"80"8000480008000Ample TYPE<br>TubeWELL<br>P = PistonWELL<br>NFCRMATIONN = No Sample8000N = No Sample8000Seec.<br>Ft.<br>or<br>8 RQD<br>9608000N = No Sample14b.<br>Class.<br>Class.<br>Class.<br>Rate14b.<br>North Moist<br>96108211968000119680001196800011968000119680001196800011968000121112111311141214121512161116111721811191110121112121113121412151216121712181219121013111412.0141414 <tr< td=""><td>SPOONCASINGAUGERSSIZEDATE(FT)2"<math>3''</math><math>5'''</math><math>5''''</math><math>5'''''</math><math>4''''''''''''''''''''''''''''''''''''</math></td><td>SPOON       CASING       AUGERS       SIZE       DATE       (FT)       WEATH         2"       8"       5-11-94       44.0       Cool., Surn         2"       80"       8"       5-11-94       44.0       Cool., Surn         30"       80"       90"       90000       90000       90000       90000         30"       900000       800000       900000       900000       900000       900000         140#       90000000       90000000       90000000       90000000       900000000       900000000         140#       900000000000000       9000000000000000000000000000000000000</td><td>SPOONCASINGAUGERSSIZEDATE(FT)WEATHER2"<math>3"</math><math>5-11-94</math><math>44.0</math><math>200L, 5unny2"<math>2"</math><math>2"</math><math>2"</math><math>2"</math><math>200L, 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Sunny2"3"5".11-9444.0Cool.: Sunny2"9"9"9"9"140#9"9"9"30"9"9"9"140#9"9"9"30"9"9"9"30"9"9"9"140#9"9"9"140#9"9"9"30"9"9"9"140#9"9"9"140#9"9"9"140#9"9"9"140#9"9"9"140#9"9"9"140#9"9"9"140#9"9"9"140#9"9"9"140#9"9"9"140#9"9"9"140#9"9"9"140#9"9"9"140#9"9"9"150#9"9"9"169"9"9"171010"10"1810"10"10"199"9"10"1010"10"10"1010"10"10"1010"10"10"1010"10"10"</td></tr<> | SPOONCASINGAUGERSSIZEDATE(FT)2" $3''$ $5'''$ $5''''$ $5'''''$ $4''''''''''''''''''''''''''''''''''''$ | SPOON       CASING       AUGERS       SIZE       DATE       (FT)       WEATH         2"       8"       5-11-94       44.0       Cool., Surn         2"       80"       8"       5-11-94       44.0       Cool., Surn         30"       80"       90"       90000       90000       90000       90000         30"       900000       800000       900000       900000       900000       900000         140#       90000000       90000000       90000000       90000000       900000000       900000000         140#       900000000000000       9000000000000000000000000000000000000 | SPOONCASINGAUGERSSIZEDATE(FT)WEATHER2" $3"$ $5-11-94$ $44.0$ $200L, 5unny2"2"2"2"2"200L, 5unnySTD.Rorney2"2"2"2"140#2"2"2"2"2"30"2"2"2"2"140#2"2"2"2"30"2"2"2"2"140#2"2"2"2"140#2"2"2"2"140#2"2"2"2"140#2"2"2"2"140#2"2"2"2"140#2"2"2"2"140#2"2"2"2"140#2"2"2"2"140#2"2"2"2"140#2"2"2"2"150#2"2"2"2"162"2"2"2"1722"2"2"1722"2"2"1722"2"2"182"2"2"2"192"2"2"2"192"2"2"2"192"2"$ | SPLIT<br>SPOONCASINGAUGERSBIT<br>SIZEDATEPROGRESS<br>(FT)WEATHERDEPTH<br>(FT)2"3"5".11-9444.0Cool.: Sunny2"3"5".11-9444.0Cool.: Sunny2"9"9"9"9"140#9"9"9"30"9"9"9"140#9"9"9"30"9"9"9"30"9"9"9"140#9"9"9"140#9"9"9"30"9"9"9"140#9"9"9"140#9"9"9"140#9"9"9"140#9"9"9"140#9"9"9"140#9"9"9"140#9"9"9"140#9"9"9"140#9"9"9"140#9"9"9"140#9"9"9"140#9"9"9"140#9"9"9"150#9"9"9"169"9"9"171010"10"1810"10"10"199"9"10"1010"10"10"1010"10"10"1010"10"10"1010"10"10" |

DRILLING CO.: <u>Hardin Huber Incorporated</u> DRILLER: <u>Brian Van Doren</u>

BORING NO .: 35 MW - 30B

SHEET 1 OF 3



PROJECT: Site 35 - Camp Geiger Area Fuel Farm

S.O. NO.: 62470-232

BORING NO .: 35MW-30B

| T =<br>R =           | Split Spo<br>Shelby Tu<br>Air Rotar<br>Denison | ube<br>Ƴ                         | A =<br>W =<br>C =<br>P = | Auger<br>Wash<br>Core<br>Piston      |                    | DEFINITIONS<br>SPT = Standard Penetration Test (<br>RQD = Rock Quality Designation (<br>Lab. Class. = USCS (ASTM D-2487)<br>Lab. Moist. = Moisture Content (A | (%)<br>or A | ASHT | D (AS | TM D-3282)        | <u> </u> |           |
|----------------------|------------------------------------------------|----------------------------------|--------------------------|--------------------------------------|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|------|-------|-------------------|----------|-----------|
| Depth<br>(Ft.)       | Sample<br>Type<br>and<br>No.                   | Samp.<br>Rec.<br>(Ft.<br>&<br>%) | SPT<br>or<br>RQD         | Lab.<br>Class.<br>or<br>Pen.<br>Rate | Lab.<br>Moist<br>% | Visual Description                                                                                                                                            | `           | Well |       | tallation<br>tail |          | Elevation |
| -<br>11_<br>-<br>12_ |                                                |                                  |                          |                                      |                    | Continued from Sheet 1                                                                                                                                        |             |      |       |                   |          | -         |
| -<br>13<br>14        |                                                | •                                |                          |                                      |                    | 12.5(est) 12.5                                                                                                                                                |             |      | -     |                   |          | 3.7       |
| 15                   | 5-6                                            | 1.7<br>2.0<br>85%                | N 107 107 109            |                                      |                    | SAND, fine grained, trace -<br>Silt, gray, coose, wet -                                                                                                       |             |      | ¢     |                   |          |           |
| -<br>18<br>19        |                                                |                                  |                          |                                      |                    |                                                                                                                                                               |             |      |       |                   |          |           |
| 20<br>21<br>22       | 5-7                                            | 1.4<br>17.0<br>70%               | <br>Шон<br>Шон<br>Шон    |                                      |                    | NOTE: QUIUL COLOR                                                                                                                                             |             | 4 7  |       |                   |          |           |
| 23<br>24             |                                                |                                  |                          |                                      |                    | <u>23.5(cst)</u>                                                                                                                                              |             |      |       |                   |          | - 7.3     |
| 25<br>26<br>27       | 5-8                                            | 2.0<br>2.0<br>100%               | 8<br>10<br>22<br>26      |                                      |                    | SILT, Little Clay, Frace Sand,<br>Grayish white, dinse, wet-<br>26.2 202 20.2<br>SAND, fine to medium grained, -<br>Sonce she u fragments, trace              | о<br>À      |      |       |                   |          | 10.0      |
| 28<br>29             |                                                |                                  |                          |                                      |                    | Some shell fragments, trace_<br>silt, light gray, dease, wet, _<br>partially comented with<br>Calcum carbonate.                                               |             |      |       |                   |          |           |
| 30                   |                                                |                                  |                          |                                      |                    | -                                                                                                                                                             |             |      |       |                   | -        | <u> </u>  |

DRILLING CO.: <u>Hardin Huber Incorporated</u> DRILLER: <u>Brian Van Doren</u>

BAKER REP.: James Culp

BORING NO .: 35MW-30B

SHEET 2 OF 3



PROJECT: Site 35 - Camp Geiger Area Fuel Farm

S.O. NO.: 62470-232

BORING NO .: 35 MW-30B

DEFINITIONS SAMPLE TYPE SPT = Standard Penetration Test (ASTM D-1586) (Blows/0.5') A = Auger = Split Spoon S RQD = Rock Quality Designation (%) Т = Shelby Tube W = WashLab. Class. = USCS (ASTM D-2487) or AASHTO (ASTM D-3282) C = Core R = Air Rotary Lab. Moist. = Moisture Content (ASTM D-2216) Dry Weight Basis = Denison P = Piston D N = No Sample Samp. Lab. Well Installation Sample Rec. Class. SPT Lab. Depth Type Visual Description Detail Elevation (Ft. or or Moist (Ft.) and & Pen. RQD % No. %) Rate 1.2 22 24 Continued from Sheet 2 ž ы 31. 24. 59 ¢ 23 60% 32 -16.8 33. 33.5 <u>33.5(es+)</u> ٨ -17.3 AN ¥ 34 5 35 GRAVEL, (Cemented Sand, ¥ 1. Z 18 QUARTE PEOBLES And Umestone 22 2.0 36 fragments) Some Shell fragments gray, very dense, we t 5-10 26 60% 17 37 -21.05 ß 38 Ì AN ×° 39. 40 20 22 1.9 2.0 -25.05 41. 24 5-11 ₹^ 41.9 - 25.7 - 25.8 22 95% SAND fine grained, some sitt, greenish gray, medium dense, 42 58 2.0 25 26.8 2.0 43 moist 10 5-12 #3 <u> 4</u>3 #3 12 100% 44.0 44.0 - 27.8 44 END OF BORING AT 44.0 FEET .. SET WELL AT 42.0 FEET. 45 46 *4*7 4-8 **49** 50

DRILLING CO.: <u>Hardin Huber Incorporated</u> DRILLER: <u>Brian Van Doren</u> BAKER REP.: James Culp

BORING NO .: 35MW-30B

SHEET 3 OF 3



PROJECT: Site 35 - Camp Geiger Area Fuel Farm

S.O. NO.: <u>62470-232</u> COORDINATES: EAST: <u>2464806.3000</u> ELEVATION: SURFACE: <u>16.3</u> BORING NO.: <u>35MW-30A</u> NORTH: <u>362825.7500</u> TOP OF STEEL CASING: 18.38

|                                                                         | SPLIT<br>SPOON                   | CASING             | AU                 | GERS       | BIT<br>SIZE      | DATE       | PROGR<br>(FT) |                             | W         | VEAT        | HER                 | 1               | VATER<br>DEPTH<br>(FT) | TIME                    |
|-------------------------------------------------------------------------|----------------------------------|--------------------|--------------------|------------|------------------|------------|---------------|-----------------------------|-----------|-------------|---------------------|-----------------|------------------------|-------------------------|
| SIZE (DIAM.)                                                            | 2"                               |                    | 6.2                | 5"ID       |                  | 5-11-94    | 4 17.0        | ,                           | Col       | <i>96,5</i> | sun                 | ny              |                        |                         |
| LENGTH                                                                  | 2'                               |                    | 5                  | . /        |                  |            |               |                             |           |             |                     |                 | inter                  |                         |
| ТҮРЕ                                                                    | STD.                             |                    | H. 5               | s.A.       |                  |            |               |                             |           |             |                     |                 |                        | -                       |
| HAMMER WT.                                                              | 140#                             |                    |                    |            |                  |            |               |                             |           |             |                     |                 |                        |                         |
| FALL                                                                    | 30"                              |                    |                    |            |                  | ,          |               |                             |           |             | -                   |                 |                        |                         |
| STICK UP                                                                |                                  |                    |                    |            |                  |            |               |                             |           |             |                     |                 |                        |                         |
| remarks: AU                                                             | WELL (                           | DNSTRI             | ICTIL              | ONDE       | TAILS            | ARE BA     | GEDON         | FIEL                        | DN        | NEA         | SU                  | ZEME            | ENTS                   |                         |
| <u>S</u> = Split Spo<br>T = Shelby T                                    | AMPLE TYPE<br>oon A<br>ube W     | = Auger<br>= Wash  |                    |            | ELL<br>RMATION   | DIAM       |               | ТҮРЕ                        |           |             |                     | T(<br>DEP<br>(F | тн                     | BOTTOM<br>DEPTH<br>(FT) |
| R = Air Rota<br>D = Denison                                             |                                  | = Core<br>= Piston |                    | Riser F    | ripe             | 2"         | Schedule 4    | 0, PVC                      |           |             |                     | +2.             | 08                     | -6.25                   |
| N                                                                       | = No Sample                      | •<br>              |                    | Screen     |                  | 2"         | .10 Slot, Sc  | hedule                      | 40 P \    | 7C          |                     | -6.             | 25                     | - /5.25                 |
| Sampi<br>Depth Type<br>(Ft.) and<br>No.                                 | Samp.<br>Rec.<br>Ft. or<br>& RQI | or N               | Lab.<br>Moist<br>% |            | Visual C         | Descriptio | on            |                             |           | ln          | We<br>istall<br>Det | ation           |                        | Elevation               |
| -<br>1 -<br>2 -<br>3 -<br>4 -<br>5 -<br>6 -<br>7 -<br>8 -<br>9 -<br>0 - |                                  |                    |                    | SEE<br>FOR | BORING<br>SOIL I |            | 35 MW-3       | 4:5   •   5   •   •   •   • | #5> #2 #0 | چه<br>ج*    | 465 K2 40           |                 | -                      | - 13.3                  |
|                                                                         |                                  |                    |                    |            |                  | 141        |               | 2012                        |           |             |                     |                 |                        |                         |



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## **TEST BORING AND WELL CONSTRUCTION RECORD**

PROJECT: Site 35 - Camp Geiger Area Fuel Farm

S.O. NO.: 62470-232

BORING NO .: 35MW-30A

| S = Split Spo<br>T = Shelby 1<br>R = Air Rota<br>D = Denison                                                | ube W=<br>ry C=                             | = Auger<br>= Wash<br>= Core<br>= Piston |                    | DEFINITIONS<br>SPT = Standard Penetration Test (<br>RQD = Rock Quality Designation (<br>Lab. Class. = USCS (ASTM D-2487)<br>Lab. Moist. = Moisture Content (A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | %)<br>or AASHTO (ASTM D-3282) |                             |       |                    |  |  |
|-------------------------------------------------------------------------------------------------------------|---------------------------------------------|-----------------------------------------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-----------------------------|-------|--------------------|--|--|
| Depth Sample<br>(Ft.) and<br>No.                                                                            | Samp.<br>Rec. SPT<br>(Ft. or<br>& RQD<br>%) | or                                      | Lab.<br>Moist<br>% | Visual Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Wel                           | Well Installation<br>Detail |       |                    |  |  |
| 11 - 12 - 13 - 14 - 13 - 14 - 15 - 16 - 17 - 18 - 17 - 18 - 19 - 20 - 21 - 22 - 23 - 23 - 23 - 23 - 23 - 23 |                                             |                                         |                    | Continued from Sheet 1<br>SEE BORING LOG FOR 35MW-3<br>FOR SOIL INFORMATION.<br>15:25<br>16.0<br>17.0<br>17.0<br>16.0<br>17.0<br>17.0<br>16.0<br>17.0<br>16.0<br>17.0<br>17.0<br>17.0<br>16.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17.0<br>17. | ð                             |                             | -<br> | . 05<br>0.3<br>0.7 |  |  |

DRILLING CO.: <u>Hardin Huber Incorporated</u> DRILLER: <u>Brian Van Doren</u> BAKER REP.: James Culp

BORING NO .: 35MW-30A

SHEET 2 OF 2



PROJECT: Site 35 - Camp Geiger Area Fuel Farm

S.O. NO.: <u>62470-232</u> COORDINATES: EAST: <u>2465209.7100</u> ELEVATION: SURFACE: <u>/6.4</u> BORING NO.: <u>35 MW-31 B</u> NORTH: <u>36 3319.6060</u> TOP OF STEEL CASING: <u>18.46</u>

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                                               | SPLIT<br>SPOON                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | CASING             | AUGER                          | BIT<br>SIZE                                                                      | DATE                              | PROGRESS<br>(FT)         | WEATHE     | R WATER<br>DEPTH<br>(FT) | TIME                                                             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|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|--------------------------------|----------------------------------------------------------------------------------|-----------------------------------|--------------------------|------------|--------------------------|-------------------------------------------------------------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| SIZE (DIAM.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           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| ENGTH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  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| ГҮРЕ                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | STD.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                    |                                | ROTARY                                                                           | /                                 |                          |            |                          | - 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| AMMER WT.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              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                       | -          | <b>_</b> .               |                                                                                             |
| TICK UP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                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| REMARKS: AU                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | WELL C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | ONSTRUC            | TION DE                        | TALLS ARE                                                                        | BASED                             | ON FIELD                 | MEASUREN   | ENTS                     |                                                                                             |
| <u>S</u><br>S = Split Spc<br>T = Shelby T                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | = Auger            | IN                             | WELL<br>IFORMATION                                                               | DIAM                              | түр                      | E          | TOP<br>DEPTH<br>(FT)     | BOTTOM<br>DEPTH<br>(FT)                                                                     |
| R = Air Rota<br>D = Denison                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | ry C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | = Core<br>= Piston | Ris                            | er Pipe                                                                          | 2"                                | Schedule 40, PVC         | )          | +2.06                    | - 37.                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        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                           |
| Depth Sampl<br>(Ft.) and<br>No.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | · · · ·            | Lab.<br>Moist<br>%             | Visual D                                                                         | escriptio                         | on                       | Insta      | ell<br>llation<br>tail   | Elevation                                                                                   |
| $ \begin{array}{cccccccccccccccccccccccccccccccccccc$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | $\begin{array}{c} 1.3 \\ 1.3 \\ \overline{2}.0 \\ 45\% \\ 45\% \\ 45\% \\ 7.5 \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\ 7.5\% \\$ |                    | SiL<br>SiL<br>SiL<br>Hra<br>Mo | TY SAND, +<br>WIN, LOASE,<br>I, trace s<br>UL routs, U<br>IST to demp            | dry<br>dry<br>and, tr<br>inght br | ace clay,<br>own, Loose, | \vee<br>*  | -                        | -<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>- |
| $5 - 05/35^{-} 5-3 - 05/35^{-} 5-3 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 - 050 $ | $\frac{70\%}{1.7}$ $\frac{2}{5}$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | -                  | 6.0                            | T. Some CL<br>14m SHIFF H<br>E: Geaund<br>at 5.9FE<br>UD, finc gra<br>but brown, | water enc<br>et                   | countered                |            | -                        | - /0.4                                                                                      |
| 8<br>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 0.8<br>2.0<br>40%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                    | No                             | re: HEDIUM q                                                                     | rained C                          | -<br>8.0 FEET            | - 0<br>- X |                          | - 8.4<br>-<br>-                                                                             |

DRILLER: Brian Van Doren

BORING NO .: 35MW-3/B



PROJECT: <u>Site 35 - Camp Geiger Area Fuel Farm</u> S.O. NO.: <u>62470-232</u> BORING NO.: <u>35MW-318</u>

- 2

| T =<br>R =           | Split Spoo<br>Shelby Tu<br>Air Rotar<br>Denison | be                               | A =<br>W =<br>C =<br>P = | Auger<br>Wash<br>Core<br>Piston      |                    | DEFINITIONS<br>SPT = Standard Penetration Test (/<br>RQD = Rock Quality Designation (<br>Lab. Class. = USCS (ASTM D-2487)<br>Lab. Moist. = Moisture Content (A | %)<br>or AA | SHTC | ) (AST | 'M D-3282)        | isis             |               |
|----------------------|-------------------------------------------------|----------------------------------|--------------------------|--------------------------------------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|------|--------|-------------------|------------------|---------------|
| Depth<br>(Ft.)       | Sample<br>Type<br>and<br>No.                    | Samp.<br>Rec.<br>(Ft.<br>&<br>%) | SPT<br>or<br>RQD         | Lab.<br>Ciass.<br>or<br>Pen.<br>Rate | Lab.<br>Moist<br>% | Visual Description                                                                                                                                             | v           | Vell |        | tallatior<br>tail | ו                | Elevation     |
|                      | 1.                                              |                                  |                          |                                      |                    | Continued from Sheet 1 -                                                                                                                                       |             |      |        |                   | -                |               |
| 11<br>12<br>13<br>14 | Д.н.                                            |                                  |                          |                                      |                    |                                                                                                                                                                |             |      | -<br>¥ |                   |                  | -<br>3.9      |
| 15<br>               | 5-6                                             | 1.9<br>2.0<br>95%                | 13<br>12<br>9<br>7       |                                      |                    | SAND, fine grained, trace suct,<br>trace clay, gray, medium dense,<br>wet                                                                                      |             |      |        |                   |                  |               |
| -<br>18<br>-<br>19   | A.N.                                            |                                  |                          |                                      |                    | 18.0 (lest) 18.0                                                                                                                                               |             | ~*   |        |                   | -<br>-<br>-      | -1.6          |
| 20<br>21<br>22       | 5-7                                             | 0.3<br>2.0<br>15%                | 1 1 1 1 1                |                                      |                    | Sand Anc grained, frace<br>Silt, reddesh gray, Loose, Wet, -<br>Iroa staining.                                                                                 |             |      |        |                   | -<br>-<br>-<br>- |               |
| 23 -<br>24 -         | A.N.                                            |                                  |                          |                                      |                    | 24.0/est) 24.0                                                                                                                                                 |             |      |        |                   | -<br>-<br>-<br>- | -7.6          |
| 25<br>26<br>27       | 5-8                                             | 1.1<br>2.0<br>55%                | 12<br>20<br>2<br>1       |                                      |                    | Sand fine grained, trace -<br>silt, gray, medium dense<br>becoming Loose, wet, Partially -<br>Cenniated with Calcium Carbonne                                  |             |      |        |                   | -                |               |
| 28<br>29<br>-<br>30  |                                                 |                                  |                          |                                      |                    | -                                                                                                                                                              | -<br>-<br>- |      |        |                   | -                |               |
| DRILLI               | NG CO.:<br>R: <u>Bria</u> 1                     |                                  |                          |                                      | orpora             | ted BAKER REP.: James (<br>BORING NO.: <u>35M</u>                                                                                                              |             |      |        |                   | SHEE             | r <u>2</u> OF |



PROJECT: Site 35 - Camp Geiger Area Fuel Farm S.O. NO.: 62470-232 BOR

BORING NO .: 35 MW-31B

| T =<br>R =           | Split Spo<br>Shelby Tu<br>Air Rotar<br>Denison | ıbe                              | A =<br>W =<br>C =<br>P = | Auger<br>Wash<br>Core<br>Piston      |                    | DEFINITIONS<br>SPT = Standard Penetration Test (<br>RQD = Rock Quality Designation (<br>Lab. Class. = USCS (ASTM D-2487)<br>Lab. Moist. = Moisture Content (A | %)<br>or A | ASHT       | 0 (AS          | TM D-3282)        |                  |
|----------------------|------------------------------------------------|----------------------------------|--------------------------|--------------------------------------|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|------------|----------------|-------------------|------------------|
| Depth<br>(Ft.)       | Sample<br>Type<br>and<br>No.                   | Samp.<br>Rec.<br>(Ft.<br>&<br>%) | SPT<br>or<br>RQD         | Lab.<br>Class.<br>or<br>Pen.<br>Rate | Lab.<br>Moist<br>% | Visual Description                                                                                                                                            | . \        | Vel        |                | tallation<br>tail | Elevation        |
| -<br>31<br>32        | 5-9                                            | 1.4<br>2.0<br>80%                | 11 25<br>15 18           |                                      |                    | Continued from Sheet<br>SAND, fine grained, little shell<br>Fragments, gray, dense, wet,<br>partially cencented with callium<br>carbonace.                    | 0<br>¥     |            | D<br>¢         | -                 | -                |
| 33-<br>34-<br>35     | A.N.                                           |                                  |                          |                                      |                    | ,<br>                                                                                                                                                         | ₹<br>*     | ¥<br>¥     | 3 <sup>4</sup> |                   | - 16.1           |
| 35<br>36<br>37       | 5-10                                           | 1.4<br>1.2.0<br>70%              | 15 22 16<br>22 16 18     |                                      |                    |                                                                                                                                                               |            |            | *5             |                   | -18.6            |
| -<br>58-<br>39-<br>- |                                                |                                  |                          |                                      |                    | -<br>                                                                                                                                                         | _          | #8         |                | -                 | -                |
| 40<br>41<br>42       | 5-11                                           | 2.0<br>2.0<br>100%               | /6<br>23<br>24<br>30     |                                      |                    |                                                                                                                                                               | *5         | <u>н</u> 1 |                |                   | - 24.6           |
| 43_<br>44_<br>-      |                                                |                                  |                          |                                      |                    | <u>48.5455</u> <u>43.5</u>                                                                                                                                    | 10<br>10   | #5         | يد<br>رو       |                   | - 26.6<br>- 27.1 |
| 45<br>               | 5-12                                           | 2.0<br>2.0<br>100%               | 5510 12                  |                                      |                    | SAND, fine grained, some silt, -<br>greenish gray, mediumdense,<br>Moist<br>47.0 47.0                                                                         | ¢          | 3<br>*     |                |                   | -30.6            |
| 48_<br>49_           |                                                |                                  |                          |                                      |                    | INB OF BORING AT 47.0 FEET                                                                                                                                    |            |            |                |                   | - 50.6           |
| 50_                  |                                                |                                  |                          |                                      |                    | هـ<br>سه                                                                                                                                                      |            |            |                | -                 |                  |

DRILLING CO.: <u>Hardin Huber Incorporated</u> DRILLER: <u>Brian Van Doren</u>

BAKER REP.: James Culp

BORING NO.: <u>35MW-31B</u>

SHEET 3 OF 3



PROJECT: Site 35 - Camp Geiger Area Fuel Farm

-r (4 8-4 1

S.O. NO.: <u>62470-232</u> COORDINATES: EAST: <u>2465203.3700</u> ELEVATION: SURFACE: <u>16.4</u>

BORING NO.: 35 MW-31 A NORTH: 363319.0100 TOP OF STEEL CASING: 18.32

| RIG: R35-Mol                                    | oile Drill     |                                                |                    |             |                     |            |                                            |           |                          |                                                                                                              |
|-------------------------------------------------|----------------|------------------------------------------------|--------------------|-------------|---------------------|------------|--------------------------------------------|-----------|--------------------------|--------------------------------------------------------------------------------------------------------------|
|                                                 | SPLIT<br>SPOON | CASING                                         | G AI               | JGERS       | BIT<br>SIZE         | DATE       | PROGRESS<br>(FT)                           | WEATHEI   | WATER<br>DEPTH<br>R (FT) | TIME                                                                                                         |
| SIZE (DIAM.)                                    | 2"             |                                                | 6.                 | 25"ID       |                     | 1-30-94    | 14.0                                       | Hor, Humi | d 🛛                      |                                                                                                              |
| LENGTH                                          | 2'             |                                                |                    | 5'          |                     |            |                                            |           |                          |                                                                                                              |
| ТҮРЕ                                            | STD.           |                                                | A                  | 1.5.A.      |                     |            |                                            |           |                          | -                                                                                                            |
| HAMMER WT.                                      | 140#           |                                                |                    |             |                     |            |                                            |           |                          |                                                                                                              |
| FALL                                            | 30"            |                                                |                    |             |                     |            |                                            |           |                          |                                                                                                              |
| STICK UP                                        |                |                                                |                    |             |                     |            |                                            |           |                          |                                                                                                              |
| REMARKS: A                                      | U WEL          | CONST                                          | RUC                | Man Z       | XET ALLS            | ARE BA     | ISED AN FIL                                | ELD MEAS  | UREMENT                  | 3                                                                                                            |
| S = SplitSp<br>T = Shelby                       |                | <u>E</u><br>A = Auger<br>V = Wash              |                    | V<br>INFC   | VELL                | DIAM       | ТҮР                                        | E         | TOP<br>DEPTH<br>(FT)     | BOTTOM<br>DEPTH<br>(FT)                                                                                      |
| R = Air Rot<br>D = Deniso                       | ary C          | = Core<br>= Piston                             |                    | Riser       | Pipe                | 2"         | Schedule 40, PVC                           | >         | T1.92                    | - 3.05                                                                                                       |
|                                                 | N = No Sam     |                                                |                    | Screen      | 1                   | 2"         | .10 Slot, Schedule                         | = 40 PVC  | -3.05                    | - 12.0                                                                                                       |
| Samp<br>Depth Type<br>(Ft.) and<br>No.          | Ft. 0<br>& p   | PT Lab.<br>Class.<br>or or<br>CQD Pen.<br>Rate | Lab.<br>Moist<br>% |             | Visual [            | Descriptic | on                                         | Insta     | /ell<br>llation<br>etail | Elevation                                                                                                    |
| 1<br>2<br>3<br>4<br>5<br>6<br>7<br>8<br>9<br>10 |                |                                                |                    | See<br>31 B | E PSORINA<br>FOR SO | IL INFON   | -<br>-<br>atch to Sheet 2                  |           |                          | - 15.4<br>- 13.9<br>- 13.35<br>- 13.35<br>- 1<br>- 1<br>- 1<br>- 1<br>- 1<br>- 1<br>- 1<br>- 1<br>- 1<br>- 1 |
| DRILLING CO.<br>DRILLER: Bria                   |                |                                                | orpora             | ted         |                     |            | REP.: <u>James (</u><br>G NO.: <u>35 M</u> |           | SHEE                     | T <u>1</u> OF                                                                                                |



Baker Environmental, 🔤

PROJECT: <u>Site 35 - Camp Geiger Area Fuel Farm</u> S.O. NO.: <u>62470-232</u> BOF

BORING NO .: 35 MW-31 A

| S = Split<br>T = Shelt<br>R = Air R<br>D = Deni                                                                                                 | by Tube<br>lotary                | A =<br>W =<br>C =<br>P = | Auger<br>Wash<br>Core<br>Piston      |                    | DEFINITIONS<br>SPT = Standard Penetration Test (<br>RQD = Rock Quality Designation (<br>Lab. Class. = USCS (ASTM D-2487)<br>Lab. Moist. = Moisture Content (A | %)<br>or AASHTO | (ASTM D-3282)          |           |
|-------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|--------------------------|--------------------------------------|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|------------------------|-----------|
| Depth Ty<br>(Ft.) ar                                                                                                                            | nple<br>pe (Ft.<br>nd &<br>0. %) |                          | Lab.<br>Class.<br>or<br>Pen.<br>Rate | Lab.<br>Moist<br>% | Visual Description                                                                                                                                            | Well            | Installation<br>Detail | Elevation |
| 11-<br>12-<br>13-<br>14-<br>15-<br>16-<br>17-<br>18-<br>19-<br>20-<br>21-<br>22-<br>23-<br>23-<br>24-<br>25-<br>26-<br>27-<br>28-<br>29-<br>30- |                                  |                          |                                      |                    | Continued from Sheet 1<br>12.0-<br>13.0-<br>14.0-<br>SEE BORINIG LUG FOR<br>35 MW-318 FOR SOIL INFORMATION<br>                                                | 48<br>27<br>25  |                        |           |

DRILLING CO.: <u>Hardin Huber Incorporated</u> DRILLER: <u>Brian Van Doren</u>

BAKER REP.: James Culp BORING NO.: <u>35 MW-31A</u>



PROJECT: Site 35 - Camp Geiger Area Fuel Farm

S.O. NO.: <u>62470-232</u> COORDINATES: EAST: <u>2465339.4700</u> ELEVATION: SURFACE: <u>/6./</u>

BORING NO.: <u>35 MW-328</u> NORTH: <u>36 29 26. 55 20</u> TOP OF STEEL CASING: <u>/8.75</u>

| RIG: R35-Mobile                                       | Drill                                                                           |                                      |                    |                                                                                                           |                                                                                                              |                                                                                        |                                                              |         |                  |                           |                        |                                     |
|-------------------------------------------------------|---------------------------------------------------------------------------------|--------------------------------------|--------------------|-----------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|--------------------------------------------------------------|---------|------------------|---------------------------|------------------------|-------------------------------------|
|                                                       | PLIT                                                                            | CASING                               |                    | JGERS                                                                                                     | BIT<br>SIZE                                                                                                  | DATE                                                                                   | PROGRESS<br>(FT)                                             | v       | VEATH            | ER                        | WATER<br>DEPTH<br>(FT) | ТІМЕ                                |
| SIZE (DIAM.)                                          | 2"                                                                              |                                      |                    |                                                                                                           | 8"                                                                                                           | 5-14-94                                                                                | 44.0                                                         | -<br>Su | nny,c            | 200L                      |                        |                                     |
| LENGTH                                                | 2'                                                                              |                                      |                    |                                                                                                           |                                                                                                              |                                                                                        |                                                              |         |                  |                           |                        |                                     |
| ТҮРЕ 5                                                | STD.                                                                            |                                      |                    |                                                                                                           | ROTARY                                                                                                       |                                                                                        |                                                              |         |                  |                           |                        | -                                   |
| HAMMER WT. 1                                          | .40#                                                                            |                                      |                    |                                                                                                           |                                                                                                              |                                                                                        |                                                              |         |                  |                           |                        |                                     |
| FALL                                                  | 30"                                                                             |                                      |                    |                                                                                                           |                                                                                                              |                                                                                        |                                                              |         | -                | <u> </u>                  |                        |                                     |
|                                                       |                                                                                 |                                      |                    |                                                                                                           |                                                                                                              |                                                                                        |                                                              |         |                  |                           |                        |                                     |
| REMARKS: ALL                                          | WELL C                                                                          | DNSTR                                | ucn                | ON DE                                                                                                     | TAILS A                                                                                                      | ee BAS                                                                                 | ED ON FIE                                                    | W/      | YEAS             | VIZE                      | MENTS                  | <u> </u>                            |
| <u>SAMP</u><br>S = Split Spoon<br>T = Shelby Tube     |                                                                                 | Auger<br>Wash                        |                    |                                                                                                           | /ELL<br>RMATION                                                                                              | DIAM                                                                                   | TYF                                                          | PE      |                  | C                         | top<br>)epth<br>(FT)   | BOTTOM<br>DEPTH<br>(FT)             |
| R = Air Rotary<br>D = Denison                         | -                                                                               | Core<br>Piston                       |                    | Riser I                                                                                                   | Pipe                                                                                                         | 2"                                                                                     | Schedule 40, PV                                              | C       |                  | +2                        | .65                    | -37.3                               |
| N = N                                                 | lo Sample                                                                       | <del></del>                          |                    | Screen                                                                                                    |                                                                                                              | 2"                                                                                     | .10 Slot, Schedul                                            | e 40 P  | vc               | . –                       | 37.3                   | -41.25                              |
| Sample p                                              | imp.<br>lec.<br>Ft. or<br>& RQD                                                 | Lab.<br>Class.<br>or<br>Pen.<br>Rate | Lab.<br>Moist<br>% |                                                                                                           | Visual D                                                                                                     | escriptio                                                                              | 'n                                                           |         | Inst             | Well<br>allatio<br>Detail | n                      | Elevation                           |
| 2 - 5 - 7 - 5 - 7 - 5 - 7 - 5 - 7 - 5 - 7 - 5 - 7 - 7 | 010 76 800 1/2 34 1233 1233<br>15 79910 2234 1233 1233<br>120 1/2 50 1/2 50 5/2 |                                      |                    | 1.8<br>SILT,<br>Light<br>MOISE<br>3.7<br>SAND<br>JIELA<br>NOTE:<br>6.4<br>SAND<br>-trac<br>NOTE:<br>NOTE: | Some san<br>brown, n<br>tine grai<br>t, light<br>t<br>GROUNDWA<br>FOET.<br>fine grai<br>c clay,<br>CLAY CONT | d, trace<br>ned, tette<br>brown, c<br>TER ENKOUN<br>NEL, tra<br>gray, co<br>ENT DECRES | 3.7<br>Le SILE, Frace<br>DOSE, MOISE<br>NTERES AT 5.7<br>6.4 |         | 9<br>1<br>1<br>1 | 8                         |                        | - /4.3<br>- /2.4<br>- /2.4<br>- 9.7 |

DRILLING CO.: <u>Hardin Huber Incorporat</u> DRILLER: <u>Brian Van Doren</u>

BORING NO .: 35MW-32 B

SHEET 1 OF 3



PROJECT: <u>Site 35 - Camp Geiger Area Fuel Farm</u> S.O. NO.: <u>62470-232</u> BORING N

BORING NO .: 35MW-32B

| T = 2<br>R = 2 | Split Spor<br>Shelby Tu<br>Air Rotar<br>Denison | ıbe                              | A =<br>W =<br>C =<br>P = | Auger<br>Wash<br>Core<br>Piston      |                    | DEFINITIONS<br>SPT = Standard Penetration Test (<br>RQD = Rock Quality Designation (<br>Lab. Class. = USCS (ASTM D-2487)<br>Lab. Moist. = Moisture Content (4 | (%)<br>) or A | ASHT | D (AS | FM D-3282)        |           |
|----------------|-------------------------------------------------|----------------------------------|--------------------------|--------------------------------------|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|------|-------|-------------------|-----------|
| Depth<br>(Ft.) | Sample<br>Type<br>and<br>No.                    | Samp.<br>Rec.<br>(Ft.<br>&<br>%) | SPT<br>or<br>RQD         | Lab.<br>Class.<br>or<br>Pen.<br>Rate | Lab.<br>Moist<br>% | Visual Description                                                                                                                                            |               | Well |       | tallation<br>tail | Elevation |
| - 11-          |                                                 |                                  |                          |                                      |                    | Continued from Sheet 1 -                                                                                                                                      |               |      |       | -                 | -         |
| 12<br>13       | A.N.                                            |                                  |                          |                                      |                    | <u>/2.5(est)</u> <u>/2.5</u>                                                                                                                                  |               |      | -     |                   | 3.6       |
| - 14 -         |                                                 |                                  |                          |                                      |                    |                                                                                                                                                               |               | *1   |       | -                 |           |
| 15             | 5-6                                             | 1.5<br>2.0<br>75%                | 69114                    |                                      |                    | SAND, fine grained, frace Silt,<br>Olive, medium dense, wet<br>Note: dara gray@ 16.0 Fect                                                                     | *0            |      |       | -<br>-<br>-       |           |
| 17<br>18<br>19 | A.N.                                            |                                  | •                        |                                      |                    |                                                                                                                                                               |               |      |       |                   |           |
| 20<br><br>21   | 5-7                                             | 2:0<br>2:0<br>100%               | /<br>/<br>2<br>2         |                                      |                    |                                                                                                                                                               |               |      |       |                   |           |
| 23<br>24       | A.N.                                            |                                  |                          |                                      |                    | -                                                                                                                                                             |               |      | ¥     | -                 |           |
| -<br>25<br>26  |                                                 |                                  |                          |                                      |                    | NOTE: WE SKIPPEd the 25 to 27<br>foot interval because of a                                                                                                   |               |      |       | -                 | - 9.9     |
| 27             |                                                 |                                  |                          |                                      |                    | foot interval because of a<br>21. deess of drilling Fluids<br>24.0<br>SAND, fine grained, Some shell<br>fragments, trace site, gray,                          |               |      |       | -                 | - 7,7     |
| 28<br>-<br>29  |                                                 |                                  |                          |                                      |                    | dense, wet, partially temented<br>with Calcium carbonate.                                                                                                     |               |      |       | -                 | -12.9 ~   |
| 30             |                                                 |                                  |                          |                                      |                    | -<br>                                                                                                                                                         | #2            |      | #2    | -                 |           |

DRILLING CO.: <u>Hardin Huber Incorporated</u> DRILLER: <u>Brian Van Doren</u> BAKER REP.: James Culp

BORING NO .: 35MW-32B



PROJECT: Site 35 - Camp Geiger Area Fuel Farm

S.O. NO.: 62470-232

BORING NO .: 55 MW-32B

| T =<br>R =             | Split Spoo<br>Shelby Tu<br>Air Rotan<br>Denison | be                        | A =<br>W =<br>C =<br>P =  | Auger<br>Wash<br>Core<br>Piston |  | DEFINITIONS<br>SPT = Standard Penetration Test (<br>RQD = Rock Quality Designation<br>Lab. Class. = USCS (ASTM D-2487)<br>Lab. Moist. = Moisture Content (/ | %)<br>or AA | SHTC | ) (AST     | M D-3282)         |                  |
|------------------------|-------------------------------------------------|---------------------------|---------------------------|---------------------------------|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|------|------------|-------------------|------------------|
| Depth<br>(Ft.)         | Sample Rec. SPT Class. La<br>Type (Ft. or or Ma |                           |                           |                                 |  | Visual Description                                                                                                                                          | V           | Vell | Inst<br>De | tallation<br>tail | Elevation        |
| 31-<br>32-<br>-        | 5-8                                             | 1.9<br>2.0<br>95%         | 20<br>22<br>22<br>24      |                                 |  | Continued from Sheet 2.                                                                                                                                     | #2          |      | #2         | -                 | -                |
| 33_<br>-<br>34_<br>35  | A.N.                                            |                           |                           |                                 |  | -<br>-<br>-<br>-                                                                                                                                            |             | ¥7   |            |                   | -17,9            |
| 36                     | 5-9                                             | 2.0<br>2.0<br>100%        | 25<br>27<br>27<br>28      |                                 |  | -<br>-                                                                                                                                                      |             |      | ษร         | -                 | -21.2            |
| 38-<br>-<br>39-<br>4.0 | A.N.                                            |                           |                           |                                 |  | -                                                                                                                                                           | #5          | ±В   |            | -                 |                  |
| #1<br>#2               | 5-10                                            | 2.0<br>2.0<br>100%<br>2.0 | 18<br>20<br>22<br>22<br>8 |                                 |  | Note: Tracc Clay from 41.3 feet<br>to 41.6 fect, silt content increasing<br>42.0 42.0<br>SAND, fine grained, Some Shell                                     |             | #7   |            | -                 | - 25,5           |
| 43_<br>44              | 5-11                                            | 2.0                       | 10<br>10<br>11            |                                 |  | Fragmints<br>END OF BORING AT 44.0 FEET; SET                                                                                                                | - #3        | +    | #3         | -                 | - 26.9<br>- 27.9 |
| 45 -<br>46 -           |                                                 |                           |                           |                                 |  | WELL AT \$2.0                                                                                                                                               |             |      |            | -                 |                  |
| 47-<br>48-             |                                                 |                           |                           |                                 |  |                                                                                                                                                             |             |      |            | -                 |                  |
| 49-<br>50-             |                                                 |                           |                           |                                 |  | -                                                                                                                                                           | -           |      |            | -                 | -                |

DRILLING CO.: <u>Hardin Huber Incorporated</u> DRILLER: <u>Brian Van Doren</u>

BORING NO .: 35MW-32B



PROJECT: Site 35 - Camp Geiger Area Fuel Farm

Baker Environmental, Inc.

S.O. NO.: <u>62470-232</u> COORDINATES: EAST: <u>24-65339.5300</u> ELEVATION: SURFACE: <u>16.1</u>

BORING NO.: <u>35 MW-32A</u> NORTH: <u>36 2921.8600</u> TOP OF STEEL CASING: <u>/8.23</u>

| SAMPLE TYPE<br>S = Split Spoon<br>T = Shelby Tube<br>D = Denison<br>N = No SampleAuger<br>W = Wash<br>P = Piston<br>N = No SampleWELL<br>INFORMATIONDIAMTYPETOP<br>DEPTH<br>(FT)BOTTOM<br>DEPTH<br>(FT)Well<br>N = No SampleWell<br>ScreenDiamTYPETOP<br>DEPTH<br>(FT)BOTTOM<br>DEPTH<br>(FT)DepthN = No SampleN = No SampleScreen2"Schedule 40, PVC $\neq 2./3$ $-4.25$ DepthSample<br>Rec.<br>SpTLab.<br>Class.<br>Lab.Visual DescriptionWell<br>WellWell                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                         | SPLIT<br>SPOON               | CASING                   | AU    | GERS                | BIT<br>SIZE | E DÀTE (FT) |                   | WEATHE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | WATER<br>DEPTH<br>R (FT) | TIME     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|------------------------------|--------------------------|-------|---------------------|-------------|-------------|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|----------|
| TYPE       STD. $U/S.A.$ HAMMER WT.       140#                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | IZE (DIAM.)             | 2"                           |                          | 6.25  | "ID                 |             | 5-14-94     | 15.0              | Sunny, coo                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 2                        |          |
| HAMMER WT. 140#<br>FALL 30"<br>STICK UP<br>REMARKS: ALL UPLL CONSTRUCTION DETAILS ARE BASED ON FIELD MEASUREMENTS<br>SAMPLE TYPE<br>S = Splits (Spoon A = Auger<br>T = Shelby Tube W = Wash<br>R = Air Retary C = Core<br>D = Denkson P = Piston<br>N = No Sample<br>(FL) Sample Rec.<br>PL OF OF OF A<br>No. N = No Sample Structure Lab.<br>(FL) Structure Rec.<br>PL OF OF OF A<br>No. N = No Sample Structure ALL<br>SEE BOOLNALOGE FOR 35 MW-32.B<br>For Sould To formultion 4.25<br>SEE BOOLNALOGE FOR 35 MW-32.B<br>For Sould To formultion 4.25<br>HB I I I I I I I I I I I I I I I I I I I                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | ENGTH                   | 2'                           |                          | 5     | -/                  |             |             |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                          |          |
| FALL     30"       STICK UP       REMARKS:       ALL       Sample       D = Dension       N = No Sample       Visual Description       No.       %       Repair       All       Visual Description       Well       No.       %       Repair       Set Back of Processor       Part of Processor       Part of Processor       Part of Processor       Part of Processor       Part of Processor       Part of Processor       Part of Processor       Part of Processor       Part of Processor       Part of Processor       Part of Processor       Part of Processor       Part of Processor       Part of Processor       Part of Processor       Part of Processor       Part of Processor       Part of Processor       Part of Processor       Part of Processor       Part of Processor       Part of Processor       Part of Processor       Part of Processor       Part of Processor       Part of Processor       Part of Processor       Part of Processor       Part of Processor       Part of Procesor <td>YPE</td> <td>STD.</td> <td></td> <td>H.5</td> <td>5.4.</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>-</td>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | YPE                     | STD.                         |                          | H.5   | 5.4.                |             |             |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                          | -        |
| STICK UP       REMARKS: ALL WEW CONSTRUCTION DETAILS ARE BASED ON FIELD MEASUREMENTS       SAMPLE TYPE       S = Split Spoon     A = Auger       T = Shelby Tube     W = Wash       R = Air Rotary     C = Core       D = Denkon     P = Piston       N = No Sample     Sample       C(r)     Sample       Streen     2"       Josto Statute     Sample       Sample     Sample       Sample     Sample       Sample     Sample       Streen     2"       Josto Statute     Sample       Sample     Sample       Sample     Sample       Visual Description     Well<br>Installation<br>Detail       Installation     Stee       See DoerNacces For Sould To Formation     4.25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | HAMMER WT.              | 140#                         |                          |       |                     |             |             |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                          |          |
| REMARKS: All WELL CONSTRUCTION DETAILS ARE BASED ON FIELD MEASUREMENTSSAMPLE TYPES = Spills Spoon $A = AugerWELLDIAMTYPETOPDEPTH(FT)BOTTOMDEPTH(FT)R = AirRotaryC = Core2"Schedule 40, PVC+2.13-4.23D = DenisonN = No SampleSere2"ItoSlot, Schedule 40, PVC-4.25-13.25Depth(Ft)SampleRec.andNo.SFTLab.Class.rrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrr$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | ALL                     | 30"                          |                          |       |                     |             | ,           |                   | _                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | a=1.                     |          |
| $ \begin{array}{c c c c c c c c c c c c c c c c c c c $                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | TICK UP                 |                              |                          |       |                     |             |             |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                          |          |
| S     = Split Spoon     A     = Auger       T     = Shelby Tube     W     = Wash       R     = Air Rotary     C     = Core       D     = Denison     P     = Piston       N     = No Sample     Serven     2"     Schedule 40, PVC     + 2./3     - 4/2.9       Depth     Sample RC     sample RC     sample RC     Serven     2"     10 Slot, Schedule 40, PVC     - 4/2.5     - 1/3.25       Depth     Sample RC     sample RQD     or     or     or     Moist     Visual Description     Well       1     -     -     -     -     -     -     -     -       3     -     -     -     -     -     -     -     -       4     -     -     -     -     -     -     -     -       5     -     -     -     -     -     -     -     -       4     -     -     -     -     -     -     -     -       6     -     -     -     -     -     -     -     -       6     -     -     -     -     -     -     -     -       6     -     -<                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | REMARKS: AL             | WEU                          | CONSTR                   | uct   | ton Z               | ETAILS      | ARE B       | ASED ON F         | TELD MEA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | SULEHENT                 | rs.      |
| R = Air Rotary<br>D = DenisonC = Core<br>P = PistonRiser Pipe2"Schedule 40, PVC $+2./3$ $-4/2.3$ N = No Sample<br>(Ft.)Sample<br>Rec.<br>Type d<br>No.Spr<br>8<br>(class.<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r<br>r< | S = Split Sp            | oon A                        |                          |       |                     |             | DIAM        | TYF               | PE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | DEPTH                    | DEPTH    |
| N = No SampleScreen2".10 Slot, Schedule 40 PVC $-4.25$ $-13.25$ Depth<br>(Ft.) $and$<br>$No.$ $g_{4}^{H}$ SPT<br>or<br>$RQD$ Lab.<br>Or<br>RateLab.<br>Moist<br>$g_{4}^{H}$ Lab.<br>Noist<br>$RateVisual DescriptionWellInstallationDetailElevation1-4.251 -2 -3 -4 -5 -6 -7 -8 -1111112 -7 -8 -8 -111111111 -2 -7 -8 -8 -1111111111 -2 -7 -8 -8 -8 -1111111111 -2 -7 -8 -8 -8 -1111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | R = Air Rota            | iry C                        | = Core                   |       | Riser P             | ipe         | 2"          | Schedule 40, PV   | C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | +2.13                    | -4.29    |
| $\begin{array}{c c c c c c c c c c c c c c c c c c c $                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                         |                              |                          |       | Screen              |             | 2"          | .10 Slot, Schedul | e 40 PVC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | -4.25                    | -13.25   |
| $ \begin{array}{cccccccccccccccccccccccccccccccccccc$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Depth Type<br>(Ft.) and | e Rec. SPT<br>Ft. or<br>& RO | Class.<br>or N<br>D Pen. | Noist |                     | Visual [    | Descriptio  | on                | Insta                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | llation                  | Elevatio |
| 10 Match to Sheet 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 2                       |                              |                          |       | <i>бее 1</i><br>For | SOLL IN     | formati     | 3.0<br>MW-32B<br> | - + 2<br>- + 2<br>- + 2<br>- + 2<br>- + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + 2<br>+ + + + | -                        | - /5,/   |



PROJECT: <u>Site 35 - Camp Geiger Area Fuel Farm</u> S.O. NO.: <u>62470-232</u>BO

BORING NO .: 35HW-32A

|                   | S<br>T<br>R<br>D    | = : | Split Spoo<br>Shelby Tu<br>Air Rotar<br>Denison | be                               | A =<br>W =<br>C =<br>P = | Auger<br>Wash<br>Core<br>Píston      |                    | DEFINITIONS<br>SPT = Standard Penetration Test (<br>RQD = Rock Quality Designation (<br>Lab. Class. = USCS (ASTM D-2487)<br>Lab. Moist. = Moisture Content (A | (%)<br>  or A | ASHT          | D (AS | TM D-3282)        |         |    |
|-------------------|---------------------|-----|-------------------------------------------------|----------------------------------|--------------------------|--------------------------------------|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------|-------|-------------------|---------|----|
|                   | Dep<br>(Ft.         |     | Sample<br>Type<br>and<br>No.                    | Samp.<br>Rec.<br>(Ft.<br>&<br>%) | SPT<br>or<br>RQD         | Lab.<br>Class.<br>or<br>Pen.<br>Rate | Lab.<br>Moist<br>% | Visual Description                                                                                                                                            |               | Vel           |       | tallation<br>tail | Elevati | оп |
| 11                | 2                   |     |                                                 |                                  |                          |                                      |                    | Continued from Sheet 1                                                                                                                                        | #5<br>-       | 井名            | ¥5    |                   | -<br>   |    |
| 13<br>14<br>19    | -<br>-<br>-         |     |                                                 |                                  |                          |                                      |                    | )3.25<br>14.0                                                                                                                                                 |               | 분기<br><u></u> |       |                   | 2,85    | -  |
| -   <sub>10</sub> | -                   |     |                                                 |                                  |                          |                                      |                    | SEE BORING LOG FOR<br>35MW-32B FOR SOLL INFORMATIC                                                                                                            | -<br>7<br>-   |               |       |                   |         |    |
| 18                | -<br>8- <br>-<br>9- |     |                                                 |                                  |                          |                                      |                    |                                                                                                                                                               |               |               |       |                   |         |    |
| 20<br>21          | 1-1                 |     |                                                 |                                  |                          |                                      |                    | -                                                                                                                                                             |               |               |       |                   |         |    |
| 2                 | 2                   |     |                                                 |                                  |                          | -                                    |                    |                                                                                                                                                               |               |               |       |                   |         |    |
| 2                 | 4<br>5<br>6         |     |                                                 |                                  |                          |                                      |                    |                                                                                                                                                               |               |               |       |                   |         |    |
| 2                 | -                   |     |                                                 |                                  |                          |                                      |                    |                                                                                                                                                               |               |               |       |                   |         |    |
| - 2               | -                   |     |                                                 |                                  |                          |                                      |                    | edBAKER REP.: James (                                                                                                                                         | -<br>-<br>-   |               |       |                   | -<br>   |    |

DRILLING CO.: <u>Hardin Huber Incorporated</u> DRILLER: <u>Brian Van Doren</u> BAKER REP.: James Culp BORING NO.: <u>35 MW·32A</u>



PROJECT: Site 35 - Camp Geiger Area Fuel Farm

S.O. NO.: <u>62470-232</u> COORDINATES: EAST: <u>2465634.3/00</u> ELEVATION: SURFACE: <u>/6.8</u>

BORING NO.: <u>35MW-338</u> NORTH: <u>363097,4320</u> TOP OF STEEL CASING: <u>16,62</u>

|                                        | SPLIT<br>SPOON                   | CASING             | AUGERS           | BIT<br>SIZE     | DATE                | PROGRESS<br>(FT)                 | WEAT     | HER                        | WATER<br>DEPTH<br>(FT) | TIME                                 |
|----------------------------------------|----------------------------------|--------------------|------------------|-----------------|---------------------|----------------------------------|----------|----------------------------|------------------------|--------------------------------------|
| iize (DIAM.)                           | 2"                               |                    |                  | 8"              | 5-11-94             | 27.0                             | COOL, SU | inny                       |                        | -                                    |
| .ENGTH                                 | 2'                               |                    |                  | :               |                     |                                  |          |                            |                        |                                      |
| ТҮРЕ                                   | STD.                             |                    | <u>.</u>         | ROTARY          |                     |                                  |          |                            |                        | -                                    |
| IAMMER WT.                             | 140#                             |                    |                  |                 |                     |                                  |          |                            |                        |                                      |
| ALL                                    | 30"                              |                    |                  |                 | •                   |                                  |          | <b>.</b>                   |                        |                                      |
| TICK UP                                |                                  |                    |                  |                 |                     |                                  |          |                            |                        |                                      |
| REMARKS: AL                            | WELL (                           | ONSTRUC            | TION DET         | AILS AL         | E BASE              | ED ON FIEL                       | D MEA    | SURE                       | MENT                   | 5.                                   |
| S = Split Sp<br>T = Shelby             |                                  | = Auger<br>= Wash  |                  | TELL<br>RMATION | DIAM                | ТҮР                              | E        |                            | TOP<br>DEPTH<br>(FT)   | BOTTOM<br>DEPTH<br>(FT)              |
| R = Air Rota<br>D = Denisor            | iry C                            | = Core<br>= Piston | Riser H          | 'ipe            | 2*                  | Schedule 40, PVC                 | ;        | -0                         | 0.18                   | - 39.0                               |
| •                                      | I = No Sample                    | ·                  | Screen           |                 | 2"                  | .10 Slot, Schedule               | e 40 PVC |                            | 34.0                   | -43.0                                |
| Samp<br>Depth Type<br>(Ft.) and<br>No. | Samp.<br>Rec.<br>Ft.<br>&<br>RQI | or M               | ab.<br>oist<br>% | Visual D        | escriptio           | n                                | In       | Well<br>stallati<br>Detail |                        | Elevatio                             |
| 1 – A.A<br>2 – A.A<br>3 – S-2          | 1.3<br>2.0 5                     |                    |                  |                 | ined, tr<br>wn, Mca | ace gravel,<br>lum dense,<br>3.5 |          | ∳0                         |                        | - 16.3<br>-<br>-<br>-<br>-<br>-<br>- |



PROJECT: <u>Site 35 - Camp Geiger Area Fuel Farm</u> S.O. NO.: <u>62470-232</u> BOR

BORING NO.: <u>35MW-33B</u>

| T =<br>R =      | Split Spor<br>Shelby Tu<br>Air Rotar<br>Denison | ıbe                              | A =<br>W =<br>C =<br>P = | Auger<br>Wash<br>Core<br>Piston      |                    | <u>DEFINITIONS</u><br>SPT = Standard Penetration Test (/<br>RQD = Rock Quality Designation ('<br>Lab. Class. = USCS (ASTM D-2487)<br>Lab. Moist. = Moisture Content (A | %)<br>or A | ASHT | O (AS | FM D-3282)        |           |
|-----------------|-------------------------------------------------|----------------------------------|--------------------------|--------------------------------------|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|------|-------|-------------------|-----------|
| Depth<br>(Ft.)  | Sample<br>Type<br>and<br>No.                    | Samp.<br>Rec.<br>(Ft.<br>&<br>%) | SPT<br>or<br>RQD         | tab.<br>Class.<br>or<br>Pen.<br>Rate | Lab.<br>Moist<br>% | Visual Description                                                                                                                                                     |            | Wel  |       | tallation<br>tail | Elevation |
| 11              |                                                 |                                  |                          |                                      |                    | Continued from Sheet 1<br>Frall Silt, brown, medium dense,<br>Moist.                                                                                                   |            |      |       |                   |           |
| 12<br>13        |                                                 |                                  |                          |                                      |                    | , -<br>, -                                                                                                                                                             |            |      | -     |                   |           |
| 14              |                                                 |                                  |                          |                                      |                    |                                                                                                                                                                        |            |      | *0    |                   | -         |
| 16<br>17        | 57                                              | 1.6<br>2.0                       | 5572                     |                                      |                    | NOTE: Orange at 16.4 FEET.                                                                                                                                             |            |      |       |                   |           |
| 18_             |                                                 |                                  | •                        |                                      |                    |                                                                                                                                                                        |            |      |       |                   |           |
| 19<br><br>20    |                                                 |                                  |                          |                                      |                    | Nore: Light Brown at 20.0 FEET                                                                                                                                         |            | *1   |       |                   |           |
| 21<br>22        | 5-8                                             | 1.0<br>2.0<br>50%                | WOH<br>WOH               |                                      |                    | Nore: Light Brown at 20.0 FEET<br>Nore: Olive color at 21.0 FEET                                                                                                       |            |      |       |                   |           |
| 23 _            |                                                 |                                  |                          | -                                    |                    | 23.0(est) 23.0                                                                                                                                                         |            |      |       |                   | 6.2       |
| 24<br>25        |                                                 | 19                               | 5                        |                                      |                    | SAND, fine grained, Some shell -                                                                                                                                       |            |      |       |                   |           |
| 26<br>27        | 5-9                                             | 1.8<br>2.0<br>90%                | 591620                   |                                      |                    | Fragments, trace sict, gray,<br>medium dense, wet, partialing -<br>Cemented with Calecum<br>partonate. 27.0 7                                                          | *          |      |       |                   |           |
| -<br>28<br>-    |                                                 |                                  |                          |                                      |                    | END & F BORING FOR 5-11-94.                                                                                                                                            |            |      |       |                   |           |
| 29_<br>-<br>30_ |                                                 |                                  |                          |                                      |                    |                                                                                                                                                                        |            |      |       | -                 | 13.2      |

DRILLING CO.: <u>Hardin Huber Incorporated</u> DRILLER: <u>Brian Van Doren</u> BAKER REP.: <u>James Culp</u> BORING NO.: <u>35MW-33B</u>



Baker Environmental, Inc.

PROJECT: <u>Site 35 - Camp Geiger Area Fuel Farm</u> S.O. NO.: <u>62470-232</u> BO

BORING NO .: 35MW - 33B

|   | T =<br>R =              | Split Spoo<br>Shelby Tu<br>Air Rotary<br>Denison | be                               | A =<br>W =<br>C =<br>P = |                                      |                    | DEFINITIONS<br>SPT = Standard Penetration Test (<br>RQD = Rock Quality Designation (<br>Lab. Class. = USCS (ASTM D-2487)<br>Lab. Moist. = Moisture Content (A | %)<br>or A/ | ASHTO | ) (AST   | M D-3282)         |                  |
|---|-------------------------|--------------------------------------------------|----------------------------------|--------------------------|--------------------------------------|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-------|----------|-------------------|------------------|
|   | Depth<br>(Ft.)          | Sample<br>Type<br>and<br>No.                     | Samp.<br>Rec.<br>(Ft.<br>&<br>%) | SPT<br>or<br>RQD         | Lab.<br>Class.<br>or<br>Pen.<br>Rate | Lab.<br>Moist<br>% | Visual Description                                                                                                                                            | \           | Vell  |          | tallation<br>tail | Elevation        |
|   | 31<br>32                | 5-10                                             | 1.25<br>2.0<br>62.5              | 18<br>25<br>32<br>22     |                                      |                    | Continued from Sheet 2<br>SAND, fine grained, Little shell<br>fragments, frace suct, gray,<br>Very dense, wet, Partially<br>cemented with calcum carbonat     |             |       | \$<br>\$ | -                 | -                |
|   | -<br>33<br>-<br>34      | A.N.                                             |                                  |                          | ÷                                    |                    | ,                                                                                                                                                             | \$<br>*     | ×,>   | -        |                   |                  |
| 1 | 35<br><br><br><br>37    | 5-11                                             | 0.9<br>2.0<br>45%                | 22<br>25<br>35<br>5%5    |                                      |                    | Note: Mudstone Fragments observed<br>in spoils                                                                                                                |             |       |          |                   | - 19.2           |
|   | 38-<br>39-              | . Д.N.                                           |                                  |                          |                                      |                    |                                                                                                                                                               |             |       | 5.       | -                 | - 22.2           |
|   | 40<br>41                | 5-12                                             | 1.7<br>2.0<br>85%                | 15<br>22<br>24<br>22     |                                      |                    | Note: Some shell fragments,<br>41.3 Little sile 41.5<br>GRAVEL, I Cemented Sand), Some<br>Shell fragments, gray, very dense,                                  | \$<br>\$    | ¥8    |          |                   | -                |
|   | 42<br>43<br>44          | 5-13                                             | 2.0<br>2.0<br>100%               | 15<br>22<br>24<br>24     |                                      |                    | 42.5 WET 42.5<br>SILTY SAND, fine grained, trace shell<br>Fragments, gray, very dense, moise -<br>43.7 43.7<br>SILT, Some Sand, trace shell                   |             | #7    |          | -                 | - 26.2<br>- 27.2 |
|   | -<br>45<br>45           |                                                  |                                  |                          |                                      |                    | END OF BORING AT 44.0FEET; SET -<br>Wall AT 44.0 FEET.                                                                                                        |             |       |          | -                 |                  |
|   | 47-<br>4 <sup>8</sup> - |                                                  |                                  |                          |                                      |                    | -                                                                                                                                                             |             |       |          | -                 |                  |
|   | 49-<br>50-              |                                                  |                                  |                          |                                      |                    |                                                                                                                                                               | -           |       |          | -                 | -                |

DRILLING CO.: Hardin Huber Incorporated DRILLER: Brian Van Doren

BAKER REP.: James Culp

BORING NO. 354W-33B



PROJECT: Site 35 - Camp Geiger Area Fuel Farm

S.O. NO.: <u>62470-232</u> COORDINATES: EAST: <u>2465638.5600</u> ELEVATION: SURFACE: <u>/6.9</u>

BORING NO.: <u>35MW-33A</u> NORTH: <u>363097.6030</u>

TOP OF STEEL CASING: \_16.68

| <u></u>                                        | SPLIT<br>SPOON |                                        | ١G | AU                | GERS       | BIT<br>SIZE        | DATE               | PROGRESS<br>(FT)                       | WEATHEI               | R (I                   | ATER<br>PTH<br>FT) | TIME                        |
|------------------------------------------------|----------------|----------------------------------------|----|-------------------|------------|--------------------|--------------------|----------------------------------------|-----------------------|------------------------|--------------------|-----------------------------|
| IZE (DIAM.)                                    | 2"             |                                        |    | 6.2               | 5"ID       |                    | 5-12-94            | 15.0                                   | Sunny, Cool<br>breezy | -,                     |                    | -                           |
| ENGTH                                          | 2'             |                                        |    | 5                 |            |                    |                    |                                        |                       |                        |                    |                             |
| YPE                                            | STD.           |                                        |    | H.S               | .4.        |                    |                    |                                        |                       |                        |                    | -                           |
| IAMMER WT.                                     | 140#           |                                        |    |                   |            |                    |                    |                                        |                       |                        |                    |                             |
| ALL                                            | 30"            |                                        |    |                   |            |                    |                    |                                        | -                     |                        |                    | n.,                         |
| TICK UP                                        |                |                                        |    |                   |            |                    |                    |                                        |                       |                        |                    |                             |
| EMARKS: AU                                     | L WEL          | CONS                                   | TR | VCT               | TON I      | DETAILS            | - ALE E            | BASED ON                               | FIELD ME              | EASUR                  | EME                | NTS                         |
|                                                | AMPLE TYP      |                                        |    |                   | v          | IELL<br>RMATION    | DIAM               | ТҮР                                    |                       | TOP<br>DEPTI<br>(FT)   | 4                  | BOTTOM<br>DEPTH<br>(FT)     |
| R = Air Rota<br>D = Denisor                    | iry (          | C = Core<br>P = Piston                 |    |                   | Riser l    | Pipe               | 2"                 | Schedule 40, PV                        | ]                     | -0.22                  | 2                  | - 4.25                      |
|                                                | I = No Sam     |                                        |    |                   | Screen     |                    | 2"                 | .10 Slot, Schedul                      | e 40 PVC              | - 4.25                 | -                  | -13.25                      |
| Samp<br>Depth Type<br>(Ft.) and<br>No.         | FL             | SPT Class<br>or or<br>RQD Pen.<br>Rate | M  | ab.<br>Ioist<br>% |            | Visual [           | Descriptio         | n                                      | Insta                 | ell<br>llation<br>tail |                    | Elevatior                   |
| 1<br>2<br>3<br>4<br>5<br>6<br>7<br>8<br>9<br>0 |                |                                        |    |                   | SEE<br>FOR | BORINKAL<br>SOIL I | 065 FOR<br>INFORMA | 1.5<br>35MW-338~<br>710N.<br>4.25<br>- | #2 #1 #2              | -                      | -                  | - 15.4<br>- 13.9<br>- 12.65 |

DRILLER: Brian Van Doren

BORING NO .: 35 MW-33A



Baker Environmental, techer

PROJECT: <u>Site 35 - Camp Geiger Area Fuel Farm</u> S.O. NO.: <u>62470-232</u>BO

BORING NO .: 35MW-33A

|             | $\begin{array}{l} T &= 2 \\ R &= 2 \end{array}$ | Split Spoo<br>Shelby Tu<br>Air Rotar<br>Denison | ibe                              | A =<br>W =<br>C =<br>P = | Auger<br>Wash<br>Core<br>Piston      |                    | <u>DEFINITIONS</u><br>SPT = Standard Penetration Test (<br>RQD = Rock Quality Designation (<br>Lab. Class. = USCS (ASTM D-2487)<br>Lab. Moist. = Moisture Content (A | %)<br>or A | АЅНТС       | ) (ASI      | 'M D-3282)        |           |
|-------------|-------------------------------------------------|-------------------------------------------------|----------------------------------|--------------------------|--------------------------------------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-------------|-------------|-------------------|-----------|
|             | epth<br>Ft.)                                    | Sample<br>Type<br>and<br>No.                    | Samp.<br>Rec.<br>(Ft.<br>&<br>%) | SPT<br>or<br>RQD         | Lab.<br>Class.<br>or<br>Pen.<br>Rate | Lab.<br>Moist<br>% | Visual Description                                                                                                                                                   | `          | Well        |             | tallation<br>tail | Elevation |
| 11-         |                                                 |                                                 |                                  |                          |                                      |                    | Continued from Sheet 1 -                                                                                                                                             |            |             |             |                   | -         |
| 12-         |                                                 |                                                 |                                  |                          |                                      |                    |                                                                                                                                                                      | 45         | <b>#</b> 8  | <b>\$</b> 5 | -                 |           |
| 13-         |                                                 |                                                 |                                  |                          |                                      |                    |                                                                                                                                                                      | ]          |             | -           |                   | 3.65      |
| 14 -        |                                                 |                                                 |                                  |                          |                                      |                    | SEE BORING LOG FOR 35HW-33B<br>FOR SOLL INFORMATION                                                                                                                  | ] .        | #1          |             | -                 | 2.9       |
| 15-         |                                                 |                                                 |                                  |                          |                                      |                    | For- Gou In Port Ation.                                                                                                                                              |            | <b>\$</b> 5 |             | -                 | 1.9       |
| 16-         | -                                               |                                                 |                                  |                          |                                      |                    |                                                                                                                                                                      |            |             |             | -                 |           |
| 17-         | -                                               |                                                 |                                  |                          |                                      |                    | -                                                                                                                                                                    |            |             |             |                   |           |
| 18-         | 4                                               |                                                 |                                  |                          |                                      |                    | -                                                                                                                                                                    |            |             |             |                   |           |
|             | -                                               |                                                 |                                  |                          |                                      |                    | •                                                                                                                                                                    |            |             |             |                   |           |
| 19-         | 4                                               |                                                 |                                  |                          |                                      |                    |                                                                                                                                                                      | ]          |             |             |                   |           |
| 20-         | 4                                               |                                                 |                                  |                          |                                      |                    | -                                                                                                                                                                    | 1          |             | 1           | -                 | 1         |
| 21-         | 4                                               |                                                 |                                  |                          |                                      |                    | -                                                                                                                                                                    |            |             |             | -                 | 1         |
| 22.         |                                                 |                                                 |                                  |                          |                                      |                    | -                                                                                                                                                                    | 1          |             |             | -                 | -         |
| 23.         | -                                               |                                                 |                                  |                          |                                      |                    | -                                                                                                                                                                    |            |             |             | -                 |           |
| 24.         | -                                               |                                                 |                                  |                          |                                      |                    | -                                                                                                                                                                    | 1          |             |             | -                 | 1         |
| 25          | -                                               |                                                 |                                  |                          |                                      |                    | -                                                                                                                                                                    |            |             |             | -                 | 1         |
| 26          |                                                 |                                                 |                                  |                          |                                      |                    | -                                                                                                                                                                    | -          |             |             | -                 | -         |
| 27          | -                                               |                                                 |                                  |                          |                                      |                    | -                                                                                                                                                                    | 4          |             |             | -                 | 4         |
| 28          | -                                               |                                                 |                                  |                          |                                      | ł                  |                                                                                                                                                                      | ]          |             |             | -                 | -         |
| 29          | 1                                               |                                                 |                                  |                          |                                      |                    | -                                                                                                                                                                    | -          |             |             | -                 | -         |
| <u>130-</u> |                                                 |                                                 |                                  |                          |                                      |                    |                                                                                                                                                                      |            |             |             |                   | 1         |

DRILLING CO.: <u>Hardin Huber Incorporated</u> DRILLER: <u>Brian Van Doren</u> BAKER REP.: James Culp

BORING NO .: 35MW-33A



.

## TEST BORING AND WELL CONSTRUCTION RECOR

PROJECT: Site 35 - Camp Geiger Area Fuel Farm

S.O. NO.: <u>62470-232</u> B COORDINATES: EAST: <u>2465706.6900</u> N ELEVATION: SURFACE: <u>14.8</u> T

BORING NO.: <u>35 MW-34 B</u> NORTH: <u>36 2733, 6920</u> TOP OF STEEL CASING: <u>16,76</u>

|                |                                     | SPLI<br>SPOO                      |                   | CASING                                  | 5 A1               | JGERS                            | BIT<br>SIZE            | DATE                                                                             | PROGRESS<br>(FT)                                                                                                | v                 | VEAT      | HER                    | WATER<br>DEPTH<br>(FT) | TIME                            |
|----------------|-------------------------------------|-----------------------------------|-------------------|-----------------------------------------|--------------------|----------------------------------|------------------------|----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-------------------|-----------|------------------------|------------------------|---------------------------------|
| IZE (DIAN      | 1.)                                 | 2"                                |                   |                                         | -                  | han din sina ana                 | 8"                     | 5-10-94                                                                          | 42.0                                                                                                            | Cou               | 2,00      | vertas                 | se                     |                                 |
| ENGTH          |                                     | 2'                                | $\neg \uparrow$   | а <u>н ар</u> ија <sup>2</sup> 016 годи |                    |                                  |                        | 321-11-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1                                         |                                                                                                                 |                   | · · · · · |                        |                        |                                 |
| YPE            |                                     | STD                               |                   | ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,  |                    | NORTH Closen and an and a second | ROTARY                 | ana amin'ny faritr'o dia mampia dia mampia dia dia dia dia dia dia dia dia dia d | bine on the second second second second second second second second second second second second second second s |                   |           |                        |                        |                                 |
| IAMMER         | WT.                                 | 1407                              | ¥                 |                                         |                    |                                  |                        |                                                                                  |                                                                                                                 |                   |           |                        |                        |                                 |
| ALL            |                                     | 30"                               |                   |                                         |                    |                                  |                        | . 1                                                                              |                                                                                                                 |                   |           |                        | -                      |                                 |
| TICK UP        |                                     |                                   |                   |                                         |                    | -                                |                        |                                                                                  |                                                                                                                 |                   |           |                        |                        |                                 |
| EMARKS         | : Al                                | l W                               | EU.               | CONE                                    | STRI               | CTION                            | BETHIL.                | s ARE ;                                                                          | BASED ON P                                                                                                      | EL                | DA        | 1EHE                   | UREMEN                 | TS                              |
|                | <u>SA</u><br>Split Spo<br>Shelby Tu |                                   | A =               | - Auger<br>- Wash                       |                    | W<br>INFO                        | IELL<br>RMATION        | DIAM                                                                             | ТҮР                                                                                                             | E                 |           |                        | TOP<br>DEPTH<br>(FT)   | BOTTOM<br>DEPTH<br>(FT)         |
| R = /          | Air Rotar<br>Denison                |                                   | C =               | Core<br>Piston                          |                    | Riser I                          | Pipe                   | 2"                                                                               | Schedule 40, PV(                                                                                                | >                 |           | -                      | +1.96                  | -36.2                           |
|                |                                     | = No Sa                           |                   |                                         |                    | Screen                           |                        | 2"                                                                               | .10 Slot, Schedul                                                                                               | e 40 P            | VC        |                        | 36.25                  | -40.25                          |
| Depth<br>(Ft.) | Sample<br>Type<br>and<br>No.        | Samp.<br>Rec.<br>Ft.<br>&<br>%    | SPT<br>or<br>RQD  | Lab.<br>Class.<br>or<br>Pen.<br>Rate    | Lab.<br>Moist<br>% |                                  | Visual D               | escripti                                                                         | on                                                                                                              |                   | Ir        | Wel<br>Istalla<br>Deta | tion                   | Elevation                       |
| 1<br>2<br>3    | 5-1                                 | 2.0<br>2.0<br>1007.<br>0.4<br>2.0 | 4005 45           |                                         |                    | dense                            | , damp                 |                                                                                  | 0:3<br>brown, mcdium<br>1.2<br>Clay, broan,<br>1.5<br>Silt, train<br>maense, damp                               |                   |           | Å<br>0                 |                        | _ 14.5<br>- 13.6<br>- 13.3<br>- |
| 4              | 5-2                                 | 20%                               | 55 m -            |                                         |                    | 4.0                              | SAND, bra              |                                                                                  | · · · · · · · · · ·                                                                                             | -                 |           |                        |                        | - 10.8                          |
| 5 - 03<br>6    | 5-3                                 | 1.7<br>2.0<br>85%                 | 122               |                                         |                    | 5.3<br>Clay,<br>and              | Some sels<br>gray, stf | t, trace<br>t, moise                                                             | 5.3<br>Sand, brown                                                                                              |                   | ~<br>*    |                        |                        | 9.5                             |
| 7<br>7<br>8    | 5-4                                 | 2.0<br>2.0<br>100%                | 1<br>2<br>9<br>14 |                                         |                    | 1.2<br>SEND                      | modium d               | avained.                                                                         | 7.2-<br>Doorly araded                                                                                           |                   |           |                        |                        | 7.6                             |
| 9 _            | 5-5                                 | 0.9<br>2.0<br>40%                 | 332               |                                         |                    | brou                             | in, mediu              | m dens<br>sater en                                                               | sturning<br>se, wet<br>countered                                                                                | - 0<br>- 2<br>- 2 |           |                        |                        |                                 |
| 0              |                                     |                                   |                   |                                         |                    |                                  |                        |                                                                                  |                                                                                                                 |                   |           |                        |                        |                                 |

 DRILLING CO.: <u>Hardin Huber Incorporated</u>
 BAKER REP.: <u>James Culp</u>

 DRILLER: <u>Brian Van Doren</u>
 BORING NO.: <u>35MW-34-B</u>

SHEET 1 OF 3



PROJECT: <u>Site 35 - Camp Geiger Area Fuel Farm</u> S.O. NO.: <u>62470-232</u> BO

BORING NO .: 35MW-34B

| T =<br>R =                                | Split Spoo<br>Shelby Tu<br>Air Rotar<br>Denison | ibe                              | A =<br>W =<br>C =<br>P = | Auger<br>Wash<br>Core<br>Piston      |                    | <u>DEFINITIONS</u><br>SPT = Standard Penetration Test (<br>RQD = Rock Quality Designation (<br>Lab. Class. = USCS (ASTM D-2487)<br>Lab. Moist. = Moisture Content (A | %)<br>or A/ | ASHTO | ) (AST         | M D-3282)         |                         |
|-------------------------------------------|-------------------------------------------------|----------------------------------|--------------------------|--------------------------------------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-------|----------------|-------------------|-------------------------|
| Depth<br>(Ft.)                            | Sample<br>Type<br>and<br>No.                    | Samp.<br>Rec.<br>(Ft.<br>&<br>%) |                          | Lab.<br>Class.<br>or<br>Pen.<br>Rate | Lab.<br>Moist<br>% | Visual Description                                                                                                                                                   | V           | Vell  |                | tallation<br>tail | Elevation               |
| -<br>11-<br>-<br>12<br>-<br>13<br>-<br>14 | A. N.                                           |                                  |                          |                                      |                    | Continued from Sheet 1                                                                                                                                               |             |       | -<br>•         |                   | 2.3                     |
| -<br>15<br>16<br>17<br>18                 |                                                 | 2.0<br>2.0<br>100%               | 1233                     | -                                    |                    | CLAYEYSILT, frace sand, -<br>trace root material, gray, -<br>medium shift, wet                                                                                       |             |       |                | -                 |                         |
| 19<br>20<br>21<br>22                      | <u>А</u> . <i>N</i> .                           | 2.0<br>2.0<br>100%               | 4579                     |                                      |                    | 18.5 (est) 18.5<br><u>PEAT</u> , Some wood fragments,-<br>dark brown, medium dense,<br>Net                                                                           | á<br>á      |       |                | -                 | 3.7<br>-<br>-<br>-<br>- |
| 23<br>24<br>25                            | A.N.                                            | 2.0                              | 2                        |                                      |                    | 25.4 <u>25.4</u>                                                                                                                                                     |             | ~ *   |                |                   | - 10.6                  |
| 26<br>27<br>28<br>20                      |                                                 | 2.0                              | 233                      |                                      | -                  | Sand, fine grained, trace silt,<br>gray, loose, wet.<br>26.7 26.7<br>Sut, trace sand, darn gray, -<br>loose, wet<br>29.0(15t) 29.0                                   |             |       |                |                   | - 11.9<br>              |
| 29<br>30                                  |                                                 |                                  |                          |                                      |                    |                                                                                                                                                                      | *           |       | 4 <sup>N</sup> |                   | -                       |

DRILLING CO.: <u>Hardin Huber Incorporated</u> DRILLER: <u>Brian Van Doren</u> BAKER REP.: James Culp

BORING NO.: 35MW-34B



PROJECT: <u>Site 35 - Camp Geiger Area Fuel Farm</u> S.O. NO.: <u>62470-232</u> BOR

BORING NO .: 35MW-34-8

| T =<br>R =               | Split Spoo<br>Shelby Tu<br>Air Rotar<br>Denison | ıbe                              | A =<br>W =<br>C =<br>P = | Auger<br>Wash<br>Core<br>Piston      |                    | <u>DEFINITIONS</u><br>SPT = Standard Penetration Test (<br>RQD = Rock Quality Designation (<br>Lab. Class. = USCS (ASTM D-2487)<br>Lab. Moist. = Moisture Content (A          | %)<br>or AASHTO (ASTM D-3282)                                                     |
|--------------------------|-------------------------------------------------|----------------------------------|--------------------------|--------------------------------------|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Depth<br>(Ft.)           | Sample<br>Type<br>and<br>No.                    | Samp.<br>Rec.<br>(Ft.<br>&<br>%) |                          | Lab.<br>Class.<br>or<br>Pen.<br>Rate | Lab.<br>Moist<br>% | Visual Description                                                                                                                                                            | Well Installation<br>Detail Elevation                                             |
| 31<br>32                 | 5-9                                             | 1.9<br>2.0<br>95%                | 28<br>25<br>26<br>30     |                                      |                    | Continued from Sheet 2<br><u>SAND</u> , fine grained, some shell<br>fragments, trace selt, grayit<br>White, Very dense, wet,<br>Partially Cemented with<br>Calcium carbonate. | <i>x</i> <sup>2</sup> <i>x</i> <sup>2</sup> − − − − − − − − − − − − − − − − − − − |
| 3                        | A.N.                                            |                                  |                          |                                      |                    | L'al cium lar vorrai c.<br>                                                                                                                                                   | ₽ <sup>2</sup>                                                                    |
| 35<br>56<br>37           | 5-10                                            | 1.6<br>2.0<br>80%                | 15 17 16 15              |                                      |                    |                                                                                                                                                                               | - 21,45                                                                           |
| 78-<br>78-<br>79-<br>-   | ĄN.                                             |                                  |                          |                                      |                    | -<br><br>                                                                                                                                                                     |                                                                                   |
| 0<br>                    | 5-11                                            | 1.9<br>20<br>95%                 | 16<br>18<br>18<br>19     |                                      |                    | 40.5<br>SAND, fine grained, Some silt,<br>Frace Shell fragmints, greenist<br>grow, dense, moist<br>42.0<br>42.0                                                               | +7<br>+7<br>+5<br>-25.45<br>-24.2<br>-27.2                                        |
| -4                       |                                                 |                                  |                          |                                      |                    | ENL. OF BORING AT 42.0 FEET;<br>SET WELL AT 41.0 FEET                                                                                                                         |                                                                                   |
| 5                        |                                                 |                                  |                          |                                      |                    |                                                                                                                                                                               |                                                                                   |
| .7<br>-<br>-8<br>-<br>-9 |                                                 |                                  |                          |                                      |                    |                                                                                                                                                                               |                                                                                   |
| -0-                      |                                                 |                                  |                          |                                      |                    |                                                                                                                                                                               |                                                                                   |

DRILLING CO.: <u>Hardin Huber Incorporated</u> DRILLER: <u>Brian Van Doren</u> BAKER REP.: James Culp

BORING NO .: 35MW-348



PROJECT: Site 35 - Camp Geiger Area Fuel Farm

S.O. NO.: <u>62470-232</u> COORDINATES: EAST: <u>24657/1.2800</u> ELEVATION: SURFACE: <u>14.7</u>

BORING NO.: <u>35 MW-34 A</u> NORTH: <u>362735.0940</u> TOP OF STEEL CASING: <u>16.77</u>

| SA<br>S = Split Spoo<br>T = Shelby Tu<br>R = Air Rotan<br>D = Denison<br>N<br>Sample                                                        | AMPLE TYPE<br>on A = A<br>ube W = V<br>y C = C<br>P = F<br>= No Sample                                 | Auger<br>Wash<br>Core |                  | A.<br>DN DETAN<br>WELL<br>INFORMATION | 5-10-94                | ISTO<br>BASED DI<br>TYP                  |                | S ME                        | ASURET<br>TOP | BOTTOM                      |
|---------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|-----------------------|------------------|---------------------------------------|------------------------|------------------------------------------|----------------|-----------------------------|---------------|-----------------------------|
| YPE<br>AMMER WT.<br>ALL<br>TICK UP<br>EMARKS: AU<br>S = Split Spoo<br>T = Shelby Tu<br>R = Air Rotary<br>D = Denison<br>N =<br>Sample       | STD.<br>140#<br>30"<br>UUEUUU<br>MPLE TYPE<br>on A = A<br>ube W = V<br>y C = C<br>P = F<br>= No Sample | Auger<br>Wash<br>Core | H.S.I            | DN DETAI<br>WELL<br>INFORMATION       |                        |                                          |                |                             | ТОР           | BOTTOM                      |
| AMMER WT.<br>ALL<br>TICK UP<br>EMARKS: AU<br>EMARKS: AU<br>S = Split Spoo<br>T = Shelby Tu<br>R = Air Rotan<br>D = Denison<br>N =<br>Sample | 140# $30"$ $WEU 0$ $MPLE TYPE$ on A = A<br>ube W = V<br>y C = C<br>P = F<br>= No Sample                | Auger<br>Wash<br>Core |                  | DN DETAI<br>WELL<br>INFORMATION       |                        |                                          |                |                             | ТОР           | BOTTOM                      |
| ALL<br>FICK UP<br>EMARKS: $AUC$<br>S = Split Spoo<br>T = Shelby Tu<br>R = Air Rotan<br>D = Denison<br>N =<br>Sample                         | 30"<br><u>WEU</u><br>on A = A<br>ube W = V<br>y C = C<br>P = F<br>= No Sample                          | Auger<br>Wash<br>Core |                  | WELL<br>INFORMATION                   |                        |                                          |                |                             | ТОР           | BOTTON                      |
| FICK UP<br>EMARKS: $AUC$<br>S = Split Spoo<br>T = Shelby Tu<br>R = Air Rotan<br>D = Denison<br>N =<br>Sample                                | MPLE TYPE<br>on A = A<br>ube W = V<br>y C = C<br>P = F<br>= No Sample                                  | Auger<br>Wash<br>Core |                  | WELL<br>INFORMATION                   |                        |                                          |                |                             | ТОР           | BOTTON                      |
| EMARKS: AU<br>S = Split Spoc<br>T = Shelby Tu<br>R = Air Rotan<br>D = Denison<br>N =<br>Sample                                              | AMPLE TYPE<br>on A = A<br>ube W = V<br>y C = C<br>P = F<br>= No Sample                                 | Auger<br>Wash<br>Core |                  | WELL<br>INFORMATION                   |                        |                                          |                |                             | ТОР           | BOTTON                      |
| SA<br>S = Split Spoo<br>T = Shelby Tu<br>R = Air Rotan<br>D = Denison<br>N<br>Sample                                                        | AMPLE TYPE<br>on A = A<br>ube W = V<br>y C = C<br>P = F<br>= No Sample                                 | Auger<br>Wash<br>Core |                  | WELL<br>INFORMATION                   |                        |                                          |                |                             | ТОР           | BOTTON                      |
| S = Split Spoo<br>T = Shelby Tu<br>R = Air Rotan<br>D = Denison<br>N =<br>Sample                                                            | on A = A<br>ube W = V<br>y C = C<br>P = P<br>= No Sample                                               | Wash<br>Core          |                  | INFORMATION                           | DIAM                   | түр                                      | E              |                             |               |                             |
| D = Denison<br>N =<br>Sample                                                                                                                | P = F<br>= No Sample                                                                                   |                       | Ri               |                                       |                        |                                          |                |                             | DEPTH<br>(FT) | DEPTH<br>(FT)               |
| Sample                                                                                                                                      | <u></u>                                                                                                |                       |                  | iser Pipe                             | 2"                     | Schedule 40, PVC                         | >              | . + .                       | 2.07          | - 3,75                      |
| Sample                                                                                                                                      |                                                                                                        |                       | S                | creen                                 | 2"                     | .10 Slot, Schedule                       | e 40 PVC       | -                           | 3.75          | - 12.7                      |
| Depth Type<br>(Ft.) and<br>No.                                                                                                              | Samp.<br>Rec.<br>Ft. SPT<br>& or<br>& RQD                                                              | or M                  | ab.<br>oist<br>% | Visual                                | Description            | on                                       | In             | Well<br>stallatio<br>Detail | on            | Elevatio                    |
|                                                                                                                                             |                                                                                                        |                       | 5                | EE BOLING<br>FOR SOIL I               | n Log For<br>In Format | - 35 MW-34 B<br>- 10N<br>- 3.5<br>- 3.75 | *0 *1<br>**    | ¥2                          | -             | - 12.2<br>- 11.2<br>- 10.95 |
|                                                                                                                                             |                                                                                                        |                       |                  |                                       | М                      | -<br>-<br>atch to Sheet 2                | ¥ <sup>5</sup> | *5                          | -             |                             |



PROJECT: Site 35 - Camp Geiger Area Fuel Farm

S.O. NO.: 62470-232

BORING NO .: 35MW-34A

| T =<br>R =     | Split Spoo<br>Shelby Tu<br>Air Rotar<br>Denison | ıbe                              | A =<br>W =<br>C =<br>P = | Auger<br>Wash<br>Core<br>Piston      |                    | DEFINITIONS<br>SPT = Standard Penetration Test (ASTM D-1586) (Blows/0.5')<br>RQD = Rock Quality Designation (%)<br>Lab. Class. = USCS (ASTM D-2487) or AASHTO (ASTM D-3282)<br>Lab. Moist. = Moisture Content (ASTM D-2216) Dry Weight Basis |                   |      |     |                   |           |  |
|----------------|-------------------------------------------------|----------------------------------|--------------------------|--------------------------------------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|------|-----|-------------------|-----------|--|
| Depth<br>(Ft.) | Sample<br>Type<br>and<br>No.                    | Samp.<br>Rec.<br>(Ft.<br>&<br>%) |                          | Lab.<br>Class.<br>or<br>Pen.<br>Rate | Lab.<br>Moist<br>% | Visual Description                                                                                                                                                                                                                           | \                 | Vell |     | tallation<br>tail | Elevation |  |
| _              |                                                 |                                  |                          |                                      |                    | Continued from Sheet 1 -                                                                                                                                                                                                                     |                   |      |     |                   | 4         |  |
| 11             |                                                 |                                  |                          |                                      |                    | -                                                                                                                                                                                                                                            | #5                | #8   |     |                   |           |  |
| 12_            |                                                 |                                  |                          |                                      |                    | -                                                                                                                                                                                                                                            |                   |      | 215 |                   | -         |  |
| 13_            |                                                 |                                  |                          |                                      |                    | SEE BORING LOG FOR 35MW-348                                                                                                                                                                                                                  | 1                 |      | -   | <br>-             | - 1.95    |  |
| 14_            |                                                 |                                  |                          |                                      |                    | FOR SOIL INFORMATION                                                                                                                                                                                                                         |                   | #7   |     |                   | 0.7       |  |
| -              |                                                 |                                  |                          |                                      |                    | -<br>15.a                                                                                                                                                                                                                                    |                   | #5   |     |                   | -0.3      |  |
| 4              |                                                 |                                  |                          |                                      |                    |                                                                                                                                                                                                                                              |                   |      |     |                   | -         |  |
| 16             |                                                 |                                  |                          |                                      |                    | -                                                                                                                                                                                                                                            | 1                 |      | ļ   |                   | - L       |  |
| 17_            |                                                 |                                  | ۰.<br>۲                  |                                      |                    | _                                                                                                                                                                                                                                            |                   |      |     |                   | -         |  |
| 18-            |                                                 |                                  |                          |                                      |                    | -                                                                                                                                                                                                                                            |                   |      |     |                   | _         |  |
| 19_            |                                                 |                                  |                          |                                      |                    |                                                                                                                                                                                                                                              | 1                 |      |     |                   | 1         |  |
| 20 _           |                                                 |                                  |                          |                                      |                    |                                                                                                                                                                                                                                              |                   |      |     |                   | 1         |  |
| 4              |                                                 |                                  |                          |                                      |                    | -                                                                                                                                                                                                                                            | -                 |      |     |                   | 4         |  |
| 21_            |                                                 |                                  |                          |                                      |                    | -                                                                                                                                                                                                                                            | 1                 |      |     |                   | 1         |  |
| 22_            |                                                 |                                  |                          |                                      |                    | -                                                                                                                                                                                                                                            | 1                 |      |     |                   | -         |  |
| 23 _           |                                                 |                                  |                          |                                      |                    | · -                                                                                                                                                                                                                                          | $\left\{ \right.$ |      |     |                   |           |  |
| 24_            |                                                 |                                  |                          |                                      |                    | -                                                                                                                                                                                                                                            | ]                 |      |     |                   | -         |  |
| - 25           |                                                 |                                  |                          |                                      |                    |                                                                                                                                                                                                                                              | 1                 |      |     |                   | 4         |  |
| 26             |                                                 |                                  |                          |                                      |                    |                                                                                                                                                                                                                                              | 1                 |      |     |                   | <u> </u>  |  |
| 4              |                                                 |                                  |                          |                                      |                    |                                                                                                                                                                                                                                              |                   |      |     |                   | 4         |  |
| 27             |                                                 |                                  |                          |                                      |                    | -                                                                                                                                                                                                                                            | 1                 |      |     |                   | 1         |  |
| 28_            |                                                 |                                  |                          |                                      |                    | -                                                                                                                                                                                                                                            |                   |      |     |                   | -1        |  |
| 29_            |                                                 |                                  |                          |                                      |                    | -                                                                                                                                                                                                                                            | -                 |      |     |                   | <b>-</b>  |  |
| 30             |                                                 |                                  |                          |                                      |                    |                                                                                                                                                                                                                                              |                   |      |     |                   | _         |  |

DRILLING CO.: <u>Hardin Huber Incorporated</u> DRILLER: <u>Brian Van Doren</u> BAKER REP.: James Culp BORING NO.: <u>35 MW- 54A</u>



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### **TEST BORING AND WELL CONSTRUCTION RECORD**

- 승규는 아름 문

PROJECT: Site 35 - Camp Geiger Area Fuel Farm

S.O. NO.: <u>62470-232</u> COORDINATES: EAST: <u>2465840-3700</u> ELEVATION: SURFACE: <u>/3.7</u>

BORING NO.: <u>35MW-35B</u> NORTH: <u>362997,6940</u> TOP OF STEEL CASING: <u>15,67</u>

|                                                       | SPLIT<br>SPOON                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                         | CASING                               | i Al               | JGERS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | BIT<br>SIZE                                                                                                                                       | DATE                                                                                                                                                                                   | PROGRESS<br>(FT)                                               | w       | 'EATI | HER                     | WATER<br>DEPTH<br>(FT) | TIME                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    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-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|---------|-------|-------------------------|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| IZE (DIAM.)                                           | 2"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                         |                                      |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 8"                                                                                                                                                | 5-3-94                                                                                                                                                                                 | 42.0                                                           | HOT,    | BR    | eery                    | ,                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         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| ENGTH                                                 | 2'                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             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Baker Environmental, 🔤

PROJECT: <u>Site 35 - Camp Geiger Area Fuel Farm</u> S.O. NO.: <u>62470-232</u> BORIN

BORING NO.: 35 MW-35 B

| T =<br>R =                          | Split Spor<br>Shelby Tu<br>Air Rotar<br>Denison | ıbe<br>Y                         | A =<br>W =<br>C =<br>P = | Auger<br>Wash<br>Core<br>Piston      |                    | DEFINITIONS<br>SPT = Standard Penetration Test (ASTM D-1586) (Blows/0.5')<br>RQD = Rock Quality Designation (%)<br>Lab. Class. = USCS (ASTM D-2487) or AASHTO (ASTM D-3282)<br>Lab. Moist. = Moisture Content (ASTM D-2216) Dry Weight Basis |                |     |        |                   |   |          |
|-------------------------------------|-------------------------------------------------|----------------------------------|--------------------------|--------------------------------------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|-----|--------|-------------------|---|----------|
| Depth<br>(Ft.)                      | Sample<br>Type<br>and<br>No.                    | Samp.<br>Rec.<br>(Ft.<br>&<br>%) |                          | Lab.<br>Class.<br>or<br>Pen.<br>Rate | Lab.<br>Moist<br>% | Visual Description                                                                                                                                                                                                                           |                | Wel |        | tallation<br>tail |   | levation |
|                                     |                                                 |                                  |                          |                                      |                    | Continued from Sheet 1                                                                                                                                                                                                                       |                |     |        |                   | - |          |
| 1_<br>-<br>2_<br>-<br>3_<br>-<br>4_ | A.N.                                            |                                  |                          |                                      |                    |                                                                                                                                                                                                                                              |                |     | -<br>- |                   |   | 0,7      |
|                                     | 5-6                                             | 2.0<br>2.0<br>100%               | NBH<br>1<br>1            |                                      |                    | SILT, trace Clay, trace wood<br>And voot fragments, dark gray,<br>SOFT, damp                                                                                                                                                                 |                |     | 0<br>X |                   |   |          |
| -<br>3-<br>-<br>-<br>-              | ĄN.                                             |                                  |                          |                                      |                    |                                                                                                                                                                                                                                              |                | *   |        |                   |   |          |
|                                     | 5-7                                             | 2.0<br>2.0<br>100%               | 9805                     |                                      |                    | 20.3<br>SAND, fine to medium grained,<br>Little she il fragments, trace silt,<br>gray, medium dense, wet,<br>partially comented with calcium<br>Carbonatic                                                                                   |                |     |        |                   |   | · 6.6    |
| -                                   | A.N.                                            |                                  |                          |                                      |                    | -                                                                                                                                                                                                                                            | <u></u><br>ў   |     |        |                   |   |          |
| ;<br>;<br>;<br>;                    | 58                                              | 2.0<br>2.0<br>100%               | 9<br>15<br>21<br>23      |                                      |                    | Note: Shell fragments increasing                                                                                                                                                                                                             |                | -   | **     |                   |   | - 12.3   |
|                                     |                                                 |                                  |                          |                                      | -<br>-<br>-<br>-   |                                                                                                                                                                                                                                              | * <sup>1</sup> | ,   |        |                   |   |          |
|                                     |                                                 |                                  |                          |                                      |                    | <u>30.0(es+)</u> <u> </u>                                                                                                                                                                                                                    |                |     |        |                   |   | -16.3    |

DRILLER: Brian Van Doren

BORING NO .: 35HW-35B



PROJECT: Site 35 - Camp Geiger Area Fuel Farm

S.O. NO.: 62470-232

BORING NO .: 35 MW-35B

|   |                | = Split Spo<br>= Shelby T<br>= Air Rota<br>= Denison | ube<br>ry                       | A =<br>W =<br>C =<br>P = | Auger<br>Wash<br>Core<br>Piston      |                    | DEFINITIONS<br>SPT = Standard Penetration Test (<br>RQD = Rock Quality Designation (<br>Lab. Class. = USCS (ASTM D-2487)<br>Lab. Moist. = Moisture Content (A | %)<br>or A/    | ASHTO    | ) (AST | M D-3282)        |                |
|---|----------------|------------------------------------------------------|---------------------------------|--------------------------|--------------------------------------|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|----------|--------|------------------|----------------|
|   | Depti<br>(Ft.) | 1 .76-                                               | Samp<br>Rec.<br>(Ft.<br>&<br>%) | SPT<br>or<br>RQD         | Lab.<br>Class.<br>or<br>Pen.<br>Rate | Lab.<br>Moist<br>% | Visual Description                                                                                                                                            | N              | Vell     |        | allation<br>tail | Elevation      |
|   | -              |                                                      | 1                               | 1                        |                                      |                    | Continued from Sheet 3 -                                                                                                                                      | *2             |          | \$V    | -                |                |
|   | 31-<br>-<br>32 | N                                                    |                                 |                          |                                      |                    | DID NOT SAMPLE - LOST RECIEL-<br>ULATION OF DEILUNG FULIDS -<br>LIMESTONE FEAGMENTS, Some shell                                                               |                |          |        |                  | 17.3           |
|   | 32<br>-<br>33  |                                                      |                                 |                          |                                      |                    | fragments, trace sand, gray, -                                                                                                                                | -              | *1       | -      | <b>_</b>         |                |
|   | -<br>34-       | A.N.                                                 |                                 |                          |                                      |                    | 34.0(est) 34.0<br>SAND fine around, little Shell                                                                                                              |                | <u> </u> |        | -                | -20,3<br>-20,4 |
|   | <i>3</i> 5     |                                                      | 1.0<br>1.0                      | 11                       |                                      |                    | 34.0(est) 34.0<br>SAND, finc grained, little Shell<br>Fragments, gray, dense, wet,<br>Partially cemented with calcium<br>Carbondte.                           | ¥ <sup>5</sup> |          | ¥9     | _                |                |
| ( | 36             | 5-9                                                  | 2.0<br>100%                     | 19<br>21<br>22           |                                      |                    | Carbondte                                                                                                                                                     |                | 48       |        | -                |                |
|   | 37             |                                                      |                                 |                          |                                      |                    |                                                                                                                                                               |                |          |        | -                |                |
|   | 38-            | A.N.                                                 |                                 |                          |                                      |                    | -                                                                                                                                                             |                |          |        | -                |                |
|   | 39<br>-<br>40  |                                                      |                                 |                          |                                      |                    | 40.0 40.0                                                                                                                                                     |                | #7       |        | -                | -25.55         |
|   |                |                                                      | 2.0                             | 445                      |                                      |                    | Sand, fine grained, little selt.                                                                                                                              |                | #5       |        | -                | - 27.3         |
|   | 41-<br>42      | 5-10                                                 | 100%                            | 5                        |                                      |                    |                                                                                                                                                               | <b>\$</b> #3   | #3       | #3     |                  | - 28.3         |
|   | 43-            |                                                      |                                 |                          | -                                    |                    | END OF BORING AT 42.0 FEET, SET _<br>WELL AT 40.0 FEET _                                                                                                      |                |          |        | _                | 4              |
|   | -44<br>        |                                                      |                                 |                          |                                      |                    | -                                                                                                                                                             |                |          |        | -                |                |
|   | <i>4</i> :5    |                                                      |                                 |                          |                                      |                    | -                                                                                                                                                             | 1              |          |        | -                |                |
|   | <b>4</b> .6    |                                                      |                                 |                          |                                      |                    | -                                                                                                                                                             |                |          |        | -                |                |
|   | 47 _           |                                                      |                                 |                          |                                      |                    | -                                                                                                                                                             |                |          |        | -                |                |
|   | <i>4</i> :8    |                                                      |                                 |                          |                                      |                    | -                                                                                                                                                             | -              |          |        | -                |                |
| - | 49_            |                                                      |                                 |                          |                                      |                    | -                                                                                                                                                             | -              |          |        |                  | -              |
|   | 50_            |                                                      |                                 |                          | <u> </u>                             | <u> </u>           | <u> </u>                                                                                                                                                      | -              |          |        |                  | <u>-l</u>      |

DRILLING CO.: <u>Hardin Huber Incorporated</u> DRILLER: <u>Brian Van Doren</u> BAKER REP.: James Culp

BORING NO .: 35 MW 35 B



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# TEST BORING AND WELL CONSTRUCTION RECOR

PROJECT: Site 35 - Camp Geiger Area Fuel Farm

S.O. NO.: <u>62470-232</u> COORDINATES: EAST: <u>2465844-6700</u> ELEVATION: SURFACE: <u>13.6</u>

BORING NO .: 35 MW -35A

NORTH: 362994,5130 TOP OF STEEL CASING: 15.45

| RIG: R35-Mol                                         | oile Drill     |                    |                    |            |                  |           |                                                                                                          |                    |                          |                                |
|------------------------------------------------------|----------------|--------------------|--------------------|------------|------------------|-----------|----------------------------------------------------------------------------------------------------------|--------------------|--------------------------|--------------------------------|
|                                                      | SPLIT<br>SPOON | CASING             | AL                 | JGERS      | BIT<br>SIZE      | DATE      | PROGRESS<br>(FT)                                                                                         | WEATHEI            | WATER<br>DEPTH<br>R (FT) |                                |
| SIZE (DIAM.)                                         | 2"             |                    | 6.2                | 5"ID       |                  | 5-3-94    | 15.0                                                                                                     | HOT, BREE<br>SUNNY | 24                       |                                |
| LENGTH                                               | 2'             |                    | _                  | -1         |                  |           |                                                                                                          |                    |                          |                                |
| ТҮРЕ                                                 | STD.           |                    | H                  | s,A.       |                  |           |                                                                                                          |                    |                          | -                              |
| HAMMER WT.                                           | 140#           |                    |                    |            |                  |           |                                                                                                          |                    |                          |                                |
| FALL                                                 | 30"            |                    |                    |            |                  |           |                                                                                                          | -                  |                          |                                |
| STICK UP                                             |                |                    |                    |            |                  |           |                                                                                                          |                    |                          |                                |
| REMARKS: A                                           | U WEI          | L CONS             | TRI                | ICTIO      | N DETA           | ILS AR    | E BASED (                                                                                                | IN FIELD           | MEASUR                   | EMENTS                         |
| S = SplitSp<br>T = Shelby                            |                | = Auger            |                    |            | /ELL<br>RMATION  | DIAM      | ТҮР                                                                                                      | E                  | TOP<br>DEPTH<br>(FT)     | BOTTOM<br>DEPTH<br>(FT)        |
| R = Air Rot<br>D = Deniso                            | ary C          | = Core<br>= Piston |                    | Riser l    | Pipe             | 2"        | Schedule 40, PV(                                                                                         | 3                  | +1.85                    | -4.2                           |
|                                                      | N = No Samp    |                    |                    | Screen     | L                | 2"        | .10 Slot, Schedul                                                                                        | e 40 PVC           | - 4.25                   | -13.25                         |
| Samp<br>Depth Type<br>(Ft.) and<br>No.               | Ft o           |                    | Lab.<br>Moist<br>% |            | Visual [         | Descripti | on                                                                                                       | Insta              | /ell<br>llation<br>etail | Elevation                      |
| -<br>1<br>2<br>3<br>4<br>5<br>6<br>7<br>8<br>9<br>10 |                |                    |                    | SEE<br>For | BOZING<br>- EOIL | INFORMI   | I.o<br>.35 HW-35 8<br>ATTON 3.o<br>4.25<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>- |                    |                          | - 12.6<br>- 10.6<br>- 9.35<br> |
| DRILLING CO.:                                        | Hardin H       | uber Incor         | porat              | ed         |                  | BAKE      | R REP.: James C                                                                                          | ulp                |                          |                                |
| DRILLER: Bria                                        | n Van Dor      | en                 |                    |            |                  | _ BORIN   | IG NO.: <u>35M</u>                                                                                       | W:35A              | SHEE                     | T <u>1</u> OF <u>2</u>         |

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Baker Environmental, Inc

### **TEST BORING AND WELL CONSTRUCTION RECORD**

- 12 i

PROJECT: <u>Site 35 - Camp Geiger Area Fuel Farm</u> S.O. NO.: <u>62470-232</u> BC

\_\_\_\_ BORING NO .: 35 MW-354

|   | T = 9<br>R = 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Split Spoo<br>Shelby Tu<br>Air Rotan<br>Denison | be                               | A =<br>W =<br>C =<br>P = | Auger<br>Wash<br>Core<br>Piston      |                    | DEFINITIONS<br>SPT = Standard Penetration Test (ASTM D-1586) (Blows/0.5')<br>RQD = Rock Quality Designation (%)<br>Lab. Class. = USCS (ASTM D-2487) or AASHTO (ASTM D-3282)<br>Lab. Moist. = Moisture Content (ASTM D-2216) Dry Weight Basis |                                                                                   |  |  |  |  |  |  |
|---|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|----------------------------------|--------------------------|--------------------------------------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--|--|--|--|--|--|
| - | Depth<br>(Ft.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Sample<br>Type<br>and<br>No.                    | Samp.<br>Rec.<br>(Ft.<br>&<br>%) | SPT<br>or<br>RQD         | Lab.<br>Class.<br>or<br>Pen.<br>Rate | Lab.<br>Moist<br>% | Visual Description                                                                                                                                                                                                                           | Well Installation<br>Detail Elevation                                             |  |  |  |  |  |  |
|   | 11 - 12 - 13 - 14 - 15 - 16 - 17 - 18 - 17 - 18 - 19 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 - 120 |                                                 |                                  |                          |                                      |                    | Continued from Sheet 1                                                                                                                                                                                                                       | $u \leq u^2$ $u^7$ $-0.4$ $-1.4$ $-1.4$ $-1.4$ $-1.4$ $-1.4$ $-1.4$ $-1.4$ $-1.4$ |  |  |  |  |  |  |
|   | 30                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                 |                                  |                          |                                      |                    | -                                                                                                                                                                                                                                            |                                                                                   |  |  |  |  |  |  |

DRILLING CO.: <u>Hardin Huber Incorporated</u> DRILLER: <u>Brian Van Doren</u> BAKER REP.: James Culp BORING NO.: 35MW-35-A

SHEET <u>2</u> OF <u>2</u>



# **TEST BORING AND WELL CONSTRUCTION RECORP**

PROJECT: Site 35 - Camp Geiger Area Fuel Farm

S.O. NO.: <u>62470-232</u> COORDINATES: EAST: <u>24-66049.6000</u> ELEVATION: SURFACE: <u>//.3</u>

BORING NO.: <u>\$5 MW-568</u> NORTH: <u>363075.1260</u>

TOP OF STEEL CASING: \_\_\_\_\_\_\_

| <u></u>                                               | SPLIT<br>SPOON                                                                          |                          | CASING                               |                    | JGERS                                      | BIT<br>SIZE                                                | DATE                            | PROGRESS<br>(FT)                                                                                                                                                                                                 | WEATH             | IER                        | WATER<br>DEPTH<br>(FT) | TIME                                        |
|-------------------------------------------------------|-----------------------------------------------------------------------------------------|--------------------------|--------------------------------------|--------------------|--------------------------------------------|------------------------------------------------------------|---------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|----------------------------|------------------------|---------------------------------------------|
| SIZE (DIAM.)                                          | 2"                                                                                      |                          |                                      |                    |                                            | 8"                                                         | 5-4-9                           | 4 42.0                                                                                                                                                                                                           | WET, COOL<br>70'5 | -1                         |                        | -                                           |
| ENGTH                                                 | 2'                                                                                      |                          |                                      |                    |                                            |                                                            |                                 | ,                                                                                                                                                                                                                | <u>// U</u>       |                            |                        |                                             |
| ГҮРЕ                                                  | STD.                                                                                    |                          | *                                    |                    |                                            | ROTARY                                                     |                                 |                                                                                                                                                                                                                  |                   |                            |                        | -                                           |
| IAMMER WT.                                            | 140#                                                                                    |                          |                                      |                    |                                            |                                                            |                                 |                                                                                                                                                                                                                  |                   | an an in helen illi en far |                        |                                             |
| ALL                                                   | 30"                                                                                     |                          |                                      |                    |                                            |                                                            |                                 |                                                                                                                                                                                                                  | -                 | <u> </u>                   |                        |                                             |
| TICK UP                                               |                                                                                         |                          |                                      |                    |                                            |                                                            |                                 |                                                                                                                                                                                                                  |                   |                            | 1                      |                                             |
| EMARKS: AU                                            | WEIL                                                                                    | . 00,                    | NSTR                                 | VCTI               | ON DE                                      | ETAILS 1                                                   | ARE B                           | ASED ON F                                                                                                                                                                                                        | HELD 1            | NEA                        | SUREM                  | ENTS                                        |
|                                                       | AMPLE TY                                                                                |                          | Auger                                |                    | w                                          | YELL<br>RMATION                                            | DIAM                            | ТҮРІ                                                                                                                                                                                                             |                   |                            | TOP<br>DEPTH<br>(FT)   | BOTTOM<br>DEPTH<br>(FT)                     |
| R = Air Rota<br>D = Denisor                           | iry (                                                                                   | C = C<br>P = F           |                                      |                    | Riser H                                    | Yipe                                                       | 2"                              | Schedule 40, PVC                                                                                                                                                                                                 | ļ                 | +.                         | 1.92                   | -34:                                        |
|                                                       | = No Sam                                                                                |                          |                                      |                    | Screen                                     |                                                            | 2"                              | .10 Slot, Schedule                                                                                                                                                                                               | 40 PVC            | : - 5                      | 34,20                  | - 38.zł                                     |
| Sampi<br>Depth Type<br>(Ft.) and<br>No.               | Ft.                                                                                     | SPT<br>or<br>RQD         | Lab.<br>Class.<br>or<br>Pen.<br>Rate | Lab.<br>Moist<br>% |                                            | Visual D                                                   | Descriptio                      | n                                                                                                                                                                                                                | Ins               | Well<br>tallati<br>Detail  | on                     | Elevation                                   |
| $ \begin{array}{cccccccccccccccccccccccccccccccccccc$ | 2.0<br>100%<br>1.0<br>2.0<br>5.75<br>0.75<br>0.75<br>0.75<br>0.75<br>0.75<br>0.75<br>0. | 9120 3334 3433 1111 1222 |                                      |                    | SULT,<br>3.0 1<br>SAND,<br>Light<br>Stread | trace san<br>noist to a<br>fine grain<br>brown, b<br>ching | lamp<br>Led, trace<br>Loose, da | 0.75<br>+macc clay,<br>dense, dry, 25/<br>5,512, ught<br>dry 25/<br>gray, LOOSE,<br>3.97<br>- 5125,<br>mp, gray<br>- 7.5 FEET.<br>-<br>-<br>8.8<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>- | *                 | ¢∕×                        | -                      | 10.55<br>10.05<br>9.03<br>8.3<br>2.5<br>2.1 |

DRILLER: Brian Van Doren

BORING NO .: 35 MW-36B



Baker Environmental, Inc

#### **TEST BORING AND WELL CONSTRUCTION RECORD**

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PROJECT: <u>Site 35 - Camp Geiger Area Fuel Farm</u> S.O. NO.: <u>62470-232</u> BO

BORING NO.: <u>35 MW-36B</u>

| T<br>R                                               | = Split Spor<br>= Shelby Tu<br>= Air Rotar<br>= Denison | ıbe                              | A =<br>W =<br>C =<br>P = | Auger<br>Wash<br>Core<br>Piston      |                    | <u>DEFINITIONS</u><br>SPT = Standard Penetration Test (ASTM D-1586) (Blows/0.5')<br>RQD = Rock Quality Designation (%)<br>Lab. Class. = USCS (ASTM D-2487) or AASHTO (ASTM D-3282)<br>Lab. Moist. = Moisture Content (ASTM D-2216) Dry Weight Basis |          |       |             |                   |                       |  |  |
|------------------------------------------------------|---------------------------------------------------------|----------------------------------|--------------------------|--------------------------------------|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-------|-------------|-------------------|-----------------------|--|--|
| Depth<br>(Ft.)                                       | Sample<br>Type<br>and<br>No.                            | Samp.<br>Rec.<br>(Ft.<br>&<br>%) | SPT<br>or<br>RQD         | Lab.<br>Class.<br>or<br>Pen.<br>Rate | Lab.<br>Moist<br>% | Visual Description                                                                                                                                                                                                                                  | V        | Vell  | Inst<br>Det | allation<br>tail  | Elevation             |  |  |
| 11-<br>12-<br>13-<br>14-<br>15-<br>16-<br>17-<br>10- | 4.N.<br>5-6                                             | 2.0<br>2.0<br>100%               | *550                     |                                      |                    | Continued from Sheet 1<br>Chat, little site, Geey and brown,<br>soft, wet, stained soils at 8.9<br>FEET, hydrocaston obors observed<br>                                                                                                             | لم<br>لا |       | -           |                   | -4.0                  |  |  |
| 18                                                   | А.N.<br>5-7                                             | 1.7<br>2.0<br>85%                | 5779                     |                                      |                    |                                                                                                                                                                                                                                                     |          | حر به |             |                   |                       |  |  |
| 23<br>24<br>25<br>26<br>27                           | A.N.<br>5-8                                             | 2.0<br>2.0<br>100%               | /<br>3<br>8<br>20        |                                      |                    | 23.5 23.5<br>SAND, fine grained, trace<br>Shell fragments, trace<br>Sice, Redelics crowing<br>Midium dirse, Wes, Irom<br>24.7<br>Sphild, fine grained, Some Shell                                                                                   |          |       | 0 A         | -<br><br><br><br> | - 12.2                |  |  |
| 28<br>29<br>30                                       |                                                         |                                  |                          |                                      |                    | fragments, gray, dense, wet<br>partially comunted caleium<br>Carbonate.                                                                                                                                                                             | ¥        |       | ~<br>∗      | -                 | -<br>- 16.7<br>-<br>- |  |  |

DRILLING CO.: <u>Hardin Huber Incorporated</u> DRILLER: <u>Brian Van Doren</u> BAKER REP.: James Culp BORING NO.: <u>35MW-36B</u>



PROJECT: <u>Site 35 - Camp Geiger Area Fuel Farm</u> S.O. NO.: <u>62470-232</u> BO

BORING NO .: 35MW-368

Baker Environmental, Inc

| T =<br>R =     | Split Spoo<br>Shelby Tu<br>Air Rotar<br>Denison | ibe                              | A =<br>W =<br>C =<br>P = | Auger<br>Wash<br>Core<br>Piston      |                    | <u>DEFINITIONS</u><br>SPT = Standard Penetration Test (<br>RQD = Rock Quality Designation (<br>Lab. Class. = USCS (ASTM D-2487)<br>Lab. Moist. = Moisture Content (A | %)<br>or A/ | ASHTO      | D (ASI   | (M D-3282)        |                                  |
|----------------|-------------------------------------------------|----------------------------------|--------------------------|--------------------------------------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|------------|----------|-------------------|----------------------------------|
| Depth<br>(Ft.) | Sample<br>Type<br>and<br>No.                    | Samp.<br>Rec.<br>(Ft.<br>&<br>%) |                          | Lab.<br>Class.<br>or<br>Pen.<br>Rate | Lab.<br>Moist<br>% | Visual Description                                                                                                                                                   | V           | Vell       |          | tallation<br>tail | Elevation                        |
| 31-<br>32      | 5-9                                             | 2.0<br>2.0<br>100%               | 18<br>22<br>26<br>28     |                                      |                    | Continued from Sheet 2<br><u>SAND</u> , fine grained, Some Skell<br>fragments, gray, dense, wet,<br>Partially Cemented with<br>Calcium Carbonale.                    | *2          | ¥J         | #2<br>#5 | -                 | -<br>19.7                        |
| 33             | A.N.                                            |                                  |                          | -                                    |                    |                                                                                                                                                                      |             |            | *        | ,<br>, -          |                                  |
| 35<br>36       | 5-10                                            | 2 <u>.0</u><br>2.0<br>100%       | 19<br>22<br>22<br>20     |                                      |                    |                                                                                                                                                                      | 45          | 48         |          | -                 |                                  |
| 37<br>38<br>39 | · A.N.                                          | 100/8                            |                          |                                      |                    | 39.0(est) 39.0                                                                                                                                                       |             | #1         |          |                   | -<br>-<br>- 26.96<br>-<br>- 27.7 |
| 40             |                                                 | 2.0                              | 9                        |                                      |                    | SAND, fine grain à , some<br>Silt, trace shell fragment<br>greenish gray, dense, moist                                                                               |             | <u>4</u> 5 |          |                   | 28.7                             |
| 41<br>42       | 5-11                                            | 100%                             | 18                       | ita da eser ante tata de             |                    | 42.0 42.0<br>END OF BORING AT 42.0 FEET;                                                                                                                             | 1           | \$3        | ¥3       |                   | -<br>30.7<br>-                   |
| 43<br>44       |                                                 |                                  |                          |                                      |                    | SET WELL AT 39.0 FEET                                                                                                                                                |             |            |          |                   |                                  |
| 45<br>46       |                                                 |                                  |                          |                                      |                    |                                                                                                                                                                      |             |            |          |                   |                                  |
| 47 -<br>48 -   |                                                 |                                  |                          |                                      |                    | -                                                                                                                                                                    |             |            |          |                   |                                  |
| 49_<br>50_     |                                                 |                                  |                          |                                      |                    | -<br>-<br>-                                                                                                                                                          |             |            |          | -                 |                                  |

DRILLING CO.: <u>Hardin Huber Incorporated</u> DRILLER: <u>Brian Van Doren</u> BAKER REP.: James Culp

BORING NO .: 35 MW-36 8



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## **TEST BORING AND WELL CONSTRUCTION RECORD**

PROJECT: Site 35 - Camp Geiger Area Fuel Farm

S.O. NO.: 62470-232 COORDINATES: EAST: 24660 50.9700 NORTH: 36 3068.7520 ELEVATION: SURFACE: //.3

BORING NO .: 35-MW-364 TOP OF STEEL CASING: 13.30

|                                                      |                                           |       |                                      |                    |            |                     |            |                                                                                                       |                         | _                        |                        |                              |
|------------------------------------------------------|-------------------------------------------|-------|--------------------------------------|--------------------|------------|---------------------|------------|-------------------------------------------------------------------------------------------------------|-------------------------|--------------------------|------------------------|------------------------------|
| RIG: R35-                                            | Mobile Dri                                | 11    |                                      |                    |            |                     |            |                                                                                                       |                         |                          |                        |                              |
|                                                      | SPL<br>SPO                                |       | CASING                               | A                  | JGERS      | BIT<br>SIZE         | DATE       | PROGRESS<br>(FT)                                                                                      | WEATHE                  |                          | WATER<br>DEPTH<br>(FT) | TIME                         |
| SIZE (DIAM                                           | .) 2'                                     | '     |                                      | 6                  | 6.25"      |                     | 5-9-94     | 16.0                                                                                                  | BRIGHT, SU<br>BREEZY, H |                          |                        |                              |
| LENGTH                                               | 2'                                        | ·     | _                                    |                    | 5'         |                     |            |                                                                                                       |                         |                          |                        |                              |
| ТҮРЕ                                                 | ST                                        | D.    |                                      |                    | H.S.A.     |                     |            |                                                                                                       |                         |                          | •                      | -                            |
| HAMMER V                                             | VT. 140                                   | #     |                                      |                    |            |                     |            |                                                                                                       |                         |                          |                        |                              |
| FALL                                                 | 30                                        | 11    |                                      |                    |            |                     | ,          |                                                                                                       | -                       |                          |                        |                              |
| STICK UP                                             |                                           |       |                                      |                    |            |                     |            |                                                                                                       |                         |                          |                        |                              |
| REMARKS:                                             | All WE                                    | U.    | <b>WNST</b>                          | ever               | TON E      | ETAILS              | ARE Z      | BASED ON P                                                                                            | FIELD MEN               | <u>451/2</u>             | EME                    | Its                          |
|                                                      | SAMPLE<br>lit Spoon<br>elby Tube          | A =   | = Auger<br>= Wash                    |                    |            | ELL<br>RMATION      | DIAM       | ТҮР                                                                                                   | E                       | DE                       | OP<br>PTH<br>FT)       | BOTTOM<br>DEPTH<br>(FT)      |
| R = Ai                                               | r Rotary<br>enison                        | -     | = Core<br>= Piston                   |                    | Riser I    | Pipe                | 2"         | Schedule 40, PV(                                                                                      | ;                       | +2                       |                        | - 3.25                       |
|                                                      | N = No 5                                  | ample |                                      |                    | Screen     |                     | 2"         | .10 Slot, Schedule                                                                                    | e 40 PVC                | -3.                      | 25                     | -/2.25                       |
| Depth<br>(Ft.)                                       | Sample Rec.<br>Type Ft.<br>and &<br>No. % |       | Lab.<br>Class.<br>or<br>Pen.<br>Rate | Lab.<br>Moist<br>% |            | Visual [            | Descriptio | on                                                                                                    | Insta                   | /ell<br>Ilation<br>etail | 1                      | Elevation                    |
| -<br>1<br>2<br>3<br>4<br>5<br>6<br>7<br>8<br>9<br>10 |                                           |       |                                      |                    | SEE<br>FOR | BORING<br>SOIL INFO | DRMATTON   | 7.5<br><b>c. 35</b> Mw - 368<br>3.25<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>- |                         | -                        | -                      | - 9.8<br>- 8.8<br>- 8.05<br> |
|                                                      | CO.: <u>Hardi</u>                         |       |                                      | porat              | ted        |                     |            | REP.: James C                                                                                         |                         |                          | C1100                  |                              |
| DRILLER:                                             | <u>Brian Van</u>                          | Dorei | <u>n</u>                             |                    |            |                     | _ BORIN    | G NO.: <u>35 MW</u>                                                                                   | -36A                    |                          | SHEET                  | <u>1</u> OF <u>2</u>         |



Baker Environmental, 🔤

PROJECT: <u>Site 35 - Camp Geiger Area Fuel Farm</u> S.O. NO.: <u>62470-232</u> BOR

BORING NO .: 35MW-36A

| T =<br>R =                                                                                                                                                                                         | Split Spoo<br>Shelby Tu<br>Air Rotar<br>Denison | be                               | A =<br>W =<br>C =<br>P = |                                      |                    | DEFINITIONS<br>SPT = Standard Penetration Test (ASTM D-1586) (Blows/0.5')<br>RQD = Rock Quality Designation (%)<br>Lab. Class. = USCS (ASTM D-2487) or AASHTO (ASTM D-3282)<br>Lab. Moist. = Moisture Content (ASTM D-2216) Dry Weight Basis |                       |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|----------------------------------|--------------------------|--------------------------------------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| Depth<br>(Ft.)                                                                                                                                                                                     | Sample<br>Type<br>and<br>No.                    | Samp.<br>Rec.<br>(Ft.<br>&<br>%) | SPT<br>or<br>RQD         | Lab.<br>Class.<br>or<br>Pen.<br>Rate | Lab.<br>Moist<br>% | Visual Description Well Installation<br>Detail                                                                                                                                                                                               | Elevation             |
| $ \begin{array}{c} 11 \\ 12 \\ 13 \\ 14 \\ 15 \\ 16 \\ 17 \\ 16 \\ 17 \\ 18 \\ 19 \\ 20 \\ 21 \\ 22 \\ 23 \\ 24 \\ 25 \\ 24 \\ 25 \\ 26 \\ 27 \\ 26 \\ 27 \\ 28 \\ 29 \\ 30 \\ 30 \\ \end{array} $ |                                                 |                                  |                          |                                      |                    | Continued from Sheet 1  /2.25  /3.0  /2.25  /3.0  /2.25  /3.0  /2.25  /3.0  /2.2  /3.0  /2.2  /3.0  /2.2  /3.0  /2.2  /3.0  /45  /45  /45  /45  /45  /45  /45  /4                                                                            | -0.95<br>-1.7<br>-4.7 |

DRILLING CO.: <u>Hardin Huber Incorporated</u> DRILLER: <u>Brian Van Doren</u> BAKER REP.: James Culp BORING NO.: <u>35MW-36A</u>



PROJECT: Site 35 - Camp Geiger Area Fuel Farm

 BORING NO.:
 <u>D24/10-232</u>
 BORING NO.:
 <u>3574W-37B</u>

 COORDINATES:
 EAST:
 <u>2464336.8600</u>
 NORTH:
 <u>363160.2700</u>

 ELEVATION:
 SURFACE:
 18.3
 TOP OF STEEL CASING:
 20.

TOP OF STEEL CASING: 20.33

|                                                               | SPLI<br>SPOC |                   | CASING                               | G AI               | UGERS                      | BIT<br>SIZE                 | DATE                               | PROGRESS<br>(FT)                        | v      | VEAT | HER                  | WATER<br>DEPTH<br>(FT) | ТІМЕ                          |
|---------------------------------------------------------------|--------------|-------------------|--------------------------------------|--------------------|----------------------------|-----------------------------|------------------------------------|-----------------------------------------|--------|------|----------------------|------------------------|-------------------------------|
| IZE (DIAM.)                                                   | 2"           |                   |                                      |                    |                            | 8"                          | 5-15-94                            | 45.0                                    | WA     | Rm,  | sunn                 | 24                     |                               |
| ENGTH                                                         | 2'           |                   |                                      |                    |                            |                             |                                    |                                         |        |      |                      |                        |                               |
| YPE                                                           | STL          | ).                |                                      |                    |                            | ROTARY                      |                                    |                                         |        |      |                      |                        |                               |
| IAMMER WT.                                                    | 140;         | #                 |                                      |                    |                            |                             |                                    |                                         |        |      |                      |                        |                               |
| ALL                                                           | 30"          | '                 |                                      |                    |                            |                             |                                    |                                         |        |      |                      |                        |                               |
| TICK UP                                                       |              |                   |                                      |                    |                            |                             |                                    |                                         |        |      |                      |                        |                               |
| emarks: A                                                     | l WEI        | 1 C               | DNSTR                                | WCT                | ION D                      | ETAILS                      | ARE B                              | ASED ON P                               | TEU    | N    | EA                   | SUREME                 | NTS.                          |
|                                                               | SAMPLE T     | <u>YPE</u><br>A = | = Auger<br>= Wash                    |                    | l w                        | /ELL<br>RMATION             | DIAM                               | TYP                                     |        |      |                      | TOP<br>DEPTH<br>(FT)   | BOTTON<br>DEPTH<br>(FT)       |
| $\mathbf{R} = \text{Air Rot}$<br>$\mathbf{D} = \text{Deniso}$ | ary          | C =               | = Core<br>= Piston                   |                    | Riser I                    | Pipe                        | 2"                                 | Schedule 40, PV                         | C      |      | •                    | +2.03                  | -39.                          |
|                                                               | N = No Sa    |                   |                                      |                    | Screen                     | l                           | 2"                                 | .10 Slot, Schedul                       | e 40 P | VC   | .   -                | -39.0                  | - 43.                         |
| Samp<br>Depth Type<br>(Ft.) and<br>No.                        | Ft.          | SPT<br>or<br>RQD  | Lab.<br>Class.<br>or<br>Pen.<br>Rate | Lab.<br>Moist<br>% |                            | Visual (                    | Descriptic                         | n                                       |        | In   | We<br>stalla<br>Deta | ation                  | Elevatio                      |
| 1                                                             | 50%          | 6917 23           |                                      |                    | <b>Sana</b><br>dens<br>2.3 | c, dark<br>c, dry           | nnd, trace,                        | nal, little<br>medium<br>2.3<br>cuclay, | -      |      | #0                   |                        | -<br>-<br>-<br>16.0           |
| 4<br>- 35-<br>- MW3785-<br>5 - 03 5-                          | 75%          | MMM NM UC         |                                      |                    | NOTE:                      | SANC AP<br>In <b>LOCA</b> L | , LOOSE,<br>PEANS CON<br>I ZED ZON | es.<br>5.5                              | •      | ¥7   |                      |                        | -<br>-<br>-<br>-<br>-<br>12.8 |
| 6<br>-<br>7 - S-<br>8 - S-                                    | 1.5          | 4902              |                                      |                    | SILE,<br>MOISE<br>NOTO     | brown <sup>±</sup>          | , midian<br>Water ei               | n dense,<br>ncountered                  |        |      |                      |                        |                               |
|                                                               | 5 2.0        | 4.69              |                                      |                    |                            |                             |                                    |                                         | ±0     |      |                      |                        | -                             |



PROJECT: <u>Site 35 - Camp Geiger Area Fuel Farm</u> S.O. NO.: <u>62470-232</u> BOF

BORING NO .: 35MW-37B

| T =<br>R = .            | Split Spor<br>Shelby Tu<br>Air Rotar<br>Denison | ıbe                              | A =<br>W =<br>C =<br>P = | Auger<br>Wash<br>Core<br>Piston      |                    | <u>DEFINITIONS</u><br>SPT = Standard Penetration Test (A<br>RQD = Rock Quality Designation (9<br>Lab. Class. = USCS (ASTM D-2487) (<br>Lab. Moist. = Moisture Content (A                             | %)<br>or A/ | ASHTO | D (ASI | M D-3282)         |    |          |
|-------------------------|-------------------------------------------------|----------------------------------|--------------------------|--------------------------------------|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-------|--------|-------------------|----|----------|
| Depth<br>(Ft.)          | Sample<br>Type<br>and<br>No.                    | Samp.<br>Rec.<br>(Ft.<br>&<br>%) | SPT<br>or<br>RQD         | Lab.<br>Class.<br>or<br>Pen.<br>Rate | Lab.<br>Moist<br>% | Visual Description                                                                                                                                                                                   | ١           | Vell  |        | tallation<br>tail | EI | evation  |
| -<br>11-<br>-<br>12     | 5-6                                             | 1.3<br>2.0<br>65%                | 5422                     |                                      |                    | Continued from Sheet 1<br>Well graded, trace silt, brown,<br>LODSE, WEL                                                                                                                              |             |       | #0     | •                 |    |          |
| -<br>13_<br>-<br>14_    | A.N.                                            |                                  | :                        |                                      |                    | .13.0                                                                                                                                                                                                |             |       | -      |                   |    | 5.3      |
| -<br>-<br>16<br>-<br>17 | 5-7                                             | 1.8<br>2.0<br>90%                | NN 3733                  |                                      |                    | SAND, COARSE GRAINED, Frace<br>Selt, Light brown, Loose, wet<br>15.3<br>SAND, fing to medium grained,                                                                                                | -           |       |        |                   | 1  | 3.0      |
| -<br>18<br>-<br>19      | A.N.                                            |                                  |                          |                                      |                    | 15.3<br>SAND, fine to medium grained,<br>ULL graded, trace silt, dark<br>Ingray, LOOSE, wet.<br>16.2<br>SAND, fine grained, lette silt,<br>dark gray, Loose, wet<br><u>18.5648</u><br><u>18.5648</u> |             | #1    | •      |                   |    | - 0.2    |
| 20<br>21<br>22          | 5-8                                             | 1.8<br>2.0<br>90%                | l<br>Wott<br>Wott        |                                      |                    | SAND, fine grained, trace sult, -<br>Olive, Very Loose, Wet -                                                                                                                                        |             |       |        |                   |    |          |
| -<br>23<br>-<br>24      |                                                 |                                  |                          |                                      |                    |                                                                                                                                                                                                      |             |       |        |                   |    |          |
| 25<br>26                |                                                 |                                  |                          |                                      |                    | Note: Skipped the 25'-27' interval<br>because we feared Losing<br>drilling fluid recirculation.<br>26:0(est) 26.0                                                                                    | ¥0          |       |        |                   |    | 7.7      |
| 27<br>28<br>29          |                                                 |                                  |                          |                                      |                    | SAND, fine grained, Some shell -<br>fragments, trace silt, gray,<br>dense, wet, partially comented<br>with calcium carbonate.                                                                        |             |       |        |                   |    |          |
| <br>                    |                                                 |                                  |                          |                                      |                    |                                                                                                                                                                                                      |             |       |        |                   |    | <u> </u> |

DRILLING CO.: <u>Hardin Huber Incorporated</u> DRILLER: <u>Brian Van Doren</u> BAKER REP.: James Culp

BORING NO .: 35 MW-37B



Baker Environmental, Inc. PROJEC

PROJECT: Site 35 - Camp Geiger Area Fuel Farm

S.O. NO.: 62470-232 BORING NO.: 35MW-37B

|   | T =<br>R =         | Split Spoo<br>Shelby Tu<br>Air Rotan<br>Denison | be                               | A =<br>W =<br>C =<br>P = |                                      |                    | DEFINITIONS<br>SPT = Standard Penetration Test (ASTM<br>RQD = Rock Quality Designation (%)<br>Lab. Class. = USCS (ASTM D-2487) or A<br>Lab. Moist. = Moisture Content (ASTM | ASHTC    | ) (ASTI     | M D-3282)       |                          |
|---|--------------------|-------------------------------------------------|----------------------------------|--------------------------|--------------------------------------|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-------------|-----------------|--------------------------|
|   | Depth<br>(Ft.)     | Sample<br>Type<br>and<br>No.                    | Samp.<br>Rec.<br>(Ft.<br>&<br>%) | SPT<br>or<br>RQD         | Lab.<br>Class.<br>or<br>Pen.<br>Rate | Lab.<br>Moist<br>% | Visual Description                                                                                                                                                          | Well     | Inst<br>Det | allation<br>ail | Elevation                |
|   | 32                 | 5-9                                             | 1.7<br>2.0<br>85%                | /8<br>22<br>23<br>20     |                                      |                    | Continued from Sheet 2<br>NOTE: Little Shell Fragments _ #0                                                                                                                 | -        | #0          | -               | -<br>- 13.7              |
|   | 33<br>34<br>35     | AN                                              |                                  |                          |                                      |                    |                                                                                                                                                                             | #7       | H2          |                 |                          |
| - | 36<br>37           | 5-10                                            | 1.9<br>2.0<br>95%                | 15<br>18<br>22<br>21     |                                      |                    |                                                                                                                                                                             |          |             | <br>            | -/7.7                    |
|   | 38-<br>39-<br>40   | AN                                              |                                  |                          |                                      |                    |                                                                                                                                                                             | 5        |             | -               | -20.7                    |
|   | 41                 | 5-11                                            | 2.0<br>2.0<br>100%               | 9 11 15 22               |                                      |                    | H.7 HI.7 -<br>ENLTY SAND, fine grained, trace -                                                                                                                             | #8       | us-         | -               |                          |
|   | 43 —<br>44 —       | 5-12                                            | 2.0<br>2.0<br>100%               | 12<br>18<br>20<br>18     |                                      |                    | SILTY SAND, fine grained, trace<br>Shell Fragments, greenish<br>Gray, dehse, Moist<br>45.0 45.0                                                                             | #7<br>#5 | -           | -               | - 24.7<br>-25.7<br>-26.7 |
|   | 45<br>46<br>47     |                                                 |                                  |                          |                                      |                    | END OF BORING AT 45.0 FEET; SET<br>WELL AT 44.0 FEET.                                                                                                                       |          |             | -               |                          |
| _ | -<br>48<br>-<br>49 |                                                 |                                  |                          |                                      |                    |                                                                                                                                                                             |          |             | -               | -<br>-<br>-              |
|   | 50_                | <u> </u>                                        |                                  | <u> </u>                 |                                      |                    |                                                                                                                                                                             |          |             |                 | _                        |

DRILLING CO.: <u>Hardin Huber Incorporated</u> DRILLER: <u>Brian Van Doren</u> BAKER REP.: James Culp

BORING NO .: 35 MW - 37 B



PROJECT: Site 35 - Camp Geiger Area Fuel Farm

| S.O. NO.: 62470-232               | BORING NO.: <u>35MW-37A</u>       |
|-----------------------------------|-----------------------------------|
| COORDINATES: EAST: 2464 340. 4100 | NORTH: 363160.1660                |
| ELEVATION: SURFACE: /8.3          | TOP OF STEEL CASING: <u>20.30</u> |

|                                     | SPLI<br>SPOC |                  | CASING                               | i Al               | JGERS      | BIT<br>SIZE     | DATE               | PROGRESS<br>(FT)           | v        | VEAT | THER                | WATER<br>DEPTH<br>(FT) | TIME                          |
|-------------------------------------|--------------|------------------|--------------------------------------|--------------------|------------|-----------------|--------------------|----------------------------|----------|------|---------------------|------------------------|-------------------------------|
| SIZE (DIAM.)                        | 2"           |                  |                                      | 6.                 | 25 20      |                 | 5-15-94            | 16.0                       | 20       | urm, | i SUM               | ing                    |                               |
| ENGTH                               | 2'           |                  |                                      |                    | 5'         |                 |                    |                            |          |      |                     |                        |                               |
| YPE                                 | STD          | ).               |                                      | H                  | 1.5.4.     |                 |                    |                            |          |      |                     |                        | -                             |
| AMMER WT.                           | 140;         | #                |                                      |                    |            |                 |                    |                            |          |      |                     |                        |                               |
| ALL                                 | 30"          |                  |                                      |                    |            |                 | 1                  |                            |          |      |                     |                        |                               |
| STICK UP                            |              |                  |                                      |                    |            |                 |                    |                            |          |      |                     |                        |                               |
| REMARKS: AL                         | L WEL        | ic               | ONSTR                                | VCTI               | ON DE      | ETAILS          | ARE BA             | SEDON FIE                  | 101      | ME   | <u>АЗИ</u>          | REMENT                 | 3                             |
| S = SplitS<br>T = Shelby            |              | A =              | = Auger<br>= Wash                    |                    |            | VELL<br>RMATION | DIAM               | TYP                        | E        |      |                     | TOP<br>DEPTH<br>(FT)   | BOTTOM<br>DEPTH<br>(FT)       |
| R = Air Ro<br>D = Deniso            | tary         | C =              | = Core<br>= Piston                   |                    | Riser I    | Pipe            | 2"                 | Schedule 40, PV            | 2        |      |                     | +12.0                  | -5.2                          |
|                                     | N = No Sa    | -                |                                      |                    | Screen     | L               | 2"                 | .10 Slot, Schedul          | e 40 P   | vc   |                     | - 5.2                  | -14.0                         |
| Sam<br>Depth Typ<br>(Ft.) and<br>No | e FL         | SPT<br>or<br>RQD | Lab.<br>Class.<br>or<br>Pen.<br>Rate | Lab.<br>Moist<br>% |            | Visual I        | Descriptio         | on                         |          | Ir   | We<br>hstall<br>Det | ation                  | Elevation                     |
| 1 -<br>-<br>2<br>3                  |              |                  |                                      |                    | SEE<br>FOR | BOENG<br>SOL F  | LOG FOR<br>Informa | 35MW-37B<br>2.5<br>71071 - | ¥0<br>¥2 | •    | ¥0<br>¥2            | •                      | -<br>-<br>-<br>-<br>-<br>/5.8 |
| 4<br>5<br>6                         |              |                  |                                      |                    |            |                 |                    | 4:0-<br>5:2                |          |      |                     |                        | - 14.3<br>- 13.1              |
| 8 -<br>9 -                          |              |                  |                                      |                    |            |                 |                    | -                          |          | #8   | ¥5                  |                        |                               |
|                                     | 1            | 1                | 1                                    | 1                  | 1          |                 |                    | -                          |          | 1    | 1. 1                |                        | <b>-1</b> (                   |

DRILLER: Brian Van Doren

BORING NO.: 35MW-37A-

SHEET <u>1</u> OF <u>2</u>



PROJECT: Site 35 - Camp Geiger Area Fuel Farm

5.O. NO.: 62470-232

BORING NO .: 35HW-37A

|   | S<br>T<br>R<br>C | ; = ;<br>= ; | Split Spoc<br>Shelby Tu<br>Air Rotary<br>Denison | be                               | A =<br>W =<br>C =<br>P = | Auger<br>Wash<br>Core<br>Piston      |                    | DEFINITIONS<br>SPT = Standard Penetration Test (<br>RQD = Rock Quality Designation (<br>Lab. Class. = USCS (ASTM D-2487)<br>Lab. Moist. = Moisture Content (A | (%)<br>) or A/ | ASHTO | ) (AST      | M D-3282)         | <u></u>   |
|---|------------------|--------------|--------------------------------------------------|----------------------------------|--------------------------|--------------------------------------|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|-------|-------------|-------------------|-----------|
|   | Deç<br>(F1       | oth<br>:.)   | Sample<br>Type<br>and<br>No.                     | Samp.<br>Rec.<br>(Ft.<br>&<br>%) | SPT<br>or<br>RQD         | Lab.<br>Class.<br>or<br>Pen.<br>Rate | tab.<br>Moist<br>% | Visual Description                                                                                                                                            | \              | Vell  | Ins<br>De   | tallation<br>tail | Elevation |
| ſ |                  |              |                                                  |                                  |                          |                                      |                    | Continued from Sheet 1 -                                                                                                                                      |                |       |             |                   | 4         |
|   | 11_              |              |                                                  |                                  |                          |                                      |                    | -                                                                                                                                                             | 1              |       |             |                   |           |
|   | 12<br><br>13     |              |                                                  |                                  |                          |                                      |                    | ,                                                                                                                                                             | #5             | #8    | <b>#</b> 5" |                   |           |
|   | 14_              |              |                                                  |                                  |                          |                                      |                    | 14.0_                                                                                                                                                         |                |       |             |                   | - 4.3     |
|   | 15-              |              |                                                  |                                  |                          |                                      |                    | SEE BORING LOG FOR 35 MN-37<br>FOR GOIL Information 15:0-                                                                                                     |                | #?    |             |                   | 3.3       |
|   | -                |              |                                                  |                                  |                          |                                      |                    | FAR BOIL HINDI HINT 100-                                                                                                                                      |                | #5    |             | ·                 | 2.3       |
| ť | 16_<br>-         |              |                                                  |                                  |                          |                                      |                    | /6.0                                                                                                                                                          |                | 1     |             |                   | -         |
|   | 17_              |              |                                                  |                                  |                          |                                      |                    | -                                                                                                                                                             | 1              |       |             |                   |           |
|   | 18—              |              |                                                  |                                  |                          |                                      |                    | -                                                                                                                                                             |                |       |             |                   |           |
|   | 19_              |              |                                                  |                                  |                          |                                      |                    | -                                                                                                                                                             | -              |       |             |                   | -         |
|   | 20 _             |              |                                                  |                                  |                          |                                      |                    | -                                                                                                                                                             | -              |       |             |                   | -         |
|   | -<br>21 _        |              |                                                  |                                  |                          |                                      |                    | -                                                                                                                                                             |                |       |             |                   | 4         |
|   | -<br>22          |              |                                                  |                                  |                          |                                      |                    | -                                                                                                                                                             | 1              |       |             |                   | 1         |
|   | 23               |              |                                                  |                                  |                          | -                                    |                    |                                                                                                                                                               |                |       |             |                   | 4         |
|   | -                |              |                                                  |                                  |                          |                                      |                    |                                                                                                                                                               | -              |       |             |                   | -         |
|   | 24 —<br>-        |              |                                                  |                                  |                          |                                      |                    |                                                                                                                                                               | ]              |       |             |                   | -         |
|   | 25 —<br>-        |              |                                                  |                                  |                          |                                      |                    | -                                                                                                                                                             |                |       |             |                   |           |
|   | 26               |              |                                                  |                                  | 1                        |                                      |                    | -                                                                                                                                                             | 1              |       |             |                   |           |
|   | 27               |              |                                                  |                                  |                          |                                      |                    | -                                                                                                                                                             | -              |       |             |                   | -]        |
|   | -<br>28 –        |              |                                                  |                                  |                          |                                      |                    |                                                                                                                                                               | -              |       |             |                   | -         |
|   | 29_              |              |                                                  |                                  |                          |                                      |                    | .                                                                                                                                                             | -              |       |             |                   | -         |
| 1 | 30               |              |                                                  |                                  |                          |                                      |                    | ·                                                                                                                                                             | -              |       |             |                   | _         |

DRILLING CO.: <u>Hardin Huber Incorporated</u> DRILLER: <u>Brian Van Doren</u>

8

BAKER REP.: James Culp BORING NO.: <u>3546-37A</u>



PROJECT: Site 35 - Camp Geiger Area Fuel Farm

S.O. NO.: <u>62470-232</u> COORDINATES: EAST: <u>24-64-508.4900</u> ELEVATION: SURFACE: <u>/8.2</u>

BORING NO.: <u>35 MW-38 B</u> NORTH: <u>3628/3, 1980</u> TOP OF STEEL CASING: <u>20.00</u>

|                                       |                                   | SPLI<br>SPOO                   |                  | CASING                               | 5 AL               | JGERS        | BIT<br>SIZE          | DATE                 | PROGRESS<br>(FT)                           | v      | VEAT                       | HER                | • .   | WATER<br>DEPTH<br>(FT) | TIME                    |
|---------------------------------------|-----------------------------------|--------------------------------|------------------|--------------------------------------|--------------------|--------------|----------------------|----------------------|--------------------------------------------|--------|----------------------------|--------------------|-------|------------------------|-------------------------|
| SIZE (DIAN                            | 1.)                               | 2"                             |                  |                                      |                    |              | 8"                   | 5-16-94              | 45.0                                       | 401    | ; SUN<br>NU <del>9</del> 9 | ny,<br>4           |       |                        |                         |
| LENGTH                                |                                   | 2'                             |                  |                                      |                    |              |                      |                      |                                            |        |                            |                    |       |                        |                         |
| ТҮРЕ                                  |                                   | STD                            | ).               |                                      |                    |              | ROTARY               |                      |                                            |        |                            |                    |       |                        | -                       |
| HAMMER                                | WT.                               | 140#                           | #                |                                      |                    |              |                      |                      |                                            |        |                            |                    |       |                        |                         |
| FALL                                  |                                   | 30"                            |                  |                                      |                    |              |                      | т                    |                                            |        |                            | -                  |       |                        |                         |
| STICK UP                              |                                   |                                |                  |                                      |                    |              |                      |                      |                                            |        |                            |                    |       |                        |                         |
| REMARKS                               | AU                                | WE                             | U                | CONST                                | EUCT               | TON          | ETAILS               | ARE E                | SASED ON F                                 | IEU    | D M                        | IEA.               | SUR   | <u>EME</u> Ă           | 173                     |
|                                       | <u>SA</u><br>plit Spo<br>helby Tu |                                | A =              | = Auger<br>= Wash                    |                    |              | (ELL<br>RMATION      | DIAM                 | ТҮР                                        | E      |                            |                    | Ð     | TOP<br>EPTH<br>(FT)    | BOTTOM<br>DEPTH<br>(FT) |
| R = A                                 | vir Rotar<br>Denison              |                                | C =              | = Core<br>= Piston                   |                    | Riser I      | Pipe                 | 2"                   | Schedule 40, PVC                           | >      |                            |                    | +     | 1.8                    | - 39.                   |
| <b>D</b> = 0                          |                                   | = No Sa                        |                  |                                      |                    | Screen       |                      | 2"                   | .10 Slot, Schedul                          | e 40 P | vc                         |                    | - ;   | 34.0                   | -43.0                   |
| Depth<br>(Ft.)                        | Sample<br>Type<br>and<br>No.      | Samp.<br>Rec.<br>Ft.<br>&<br>% | SPT<br>or<br>RQD | Lab.<br>Class.<br>or<br>Pen.<br>Rate | Lab.<br>Moist<br>% |              | Visual D             | escriptio            | n                                          |        | Ir                         | Wo<br>nstal<br>Det | latic | on                     | Elevation               |
| -<br>1<br>2                           | 5-1                               | 1.9<br>2.0<br>95%              | 4797             |                                      |                    | brow         | on, medil            | im dens              | ts, dark<br>se, dry 1.0<br>rk brown,<br>p. |        |                            |                    |       |                        | - 17.2                  |
|                                       | 5-2                               | 1.7<br>2.0<br>85%              | 4766             |                                      |                    | 2.7          |                      |                      | 2.7<br>A, little<br>um dense,              | -      |                            | ¥0                 |       |                        |                         |
| - <u>35-</u><br>- MW 38<br>5 - 03<br> | <b>вs-</b><br>5-3                 | 1.6<br>2.0<br>80%              | 571012           |                                      |                    | NOTE<br>NOTE | : Traces<br>: Graya  | ilt at 9<br>t 5.7 fc | 1.0 FEET.<br>LT                            |        | *1                         |                    |       |                        | -                       |
| 7                                     | 5-4                               | 1.8<br>2.0<br>10%              | 4667             |                                      |                    | Note<br>A    | : bround<br>77.0 FEE | water,               | encountered<br>-                           |        |                            |                    |       |                        |                         |
| 8                                     | 5-5                               | 1.9                            | 133              |                                      |                    | 1/000        | TI MILLIA            | cound a              | -<br>et 9.8 FEBL                           | - y0   |                            |                    |       |                        |                         |
| 9 _<br>10 _                           | 5-5                               | 95%                            | 4                |                                      |                    | 10010        | Finegi               | anna                 | ,,,                                        | -      |                            |                    |       |                        | 1 💊                     |

DRILLER: Brian Van Doren

BAKER REP.: James Culp BORING NO.: <u>35MW-38B</u>



PROJECT: <u>Site 35 - Camp Geiger Area Fuel Farm</u> S.O. NO.: <u>62470-232</u>BC

BORING NO .: 35MW-38B

|                      | 「=<br>{= | Split Spoo<br>Shelby Tu<br>Air Rotan<br>Denison | be                               | A =<br>W =<br>C =<br>P = | Auger<br>Wash<br>Core<br>Piston      |                    | <u>DEFINITIONS</u><br>SPT = Standard Penetration Test (,<br>RQD = Rock Quality Designation (<br>Lab. Class. = USCS (ASTM D-2487)<br>Lab. Moist. = Moisture Content (A | %)<br>or A/      | ASHTC | ) (AST | M D-3282)        |           |
|----------------------|----------|-------------------------------------------------|----------------------------------|--------------------------|--------------------------------------|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|-------|--------|------------------|-----------|
| De<br>(F             |          | Sample<br>Type<br>and<br>No.                    | Samp.<br>Rec.<br>(Ft.<br>&<br>%) | SPT<br>or<br>RQD         | Lab.<br>Class.<br>or<br>Pen.<br>Rate | Lab.<br>Moist<br>% | Visual Description                                                                                                                                                    | V                | Vell  |        | allation<br>tail | Elevation |
|                      |          | Д ,N.                                           |                                  |                          |                                      |                    | Continued from Sheet 1                                                                                                                                                |                  |       |        |                  |           |
| 14                   |          | 5-6                                             | 1.4<br>2.0<br>70%                | 1 23                     |                                      |                    | SAND, fine grained, trace -<br>Silt, light green, Loose, -<br>wet                                                                                                     |                  |       | *0     |                  |           |
| 18<br><br>19<br>20   |          | A.N.                                            |                                  |                          |                                      |                    | -<br>-<br>-<br>-                                                                                                                                                      |                  | T H   |        |                  |           |
| 21 -<br>22 -         |          | 5-7                                             | 1.6<br>2.0<br>80%                | 3446                     |                                      |                    |                                                                                                                                                                       |                  |       |        |                  |           |
| 23 -<br>24 -         |          | A. <i>N</i> .                                   |                                  |                          |                                      |                    | -<br>-<br>-                                                                                                                                                           | -<br>-<br>-<br>- |       |        |                  |           |
| 25 -<br>26 -<br>27 - |          | 5-8                                             | 2.0<br>2.0<br>100%               | 4 42 12 18               |                                      |                    | 25.9 25.9<br>SILTY CLAY, Some Shell fragmen<br>Gray, Very Stiff, Moist, Caleiam<br>Carbonate (Marl). 27.8                                                             |                  |       |        |                  |           |
| 28 -<br>29 -         |          | 5-9                                             | 2.0<br>2.0<br>100%               | 12<br>12<br>14<br>18     |                                      |                    | Carbonate (Marl). 27.8<br>GRAVEL (Lime stone fragments),<br>Little Clay, trace silt, gray,<br>dense, wet                                                              |                  |       |        |                  |           |
| <u>30-</u>           |          | A.N.                                            | <u> </u>                         |                          |                                      |                    |                                                                                                                                                                       |                  |       |        |                  |           |

DRILLING CO.: Hardin Huber Incorporated DRILLER: Brian Van Doren

BAKER REP.: James Culp BORING NO .: 35 MW- 38B ...



PROJECT: <u>Site 35 - Camp Geiger Area Fuel Farm</u> S.O. NO.: <u>62470-232</u>BOR

BORING NO .: 35MW-38B

| T =<br>R =         | SAMPLE TYPE<br>= Split Spoon A = Auger<br>= Shelby Tube W = Wash<br>= Air Rotary C = Core<br>= Denison P = Piston<br>N = No Sample<br>Samp- Lab. |                                  |                  |              |                    | DEFINITIONS<br>SPT = Standard Penetration Test (<br>RQD = Rock Quality Designation (<br>Lab. Class. = USCS (ASTM D-2487)<br>Lab. Moist. = Moisture Content (A | (%)<br>) or AASHTO (ASTM D-3282)      |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------|--------------|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|
| Depth<br>(Ft.)     | Sample<br>Type<br>and<br>No.                                                                                                                     | Samp.<br>Rec.<br>(Ft.<br>&<br>%) | SPT<br>or<br>RQD | Class.<br>or | Lab.<br>Moist<br>% | Visual Description                                                                                                                                            | Well Installation<br>Detail Elevation |
| 31-<br>32-<br>33-  |                                                                                                                                                  |                                  |                  |              |                    | Continued from Sheet                                                                                                                                          | - W W                                 |
| 35-<br>            | 5-16                                                                                                                                             | 2.6                              | 10 12 12         |              |                    | SAND, fine grained, frace -<br>Sict, gray, medium dense, wet<br>partially cemented with<br>Calcium carbonale.                                                 |                                       |
| 37<br>             | A.N.                                                                                                                                             | 100%                             | 1                |              |                    | Calcium carbonāle.                                                                                                                                            | ¥1<br>×1<br>×5<br>                    |
| 40<br>4:1<br>42    | 5-11                                                                                                                                             | 2.0<br>2.0<br>100%               | 9                | -            |                    | -                                                                                                                                                             |                                       |
| 43-<br>44<br>45    | 5-12<br>A.N.                                                                                                                                     | 2,0<br>2.0<br>100%               | 17<br>8<br>6     |              |                    | 43.3<br>SAND, fine are inter, some sile, greenish<br>gray, medium dense, moist.<br>45.0<br>45.0                                                               |                                       |
| 46 -<br>4:7 -      |                                                                                                                                                  |                                  |                  |              |                    | END OF BORING AT 45.0 FEET                                                                                                                                    |                                       |
| 48-<br>4.9-<br>50- |                                                                                                                                                  |                                  |                  |              |                    | -                                                                                                                                                             |                                       |

DRILLING CO.: <u>Hardin Huber Incorporated</u> DRILLER: <u>Brian Van Doren</u> BAKER REP.: James Culp

BORING NO .: 35MW-38B



PROJECT: Site 35 - Camp Geiger Area Fuel Farm

S.O. NO.: <u>62470-232</u> COORDINATES: EAST: <u>2464504.3600</u> ELEVATION: SURFACE: <u>/8./</u>

SPAR AN \$1.1.1P

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BORING NO.: <u>35MW-38A</u> NORTH: <u>362812.6300</u> TOP OF STEEL CASING: <u>19.74</u>

|                                                                    | SPLIT                              |                    | Τ                  |                   | BIT                        | -                       | PROGRESS                   |           |                   |                      | ATER<br>PTH |                                                                                             |
|--------------------------------------------------------------------|------------------------------------|--------------------|--------------------|-------------------|----------------------------|-------------------------|----------------------------|-----------|-------------------|----------------------|-------------|---------------------------------------------------------------------------------------------|
| -                                                                  | SPOON                              | CASING             | AU                 | GERS              | SIZE                       | DATE                    | (FT)                       |           | ATHEF             | ₹ (                  | FT)         | TIME                                                                                        |
| IZE (DIAM.)                                                        | 2"                                 |                    | 6                  | e25 ID            |                            | 5-16-94                 | 16.0                       | HOT &     | by by             | 1                    |             |                                                                                             |
| ENGTH                                                              | 2'                                 |                    |                    | 5'                |                            |                         | <u> </u>                   |           |                   |                      |             |                                                                                             |
| YPE                                                                | STD.                               |                    | <u> </u>           | 4.5.4.            |                            | 1                       |                            | _         |                   |                      |             |                                                                                             |
| IAMMER WT.                                                         | 140#                               |                    |                    |                   |                            |                         |                            | <u> </u>  |                   |                      |             |                                                                                             |
| ALL                                                                | 30"                                |                    |                    |                   |                            | ļ                       |                            |           |                   |                      |             | <u> </u>                                                                                    |
|                                                                    |                                    |                    |                    |                   |                            |                         |                            |           |                   |                      |             |                                                                                             |
| EMARKS: AU                                                         | WELL (                             | DNSTRU             | UCTI.              | ON E              | ETAILS                     | ARE B                   | ASED ON                    | TELD      | ME                | ASURE                | FME         | NTS.                                                                                        |
| <u>S</u><br>S = Split Spo<br>T = Shelby T                          |                                    | = Auger<br>= Wash  |                    |                   | ELL<br>RMATION             | DIAM                    | Ţ                          | PE        |                   | TOP<br>DEPTi<br>(FT) |             | BOTTOM<br>DEPTH<br>(FT)                                                                     |
| R = Air Rota<br>D = Denison                                        | ry C                               | = Core<br>= Piston |                    | Riser F           | lipe                       | 2"                      | Schedule 40, PV            | °C        |                   | + 1.4                | ;4          | - 5,25                                                                                      |
| N                                                                  | = No Sample                        | ;                  |                    | Screen            |                            | 2"                      | .10 Slot, Schedu           | le 40 PVC |                   | - 5.25               | ·           | -14,25                                                                                      |
| Sampl<br>Depth Type<br>(Ft.) and<br>No.                            | Samp.<br>Rec.<br>Ft.<br>& RQI<br>% | or                 | Lab.<br>Moist<br>% |                   | Visual C                   | Descriptic              | n                          |           | W<br>Instal<br>De | lation               |             | Elevatio                                                                                    |
| -<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>- |                                    |                    |                    | SEE<br>354<br>INF | Воігла<br>1W-388<br>Бакмат | s Los F<br>B For<br>Ton | ок<br>50 г с<br>3.5<br>5.2 | #<br>     | #0<br>7 #2<br>#5  |                      | -           | -<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>- |
| 7<br>-<br>8<br>-<br>9<br>0                                         |                                    |                    |                    |                   |                            | М                       | atch to Sheet 2            |           | +8                |                      | •           |                                                                                             |



PROJECT: <u>Site 35 - Camp Geiger Area Fuel Farm</u> S.O. NO.: <u>62470-232</u> BO

BORING NO .: 35MW-38A

| T =<br>R =         | Split Spoo<br>Shelby Tu<br>Air Rotar<br>Denison | ıbe                              | A =<br>W =<br>C =<br>P = | Auger<br>Wash<br>Core<br>Piston      |                    | DEFINITIONS<br>SPT = Standard Penetration Test (<br>RQD = Rock Quality Designation (<br>Lab. Class. = USCS (ASTM D-2487)<br>Lab. Moist. = Moisture Content (A | %)<br>or A | ASHT     | D (AS     | TM D-3282)       | I           |                    |
|--------------------|-------------------------------------------------|----------------------------------|--------------------------|--------------------------------------|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------|-----------|------------------|-------------|--------------------|
| Depth<br>(Ft.)     | Sample<br>Type<br>and<br>No.                    | Samp.<br>Rec.<br>(Ft.<br>&<br>%) | SPT<br>or<br>RQD         | Lab.<br>Class.<br>or<br>Pen.<br>Rate | Lab.<br>Moist<br>% | Visual Description                                                                                                                                            | ١          | Well     | Ins<br>De | tallatio<br>tail | n           | Elevation          |
|                    |                                                 |                                  |                          |                                      |                    | Continued from Sheet 1                                                                                                                                        |            |          |           |                  | · -         | -                  |
| 12                 |                                                 |                                  |                          |                                      |                    |                                                                                                                                                               | #5         | #8       | -<br>#5   | <b></b><br>-     |             | 3.85               |
| 15                 |                                                 |                                  |                          |                                      |                    | SEE BORING LOG FOR 35 MW-38 B<br>FOR SOIL INFORMATION. 15.4                                                                                                   |            | #7<br>#5 |           |                  | -           | 3.83<br>3.1<br>2.1 |
| 10                 |                                                 |                                  |                          |                                      |                    | / 6. <del></del>                                                                                                                                              |            |          |           |                  | -           |                    |
| -<br>19<br>-       |                                                 |                                  |                          |                                      |                    | -                                                                                                                                                             |            |          |           |                  | <br><br>-   |                    |
| 20<br>-<br>21<br>- |                                                 |                                  |                          |                                      |                    |                                                                                                                                                               |            |          |           |                  |             |                    |
| 22<br>23           |                                                 |                                  |                          |                                      |                    |                                                                                                                                                               |            |          |           |                  | -<br>-<br>- |                    |
| 24<br>25           |                                                 |                                  |                          |                                      |                    |                                                                                                                                                               |            |          |           |                  | -           |                    |
| -<br>26            |                                                 |                                  |                          |                                      |                    |                                                                                                                                                               |            |          |           |                  | -<br><br>-  |                    |
| 27<br>28           |                                                 |                                  |                          |                                      |                    |                                                                                                                                                               |            |          |           |                  | -           |                    |
| 29—<br>-<br>30—    |                                                 |                                  |                          |                                      |                    |                                                                                                                                                               |            |          |           |                  | -           |                    |

DRILLING CO.: <u>Hardin Huber Incorporated</u> DRILLER: <u>Brian Van Doren</u> BAKER REP.: James Culp BORING NO.: <u>35HW-38A</u>.



#### SAMPLING SUMMARY SITE 35, CAMP GEIGER AREA FUEL FARM REMEDIAL INVESTIGATION CONTRACT TASK ORDER 0232 MARINE CORP BASE, CAMP LEJEUNE, NORTH CAROLINA

#### SURFACE WATER

|           |           |      |       |       | THAT . |          |
|-----------|-----------|------|-------|-------|--------|----------|
|           |           |      |       | TCL   | TAL    |          |
| SAMPLE    | DATE      | TCL  | TCL   | PEST/ | TOTAL  |          |
| LOCATION  | COLLECTED | VOLS | SVOLS | PCB   | METALS | HARDNESS |
| 35-SWO1   | 4/12      | X    | X     | X     | x      | X        |
| 35-SWO2   | 4/12      | х    | x     | х     | x      | x        |
| 35-SWO3   | 4/12      | х    | х     | Х     | х      | x        |
| 35-SWO4   | 4/12      | x    | х     | Х     | х      | x        |
| 35-SWO5   | 4/12      | х    | x     | x     | x      | x        |
| 35-SWO6   | 4/12      | х    | x     | Х     | x      | x        |
| 35-SWO7   | 4/20      | х    | x     | х     | x      |          |
| 35-SWPD01 | 7/28      | х    | x     | х     | x      |          |
| 35-SWPD02 | 7/28      | х    | x     | х     | X      |          |

#### SURFACE SOIL

|           |                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                      | TCL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-----------|-----------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DATE      | TCL                                                                                                       | TCL                                                                                                                                                                                                                                                                                                                                                                                  | PEST/                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | TAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| COLLECTED | VOLS                                                                                                      | SVOLS                                                                                                                                                                                                                                                                                                                                                                                | PCB                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | METALS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 5/17      | x                                                                                                         | X                                                                                                                                                                                                                                                                                                                                                                                    | X                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | X                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 5/17      | х                                                                                                         | x                                                                                                                                                                                                                                                                                                                                                                                    | х                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Х                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 5/18      | х                                                                                                         | х                                                                                                                                                                                                                                                                                                                                                                                    | х                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | х                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 5/18      | х                                                                                                         | х                                                                                                                                                                                                                                                                                                                                                                                    | x                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | х                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 4/29      | х                                                                                                         | x                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | x                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 4/29      | х                                                                                                         | x                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | х                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 5/18      | х                                                                                                         | x                                                                                                                                                                                                                                                                                                                                                                                    | x                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | x                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 4/29      | х                                                                                                         | х                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | x                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 5/18      | х                                                                                                         | x                                                                                                                                                                                                                                                                                                                                                                                    | х                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | x                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 5/17      | х                                                                                                         | x                                                                                                                                                                                                                                                                                                                                                                                    | х                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | x                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 4/13      | х                                                                                                         | x                                                                                                                                                                                                                                                                                                                                                                                    | х                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | x                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 4/13      | х                                                                                                         | x                                                                                                                                                                                                                                                                                                                                                                                    | х                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | x                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 5/18      | х                                                                                                         | x                                                                                                                                                                                                                                                                                                                                                                                    | х                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | x                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 5/18      | х                                                                                                         | x                                                                                                                                                                                                                                                                                                                                                                                    | Х                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | x                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|           | COLLECTED<br>5/17<br>5/18<br>5/18<br>4/29<br>4/29<br>5/18<br>4/29<br>5/18<br>5/17<br>4/13<br>4/13<br>5/18 | COLLECTED         VOLS           5/17         X           5/17         X           5/18         X           5/18         X           4/29         X           5/18         X           4/29         X           5/18         X           4/29         X           5/18         X           5/17         X           4/13         X           4/13         X           5/18         X | COLLECTED         VOLS         SVOLS           5/17         X         X           5/17         X         X           5/18         X         X           5/18         X         X           4/29         X         X           5/18         X         X           4/29         X         X           5/18         X         X           5/18         X         X           5/18         X         X           5/17         X         X           5/17         X         X           4/13         X         X           4/13         X         X | COLLECTED         VOLS         SVOLS         PCB           5/17         X         X         X           5/17         X         X         X           5/17         X         X         X           5/17         X         X         X           5/18         X         X         X           4/29         X         X         X           4/29         X         X         X           5/18         X         X         X           4/29         X         X         X           5/18         X         X         X           5/18         X         X         X           5/17         X         X         X           5/17         X         X         X           4/13         X         X         X           4/13         X         X         X           5/18         X         X         X           4/13         X         X         X           5/18         X         X         X |

#### SEDIMENT

| SEDIMENT    |           |      |       |       |        |     |                       |
|-------------|-----------|------|-------|-------|--------|-----|-----------------------|
|             |           |      |       | TCL   |        |     | · · · · · · · · · · · |
| SAMPLE      | DATE      | TCL  | TCL   | PEST/ | TAL    |     | GRAIN SIZE/           |
| LOCATION    | COLLECTED | VOLS | SVOLS | PCB   | METALS | TOC | SIEVE                 |
| 35-SDO1-06  | 4/16      |      |       |       |        |     | x                     |
| 35-SDO1-06  | 4/20      | X    | x     | х     | Х      | х   |                       |
| 35-SDO1-612 | 4/20      | х    | x     | X     | х      |     |                       |
| 35-SDO2-06  | 4/16      |      |       |       |        |     | x                     |
| 35-SDO2-06  | 5/17      | х    | x     | х     | x      |     |                       |
| 35-SDO2-612 | 5/17      | х    | х     | x     | Х      |     |                       |
| 35-SDO3-06  | 4/14      |      |       |       |        |     | x                     |
| 35-SDO3-06  | 5/17      | Х    | x     | х     | x      | 1   |                       |
| 35-SDO3-612 | 5/17      | Х    | x     | х     | х      |     |                       |
| 35-SDO4-06  | 4/14      |      |       |       |        |     | x                     |
| 35-SDO4-06  | 4/20      | Х    | x     | х     | х      | x   |                       |
| 35-SDO4-612 | 4/20      | Х    | x     | х     | х      | x   |                       |
| 35-SDO5-06  | 5/17      | х    | x     | X     | х      | 1   |                       |
| 35-SDO5-612 | 5/17      | х    | x     | х     | х      |     |                       |
| 35-SDO5-06  | 4/15      |      |       |       |        |     | x                     |
| 35-SDO6-06  | 5/17      | x    | x     | х     | Х      |     | ĺ                     |
| 35-SDO6-612 | 5/17      | х    | X     | х     | x      |     |                       |
| 35-SDO6-06  | 4/15      |      |       |       |        |     | x                     |
| 35-SDO7-06  | 4/14      |      |       |       |        |     | x X                   |
| 35-SDO7-06  | 4/20      | х    | x     | Х     | x      | x   |                       |
| 35-SD07-612 | 4/20      | х    | x     | x     | x      | x   | [                     |
| 35-BN02-06  | 4/16      |      |       |       |        | 1   | x                     |
| 35-BN03-06  | 4/16      | 1    | 1     |       | ł      | -   | x                     |
| 35-BN04-06  | 4/16      |      |       |       |        |     | <u>x</u>              |

SAMPLING SUMMARY (Continued)

SITE 35, CAMP GEIGER AREA FUEL FARM REMEDIAL INVESTIGATION CONTRACT TASK ORDER 0232 MARINE CORP BASE, CAMP LEJEUNE, NORTH CAROLINA

|     | SAMPLE       | DATE      | TCL | TCL   | TAL    | ADDITIONAL |                          |
|-----|--------------|-----------|-----|-------|--------|------------|--------------------------|
|     |              | COLLECTED |     | SVOLS | METALS | PARAMETERS |                          |
|     | 35-GWD01-03  | 4/26      | X   |       | x      |            | 19 octual y rates        |
| - Y | 35-GWD02-03  | 5/16      | X   | x     | х      |            |                          |
| 1   | 35-GWD03-03  | 5/16      | X   | X     | х      |            | this list does not indeh |
|     | 35-GWD03-04  | 5/16      |     | k I   |        | x          |                          |
| 1   | 35-GWD04-02  | 5/16      | х   | X     | х      |            | actual samples tokin     |
| ~   | 35-GWD05-03  | 4/28      | х   | X     | х      |            |                          |
| ~   | 35-MW26B-04  | 5/13      | х   | 1 1   |        |            | 35MW 29 B. CI            |
| V   | 35-MW29B-03  | 5/10      | х   | x     | X      |            |                          |
| _   | -35-MW30B-04 | 5/11      | х   |       |        |            | BSWANSOBILITY            |
| V   | 35-MW31B-03  | 4/30      | X   |       |        |            |                          |
| V   | 35-MW32B-03  | 5/14      | х   |       |        |            |                          |
| 5   | 35-MW33B-05  | 5/11      | х   |       |        |            |                          |
| 4   | 35-MW34B-03  | 5/10      | х   |       |        |            |                          |
| 4   | 35-MW35B-01  | 5/10      | х   | x     | x      |            |                          |
| 1   | 35-MW36B-03  | 5/4       | х   |       |        |            | 55-MW35-02               |
|     | 35-MW37B-03  | 5/15      | X   |       |        |            |                          |

| SAMPLE             | DATE              | TCLP   | TCLP          | TCLP             | TCLP        | TCLP   | REACTIVITY   |     | TOTAL<br>KJELDAHL           | TOTAL<br>PHOSPOROUS | REACTIVE<br>CYANIDE | REACTIVE<br>SULFIDE | TOTAL<br>PLATE |
|--------------------|-------------------|--------|---------------|------------------|-------------|--------|--------------|-----|-----------------------------|---------------------|---------------------|---------------------|----------------|
| LOCATION           | COLLECTED         |        | SVOLS         |                  | HERB        | METALS | IGNITABILITY | TOC | NITROGEN                    | EPA 365.3           | CIANDE              | JOLFIDE             | COUNT          |
| 35-GWD03-04        | 4/16              | x      | x             | x                | x           | x      | x            | x   | x                           | x                   | x                   | x                   | x              |
|                    |                   | ATTER- | 1             | 1                |             | 1      |              |     |                             |                     |                     |                     |                |
| SAMPLE<br>LOCATION | DATE<br>COLLECTED | BURG   | GRAIN<br>SIZE | CONSTANT<br>HEAD | PERMEABLITY |        |              |     | $\mathcal{O}_{\mathcal{A}}$ |                     |                     |                     |                |
| 35-ST01            | 4/1               | x      | x             | x                | x           |        |              |     | Le C                        | 0                   |                     |                     |                |
|                    |                   |        |               |                  |             |        |              |     |                             | -<br>Ar             |                     |                     |                |

| SAMPLE<br>LOCATION | DATE<br>COLLECTED |   |   | CONSTANT<br>HEAD | PERMEABLITY |
|--------------------|-------------------|---|---|------------------|-------------|
| 35-ST01            | 4/1               | x | x | x                | x           |

#### SAMPLING SUMMARY (Continued) SITE 35, CAMP GEIGER AREA FUEL FARM REMEDIAL INVESTIGATION CONTRACT TASK ORDER 0232 MARINE CORP BASE, CAMP LEJEUNE, NORTH CAROLINA

#### SUBSURFACE SOIL

| SAMPLE<br>LOCATION | DATE<br>COLLECTED | TCL<br>VOLS | TCL<br>SVOLS | TAL<br>METALS | ADDITIONAL<br>PARAMETERS |
|--------------------|-------------------|-------------|--------------|---------------|--------------------------|
| 35-GWD01-03        | 4/26              | X           | X            | Х             |                          |
| 35-GWD02-03        | 5/16              | x           | X            | х             |                          |
| 35-GWD03-03        | 5/16              | х           | X            | х             |                          |
| 35-GWD03-04        | 5/16              |             |              |               | x                        |
| 35-GWD04-02        | 5/16              | х           | X            | х             |                          |
| 35-GWD05-03        | 4/28              | - X         | X            | х             |                          |
| 35-MW26B-04        | 5/13              | Х           |              |               | [                        |
| 35-MW29B-01        | 5/10              | х           | x            | х             |                          |
| 35-MW29B-03        | 5/10              | Х           | X            | х             | [ [                      |
| 35-MW30B-01        | 5/10              | Х           | X            | х             |                          |
| 35-MW30B-04        | 5/11              | X           |              |               | [ [                      |
| 35-MW31B-03        | 4/30              | X           |              |               | 1                        |
| 35-MW32B-03        | 5/14              | х           |              | e             | 1 1                      |
| 35-MW33B-05        | 5/11              | х           |              |               |                          |
| 35-MW34B-03        | 5/10              | x           |              |               | (                        |
| 35-MW35B-01        | 5/10              | x           | X            | x             |                          |
| 35-MW35B-02        | 5/3               | x           | 1            |               |                          |
| 35-MW36B-03        | 5/4               | х           |              |               | 1                        |
| 35-MW37B-03        | 5/15              | X           | 1            |               | -                        |
| 35-MW38B-03        | 5/16              | x           | <u> </u>     |               |                          |

# ADDITIONAL PARAMETERS, SUBSURFACE SOIL

| SAMPLE<br>LOCATION | DATE<br>COLLECTED | TCLP<br>VOLS | TCLP<br>SVOLS | TCLP<br>PEST | TCLP<br>HERB | TCLP<br>METALS | REACTIVITY<br>CORROSIVITY<br>IGNITABILITY |   | TOTAL<br>KJELDAHL<br>NITROGEN |   | REACTIVE<br>CYANIDE | REACTIVE<br>SULFIDE | TOTAL<br>PLATE<br>COUNT |
|--------------------|-------------------|--------------|---------------|--------------|--------------|----------------|-------------------------------------------|---|-------------------------------|---|---------------------|---------------------|-------------------------|
| 35-GWD03-04        | , 4/16            | x            | x             | x            | x            | x              | x                                         | x | x                             | x | X                   | x                   | x                       |

÷.,

| SAMPLE<br>LOCATION | DATE<br>COLLECTED | ATTER-<br>BURG<br>LIMITS | GRAIN<br>SIZE | CONSTANT<br>HEAD | PERMEABILITY |
|--------------------|-------------------|--------------------------|---------------|------------------|--------------|
| 35-ST01            | 4/1               | x                        | x             | x                | x            |

#### SAMPLING SUMMARY SITE 35, CAMP GEIGER AREA FUEL FARM REMEDIAL INVESTIGATION CONTRACT TASK ORDER 0232 MARINE CORP BASE, CAMP LEJEUNE, NORTH CAROLINA

#### SURFACE WATER

|   |              |           |      |       | TCL   | TAL    |          |             |
|---|--------------|-----------|------|-------|-------|--------|----------|-------------|
|   | SAMPLE       | DATE      | TCL  | TCL   | PEST/ | TOTAL  |          |             |
|   | LOCATION     | COLLECTED | VOLS | SVOLS | PCB   | METALS | HARDNESS |             |
|   | 35-SWO1      | 4/12      | X    | Х     | X     | X      | X        |             |
|   | 35-SWO2      | 4/12      | х    | x     | x     | x      | x        |             |
|   | 35-SWO3      | 4/12      | х    | х     | х     | x      | x        | ·X          |
|   | 35-SWO4      | 4/12      | х    | x     | x     | x      | x        |             |
|   | 35-SWO5      | 4/12      | х    | x     | х     | x      | x        | V / $>$ , / |
|   | 35-SWO6      | 4/12      | х    | х     | х     | x      | x        |             |
|   | 35-SWO7      | 4/20      | X    | х     | х     | x      |          | NOV (Q)     |
|   | 35-SWPD01    | 7/28      | х    | x     | х     | x      |          |             |
|   | 35-SWPD02    | 7/28      | X    | х     | X     | x      |          |             |
|   | · · · ·      |           |      |       |       |        | <u> </u> |             |
|   | SURFACE SOIL |           |      |       |       |        | _ /      |             |
|   |              |           |      |       | TCL   |        |          | V 0 X       |
|   | SAMPLE       | DATE      | TCL  | TCL   | PEST/ | TAL    |          | LU.         |
|   | LOCATION     | COLLECTED | VOLS | SVOLS | PCB   | METALS |          |             |
| 1 | 35-SSO1-00   | 5/17      | Х    | X     | Х     | X      | )        | N į         |
| 1 | 35-SSO2-00   | 5/17      | х    | x     | х     | l x    |          | $\sim$      |

#### SURFACE SOIL

|              |           |      |       | TCL   |        |
|--------------|-----------|------|-------|-------|--------|
| SAMPLE       | DATE      | TCL  | TCL   | PEST/ | TAL    |
| LOCATION     | COLLECTED | VOLS | SVOLS | PCB   | METALS |
| 35-SSO1-00   | 5/17      | X    | X     | x     | X      |
| 35-SSO2-00   | 5/17      | x    | х     | х     | x      |
| 35-SSO3-00   | 5/18      | х    | х     | х     | x      |
| 35-SSO4-00   | 5/18      | х    | х     | х     | x      |
| 35-SSO5-00   | 4/29      | x    | x     |       | x      |
| 35-SSO6-00   | 4/29      | х    | х     |       | x      |
| 35-SSO7-00   | 5/18      | х    | х     | X     | x      |
| 35-SSO8-00   | 4/29      | x    | х     |       | x      |
| 35-SSO9-00   | 5/18      | x    | х     | Χ.    | х      |
| 35-SS10-00   | 5/17      | x    | х     | Х     | x      |
| 35-SS11-00   | 4/13      | x    | x     | х     | • X    |
| 35-SS12-00   | 4/13      | x    | x     | x     | x      |
| 35-SS13-00   | 5/18      | х    | x     | X     | х      |
| 35-\$\$14-00 | 5/18      | x    | x     | Х     | X      |

# SEDIMENT

| SEDIMEN I   |           |      |       |       |        |     |             |
|-------------|-----------|------|-------|-------|--------|-----|-------------|
|             |           |      |       | TCL   |        |     |             |
| SAMPLE      | DATE      | TCL  | TCL   | PEST/ | TAL    |     | GRAIN SIZE/ |
| LOCATION    | COLLECTED | VOLS | SVOLS | PCB   | METALS | тос | SIEVE       |
| 35-SDO1-06  | 4/16      |      |       |       |        |     | x           |
| 35-SDO1-06  | 4/20      | х    | х     | Х     | х      | x   |             |
| 35-SDO1-612 | 4/20      | х    | x     | X     | х      |     |             |
| 35-SDO2-06  | 4/16      |      |       |       |        |     | х           |
| 35-SDO2-06  | 5/17      | х    | х     | х     | х      |     |             |
| 35-SDO2-612 | 5/17      | x    | х     | x     | х      |     |             |
| 35-SDO3-06  | 4/14      |      |       |       |        |     | x           |
| 35-SDO3-06  | 5/17      | х    | х     | x     | х      |     |             |
| 35-SDO3-612 | 5/17      | x    | x     | x     | х      |     |             |
| 35-SDO4-06  | 4/14      |      |       |       |        |     | x           |
| 35-SDO4-06  | 4/20      | х    | x     | х     | х      | x   |             |
| 35-SDO4-612 | 4/20      | х    | x     | x     | x      | x   |             |
| 35-SDO5-06  | 5/17      | x    | x     | х     | х      |     |             |
| 35-SDO5-612 | 5/17      | x    | x     | х     | х      |     |             |
| 35-SDO5-06  | 4/15      |      |       |       |        |     | x           |
| 35-SDO6-06  | 5/17      | х    | x     | x     | х      |     | · ř         |
| 35-SDO6-612 | 5/17      | x    | x     | x     | x      | e   |             |
| 35-SDO6-06  | 4/15      |      |       |       |        |     | x           |
| 35-SDO7-06  | 4/14      |      |       |       |        |     | x           |
| 35-SDO7-06  | 4/20      | x    | x     | x     | х      | x   |             |
| 35-SDO7-612 | 4/20      | x    | x     | x     | х      | х   |             |
| 35-BN02-06  | 4/16      |      |       |       |        |     | x           |
| 35-BN03-06  | 4/16      |      | 1     |       |        |     | x           |
| 35-BN04-06  | 4/16      |      |       |       |        |     | x           |

#### SAMPLING SUMMARY (Continued) SITE 35, CAMP GEIGER AREA FUEL FARM REMEDIAL INVESTIGATION CONTRACT TASK ORDER 0232 MARINE CORP BASE, CAMP LEJEUNE, NORTH CAROLINA

ROUNDWATER

| JROUNDWATI  | ER        |      |       |         |         |            |     |     |            |
|-------------|-----------|------|-------|---------|---------|------------|-----|-----|------------|
|             | -         |      |       |         | TAL     | TAL        |     |     |            |
| SAMPLE      | DATE      | TCL  | TCL   | PEST/   | METALS  | METALS     | EPA | EPA | ADDITIONAL |
| LOCATION    | COLLECTED | VOLS | SVOLS | РСВ     | (TOTAL) | (DISSOLVED | 601 | 602 | PARAMTERS  |
| 35-GWD1-01  | 5/14      |      |       |         |         |            | X   | Х   |            |
| 35-GWD2-01  | 5/14      |      |       |         |         |            | x   | Х   |            |
| 35-GWD3-01  | 5/15      |      |       |         |         |            | х   | Х   |            |
| 35-GWD4-01  | 5/15      |      |       |         |         |            | х   | Х   |            |
| 35-GWD5-01  | 5/15      |      | x     | х       | x       | x          | х   | х   |            |
| 35-MW02S-02 | 4/26      |      |       |         |         |            | х   | Х   |            |
| 35-MW06S-02 | 4/26      |      |       |         |         |            | x   | х   |            |
| 35-MW09S-02 | 5/10      |      | x     |         | x       | x          | x   | х   |            |
| 35-MW09D-02 | 5/11      |      | x     |         | х       | x          | x   | х   |            |
| 35-MW04S-02 | 4/26      |      |       |         |         |            | х   | X   |            |
| 35-MW10S-02 | 5/12      |      | х     |         | х       | x          | x   | Х   |            |
| 35-MW10D-02 | 5/11      |      | x     |         | х       | x          | X   | х   |            |
| 35-MW14S-02 | 5/12      |      | х     |         | х       | x          | x   | х   |            |
| 35-MW14D-02 | 5/12      |      | x     |         | x       | x          | x   | x   |            |
| 35-MW16S-02 | 5/12      |      | x     |         | x       | x          | x   | x   |            |
| 35-MW16D-02 | 5/12      |      | x     |         | x       | x          | x   | x   |            |
| 35-MW10D-02 | 5/12      |      | x     |         | x       | x          | x   | x   |            |
| 35-MW193-02 | 5/12      |      | x     |         | x       | x          | x   | x   |            |
| 35-MW21S-02 | 5/12      |      | x     | x       | x       | x          | x   | x   |            |
| 35-MW213-02 | 5/20      |      | Â     | ^       | ~       | ~          |     | ~   | x          |
| 35-MW213-02 | 5/13      | х    | x     | х       | x       | x          | х   | х   | ~          |
| 35-MW21D-02 | 5/13      | л    | x     | x       | x       | X          | x   | x   |            |
| 4 1         |           | x    | x     | ~       | x       | x          | x   | x   |            |
| 35-MW22D-02 | 5/13      |      | 1     |         |         | X          | X   | X   |            |
| 35-MW25S-02 | 5/13      | х    | X     |         | X<br>X  | x          | X   | X   |            |
| -MW25D-02   | 5/13      |      | x     |         | ~       | ^          | X   | x   |            |
| J-MW26A-02  | 5/17      |      | ł     |         |         |            | x   | x   |            |
| 35-MW26B-01 | 5/20      |      |       |         |         | v          | X   | x   |            |
| 35-MW29A-01 | 5/10      |      | X     | .,      | X       | X<br>X     | X   | X   |            |
| 35-MW29B-01 | 5/10      |      | x     | x       | x       | X          | X   | x   | ļ          |
| 35-MW30B-01 | 5/15      |      |       | 1       |         |            | _   | x   |            |
| 35-MW31A-01 | 5/19      |      |       |         |         |            | X   |     |            |
| 35-MW31B-01 | 5/14      |      |       |         |         |            | X   | X   | -          |
| 35-MW32A-01 | 5/19      |      |       |         |         | 1          | X   | X   |            |
| 35-MW32B-01 | 5/19      |      |       |         |         | ]          | x   | X   | 1          |
| 35-MW33A-01 | 5/19      |      | x     | х       | X       | X          | x   | x   |            |
| 35-MW33B-01 | 5/17      |      | x     | x       | x       | x          | X   | X   | 1          |
| 35-MW34A-01 | 5/16      |      |       | 1       |         | l .        | X   | x   |            |
| 35-MW34B-01 | 5/16      |      |       | 1       |         |            | х   | x   |            |
| 35-MW35A-01 | 5/14      |      |       | 1       |         |            | х   | x   | 1          |
| 35-MW35B-01 | 5/15      |      |       |         |         | 1          | х   | x   | 1          |
| 35-MW36A-01 | 5/16      |      |       | ļ       |         |            | x   | x   |            |
| 35-MW36B-01 | 5/15      |      |       | 1       |         |            | x   | X   |            |
| 35-MW37A-01 | 5/19      |      |       |         |         | 1          | x   | x   |            |
| 35-MW37B-01 | 5/19      |      | 1     | 1       | 1       |            | х   | x   |            |
| 35-MW38A-01 |           |      |       |         |         | l          | x   | x   |            |
| 35-MW38B-01 | 5/20      |      |       |         |         | 1          | x   | x   |            |
| 35-EMW03-03 |           | x    | x     |         | x       | x          | x   | x   | 1          |
| 35-EMW05-03 |           | x    | x     |         | x       | x          | х   | x   |            |
| 35-EMW07-03 |           | x    | x     |         | x       | x          | x   | х   |            |
|             |           |      |       | <u></u> | <u></u> |            |     |     |            |

# ADDITIONAL PARAMETERS, GROUNDWATER

|          | ADDITIONAL I | PARAMETERS, | GROUNI | JWAICK |     |     |            |     |          |            |          |
|----------|--------------|-------------|--------|--------|-----|-----|------------|-----|----------|------------|----------|
| F        |              | 1           |        |        |     |     |            |     | TOTAL    | TOTAL      | TOTAL    |
| 1        | SAMPLE       | DATE        |        |        | 1   |     | TOTAL      |     | KJELDAHL | PHOSPOROUS | PLATE    |
| <u>_</u> | OCATION      | COLLECTED   | BOD    | COD    | TSS | TDS | ALKALINITY | TOC | NITROGEN | EPA 365.3  | COUNT    |
| -        | MWD21S-0     | 4-16        | Х      | X      | X   | X   | X          | X   | X        | X          | <u>x</u> |

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SAMPLING SUMMARY (Continued) SITE 35, CAMP GEIGER AREA FUEL FARM REMEDIAL INVESTIGATION CONTRACT TASK ORDER 0232 MARINE CORP BASE, CAMP LEJEUNE, NORTH CAROLINA

**Fish Samples** 

| Fish Samples       | 1                 |        |        |        | TAL    |
|--------------------|-------------------|--------|--------|--------|--------|
|                    | DATE              | TCL    | TCL    | DECT   | METALS |
| SAMPLE<br>LOCATION | DATE              | VOLS   | SVOLS  | PEST/  | METALS |
| 35-FS03-MC09       | COLLECTED<br>4-17 |        |        | PCB    | x      |
|                    |                   | x<br>x | x<br>x | x<br>x | x      |
| 35-FS03-MC10       | 4-17<br>4-14      | X      | x      |        | x      |
| 35-FS03-AEE01      |                   |        |        | X      |        |
| 35-FS03-PS01       | 4-14              | X      | X      | X      | X      |
| 35-FS03-PS02       | 4-14              | X      | X      | X      | X      |
| 35-FS03-PSO3       | 4-15              | X      | X      | X      | X      |
| 35-FS03-PS04       | 4-15              | X      | X      | X      | X      |
| 35-FS03-PS05       | 4-15              | X      | X      | X      | X      |
| 35-FS03-PS06       | 4-15              | X      | X      | X      | X      |
| 35-FS03-PS07       | 4-17              | X      | X      | X      | X      |
| 35-FS03-WM02       | 4-15              | X      | X      | X      | X      |
| 35-FS03-BG01       | 4-15              | X      | x      | X      | x      |
| 35-FS03-BG02       | 4-15              | x      | x      | X      | X      |
| 35-FS03-BG03       | 4-15              | X      | X      | X      | x      |
| 35-FS03-BG04       | 4-15              | x      | x      | X      | x      |
| 35-FS03-BG05       | 4-15              | X      | x      | X      | x      |
| 35-FS03-BG06       | 4-15              | x      | х      | х      | х      |
| 35-FS03-BG07       | 4-15              | х      | х      | х      | х      |
| 35-FS03-SM03       | 4-17              | х      | х      | х      | x      |
| 35-FS03-SM04       | 4-17              | х      | x      | Х      | x      |
| 35-FS03-MC01       | 4-14              | х      | x      | х      | x      |
| 35-FS03-MC02       | 4-17              | х      | х      | х      | x      |
| 35-FS03-MC03       | 4-17              | х      | x      | x      | х      |
| 35-FS03-MC04       | 4-17              | Х      | x      | x      | x      |
| 35-FS03-MC05       | 4-17              | Х      | х      | х      | х      |
| 35-FS03-MC06       | 4-17              | Х      | х      | Х      | х      |
| 35-FS03-MC07       | 4-17              | Х      | х      | x      | X      |
| 35-FS03-MC08       | 4-17              | х      | х      | x      | х      |
| 35-FS03-LG03       | 4-17              | X      | х      | х      | x      |
| 35-FS03-LG04       | 4-17              | х      | х      | х      | x      |
| 35-FS03-LG05       | 4-17              | x      | x      | x      | х      |
| 35-FS03-LG06       | 4-17              | х      | х      | х      | x      |
| 35-FS03-LG07       | 4-17              | х      | х      | х      | x      |
| 35-FS03-LG08       | 4-17              | х      | х      | х      | x      |
| 35-FS03-LG09       | 4-17              | х      | х      | х      | х      |
| 35-FS03-LG01       | 4-15              | х      | х      | Х      | х      |
| 35-FS03-SM01       | 4-14              | x      | х      | Х      | x      |
| 35-FS03-SM02       | 4-14              | x      | x      | Х      | х      |
| 35-FS02-AE01       | 4-14              | х      | х      | x      | x      |
| 35-FS02-PS01       | 4-14              | х      | х      | х      | x      |
| 35-FS02-MC01       | 4-17              | x      | х      | х      | x      |
| 35-FS02-MC02       | 4-17              | x      | x      | х      | x      |
| 35-FS02-CF01       | 4-14              | х      | x      | x      | х      |
| 35-FS01-GS01       | 4-15              | x      | х      | х      | x      |
| 35-FS01-AE01       | 4-15              | x      | х      | х      | x      |
| 35-FS01-PS01       | 4-15              | х      | х      | х      | x      |
| 35-FS03-WM01       | 4-15              | x      | x      | X      | x      |
| 35-FS02-LG01       | 4-14              | x      | х      | x      | x      |
| 35-FS03-LG02       | 4-17              | x      | x      | x      | x      |
|                    |                   |        |        |        |        |

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APPENDIX J SUMMARY OF PID MEASUREMENTS FROM RI/FS SOIL BORINGS

| Soil Boring<br>Number | Sample<br>Interval<br>(feet, bgs) | Background<br>Readings<br>(ppm) | Point Source<br>Readings<br>(ppm) | Headspace<br>Readings<br>(ppm) | Comments                              |
|-----------------------|-----------------------------------|---------------------------------|-----------------------------------|--------------------------------|---------------------------------------|
| 35GWD-1               | 0.0 - 2.0                         | 0.7                             | 0.7                               | 0.7                            |                                       |
|                       | 4.0 - 6.0                         | 0.7                             | 0.7                               | 0.7                            | Sample collected for analysis         |
|                       | 6.0 - 8.0                         | 0.7                             | 0.7                               | 0.7                            |                                       |
|                       | 8.0 - 10.0                        | 0.7                             | 0.7                               | 0.7                            |                                       |
|                       | 10.0 - 12.0                       | 0.7                             | 0.7                               | 0.7                            |                                       |
|                       | 12.0 - 14.0                       | 0.7                             | 0.7                               | 0.7                            |                                       |
|                       | 14.0 - 16.0                       | 0.7                             | 0.7                               | 0.7                            |                                       |
|                       | 16.0 - 18.0                       | 0.7                             | 0.7                               | 0.7                            |                                       |
|                       | 18.0 - 20.0                       | 0.7                             | 0.7                               | 0.7                            |                                       |
|                       | 20.0 - 22.0                       | 0.7                             | 0.7                               | 0.7                            |                                       |
|                       | 22.0 - 24.0                       | 0.7                             | 0.7                               | 0.7                            |                                       |
|                       | 24.0 - 26.0                       | 0.7                             | 0.7                               | 0.7                            |                                       |
|                       | 26.0 - 28.0                       | 0.7                             | 0.7                               | 0.7                            | ······                                |
|                       | 28.0 - 30.0                       | 0.7                             | 0.7                               | 0.7                            |                                       |
|                       | 30.0 - 32.0                       | 0.7                             | 0.7                               | 0.7                            |                                       |
|                       | 32.0 - 34.0                       | 0.7                             | 0.7                               | 0.7                            |                                       |
|                       | 34.0 - 36.0                       | 0.7                             | 0.7                               | 0.7                            |                                       |
|                       | 36.0 - 38.0                       | 0.7                             | 0.7                               | 0.7                            |                                       |
|                       | 38.0 - 40.0                       | 0.7                             | 0.7                               | 0.7                            |                                       |
| l i                   | 40.0 - 42.0                       | 0.7                             | 0.7                               | 0.7                            |                                       |
|                       | 42.0 - 44.0                       | 0.7                             | 0.7                               | 0.7                            |                                       |
|                       | 44.0 - 46.0                       | 0.7                             | 0.7                               | 0.7                            |                                       |
|                       | 47.0 - 49.0                       | 0.0                             | 0.0                               | 0.0                            | · · · · · · · · · · · · · · · · · · · |
|                       | 49.0 - 51.0                       | 0.0                             | 0.0                               | 0.0                            |                                       |
|                       | 51.0 - 53.0                       | 0.0                             | 0.0                               | 0.0                            |                                       |
|                       | 53.0 - 55.0                       | 0.0                             | 0.0                               | 0.0                            |                                       |
|                       | 60.0 - 62.0                       | 0.0                             | 0.0                               | 0.0                            |                                       |
|                       | 65.0 - 67.0                       | 0.0                             | 0.0                               | 0.0                            | <u></u>                               |
| 35GWD-2               | 0.0 - 2.0                         | 0.4                             | 0.3                               | 0.5                            |                                       |
|                       | 2.0 - 4.0                         | 0.3                             | 1.3                               | 0.6                            |                                       |
|                       | 4.0 - 6.0                         | 1.1                             | 0.3                               | 0.3                            | Sample collected for analysis         |
|                       | 6.0 - 8.0                         | 0.1                             | 0.1                               | 0.1                            |                                       |
|                       | 8.0 - 10.0                        | 0.1                             | 0.1                               | 1.4                            |                                       |
|                       | 10.0 - 12.0                       | 0.1                             | 0.1                               | 0.9                            |                                       |
| ·                     | 12.0 - 14.0                       | 0.1                             | 0.3                               | 0.6                            | · · · · · · · · · · · · · · · · · · · |
|                       | 14.0 - 16.0                       | 0.1                             | 0.1                               | 0.6                            | · · · · · · · · · · · · · · · · · · · |

| Soil Boring<br>Number | Sample<br>Interval<br>(feet, bgs) | Background<br>Readings<br>(ppm) | Point Source<br>Readings<br>(ppm) | Headspace<br>Readings<br>(ppm) | Comments                       |
|-----------------------|-----------------------------------|---------------------------------|-----------------------------------|--------------------------------|--------------------------------|
| 35GWD-2               | 20.0 - 22.0                       | 0.2                             | 0.2                               | 1.1                            |                                |
| (continued)           | 25.0 - 27.0                       | 0.1                             | 0.1                               | 0.6                            |                                |
|                       | 30.0 - 32.0                       | 0.1                             | 0.1                               | 0.1                            |                                |
|                       | 35.0 - 37.0                       | 0.1                             | 0.1                               | 0.1                            |                                |
|                       | 40.0 - 42.0                       | 0.1                             | 0.1                               | 0.1                            |                                |
|                       | 42.0 - 44.0                       | 0.1                             | 0.1                               | • 0.1                          |                                |
|                       | 44.0 - 46.0                       | 0.1                             | 0.1                               | 0.1                            |                                |
|                       | 46.0 - 48.0                       | 0.1                             | 0.1                               | 0.1                            |                                |
|                       | 48.0 - 50.0                       | 0.1                             | 0.1                               | 0.1                            |                                |
|                       | 50.0 - 52.0                       | 0.1                             | 0.1                               | 0.1                            |                                |
|                       | 52.0 - 54.0                       | 0.1                             | 0.1                               | 0.1                            |                                |
|                       | 60.0 - 62.0                       | 0.1                             | 0.1                               | 0.1                            |                                |
| 35GWD-3               | 0.0 - 2.0                         | 0.2                             | 0.2                               | 0.3                            |                                |
|                       | 2.0 - 4.0                         | 0.2                             | 0.2                               | 0.2                            | Sample composited and analyzed |
|                       | 4.0 - 6.0                         | 0.2                             | 0.3                               | 0.2                            | Sample composited and analyzed |
|                       | 6.0 - 8.0                         | 0.2                             | 0.2                               | 0.2                            | Sample composited and analyzed |
|                       | 8.0 - 10.0                        | 0.2                             | 0.2                               | 0.2                            |                                |
|                       | 10.0 - 12.0                       | 0.2                             | 0.2                               | 0.2                            |                                |
|                       | 15.0 - 17.0                       | 0.2                             | 0.2                               | 0.2                            |                                |
|                       | 20.0 - 22.0                       | 0.1                             | 0.1                               | 1.8                            |                                |
|                       | 25.0 - 27.0                       | 0.1                             | 0.1                               | 2.2                            |                                |
|                       | 30.0 - 32.0                       | 0.1                             | 0.1                               | 1.6                            |                                |
|                       | 35.0 - 37.0                       | 0.1                             | 0.1                               | 1.4                            |                                |
|                       | 40.0 - 42.0                       | 0.1                             | 0.1                               | 1.5                            |                                |
|                       | 42.0 - 44.0                       | 0.1                             | 0.1                               | 0.6                            |                                |
|                       | 46.0 - 48.0                       | 0.0                             | 0.0                               | 0.0                            |                                |
|                       | 48.0 - 50.0                       | 0.0                             | 0.0                               | 0.0                            |                                |
|                       | 50.0 - 52.0                       | 0.0                             | 0.0                               | 0.0                            |                                |
|                       | 52.0 - 54.0                       | 0.0                             | 0.0                               | 0.0                            |                                |
|                       | 54.0 - 56.0                       | 0.0                             | 0.0                               | 0.0                            |                                |
|                       | 56.0 - 58.0                       | 0.0                             | 0.0                               | 0.0                            |                                |
|                       | 60.0 - 62.0                       | 0.0                             | 0.0                               | 0.0                            |                                |
|                       | 65.0 - 67.0                       | 0.0                             | 0.0                               | 0.0                            | I                              |

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| Soil Boring<br>Number | Sample<br>Interval<br>(feet, bgs) | Background<br>Readings<br>(ppm) | Point Source<br>Readings<br>(ppm) | Headspace<br>Readings<br>(ppm) | Comments                              |
|-----------------------|-----------------------------------|---------------------------------|-----------------------------------|--------------------------------|---------------------------------------|
| 35GWD-4               | 0.0 - 2.0                         | 0.9                             | 0.9                               | 0.8                            |                                       |
|                       | 2.0 - 4.0                         | 0.4                             | 1.9                               | 1.9                            | Sample composited and analyzed        |
|                       | 4.0 - 6.0                         | 0.4                             | N.R.                              | N.R.                           | No recovery from this interval        |
|                       | 6.0 - 8.0                         | 0.3                             | 65.3                              | 42.8                           | Sample composited and analyzed        |
|                       | 8.0 - 10.0                        | 0.5                             | 49.5                              | 49.8                           |                                       |
|                       | 15.0 - 17.0                       | 0.4                             | 1.7                               | 1.7                            |                                       |
|                       | 20.0 - 22.0                       | 0.4                             | 3.8                               | 1.6                            |                                       |
|                       | 25.0 - 27.0                       | 0.3                             | 1.0                               | 1.3                            |                                       |
|                       | 30.0 - 32.0                       | 0.3                             | 0.3                               | 1.9                            |                                       |
|                       | 35.0 - 37.0                       | 0.0                             | 0.2                               | 1.0                            | · · · · · · · · · · · · · · · · · · · |
|                       | 40.0 - 42.0                       | 0.0                             | 0.0                               | 0.6                            |                                       |
|                       | 44.0 - 46.0                       | 0.3                             | 0.3                               | 0.3                            |                                       |
|                       | 46.0 - 48.0                       | 0.3                             | 0.3                               | 0.3                            |                                       |
|                       | 53.0 - 55.0                       | 0.3                             | 0.3                               | 0.3                            |                                       |
| 35GWD-5               | 0.0 - 2.0                         | 0.3                             | 0.3                               | 0.3                            |                                       |
|                       | 2.0 - 4.0                         | 0.3                             | 0.4                               | 0.3                            |                                       |
|                       | 4.0 - 6.0                         | 0.3                             | 0.3                               | 0.3                            | Sample collected for analysis         |
|                       | 6.0 - 8.0                         | 0.3                             | 0.4                               | 0.3                            | Sample collected for MS/MSD           |
|                       | 8.0 - 10.0                        | 0.3                             | 0.6                               | 0.3                            |                                       |
|                       | 15.0 - 17.0                       | 0.3                             | 0.3                               | 0.3                            |                                       |
|                       | 20.0 - 22.0                       | 0.3                             | 0.3                               | 0.3                            |                                       |
|                       | 25.0 - 27.0                       | 0.3                             | 0.3                               | 0.3                            |                                       |
|                       | 30.0 - 32.0                       | 0.0                             | 0.0                               | 0.0                            |                                       |
| ľ                     | 35.0 - 37.0                       | 0.0                             | 0.0                               | 0.0                            |                                       |
| ſ                     | 40.0 - 42.0                       | 0.3                             | 0.3                               | 0.3                            |                                       |
| ľ                     | 42.0 - 44.0                       | 0.3                             | 0.3                               | 0.3                            |                                       |
|                       | 44.0 - 46.0                       | 0.3                             | 0.3                               | 0.3                            |                                       |
| ľ                     | 50.0 - 52.0                       | 0.3                             | 0.3                               | 0.3                            |                                       |
|                       | 55.0 - 57.0                       | 0.3                             | 0.3                               | 0.3                            |                                       |
| 35MW-26B              | 0.0 - 2.0                         | 0.2                             | 0.3                               | 0.2                            |                                       |
| ſ                     | 2.0 - 4.0                         | 0.3                             | 0.3                               | 0.2                            |                                       |
| ſ                     | 4.0 - 6.0                         | 0.3                             | 0.3                               | 0.2                            |                                       |
| Ĭ                     | 6.0 - 8.0                         | 0.3                             | 0.6                               | 0.3                            | Sample collected for analysis         |
| ľ                     | 8.0 - 10.0                        | 0.3                             | 0.6                               | 0.4                            |                                       |
| ŀ                     | 15.0 - 17.0                       | 0.3                             | 0.4                               | 0.3                            | · · · · · · · · · · · · · · · · · · · |
| Γ                     | 20.0 - 22.0                       | 0.3                             | 0.3                               | 0.5                            |                                       |

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| Soil Boring<br>Number | Sample<br>Interval<br>(feet, bgs) | Background<br>Readings<br>(ppm) | Point Source<br>Readings<br>(ppm) | Headspace<br>Readings<br>(ppm) | Comments                      |  |
|-----------------------|-----------------------------------|---------------------------------|-----------------------------------|--------------------------------|-------------------------------|--|
| 34MW-26B              | 25.0 - 27.0                       | 0.2                             | 0.3                               | 0.3                            |                               |  |
| (continued)           | 30.0 - 32.0                       | 0.2                             | 0.2                               | 0.3                            |                               |  |
|                       | 35.0 - 37.0                       | 0.2                             | 0.2                               | 0.2                            |                               |  |
|                       | 40.0 - 42.0                       | 0.2                             | 0.2                               | 0.2                            |                               |  |
| 35MW-29B              | 2.0 - 4.0                         | 0.2                             | 0.2                               | 0.3                            |                               |  |
|                       | 4.0 - 6.0                         | 0.2                             | 0.2                               | 0.3                            |                               |  |
|                       | 6.0 - 8.0                         | 0.2                             | 0.2                               | 0.8                            | Sample collected for analysis |  |
|                       | 8.0 - 10.0                        | 0.2                             | 0.2                               | 0.4                            |                               |  |
|                       | 15.0 - 17.0                       | 0.2                             | 0.2                               | 0.5                            |                               |  |
|                       | 20.0 - 22.0                       | 0.2                             | 0.2                               | 0.5                            |                               |  |
|                       | 25.0 - 27.0                       | 0.2                             | 0.2                               | 0.2                            |                               |  |
|                       | 30.0 - 32.0                       | 0.2                             | 0.2                               | 0.3                            |                               |  |
|                       | 35.0 - 37.0                       | 0.2                             | 0.2                               | 0.3                            |                               |  |
|                       | 40.0 - 42.0                       | 0.2                             | 0.2                               | 0.3                            |                               |  |
|                       | 42.0 - 44.0                       | 0.2                             | 0.2                               | 0.2                            |                               |  |
|                       | 44.0 - 46.0                       | 0.2                             | 0.2                               | 0.2                            |                               |  |
| 35MW-30B              | 0.0 - 2.0                         | 4.5                             | 5.5                               | 2.0                            |                               |  |
|                       | 2.0 - 4.0                         | 4.5                             | 5.9                               | 2.0                            |                               |  |
|                       | 4.0 - 6.0                         | 4.5                             | 7.0                               | 1.6                            |                               |  |
|                       | 6.0 - 8.0                         | 4.5                             | 6.0                               | 2.0                            | Sample collected for analysis |  |
|                       | 8.0 - 10.0                        | 4.5                             | 5.2                               | 3.0                            |                               |  |
|                       | 15.0 - 17.0                       | 2.0                             | 6.0                               | 2.0                            |                               |  |
|                       | 20.0 - 22.0                       | 2.0                             | 6.0                               | 2.0                            |                               |  |
|                       | 25.0 - 27.0                       | 1.0                             | 2.2                               | 2.0                            |                               |  |
|                       | 30.0 - 32.0                       | 1.0                             | 2.0                               | 2.0                            |                               |  |
|                       | 35.0 - 37.0                       | 0.2                             | 0.2                               | 1.8                            |                               |  |
|                       | 40.0 - 42.0                       | 0.2                             | 0.2                               | 1.6                            |                               |  |
|                       | 42.0 - 44.0                       | 0.2                             | 0.2                               | 1.6                            |                               |  |
| 35MW-31B              | 0.0 - 2.0                         | 0.3                             | 0.3                               | 0.3                            |                               |  |
|                       | 2.0 - 4.0                         | 0.3                             | 0.3                               | 0.3                            |                               |  |
|                       | 4.0 - 6.0                         | 0.3                             | 0.3                               | 0.3                            | Sample collected for analysis |  |
|                       | 6.0 - 8.0                         | 0.3                             | 0.3                               | 0.3                            |                               |  |
|                       | 8.0 - 10.0                        | 0.3                             | 0.3                               | 0.3                            |                               |  |
|                       | 15.0 - 17.0                       | 0.3                             | 0.3                               | 0.3                            |                               |  |
|                       | 20.0 - 22.0                       | 0.3                             | 0.3                               | 0.3                            |                               |  |
|                       | 25.0 - 27.0                       | 0.3                             | 0.3                               | 0.3                            | <u> </u>                      |  |

| Soil Boring<br>Number | Sample<br>Interval<br>(feet, bgs) | Background<br>Readings<br>(ppm) | Point Source<br>Readings<br>(ppm) | Headspace<br>Readings<br>(ppm) | Comments                              |
|-----------------------|-----------------------------------|---------------------------------|-----------------------------------|--------------------------------|---------------------------------------|
| 35MW-31B              | 30.0 - 32.0                       | 0.3                             | 0.3                               | 0.3                            |                                       |
| (continued)           | 35.0 - 37.0                       | 0.3                             | 0.3                               | 0.3                            |                                       |
|                       | 40.0 - 42.0                       | 0.3                             | 0.3                               | 0.3                            | · · · · · · · · · · · · · · · · · · · |
|                       | 45.0 - 47.0                       | 0.3                             | 0.3                               | 0.3                            |                                       |
| 35MW-32B              | 0.0 - 2.0                         | 1.2                             | 1.2                               | 1.2                            | · · · · · · · · · · · · · · · · · · · |
|                       | 2.0 - 4.0                         | 1.2                             | 1.6                               | 1.6                            |                                       |
|                       | 4.0 - 6.0                         | 1.2                             | 2.0                               | 2.0                            | Sample collected for analysis         |
|                       | 6.0 - 8.0                         | 1.2                             | 1.8                               | 1.8                            |                                       |
|                       | 8.0 - 10.0                        | 1.2                             | 1.8                               | 1.8                            |                                       |
|                       | 15.0 - 17.0                       | 1.2                             | 1.2                               | 1.2                            |                                       |
|                       | 20.0 - 22.0                       | 0.7                             | 1.5                               | 1.5                            |                                       |
|                       | 25.0 - 27.0                       |                                 |                                   |                                | Did not sample this interval          |
|                       | 30.0 - 32.0                       | 0.7                             | 1.5                               | 1.3                            |                                       |
|                       | 35.0 - 37.0                       | 0.3                             | 1.0                               | 1.0                            |                                       |
|                       | 40.0 - 42.0                       | 0.2                             | 0.3                               | 0.3                            |                                       |
|                       | 42.0 - 44.0                       | 0.2                             | 0.2                               | 0.2                            |                                       |
| 35MW-33B              | 2.0 - 4.0                         | 0.2                             | 0.2                               | 0.2                            |                                       |
|                       | 4.0 - 6.0                         | 0.2                             | 0.2                               | 0.2                            |                                       |
|                       | 6.0 - 8.0                         | 0.2                             | 0.2                               | 0.2                            |                                       |
|                       | 8.0 - 10.0                        | 0.2                             | 1.0                               | 1.0                            | Sample collected for analysis         |
|                       | 10.0 - 12.0                       | 0.2                             | 1.4                               | 1.4                            |                                       |
|                       | 15.0 - 17.0                       | 0.2                             | 0.3                               | 0.2                            |                                       |
|                       | 20.0 - 22.0                       | 0.2                             | 0.3                               | 0.2                            |                                       |
|                       | 25.0 - 27.0                       | 0.2                             | 0.2                               | 0.2                            |                                       |
|                       | 30.0 - 32.0                       | 1.0                             | 1.0                               | 1.5                            |                                       |
|                       | 35.0 - 37.0                       | 2.0                             | 2.0                               | 2.6                            |                                       |
|                       | 40.0 - 42.0                       | 1.7                             | 1.9                               | 2.3                            |                                       |
|                       | 42.0 - 44.0                       | 1.3                             | 1.5                               | 1.8                            | · · · · · · · · · · · · · · · · · · · |
| 35MW-34B              | 0.0 - 2.0                         | 2.0                             | 6.0                               | 2.0                            |                                       |
|                       | 2.0 - 4.0                         | 4.0                             | 7.0                               | 4.0                            |                                       |
|                       | 4.0 - 6.0                         | 4.0                             | 7.0                               | 4.0                            | Sample collected for analysis         |
|                       | 6.0 - 8.0                         | 4.0                             | 7.0                               | 4.0                            |                                       |
|                       | 8.0 - 10.0                        | 4.0                             | 6.0                               | 4.0                            |                                       |
|                       | 15.0 - 17.0                       | 4.5                             | 5.2                               | 4.5                            |                                       |
|                       | 20.0 - 22.0                       | 0.0                             | 2.0                               | 2.0                            |                                       |
|                       | 25.0 - 27.0                       | 0.0                             | 3.0                               | 5.0                            |                                       |

| Soil Boring<br>Number | Sample<br>Interval<br>(feet, bgs) | Background<br>Readings<br>(ppm) | Point Source<br>Readings<br>(ppm) | Headspace<br>Readings<br>(ppm) | Comments                                                                                      |
|-----------------------|-----------------------------------|---------------------------------|-----------------------------------|--------------------------------|-----------------------------------------------------------------------------------------------|
| 35MW-34B              | 30.0 - 32.0                       | 0.0                             | 0.4                               | 2.0                            |                                                                                               |
| (continued)           | 35.0 - 37.0                       | 0.0                             | 0.2                               | 2.0                            |                                                                                               |
|                       | 40.0 - 42.0                       | 0.0                             | 0.2                               | 2.0                            |                                                                                               |
| 35MW-35B              | 0.0 - 2.0                         | 0.4                             | 0.2                               | 0.2                            |                                                                                               |
|                       | 2.0 - 4.0                         | 0.2                             | 0.1                               | 0.3                            | Sample collected for analysis                                                                 |
|                       | 4.0 - 6.0                         | 0.2                             | 0.1                               | 0.4                            |                                                                                               |
|                       | 6.0 - 8.0                         | 0.2                             | 0.1                               | 0.3                            |                                                                                               |
|                       | 8.0 - 10.0                        | 0.1                             | 0.1                               | 0.2                            |                                                                                               |
|                       | 15.0 - 17.0                       | 0.1                             | 0.1                               | 0.2                            |                                                                                               |
|                       | 20.0 - 22.0                       | 0.1                             | 0.1                               | 0.2                            |                                                                                               |
|                       | 25.0 - 27.0                       | 0.0                             | 0.1                               | 0.2                            |                                                                                               |
|                       | 30.0 - 32.0                       |                                 |                                   |                                | Did not sample this interval                                                                  |
|                       | 35.0 - 37.0                       | 0.1                             | 0.1                               | 1.8                            |                                                                                               |
|                       | 40.0 - 42.0                       | 0.1                             | 0.1                               | 2.0                            | · · · · · · · · · · · · · · · · · · ·                                                         |
| 35MW-36B              | 0.0 - 2.0                         | 0.6                             | 0.6                               | 2.0                            |                                                                                               |
|                       | 2.0 - 4.0                         | N/A                             | N/A                               | 2.0                            | Background readings were not<br>obtained due to heavy rains                                   |
|                       | 4.0 - 6.0                         | N/A                             | N/A                               | 2.0                            | Background readings were not<br>obtained due to heavy rains. Sample<br>collected for analysis |
|                       | 6.0 - 8.0                         | N/A                             | N/A                               | 2.0                            | Background readings were not<br>obtained due to heavy rains                                   |
|                       | 8.0 - 10.0                        | 0.1                             | 2.5                               | 2.4                            |                                                                                               |
|                       | 15.0 - 17.0                       | N/A                             | N/A                               | 2.0                            | Background readings were not<br>obtained due to heavy rains                                   |
|                       | 20.0 - 22.0                       | N/A                             | N/A                               | 2.0                            | Background readings were not<br>obtained due to heavy rains                                   |
|                       | 25.0 - 27.0                       | N/A                             | N/A                               | 2.2                            | Background readings were not<br>obtained due to heavy rains                                   |
| j.                    | 30.0 - 32.0                       | N/A                             | N/A                               | 1.8                            | Background readings were not<br>obtained due to heavy rains                                   |
|                       | 35.0 - 37.0                       | N/A                             | N/A                               | 1.6                            | Background readings were not<br>obtained due to heavy rains                                   |
|                       | 40.0 - 42.0                       | N/A                             | N/A                               | 1.8                            | Background readings were not<br>obtained due to heavy rains                                   |

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| Soil Boring<br>Number | Sample<br>Interval<br>(feet, bgs) | Background<br>Readings<br>(ppm) | Point Source<br>Readings<br>(ppm) | Headspace<br>Readings<br>(ppm) | Comments                      |
|-----------------------|-----------------------------------|---------------------------------|-----------------------------------|--------------------------------|-------------------------------|
| 35MW-37B              | 0.0 - 2.0                         | 0.2                             | 0.2                               | 0.2                            |                               |
|                       | 2.0 - 4.0                         | 0.2                             | 0.2                               | 0.2                            |                               |
|                       | 4.0 - 6.0                         | 0.2                             | 0.2                               | 0.2                            | Collected sample for analysis |
|                       | 6.0 - 8.0                         | 0.2                             | 0.2                               | 0.2                            |                               |
|                       | 8.0 - 10.0                        | 0.2                             | 0.2                               | 0.2                            |                               |
|                       | 10.0 - 12.0                       | 0.2                             | 0.2                               | 0.2                            |                               |
|                       | 15.0 - 17.0                       | 0.2                             | 0.2                               | 0.2                            | -                             |
|                       | 20.0 - 22.0                       | 0.2                             | 0.2                               | 0.2                            |                               |
|                       | 25.0 - 27.0                       | ***                             |                                   | +++++++++                      | Did not sample this interval  |
|                       | 30.0 - 32.0                       | 0.2                             | 0.2                               | 0.2                            |                               |
|                       | 35.0 - 37.0                       | 0.2                             | 0.2                               | 0.2                            |                               |
| <b>  </b> [           | 40.0 - 42.0                       | 0.2                             | 0.2                               | 0.2                            |                               |
|                       | 42.0 - 44.0                       | 0.2                             | 0.2                               | 0.2                            |                               |
| 35MW-38B              | 0.0 - 2.0                         | 0.3                             | 0.3                               | 0.3                            |                               |
|                       | 2.0 - 4.0                         | 0.3                             | 0.3                               | 0.3                            |                               |
|                       | 4.0 - 6.0                         | 0.3                             | 0.3                               | 0.3                            | Sample collected for analysis |
|                       | 6.0 - 8.0                         | 0.3                             | 0.3                               | 0.3                            |                               |
|                       | 8.0 - 10.0                        | 0.3                             | 0.3                               | 0.3                            |                               |
|                       | 15.0 - 17.0                       | 0.3                             | 0.3                               | 0.4                            |                               |
|                       | 20.0 - 22.0                       | 0.3                             | 0.3                               | 0.3                            |                               |
|                       | 25.0 - 27.0                       | 0.3                             | 0.3                               | 0.3                            |                               |
|                       | 27.0 - 29.0                       | 0.3                             | 0.3                               | 0.3                            |                               |
|                       | 35.0 - 37.0                       | 0.2                             | 0.3                               | 0.2                            |                               |
|                       | 40.0 - 42.0                       | 0.2                             | 0.3                               | 0.2                            |                               |
|                       | 42.0 - 44.0                       | 0.2                             | 0.3                               | 0.2                            |                               |

Note: Split-spoon samples were collected from only intermediate and deep soil borings. Shallow borings were advanced for well installation only.



GEOTECHNICAL, ENVIRONMENTAL & CONSTRUCTION MATERIALS CONSULTANTS

February 19, 1993

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Commander Naval Facilities Engineering Command Atlantic Division Norfolk, Virginia 23511-6287

Attention: Mr. Trueman Seamans Engineer-In-Charge

Subject: ADDENDUM TO REPORT OF UNDERGROUND FUEL INVESTIGATION AND COMPREHENSIVE SITE ASSESSMENT CAMP GEIGER FUEL FARM, MARINE CORPS BASE CAMP LEJEUNE, NORTH CAROLINA LAW ENGINEERING JOB NO. 475-08135-01

Dear Mr. Seamans:

In accordance with Naval Facilities Engineering Command Order for Supplies and Services Contract No. N62470-90-D-7625/0002 dated September 29, 1990, Law Engineering is pleased to present this addendum to the report of our environmental services for the above-referenced project site. The scope of our services, as described in the attached report, included drilling of three soil-test borings and collecting soil samples for chemical testing; installing three ground-water monitoring wells and collecting ground-water samples for chemical testing; performing an eight-hour aquifer test using the three newly-installed wells; and interpreting the data from the pump test to estimate the hydraulic characteristics of the aquifer.

This report is intended for the exclusive use of Naval Facilities Engineering Command, Atlantic Division. The contents should not be relied upon by any other parties without the express, written consent of Law Engineering. The findings are relevant to the dates of our site work and should not be relied upon to represent site conditions on other dates.

> 3301 ATLANTIC AVE. P.O. BOX 18288 RALEIGH, NC 27619 919-876-0416



We appreciate the opportunity to continue to work with you and the Navy on your environmental projects. If any questions arise, please contact us at (919) 876-0416.

Sincerely,

2

LAW ENGINEERING, INC Richard A. Koll Richard A. Kolb Senior Geologist 42923234<sup>933</sup> C. Jettrey Adkins, P **Project Engineer** 

Mans A. Proctor, P.G.

Senior Geologist

Bu

W. Douglass Dixon, P.E. Principal Engineer

RAK/WDD/rak/bro

cc: Code 09A2122, Ms. Nicola Gonzalez Ms. Debra Pickett

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- H Laboratory Analytical Test Reports, Ground-Water Samples
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# **1.0 INTRODUCTION**

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## 1.1 <u>Purpose of the Investigation</u>

On September 29, 1990, the Commander of the Atlantic Division Naval Facilities Engineering Command (LANTDIV) in Norfolk, Virginia, contracted with Law Companies Group, Inc. to perform a Comprehensive Site Assessment (CSA) at the Camp Geiger Fuel Farm, Marine Corps Base (MCB), Camp Lejeune, North Carolina (Drawing 1.1). The purpose of the investigation was 1) to identify the presence, magnitude and extent of possible free-product accumulation and ground-water contamination and 2) to assess potential exposure to subsurface contaminants resulting from the release(s) of petroleum fuels. As stated in Law Engineering's CSA Workplan dated July 25, 1991, the objective of the investigation was to provide sufficient data to meet the requirements of Sections 280.63 and 280.65 of 40 CFR Part 280, Federal Technical Standards for Underground Storage Tanks and Sections .0704 and .0706 of Title 15A, Chapter 2, Subchapter 2N, North Carolina Criteria and Standards Applicable to Underground Storage Tanks.

The assessment activities presented in the CSA Workplan were completed and a report, entitled "Final Report, Underground Fuel Investigation, Comprehensive Site Assessment", was issued to the Commander of the Atlantic Division, Naval Engineering Facilities Command on February 8, 1992. Based upon the results of the



initial assessment, it was determined that additional assessment was necessary to fully characterize the southern extent of petroleum contamination resulting from the underground fuel release and that performing an aquifer pumping test was necessary to estimate the hydraulic characteristics of the surficial aquifer.

#### 1.2 <u>Scope of Work</u>

Authorization to proceed with the investigation was granted by the Commander of LANTDIV of Norfolk, Virginia, via Addendum to Contract/Purchase Order No. N62470-90-D-7625/0002. As outlined in the contract, the scope of work included preparing a health and safety plan, advancing three soil borings, installing three monitoring wells, collecting and analyzing soil and ground-water samples, performing an eight-hour pumping test of the surficial aquifer, preparing an addendum to our report of investigation, and presenting our data and conclusions. Specific methods employed while performing the project activities are described in this report, which presents a summary of the additional assessment activities performed during October and November 1992.



# 2.0 SUBSURFACE CONTAMINATION ASSESSMENT

#### 2.1 Installation of the Monitoring Wells

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Law Engineering performed field activities on October 28 and 29, 1992, which consisted of advancing three soil borings. One of these borings was subsequently used to install pumping well 28 (PW-28). The remaining two borings were used to install monitoring wells 26 (MW-26) and MW-27, used as observation wells during the pumping test. The locations of these wells are shown on Drawing 3.1. The numbers of the drawings included in this addendum report correspond with those in our February 1992 report.

Law Engineering accomplished all drilling using hollow-stem augers and techniques described in ASTM D-1452. We steam-cleaned our down-hole drilling equipment prior to work at each drilling location. We used augers with an inside diameter of 6.25 inches for drilling each boring. The site geologist collected soil samples from each of the soil borings for field classification, headspace testing and chemical testing. We generally obtained soil samples for field classification at depths of 0 to 1.5 feet, 1.5 to 3 feet, 3 to 4.5 feet and on 5-foot centers thereafter to boring termination. We collected these soil samples with a split-spoon sampler 24 inches long and with an inside diameter of 1.375 inches (outside diameter of 2 inches). We obtained each soil



sample by continually dropping a 140-pound hammer for 30 inches, until the sampler was driven 18 inches into the substrate. We performed split-spoon sampling in general accordance with ASTM D-1586 and recorded on the field boring log the number of blows required to drive the sampler each 6-inch increment. After donning laboratory-grade gloves, we placed representative portions of each sample in two, pre-labeled plastic bags and sealed each bag for subsequent headspace testing.

The site geologist examined in the field the soil sample collected at each interval using visual/manual techniques described in ASTM D-2487 and ASTM D-2488. We classified the soil in general accordance with the United Soil Classification System. We have included a record of each test boring in Appendix A.

We collected one soil sample from the boring for the pumping well to test for grainsize distribution. We used the data from this test in calculations to estimate the hydraulic conductivity of the surficial aquifer. The results of this grain-size test are included in Appendix B.

The specifications for each soil boring included decontaminating the drilling equipment with a pressurized steam-cleaning unit, emplacing a silica-sand filter pack and a bentonite seal above the filter pack and grouting the well above the bentonite seal with a cement/bentonite slurry, and developing the well through low-yield pumping.



Development water was discharged to the oil/water separator which is located east of the fuel farm, as directed by activity personnel.

The screened intervals of the two observation wells are constructed of Schedule 40 PVC with an inside diameter of two inches. The screened interval of the pumping well is constructed of Schedule 40 PVC with an inside diameter of four inches. The risers for each of the three wells are constructed of Schedule 80 PVC. Each of the wells constructed by Law Engineering has a lockable cap and is protected by a flush-mount cover constructed of steel. Details for installing the monitoring wells are included in Appendix C. Upon installation, each well was developed through low-yield pumping. In Table 3.1, we have summarized the approximate volumes of water removed during well development and our observations of turbidity of the development water. The numbers of the tables included in this report correspond with those in our February 1992 report.

#### 2.2 Assessment of Soil Contamination

#### 2.2.1 Scanning Procedures

Law Engineering monitored all soil-investigation activities with an organic vapor analyzer (OVA) manufactured by Foxboro (Model 128) which had been calibrated



using methane. We used the OVA to qualitatively measure total volatile organics in the borehole, in ambient air, and in the individual soil samples. Values recorded with the OVA are qualitative and are not directly comparable to actual laboratory analytical results. However, the OVA is useful in providing a relative indication of the presence of volatile organics in soil samples.

2.2.2 Collection of Soil Samples

We collected soil samples from each boring for headspace testing and laboratory chemical analysis according to the following procedure:

- Drive the decontaminated split-spoon sampler to the desired depth interval.
- Retrieve and immediately open the split-spoon sampler. Quickly remove portions of sample aliquots from the split-spoon sampler and place the sample into two, pre-labeled, airtight plastic bags. Carefully execute sample handling in an effort to reduce the loss of the volatile organics. Seal and place the bags in a warm location.



- After approximately 10 minutes, test the headspace gas in one of the two bags with the OVA and record the peak value. This procedure was conducted for the soil sample collected at each sample-depth interval.
- From the soil samples collected from each boring, two samples were targeted for chemical testing. For those samples, the paired sample was transferred to a laboratory-supplied glass container, placed into a cooler, packed on ice and shipped to the laboratory for chemical analysis. Law Engineering maintained custody of the samples until shipment. Chain of custody forms are included in Appendix D.

2.2.3 Results of the Soil Sampling

A summary of headspace testing is presented in Table 4.1. Volatile organics were not detected in the boreholes for MW-26 and MW-27. Volatile organics were detected in excess of the equipment detection limit of 0.2 parts per million (ppm) in samples collected from the borehole for PW-28 at depths below the water table.

We have presented a summary of laboratory analyses of the soil samples collected from MW-26, MW-27 and PW-28 in Table 4.2. Copies of the laboratory test reports are included in Appendix E. The selected soil samples were tested for total petroleum



hydrocarbons (TPH) using EPA Methods 3550 (semi-volatiles) and 5030 (volatiles). The laboratory did not detect TPH in the soil samples collected from these three wells.

We have modified two of our isopleth maps (Drawings 4.3 and 4.3.1) to include the locations of MW-26, MW-27 and PW-28. TPH was not detected in the soil samples from these three wells; therefore, the contours on these isopleth maps did not change from those in our February 1992 report.

# 2.3 Assessment of Ground-Water Contamination

# 2.3.1 Procedures for Sampling the Monitoring Wells

Law Engineering installed three wells during the investigation to complement the 25 wells installed during previous investigations. Prior to sampling each of the three, newly-installed wells, Law Engineering measured and recorded the depth to ground water using an electronic, water-level probe. We recorded the data collected and observations made on the Monitoring Well and Sampling Field Data Worksheets (Appendix E). Ground-water elevations relative to sea level for the newly-installed wells are shown on the Monitoring Well Casing and Water Elevation Worksheet (Appendix F).



Law Engineering evacuated the newly-installed wells prior to collecting ground-water samples to remove stagnant water from the well casing and sand pack. We performed this task in an effort to collect samples representative of the water quality in the surficial aquifer. To evacuate the observation wells, we used decontaminated, Teflon bailers attached to new nylon cord; to evacuate the pumping well, we used an Arch Well Development Pump. We measured and recorded specific conductance, pH, and water temperature throughout the evacuation process. We generally evacuated the wells of at least three standing well volumes and until indicator parameters had stabilized.

Prior to sampling the wells, Law Engineering personnel donned laboratory-grade gloves. We collected the water samples and immediately decanted the samples from the bailer into pre-labeled sample containers. We sealed the containers, stored the containers in a chilled cooler, and maintained custody of the samples until shipment at the end of the day.

2.3.2 Results of the Ground-Water Sampling

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We have presented a summary of laboratory analyses of the ground-water samples collected from all of the monitoring wells, including MW-26, MW-27 and PW-28, in Table 4.4. Copies of the laboratory test reports are included in Appendix H. We



tested the ground-water samples from MW-26, MW-27 and PW-28 for purgeable aromatic hydrocarbons by EPA Method 602, modified to include total xylenes and methyl tertiary butyl ether (MTBE). The laboratory did not detect constituents of petroleum hydrocarbons in the ground-water samples from MW-27 and PW-28. In the sample from MW-26, the laboratory detected total xylenes at a concentration of 1  $\mu$ g/L and MTBE at a concentration of 12  $\mu$ g/L. The North Carolina Ground-Water Quality Standard for total xylenes is 400  $\mu$ g/L and for MTBE is 50  $\mu$ g/L. Therefore, the concentrations of these constituents in MW-26 are below the state standards.

We have modified six isopleth maps from the February 1992 report (Drawings 4.7, 4.7.1 through 4.7.4 and 4.13) to include the locations of MW-26, MW-27 and PW-28. Benzene, toluene and ethylbenzene were not detected in the ground-water samples from these three wells; therefore, we did not change the contours for these constituents on the isopleth maps (Drawings 4.7.1, 4.7.2 and 4.7.3, respectively). We also did not change the contours of the isopleth maps of total xylenes concentrations (Drawing 4.7.4) and combined BTEX concentrations (Drawing 4.7). Since the concentration of 1  $\mu$ g/L of total xylenes detected by the laboratory in the ground-water sample from MW-26 is the same as the laboratory detection limit, it is possible that this concentration is a result of laboratory-induced contamination or handling of the samples during shipment.



Law Engineering documented MTBE at concentrations below the State Standard of 50  $\mu$ g/L in the ground-water sample from MW-26 and in the water collected during the pumping test performed on PW-28. MW-26 and PW-28 are hydraulically upgradient of the contaminant source at the Tank Farm; therefore, the MTBE documented in the ground water from these wells is possibly not related to activities at the Tank Farm. As we documented in our previous report, we also could not identify a likely source for the MTBE detected in the sample collected from MW-9, which is located west of the Tank Farm and of MW-26/PW-28. Because of the isolated occurrence of MTBE in several of the wells and no discernible pattern of contaminant migration, we are unable to offer an explanation as to other sources of MTBE.

#### 3.0 SITE HYDROGEOLOGY

#### 3.1 <u>Eight-Hour Pumping Test</u>

Law Engineering conducted an eight-hour pumping test during November 1992 at PW-28 to determine the performance characteristics of the well and to estimate the hydraulic parameters of the aquifer. Yield and drawdown were recorded so that the specific capacity of the well could be calculated. These data give a measure of the productive capacity of the well and provide information needed for the selection of



appropriately sized pumping equipment which may be necessary during the corrective action phase of the project. The pumping test also provided data from which to determine the transmissivity and storativity of the surrounding aquifer in order to predict the size and shape of capture zones produced during pumping of individual or multiple extraction wells.

3.1.1 Pumping-Test Procedures

Prior to the actual pumping test, PW-28 was pumped for approximately one hour to determine the approximate well yield. This "pre-test" data was necessary to select the proper size pump and to establish the pumping rate to be used during the test.

During the pumping test, the ground water pumped from PW-28 was stored in a tanker. The laboratory tested a water sample collected from this tanker for purgeable aromatics by EPA Method 602, modified to include total xylenes and MTBE. The discharged water was transported off the site by P&W Oil Company, which is storing the water for future disposal.

The eight-hour pumping test was conducted on November 4, 1992. During the test, a constant pumping rate of approximately 4.1 gallons per minute was maintained and the drawdown in each of the surrounding observation wells -- MW-22S, MW-26 and



MW-27 --- was measured and recorded at appropriate time intervals. These data are summarized in Appendix I. As summarized, after eight hours of pumping PW-28, approximately 2,360 gallons of ground water were extracted and drawdowns were as follows:

| Observation Well | Distance from PW-28 | Drawdown  |
|------------------|---------------------|-----------|
| MW-22S           | 113 feet            | 0.08 feet |
| MW-26            | 32 feet             | 0.22 feet |
| MW-27            | 88 feet             | 0.01 feet |

# 3.1.2 Estimating Aquifer Parameters

The data collected during the pumping test were used to calculate the storativity and transmissivity of the surrounding aquifer. These determinations were made by using type curve matching, time-downdown method, and the In-Situ computer software, TS-Match Theis Curve Automated Matching Program. TS-Match uses relative least-squares and the Newton-Raphson iterative method to solve the Theis solution, where:

$$s = \underline{O} \int_{u}^{\infty} \frac{e^{-u}}{nT} du,$$

<u>where</u>:

:

s= drawdown

Q = pumping rate, in gpm T = Transmissivity, in gpd/ft

 $u = (r^2S)/(4Tt)$ , where

- r = radial distance, in feet, from the pumped well to the observation well,
- S = storage coefficient, and

t= time

The TS-Match program makes the following assumptions:

- the production rate is constant.
- the aquifer is homogeneous, non-leaky, and there is no recharge.
- the aquifer has very large areal extent. If this is not the case, a mechanism has been provided to ignore data which the user considers are strongly influenced by the limited extent of the aquifer.
- water removed from storage is discharged instantaneously with decline in head (i.e., no delayed-yield effects).
- for analyzing production well data, skin (well loss) = 0.



for analyzing production well data, wellbore storage is not accounted for. However, a mechanism has been provided to ignore data that may be influenced by wellbore storage.

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In addition, the data were also analyzed manually by the type-curve matching method and the manual time-drawdown method to confirm the solution presented by TS-Match. We also analyzed grain-size distribution data from well PW-28 to estimate hydraulic conductivity. The field data and calculations are presented in Appendix I. The Type-curve matching, TS-Match, time-drawdown and grain size distribution solutions are as follows:

| SUMMARY OF AQUIFER PARAMETER ESTIMATIONS                                                                                                                              |                          |                         |       |  |  |  |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|-------------------------|-------|--|--|--|--|
| AQUIFER PARAMETER                                                                                                                                                     | ` V                      | VELL NUMBE              | R     |  |  |  |  |
|                                                                                                                                                                       | MW-22S                   | MW-26                   | PW-28 |  |  |  |  |
| <ul> <li>I. Transmissivity (ft²/day) by:</li> <li>a) Type Curve Matching</li> <li>b) Time-Drawdown</li> <li>c) Theis Curve Matching<br/>(Computer Program)</li> </ul> | 3064<br>3911<br>4226     | 1570<br>1026<br>988     |       |  |  |  |  |
| <ul> <li>II. Specific Storage by:</li> <li>a) Type Curve Matching</li> <li>b) Time-Drawdown</li> <li>c) Theis Curve Matching</li> </ul>                               | 0.003<br>0.001<br>0.0015 | 0.008<br>0.006<br>0.011 |       |  |  |  |  |



| SUMMARY OF AQUIFER PARAMETER ESTIMATIONS        |        |       |       |  |  |  |
|-------------------------------------------------|--------|-------|-------|--|--|--|
| AQUIFER PARAMETER WELL NUMBER                   |        |       |       |  |  |  |
|                                                 | MW-22S | MW-26 | PW-28 |  |  |  |
| III. Hydraulic Conductivity (3)<br>(ft/day) by: |        |       |       |  |  |  |
| a) Type Curve Matching                          | 139    | 71    |       |  |  |  |
| b) Time-Drawdown                                | 177    | 47    |       |  |  |  |
| c) Theis Curve Matching                         | 192    | 45    |       |  |  |  |
| d) Grain-Size Analysis                          | (4)    | (4)   | 99    |  |  |  |

NOTES:

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(1) MW-22 and MW-26 were used as observation wells for the pumping test.

(2) PW-28 was the well on which the pumping test was performed.

(3) Aquifer thickness is 22 feet, estimated from boring records in February 7, 1992, report.

(4) Grain-size distribution analysis not performed on soil samples from these wells.

From this data, average hydraulic conductivity values would be 169 ft/day for MW-22S, and 54 ft/day for MW-26. The hydraulic conductivity value from grain-size analysis for well PW-28, which is 99 ft/day, falls between these two other values. All three conductivity values fall within the same order of magnitude. The differences between the values may be explained by local heterogeneities in the soil matrix of the aquifer. A regional average of approximately 110 ft/day may be used for hydraulic conductivity in the surficial aquifer beneath the Fuel Farm area.

Similarly, average specific storage calculated from the pumping test ranges from  $10^{-3}$  to  $10^{-2}$ . Specific storage values associated with well MW-26 are higher than those



associated with MW-22. The differences may be explained by local heterogeneities in the soil matrix of the aquifer.

## 4.0 PROCEDURES FOR QUALITY CONTROL

#### 4.1 <u>Decontaminating Equipment</u>

The CSA Workplan details the quality-control procedures followed for handling and decontaminating equipment in the field. Using the procedures described in the Workplan, we decontaminated our drilling equipment adjacent to the oil/water separator, which is located east of the Fuel Farm.

#### 4.2 <u>Collecting, Handling and Shipping Samples</u>

The CSA Workplan details the quality-control procedures followed for collecting, handling and shipping samples. We utilized rinse blanks and trip blanks as qualitycontrol measures to provide checks on the integrity and quality of our ground-water sampling program.

Law Engineering submitted an equipment rinse blank to the laboratory to evaluate the procedures we used for decontaminating the Teflon bailers. Law Engineering also



submitted a trip blank to the laboratory to check the integrity of the sample containers, to determine if contaminants may have entered the sample containers during shipment to and from the job site, and to check for laboratory-induced contamination. Each of the blanks was analyzed for purgeable aromatics. The two blank samples did not contain contaminant levels above the laboratory detection limit. Although, our procedures for bailer decontamination were generally successful in eliminating the introduction of contaminants through the sampling equipment, it is possible that the 1  $\mu$ g/L of total xylenes documented in the ground-water sample from MW-26 may have resulted from incomplete decontamination of the bailer used to sample that well or from laboratory-induced contamination.

## 5.0 **REFERENCES**

Freeze, R. Allan and Cherry, John A., <u>Groundwater</u>, Prentice-Hall, Inc., Englewood Cliffs, New Jersey, 1979.

North Carolina Administrative Code, Title 15, Subchapter 2L, Classification and Water Quality Standards Applicable to the Groundwaters of North Carolina, North Carolina Environmental Management Commission, Raleigh, North Carolina, August 4, 1989.



Walton, W.C., Practical Aspects of Ground Water Modeling, 2nd Edition, 1984.

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Water-Vel, Hydrologic Modeling Division, In-Situ, Inc., Laramie, Wyoming, Version 2.2, July 1989.

## TABLES



| SUMMARY OF                                  | TABLE 3.1<br>DEVELOPMENT OF MONIT                                                                                             | ORING WELLS                                      |
|---------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|
| COM                                         | T OF UNDERGROUND FUE<br>PREHENSIVE SITE ASSESSI<br>CAMP GEIGER FUEL FARM<br>MP LEJEUNE,NORTH CAROI<br>GINEERING JOB NO. 475-0 |                                                  |
| MONITORING WELL<br>IDENTIFICATION<br>NUMBER | FINAL TURBIDITY<br>(SUBJECTIVE)*                                                                                              | APPROXIMATE<br>VOLUME OF WATER<br>REMOVED (GAL.) |
| MW-26                                       | 2                                                                                                                             | 13.5                                             |
| MW-27                                       | 2                                                                                                                             | 20                                               |
| PW-28                                       | 1                                                                                                                             | 120                                              |

Note:

\* (1) Clear; (2) Slight; (3) Moderate; (4) High



|                    | SUMMARY OF HE<br>O REPORT OF UNDER<br>COMPREHENSIVE<br>CAMP GEIGE | SITE ASSESSMENT<br>R FUEL FARM<br>NORTH CAROLINA |                                                  |
|--------------------|-------------------------------------------------------------------|--------------------------------------------------|--------------------------------------------------|
| SAMPLE<br>LOCATION | SAMPLE DEPTH<br>(ft.)                                             | OVA READING                                      | SAMPLE<br>SELECTED FOR<br>LABORATORY<br>ANALYSIS |
|                    | 0 - 1.5                                                           | Not Detected (ND)                                |                                                  |
|                    | 1.5 - 3                                                           | ND                                               | ÷                                                |
|                    | 3 - 4.5                                                           | ND                                               |                                                  |
|                    | 6 - 7.5                                                           | ND                                               | *                                                |
| MW-26              | 9.5 - 11                                                          | ND                                               |                                                  |
|                    | 14.5 - 16                                                         | ND                                               |                                                  |
|                    | 0 - 1.5                                                           | ND                                               |                                                  |
| MW-27              | 1.5 - 3                                                           | ND                                               | *                                                |
|                    | 3 - 4.5                                                           | ND                                               |                                                  |
|                    | 6 - 7.5                                                           | ND                                               | *                                                |
|                    | 9.5 - 11                                                          | ND                                               |                                                  |
|                    | 14.5 - 16                                                         | ND                                               |                                                  |
|                    | 0 - 1.5                                                           | ND                                               |                                                  |
| ù                  | 1.5 - 3                                                           | ND                                               |                                                  |
|                    | 3 - 4.5                                                           | ND                                               | *                                                |
|                    | 6 - 7.5                                                           | ND                                               |                                                  |
| PW-28              | 9.5 - 11                                                          | ND                                               | *                                                |
|                    | 14.5 - 16                                                         | 20                                               |                                                  |
|                    | 19.5 - 21                                                         | 28                                               |                                                  |



|                    | TO REPORT OF UNDER<br>COMPREHENSIVE<br>CAMP GEIGER<br>CAMP LEJEUNE, |                      | STIGATION AND             |
|--------------------|---------------------------------------------------------------------|----------------------|---------------------------|
|                    |                                                                     | TOTAL PETROLEU       | M HYDROCARBONS            |
| SAMPLE<br>LOCATION | SAMPLE DEPTH<br>(ft)                                                | VOLATILES<br>(mg/kg) | SEMI-VOLATILES<br>(mg/kg) |
| MW-26              | 1.5-3                                                               | N.D.                 | N.D.                      |
| MW-26              | 6-7.5                                                               | N.D.                 | N.D.                      |
| MW-27              | 1.5-3                                                               | N.D.                 | N.D.                      |
| MW-27              | 6-7.5                                                               | N.D.                 | N.D.                      |
| PW-28              | 3-4.5                                                               | N.D.                 | N.D.                      |
| PW-28              | 9.5-11                                                              | N.D.                 | N.D.                      |



### **KEY TO SYMBOLS FOR TABLE 4.4**

### SUMMARY OF LABORATORY ANALYSES

\* Numerical standard has not been established; substances not allowed in detectable concentrations.

N.D. = Not detected: see laboratory reports for applicable detection limits.

- = Sample not analyzed for this parameter.

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|                                       |                                |                                   |                   | SUMMARY OF<br>ONITORING WEI<br>SHALLOW | 4.4 (Page 1 of<br>LABORATORY /<br>LL GROUND-WA'<br>SCREENED INT<br>INDERGROUND 1<br>ISIVE SITE ASSE | NALYSES<br>TER SAMPLES<br>ERVAL<br>FUEL INVESTIG/ | ATION AND         |                   |                   |          |          | <u></u>    |
|---------------------------------------|--------------------------------|-----------------------------------|-------------------|----------------------------------------|-----------------------------------------------------------------------------------------------------|---------------------------------------------------|-------------------|-------------------|-------------------|----------|----------|------------|
|                                       |                                |                                   |                   | CAMP LEJE                              | GEIGER FUEL FA<br>UNE, NORTH CA<br>ING JOB NO, 47                                                   | ROLINA                                            |                   |                   |                   |          |          |            |
|                                       | WELL<br>NUMBER                 | NC<br>GROUND<br>WATER<br>STANDARD | EMW-1<br>(CGMW-1) | EMW-2<br>(CGMW-2)                      | EMW-3<br>(CGMW-3)                                                                                   | EMW-4<br>(CGMW-4)                                 | EMW-5<br>{35GW-4} | EMW-6<br>(35GW-5) | EMW-7<br>(35GW-8) | MW-8S    | MW-95    | MW-10S     |
|                                       | DATE<br>SAMPLED                |                                   | 9/3/91            | <b>9/</b> 5/91                         | 9/5/91                                                                                              | 9/5/91                                            | 9/4/91            | 9/5/91            | 9/5/91            | 9/4/91   | 9/3/91   | 9/3/91     |
| PARAMETER (ug/l)                      | SCREENED<br>INTERVAL<br>(Feet) |                                   | 8.5-17.5          | 1.87-10.87                             | 3.06-12.06                                                                                          | 2.61-11.61                                        | 10.5-24.5         | 10.5-24.5         | 10.5-24.5         | 4.6-13,5 | 3.5-12.5 | 4.5-13.5'  |
| BENZENE                               |                                | 1                                 | ND                | 40                                     | ND                                                                                                  | 13                                                | 0.4               | 0.3               | ND,               | 52       | 45       | 3′         |
| TOLUENE                               |                                | 1000                              | ND                | 12                                     | ,<br>ND                                                                                             | ND                                                | ND                | ND                | ND                | ND       | ND       | 5          |
| ETHYLBENZENE                          |                                | 29                                | ND                | 41                                     | ND                                                                                                  | 0,7                                               | ND                | ND                | ND                | 73       | ND       | 7          |
| XYLENES TOTAL                         |                                | 400                               | ND                | 76                                     | ND                                                                                                  | 2                                                 | ND                | ND                | ND                | 420      | 4        | ND         |
| METHYL TERTIARY BUTYL<br>ETHER (MTBE) |                                | 50                                | ND                | ND                                     | ND                                                                                                  | ND                                                | ND                | 3                 | ND                | ND       | 46       | ND         |
| LEAD                                  |                                | 50                                | 14                | ND                                     | 2                                                                                                   | 28                                                | 75                | ND                | 12                | 5        | ND       | 3          |
|                                       |                                |                                   |                   |                                        |                                                                                                     |                                                   |                   |                   |                   |          |          |            |
| TRANS-1,2-DICHLOROETHENE              |                                | 70                                | ND                | ND                                     | 2                                                                                                   | ND                                                | 0.7               | ND                | 18                | ND       | ND       | 17         |
| TRICHLOROETHENE                       |                                | 2.8                               | ND                | ND                                     | 8                                                                                                   | 0.6                                               | 3                 | 0.6               | 59                | ND       | ND       | 170        |
| 1-METHYLNAPTHALENE                    |                                | •                                 |                   | -                                      | -                                                                                                   | •                                                 | -                 |                   | -                 | 450      | -        | ·          |
| 2-METHYLNAPTHALENE                    |                                | •                                 | <u> </u>          | -                                      | <u>.</u>                                                                                            | •                                                 | -                 | •                 | •                 | 460      |          | l <u>.</u> |

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|                                       | <u></u>                        |                                   |            |                                                                |                                                                                                                                                   |                                                                                                       |                      |            |            |           |            |          |
|---------------------------------------|--------------------------------|-----------------------------------|------------|----------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|----------------------|------------|------------|-----------|------------|----------|
|                                       |                                |                                   | ADDENDU    | SUMMARY<br>MONITORING<br>SHAL<br>I TO REPORT<br>COMPRI<br>CAMP | ABLE 4.4 (Page<br>Y OF LABORAT<br>I WELL GROUND<br>LOW SCREENE<br>OF UNDERGRO<br>EHENSIVE SITE<br>AMP GEIGER FU<br>LEJEUNE, NOR'<br>NEERING JOB N | ORY ANALYSES<br>D-WATER SAMI<br>D INTERVAL<br>UND FUEL INVE<br>ASSESSMENT<br>IEL FARM<br>ITH CAROLINA | PLES<br>STIGATION AN | D          |            |           |            |          |
|                                       | WELL<br>NUMBER                 | NC<br>GROUND<br>WATER<br>STANDARD | MW-115     | MW-12S                                                         | MW-13S                                                                                                                                            | MW-145                                                                                                | MW-155               | MW-16S     | MW-175     | MW-185    | MW-195     | MW-20    |
|                                       | DATE<br>SAMPLED                |                                   | 9/4/91     | 9/4/91                                                         | 9/4/91                                                                                                                                            | 9/4/91                                                                                                | 9/4/91               | 9/5/91     | 9/5/91     | 9/5/91    | 9/4/91     | 9/4/91   |
| PARAMETER (ug/l)                      | SCREENED<br>INTERVAL<br>(Feet) |                                   | 4.5'-13.5' | 5'-14'                                                         | 5.5'-14.5'                                                                                                                                        | 3.5'-12.5'                                                                                            | 4.5'-13.5'           | 5.0′-14.0′ | 7.5′-10.5′ | 3.0'12.0' | 4,5'-13.5' | 3.0'-12. |
| BENZENE                               |                                | 1                                 | ND         | ŃD                                                             | ND                                                                                                                                                | 0.6                                                                                                   | 4                    | 40         | 0.5        | 52        | ND         | 140      |
| TOLUENE                               |                                | 1000                              | ND         | ND                                                             | ND                                                                                                                                                | ND                                                                                                    | ND                   | 230        | ND         | ND        | ND         | 280      |
| ETHYLBENZENE                          |                                | 29                                | 80         | ND                                                             | ND                                                                                                                                                | ND                                                                                                    | 3                    | 76         | ND         | ND        | ND         | 320      |
| XYLENES TOTAL                         |                                | 400                               | 170        | ND                                                             | ND                                                                                                                                                | ND                                                                                                    | 29                   | 800        | ND         | ND        | ND         | 830      |
| METHYL TERTIARY BUTYL<br>ETHER (MTBE) |                                | 50                                | ND         | ND                                                             | ND                                                                                                                                                | ND                                                                                                    | ND                   | ND         | 1          | 32        | ND         | ND       |
| LEAD                                  |                                | 50                                | ND         | 16                                                             | 7                                                                                                                                                 | 2                                                                                                     | 5                    | 6          | 6          | 9         | 36         | ND       |
| CHLOROFORM                            |                                | 0.19                              | ND         | ND                                                             | ND                                                                                                                                                | 3                                                                                                     | ND                   | ND         | ND         | ND        | ND         | ND       |
| TRANS-1,2-DICHLOROETHENE              |                                | 70                                | ND         | ND                                                             | ND                                                                                                                                                | 44                                                                                                    | ND                   | ND         | ND         | ND        | 5          | ND       |
| TRICHLOROETHENE                       |                                | 2.8                               | ND         | ND                                                             | ND                                                                                                                                                | 110                                                                                                   | ND                   | ND         | 0.8        | ND        | 31         | ND       |
| 1.2-DICHLOROETHANE                    |                                | •                                 | ND         | ND                                                             | ND                                                                                                                                                | ND                                                                                                    | ND                   | ND         | 1          | ND        | ND         | ND       |
| 1,1,2,2-TETRACHLOROETHANE             |                                | •                                 | ND         | ND                                                             | ND                                                                                                                                                | ND                                                                                                    | ND                   | ND         | ND         | ND        | 12         | ND       |
| TETRACHLOROETHENE                     |                                | •                                 | ND         | ND                                                             | ND                                                                                                                                                | ND                                                                                                    | ND                   | ND         | ND         | ND        | 1          | ND       |

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TABLE 4.4 (Page 3 of 3) SUMMARY OF LABORATORY ANALYSES MONITORING WELL GROUND-WATER SAMPLES SHALLOW SCREENED INTERVAL

#### ADDENDUM TO REPORT OF UNDERGROUND FUEL INVESTIGATION AND 7COMPREHENSIVE SITE ASSESSMENT

CAMP GEIGER FUEL FARM CAMP LEJEUNE, NORTH CAROLINA LAW ENGINEERING JOB NO. 475-08135-01

|                                       | WELL<br>NUMBER                 | NC<br>GROUND<br>WATER<br>STANDARD | MW-215   | MW-225     | MW-23S  | MW-24S   | MW-255   | MW-28S<br>(blind<br>duplicate<br>MW-14S) | MW-27S<br>(blind<br>duplicate<br>MW-24S) | MW-28    | MW-27     | PW-28     | POTABLE<br>WATER |
|---------------------------------------|--------------------------------|-----------------------------------|----------|------------|---------|----------|----------|------------------------------------------|------------------------------------------|----------|-----------|-----------|------------------|
|                                       | DATE<br>SAMPLED                | 4                                 | 9/4/91   | 9/4/91     | 9/5/91  | 9/5/91   | 9/4/91   | 9/4/91                                   | 9/5/91                                   | 11/04/92 | 11/04/92  | 11/04/92  | 10/29/92         |
| PARAMETER (ug/l)                      | SCREENED<br>INTERVAL<br>(Feet) |                                   | 4.5-13.5 | 5.5'-14.5' | 2.5-9.5 | 8.5-17.5 | 4.5-13.5 | 3.5-12.5                                 | 8,5-17.5                                 | 4,5-13.5 | 55.5-14.5 | 55.5-24.5 | •                |
| BENZENE                               |                                | 1                                 | 220      | 2300       | ND      | 11       | 26       | 0.6                                      | 12                                       | ND       | ND        | ND        | ND               |
| TOLUENE                               |                                | 1000                              | ND       | ND         | ND      | ND       | 160      | ND                                       | ND                                       | ND       | ND        | ND        | ND               |
| ETHYLBENZENE                          |                                | 29                                | 590      | 560        | ND      | 10       | 190      | ND                                       | 10                                       | ND       | ND        | ND        | ND               |
| XYLENES TOTAL                         |                                | 400                               | 1100     | 740        | ND      | 43       | 500      | ND                                       | 43                                       | 1.0      | ND        | ND        | ND               |
| METHYL TERTIARY BUTYL<br>ETHER (MTBE) |                                | 50                                | ND       | ND         | ND      | ND       | ND       | ND                                       | ND                                       | 12.0     | ND        | ND        | ND               |
| LEAD                                  |                                | 50                                | 4        | 3          | 2       | 5        | ı        | 2                                        | 7                                        |          |           | •         |                  |
| CHLOROFORM                            |                                | 0,19                              | ND       | ND         | ND      | ND       | ND       | 3                                        | ND                                       | •        | •         | •         |                  |
| TRANS-1,2-DICHLOROETHENE              |                                | 70                                | ND       | ND         | ND      | ND       | ND       | 51                                       | ND                                       | ·        |           | <u> </u>  |                  |
| TRICHLOROETHENE                       |                                | 2.8                               | ND       | ND         | 0.6     | ND       | ND       | 120                                      | ND                                       |          | •         | -         |                  |
| TRICHLOROFLUOROMETHANE                |                                | •                                 | ND       | ND         | 0.9     | ND       | ND       | ND                                       | ND                                       |          |           | •         | -                |
| BROMODICHLOROMETHANE                  |                                | •                                 | ND       | ND         | ND      | ND       | ND       | ND                                       | ND                                       | -        | ·         |           |                  |
| BROMOFORM                             |                                | 0.19                              | ND       | ND         | ND      | ND       | ND       | ND                                       | ND                                       |          |           | ·         | <u> </u>         |
| DIBROMOCHLOROMETHANE                  |                                | •                                 | ND       | ND         | ND      | ND       | ND       | ND                                       | ND                                       |          | <u> </u>  | · .       | <u> </u>         |
|                                       |                                | •                                 |          | -          |         | ND       | ND       | ND                                       | 0.7                                      | ·        | ·         | · .       |                  |
| FLUORENE                              |                                | •                                 | <u> </u> | •          | •       | 1        | ND       | ND                                       | ND                                       | •        |           | ·         | -                |
| 1-METHYLNAPTHALENE                    |                                | •                                 | •        |            |         | 84       | 190      | ND                                       | 42                                       |          |           |           |                  |
| 2-METHYLNAPTHALENE                    |                                | •                                 |          |            |         | 63       | 270      | ND                                       | 42                                       |          |           | ·•        |                  |
| NAPTHALENE                            |                                |                                   | -        | -          | -       | 41       | 220      | ND                                       | 31                                       |          | -         |           | -                |



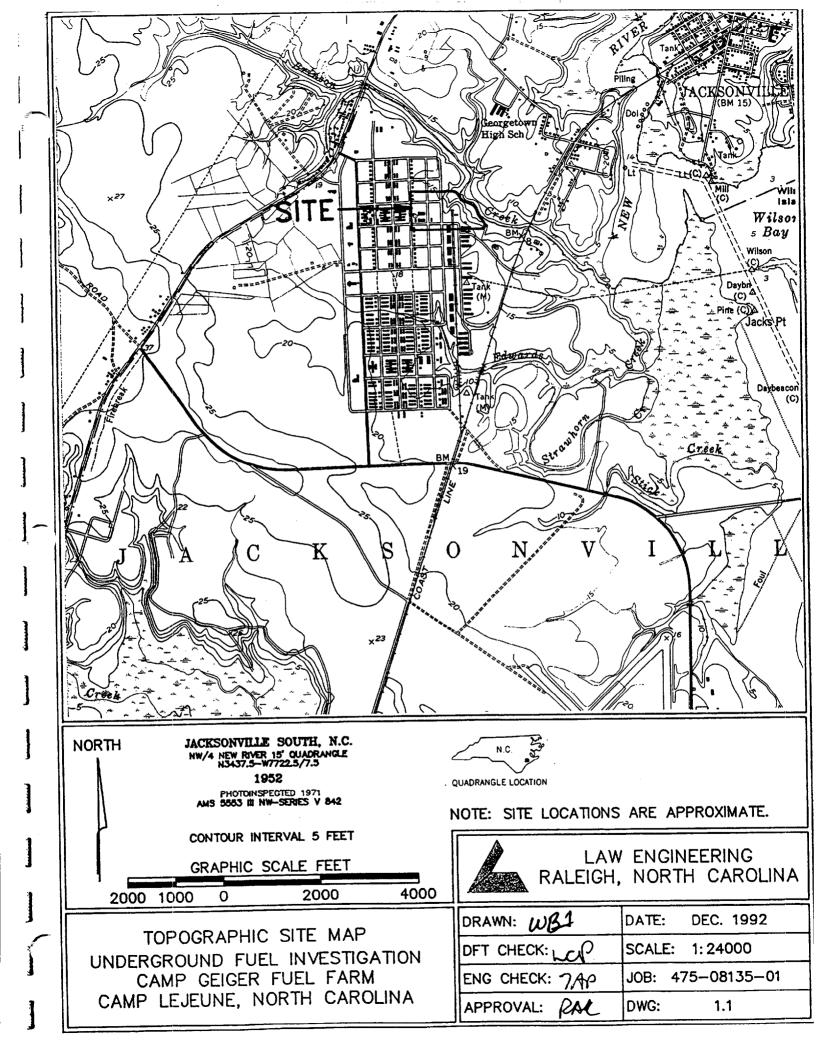
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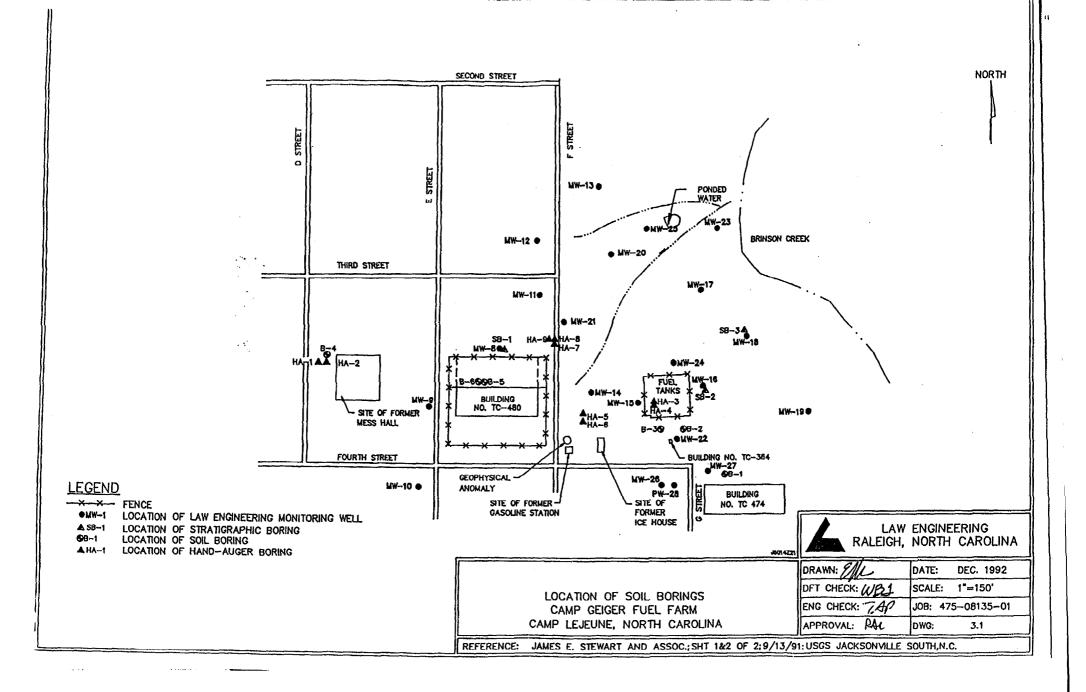
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## DRAWINGS







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### APPENDIX C

# WELL-CONSTRUCTION RECORDS AND

# GROUND-WATER MONITORING-WELL INSTALLATION DETAILS



| North Carolina - Department of Environment, Health, and Natural Resour<br>Division of Environmental Management - Groundwater Section<br>P.O. Box 29535 - Raleigh, N.C. 27626-0535<br>Phone (919) 733-3221<br>WELL CONSTRUCTION RECORD | COS FOR OFFICE USE ONLY QUAD. NO SERIAL NO Lat Long RO Minor Basin Basin Code |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| RILLING CONTRACTOR: Law Engineering                                                                                                                                                                                                   | Header Ent.                                                                   |
| STA                                                                                                                                                                                                                                   | TE WELL CONSTRUCTION<br>MIT NUMBER: 66-0277-WM-0297                           |
| 1. WELL LOCATION: (Show sketch of the location below) MW-26                                                                                                                                                                           |                                                                               |
| Nearest Town: Jacksonville County:                                                                                                                                                                                                    |                                                                               |
| (Road, Community, or Subdivision and Lot No.)                                                                                                                                                                                         | DEPTH DRILLING LOG                                                            |
| 2. OWNER <u>* See Address Below</u><br>ADDRESS                                                                                                                                                                                        | From To Formation Description                                                 |
| (Street or Route No.)                                                                                                                                                                                                                 | See Attached Test                                                             |
| City or Town State Zip Code                                                                                                                                                                                                           | Boring Records                                                                |
| <ol> <li>DATE DRILLED <u>10/29/92</u> USE OF WELL <u>Monitoring</u></li> <li>TOTAL DEPTH <u>14'</u></li> </ol>                                                                                                                        |                                                                               |
| 5. CUTTINGS COLLECTED YES XX NO                                                                                                                                                                                                       |                                                                               |
| 6. DOES WELL REPLACE EXISTING WELL? YES NO XX<br>7. STATIC WATER LEVEL Below Top of Casing: 7.47 FT.                                                                                                                                  | ······································                                        |
| (Use "+" if Above Top of Casing)                                                                                                                                                                                                      |                                                                               |
| 8. TOP OF CASING IS <u>0'</u> FT. Above Land Surface <sup>*</sup><br>* Casing Terminated at/or below land surface is illegal unless a variance is issued                                                                              |                                                                               |
| in accordance with 15A NCAC 2C .0118                                                                                                                                                                                                  | ······································                                        |
| 9. YIELD (gpm):N/AMETHOD OF TESTN/A<br>10. WATER ZONES (depth):N/A                                                                                                                                                                    |                                                                               |
|                                                                                                                                                                                                                                       |                                                                               |
| 1. CHLORINATION: Type <u>N/A</u> Amount<br>12. CASING:                                                                                                                                                                                | If additional space is needed use back of form                                |
| Wall Thickness                                                                                                                                                                                                                        | LOCATION SKETCH                                                               |
| Depth Diameter or Weight/Ft. Material                                                                                                                                                                                                 | (Show direction and distance from at least two State                          |
| From 0 To 4.5 Ft. 2" SCH 30 PVC From To Ft.                                                                                                                                                                                           | Roads, or other map reference points)                                         |
| From To Ft                                                                                                                                                                                                                            |                                                                               |
| 13. GROUT:                                                                                                                                                                                                                            | See Attached Site Location Map                                                |
| Depth Material Method                                                                                                                                                                                                                 |                                                                               |
| From <u>1.5</u> To <u>3.0</u> Ft. <u>Bentonite</u> Pour                                                                                                                                                                               |                                                                               |
| From To Ft 14. SCREEN:                                                                                                                                                                                                                | - * Commander<br>Atlantic Division                                            |
| Depth Diameter Slot Size Material                                                                                                                                                                                                     | Naval Facilities Engineering Comman                                           |
| From <u>4.5</u> To <u>13.5</u> Ft <u>2</u> in. <u>0.010</u> in. <u>PVC</u>                                                                                                                                                            | Norfolk, Virginia 23511-6287                                                  |
| From To Ft in in                                                                                                                                                                                                                      | <b>a</b>                                                                      |
| From To Ft in in                                                                                                                                                                                                                      | - Seamans                                                                     |
| 15. SAND/GRAVEL PACK:<br>Depth Size Material                                                                                                                                                                                          |                                                                               |
| From <u>3.0</u> To <u>14.0</u> Ft. Torpedo <u>Sand</u>                                                                                                                                                                                | -                                                                             |
| From To Ft                                                                                                                                                                                                                            | _                                                                             |
| 16. REMARKS: Concrete from 0' - 1.5'                                                                                                                                                                                                  |                                                                               |
| I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN                                                                                                                                                                                 | ACCORDANCE WITH 15A NCAC 2C. WELL                                             |
| CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECO                                                                                                                                                                                  | RD HAS BEEN PROVIDED TO THE WELL OWNER.                                       |

Richard A. Koll

12/14/92 DATE

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SIGNATURE OF CONTRACTOR OR AGENT E Submit original to Division of Environmental Management and copy to well owner.

| <ul> <li>North Carolina - Department of Environment, Health, and Natural Resource<br/>Division of Environmental Management - Groundwater Section<br/>P.O. Box 29535 - Raleigh, N.C. 27626-0535<br/>Phone (919) 733-3221</li> <li>WELL CONSTRUCTION RECORD</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | es FOR OFRCE USE ONLY QUAD. NOSERIAL NORO LatLongRO Minor BasinRO                                                                                         |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| DRILLING CONTRACTOR: Law Engineering                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Header EntGW-1 Ent                                                                                                                                        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | E WELL CONSTRUCTION                                                                                                                                       |
| 1. WELL LOCATION: (Show sketch of the location below) MW-27<br>Nearest Town:Jacksonville County:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Onslow                                                                                                                                                    |
| (Road, Community, or Subdivision and Lot No.) 2. OWNER <u>* See Address Below</u> ADDRESS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | DEPTH DRILLING LOG<br>From To Formation Description                                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | See Attached TestBoring Records                                                                                                                           |
| City or Town       State       Zip Code         3. DATE DRILLED _10/29/92       USE OF WELL Monitoring         4. TOTAL DEPTH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                           |
| 11. CHLORINATION: TypeN/A Amount                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | If additional space is needed use back of form                                                                                                            |
| 12. CASING:       Wall Thickness         Depth       Diameter         From       0         To       5.5         Ft.       2"         SCH       80         PVC         From       To         Ft.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <u>LOCATION SKETCH</u><br>(Show direction and distance from at least two State<br>Roads, or other map reference points)<br>See Attached Site Location Map |
| Depth       Material       Method         From       1.5       To       3       Ft.       Bentonite       Pour         From       To       3       Ft.       Bentonite       Pour         14. SCREEN:       Depth       Diameter       Slot Size       Material         From       5.5       To       14.5       Ft       2       in.       0.010       PVC         From       To       Ft.       in.       0.010       in.       PVC         From       To       Ft.       in.       in.       in.       10         From       To       Ft.       in.       in.       in.       10         From       To       Ft.       in.       in.       in.       10         15. SAND/GRAVEL PACK:       Depth       Size       Material       10       10       10         From       3       To       15       Ft.       Torpedo       Sand       10         From       To       Ft.       Torpedo       Sand       14       14       14       14       14       14       14       14       14       14       15       15       15       16       < | * Commander<br>Atlantic Division<br>Naval Facilities Engingering Command<br>Norfolk, Virginia 23511-6287<br>Attention: Code 1821,<br>Mr. Trueman Seamans  |
| I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN AC<br>CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                           |

Ki Chavel A. Kell

12/14/92 DATE

SIGNATURE OF CONTRACTOR OR AGENT DA Submit original to Division of Environmental Management and copy to well owner.

| <ul> <li>North Carolina - Department of Environment,<br/>Division of Environmental Managemer<br/>P.O. Box 29535 - Raleigh, N.<br/>Phone (919) 733-3</li> <li>WELL CONSTRUCTIO</li> </ul>                                                                                                                     | nt - Groundwater Section<br>.C. 27626-0535<br>3221                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | QUAD. NO Long.<br>Lat Long.<br>Minor Basin Long.                                  |                                       |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------------------|
| RILLING CONTRACTOR: Law                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Header Ent                                                                        | GW-1 Ent DEA                          |
| DRILLER REGISTRATION NUMBER:                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | WELL CONSTRUCTION                                                                 | -WM0297                               |
| 1. WELL LOCATION: (Show sketch of the<br>Nearest Town:Jacksonville                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Onslow                                                                            |                                       |
| (Road, Community, or Subdivision and Lot No.)<br>2. OWNER <u>* See Address Bel</u><br>ADDRESS                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | DEPTH<br>From To                                                                  | DRILLING LOG<br>Formation Description |
| (Street or Route No.)                                                                                                                                                                                                                                                                                        | )                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                   | See Attached Test                     |
| <ul> <li>4. TOTAL DEPTH <u>25'</u></li> <li>5. CUTTINGS COLLECTED YES X</li> <li>6. DOES WELL REPLACE EXISTING WEI</li> <li>7. STATIC WATER LEVEL Below Top of C</li> </ul>                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                   | Boring_Records                        |
| * Casing Terminated at/or below land surface is illeg                                                                                                                                                                                                                                                        | al unless a variance is issued """                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | ·····                                                                             | · · · · · · · · · · · · · · · · · · · |
| in accordance with 15A NCAC 2C .0118<br>9. YIELD (gpm):N/A METHOD OF T                                                                                                                                                                                                                                       | ESTN/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | • • • • • • • • • • • • • • • • • • •                                             |                                       |
| 10. WATER ZONES (depth):N/A                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                   |                                       |
| 1. CHLORINATION: Type N/A                                                                                                                                                                                                                                                                                    | Amount                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | If additional space is neede                                                      | ed use back of form                   |
| From To Ft<br>From To Ft                                                                                                                                                                                                                                                                                     | SCH 80 PVC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <u>LOCATION</u><br>(Show direction and distance fro<br>Roads, or other map refere | om at least two State                 |
| 13. GROUT:<br>Depth Ma<br>From <u>2</u> To <u>3</u> Ft. <u>Bent</u><br>From To Ft                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | See Attached Site I                                                               | ocation Map                           |
| 14. SCREEN:         Depth       Diameter       S         From      To      Ft      in.         From      To      Ft.      in.         15. SAND/GRAVEL PACK:       Depth       Size         From      To      Ft.      in.         15. SAND/GRAVEL PACK:       Depth       Size         From      To      Ft. | Slot Size         Material           0.010         in.         PVC           in.         in.         Image: state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state state | Norfolk, Virginia<br>Attention: Code                                              | Engineering Command<br>a 23511-6287   |
| 16. REMARKS: <u>Concrete from 0</u><br>I DO HEREBY CERTIFY THAT THIS WELL<br>CONSTRUCTION STANDARDS, AND THA                                                                                                                                                                                                 | WAS CONSTRUCTED IN ACC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | HAS BEEN PROVIDED TO THE                                                          | C, WELL<br>WELL OWNER.<br>12(14/92)   |
| GW-1 REV. 9/91                                                                                                                                                                                                                                                                                               | SIGNATURE OF CONTRACT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | OR OR AGENT                                                                       |                                       |

### APPENDIX A

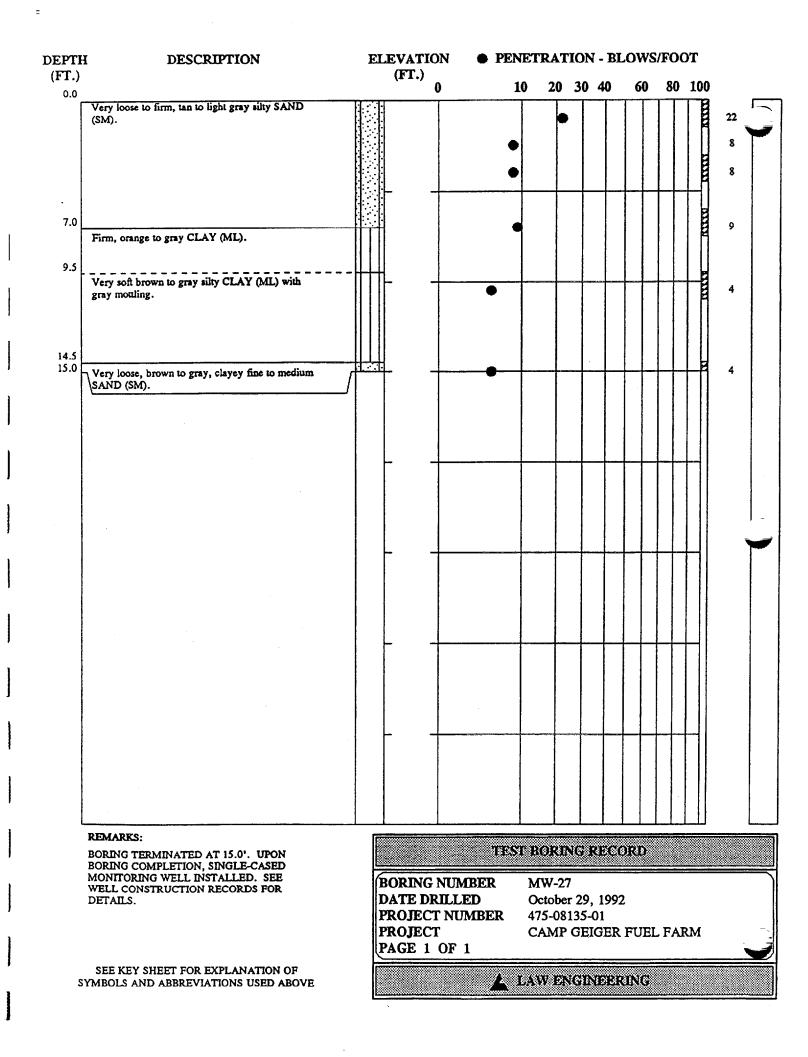
## **RECORDS OF SOIL-TEST BORINGS**



| DEPTH<br>(FT.) | DESCRIPTION                                                                                                    | E | LEVATIC<br>(FT.)                                | N                   | • PENI          |           |         |                                |     | ows |      |     |    |  |
|----------------|----------------------------------------------------------------------------------------------------------------|---|-------------------------------------------------|---------------------|-----------------|-----------|---------|--------------------------------|-----|-----|------|-----|----|--|
| 0.0            |                                                                                                                |   | (                                               | D                   | 10              | )         | 20      | 30 4                           | 0   | 60  | 80   | 100 |    |  |
|                | Loose, tan to light brown, slightly silty, very fine<br>SAND (SM).                                             |   |                                                 |                     |                 |           | ▶       |                                |     |     |      |     | 17 |  |
| 3.0            | Loose, white, tan to light brown, slightly silty very                                                          |   |                                                 |                     |                 |           |         |                                |     |     |      |     | 11 |  |
|                | fine to medium SAND (SM).                                                                                      |   |                                                 |                     |                 |           |         |                                |     |     |      |     | 9  |  |
|                |                                                                                                                |   |                                                 |                     |                 | •         |         |                                |     |     |      |     | 12 |  |
| 9.5            |                                                                                                                |   | •                                               |                     |                 |           |         |                                |     |     |      |     |    |  |
|                | Loose, light brown to tan to gray, silty fine to<br>medium SAND (SM).                                          |   |                                                 |                     | •               |           |         |                                |     |     |      |     | 5  |  |
| 14.0           |                                                                                                                |   |                                                 |                     | ļ               |           |         |                                |     |     |      |     | 10 |  |
|                |                                                                                                                |   |                                                 |                     |                 | <u></u>   |         |                                |     |     | ┼┼   | +1  |    |  |
|                |                                                                                                                |   |                                                 |                     |                 |           |         |                                |     |     |      |     |    |  |
|                |                                                                                                                |   |                                                 |                     |                 |           |         |                                |     |     |      |     |    |  |
|                |                                                                                                                |   |                                                 |                     |                 |           |         |                                |     |     |      |     |    |  |
|                |                                                                                                                |   |                                                 |                     |                 |           |         |                                |     |     |      |     |    |  |
|                |                                                                                                                |   |                                                 |                     |                 |           | -       | _                              |     |     |      | ╈   |    |  |
|                |                                                                                                                |   |                                                 |                     |                 |           |         |                                |     |     |      |     |    |  |
|                |                                                                                                                |   |                                                 |                     |                 |           |         |                                |     |     |      |     |    |  |
|                |                                                                                                                |   |                                                 |                     |                 |           |         |                                |     |     |      |     |    |  |
|                |                                                                                                                |   |                                                 |                     |                 |           |         |                                |     |     |      |     |    |  |
|                |                                                                                                                |   |                                                 |                     |                 |           | _       |                                |     |     |      | +   |    |  |
|                |                                                                                                                |   |                                                 |                     |                 |           |         |                                |     |     |      |     |    |  |
|                |                                                                                                                |   |                                                 |                     |                 |           |         |                                |     |     |      |     |    |  |
| L              | REMARKS:<br>BORING TERMINATED AT 14.0'. UPON                                                                   | ] |                                                 |                     | TESI            | r BC      | )<br>RI | NGR                            | ECC | )RD |      |     |    |  |
| -              | BORING COMPLETION, SINGLE-CASED<br>MONITORING WELL INSTALLED. SEE<br>WELL CONSTRUCTION RECORDS FOR<br>DETAILS. |   | BORING<br>DATE DI<br>PROJEC<br>PROJEC<br>PAGE 1 | RILLE<br>F NUM<br>F | D<br>ÍBER       | Oc<br>47: | 5-08    | 6<br>or 29,<br>135-0<br>9 GEIC | 1   |     | L FA | .RM |    |  |
| S              | SEE KEY SHEET FOR EXPLANATION OF<br>YMBOLS AND ABBREVIATIONS USED ABOVE                                        |   |                                                 |                     | <u><u> </u></u> | LAV       | V E     | NGIN                           | EBR | UNG |      |     |    |  |

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|   | DEPT<br>(FT.)         |                                                                                                                | I   | ELEVATION<br>(FT.)                                     | N 🗣 PE                  | NET            | RATI                   | ON - B                                        | LOWS | /FOO  | т     |                |
|---|-----------------------|----------------------------------------------------------------------------------------------------------------|-----|--------------------------------------------------------|-------------------------|----------------|------------------------|-----------------------------------------------|------|-------|-------|----------------|
|   | ( <b>F</b> 1.)<br>0.0 |                                                                                                                |     | 0                                                      |                         | 10             | 20 3                   | 30 40                                         | 60   | 80    | 100   |                |
|   |                       | Loose, tan to white, slightly silty, fine SAND (SM).                                                           |     |                                                        |                         | •              | •                      |                                               |      |       |       | 19<br>14<br>12 |
|   | 9.5                   |                                                                                                                |     |                                                        |                         | •              |                        |                                               |      |       |       | II             |
|   | 10.0                  | ·····                                                                                                          | ŢĮ, | # +                                                    |                         |                |                        | <u>                                      </u> |      |       |       |                |
|   |                       | Very loose, light brown to gray, silty fine SAND<br>(SM).                                                      |     |                                                        | •                       |                |                        |                                               |      |       | IX.   | 6              |
|   | 14.5                  | Brown to black, CLAY (ML) rich in organic<br>material and roots.                                               |     |                                                        | •                       | -              |                        |                                               |      |       | IXXXX | 9              |
|   | 19.5<br>25.0          | Very loose, light brown to orange, fine SAND (SM).                                                             |     |                                                        |                         |                |                        |                                               |      |       |       | woн            |
|   |                       |                                                                                                                |     |                                                        |                         |                |                        |                                               |      |       |       |                |
|   |                       |                                                                                                                |     |                                                        |                         |                |                        |                                               |      |       |       |                |
| 1 |                       | REMARKS:<br>BORING TERMINATED AT 25.0'. UPON                                                                   |     |                                                        | TES                     | ST B           | ORIN                   | G REC                                         | ORD  |       |       |                |
|   |                       | BORING COMPLETION, SINGLE-CASED<br>MONITORING WELL INSTALLED. SEE<br>WELL CONSTRUCTION RECORDS FOR<br>DETAILS. |     | BORING N<br>DATE DRI<br>PROJECT<br>PROJECT<br>PAGE 1 C | UMBER<br>LLED<br>NUMBER | PV<br>Oc<br>47 | V-28<br>tober<br>5-081 | 28, 199                                       | 2    | _ FAR | ĽM    |                |
| ] |                       | SEE KEY SHEET FOR EXPLANATION OF<br>SYMBOLS AND ABBREVIATIONS USED ABOVE                                       |     |                                                        | 4                       | LAV            | V EN                   | INEE                                          | RING |       |       |                |

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APPENDIX D INTERIM REMEDIAL ACTION REMEDIAL INVESTIGATION (BAKER, 1994)

# Final

## Interim Remedial Action Remedial Investigation/ Feasibility Study

## Operable Unit No. 10 Site 35 - Camp Geiger Area Fuel Farm

Marine Corps Base Camp Lejeune, North Carolina



**Prepared For:** 

Department of the Navy Atlantic Division Naval Facilities Engineering Command Norfolk, Virginia

Under the

### LANTDIV CLEAN Program

Comprehensive Long-Term Environmental Action Navy

#### **EXECUTIVE SUMMARY**

### **Introduction**

An Interim Remedial Action Remedial Investigation (RI) was conducted at Operable Unit 10, Site 35 - Camp Geiger Area Fuel Farm to provide additional data regarding petroleum hydrocarbon contaminated soil to support the selection of an interim remedial action. Previous investigations had determined the presence of fuel-related contamination in subsurface soils and shallow groundwater in the vicinity of the Fuel Farm. Based on previously obtained data and reports of fuel-like odors along Brinson Creek by Camp Lejeune, LANTDIV, and Baker personnel, an Interim Remedial Action RI and Feasibility Study (FS) was deemed necessary because it was determined qualitatively that:

- The existing site conditions potentially expose nearby human populations, animals, or food chains to toxic substances, pollutants, or contaminants; and
- High levels of toxic substances or pollutants in soils are largely at or near the surface that may migrate.

### Site Location and Description

Camp Geiger is located at the extreme northwest corner of MCB, Camp Lejeune, Onslow County. The main entrance to Camp Geiger is off U.S. Route 17, approximately 3.5 miles southeast of the City of Jacksonville, North Carolina. Site 35, the Camp Geiger Area Fuel Farm refers primarily to five, 15,000-gallon aboveground storage tanks (ASTs), a pump house, and a fuel unloading pad situated within Camp Geiger just north of the intersection of Fourth and "G" Streets.

#### Site History

Construction of Camp Geiger was completed in 1945, four years after construction of MCB, Camp Lejeune was initiated. Originally, the Fuel Farm ASTs were used for the storage of No. 6 fuel oil, but, were later converted for storage of other petroleum products including unleaded gasoline, diesel fuel, and kerosene. The date of their conversion is not known. Routinely, the ASTs at Site 35 supply fuel to an adjacent dispensing pump. A leak in an underground line at the station was reportedly responsible for the loss of roughly 30 gallons per day of gasoline over an unspecified period (Law, 1992). The leaking line was subsequently sealed and replaced.

The ASTs at Site 35 are currently used to dispense gasoline, diesel and kerosene to government vehicles and to supply USTs in use at Camp Geiger and the nearby New River Marine Corps Air Station. The ASTs are supplied by commercial carrier trucks which deliver product to fill ports located on the fuel unloading pad at the southern end of the facility. Six, short-run (120 feet maximum), underground fuel lines are currently utilized to distribute the product from the unloading pad to the ASTs. Product is dispensed from the ASTs via trucks and underground piping.

Reports of a release from an underground distribution line near one of the ASTs date back to 1957-58 (ESE, 1990). Apparently, the leak occurred as the result of damage to a dispensing pump. At that time the Camp Lejeune Fire Department estimated that thousands of gallons of fuel were released although records of the incident have since been destroyed. The fuel reportedly migrated to the east and northeast toward Brinson Creek. Interceptor trenches were excavated and the captured fuel was ignited and burned.

Another abandoned underground distribution line extended from the ASTs to the former Mess Hall Heating Plant, located adjacent to "D" Street, between Third and Fourth Streets. The underground line dispensed No. 6 fuel oil to a UST which fueled the Mess Hall boiler. The Mess Hall, located across "D" Street to the west, is believed to have been demolished along with its Heating Plant in the 1960s.

In April 1990, an undetermined amount of fuel had been discovered by Camp Geiger personnel along the unnamed drainage channels north of the Fuel Farm. Apparently, the source of the fuel, believed to diesel or jet fuel, was an unauthorized discharge from a tanker truck that was never identified. The Activity reportedly initiated an emergency clean-up which included the removal of approximately 20 cubic yards of soil.

The Fuel Farm is scheduled to be decommissioned in 1994. Plans are currently being prepared to empty, clean, dismantle, and remove the ASTs along with all concrete foundations, slabs on grade, berms and associated underground piping. The Fuel Farm is being removed to make

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way for a four lane divided highway proposed by the North Carolina Department of Transportation (NCDOT).

#### **Previous Investigations and Findings**

Previous investigations include an Initial Assessment Study (Water and Air Research [WAR], 1983), a Confirmation Study (Environmental Science and Engineering, Inc. [ESE], 1984 and 1987), a Focused Feasibility Study (NUS Corporation [NUS], 1990), and a Comprehensive Site Assessment (Law Engineering, Inc. [Law], 1991).

The Initial Assessment Study identified Site 35 as one of 23 sites warranting further investigation. Environmental media were not sampled as part of this study.

ESE performed the Confirmation Study at the Fuel Farm between 1984 and 1987. Soil, groundwater, surface water, and sediment samples were obtained and analyzed for lead and oil and grease. Groundwater was also analyzed for volatile organics. Oil and grease results indicated that soils northeast of the Fuel Farm were potentially impacted by site activities.

Additional wells were installed by NUS Corporation during the Focused Feasibility Study, which was conducted in 1990. Soil cuttings obtained from two of the four well boreholes contained hydrocarbon related contamination.

Law conducted the Comprehensive Site Assessment in 1991. A total of 18 soil borings were drilled, sampled and converted to nested wells that monitor the water table aquifer at two depths. An additional three soil borings were drilled to provide stratigraphic data. Five more soil borings were drilled to provide data regarding vadose zone contamination. Nine handauger samples were also obtained. A follow-up study was conducted subsequent to the Comprehensive Site Assessment. Three additional borings were drilled, sampled and converted to wells.

Law identified areas of impacted soil and groundwater directly beneath and apart from the Fuel Farm. The nature of the contamination included both chlorinated organic compounds (e.g., TCE, trans-1,2-DCE, and vinyl chloride) and petroleum hydrocarbons (e.g., TPH, MTBE, BTEX). The majority of the soil contamination encountered appeared to be associated with a fluctuating groundwater table. Two plumes of shallow groundwater contaminated with petroleum constituents and two plumes contaminated with chlorinated organics were

identified. All four plumes were located north of Fourth Street and east of E Street except for a portion of a TCE plume extending southwest of Fourth Street.

The Interim Remedial Action RI conducted by Baker in 1993 and 1994 consisted of drilling seven additional soil borings including five in those areas where groundwater contamination plumes were suspected. A single soil sample was obtained from each of these soil borings and analyzed for TCL organics, TAL inorganics, TPH and oil and grease. Samples obtained from two boring locations (SB-30 and SB-34) displayed relatively high concentrations of benzene, toluene, ethylbenzene, xylenes, naphthalene and 2-methylnaphthalene; constituents commonly associated with fuels. These two locations also displayed the highest detected concentrations of TPH encountered during the Interim Remedial Action RI. Highest detected concentrations of these contaminants were in samples taken at or below the shallow water table.

The non-fuel related contaminant trichloroethene (TCE) was detected at concentrations below its corresponding contract required quantitation limit in two samples. One of these samples was obtained from background soil boring location SB-29.

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In addition to soil boring samples a total of ten shallow soil samples were obtained in the vicinity of Brinson Creek and the unnamed drainage channels located to the north of the Fuel Farm. No significant levels of fuel-related contaminants and TPH were detected in these samples. Oil and grease was, however, detected in these shallow soil samples. Therefore, two additional samples were obtained approximately 1/2-mile upstream of the site along Brinson Creek to establish background levels of oil and grease. Background oil and grease results obtained upstream of Site 35 indicate that naturally-occurring organics in soils or an upgradient contamination source could be responsible for the positive oil and grease results obtained at the site. An additional sample was also obtained downstream of the site to identify the potential extent of contamination.

In general, the Interim Remedial Action RI data confirm the findings of the CSA (Law, 1992) that indicated contaminated soil conditions at Site 35 are primarily associated with a fluctuating shallow groundwater plume. Contamination encountered in the vicinity of monitoring wells MW-21 and MW-25 was detected at approximately two or more feet above the measured groundwater surface and may be indicative of contamination-not associated with a fluctuating groundwater plume. To date, however, recorded groundwater levels

provide insufficient data to afford an estimate of the range of groundwater elevation fluctuation at Site 35.

#### Nature and Extent of Contamination

Petroleum hydrocarbon contamination at Site 35 is primarily associated with shallow groundwater that is typically encountered across the site at six to eight feet below the ground surface (bgs). Law identified two distinct petroleum hydrocarbon shallow groundwater plumes including one directly beneath the Fuel Farm ASTs and another located immediately northwest of the Fuel Farm ASTs in the vicinity of the unnamed drainage channels that covey surface runoff to Brinson Creek.

In addition to contaminated groundwater samples, subsurface soil samples have been identified at the site as contaminated with petroleum hydrocarbons. The contaminated soil samples, for the most part, were obtained along a narrow zone that extends about one to two feet above the groundwater table (as measured on two separate occasions including once in August, 1991 by Law and again in March, 1994 by Baker). The soil contamination in this zone just above the top of shallow groundwater appears to have been transported there by a fluctuating groundwater table. In only two areas did the results of soil sampling indicate the presence of elevated petroleum hydrocarbon contamination at locations sufficiently above the top of groundwater such that the source of the contamination may not have been a fluctuating groundwater table. The two areas are both located north of the Fuel Farm where past unauthorized discharges of fuel products were reported to have occurred and are centered around samples obtained from monitoring well MW-25 and monitoring well MW-21, respectively.

#### Summary of Site Risks

A preliminary baseline risk assessment, limited to Site 35 soil contamination, was conducted using data from the previous investigations and the Interim Remedial Action RI. A more comprehensive baseline risk assessment involving groundwater, surface water, and sediment, in addition to soil, will be conducted as part of the comprehensive Site 35 Remedial Investigation being conducted concurrently.

Because soil contamination is associated with subsurface soils at or below the water table, a construction worker scenario was used to determine potential human health risks.

The construction worker was assumed to engage in excavation activities and could potentially contact contaminants in deep soil by dermal contact, through accidental ingestion and by inhaling contaminant-laden dust particles. A construction worker scenario is the most likely current potential human receptor as well as the most likely future receptor because of the new highway construction scheduled for Site 35. Benzene and arsenic were retained as chemicals of potential concern (COPCs) for quantitative evaluation in the preliminary baseline risk assessment. An incremental lifetime cancer risk (ICR) value of  $3 \times 10^{-6}$  was derived for the construction worker. This value falls within USEPA's target risk range of  $10^{-6}$  to  $10^{-4}$  which is generally considered to be acceptable by the Agency. Noncarcinogenic hazard index (HI) values fell below 1.0 suggesting that systemic adverse health effects would not occur subsequent to exposure.

An ecological risk assessment was not performed at this time because soil contaminants are encountered at depths 4 feet below the ground surface or more and occur primarily at or below the shallow water table. A comprehensive baseline ecological risk assessment, in addition to the baseline human health risk assessment, will, however, be conducted as part of the concurrent comprehensive Remedial Investigation at Site 35.

In addition to human health risks, North Carolina's Department of Environment, Health and Natural Resources Division of Environmental Management's Site Sensitivity Evaluation (SSE) was performed. SSE cleanup goals for gasoline, diesel and oil and grease were derived. Cleanup goals of 40 mg/kg, 160 mg/kg and 800 mg/kg, respectively, were calculated. The applicability of the SSE cleanup goals will be further addressed in the Interim Remedial Action Feasibility Study (FS).

APPENDIX K RI/FS CHAIN OF CUSTODY RECORDS

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| i                                     | Phone             | »: <u>4</u>    | 12-              | 26               | 9-2099                                   | Ph                   | one:                                   |          |              |              | _        |           |               |         | Y             | .5       | 5/               |          |        |       |        |          |            |         | RCRA                                     |                       | ] [            |
|                                       | Fax               | <u>e 41</u>    | 2-               | 26               | 9-2002                                   | P                    | 0 #:                                   |          |              |              |          |           | ł             | H.      | $\frac{1}{2}$ | 5/       | ¥                | /        | /      | /     | /      | /        | /          |         | NPDES                                    |                       | ן נ            |
|                                       |                   |                |                  |                  |                                          |                      |                                        |          |              |              |          |           | Ä             | ¥ ŝ     | ٧Ň            | 73       | 7,               | / /      | / /    | '     | '      | / /      | /          |         | Screened<br>For Radioac                  | tivity                | זו             |
|                                       |                   |                |                  |                  | ou agree to the terms ar                 | nd conditio          | ons contained in NDR                   | C's Pric | e Scheo      | dule.        |          |           | Veranic       | J       | M             | `        |                  |          |        |       |        |          |            |         | Temp                                     |                       | $\neg$         |
|                                       | ij. No.<br>23:    | Proj<br>Z MO   |                  |                  | PLETEUNE, CA                             | MP G                 | EIGER                                  | No. c    | of Cont      | ainer        | Ś        |           | 7             | 5       | Y             | MURCH SS |                  |          | /      |       | /      |          | ÷          |         | - onp                                    | 0                     |                |
| 1                                     | Date              | Time           | Comp             | G<br>r<br>a<br>b | Identifying Marks                        | <u> </u>             |                                        | VOA      | A/G<br>1 LL  | 250<br>ml    | P/0      | 4         | 4 /5          |         | / i           |          | $\left  \right $ |          |        | / /   | / /    | /        | Lab.       | Sam     | iple ID                                  |                       |                |
| 5                                     | 4-13              | 1327           | <u> </u>         | X                | 35-500                                   | 5-06                 | 2                                      |          |              |              |          | X         | X             | X       | X             |          | {                |          |        | -     | 1      | T        |            |         |                                          |                       |                |
|                                       |                   | 1325           |                  | X                | 35 · 5 Dets                              |                      |                                        |          |              |              |          | X         | Х             | X       | X             |          |                  |          |        |       |        |          |            |         |                                          | <u> </u>              |                |
| S                                     |                   | 1242           |                  | X                | 35 - SD00                                |                      |                                        |          |              |              |          | χ         | χ             | X       | X             |          |                  |          |        |       |        |          |            |         |                                          | <u> </u>              |                |
| 5                                     | 4-13              | 1240           |                  | X                | 35- SD06                                 |                      |                                        |          |              |              |          | Χ         | Х             | X       | X             |          |                  |          |        |       | Τ      |          |            |         |                                          |                       |                |
| W                                     | 4-13              |                |                  |                  | 35 - SDER                                |                      |                                        |          |              |              |          | X         | Х             | Х       | X             |          |                  |          |        |       |        |          |            |         |                                          |                       |                |
| W                                     | 4-13              |                |                  |                  | 35 - TBOG                                | 2                    |                                        |          |              |              |          | X         |               |         | ,             |          |                  |          |        |       |        |          |            |         | ·                                        |                       |                |
|                                       |                   |                |                  |                  | ·                                        |                      |                                        |          |              |              |          |           |               |         |               |          |                  |          | ·      | •     |        |          |            |         |                                          |                       |                |
|                                       |                   |                |                  |                  |                                          | · · · · ·            |                                        |          |              |              |          |           |               |         |               |          | <u> </u>         |          |        |       |        |          |            |         |                                          |                       |                |
|                                       |                   |                |                  |                  |                                          |                      | ·····                                  |          |              |              |          |           |               |         |               |          |                  |          |        |       |        |          |            |         | •                                        |                       |                |
|                                       |                   | 1              | -                |                  | or Standard D Priority 2                 | 5001                 |                                        |          | 1 500        |              |          |           |               |         |               |          |                  |          |        |       |        |          |            | 1011    |                                          |                       |                |
| 1/1                                   | around<br>inquish | ,              |                  |                  |                                          |                      | Received by: (Sign                     |          | 4 EHS 4      |              | Date:    |           |               | r (602/ | -             | , TPH (  | _                | or 801   | o), VO |       | :5 (62 | :4/824   | o), IGNITA | ABILIT  | Y, TOTAL LE                              | AD (6010)             | -              |
|                                       | ich               | Nor            | Ŷ                | hr J             | 2mp 4/18 15                              | 24                   |                                        |          |              |              |          |           |               |         |               |          |                  |          |        |       |        |          |            |         |                                          |                       |                |
| Rei                                   | inquish           | eti by:"(      | Signa            | ture)            | Date:                                    | Time:                | Received by: (Sign                     | ature)   |              | '            | Date:    | :<br>     | Tir           | ne:     |               |          |                  |          |        |       |        |          |            |         |                                          |                       |                |
| Rel                                   | inquish           | ed by: (       | Signa            | ture)            | Date:                                    | Time:                | Received by: (Sign                     | ature)   |              |              | Date     | <br>:<br> | Tir           | ne:     | 1             |          |                  |          |        |       |        |          |            |         |                                          |                       |                |
| <sup>1</sup> Matr<br><sup>2</sup> Con |                   | WW - Wa<br>VOA | astewa<br>- 40 n |                  | W - Water S - So<br>A/G - Amber / Or Gia | il SD<br>ass 1 Liter | - Solid L - Liquid<br>250 ml - Glass w |          | Air Bag<br>h | )<br>P/O - I |          |           | al tub<br>her | Ð       | S             | SL - Sk  | ıdgə             | 0-       | Oil    |       | _      | NDF<br>P | lease F    | ax w    | -<br>cept verb<br>ritten cha<br>238-5592 | al change<br>inges to | <b></b><br>:s. |

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| nchcape Testing Services NDRC Laborat                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | SDG4<br>ories. CHAII                          | ⊧: 3<br>NOF | 500<br>CUS     | S<br>OD  | Y RE     |          | <b>RD</b> 1     | 089 Ea     | st Colli | ns Blv    | d., Richa  | rdson, T   | <b>PTOF</b><br>X 75081 (214) 23 | i8-{      |
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| Submitted by                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Bill to                                       |             |                | A        | IALYS    | SIS      | $\overline{77}$ | 77         | 77       | 7         | TT         | 11         | Lab use only                    |           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | + SAME                                        |             |                |          | QUIF     |          |                 |            |          | 11        | / /        |            | Due Date:                       |           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                               |             | <del></del>    |          |          |          |                 | ' /        |          | / /       | //         | / /        |                                 |           |
| Contact: <u>F. HoFF</u> Contact:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | + SAME                                        |             |                |          |          | /        | up /            |            | / /      |           |            | /          |                                 |           |
| Phone: 412 - 269 - 2099 Phone:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | - <u></u>                                     |             |                |          |          | Ļ        | 1.5             | / /        |          |           |            | /          | RCRA                            |           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                               |             |                |          |          | Ϋ:       | \$₹             |            |          |           |            |            | NPDES                           | C         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                               |             |                |          | 4        | 1 3      | 3/              |            | / /      |           |            |            | Screened                        | Γ         |
| By submitting these samples, you agree to the terms and conditions co                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | entained in NDRC's Price                      | Schedu      | JIO.           |          | -Vera-   | SEMINO.  | The And         |            |          | / /       | / /        |            | For Radioactivity               |           |
| Proj. No. Project Name<br>CTD 2 32.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | No. of                                        | Conta       | liners         |          | . /      |          | I I I           | ' /        | //       | / /       |            |            | Temp                            | •C<br>    |
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| S <del>8850</del> 0850 X 35 - SSII - OO                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                               |             |                | X        | X        | X        |                 |            |          |           |            |            |                                 |           |
| S 4-13-94 0857 X 35 - SS12-00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                               |             |                | X        | X        | X        |                 |            |          |           |            |            |                                 |           |
| S 4-13-94 0925 X 35 - SS14 - OO                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                               |             |                | <u>x</u> | X        | X        |                 |            |          |           |            |            |                                 | <b></b> . |
| S 4-13-4 1250 X 35-SS13-00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                               |             |                | X        | X        | X        |                 |            |          |           |            |            |                                 |           |
| S 4-13-4/1320 X 35- SS10-00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                               |             |                | X        | X        | X        |                 |            |          |           |            |            |                                 |           |
| 5 413-94 1340 X 35-5509-00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                               |             |                | X        | X        | X        |                 |            |          |           |            |            |                                 |           |
| S 4-13-94 1350 X 35-5507-00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                               |             |                | X        | X        | X        |                 |            |          |           |            |            |                                 |           |
| S 4-13-74 1350 X 35- SS07 -00 MS/M                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 5D                                            |             |                | X        | X        | X        |                 |            |          |           |            |            |                                 |           |
| S 413-94 1352 X 35-SS07-00D                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                               |             |                | X        | ΪX       | Y        |                 |            |          |           |            |            |                                 |           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                               |             |                |          |          |          |                 |            |          |           |            |            |                                 |           |
| Turn around time . If Priority 1 or Standard D Priority 2 or 50% D Priority                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | ority 3 or 100%                               | 4 ERS *     | l              | <u> </u> | + BTE    | K (602/8 | 020), TPH (41   | 3.1 or 801 | 5), VOL  | TILES     | (624/8240) | , IGNITABI | LITY, TOTAL LEAD (6             | 010       |
| Reinquished by: (Signature) Date: Time: Rec<br>Just North 4-14 15:37                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | eived by: (Signature)                         | •           | Dat            | e:       | Tiı      | ne:      | Remarks         | _          |          |           |            |            |                                 |           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | eived by: (Signature)                         |             | Dat            | e:       | Ti       | me:      | Nore            | 35-:       | 5507.    | -00       | MS/M       | JD Fo      | L VOLATICES                     |           |
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| Matrix WW - Wastewater W - Water S - Soil SD - So<br>Container VQA - 40 ml vial A/G - Amber / Or Glass 1 Liter                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | id L - Liquid A -<br>250 ml - Glass wide mout | Air Bag     | C<br>P/O - Pla |          | coal tub |          | SL - Sludg      | e O        | - Oil    |           |            |            | accept verbal ch                |           |

OFFICE ONLY

|             |                 |                  |                  | _                   | Services N<br>d by                     | 1           | Bill                 | to        |              |           | Ī      |         |                                              |     |            | 7        | 77   | 7          | 7     | 7      | 7      | 77        | _/     | K 75081 (214) 238    |
|-------------|-----------------|------------------|------------------|---------------------|----------------------------------------|-------------|----------------------|-----------|--------------|-----------|--------|---------|----------------------------------------------|-----|------------|----------|------|------------|-------|--------|--------|-----------|--------|----------------------|
|             | .a<br>Mome      |                  |                  |                     | VIRONMENTAL                            | NI.         |                      |           | =            |           | . [    | • • • • | ialy:<br>Qui                                 |     |            |          | ' /  |            |       | /      |        |           |        | Due Date:            |
|             |                 |                  |                  |                     | is, PA                                 |             | ress:                |           |              |           |        |         |                                              | RED |            | ' /      |      | /          | / /   | / /    | / /    |           |        |                      |
| A           | Jures           | s: <u> </u>      | CILA             | opoc                | <u> </u>                               |             |                      |           |              |           | -      |         |                                              |     |            |          |      | '          | '     |        | ŀ      |           | /      |                      |
| С           | ontac           | <br>t•           | P.               | Ho                  | FF                                     | Con         | tact: <u> </u>       | ME        |              |           | -      |         |                                              |     | / ·        | / /      | / /  |            |       | /      | /      |           |        |                      |
|             |                 |                  |                  |                     | -2099                                  |             | one:                 |           |              |           | _      |         |                                              |     | ้ พ่       | /        |      | /          | / /   | / /    |        | ' /       | ſ      | RCRA                 |
| I           |                 |                  |                  |                     |                                        |             | 0 #:                 |           |              |           |        |         |                                              | ų/  | Ĩ.         | 3        | d    | / /        | ' /   |        |        |           |        | NPDES                |
|             | гa              |                  |                  | <u> </u>            | ······································ | l i         | Ο π                  |           |              |           | -1     |         | ŧ                                            | Ĭ : |            | \$X      | / /  |            |       |        |        | /         | ŀ      | Screened             |
| By s        | submitti        | ng these         | sam              | ples, y             | ou agree to the terms a                | nd conditi  | ons contained in NDI | RC's Pric | e Scheo      | dule.     |        |         | Verten                                       | 3   | رم ا       | 1.57     |      | /          | / ·   |        | / /    | /         | ╞      | For Radioactivity    |
| Pro         | j. No.          | Pro              | ect N            | Vame                | · · · · · · · · · · · · · · · · · · ·  |             |                      | No. d     | of Cont      | ainers    | 2<br>S |         |                                              | 7/2 |            | L PET PC | / /  | / /        |       | /      |        |           |        | Temp °               |
| ı<br>latrix | Date            | Time             | C<br>o<br>m<br>P | G<br>r<br>a<br>b    | Identifying Marks                      |             |                      | VOA       | A/G<br>1 Lt. | 250<br>mi | P/0    | ~<br>   | <u>                                     </u> | 26  | 4          |          | / /  |            |       |        |        | Lab       | . San  | nple ID              |
| S           | 4-13 94         | 1425             |                  | X                   | 35-5502-0                              | 00          |                      |           |              |           |        | X       | X                                            | X   |            |          |      |            |       |        |        |           |        |                      |
| S           | 41394           | /430             |                  | X                   | 35-5501-                               | 00          |                      |           | <u> </u>     |           |        | X       | X                                            | X   |            |          |      |            |       |        |        |           |        |                      |
| ω           | 4139            |                  |                  | X                   | 35 - TB07                              |             |                      | _         | ļ            |           |        | X       | Х                                            | X   |            |          |      |            |       |        |        |           |        | H                    |
| W           | 4-13.9          |                  |                  | X                   |                                        |             |                      |           | <u> </u>     |           |        | X       | X                                            | X   |            |          |      |            |       |        |        |           |        | <u></u>              |
|             | <del>*157</del> |                  |                  | X                   | -35 FBOI                               |             | - R.H. 4/13          |           | <u> </u>     |           |        |         |                                              |     |            |          |      |            |       | .<br>  |        |           |        |                      |
| S           | 4-14-           | 1405             |                  | X                   | 35-5003                                | -612        | ·                    |           |              |           |        | X       | Х                                            | X   | X          | _        |      |            |       |        |        |           |        |                      |
| 5           | 4-14-9          | 1407             |                  | X                   | 35-5003                                | -06         |                      |           |              |           |        | X       | X                                            | X   | X          |          |      |            |       |        |        |           |        | ····                 |
| S           | 4-14-94         | 1407             |                  | X                   | 35 - SD03 -                            | -061        | IS/MSD               |           |              |           |        | X       | X                                            | X   | X          |          |      |            |       |        |        |           |        |                      |
| W           | 4-14            |                  |                  | X                   | 35 - TB08                              | )<br>       |                      |           |              |           |        |         |                                              |     |            |          |      |            |       |        |        |           |        |                      |
|             |                 |                  |                  |                     |                                        |             | · <u>····</u> ···    |           |              |           |        |         |                                              |     |            |          |      |            |       |        |        |           |        | ·                    |
|             | around          | time<br>ed byy ( |                  |                     | 1 or Standard Driority 2               |             |                      |           | 4 ERS 1      | -         | )-t-   |         | -                                            |     | - <u>-</u> |          |      | 8015),     | VOLAT | ILES ( | 624/82 | 40), IGNI | TABILI | TY, TOTAL LEAD (6010 |
|             |                 | - 11             | aigna<br>A       | aiuf <del>0</del> ) |                                        | Time:<br>37 | Received by: (Sig    | naturej   |              |           | Date:  | ļ       | lír                                          | ne: |            | emark    | i    |            |       |        |        |           |        |                      |
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| nchcape Testing Services NDRC Laboratori                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Bill to                         | AIN OF              | - 008           |                       |           |               | RD               | , ;        | 1089 E<br>7 | ast Co           | ollins : | Blvd., F | lichardso         | on, TX 75081 (214)                                        |             |
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| Submitted by<br>Name: BALER ENIMAMENTAL Name:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | String                          | -                   |                 |                       | NALY      |               | /                | ' /        |             | / /              |          |          |                   | / Due Date:                                               |             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                 |                     |                 | -   R                 | EQUI      | RED           | /                |            |             | ' -/             |          |          |                   |                                                           |             |
| Address: <u>Contropous</u> , <u>PA</u> Address:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <u> </u>                        |                     |                 | -                     |           |               |                  | 11         | ' /         |                  |          |          |                   | /                                                         |             |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | E- SAM                          |                     | <u> </u>        | -                     |           |               | ' ¥              | ĺ /,       |             |                  | ' /      |          |                   | RCRA                                                      | <br>ר       |
| Phone: <u>42-269-2099</u> Phone:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                 |                     |                 | -                     |           | $\neg$        | Ĩ.               | 9 ž        | 7           |                  | 1        | 1        | / /               | . HONA                                                    | L           |
| Fax: PO #:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                 |                     |                 | -                     |           | ¥.            | 33               | ¥.₹/       |             |                  |          |          |                   | NPDES                                                     | Ľ           |
| ······                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                 |                     |                 |                       | 4         |               | 11               | ENDEGAUIL  |             |                  |          |          | /                 | Screened<br>For Radioactivity                             | Ľ           |
| By submitting these samples, you agree to the terms and conditions contained and the terms and conditions contained and the terms and conditions contained and the terms and conditions contained and the terms and conditions contained and the terms and conditions contained and the terms and conditions contained and the terms and conditions contained and the terms and conditions contained and the terms and conditions contained and the terms and conditions contained and the terms and conditions contained and the terms and conditions contained and the terms and conditions contained and the terms and conditions contained and the terms and conditions contained and the terms and conditions contained and the terms and conditions contained and the terms and conditions contained and the terms and conditions contained and the terms and conditions contained and the terms and conditions contained and the terms and conditions contained and the terms and conditions contained and the terms and conditions contained and the terms and conditions contained and the terms and conditions contained and the terms and conditions contained and the terms and conditions contained and the terms and conditions contained and the terms and conditions contained and the terms and terms and terms and terms and terms and terms and terms and terms and terms and terms and terms and terms and terms and terms and terms and terms and terms and terms and terms and terms and terms and terms and terms and terms and terms and terms | ned in NDRC's P                 | rice Scheo          | dule.           |                       | jo        | ' ধ্র/        | ď,               | <u>[</u> ] |             | / /              | '/       |          | /                 | Temp                                                      |             |
| Proj. No. Project Name<br>GTO 232 MCB CHMP LEJEUNE CAMP GEIGER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | No                              | o. of Cont          | ainers          |                       | 1         | 1.            | .7.              | J I        | / . /       | - /·             |          |          | 1                 | ·                                                         | _           |
| trix Date Time C G I Identifying Marks                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | vo                              | A A/G               | 250 P           | 4 ov                  | TCL VOLAT |               | / 2              | / /        |             |                  |          | ' /      | Lab.              | . Sample ID                                               |             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                 |                     |                 | X                     | <u> </u>  | <u> </u>      | x                |            | -{          | $\vdash$         | <u></u>  | +        | Т                 |                                                           |             |
| 5 4/14 1732 X 35-SS05-00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                 |                     |                 |                       | X<br>X    |               | $\frac{2}{\chi}$ |            | +           |                  |          |          |                   |                                                           |             |
| 6 4/14 1720 X 35- SS06 - 00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                 |                     |                 | <u> </u>              | +         |               | $\Im$            |            |             | $\left  \right $ |          |          |                   |                                                           |             |
| 5 4/14 1800 X 35 - 5508 - 00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                 |                     | ┡──┝-           | X                     | X         |               | 싀                |            |             |                  |          |          | +                 |                                                           |             |
| N 4/14 X 35-TB09                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                 |                     | <u> </u>        | <u> </u>              |           |               |                  |            |             |                  |          |          |                   |                                                           |             |
| 6 4/14 1730 X 35-SD01-612                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                 |                     | <u> </u>        | <u>X</u>              | X         | X             | 分                |            | _           |                  |          |          |                   |                                                           |             |
| S 4/14 1732 X 35-SD01-06                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                 |                     |                 |                       | X         | X             | X                |            |             |                  |          |          |                   |                                                           |             |
| 5 4/14 1628 X 35-SD02-612                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                 |                     |                 | _ X                   | <u>X</u>  | X             | X                |            |             | <b> </b>         |          |          |                   |                                                           |             |
| S 4/14 1630 X 35-SDO2-06                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                 |                     |                 | X                     | X         | X             | X                |            |             |                  |          |          |                   |                                                           |             |
| 5 4/14 1630 X 35-5002-060                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                 |                     |                 | <u> </u>              | X_        | X             | Хļ               |            |             |                  |          |          |                   |                                                           |             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                 |                     |                 |                       |           |               |                  |            |             |                  |          |          |                   |                                                           | 100         |
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| Anos 1000 415/94 1600                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                 |                     |                 |                       |           |               |                  |            |             |                  |          |          |                   |                                                           |             |
| Relinquished by: (Signature) / Date: Time: Receive                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | ed by: (Signature               | <b>))</b> ·         | D               | ate:                  | Т         | me:           |                  |            |             |                  |          | *        | ÷                 |                                                           |             |
| Relinquished by: (Signature) Date: Time: Receive                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | ed by: (Signature               | e)                  | D               | ate:                  | ΤΙ<br>Ι   | me:           |                  |            |             |                  |          |          |                   |                                                           |             |
| Matrix WW - Wastewater W - Water S - Soll SD - Solld<br>Container VOA - 40 ml vial A/G - Amber / Or Glass 1 Liter 250                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | L - Llquid<br>ml - Glass wide m | A - Air Ba<br>houth | g (<br>P/O - Pl | C - Char<br>lastic or |           | 90            | s                | L - Slud   | ge C        | D - Oil          |          | N<br>V   | DRC can<br>Please | not accept verbal c<br>Fax written change<br>214-238-5592 | har<br>es i |

|                                  | Subr         | nitteo           | i by                       |                           | lill to      |             |           | T        | ANAL                  | Vele                |             | T        | 7             | ŀ. /     | 1      | 7       | 7       | T T         | / Lab use on      | iy      |
|----------------------------------|--------------|------------------|----------------------------|---------------------------|--------------|-------------|-----------|----------|-----------------------|---------------------|-------------|----------|---------------|----------|--------|---------|---------|-------------|-------------------|---------|
| Name:                            | BAKE         | 26               | JVIRONMENTAL               | Name:                     | - SAME       | 5           |           |          | REQU                  |                     |             | / ·      |               | / /      |        |         |         | ' / /       | Due Date:         |         |
| Address:                         | Corro        | paus             | , PA                       | Address:                  |              | · · ·       |           | -        |                       |                     | /           | / /      | //            |          |        | / /     | //      |             |                   | <u></u> |
| Contact:                         | ٤.           | HOF              | E                          | Contact:                  | SAME         |             |           |          |                       |                     | /           | /        |               | / /      | /.     |         | / /     | / /         |                   |         |
|                                  |              |                  | 9-2099                     | Phone:                    |              |             |           | _        |                       |                     | /           |          | / _           |          |        |         | '       |             | RCRA              | Ľ       |
|                                  |              |                  |                            | PO #:                     |              |             |           |          |                       |                     | ă           | 8        | 2             |          | / /    |         | ·/      | /           | NPDES             | Г       |
|                                  |              |                  |                            |                           |              |             |           |          |                       | J.                  | 3           | ₹,       |               |          |        |         |         | /           | Screened          | <br>ר   |
|                                  |              |                  | ou agree to the terms and  | conditions contained in I | NDRC's Price | e Sche      | dule.     |          |                       | ₹,                  | \$ <u>}</u> | <u>}</u> | শি            |          |        | / /     |         |             | For Radioactivi   |         |
|                                  | Project N    |                  | LEJEUNE (MM                | oleven                    | No. o        | of Cont     | ainers    | 2        | 2                     | Ser. The            | 24          | 17       | HOMESS HULL   |          |        | ' /     |         |             | Temp              | °       |
| 1                                | Time m       | G<br>r<br>a<br>b | Identifying Marks          |                           | VOA          | A/G<br>1 LL | 250<br>ml | P/0      |                       | Y i                 | Ĭř          | A S      | SCHWER SCHWER |          |        | /       |         | Lab. S      | ample ID          |         |
| W 4/H                            |              |                  | 35- TBIO                   |                           |              |             |           | ر        | (                     |                     |             |          |               |          |        |         |         |             |                   |         |
| ~ 4/15 11                        | 607          | X                | 35-SW07                    |                           |              |             |           |          | XX                    | $\langle X \rangle$ | X           | X        |               |          |        |         |         |             |                   |         |
| S Y/15 10                        | 142          | X                | 35 - SD04 -                | 612                       |              |             |           | >        |                       |                     | X           |          |               |          |        |         |         |             |                   |         |
| <u>5 4/15 11</u>                 | 642          | X                | 35 - SD04 -                | 06                        |              |             |           |          | <u> </u>              | :   X               | X           | X        |               |          |        |         |         |             |                   |         |
| 5 4/15 1                         | 642          | X                | 35- SD04-                  | 060                       |              |             |           | 2        | $\langle   \rangle$   | $\langle X \rangle$ | X           | X        |               |          |        |         |         |             |                   |         |
| 5 4/15 11                        | 615          | X                | 35 - SD07.                 | -612                      |              |             |           | /        | ίX                    | X                   | X           | X        |               |          |        |         |         |             |                   |         |
| 5 4/15 10                        | 617          | X                | 35 - SD07 ·                | -06                       |              |             |           | <u> </u> | $\langle   X \rangle$ | (X                  | X           | X        |               |          |        |         |         |             |                   |         |
| 5 4/15 0                         | 822          | X                | 35-6WD-                    | 01                        |              |             |           | )        |                       |                     | X           |          |               |          |        |         |         |             |                   |         |
| W 4/151                          | 530          | X                | 35-RB-0                    | 2                         |              |             |           |          |                       | X                   | K           | Ľ        |               |          |        |         |         |             |                   |         |
|                                  |              |                  |                            |                           |              | <u> </u>    |           |          |                       | · ] :               |             |          |               |          |        |         |         |             |                   |         |
| Turn around time<br>Relinquished |              |                  | or Standard Deriority 2 or |                           |              | 4 ERS       | _         | Date:    |                       | EX (60<br>Fime:     |             |          |               | or 8015) | , VOLA | IILES ( | 624/824 | U), IGNITAB | ILITY, TOTAL LEAD | ) (6010 |
| Jan                              | uno          | Ń                | 1 24/15/94 10              | 00                        |              |             |           |          | <u> </u>              |                     |             |          |               |          |        |         |         |             |                   |         |
| Fielinquished                    | by: (Signa   | iture)           |                            | ne: Received by: (        | Signature)   |             |           | Date:    | ן.<br>                | lime:               |             |          |               |          |        |         |         |             |                   |         |
| Relinguished                     | i by: (Signa | iture)           | Date: Ti                   | ne: Received by: (        | Signature)   |             |           | Date:    | <u>ا</u> ا            | lime:               | -           |          |               |          |        |         |         | •           |                   |         |

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| Names Junes Clutp                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Bur Bur                     | о<br>о (          | -         |               | A        | NAL          | (SIS)    | aure,          |         |      |                         | X    | 1                 | /                   | Lab use only<br>Due Date:           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                             |                   |           |               |          | IEQU         | IRED     | ' /            |         |      |                         | 1    | 1.4               | 1                   |                                     |
| Address: 1723 Cakune BLV                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | > Address: <u>4/6</u> +     | -111-             | 112       | $\frac{r}{2}$ | <u>r</u> |              |          |                | 4       |      | 13                      | '    | у                 |                     | ¥ / L                               |
| <u></u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | CORAL                       | <u>1200</u><br>77 | 1.5%      | 2             | - /      |              |          | 15             | Y       |      | 13                      | /-   | J.                |                     | ¥ / /                               |
| Contact:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Contact:                    | FF.               |           |               | -        |              | 1.<br>1. | I I            | / /     | '  k | N/                      | 13   | ł                 | / ୬                 |                                     |
| Phone: <u>770 - 353 - 3536</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                             |                   |           |               | -        |              | 3        | J              | M       |      | Ί.                      | / 4  | ' /               | 1                   |                                     |
| Fax:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | PO #: 6247                  | 62                | 32        | ,<br>         | -        |              | Ŋ        | 3              | J :     | V ~~ | トり                      | Y    |                   |                     | い/ NPDES [                          |
| · · · · · · · · · · · · · · · · · · ·                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                             |                   |           |               | _        |              | 32       | 15             | $i_{N}$ | 1 ]  | E.                      | 4    |                   | Įζ                  | Screened<br>For Radioactivity       |
| By submitting these samples, you agree to the terms an<br>Proj. No. Project Name                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                             |                   |           |               | _        | 1            | 1 (y)    | ₹              | ']      | 1    | <u> </u>  †             | 1.   | $\langle \rangle$ | Y Y                 | Temp•                               |
| Proj. No. Project Name<br>(TC 234 KICE (AILIP (C)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | ene, Campbi                 | (Ng)              | of Cont   | ainers        |          | 1            | V.       |                | J.      | F.   | 1.7                     | 3    | Y                 | $\hat{\mathcal{A}}$ |                                     |
| Matrix Date Time C G Identifying Marks                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                             | VOA               |           | 250 P.<br>ml  |          |              | Y F      |                | 10      | 14   |                         | Γ].  | ই্বি              | $\gamma$            | Lab. Sample ID                      |
| 5 1/16 1140 X 35- GIUDS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 502-03                      |                   |           |               | >        | < >          | X        |                |         |      |                         | 1    | 1                 |                     | <u></u>                             |
| 5 417 1410- X-35-64.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                             |                   |           |               | 5        | ' Y          | $\vee$   |                |         |      |                         |      |                   |                     |                                     |
| 3 4/17 1615 × 35 6111                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                             |                   |           |               |          |              |          | X              | X       | × ·  | $\overline{\mathbf{x}}$ | ×    |                   |                     |                                     |
| W 1/16 133 X 35 RBO                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 4                           |                   |           |               | X        | ' X          | X        |                |         |      |                         |      |                   |                     |                                     |
| N 4/11 130 Y 35- RB05                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                             |                   |           |               | )        | ' X          | ×        |                |         |      |                         |      | X                 |                     |                                     |
| W 1/12 - 35 TBII                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                             |                   |           |               | >        |              |          |                |         |      |                         |      |                   |                     |                                     |
| 5 1/16 1802 × 36-5001-1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 06                          |                   |           |               | X        | X            | ×        |                |         |      |                         |      | $\vee$            |                     |                                     |
| 5 1/1 1800 V 34 SDOL-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 612                         |                   |           |               | <u> </u> | ' K          | ×        |                |         |      |                         |      | X                 |                     |                                     |
| 54/16 1115 X 36-5002                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <u>(6</u>                   |                   |           |               | X        | ×            | X        |                |         |      |                         |      | X                 |                     |                                     |
| 5 1/16 1715 X 36- 5002                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                             |                   |           |               | ۱ ا      |              | ×        |                |         |      |                         |      | X                 |                     |                                     |
| Turn around time         Of Priority 1 or Standard         Differity 2 of Priority 2 of |                             |                   | / 4 ERS • |               | ate:     |              |          | 2/8020),<br>Re |         |      | r 8015)                 | VOLA | TILES (           | (624/82             | 240), IGNITABILITY, TOTAL LEAD (601 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 520                         |                   |           |               |          |              |          |                | a nau N |      |                         |      |                   |                     |                                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | ime: Received by: (Sign     | ature)            |           | De            | ate:     | <del>ر</del> | îme:     |                |         |      |                         |      |                   |                     |                                     |
| Relinquished by: (Signature) Date: T                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | ime: Received by: (Sign     | ature)            |           | Da            | ate:     | 1            | ime:     |                |         |      |                         |      |                   |                     |                                     |

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|             |          | S        | ubm    | nitteo           | i by       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                         |           | Bill t                                |        |              |           |       |    |     |               |                  | 7         | 7          | 7   | 7        | 1                | /        | / /    | TX 75081 (214) 238                    |
|-------------|----------|----------|--------|------------------|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|-----------|---------------------------------------|--------|--------------|-----------|-------|----|-----|---------------|------------------|-----------|------------|-----|----------|------------------|----------|--------|---------------------------------------|
|             |          | : B      |        |                  |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                         | Name:     | Baller                                |        |              |           |       |    |     | sis<br>RED    | ene<br>Filosofie | 1.        |            | / / |          |                  |          |        | Due Date:                             |
| -           |          |          |        |                  | une        | BLVT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                         |           | 120 6                                 |        | • ·          |           | 1     |    |     |               |                  |           | /          |     | /        | /                |          |        |                                       |
|             |          | 7        | v I    | NC               | 7.85       | 540                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <u> </u>                |           | CLEADE                                |        |              |           | - 1   | \$ |     |               |                  | j.        | /          | /   |          | '                |          |        |                                       |
| С           | ontac    | :        | • (    | LL.              | <b>9</b> . |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | _   c                   | ontact:   | R.HOF                                 |        |              |           | _′    |    |     |               | / 3              | 1         | / /        |     |          | /.               | 1.       |        |                                       |
|             |          |          |        |                  | 3-3        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                         | hone:     | 412.26                                | 7.2    | 07           | 2         |       |    |     | y             |                  | '         | ./         |     |          | /                | / /      | / /    | RCRA                                  |
|             | Fax      | «        |        |                  |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | _                       | PO #:     | 62470                                 | 63     | در ا         |           | _     |    |     | J.            | Y                | M.        | J.         |     | / /      | / /              | '/       |        | NPDES                                 |
|             |          |          |        |                  |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                         |           |                                       |        |              |           | _     |    | 1   | ; [           | 70               | ¥ ŝ       |            | 1   | /        |                  |          | /      | Screened<br>For Radioactivity         |
| Pro         | j. No.   | Pro      | lect N | lame             |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                         |           | Camp<br>Camp<br>Cligcr                | Т      | of Conta     |           | 2     |    | 4   | Ŵ             | 1                | Ţ         | Ţ          |     |          | $\left  \right $ |          | /      | Temp°                                 |
| ı<br>Aalıtx | Date     | Time     | CoEP   | G<br>r<br>a<br>b |            | ing Marks                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                         |           |                                       | VOA    | A/G<br>1 Lt. | 250<br>ml | P/0   | ĥ  | 77  | YA            | 1 K              | #1        |            |     | ' /      |                  |          | Lab. S | ample ID                              |
| 5           | 4/16     |          |        | ×                | 36-        | SDL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 3.0                     | L         |                                       |        |              |           |       | X  | X   | X             | X                |           |            |     |          |                  |          |        |                                       |
| 5           |          | 161      | 6      | X                | 36-        | <u>- SD(</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 3 6                     | 2         |                                       |        |              |           |       | X  | ×   | Y             | X                |           |            |     |          |                  |          | ļ      |                                       |
| 5           | 1/16     | 1715     | [<br>  | Ŷ                | 36         | SDI                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0204                    | • D       |                                       |        |              |           |       | 시  | X   | X             | <u>X</u>         |           |            |     | _        |                  | +        | ļ      |                                       |
|             |          |          | -      |                  |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                         |           |                                       |        |              |           |       |    |     |               |                  |           |            |     |          |                  |          |        |                                       |
|             |          | ·· .     |        |                  |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                         |           |                                       |        |              |           | -+    |    |     |               |                  |           | -+         | -+- |          | -                |          |        |                                       |
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|             |          |          |        | and the second   | -          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                         | and a man | ·····                                 |        |              |           |       |    |     |               |                  |           |            |     |          | +                |          |        | · · · · · · · · · · · · · · · · · · · |
|             |          |          |        |                  |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                         |           | ·····                                 | •      |              |           |       |    |     |               |                  |           |            |     |          |                  |          |        |                                       |
| _           |          | <u> </u> | Ŀ      |                  |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                         |           |                                       |        |              |           |       |    |     |               |                  |           |            |     |          |                  |          |        |                                       |
|             |          | ed by: ( | Signa  | iture)           | [          | Date:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | ity 2 or 50%<br>/ Time: | Rec       | erity 3 or 100% E                     |        | 4 EHS *      | -         | Date: |    |     | x (602<br>ne: | Re               | əmark     | S          |     |          |                  |          |        | ILITY, TOTAL LEAD (6010               |
| Rel         |          | ed by: ( |        |                  |            | Date:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Time:                   | _         | elved by: (Signa                      | ature) |              | 0         | Date: |    | Tir | me:           | ] (              | i u<br>Xu | asi<br>ist |     | ion<br>S | 10               | ₹-1      | K.H.   | ( Many                                |
|             | <u> </u> | ed by: ( | Clana  | A                |            | Date:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Time:                   |           | eived by: (Signa                      |        |              |           | Date: |    | Tir | me:           | - `              | <b></b>   | t A        | 10  | $\sim$   |                  |          |        |                                       |

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|                            | Subm         |            |              |             |                | boratories.<br>Bill te | )         |             |           |                    | AN    | ALY      | 212    |       | 7        | 7       | 7      | 7            | 1                | 7                | Τ     | ΤΤ         | 7       | Lab use c                | only       |
|----------------------------|--------------|------------|--------------|-------------|----------------|------------------------|-----------|-------------|-----------|--------------------|-------|----------|--------|-------|----------|---------|--------|--------------|------------------|------------------|-------|------------|---------|--------------------------|------------|
| Name:                      | Bake         | rE         | <u>nv.</u>   |             | Na             | me: Baker              |           |             |           |                    |       |          |        | 1     | / /      | / /     | / /    | '            |                  | '                | '     |            |         | Due Date                 | :          |
| Address:                   | 1723         | L          | elei         | une E       |                | ress:R                 | USEr      | - Rd        | <u></u>   |                    |       |          |        |       | /        | /.      |        | /            |                  |                  |       |            | /       |                          |            |
|                            | Jacks        | HIVU       | <u>.u.</u> N | 10 285      | 10             | Corayo                 | lus,      | Pa          | 1510      | <u>,s</u>          |       |          |        | 1.    |          | /       | /      | /            |                  | /                | /     |            | ┝       |                          |            |
| Contact:                   | J.Cu         | 62         |              |             | _ Con          | tact: R. Hoff          |           |             |           |                    |       |          |        | 14    | 1        | /       | / /    |              | $\left  \right $ | / /              |       | / /        |         |                          |            |
|                            | 910          | •          |              |             |                | one: <u>-112-26</u>    |           |             |           | - I                |       |          | 5      | Ţ     | '/       |         | /      |              |                  |                  | /     | /          |         | RCRA                     |            |
|                            |              |            |              |             |                | 0#: <u>62470-</u>      | 232       |             |           |                    |       |          | ľ.     | J.    |          |         |        |              |                  | /                | /     | /          |         | NPDES                    |            |
|                            | <u>-</u>     |            |              |             |                |                        |           |             |           |                    |       | -Kala-   |        |       | Kitai    |         | /      | /            | Ι.               |                  | / /   | /          |         | Screened<br>For Radioact |            |
|                            |              |            | u agree      | to the term | ns and conditi | ons contained in NDR   | C's Price | e Scheo     | iule.     |                    |       | J        | . Ĵ    | Y.    | 13       | Ž       | ' /    |              | ' /              | ' /              |       |            |         | Temp                     |            |
| Proj. No.<br>232           | Project N    | ame<br>ΛΔι | (v) L        | leven       | no-Ca          | mp Geiger              | No. o     | f Cont      | ainer     | ŝ                  |       | 7        | 7      | 3     | 1. Ketar | TELANE. |        |              |                  |                  |       |            |         |                          |            |
| 1                          | Time m<br>P  |            |              | ving Marks  |                |                        | VOA       | A/G<br>1 LL | 250<br>ml | P/0                | ,Ř    |          |        | Ý Â   |          | 76      | Y<br>/ |              |                  | $\left  \right $ | /     | Lab.       | Sam     | nple ID                  |            |
| W 4-18 1                   | 1254         | X          | 36-          | swos        | 5              |                        |           |             |           |                    | Х     | ¥.       | ¥      | ¥     | X        |         |        |              |                  |                  |       |            |         |                          |            |
| W 4-18 1                   | 254          | ×          | 36-          | SWOS        | MS/M           | 150                    |           |             |           |                    | R     | ×        | 7      | X     |          |         |        |              |                  |                  |       |            |         |                          |            |
| W 1-18 /                   |              | ¥.         | 36-          | SWOT        | 7 .            |                        |           |             |           |                    | x     | Y        | X      | X     | Ý        |         |        |              |                  |                  |       | <u></u>    |         |                          |            |
| W 41-18 /                  | 1401         | X          | 36-          | SWOG        | 6 -            |                        |           |             |           |                    | x     | Y        | ¥      | ×     | ×        | _       | _      |              |                  |                  |       |            |         |                          |            |
| W 4-18/                    |              | χ,         | <u> 36 -</u> | SWO.        | 50 /           |                        |           |             |           |                    | X     | 4        | ×      | X     | 14       | 35      | 2      |              |                  | $\square$        |       |            |         | <u> </u>                 |            |
| 5 4-190                    |              |            |              |             | <u> 504 -</u>  |                        | ļ         |             | ļ         |                    | X     | ×        |        | X     |          |         |        |              |                  |                  |       |            |         |                          |            |
| S -1-18 (                  |              |            |              |             | 5 - 06         |                        |           |             | <b> </b>  | ┞──┤               | X     | X        | ×      | X     |          | X       |        |              |                  |                  |       |            |         | <u>.</u>                 |            |
| S 4-18 1                   |              |            |              |             | 5-61           |                        |           | <u> </u>    | <u> </u>  |                    | ×     | $\times$ | X      | X     |          | ×       |        |              |                  |                  |       |            |         | w <u></u>                |            |
| 54-181                     |              |            |              |             | 5-M5           | ······                 |           |             | <u> </u>  | $\left  - \right $ |       |          |        |       |          |         |        |              |                  |                  |       |            | <b></b> |                          |            |
| 54-18 (<br>Turn around tim | 311          | X I        | 36           | SDC         | 5-06           | D Priority 3 or 100%   | Priority  | A FRS       |           |                    |       | + BTE    | X (602 | /8020 | TPH      | (418    |        | 15) V        |                  | LES (6           | 24/82 | 40). IGNIT | ABILI   | TY, TOTAL L              | EAD (6010) |
|                            |              |            |              |             | Time:          |                        |           | - Lito      |           | Date:              |       |          | me:    | -     | emarl    |         |        |              |                  |                  |       |            |         |                          |            |
| Relinquished               | 1 by: (Signa | ture)      | P            | Date:/      | Time:          | Received by: (Sign     | ature)    |             |           | Date               |       | Ti       | me:    |       |          |         |        | <del>.</del> |                  |                  |       |            |         |                          |            |
| Relinguished               | by: (Signa   | ture)      |              | Date:       | Time:          | Received by: (Sign     | ature)    |             |           | Date               | :<br> | Ti       | me:    |       |          |         |        |              |                  |                  |       |            |         | •                        |            |

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|               |                  |             |          |               |                  |                          | 1           | oratories.<br>Bill t |                                              |                          |             |                |      |               |              |              | 7       | 7             | 1      | 7       | 1 1    | 7      | 7         | 7      | FX 75081 (2           |           |
|---------------|------------------|-------------|----------|---------------|------------------|--------------------------|-------------|----------------------|----------------------------------------------|--------------------------|-------------|----------------|------|---------------|--------------|--------------|---------|---------------|--------|---------|--------|--------|-----------|--------|-----------------------|-----------|
| 4             |                  | -           | R        | 0011<br>1 6 0 |                  | d by<br>Env.             |             | ne: Baher            |                                              |                          |             |                |      | IALY          |              |              | /       | 1             |        |         | ' /    |        | 11        | '      | Lab use o<br>Due Date | -         |
|               | Nam              | <b>e:</b> \ | 17       | 7 7           | T                | Law Run                  | Nar         |                      |                                              |                          | 0           | $\overline{1}$ | He   | QUI           | RED          |              | / /     | / /           | ' /    |         |        | /      |           |        |                       | •         |
| Ac            | Idres            |             |          |               |                  | Jenne Bud                |             | uss: <u>Azu 7</u>    |                                              |                          |             |                |      | )             |              |              |         |               |        |         |        |        | ' /       | /      |                       |           |
|               |                  |             | <u> </u> | <u>cu</u>     | 50               | nvill, NC 285            | 40          | Corao                | pou                                          | $\mathcal{O},\mathbf{h}$ | <u>a</u> _  | L51            | Ø8   |               |              |              |         | 1.            | /      | / - /   |        |        |           | /      |                       | <u>.</u>  |
| С             | ontac            | ct:         |          | <u>).</u> (   | Ul               | р<br>53·3336             | Conta       | act: K.Hof(          | <u>}                                    </u> |                          | <del></del> | -              |      |               | 5            | 1.           |         | / /           |        | ' /     |        | /      | / /       |        |                       |           |
| ł             | Phon             | e: .        |          | 10.           | - 3              | 53.3336                  | Pho         | ne: <u> </u>         | 9-2                                          | 09                       | 2_          | _              |      |               | Ser, Trees   | The second   | L'ERS   | w             |        |         |        | / /    | / /       |        | RCRA                  |           |
|               | Fa               | <b>x:</b> . |          |               |                  |                          | PC          | )#: <u>62470</u>     | -2                                           | 32                       |             |                |      |               | H<br>H       | Ľ            | Υ.      | y,            |        | /       |        | '/     |           |        | NPDES                 |           |
|               |                  |             |          |               |                  |                          |             |                      |                                              |                          | -           |                |      | b,            | ] .i         | [] (<br>     | N N     |               | 1      |         | ' /    |        | /         |        | Screened              |           |
|               |                  |             |          |               |                  | you agree to the terms a | nd conditio | ns contained in NDR  | C's Pric                                     | e Scheo                  | lule.       |                |      | Ý             | 19           | NY.          | 12      | ' <u>``</u> / | ' /    |         |        | /      | /         |        | For Radioact          |           |
| Pro           | j. No.           |             | Pro      | ject i        | Nam              | 3                        |             |                      | No. c                                        | of Cont                  | ainer       | 2<br>S         |      | $\mathcal{N}$ | $\mathbf{J}$ | $\mathbf{J}$ |         | Y,            | 3/     | /       |        | / /    | /         |        | Temp                  | <u> </u>  |
| ı<br>latrix   | Date             | Ţ.          | Time     | Comp          | G<br>r<br>a<br>b | Identifying Marks        | <u></u>     |                      | VOA                                          | A/G<br>1 Lt              | 250<br>mi   | P/0            | ,    |               | ĬŔ           | ĬŔ           | THE THE | Y K           | Ĭ<br>I |         | / /    |        | La        | b. Sa  | mple ID               |           |
| S             | 4-18             | 314         | 112      |               | Y                | 36-5006-                 | 06          |                      |                                              |                          |             |                | X    | ×             | X            | K            |         | X             |        |         |        | 1      |           |        |                       |           |
| S             | 4-18             | 31          | 410      |               | X                | 36-5006                  | -612        |                      |                                              |                          |             |                | X    | ×             | X            | X            |         | X             |        |         |        |        |           |        |                       |           |
| S             | 4-18             | 31          | 500      |               | X                | 36-5007                  | - 06        | · .                  |                                              |                          |             |                | X    | X             | X            | X            |         | X             |        |         |        |        |           |        |                       |           |
| S             | 4-18             | 314         | 1£       |               | X                | 36-5D07                  | - 612       | -                    |                                              |                          |             |                | X    | X             | X            | X            |         | X             |        |         |        |        |           |        | <u> </u>              |           |
| W             | 4-18             | 3           |          |               | X                | 35-TB12                  | 1           |                      |                                              |                          |             |                | Х    |               |              |              |         |               | •      |         |        |        |           |        |                       | Feet      |
| シ             | 4-19             | 1           | 440      |               | X                | 36-5001                  | '. ,        |                      |                                              |                          |             |                | χ    | 8             | Ø            | X            | 0       |               |        |         |        |        |           |        |                       |           |
| $\mathcal{O}$ | A-19             | 71.         | 420      | 2             | ٨                | 36-540:                  | 2,          |                      |                                              |                          |             |                | ×    | X             | Ŷ            | X            | x       |               |        |         |        |        |           |        |                       |           |
| ノ             | 4-19             | 13          | 350      | 2             | ×                | 36-5003                  |             |                      |                                              |                          |             |                | ×    | x             | x            | χ            | X       |               |        |         |        |        |           |        |                       |           |
| ノ             | <u>4-B</u>       | 1           | 6A       | >             | X                | 36 - RB06                | /           |                      |                                              |                          |             |                | X    | X             | X            | X            |         | X             |        |         |        |        |           |        |                       |           |
|               |                  |             |          |               |                  |                          |             |                      |                                              |                          |             |                |      |               |              |              |         |               |        |         |        |        |           |        |                       |           |
|               | around<br>qquish |             |          | <u></u>       |                  | 1 or Standard Driority 2 |             |                      |                                              | 4 ERS *                  |             |                |      |               |              | · · · · ·    |         |               | or 801 | 5), VOI | ATILES | (624/8 | 240), IGN | ITABIL | ITY, TOTAL LE         | AD (6010) |
|               | ANN ANN          | k           | 5        |               | M                | Date:                    | 630         | Received by: (Sign   | auioj                                        |                          |             | Date:          | ` -] | 111           | ne:          |              | emarl   | 13            |        |         |        |        |           |        |                       |           |
| Reli          | nquish           | hed         | by: (    | Signa         | atore            |                          |             | Received by: (Sign   | ature)                                       |                          | [           | Date:          |      | Ti            | ne:          | 1            |         |               |        |         |        |        |           |        |                       |           |
| ilمR          | nquish           | ned         | by: (    | Signa         | ature            | Date:                    | Time:       | Received by: (Sign   | ature)                                       |                          | 1           | Date:          |      | Tir           | ne:          | 1            |         |               |        |         |        |        |           |        |                       |           |

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|                                                                                                        |                                 | CHAIN                                        | IOF          | CU        | ST    | OD                | RE       | ECC           | DRD               |          | 100        | #<br>89 Ea       | <b>9</b> 3<br>ist C | 500<br>olline | 7<br>Blv | d., Ri          | chardson            | 1, TX    | 75081 (214) 238                        | -559        |
| Submitted by                                                                                           | Bill.te                         |                                              |              |           |       | AN                | ALYS     | SIS           |                   | Τ        | 7          | Τ                | Τ                   | Τ             | 7        | Τ               | TT                  | 11       | Lab use only                           |             |
| Name: Baken Excusionmenta                                                                              | Name: <u>Kasa</u>               | mo                                           |              | _         | -     | RE                | QUI      | RED           |                   | ' I      | '          | ' /              |                     | '             | '        | / /             | / /                 | /        | Due Date:                              |             |
| Address: <u>Corcopolis</u> PM                                                                          | Address:                        |                                              |              |           | _     |                   |          |               |                   |          |            |                  |                     |               | /        |                 |                     |          |                                        |             |
| <u>+</u>                                                                                               |                                 |                                              |              |           | _     |                   |          |               | /                 | /        | /          | /                | /                   | /             | /        |                 | / /                 | -        | ···-                                   |             |
| Contact: Atta R. Hoff                                                                                  | Contact: <u>4 Sam</u>           | 0                                            | <u> </u>     |           | _1    |                   |          |               | / ,               |          | / /        | / /              | /                   | / /           | /        | / 1             |                     | F        |                                        |             |
| Phone: 4/2-269-2099                                                                                    | Phone:                          |                                              |              |           |       |                   |          |               | .¥                | ./       | . J        |                  |                     |               |          |                 |                     |          | RCRA [                                 |             |
| Fax:                                                                                                   | PO #:                           |                                              |              |           | _     |                   | ``       | y .           | J .               | 3<br>J   | Ţ          |                  | /                   |               |          |                 | / -                 |          | NPDES                                  |             |
|                                                                                                        | <u> </u>                        |                                              |              |           |       |                   | X        | 7             | $\langle \rangle$ | X,       | × "        | $\left  \right $ | /                   | .             | /        |                 | /                   |          | Screened<br>For Radioactivity          |             |
| By submitting these samples, you agree to the terms a<br>Proj. No. Project Name                        | and conditions contained in NDR | No. of                                       |              |           |       |                   | J.       | J.            | 1 J<br>2          | Ň        | ł          |                  |                     | ' /           | /        | ' /             |                     |          | Temp °                                 | c           |
| CTO 232 MCB Camp Leteune                                                                               | , Camp Geiger                   |                                              |              |           |       |                   |          | - <u> </u> }- |                   | $\int$   | ¥          |                  |                     |               |          |                 |                     | L        |                                        | ,           |
| Matrix Date Time C G Identifying Marks                                                                 | ·                               | VOA                                          | AVG<br>1 Lt. | 250<br>ml | P/0   | - K               | Ĭ        | 12            |                   | 7 3      | × 1.       | ×,               | /·                  |               | /        |                 | Lab.                | San      | nple ID                                |             |
| W 4/19 1730 X 35-RBC                                                                                   | 17                              |                                              |              |           |       | X                 | X        |               | X                 | 44       |            |                  |                     |               |          |                 |                     |          |                                        |             |
| w 4/19 1940 X 36-5WO                                                                                   | Ψ                               |                                              |              |           |       | K                 | X        | X             | X                 | Х        | `          |                  |                     |               |          |                 |                     |          |                                        |             |
| W 4/20 35-7B                                                                                           | 14<br>14                        |                                              |              |           |       | X                 |          |               |                   |          |            |                  |                     |               |          |                 |                     |          |                                        |             |
| SU 4/19 1947 36-5004                                                                                   |                                 |                                              |              |           |       | X                 | _X       | X             | X                 |          | X          |                  |                     |               |          |                 |                     |          |                                        |             |
| SD 4/14 1945 36- SDU4                                                                                  | -612                            |                                              |              |           |       | X                 | X        | X             | X                 |          | X          | ]                |                     |               |          |                 |                     |          |                                        |             |
|                                                                                                        |                                 |                                              |              |           |       |                   |          |               |                   |          |            |                  |                     |               |          |                 |                     |          | ·····                                  |             |
|                                                                                                        |                                 | <u>                                     </u> |              |           |       |                   |          |               |                   | ]        |            |                  |                     |               |          |                 |                     |          |                                        |             |
|                                                                                                        |                                 |                                              |              |           |       |                   |          |               |                   | <u>.</u> |            |                  |                     |               |          |                 |                     | <u> </u> |                                        |             |
|                                                                                                        | -                               |                                              |              |           | ·     |                   |          |               |                   |          |            |                  |                     |               |          |                 |                     |          |                                        |             |
|                                                                                                        |                                 |                                              |              |           |       |                   |          |               |                   |          |            | -                |                     |               |          |                 |                     |          |                                        |             |
| Turn around time Priority 1 or Standard Priority 2<br>Relinquished by: (Signature) Date:               | 2 or 50%                        | ⊇ Priority 4<br>ature)                       | ERS *        |           | Date: |                   |          | (602<br>ne:   | _                 |          | _          |                  |                     |               |          |                 |                     |          | TY, TOTAL LEAD (601                    | <u></u>     |
| See Alal 4-20.001                                                                                      |                                 |                                              |              |           | /410. |                   |          |               |                   |          | 7          | F                | 4                   | 00            | 44       | ن <i>ی مس</i> " | Ray                 | g        | ans trong                              |             |
| Relinquished by: (Signature) Date:                                                                     | Time: Received by: (Sign        | ature)                                       |              | C         | Date  | : 1               | Tì       | ne:           |                   |          | - <i>1</i> | nos              | νı                  | ta.I          | 40.      | 7 A             | Rich h              | oFI      | Cat typ                                |             |
| Relinquished by: (Signature) Date:                                                                     | Time: Received by: (Sign        | ature)                                       |              |           | Date  | <br>:             | Ti       | me:           | -                 |          | Ą          | biv              | •                   | 10.           | - 6.     | <i>u</i> ~      |                     |          |                                        |             |
| ' Matrix WW - Wastewater W - Water S - S<br><sup>2</sup> Container VOA - 40 ml viai A/G - Amber / Or G |                                 |                                              | Air Bag      | P/O - F   |       | Charco<br>c or ol |          | 0             | ;                 | SL • S   | ludge      | 0                | - 01                |               |          | NC              | DRC can<br>Please F | ax v     | ccept verbal chan<br>vritten changes t | iges.<br>lo |
| OFFICE                                                                                                 |                                 |                                              |              |           |       |                   | <u> </u> |               |                   |          | <u></u>    |                  |                     |               |          |                 |                     | 214      | -238-5592                              |             |

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| ichcape Testing Services NI                                                                                  | DRC Laboratories.              | CHAIN        | OF C         |                 | OD'      | / RE             | CO           | RD       | 1                       | • · C<br>089 E | )C ≠<br>ast Co    | ¥ 9.<br>Ilins B | 3 <i>50</i> (<br>lvd., R | )8<br>Ichardson, | TX 75081 (214) 238-5                                            |
|--------------------------------------------------------------------------------------------------------------|--------------------------------|--------------|--------------|-----------------|----------|------------------|--------------|----------|-------------------------|----------------|-------------------|-----------------|--------------------------|------------------|-----------------------------------------------------------------|
| Submitted by                                                                                                 | Bill to                        |              |              |                 | AN       | ALYS             | IS           | /        |                         | 7              | 77                | 7               | 7                        | 11               | Lab use only<br>Due Date:                                       |
| Name: <u>Baker Environmental</u>                                                                             | Name: <u> </u>                 | <u>e</u>     |              |                 | Re       | QUIR             | ED           |          |                         |                | '/                |                 | / /                      |                  | Due Dale.                                                       |
| Address: <u>Corgopalis, Pg.</u>                                                                              | Address:                       |              |              |                 |          |                  |              |          |                         |                |                   |                 | / /                      |                  |                                                                 |
| Contact: Alla R. Hoff                                                                                        | Contact: <u> Sam</u>           | و            |              |                 |          |                  |              |          |                         |                |                   |                 |                          |                  |                                                                 |
| Phone: <u>412-269-2099</u>                                                                                   | Phone:                         |              | <u> </u>     |                 |          |                  |              |          | ฟู๙                     | ' ./           |                   |                 |                          |                  |                                                                 |
| Fax:                                                                                                         | PO #:                          | ·····        |              |                 |          |                  | /%           |          | 11 Trans                | ,<br>M         |                   |                 | '/                       | /                | NPDES                                                           |
|                                                                                                              |                                |              |              | - <u>-</u>      |          | /                | J.           | 1.60     |                         | \$             |                   | ' /             |                          | /                | Screened<br>For Radioactivity                                   |
| By submitting these samples, you agree to the terms an                                                       | d conditions contained in NDRC | 1            |              | 2               | -        |                  | Ψı           | ર્ક્ષેષ  | 3/15                    |                |                   |                 |                          | /                | Temp °C                                                         |
| Proj. No. Project Name<br><u>CTO 232</u> <u>MCB Camp Lejeune</u>                                             | Camp Geiger                    | No. of C     | Contair      | ners            |          | 12               | 3/.~         | 1 è      |                         |                |                   |                 | / /                      |                  |                                                                 |
| 1<br>Trix Date Time Date Time Date Time Date Time Date Time Date Time Date Date Date Date Date Date Date Dat |                                | VOA A        | NG 2         | 50 P/O          |          |                  | 15           | 1        | 7                       |                | $\lfloor \rfloor$ | //              |                          | Lab. S           | ample ID                                                        |
| 4-17 0825 35-FS03-MC                                                                                         | .09                            |              |              | _               |          | X                | X            | <u>X</u> | X _                     |                |                   |                 |                          |                  |                                                                 |
| 4-17 0825 35-FS03-MC                                                                                         | 10                             |              |              |                 |          |                  | Ш            | ] -      | <u>  </u>               |                |                   |                 |                          |                  |                                                                 |
| 4-14 1900 35 - FS03 - AE                                                                                     | 01                             | <u> </u>     |              |                 | <u> </u> |                  | $\downarrow$ | 11       | <b>  </b>               |                |                   |                 | _                        |                  |                                                                 |
| 4-14 1845 35 -FS03- PS                                                                                       | ò1                             |              |              | _               |          |                  |              |          |                         |                |                   |                 |                          |                  |                                                                 |
| <u>4-14 1845</u> <u>35 - FS03 - PS</u>                                                                       |                                |              |              |                 | <u> </u> |                  |              | 4        | $\downarrow \downarrow$ | ļ              |                   |                 | +                        |                  |                                                                 |
| 4-15 0946 35 - FS03 - R                                                                                      | 503                            |              |              |                 |          |                  | 44           |          | ┨┥──                    |                |                   |                 |                          |                  |                                                                 |
| 4-15 0940 35 - FSO3 - RS                                                                                     | 04                             | ┨            |              | _               | -        | ┝┛╋              | ++           | 44-      | ┨──                     |                |                   |                 |                          |                  | <u></u>                                                         |
| 4-15 0946 35 - FSO3 - PSO                                                                                    | 15                             |              |              |                 |          |                  | $  \cdot  $  |          |                         |                |                   |                 |                          |                  | ·····                                                           |
| 4-15 0940 35 - FSO3 - PSO                                                                                    |                                |              |              |                 | <u> </u> |                  | ┨-┤-         | +        |                         |                |                   |                 |                          | <u>,</u>         | <u> </u>                                                        |
| <u>4-17</u> 0825 <u>35 - FS03 - PS</u>                                                                       |                                | Priority 4 E | ERS *        |                 |          |                  | Y 1          | <b>V</b> | V                       | 1.1 or 80      | 15), VC           | LATILE          | 5 (624/8                 | 240), IGNITA     | BILITY, TOTAL LEAD (6010)                                       |
| Relinquished by: (Signature) Date: 1                                                                         | Time: Received by: (Sign       |              |              | Date            |          | Tin              |              |          | narks                   |                |                   |                 |                          |                  |                                                                 |
| Relinquished by: (Signature) Date:                                                                           | Time: Received by: (Signa      | ature)       |              | Dat             | e:       | Tin              | ne:          |          |                         |                |                   |                 |                          |                  |                                                                 |
| Relinquished by: (Signature) Date:                                                                           | Time: Received by: (Signa      | ature)       |              | Dat             | e:<br>   | Tin              | ne:          |          |                         |                |                   |                 |                          |                  |                                                                 |
| Aatrix WW - Wastewater W - Water S - So<br>Container VOA - 40 ml vial A/G - Amber / Or Gla                   |                                |              | ir Bag<br>P/ | C -<br>D - Plas |          | oal tube<br>ther | 9            | SI       | - Sludg                 | e O            | - Oil             |                 | N                        | Please Fa        | ot accept verbal chang<br>ix written changes to<br>214-238-5592 |

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|             |                |                |             |            | d by                  |              | boratories.<br>Bill                              |             |              |           | 1                  |             |     |            | 7                | 7.   | 7   |          | 77  | 7          | -7     | 71           | Lab use on      |           |
|-------------|----------------|----------------|-------------|------------|-----------------------|--------------|--------------------------------------------------|-------------|--------------|-----------|--------------------|-------------|-----|------------|------------------|------|-----|----------|-----|------------|--------|--------------|-----------------|-----------|
|             | lame           |                |             |            | vironmental           | N            | ame: <u>\                                   </u> |             |              |           |                    | ANALYS      |     | 1          | / /              |      | ' / | ' /      |     |            |        |              | Due Date:       | •         |
|             |                |                |             |            |                       |              |                                                  |             |              |           |                    | TEQUI       | LED | /          |                  |      |     |          |     |            | /      |              |                 |           |
| Ad          | aress          |                | <u>ndor</u> | 010        | <u>, 1</u> <i>q</i> . |              | 'ess:                                            |             |              | •         |                    |             |     | 1          |                  | 1    |     |          | /   | / /        | / /    |              |                 |           |
|             |                |                | <u> </u>    |            | N 44 NO               | -            |                                                  |             |              |           |                    |             | -   | /          | /                | /    |     | / /      |     | ' /        |        |              |                 |           |
| Сс          | ontac          | :: <u>_</u>    | <u>Hn</u>   | Ľ          | }. Hoff               | _ Cor        | tact: <del>&lt; S</del>                          | <u>q me</u> |              |           |                    |             |     | ' I        | 1.1              | ' /  | ' / |          |     |            |        | <i> </i> .   |                 |           |
| F           | hone           | : <u> </u>     | 12-         | 269        | 1-2099                | _   Ph       | one:                                             |             |              |           | _                  |             |     | ŀ          |                  | ~/   |     |          |     | /          | /      | /            | RCRA            | . [-      |
|             | Fax            | e              |             |            | <u> </u>              | P            | 0 #:                                             |             |              |           |                    |             | 1.  | ર્શ્       | 38               | Y :  | 4   | /        |     | / /        | / /    | /            | • NPDES         |           |
|             |                |                |             | •          | <u> </u>              | -            | -                                                |             |              |           |                    |             |     | 1 8        | 1                | X D  | l   |          | / / | ' /        |        |              | Screened        |           |
| By s        | ubmitti        | ng thes        | e sam       | ples, y    | you agree to the term | s and condit | ons contained in NDI                             | RC's Pric   | e Sche       | dule.     |                    |             | 2   | E.         | 3                | 1    | 5   |          |     |            | 1      |              | For Radioactivi |           |
| Proj        | No.            |                | ject N      |            |                       | -            |                                                  | No          | of Con       | lainer    | 2                  |             | ]'  | J          | Y                | 7    |     |          | /   | <i> </i> . | /      |              | Temp            | ℃         |
| <u>C70</u>  | 23             | <u>n</u>       | CB          | Ca         | mp Lejeune            | Camp         | Geiger                                           |             | 1            | 1         |                    | 15          | 1/2 | :/ e       | Y/§              | ∛    | /   | /        | / / |            | /      |              | L               |           |
| 1<br>Matrix | Date           | Time           | Comp        | G r<br>a b | Identifying Marks     |              | U .                                              | VOA         | A/G<br>1 Lt. | 250<br>mi | P/0                |             | /~  |            | $\left  \right $ | /    | / / |          | ' / |            |        | Lab. Sa      | mple ID         |           |
| 1           | 4-15           | 0940           |             |            | 35-FS03-4             | moz          |                                                  |             |              |           |                    | X           | X   | X          | X                |      |     |          |     |            |        |              |                 |           |
|             |                | 0940           |             |            | 35-F503-L             |              |                                                  |             |              |           |                    |             |     |            | 1                |      |     |          |     |            |        |              |                 |           |
|             |                | 0940           |             |            | 35-FS03-L             |              |                                                  |             |              |           |                    |             |     |            |                  |      |     |          |     |            |        |              |                 |           |
|             |                | 094            | <b></b>     |            | 35 - FS03 -           |              |                                                  |             |              |           |                    |             |     |            |                  |      |     |          |     |            |        |              |                 |           |
|             |                | 0940           |             |            | 35-FS0-               |              |                                                  | -           |              | 1         |                    |             | -#  |            | -11              |      |     |          |     |            |        | <del>_</del> |                 |           |
|             |                | 0940           |             | <u> </u>   | 35 - FSO <b>F</b> - A |              |                                                  |             | -            |           |                    | -+++        |     |            |                  |      |     |          |     | _          |        |              |                 |           |
|             |                |                | 1           |            | 1 .                   | -            |                                                  |             | 1            |           |                    | ╾┼╉╌┦       |     | $\uparrow$ | -#               |      |     | <u> </u> |     |            |        | <u></u>      |                 |           |
|             |                | 0940           | 1           |            | 35-FS03-              |              |                                                  |             | +            |           | $\left  - \right $ | ╧╌┤╂╍┧      | ++  | +          | +                |      |     |          |     |            |        |              |                 |           |
|             |                | 0940           |             | <u> </u>   | <u>35-FS03-1</u>      | 0607         |                                                  |             | +            |           | -                  | ╧╍┨┦┥       | +   | +          | +                | -+   |     |          |     |            | +      |              |                 |           |
|             | <del>-15</del> | 0140           | mor         | <u></u>    |                       |              |                                                  |             |              |           | ┝─┤                |             |     | T          | E                | me   |     |          |     |            |        |              |                 | <u></u> . |
|             | around         | <del>674</del> |             |            | 1 or Standard D Prior |              | Priority 3 or 100%                               |             | 4 500        | <u> </u>  |                    | <u>¥</u>    | ¥+  | ¥-         | V                | - m  |     | 5) 10    |     |            | 1/9240 |              | LITY, TOTAL LEA | 0 (6010)  |
|             |                |                |             |            | Date:                 |              | Received by: (Sig                                |             |              |           | Date:              |             | ne: |            | emarl            |      |     | 5), VO   |     |            |        |              |                 |           |
| 4           | /              | i              | L)          | , '        | 4-21-44               | 1500         |                                                  |             |              |           |                    |             |     |            |                  |      |     |          |     |            |        |              |                 |           |
| Reli        | nquish         | ed by:         | (Signa      | ature)     | Date:                 | Time:        | Received by: (Sig                                | nature)     |              |           | Date:              | Tir         | ne: | ]          |                  |      |     |          |     |            |        |              |                 |           |
| D-!!        |                |                | (0)         |            | Date:                 | Time:        | Decelus de 101                                   |             |              |           | Date               |             |     | -          |                  |      |     |          |     |            |        |              |                 |           |
| Heili       | nquisn         | ed by:         | ເວເgກຄ      | ature)     |                       | 11110.       | Received by: (Sig                                | nature)     | • '          |           | Date:              | . 1K        | ne: |            |                  |      |     |          |     |            |        |              |                 |           |
| Matri       |                | ww - v         | /astew      | ater       | W - Water S           | - Soll S     | D - Solid L - Liqui                              | d A         | - Air Ba     |           | C • C              | harcoal tub | 8   |            | 3L - SI          | udge | 0.  | Oil      |     | -          | NDR    | C cannot     | accept verbal   | chang     |

| nc          | ncaj        |           |         |                    |               | ices                      | NDRC                     | Labo    |                     |              |              |           | 1210   | JUY      | KE  | :COH       |      |          | 089 E            | ast C  | ollină | Blv   | d., Rie | chardso    | on, T | <b>X 75081 (214</b> | -          |
|-------------|-------------|-----------|---------|--------------------|---------------|---------------------------|--------------------------|---------|---------------------|--------------|--------------|-----------|--------|----------|-----|------------|------|----------|------------------|--------|--------|-------|---------|------------|-------|---------------------|------------|
|             |             |           | ubmi    |                    | -             |                           |                          |         |                     | Bill to      |              | •         |        | ANAL     | LYS | SIS        |      |          |                  | /      | /      | /     | /       |            |       | Lab use only        | 1          |
|             | Name        | : <u></u> | ker_    | En                 | vira          | nmenta                    | <u>/  </u>               | Nam     | ie: _ <del>~~</del> | Jame_        |              |           |        | REQ      | UIR | RED        | /    |          | $\left  \right $ | / /    |        | ' /   | ' /     | '/         |       | Due Date:           |            |
| Ac          | Idress      | :C        | orag    | 100                | <u>is</u> , / | 0;<br>q                   | _   A                    | ddres   | s:                  | <u></u>      |              |           |        |          |     | /          |      | '        |                  |        |        |       |         |            | /.    |                     |            |
| C           | ontaci      | :         | Hn      | R                  | Ha            | ff                        | -  c                     | conta   | ct:                 | Same         | ·            |           | ,<br>  |          |     |            |      | /        | /                | /      |        |       | / /     |            |       |                     |            |
|             |             |           |         |                    |               | 20199                     |                          |         | ie:                 |              |              |           | _      |          |     |            |      |          |                  |        | '      |       |         |            |       | RCRA                |            |
| 1           |             |           |         |                    |               |                           |                          |         |                     |              |              |           | -      |          |     | 1.5        | 6 /  | /        |                  |        |        |       |         | /          |       | NDDEO               | r          |
|             | Fax         |           |         |                    |               | · · · ·                   |                          | PO      | #:                  |              |              |           | -      |          |     | / 🕉        | :/   |          |                  |        | /      | /     | /       | /          |       | NPDES<br>Screened   | <u>ا</u>   |
| By s        | ubmittir    | na these  | samd    | les. v             | ou agre       | e to the ter              | ms and co                | ndition | s contained In      | NDRC's Price | e Schei      | dule.     |        |          |     | Kala Life. |      | /        |                  |        | / /    | / /   | / /     | /          |       | For Radioactivit    | <u>,</u> [ |
|             | j. No.      |           | ect N   |                    |               |                           |                          |         |                     |              | f Cont       |           | ²<br>S |          | 1   |            |      | / /      | ' /              |        |        |       |         |            |       | Temp                | °          |
| 1<br>Matrix | Date        | Time      | C o m p | G<br>Ta<br>b       | Ident         | ifying Mark               | <b>S</b>                 |         |                     | AOV          | A/G<br>1 Lt. | 250<br>mi | P/0    |          |     | * /        |      |          |                  |        |        |       | /       | Lab        | . Sa  | mple ID             |            |
|             | <u>4-21</u> | 1445      |         |                    | 35            | - TB 16                   |                          |         |                     | 2            |              |           | ŀ      |          | X   |            |      |          |                  |        |        |       |         |            |       |                     |            |
|             | 4-21        | 1445      |         |                    | 35.           | - TB17                    |                          |         |                     | 2            |              |           |        |          | X   |            |      |          |                  |        |        |       |         |            |       |                     |            |
|             | 4-21        | 1445      |         |                    | 35-           | - TB18                    |                          |         |                     | 2            |              |           |        |          | x   |            |      |          |                  |        |        |       |         |            |       |                     |            |
|             | 4-21        | 1445      |         |                    |               | TBI                       |                          |         |                     | 2            |              |           |        |          | X   |            |      |          |                  |        |        |       |         |            |       |                     |            |
|             | 4-21        | 1445      |         |                    |               | -TBZ                      |                          |         |                     | 2            |              |           |        | j        | (   |            |      |          |                  |        |        |       |         |            |       |                     |            |
|             |             |           |         |                    |               |                           |                          |         |                     |              |              |           |        | ľ        |     |            |      |          |                  |        |        |       |         |            |       |                     |            |
|             |             |           |         |                    |               |                           |                          |         |                     |              |              |           |        |          |     |            |      |          |                  |        |        |       |         |            |       |                     |            |
|             |             |           |         |                    |               |                           |                          |         |                     |              |              |           |        |          |     |            |      |          |                  |        |        |       |         |            |       |                     |            |
|             |             |           |         |                    |               |                           |                          |         |                     |              |              |           |        |          |     |            |      |          |                  |        |        |       |         |            |       |                     |            |
|             |             |           |         |                    |               |                           |                          |         |                     |              |              |           |        |          |     |            |      |          |                  |        |        |       |         |            |       |                     |            |
|             | around t    |           |         |                    | or Stan       |                           | <u>.</u>                 |         | Priority 3 or 100   |              | 4 ERS        |           |        |          |     | <u> </u>   |      | <u> </u> | 1 or 80          | 15), V | OLATI  | ES (6 | 24/824  | 10), IGNI' | TABIL | ITY, TOTAL LEAD     | (601       |
| Reli        | nquish      | əd by: (  | Signal  | tur <del>o</del> ) |               | Date:<br>4/-2/- <i>44</i> | Time:                    | - I .   | Received by:        | (Signature)  |              |           | Date:  |          | Tim | 18:        | Rema | rks      |                  |        |        |       |         |            |       |                     |            |
| Reli        | nquish      | ed by: (  |         | ture)              |               | Date:                     | <i>1506</i><br>Time:<br> |         | Received by: (      | Signature)   |              |           | Date:  | <b>-</b> | Tim | 10:        |      |          |                  |        |        |       |         |            |       |                     |            |
| Pali        | nguieb      | ed by: (  | Signal  | turo)              |               | Date:                     | i<br>Time:               |         | Received by: (      | Signature)   |              |           | Date:  |          | Tim |            |      |          |                  |        |        |       |         |            |       |                     |            |

| chcape Testing Services NDRC Laboratories. Cl                                                                                                                           | HAIN OF CUST                | ODY RECOR                      | RD 1089 East Co               | llins Blvd., Richardson, TX 75081 (214) 238-3                                   |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|--------------------------------|-------------------------------|---------------------------------------------------------------------------------|
| Submitted by Bill to<br>Name: <u>Baker Environmental</u> Name: <u>Same</u>                                                                                              | ٤                           | Analysis<br>Required           |                               | Lab use only Due Date:                                                          |
| Address: <u>Cora opolis</u> , Pa Address:                                                                                                                               |                             |                                |                               | ////                                                                            |
| Contact: <u>Attn R. Hoff</u> Contact: <u>Sam</u><br>Phone: <u>412-269-2099</u> Phone:                                                                                   |                             |                                | 3                             |                                                                                 |
| Fax: PO #:                                                                                                                                                              |                             | Kale Lilon                     | Lemmer Less                   | NPDES Screened                                                                  |
| y submitting these samples, you agree to the terms and conditions contained in NDRC's                                                                                   | s Price Schedule.           |                                | Land Charles                  | For Radioactivity        Temp.    °C                                            |
| roj. No. Project Name<br>TO 232 MCB Camp Lejeune, Camp Geiger                                                                                                           | No. of Containers           | 3.3                            |                               |                                                                                 |
| 1<br>ix Date Time Time C G r Identifying Marks                                                                                                                          | VOA A/G 250 P/O<br>1 Lt. ml | 1.7.7                          | 77//                          | Lab. Sample ID                                                                  |
| 4-17 0825 35-F503 - Smo3                                                                                                                                                |                             |                                | X X                           |                                                                                 |
| <u>4-170825</u> <u>35 - FS03 - SM04</u>                                                                                                                                 |                             | ┼╌┼┟┼┟┼                        |                               |                                                                                 |
| 4-14 0930 35-FS03-MC01                                                                                                                                                  |                             | ┼╌╎╏╌┼╊┿                       | ╋╋╋                           |                                                                                 |
| $\frac{4-17\ 0825}{35-F503-MC02}$                                                                                                                                       |                             | ┼╴┼╏╌┝┛┼╴                      |                               |                                                                                 |
| 4-170825 35-FS03-MC03                                                                                                                                                   |                             | ┼┈┝╋╾┝╋┽╸                      |                               |                                                                                 |
| 4-170825 35 - FS03 - MC04                                                                                                                                               |                             |                                |                               |                                                                                 |
| 4-170825 35 - FS03 - MC05                                                                                                                                               |                             | ┼─┼╂┾╂┾                        |                               |                                                                                 |
| 4-170825 35-F503-MC06                                                                                                                                                   |                             | ┼┈┼╉╌┾╏┯╴                      |                               |                                                                                 |
| 4-170825 35-FS03 - MC07                                                                                                                                                 |                             |                                |                               |                                                                                 |
| 4-7         0825         35 - FS03 - MC08           urn around time         □ Priority 1 or Standard         □ Priority 2 or 50%         □ Priority 3 or 100%         □ | Priority 4 ERS *            | * BTEX (602/6                  | 8020), TPH (418.1 or 8015), V | OLATILES (624/8240), IGNITABILITY, TOTAL LEAD (6010                             |
| telinguished by: (Signature) Date: Time: Received by: (Signature)<br>4-21-94 /500                                                                                       |                             |                                | Remarks                       |                                                                                 |
| telinquished by: (Signature) Date: Time: Received by: (Signature)                                                                                                       | ture) Dat                   | e: Time:                       | -                             | بو                                                                              |
| telinquished by: (Signature) Date: Time: Received by: (Signature)                                                                                                       | ture) Dat                   | e: Time:                       |                               |                                                                                 |
| latrix WW - Wastewater W - Water S - Soli SD - Solid L - Liquid<br>container VOA - 40 mi vial A/G - Amber / Or Glass 1 Liter 250 ml - Glass wid                         |                             | Charcoal tube<br>stic or other | SL - Sludge O - Oil           | NDRC cannot accept verbal chan<br>Please Fax written changes to<br>214-238-5592 |

| and a second second second second second second second second second second second second second second second |                                                                |                  |               | Versionalis - Mail Interactio |                                                       | )                                                                 |
|----------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|------------------|---------------|-------------------------------|-------------------------------------------------------|-------------------------------------------------------------------|
| Inchcape Testing Services                                                                                      | NDRC Laboratories.                                             | CHAIN O          | F CUS         | TODY RECO                     | COC # 935008<br>1089 East Collins Blvd., Richardso    | n, TX 75081 (214) 238-55                                          |
| Submitted by<br>Name: <u>Baker Environmental</u><br>Address: <u>Corgopolis</u> , Pa.                           | Name: <u> </u>                                                 |                  |               | ANALYSIS<br>REQUIRED          |                                                       | Lab use only<br>Due Date:                                         |
| Contact: <u>AHn R. Haff</u><br>Phone: <u>412 - 269 - 2099</u><br>Fax:                                          | Contact: <u>Say</u><br>Phone:<br>PO #:                         |                  |               | Kalo F.                       | Communities<br>Rest. 1 Pro<br>Inagramis               | RCRA       NPDES       Screened       For Radioactivity           |
| Proj. No. Project Name                                                                                         |                                                                | No. of Cor       | 2             |                               |                                                       | Temp °C                                                           |
| CTO Z32 MCB Camp Lejeun<br>Matrix Date Time R A dentifying Marks                                               | e, Cump Seiger                                                 | VOA A/G<br>1 Lt. | 250 P/O<br>mi | 1 / 1'N                       | Lab.                                                  | Sample ID                                                         |
| 4-17 0825 35-FS03-                                                                                             | LG03                                                           |                  |               | X X                           | X X                                                   |                                                                   |
| 4-17 0825 35-FS03-                                                                                             | LGOY                                                           |                  |               |                               |                                                       |                                                                   |
| 4-17 0825 35-FS03-                                                                                             | LG05                                                           |                  |               |                               |                                                       |                                                                   |
| 4-17 0825 35 - FSG 3-                                                                                          | LGOL                                                           |                  |               |                               |                                                       |                                                                   |
| 4-17 0825 35- FSG3-                                                                                            | LG07                                                           |                  |               |                               |                                                       |                                                                   |
| 4-17 0825 35-FS03-                                                                                             | LGO8                                                           |                  |               |                               |                                                       |                                                                   |
| 4-17 0825 35-FJ03-                                                                                             |                                                                |                  |               |                               |                                                       |                                                                   |
| 4-15 0940 35-FS03-                                                                                             |                                                                |                  |               |                               |                                                       |                                                                   |
| 4-14 0930 35-F303-                                                                                             |                                                                |                  |               |                               |                                                       |                                                                   |
| 4-14 0930 35-FS03-                                                                                             |                                                                |                  |               |                               |                                                       |                                                                   |
| Turn around time Priority 1 or Standard Priorit                                                                | ty 2 or 50%                                                    |                  | ;*            | + BTEX (602/8                 | 20), TPH (418.1 or 8015), VOLATILES (824/8240), IGNIT | ABILITY, TOTAL LEAD (6010)                                        |
| Relinquished by: (Signature) Date:<br>Date:<br>4-2/94                                                          | Time: Received by: (Signature)                                 |                  | Date          | e: Time:                      | Remarks                                               |                                                                   |
| Relinquished by: (Signature) Date:                                                                             | Time: Received by: (Signa                                      | ature)           | Dat           | e: Time:                      |                                                       |                                                                   |
| Relinquished by: (Signature) Date:                                                                             | Time: Received by: (Signa                                      | ature)           | Dat           | e: Time:                      |                                                       |                                                                   |
| Matrix WW - Wastewater W - Water S -<br>Container VOA - 40 ml vtal A/G - Amber / Or                            | - Soll SD - Solid L - Liquid<br>Glass 1 Liter 250 ml - Glass w |                  |               | Charcoal tube<br>tic or other | SL - Sludge O - Oil NDRC can<br>Please F              | ot accept verbal changes<br>ax written changes to<br>214-238-5592 |

| Inchcape Testing Services NDRO<br>Submitted by                                                               | Bill                      | to         |              |             | A     | NALY  |              |        | 7      | 1       | [ ]    | 7        | 1       | 7       | []          | / Lab      | use only<br>Date: | Ŷ           |
|--------------------------------------------------------------------------------------------------------------|---------------------------|------------|--------------|-------------|-------|-------|--------------|--------|--------|---------|--------|----------|---------|---------|-------------|------------|-------------------|-------------|
| Name: <u>Baker Environmental</u>                                                                             | Name: <u> Sa</u>          | me         |              |             | _   R | EQUI  | RED          | 1      | /      | / /     |        |          | / /     |         |             |            | Date:             |             |
| Address: <u>Corgopolis</u> , PA A                                                                            | ddress:                   |            |              |             | -     |       |              |        |        |         | /      |          | / /     |         |             |            |                   |             |
| Contact: Attn R. Hoff                                                                                        | Contact: <u></u>          | me.        |              |             |       |       |              | / .    | /      |         | / /    | ' /      |         |         |             |            |                   |             |
|                                                                                                              | Phone:                    |            |              |             | _     |       |              | /      | 3      |         | ~/     |          |         | ' /     | . /         | RC         | RA                | Ľ           |
| Fax:                                                                                                         | PO #:                     |            |              |             | -     |       |              | 2      | ale la | Inergen |        |          | //      | /       | /           |            | DES               |             |
| By submitting these samples, you agree to the terms and co                                                   | nditions contained in NDF | IC's Price | Scheo        | lule.       |       | .     | Kolo.        | e la   | est    |         | 5/     |          |         |         | /           |            | adioactivit       | <u> </u>    |
| Proj. No. Project Name<br><u>CTO 232</u> <u>MCB Camp Lejeune, Co</u><br>Intro Date Time of Identifying Marks | mp Geiger                 | No. o      | f Cont       | ainers      |       |       |              | y k    | J.     |         | /.     |          | '.      |         |             | ſem        | p                 | °           |
| P B                                                                                                          | ···                       | VOA        | A/G<br>1 Lt. | 250 F<br>mi | /0    |       |              |        | /      | 1/      |        |          |         |         | Lab. S      | Sample I   | D                 |             |
| 4-14 1230 35-FSOZ-AEC                                                                                        | )/                        |            |              |             | _     | X     | X            | X      | X      |         |        |          |         |         |             |            |                   | <del></del> |
| <u>4-14 / 230</u> <u>35 - F50 2 - P50</u>                                                                    | 1                         |            |              |             |       |       | -            | ~      |        |         |        |          |         |         | <u></u>     |            |                   |             |
| 4-14 1230 35-F802-PS0                                                                                        | 2 mgm                     |            |              |             |       |       | Ш            | $\bot$ |        |         |        |          | $\bot$  |         | <u> </u>    |            |                   |             |
| 4-17 0715 35- FSOP-19MGC                                                                                     | YF-01 HET                 |            |              |             |       |       |              |        |        |         |        |          |         |         |             |            |                   |             |
| 4-17 0715 35 - FS02 - MCC                                                                                    | 2                         |            |              |             |       |       |              |        |        |         |        |          |         |         |             |            |                   |             |
| 4-14 0900 35-FS02 - CFC                                                                                      | H.                        |            |              |             |       |       |              |        |        |         |        |          |         |         |             |            |                   |             |
| 4-15 1530 35 - FSOI - GSO                                                                                    | 1                         |            |              |             |       |       |              |        |        |         |        |          |         |         |             |            | **                |             |
| 4-15 1530 35 - F501 - AEO                                                                                    | •                         |            |              |             |       |       |              |        |        |         |        |          |         |         |             |            |                   |             |
| 4-15 1530 35 - FSOI - PSOI                                                                                   |                           |            |              |             |       |       |              |        |        |         |        |          |         |         |             |            |                   |             |
| 4-15 0940 35-FS03 - WM                                                                                       |                           |            |              |             |       | V     | $\mathbf{V}$ | J      | V      |         |        |          |         |         |             |            |                   | <u> </u>    |
| Turn around time Priority 1 or Standard Priority 2 or 50                                                     | 6 D Priority 3 or 100%    |            | 4 ERS        | •           |       | * BTE | K (802       | /8020  | ), TPH | (418.1  | or 801 | 5), VOL/ | TILES ( | 624/824 | 10), IGNITA | BILITY, TO | TAL LEAD          | ) (601      |
| Relinquished by: (Signature) Date: Time:                                                                     |                           | nature)    |              | D           | ate:  | Tir   | ne:          | R      | emar   | ks      |        |          |         |         |             |            |                   |             |
| Relinquished by: (Signature) Date: Time                                                                      | Received by: (Sigr        | nature)    |              | D           | ate:  | Th    | ne:          |        |        |         |        |          |         |         |             |            |                   |             |
| Relinquished by: (Signature) Date: Time                                                                      | Received by: (Sigr        | nature)    |              | D           | ate:  | Th    | ne:          |        |        |         |        |          |         |         |             |            |                   |             |

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|             |                       | -          |                  |                  | _             | ices                                         |             |          | boratories.                    |              |         |             |           | JST    |     | 311          |     |           | <u>-</u>               |          | T          |                  | 7     | 18 DIV | u., M  | 7        | 7 7     |           | 1 (214           | _     |
|-------------|-----------------------|------------|------------------|------------------|---------------|----------------------------------------------|-------------|----------|--------------------------------|--------------|---------|-------------|-----------|--------|-----|--------------|-----|-----------|------------------------|----------|------------|------------------|-------|--------|--------|----------|---------|-----------|------------------|-------|
|             |                       |            |                  |                  | d by          | t.                                           | ,           |          | ame:                           | Bill to      |         |             |           | 25     | AN/ |              |     |           |                        |          |            | /                | /     | /      | /      |          | / /     | Due I     | use onl<br>Date: | У     |
|             | Name                  | : <u>P</u> | IKer_            | <u></u>          | nviron<br>0   | menta                                        | <b>!</b>    |          |                                |              |         |             |           | -      | Red | QUII         | REC | )         | /                      | /        | / · .      | $\left  \right $ | / /   |        | '      | ' /      |         |           |                  |       |
| Ac          | dress                 | s:         | vorac            | ipol             | <u>is, 19</u> | <u>.                                    </u> |             | Add      | ress:                          |              |         |             |           |        |     |              |     |           |                        | ' /      |            |                  |       |        |        |          | /       |           |                  |       |
| С           | ontac                 | : A        | tln              | R.               | Hoff          |                                              |             | Cor      | itact: <u>&lt;</u>             | Same         |         |             |           |        |     |              |     | /         |                        |          |            | /                | /     | /      | /      |          | /       |           |                  |       |
|             |                       |            |                  |                  | 1-20          |                                              |             |          | one:                           | -            |         |             |           |        |     |              | 1   | /         |                        |          |            |                  | 1     | '      | ' /    |          | i       | RCI       | RA               | Ľ     |
|             |                       |            |                  |                  |               |                                              |             |          | °O #:                          |              |         |             |           |        | ."  |              | /.  | J.        | Le l                   | 3        | .J         |                  |       |        |        |          |         | NP        | DES              | Г     |
|             | 1 47                  |            |                  |                  |               |                                              |             |          | • ···                          |              |         |             |           |        |     |              | 1   |           |                        | Ż        | Jer,       | 1                | /     |        | /      |          |         | Screen    | ned              | <br>Г |
| By s        | ubmitti               | ng thes    | e samj           | ples, y          | ou agre       | e to the t                                   | erms and    | l condit | ions contained in              | NDRC's F     | rice S  | Sched       | ule.      |        |     | /            | 12  | الم       | No.                    | J.S      | <u>}</u> , | / /              | / ' / | / /    | / /    | /        |         |           | dioactivit       |       |
|             | i. No.<br>0 <i>23</i> |            | nject N<br>MC    | B                |               | Lejel                                        | Me,         | Cam      | <u>o Geiger</u>                | N            | o. of ( | Conta       | ainer     | 2<br>S |     | 15           | 3   | Z         | 5                      | THI      | /          |                  |       |        |        |          |         | Temp      | )<br>            | °(    |
| 1<br>Matrix | Date                  | Time       | C<br>o<br>m<br>P | G<br>r<br>a<br>b | Identi        | iying Ma                                     | rks         |          |                                | V            | A       | NG<br>1 Li, | 250<br>mi | P/0    | _/  | / ``         | 7   | $\sum$    | 7                      | 7        | $\square$  |                  |       |        |        | La       | b. Sa   | mple II   | D                |       |
|             | 4-18                  | 0800       | ,                |                  | 36-           | <u>FS03</u>                                  | - WC        | 03       |                                |              |         | ·           |           |        |     | X            | Х   | X         | X                      |          |            |                  |       |        |        |          |         |           |                  |       |
|             | 4-18                  | 0800       |                  | <u> </u>         | 36-1          | 503                                          | <u>- WC</u> | 04       |                                |              |         |             |           |        |     |              |     |           |                        | <u> </u> |            | ļ                |       |        |        |          |         |           | ·····            |       |
|             | <u>4-18</u>           | 080        | ,<br>            |                  | 36-1          | FS03                                         | - WC        | 05       |                                |              |         |             |           |        |     |              |     |           | 11                     |          | <u> </u>   |                  |       |        |        | <b></b>  |         |           |                  |       |
|             | 4-18                  | 080        | )                |                  | 36-           | <u>FS03</u>                                  | -wc         | К        |                                |              |         |             | <br>,     |        |     |              |     |           |                        | <u> </u> |            | ļ                |       |        |        |          |         |           | •                |       |
|             | 4-18                  | 0800       | /                |                  | 36-           | FS03                                         | -WC         | 07       |                                |              |         |             |           |        |     |              |     |           | 11                     | <u> </u> |            |                  |       |        |        |          |         |           |                  |       |
|             | 4-18                  |            |                  |                  | 36-1          | FS03                                         | -wc         | 08       |                                |              |         |             |           |        |     |              |     |           | Ц.                     | <u> </u> |            | ļ                |       |        |        |          |         |           |                  |       |
|             | <u>4-18</u>           |            |                  |                  | 36-1          | 503                                          | -wcc        | )1       | •                              |              |         |             |           |        |     |              |     | $\square$ | $\downarrow\downarrow$ | Ļ        | 1          | <br>             |       |        |        |          |         |           |                  |       |
|             | 4-18                  | 0800       | 1                |                  | 36-           | FS03                                         | - WC1       | 0        |                                |              |         |             |           |        |     |              |     |           |                        |          |            |                  |       |        |        |          |         |           |                  |       |
|             | <u>4-14</u>           | 0900       |                  |                  |               |                                              | - LG (      |          |                                |              |         | :           |           |        |     |              |     | Ц.        | $\square$              |          |            | ļ                |       |        |        |          |         |           | <u>.</u>         |       |
| _           | 4-17                  |            | <u> </u>         |                  | 35-           | F503                                         | -LGO        | 2        |                                |              |         |             |           |        |     | $\mathbf{V}$ | Y   | V         | L¥                     |          |            |                  |       |        |        |          |         |           |                  |       |
|             | around                |            |                  |                  |               |                                              |             |          | Priority 3 or 100 Received by: |              |         |             |           | Data   |     |              |     |           | -                      |          | 1.1 or 8   | 015), V          | OLAT  | ILES ( | 624/82 | 40), IGN | NITABIL | .017, 101 | AL LEAD          | (6010 |
|             | 2                     |            | Ŵ                |                  |               | 4-21-0                                       | 1           |          |                                | Congritation |         | . • .       |           | Dato.  |     |              |     | 1.        | 10/110                 |          |            |                  |       |        |        |          |         |           |                  |       |
| Rel         | nquish                | ed by:     | (Signa           | aturø)           |               | Date:                                        | T T         | me:      | Received by:                   | (Signature   | ə)      |             |           | Date:  |     | Tir          | ne: |           |                        |          |            | -                |       |        |        |          |         |           |                  |       |
|             | nguish                | ed by:     | (Signa           | ature)           |               | Date:                                        | T           | me:      | Received by:                   | (Signature   | <br>3)  |             |           | Date:  |     | Tir          | ne: | 4         |                        |          |            |                  |       |        |        |          |         |           |                  |       |

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OFFICE USE ONLY

| Submitted by                                                                                              | Bill                      | to        |              |           |          | NALY                   | /010                    |              | 7                   | 7       | 77        | 7       | 7   | TT         | 7 1     | Lab use only           |
|-----------------------------------------------------------------------------------------------------------|---------------------------|-----------|--------------|-----------|----------|------------------------|-------------------------|--------------|---------------------|---------|-----------|---------|-----|------------|---------|------------------------|
| Name: <u>Baker Environmental</u>                                                                          | Name:Sa                   |           |              |           | 100      |                        |                         | )            | /                   |         |           |         |     | / /        | / /     | Due Date:              |
|                                                                                                           | \ddress:                  |           |              |           |          |                        |                         |              |                     |         |           |         |     |            | ′ /     |                        |
| Address                                                                                                   |                           |           |              |           | _        |                        |                         |              |                     |         |           |         | '/  | / /        |         |                        |
| Contact: Attn R. Hoff                                                                                     | Contact: Sa               | me,       |              |           |          |                        |                         | /            |                     | /       |           |         | /   |            |         |                        |
| Phone: <u>412-269-2099</u>                                                                                | Phone:                    |           |              |           |          |                        | /                       | /            | 15                  |         | ' /       |         |     |            | /       | RCRA                   |
|                                                                                                           | PO #:                     |           |              |           |          |                        |                         | Y            | E                   | 8       | 4         | / /     | / / | / /        |         | NPDES                  |
| Fax:                                                                                                      | PO #:                     |           |              |           | -        |                        |                         | E            | J.                  | Y.      | Ĩ         | ' /     |     |            |         | Screened               |
| By submitting these samples, you agree to the terms and c                                                 | onditions contained in ND | RC's Pric | e Sched      | lule.     |          | •                      | /3                      | Sallies      |                     | Theme - | た/        |         |     | / /        |         | For Radioactivity      |
| Proj. No. Project Name                                                                                    | C                         | No. d     | of Cont      | ainer     | 2<br>5   | /                      |                         |              | ' <i>I</i>          | 1       |           |         |     | /          |         | Temp °C                |
| <u>2 TO Z3Z MCB Camp Lejeune, Camp Lejeune, Ca</u>                                                        | imp Geiger                | VOA       | 10           |           |          | / ·                    | K∕/ı                    | র্থ          | 2                   | E       |           | / /     |     | /          |         |                        |
| trix Date Time 0 r identifying Marks                                                                      |                           | VUA       | A/G<br>1 L1. | 250<br>mi | P/U      |                        | $\square$               | $\square$    |                     | $\bot$  | $\square$ |         |     | /'         | Lab. Sa | mple ID                |
| 4-18 0800 36-FS03-SM02                                                                                    |                           |           |              |           |          | X                      |                         | X            | $\langle X \rangle$ | <u></u> |           |         |     |            |         |                        |
| 4-18 0860 36-F503-SMO                                                                                     | 3                         |           |              |           |          |                        |                         |              |                     |         |           |         |     |            |         | ·····                  |
| 4-18 0800 36-FS03-Smot                                                                                    | £                         |           |              |           |          | $\square$              |                         |              |                     |         |           |         |     |            |         |                        |
| 4-18 1600 36 - FS03 - SMO                                                                                 | 5                         |           |              |           |          |                        |                         | $\downarrow$ |                     |         |           |         |     |            |         |                        |
| 4-18 0800 36-FS03-PS01                                                                                    |                           |           | ļ            |           |          |                        |                         | $\square$    |                     |         |           |         |     |            |         |                        |
| 4-18 0800 36- FS03- LMB                                                                                   | /                         |           |              |           |          |                        | $\downarrow$            |              |                     | ļ       |           |         |     |            |         |                        |
| 4-20 0800 36-F503-LMB                                                                                     | 12                        |           | ļ            | <b> </b>  |          | $\downarrow\downarrow$ | $\square$               | $\bot$       |                     |         | ┣━━┣      |         |     |            |         |                        |
| 4-20 0815 36-FS03 - WM                                                                                    | /                         |           |              |           |          |                        | $\downarrow \downarrow$ | $\downarrow$ |                     |         |           |         | _   | ┞          |         |                        |
| 4-18 0800 36-FS03-WCC                                                                                     | <u>/</u>                  | _         |              |           | <b> </b> |                        |                         | 11           |                     |         |           |         |     | <b></b>    |         |                        |
| 4-18 0800 · 36- FS03 - WCC                                                                                | 2                         |           |              |           |          | V                      | <u> </u>                | V            |                     |         |           |         |     | (824/8240) |         | ITY, TOTAL LEAD (6010) |
| Turn around time □ Priority 1 or Standard □ Priority 2 or 5<br>Relinquished by: (Signature) □ Date: , Tim |                           |           | y 4 EHS      |           | Date:    |                        | EX (6(<br>lime:         | ·····        | Rema                |         |           | 0), VUL |     |            |         |                        |
| he stal 4-21-04 150                                                                                       |                           | ,         |              |           |          |                        |                         |              |                     |         |           | •       |     |            |         |                        |
| Relinquished by: (Signature) Date: Tin                                                                    |                           | nature)   |              |           | Date:    | -                      | Time:                   |              |                     |         |           |         |     |            |         |                        |
| Relinquished by: (Signature) Date: Tin                                                                    | e: Received by: (Sig      | nature)   |              |           | Date:    | <u> </u>               | Time:                   |              |                     |         |           |         |     |            |         |                        |
|                                                                                                           |                           | ,         |              |           |          | 1                      |                         |              |                     |         |           |         |     |            |         |                        |

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|                                                                         | ORC Laboratories.             | CHAIN O        | FCUSTO                                                                                                            | DDY RECO       | RD 1089       | East Collins I  | Blvd., Richardson    | , TX 75081 (214) 238-559  |
|-------------------------------------------------------------------------|-------------------------------|----------------|-------------------------------------------------------------------------------------------------------------------|----------------|---------------|-----------------|----------------------|---------------------------|
| Submitted by                                                            | Bill t                        |                |                                                                                                                   | ANALYSIS       |               |                 |                      | Lab use only<br>Due Date: |
| Name: <u>Baker Environmental</u>                                        | Name: <u>+ San</u>            | ne             |                                                                                                                   | REQUIRED       |               |                 |                      |                           |
| Address: <u>Corgopolis</u> , <u>Pa</u>                                  | Address:                      |                | <u>·</u>                                                                                                          |                |               |                 |                      |                           |
| Contact: Alta R. Hoff                                                   | Contact: Sa                   | me             | ,                                                                                                                 | /              | ' / / /       |                 |                      |                           |
| Phone: 412 - 269-2099                                                   | Contact: $Sa$<br>Phone:       |                |                                                                                                                   | [*             |               |                 |                      | RCRA                      |
| Fax:                                                                    | PO #:                         |                |                                                                                                                   |                |               |                 |                      | NPDES                     |
|                                                                         |                               |                |                                                                                                                   | the tiles      | Comunication  |                 |                      | Screened                  |
| By submitting these samples, you agree to the terms and                 | t conditions contained in NDR | C's Price Sche | dule.                                                                                                             | 13             |               | °/ / /          |                      | For Radioactivity         |
| Proj. No. Project Name<br>CTO Z32 MCB Camp Leieune                      | C C                           | No. of Con     | tainers                                                                                                           | 4              | 397           |                 |                      | Temp °C                   |
| <u>CTOZ32 MCB C9mp Lejeune</u><br>atrix Date Time m e locatifying Marks | <u>, Comp Geiger</u>          | VOA A/G        | 250 P/O                                                                                                           |                |               |                 | / /                  | Comple ID                 |
|                                                                         |                               | 14             | m                                                                                                                 | -/-/'          | 7//           |                 |                      | Sample ID                 |
| 4-18 1000 36-F501 - SM                                                  | 03                            |                | <u> </u>                                                                                                          |                | <u>X X   </u> |                 |                      |                           |
| 4-18 1000 36 - FSOI - SM                                                |                               |                |                                                                                                                   | ·              |               |                 | .                    |                           |
| 4-18 1000 36-FS01 - SMC                                                 | 5                             |                | $\left  \begin{array}{c} \cdot \\ \cdot \\ \cdot \\ \cdot \\ \cdot \\ \cdot \\ \cdot \\ \cdot \\ \cdot \\ \cdot $ |                |               |                 |                      | - <u></u>                 |
| 4-18 1000 36-FS01 - SMC                                                 | 06                            |                | ╏──┤──┾                                                                                                           | <u>─┤╂┼╂</u> ┼ |               |                 |                      |                           |
| 4-18 1000 36-F501 -SMO                                                  | 7                             |                | <u> </u>                                                                                                          |                |               |                 |                      |                           |
| 4-18 1000 36 - FSO1 - SM                                                |                               |                |                                                                                                                   |                |               |                 |                      |                           |
| 4-18 1000 AS 36- F                                                      | SOI-WCOI                      |                |                                                                                                                   |                |               |                 |                      |                           |
| 4-18 1000 36- FSO1 - WI                                                 |                               |                |                                                                                                                   |                |               |                 |                      | . <u> </u>                |
| 4-18 1000 36-FS01-41                                                    | C 03 .                        |                |                                                                                                                   |                |               |                 |                      |                           |
| 4-18 0800 36-FS03 - SM                                                  |                               |                |                                                                                                                   | 1              |               |                 |                      |                           |
| Turn around time  Priority 1 or Standard  Priority 2 o                  |                               |                |                                                                                                                   |                | <u></u>       | 8015), VOLATILE | S (624/8240), IGNITA | BILITY, TOTAL LEAD (6010) |
|                                                                         | ime: Received by: (Sigr       | iature)        | Date:                                                                                                             | Time:          | Remarks       |                 |                      |                           |
|                                                                         | ime: Received by: (Sign       | ature)         | Date:                                                                                                             | Time:          |               |                 |                      |                           |
| Relinguished by: (Signature) Date: T                                    | Ime: Received by: (Sign       | ature)         | Date:                                                                                                             | <br>Time:      |               |                 |                      |                           |

| Name          | -             |       |          | l by<br>pironmental       | 4                | Bill<br>Iame: <u> </u>                |           |              |           |        |       |              |                      | )         | 7           | 7        | /       | Τ       | Τ   | Γ           | 7       |          | n                                            | o use only<br>9 Date:                  | r      |
|---------------|---------------|-------|----------|---------------------------|------------------|---------------------------------------|-----------|--------------|-----------|--------|-------|--------------|----------------------|-----------|-------------|----------|---------|---------|-----|-------------|---------|----------|----------------------------------------------|----------------------------------------|--------|
| Address       | :: <u>C</u> o | ۲۹o   | poli     | is, Pq.                   | Ad               | lress:                                | <u> </u>  | •            |           |        |       |              | ••                   |           | /<br>/      |          | '  ·    |         |     |             |         |          |                                              |                                        |        |
| Phone         | : <u>41</u>   | 2 -   | 26       | . H₀ff<br>9- <b>2</b> 099 | Р                | ntact:S                               |           |              |           |        | ,i.   |              | /                    | <br>.     | i loc       | PCB /    | 3       | /       | / / |             |         |          |                                              | CRA                                    |        |
|               |               |       |          |                           |                  | PO #:                                 |           |              |           |        |       |              | 4                    | Sem liles | The A       | L'est la | Junics  |         | / / |             |         | ,        | Scre                                         | PDES<br>ened<br>Radioactivity          | ,      |
| Proj. No.     | Proje         | oct N | ame      |                           |                  | itions contained in ND.               | 1         | of Con       |           | 2<br>S |       | 1            | 1º                   | 5         | ן<br>היי    |          | 1       | ' /     |     |             |         |          | Ter                                          | np                                     | _ °C   |
| atrix Date    | Time          | Comp  | G r a b  | Identifying Ma            | arks             | o Geiger                              | VOA       | A/G<br>1 Lt. | 250<br>ml | P/O    | /     | /ド           |                      |           | 7           | 7        |         |         |     |             | /       | Lab. S   | Sample                                       | ID                                     |        |
| 4-18          | 0800          |       |          | 36-FS0Z                   | -wc04            |                                       |           |              |           | •      |       | X            | X                    | X         | 1)          | <u>۲</u> |         |         |     |             |         |          |                                              |                                        |        |
| 4-20          | 0800          |       |          | 36 -FS02                  | - WC06           | · · · · · · · · · · · · · · · · · · · |           |              |           |        |       | Ц            |                      | $\square$ |             |          |         |         |     |             |         |          |                                              |                                        |        |
| 4-20          | 0800          |       |          | 36 - FSOZ                 | -WC07            | ·                                     |           |              |           |        |       |              |                      | LĹ        | $\square$   |          |         |         |     |             |         |          |                                              |                                        |        |
| 4-20          | 0800          |       |          | <u> 36 - FSOZ</u>         | -WC08            |                                       |           |              |           |        |       |              |                      |           |             |          |         |         |     |             |         |          |                                              |                                        |        |
| 4-18          | 0800          |       |          | 36-FS02                   | -WC05            |                                       |           |              |           |        |       |              |                      |           |             |          |         |         |     |             |         |          |                                              |                                        |        |
| 4-20          | 1000          |       |          | 36 - FSO                  | - PSOI           |                                       |           | ·            |           |        |       |              |                      |           |             |          |         |         |     |             |         |          |                                              |                                        |        |
| 4-20          |               |       |          | 36-FS01                   |                  |                                       | ·         |              |           |        |       | Τ            | T                    | Π         | T           |          | 1.      |         | _   |             |         |          |                                              | <u> </u>                               |        |
| 4-20          |               |       |          | 36 - FSOI                 |                  |                                       |           | 1            | 1         |        |       |              |                      | 1T        | $\dagger$   | -        | 1       |         |     |             |         |          |                                              | ······································ |        |
| 4-18          |               |       |          | 36 - FSO/                 |                  |                                       |           |              |           |        |       |              |                      |           |             | -        | 1       |         |     |             |         |          | <u>.                                    </u> |                                        | ······ |
| <u>4-18</u>   |               |       |          |                           |                  |                                       |           |              | +         |        |       | $\mathbf{t}$ | H,                   | 1         | ╢           |          | +       |         |     |             |         |          |                                              |                                        |        |
| Turn around 1 |               | D Pi  | fority 1 | 36 - FSO/                 |                  | Priority 3 or 100%                    | D Priorit | y 4 ERS      | •         | L I    |       | BTE          | ↓ <b>▼</b><br>X (60) | 2/802     | ♥<br>0), TI | PH (418  | 1 or 80 | 015), V |     | <br>.ES (62 | 4/8240) | , IGNITA | BILITY, T                                    | OTAL LEAD                              | (6010) |
| Relinquish    |               | Signa | ture)    | Date:<br>4-2/-            | Time:<br>44 /500 | Received by: (Sig                     | jnature)  |              |           | Date:  |       | Tir          | ne:                  | F         | Rem         | arks     |         |         |     |             |         |          |                                              |                                        |        |
| Relinquish    | ad by: (S     | ligna | ture)    | Date:                     | Time:            | Received by: (Sig                     | nature)   |              |           | Date:  | 1     | Ti           | me:                  |           |             |          |         |         |     |             |         |          |                                              |                                        |        |
| Relinquish    | ed by: (S     | lgna  | ture)    | Date:                     | Time:            | Received by: (Sig                     | inature)  |              |           | Date:  | <br>ا | Ti           | me:                  |           |             |          |         |         |     |             |         |          |                                              |                                        | • •    |

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|             |               |             |          |          | ıbır                  |             |            |          |                |      | *            | ,        |              |               |      |        |                | Bill to    |          |            |       |               |      | AN,           | ALY                | sis       |           |            |               | 1         | /            |          |          | /         |          |      | 11  |         | use or   | nly     |          |
|-------------|---------------|-------------|----------|----------|-----------------------|-------------|------------|----------|----------------|------|--------------|----------|--------------|---------------|------|--------|----------------|------------|----------|------------|-------|---------------|------|---------------|--------------------|-----------|-----------|------------|---------------|-----------|--------------|----------|----------|-----------|----------|------|-----|---------|----------|---------|----------|
|             | Na            | ame         | »: _     | B        | ke                    |             | = n.       | nra      | n              | ŋer  | Ta           | <u> </u> |              | Na            | me   | ÷.—    | 4-             | Sa         | me       |            | ••••  |               | _    | Re            | QUI                | REC       | )         | /          | /             | /         | /            | /        | /        | /         | /        | /    |     | Due     | Date:    |         |          |
| A           | ddı           | ress        | s: _     | <u>C</u> | <u>prq</u>            | spo         | <u>lis</u> | <u>,</u> | P <sub>q</sub> |      |              | _        | A            | ddr           | ess  | :      |                |            |          |            |       |               | -    |               |                    |           |           | /          | //            |           |              |          |          | ]         | /        | .    | ′   | ···     |          |         |          |
| c           | on            | itac        | t: _     | A        | <u>ttn</u>            |             | R          | H        | 01             | F    |              |          | 0            | Con           | lact | :      | <del>(</del> — | Sa         | me       |            |       |               | _:   |               |                    |           | /         | /.         |               | /         | /            | /        | /        | 1         |          |      | Ļ   |         |          |         |          |
|             |               |             |          |          | 12-                   |             |            |          |                |      |              | _        |              | Ph            | one  | :      |                |            |          |            |       |               | _    |               |                    | /         | ่พ        | /\$        | $ _{\otimes}$ | <br>      | / /          | Ι,       | / ,      | / /       | /        | /    |     | RC      | RA       |         |          |
|             |               |             |          |          |                       |             |            |          |                |      |              |          |              | Ρ             | 0#   | :      |                |            |          |            |       |               |      | ž             |                    |           | and they  | le l       | Š             | - Junic   |              |          |          |           |          | 1    |     | ₩P      | DES      | Ē       |          |
|             |               |             |          |          |                       |             |            |          |                |      |              | _        |              |               |      |        |                |            |          |            |       |               |      |               |                    | /:`       | F.        | Į,         | J             | Ł         |              | /        |          |           |          |      |     | Screer  | ned      |         |          |
| -           |               |             | _        |          |                       |             |            | agre     | e to           | the  | term         | IS 8     | nd co        | nditi         | onso | conta  | Ined in        | NDRO       | 's Pri   | ce Sch     | edule | 9.            |      |               | /                  | 14        |           | <u>_</u>   | 15            | 7         |              | /        | /        |           | /        |      | F   |         | dioactiv |         | _        |
| Pro<br>27   | oj. N<br>70 - | No.<br>23   | 2        | Proj     | өсt М<br><u>// С.</u> | lam<br>B    | °<br>Ča    | mp       |                | .ej  | : <i>U</i> [ | ve_      | <u> </u>     | a m           | 2 (  | Sei    | ije <i>r</i>   |            | No.      | of Co      | ntair | ners          |      |               | /                  | 5/.       |           | 2          | TAT           |           | . /          |          | ' /      | ' /       | ,        |      | L   | lem     | 0        | °(      | C<br>    |
| ı<br>latriy |               |             |          |          | p                     | r<br>a<br>b |            |          |                |      |              |          |              |               |      |        |                |            | VOA      | A/0<br>1 U | i 2   | 50 F          | 2/O  | {             | / `                | $\square$ | $\square$ | 1          | 7_            | $\square$ | /            | /        | /        | $\square$ | י<br>ד   | Lab. | Sam | nple II | D        |         |          |
|             | -             | -18         | -        |          |                       |             | -          |          |                |      |              | -        | NO/          |               |      |        |                |            |          |            |       |               |      |               | Х                  |           | X         |            |               |           | <u> </u>     | <u> </u> | -        |           | <u> </u> |      |     |         |          |         |          |
|             |               | -18         |          |          |                       |             |            |          |                |      |              |          | 102          |               |      |        |                |            |          |            |       |               |      |               | Х                  | X         | X         | <u>  X</u> |               |           |              | <u> </u> |          |           | _        | -    |     |         |          |         |          |
|             |               | -18         |          |          | -                     |             |            |          |                |      |              |          | 103          |               |      |        |                |            |          |            |       |               |      | _             | χ                  | X         | X         | <u> </u> X |               | <u> </u>  |              |          |          |           | ╞        |      |     | S.,     |          |         |          |
|             | _             | -18         | <u> </u> |          |                       |             |            |          |                |      |              |          | 704          |               |      |        |                |            |          |            |       | _             |      | $\rightarrow$ | X                  | X         | X         | X          | -             |           | _            | -        |          |           | ┢        |      |     |         |          |         |          |
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|             | -             | 20          | _        |          |                       | .<br>       |            |          |                | 02   | _            | ~~~~     |              |               |      |        |                |            |          | - <b> </b> |       |               |      |               | X                  | X         | X         |            |               |           | <u> </u>     |          | -        |           |          |      |     |         |          |         |          |
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|             | +             | -18         |          |          |                       | <u> </u>    |            |          |                |      |              |          | <u>co</u>    |               |      |        |                |            |          |            |       |               | -    |               | X                  | X         | X         | 1          |               |           | <b> </b>     |          |          |           |          |      |     |         |          |         |          |
|             |               | -18         | +        |          |                       |             |            |          | _              |      |              |          | C0.          |               |      |        |                |            | -        |            | _     | +             |      |               | X                  | X         | X         |            |               |           |              | -        |          |           | <u> </u> |      |     |         | · · ·    |         | <u> </u> |
| Tur         | <u> </u>      | -/8<br>ound |          | _        |                       |             |            |          |                |      |              |          | C()<br>or 50 | <u>3</u><br>% |      | lority | 3 or 100       | <u>« г</u> | Priorit  |            |       |               |      |               | X                  | X         |           |            | 1 (418        |           | 015\ \       |          |          | (624/8    | 240)     |      |     |         | AL LEA   | D (6010 | <u></u>  |
| Re          | ling          | uish        | ed       | by: (    | Signa                 | ture        |            |          |                | ate: |              | -        | Time<br>500  | :             |      | ceiv   | ed by:         |            |          | ,          |       | D             | ate: |               |                    | ne:       |           |            |               |           |              |          |          |           |          |      |     |         | pleg     |         | <u>,</u> |
| _           | _             | _           |          |          | Signa                 | _           | )          |          | ī              | ate: | <u>.</u><br> |          | Time         |               | Re   | ceive  | d by:          | Signa      | iture)   |            |       | D             | ate: | <br>          | Ti                 | ne:       |           | Cql        | / A           | rich      | H            | off      | 91       | · //      | ).e      | abo  | ve  | nun     | nber     | •       |          |
| Re          | linq          | uish        | ed       | oy: (    | Signa                 | ture        | )          |          |                | ate: | <br>         |          | Time         | :             | Re   | ceive  | d by:          | Signa      | iture)   |            |       | D             | ate: |               | <b>Ti</b> i<br>/ / | ne:       |           | Ho         | 19            | for       | - 91<br>- 91 | rou      | pin<br>J | <i>es</i> | •        |      |     |         |          |         |          |

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| Submitted by                                                        |                                          | Bill to              | )         |              |           | Τ     | ANA          |                   | 9     | 7                      |     | Γ       | Γ      | Π         | T                | 7    | 77       | / La          | b use only                            |
|---------------------------------------------------------------------|------------------------------------------|----------------------|-----------|--------------|-----------|-------|--------------|-------------------|-------|------------------------|-----|---------|--------|-----------|------------------|------|----------|---------------|---------------------------------------|
| Name: <u>Baker Enviro</u>                                           |                                          | ime: <u> </u>        | 2         |              |           | • •   | REQ          |                   |       |                        |     | ' '     | ' /    |           | 1                | /    | / / *    | /  Du         | e Date:                               |
| Address: Corgopolis, 1                                              | 4                                        | 'ess:                |           |              |           |       |              |                   |       | /                      | /.  | ./      |        |           | $\left  \right $ |      | ' / /    | /   .         |                                       |
| •<br>•                                                              |                                          |                      |           |              |           | _     |              |                   | /     | /.<br>/                | /   | /       |        |           | ' /              |      | / /      |               | · · · · · · · · · · · · · · · · · · · |
| Contact: AHn R. Ho.                                                 | <u> </u>                                 | tact: <u> </u>       | re        |              |           | _     |              |                   |       | /                      |     | ' /     | ' /    |           |                  | /    |          |               | ··· · · · · · · · · · · · · · · · · · |
| Phone: <u>4HZ - 269-</u>                                            | 2099 Ph                                  | one:                 |           |              |           |       |              |                   | /     | 10                     | 3/  |         |        |           |                  |      | / /      | R             |                                       |
| Fax:                                                                | P                                        | 0 #:                 |           |              |           | _     |              | /                 | ຸ ည   | 6                      | 100 |         | 3/     | / /       | / /              | ' /  |          | N             |                                       |
|                                                                     |                                          |                      |           |              |           | _     |              | Ľ                 | S.    | <u> </u>               | Ń   | 301     |        | ' /       | - <u> </u> -     |      | /        |               | ened<br>Radioactivity                 |
| By submitting these samples, you agr                                | ee to the terms and conditi              | ons contained in NDR | C's Price | e Sched      | lule.     |       |              | 13                | 3/2   |                        | 3/1 | ĝ/      | 3/     |           | /                | / /  | /-       |               | mp °C                                 |
| Proj. No. Project Name<br>TO 232 MCB Camo                           | Leieune Cama                             | Geiner               | No. c     | of Cont      | alners    | \$    |              | /~                | /_`   | $\left  \right\rangle$ | 1   | /.      |        | /         |                  | ' /  |          |               | p U                                   |
| <u>TO 232</u> <u>MCB Camp</u><br>t<br>trix Date Time m a<br>p b den | tifying Marks                            | Otigu                | VOA       | A/G<br>1 Lt. | 250<br>ml | P/O   |              |                   |       | 2                      |     | 12      | 7      | / /       |                  |      | Lab.     | Sample        | ə ID                                  |
| 4-20 1652 35                                                        | - SD04 <b>- 0</b> 6                      |                      |           |              |           |       |              | $\langle \rangle$ | (   X | $\langle \rangle$      | X   | X       |        |           |                  |      |          |               |                                       |
| H-20 1652 35                                                        | -5004 -06 D                              |                      |           |              |           |       |              |                   |       |                        |     |         |        |           |                  |      |          |               |                                       |
| 4-20 1650 35                                                        | - SD04 - 612                             |                      |           |              |           |       |              |                   |       |                        |     |         |        |           |                  |      |          |               |                                       |
| 4-20 1432 35                                                        | -SD01-06-                                |                      |           |              |           |       |              |                   |       |                        |     |         |        |           |                  |      |          |               |                                       |
| 4-20 1430 35                                                        | -5001 - 612                              |                      |           |              |           |       |              | /                 |       |                        |     |         |        |           | ·                |      |          |               |                                       |
| 4-20 1342 35                                                        | - SDO2 - 06                              |                      |           |              |           |       |              |                   |       |                        | è   |         |        |           |                  |      |          |               |                                       |
| 4-20 1342 35                                                        | - SDOZ - 06D                             |                      |           |              |           |       |              |                   |       |                        |     |         |        |           |                  | _    |          |               |                                       |
| 4-20 1340 35                                                        | - SD02-612                               | · · ·                |           |              |           |       | [            |                   |       |                        |     |         |        |           |                  |      |          |               | •                                     |
|                                                                     | <u>- 5007 - 06</u>                       |                      |           |              |           |       |              |                   |       |                        |     | $\prod$ |        |           |                  |      |          |               |                                       |
|                                                                     | -SP07-612                                | •••••••••            |           |              |           |       | $\downarrow$ |                   |       |                        | /   | ¥       |        |           |                  |      | <u> </u> |               |                                       |
| Turn around time Priority 1 or Sta<br>Relinguished by: (Signature)  | ndard 🖸 Priority 2 or 50%<br>Date: Time: | Received by: (Sign   |           | 4 ERS •      |           | )ate: | * 8          | Time              |       |                        |     |         |        |           |                  |      |          |               | TOTAL LEAD (6010)                     |
| In Nh                                                               | 4-21-94 1.500                            |                      |           |              |           |       |              |                   |       |                        | -   | 11      | ' Y    | ov 1<br>0 | bave             | 911. | y gues   | stions<br>L   | , plegse<br>bove                      |
| Relinquished by: (Signature)                                        | Date: Time:                              | Received by: (Signa  | ature)    |              |           | Date: |              | Time              |       |                        | Co  | n79     | cr<br> | Kić       | hh               | 1017 | 95 1     | r <i>he</i> q | bove                                  |
| Relinguished by: (Signature)                                        | Date: Time:                              | Received by: (Signa  | ature)    |              |           | Date: |              | Time              |       |                        | ทบ  | mb      | ť7.    |           |                  |      | •        |               |                                       |
|                                                                     |                                          |                      | -•        |              |           |       |              |                   | ·     |                        |     |         |        |           |                  |      |          |               |                                       |

| Submitted by                                                          | Bill t                    |                                         |              |           |           | ANAL     | /SIS     |               |            | 7   | 7          | 7        | 7      | /       | TT         | 11           | ise only          |     |
|-----------------------------------------------------------------------|---------------------------|-----------------------------------------|--------------|-----------|-----------|----------|----------|---------------|------------|-----|------------|----------|--------|---------|------------|--------------|-------------------|-----|
| Name: 189ker Environmental                                            | Name: <u> Sq</u>          | me                                      |              |           | _ [       | REQU     | IRED     |               |            |     |            | / /      |        | '       | '/         | / Due I      | Date:             |     |
| Address: <u>Coraopolis</u> , <u>Pa</u> A                              | ddress:                   |                                         |              |           | _         |          |          |               |            |     |            |          |        |         | //         | /            |                   |     |
| Contact: Atta. R. Haff C                                              | contact:                  | à <i>me</i>                             |              |           | _         |          |          |               | /  /       | 1   | 3          | 1        |        |         | / /        |              |                   |     |
|                                                                       | Phone:                    |                                         |              |           | _         |          |          | ./            | ٧.         | ¥ ! | ∮ ≯        | ! /      |        |         |            | RCI          | AF                |     |
| Fax:                                                                  | PO #:                     |                                         |              |           | _         |          | 1.       | MI            | 11         | ∛ ∦ | ' · }      | 7        |        | /       | /          | NPI          | DES               | Ľ   |
|                                                                       |                           |                                         | <u>.</u>     |           |           |          | 10       | $\sqrt{3}$    | 1          |     | 1          | $\nabla$ | /      |         | /          | Screen       | ed<br>dioactivity | Γ   |
| By submitting these samples, you agree to the terms and co            | nditions contained in NDF | IC's Pric                               | e Scheo      | lule.     |           |          | <u>.</u> | 13            | <i>I</i> ₽ | -∦  | <b>/</b> / | / /      | '      | ' /     |            |              |                   |     |
| Proj. No. Project Name<br>CTO 232 MCB Camp Leienne                    | Gamo Geiner               | No. c                                   | of Cont      | ainers    | 2<br>o le |          | Loit     | Ĵ.            | 11 1       |     | * //       |          |        |         |            | Temp         | )                 |     |
| CTO 232 MCB Camp Lejeune,<br>Matrix Date Time C G G Identifying Marks |                           | VOA                                     | A/G<br>1 Ll. | 250<br>ml | P/0       |          |          | ALL PROPERTY. |            | A   | 4          |          |        | [       | Lab.       | Sample II    | )                 |     |
| Sed 04-14 1617 × 35-5007-1                                            | ٥٤                        |                                         |              |           | Z         | <u>×</u> |          |               |            |     |            |          |        |         |            |              |                   |     |
| Sed 94 1644 × 35 - 5004 - 6                                           | n6 <u> </u>               |                                         |              |           | 2         | ×        |          |               |            |     |            |          |        |         |            |              |                   |     |
| Sec 94 1714 × 35-5063-6                                               | )6                        |                                         |              |           | 2         | ×        |          |               |            |     |            |          |        |         |            | <u></u>      |                   |     |
| Set 94 1000 × 35-5006-0                                               | 6                         |                                         |              |           | Z         | <u>×</u> |          |               |            |     |            |          |        |         |            |              |                   |     |
| Sed 94 1055 X 35- BNO3                                                |                           |                                         |              |           | Z         | ×        | •        |               |            |     |            |          |        |         |            |              |                   |     |
| Sed 04-15 1145 × 35- 5005-0                                           | 6                         |                                         |              |           | Z         | ×        |          |               |            |     |            |          |        |         |            |              |                   |     |
| Sed 09-16 0905 × 35- BN04                                             |                           |                                         |              |           | Z         | X        |          |               |            |     |            |          |        |         |            |              |                   |     |
| Sect 94 0945 X 35- BNDZ                                               |                           |                                         |              |           | Z         | X        |          |               | •          |     |            |          |        |         |            |              |                   |     |
| Sto 94 1110 X 35- 5002-0                                              | )6                        |                                         |              |           | Z         | X        |          |               |            |     |            |          |        |         |            |              |                   |     |
| Sed 09-16 1133 × 35-5001-                                             | 66                        | 1.5                                     |              |           | 2         | ×        | j I      |               |            |     |            |          |        |         |            |              |                   |     |
| Turn around time Priority 1 or Standard Priority 2 or 50              |                           |                                         |              |           |           |          |          |               |            | •   | 8015), \   | /OLAT    | LES (6 | 624/824 | 40), IGNIT | ABILITY, TOT | AL LEAD (6        | 010 |
| Relinguished by: (Signature) Date: Time                               | ·                         | ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ |              | ·         |           |          |          | Re            | marks      | •   |            |          |        |         |            |              |                   |     |
| Relinquished by: (Signature) Date: Time                               | Received by: (Sign        | nature)                                 |              | 1         | Date:     | 1        | 'ime:    |               |            |     |            |          |        |         |            |              |                   |     |
| Relinquished by: (Signature) Date: Time                               | Received by: (Sign        | nature)                                 |              | 1         | Date:     |          | 'ime:    | 1             |            |     | ,          |          |        |         |            |              |                   |     |

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| chcape Testing Services N                          | DRC L'aboratories.                    | CHAIN OF C           | CUSTOR       | DY RECO       |                 | 089 East Colli     | ns Blvd., Richa   | urdson, TX 75081 (214) 238-55         |
|----------------------------------------------------|---------------------------------------|----------------------|--------------|---------------|-----------------|--------------------|-------------------|---------------------------------------|
| Submitted by                                       | Bill                                  |                      | A            | NALYSIS       |                 | 111                | TTT               | Lab use only<br>Due Date:             |
| Name: Baker Environmentel                          | Name: <u> </u>                        | me                   | R            | EQUIRED       |                 |                    |                   |                                       |
| Address: <u>Coraupoli's PA</u>                     | Address:                              |                      |              |               |                 |                    | '                 |                                       |
|                                                    | · · · · · · · · · · · · · · · · · · · | <u> </u>             | (            |               | ' / /           |                    |                   |                                       |
| Contact: <u>Atta</u> , <u>R. Haff</u>              | Contact:                              |                      | [            | /             |                 |                    |                   |                                       |
| Phone: 4/2-264-2044                                | Phone:                                | <u> </u>             |              |               | 138             | 4 / 1              | '                 |                                       |
| Fax:                                               | FO #:                                 | <u></u>              |              | 2             | E & S           | ter /              |                   | NPDES Screened                        |
| submitting these samples, you agree to the terms a | id conditions contained in NDF        | RC's Price Schedule  | э.           | Keletze.      | ₹¥.             | A REAL PROPERTY OF |                   | For Radioactivity                     |
| oj. No. Project Name                               |                                       | No. of Contain       |              | 170           | Compared at the |                    | / / /             | Temp °C                               |
| TO 232 MCB Comp Lejeune                            | <u> </u>                              |                      | <u> </u>     | 12,2          | 5.2.            |                    | 1,1               | •                                     |
| C Date Time C G r Identifying Marks                | <b>、</b>                              | VOA A/G 2<br>1 Lt. r | 50 P/O<br>ni | 117           | 77,             | ¥ / /              |                   | Lab. Sample ID                        |
| 4-20 1550 35- SW07                                 |                                       |                      |              | XX            | XXX             | 424                |                   |                                       |
| 4-20 2000 35- RB08                                 | <del>,}</del>                         |                      |              | XX            | <u> </u>        |                    |                   | · · · · · · · · · · · · · · · · · · · |
| 4.21 1500 35-TBØ13                                 | <b>-</b>                              | -                    |              |               |                 |                    |                   | i                                     |
|                                                    |                                       |                      |              |               |                 |                    | <u> </u>          | ·                                     |
|                                                    | •                                     |                      | ·            |               |                 |                    |                   |                                       |
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|                                                    |                                       |                      |              |               |                 | <u>├</u> ──        |                   |                                       |
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|                                                    |                                       |                      |              |               |                 |                    |                   |                                       |
| rn around time Priority 1 or Standard Priority 2   |                                       | D Priority 4 ERS *   |              | * BTEX (602/8 |                 | 1 or 8015), VOLA   | TILES (624/8240), | IGNITABILITY, TOTAL LEAD (6010)       |
|                                                    | Time: Received by: (Sig               | nature)              | Date:        | Time:         | Remarks.        |                    |                   |                                       |
|                                                    | Time: Received by: (Sig               | nature)              | Date:        | Time:         | • • •           |                    |                   | ·                                     |
| linquished by: (Signature) Date:                   | Time: Received by: (Sig               | nature)              | Date:        | Time:         |                 |                    |                   | <u>&gt;</u>                           |
| O C                                                |                                       |                      |              |               |                 |                    |                   |                                       |

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| $\begin{array}{c c c c c c c c c c c c c c c c c c c $                                                                                                                                                                                                                                                                         | me<br>me<br>me<br>s Price |              | dule.           |       | An,<br>Red | ALYS<br>QUIF | SIS         | •   |          |     |            |        |         |         |            | Lab use only<br>Due Date:<br>RCRA<br>NPDES<br>Screened<br>For Radioactivity<br>Temp. |       |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|--------------|-----------------|-------|------------|--------------|-------------|-----|----------|-----|------------|--------|---------|---------|------------|--------------------------------------------------------------------------------------|-------|
| Phone: $\frac{4/2 - 269 - 2099}{Fax:}$ Phone:<br>Fax: PO #:<br>submitting these samples, you agree to the terms and conditions contained in NDRC's<br>oj. No. Project Name<br>TO Z 3Z MCB Camp Leieune, Camp Conject<br>x Date Time $\frac{C}{m}$ a<br>$\frac{C}{a}$ Identifying Marks<br>$\frac{C}{94}$ 1612 × 36 - 5003 - 06 | 's Price<br>No. o         | e Sche       | dule.<br>tainer | T     |            |              | ' /         | 277 |          |     |            |        |         |         |            | NPDES<br>Screened<br>For Radioactivity                                               |       |
| oj. No. Project Name<br>TO Z Z MCB Camp Leicune, Camp Geiger<br>x Date Time $ramp b$<br>B O q - 16 - 16 - 16 - 16 - 26 - 26 - 26 - 26                                                                                                                                                                                          | No. o                     | of Cont      | tainer          | T     |            |              | ' /         |     | / /      |     | //         |        |         |         | ,          | For Radioactivity                                                                    |       |
| TO Z3Z MCB Camp Lejeune, Camp Geiger<br>x Date Time $D_{p} = D_{p}$ Identifying Marks<br>$BO9-16 = 1612 \times 36-5003-06$                                                                                                                                                                                                     |                           | <b></b>      | T               | T     | ,          |              |             |     |          |     |            |        |         |         |            |                                                                                      |       |
| $304-16 \\ 94 \\ 1612 \\ \times 36-5003-06$                                                                                                                                                                                                                                                                                    | VOA                       | A/G<br>1 Lt. | 250<br>ml       | P/0   |            | / \          | 1           | 1   | 1        |     | · /        |        | 1       | /       |            |                                                                                      |       |
| 94 1612 × 36-5003-06                                                                                                                                                                                                                                                                                                           |                           |              | - S             |       | /          |              | <u> </u>    |     |          | · / |            |        |         | /       | Lab. S     | Sample ID                                                                            |       |
|                                                                                                                                                                                                                                                                                                                                |                           |              |                 | Z     |            | メ            |             |     |          |     |            |        |         |         |            |                                                                                      |       |
| 04-16<br>44 1715 × 36- 5002-06                                                                                                                                                                                                                                                                                                 |                           |              |                 | Z     |            | ×            |             |     |          |     |            |        |         |         |            |                                                                                      |       |
| ay 1802 × 36-5001-06                                                                                                                                                                                                                                                                                                           | <u> </u>                  |              | ļ               | 2     |            | ×            |             |     |          |     |            |        |         |         |            |                                                                                      |       |
| 04-18<br>94 1308 × 36 - 5 DO5 - 06                                                                                                                                                                                                                                                                                             |                           |              |                 | 2     |            | ×            |             |     |          |     |            |        |         |         |            |                                                                                      |       |
| Q4-18<br>44 1412 × 36- 5006-06                                                                                                                                                                                                                                                                                                 |                           |              |                 | 2     | -          | ×            |             |     |          |     |            |        |         |         |            |                                                                                      |       |
| 64-18 1500 × 36 - 5007-06                                                                                                                                                                                                                                                                                                      |                           |              |                 | 2     |            | ×            |             |     |          |     |            |        |         |         |            |                                                                                      |       |
| 04-19 1717 × 36-BN03                                                                                                                                                                                                                                                                                                           | . '                       |              |                 | Z     | د          | × 1          |             |     |          |     |            |        |         |         |            |                                                                                      |       |
| 04. F<br>94 1757 × 36- BNOZ                                                                                                                                                                                                                                                                                                    |                           |              |                 | 2     |            | ×            |             |     |          |     |            |        |         |         |            |                                                                                      |       |
| 04-14 1900 × 36- BNOI                                                                                                                                                                                                                                                                                                          |                           |              |                 | 2     |            | ×            |             |     |          |     |            |        |         |         |            |                                                                                      |       |
| 64.4 1947 × 36-5004-06                                                                                                                                                                                                                                                                                                         |                           |              |                 | 2     |            | ×            |             |     |          | ·   |            |        |         |         |            |                                                                                      |       |
| n around time                                                                                                                                                                                                                                                                                                                  |                           | 4 ERS        |                 |       |            |              | _ <u>_</u>  |     |          |     | r 8015), \ | VOLATI | ILES (6 | 24/8240 | ), IGNITAI | BILITY, TOTAL LEAD (                                                                 | :010) |
| 1 1110 Heceived by: (Signation 4-21-44 / 500                                                                                                                                                                                                                                                                                   | ure)                      |              | ·   '           | Date: |            | . 1117       | 18:         | Re  | emark    | 8   |            |        |         |         |            |                                                                                      |       |
| linquished by: (Signature) Date: Time: Received by: (Signatu                                                                                                                                                                                                                                                                   | ture)                     | · · ·        |                 | Date: | t<br> <br> | Tin          | ne:         |     | <u> </u> | _   |            |        |         |         |            |                                                                                      |       |
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| nchcape Testing Services ND<br>Submitted by                                               | RC Laboratories.<br>Bill 1  |           | N OF         | - CL      | JSTO               |          |                | <br>     | JRE          | ъ<br>T      | 3 68<br>7         | 9/6Cas                 | t Collin | ns Blv<br>Ø | d., Ric      | chardson,           |                        | (214) se only | 238-559  | 1<br><b>1</b> |
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| Name: Bale                                                                                | Name: Bake                  |           | 1.           |           |                    | AN<br>Re | IALÝS<br>EQUIF |          |              | /           |                   | ' /                    | /1       | ·/          |              | ' /                 | Due D                  | •             |          |               |
| Address: 173 Leilune BLVD                                                                 | Address: <u>420 k</u>       |           |              |           |                    |          |                |          |              |             | '/                |                        |          |             | ' /          |                     |                        |               |          |               |
| Jan, NC 28540                                                                             | Coraopo                     |           |              |           |                    |          |                |          |              |             |                   | / /                    | / /      |             |              |                     |                        |               |          |               |
| Contact: //m Culp                                                                         | Contact: R. Hoff            | ()        | <u>, o-</u>  |           | -                  |          |                |          | /_3          | Ý           |                   | BE I                   |          | /           | / /          | / /                 |                        |               |          |               |
| Phone: <u>9/0-353-3336</u>                                                                | Phone: <u>4/12-26</u>       |           |              |           | -                  |          |                | 5/       | N/           | .           | '  ·              | Ē/                     |          |             |              |                     | RCF                    | IA            |          | 1             |
|                                                                                           | PO #: 62478                 |           |              |           |                    |          | Å              | Ň.       | Š,           | ッ/          |                   | ζĮ                     | 1        |             |              | /                   | NPD                    |               |          |               |
| Fax:                                                                                      | FU#: <u>@# 470</u>          | <u> </u>  | <u>et.</u>   |           | -                  |          | 9              | 13       | $\mathbb{V}$ | ۲) <u>-</u> | N                 |                        |          |             | 1.           | /                   | Screene                | əd .          |          | ł             |
| By submitting these samples, you agree to the terms and                                   | conditions contained in NDF | IC's Pric | e Sche       | dule.     |                    |          | S)             | 5        | 13           |             | /\{/              |                        |          | / ',        |              | 1                   | For Rad                | lioactivity   |          | -             |
| Proj. No. Project Name                                                                    |                             | No. c     | of Cont      | tainer    | 2<br>S             | ,        | N/.            |          |              | <u>ال</u>   | <u>v</u> ]        | /                      |          | ' /         |              |                     | Temp                   | •             | _•C      |               |
| TO 232 SLTE 35 - Lampbell                                                                 | SER, MCB-CLEJ               |           | T            |           |                    | }        | N Ã            | Y F      | V 4          |             |                   |                        | ' /      |             |              |                     | <b></b>                |               |          |               |
| auto Cate Fille m a p b                                                                   | · ·                         | VOA       | A/G<br>1 Lt. | 250<br>mi | P/O                |          |                |          |              |             | $\lfloor \rfloor$ |                        |          |             | $\square$    | Lab. S              | ample IC               | •             | <u>\</u> |               |
| V 1/26 1120 X 35- RB09 .                                                                  | ·                           |           |              |           |                    | Y        | x              | Y        |              |             |                   |                        |          |             |              | (HOL                | 0)                     |               | <u>`</u> | Ë,            |
| 5 4/26/138 × 35.6WDSO                                                                     | 1-03                        |           |              |           |                    | X        | x              | x        |              |             |                   |                        |          | <u> </u>    |              |                     |                        |               |          |               |
| 5 1/26/632 × 35-MW291                                                                     | 3-03                        |           |              |           | $ \lambda $        | χ        |                | <u></u>  |              |             |                   |                        |          | <u> </u>    |              |                     |                        |               |          |               |
| N 1/26 1350 Y 35- MWOG                                                                    | 5-08:                       | _         | ļ            |           | ++                 | _        | K4             | <u>/</u> | ×            | X           |                   |                        |          | ļ           |              |                     |                        |               |          |               |
| N 4/22 1830 × 35-MW09                                                                     |                             | _         |              | <u> </u>  |                    | 4        | 34             |          | x            | X           |                   |                        |          | <u> </u>    |              |                     |                        |               | :        | _             |
| N 4/26 1710 × 35- MW02                                                                    |                             | _         |              | .<br>     |                    | 1        |                |          | ×            | X           |                   |                        |          | _           |              |                     |                        | <u> </u>      |          | -             |
| 1 4/20 1900 × 35- MW26                                                                    |                             |           |              |           |                    |          |                |          | X            | ×           |                   |                        |          |             |              |                     |                        | <u> </u>      |          | -             |
| 14/261805 × 35-MW04                                                                       |                             | _         |              |           | $\left  - \right $ |          | <b> </b>       |          | 2            | ×           |                   |                        |          |             |              |                     |                        |               |          | 4             |
| V 1/26 1400 × 35- MW 105                                                                  | -02                         | _         |              |           | $\left  - \right $ |          |                |          | X            | X           |                   |                        |          | _−          |              |                     |                        |               | <u> </u> | ł             |
| J <u>A/26</u> X <u>35-TB21</u><br>Turn around time Priority 1 or Standard □ Priority 2 or | 50% C Priority 3 or 100%    |           | 4 EBS        | •         |                    | X        | + BTE)         | ( (602   | /8020        |             | (418.1            | or 8015                |          | THES        | 624/824      | 40), IGNITA         | BILITY, TOT            |               | (6010)   | ŀ             |
|                                                                                           | me: Received by: (Sign      |           |              |           | Date:              |          | Tin            |          | R            | emar        | ks                |                        |          |             |              |                     |                        |               |          |               |
|                                                                                           |                             |           | <u> </u>     |           | Dete               |          |                |          | _  F         | -012        | 50                | amp                    | les      | ۵v          | ali          | jud.                | for E                  | ,PA 6         | -01      |               |
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| Relinquished by: (Signature) Date: Ti                                                     | me: Received by: (Sigr      | nature)   |              |           | Date:              | 1.<br>:  | Tir            | ne:      | $\exists e$  | on          | fir               | Ma                     | tion     | ~ E         | 5 5<br>7 F 0 | Pi-                 | <u>екы</u><br>н На     |               |          |               |
| Matrix WW - Wastewater W - Water S - Soil                                                 |                             | A I       | - Air Ba     |           |                    |          | oal tub        |          |              |             | iludge            |                        |          | t-          |              | - I⊂ (C<br>RC canno |                        |               |          | 1             |

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| (nchcap                                         | enerer<br>S   | seguration of the                                                                         | ,                                               |                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | a second and a second                   | boratories.                                                |                         |             | • CERT       |                               |               | 1 <b>6</b> 9 - 1           | an sara |        | <u>र्व्स्टर</u> र | t de trai | ane. |     | chardson, TX 75081 (214) 258-559                                                       |
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| Name:<br>Address:<br>Contact:<br>Phone:<br>Fax: |               | ubmi<br>3ak<br>20<br>20<br>20<br>20<br>20<br>20<br>20<br>20<br>20<br>20<br>20<br>20<br>20 | tted<br>e (<br>R<br>po<br>20<br>1020<br>105, yr | 1 by<br>E<br>ouse<br>lise<br>P<br>B<br>69 - 2<br>69 - 2 | r Rd.<br>A 151<br>Conk<br>2063<br>2002                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Na<br>Addr<br>Con<br>Ph<br>P            | Bill<br>ess: <u>Same</u><br>tact:<br>one:<br>O #:          | to<br>ers<br>DRC's Pric | Sub         | <u>m.' ]</u> |                               | ANAL'<br>Requ | /SIS                       |         |        |                   | Turnary , |      |     | Lab use only<br>Due Date:<br>RCRA<br>NPDES<br>Screened<br>For Radioactivity<br>Temp °C |
| 1<br>Matrix Date                                | Time          | C off                                                                                     | G<br>r<br>a                                     | Identify                                                | ing Marks                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 3                                       |                                                            | VOA                     | A/G<br>1 Lt | 250<br>ml    |                               |               | YH                         |         |        | Rout              |           |      | /   | Lab. Sample ID                                                                         |
| W 7-26<br>94<br>W 7-29<br>W 94<br>94            | 0930<br>1945  | <u> </u>                                                                                  | ×                                               |                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | PDØ<br>PDØ                              |                                                            |                         | 4<br>4      |              |                               | ×             |                            |         |        | ×<br>×            |           |      |     |                                                                                        |
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| Tum around tin<br>Relinguishe<br>Relinguishe    | d by: ()<br>7 | Signat                                                                                    | ture)                                           | Le                                                      | Date:<br>4 - 28<br>4 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - 28<br>5 - | rity 2 or 50%<br>Time:<br>0930<br>Time: | Priority 3 or 100%<br>Received by: (Si<br>Received by: (Si | gnature)                | 4 ERS       | 1            | Date:<br>Date:                |               | EX (602/<br>'ime:<br>'ime: | Rema    | ks     |                   |           |      |     | 10), IGNITABILITY, TOTAL LEAD (6010)                                                   |
| Relinquishe<br>Matrix V<br>Container            | - W           |                                                                                           | ter                                             | W - W<br>A/G                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Time:<br>3 - Soli Si<br>Dr Glass 1 Lite | Received by: (Si<br>- Solid L - Liq<br>r 250 mi - Glas     | uid A                   | - Air Ba    | 9            | Date:<br>C - Cha<br>Plastic c | arcoal te     |                            | SL-S    | Bludge | 0-0               | ¶         |      | NDF | RC cannot accept verbal changes<br>Please Fax written changes to<br>214-238-5592       |

OFFICE USE ONLY

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|--------------------------------------------------------------------------------------------------------|----------------------------------------|--------------|-----------|------------|-------|----------------------------|----------------|----------|---------------|----------|---------|--------|---------|-------------|----------|-------------------------|----------|
| Submitted by Bill to                                                                                   |                                        |              |           |            |       | ALY                        |                |          |               |          |         | / /    |         |             |          | Lab use                 | -        |
| Address: <u>420 Rouser Rd.</u> Name: <u>Address: Kame</u>                                              |                                        |              |           | -          | RE    | QUI                        | RED            |          |               |          | ' /     | /      |         | / /         | ' /      | Duo Dale                | ••       |
|                                                                                                        | <u>as</u> :                            | Subr         | n:#       | <u>e</u> d |       |                            |                |          |               |          |         |        |         |             |          |                         |          |
| Coraopolis, PA 15108                                                                                   | ······································ |              |           | -          |       |                            | 6              | ]        | / /           |          | /       | /      |         | <u>_</u>    | /        | ·                       |          |
| Contact: <u>Baker Env.</u> Contact:                                                                    |                                        |              |           | _          |       |                            | M. , Liles     | _n/      |               | / /      | / /     | / /    | ' /     | Tecores (   | /        |                         |          |
| Phone: (412) 269 - 2063 Phone:                                                                         |                                        |              |           | _          |       |                            | Ψ.             | o l      | / /           | '        | :/      |        |         | 4 /         |          | RCRA                    | [        |
| Fax: (412) 269 - 2002 PO #:                                                                            |                                        |              |           | _          |       | _                          | J .            | meta/    |               |          |         | /      | 1.5     | 7 /         | į.       | NPDES                   | . [      |
|                                                                                                        |                                        |              |           |            |       | -                          | 7 S            | 7./      |               | /        | / .     | / /    | · /     |             |          | Screened<br>For Radioad | tivity [ |
| By submitting these samples, you agree to the terms and conditions contained in NDRC                   | 's Price                               | Sched        |           | _          |       | -                          | /              | '  .     |               |          | ' /     |        | ð       | /           | •        | Temp.                   |          |
| Proj. No. Project Name                                                                                 | No. of                                 | f Conta      | ainers    | 2          | Ľ     | $\mathcal{Y}_{\mathbf{i}}$ | $\overline{A}$ |          |               |          |         | /-     | Ŧ/      | /           |          |                         |          |
| trix Date Time C G Identifying Marks                                                                   | VOA                                    | A/G<br>1 Lt. | 250<br>ml | P/0        | 1     | 75                         | 7              |          | ' /           |          | / /     | /&     |         | ׳<br>דר     | ab. Sa   | mple ID                 |          |
| - 7:28 0930 × 35-5WPD01                                                                                | 3                                      | 1            |           | ,          | X     | X                          |                |          |               |          |         | X      |         | 3           |          |                         |          |
|                                                                                                        | 3                                      | 1            |           |            |       | X                          |                |          |               |          |         | ×      |         |             |          |                         |          |
| $-\frac{728}{94}$ 1130 X A47/3 - CWW                                                                   |                                        | 1            |           | ľ          |       | X                          |                |          |               |          |         | ×      |         |             |          |                         |          |
| - 7-28<br>94 1245 × 35-TB-100                                                                          | Z                                      | _            |           |            | X     |                            |                |          |               |          |         | ×      |         | _           |          |                         |          |
|                                                                                                        |                                        |              |           |            |       |                            |                |          |               |          |         |        |         |             |          |                         |          |
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|                                                                                                        |                                        |              |           |            |       |                            |                | ·  -     |               |          |         |        |         |             | 4        | ψ.                      |          |
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|                                                                                                        |                                        | <u>.</u>     |           |            |       |                            |                | - ·      |               |          |         |        |         |             |          |                         |          |
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|             | Name                  |        | ubm               |            | •                       |            | Ns                | ame: <u>E</u>                    | Bill to         | )<br>En  | V.           |            |                    |          |          | SIS<br>RED | 3          | , oy                                                                                                            | 7          | 1        | 1     | Τ         |         |             | Lab use o<br>Due Date:   | •         |
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|             | ontac                 | :      |                   |            |                         |            | Con               | itact: <u>X</u><br>one: <u>4</u> |                 |          |              |            | -                  |          |          |            | /          | / /                                                                                                             |            |          |       |           | / /     | / /         | RCRA                     |           |
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| Pro         | ubmitti<br>. No.<br>2 | 1      |                   |            | ou agree to t $5 - (a)$ |            |                   | <u>.</u>                         |                 | 1        |              |            | 2<br>S             |          |          | SEN        | The MELLER | The second second second second second second second second second second second second second second second se |            |          | / /   |           |         |             | Temp                     | °C        |
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| 5           | 4/28                  | 1530   | )                 | Y          | 35-                     | 60         | 0505              | -03                              |                 |          |              |            |                    |          | X        | 4          | 4          |                                                                                                                 |            |          |       |           |         |             |                          |           |
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| V           | 4/29                  | ļ      |                   |            | 35 -                    | TB         | 22.               | tnol                             | 4/201           |          |              |            |                    |          | X        |            | -          |                                                                                                                 | _          |          |       |           |         |             |                          |           |
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|             |                       |        |                   |            |                         |            |                   | <u> </u>                         |                 |          |              |            | ┝─┟                |          | -        |            |            |                                                                                                                 |            |          |       |           |         |             |                          |           |
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| Turr        | around                | time   |                   | Yriority   | 1 or Standard           |            | 2 or 50%          | Priority 3 c                     | or 100% (       | Priority | 4 ERS        | •          |                    | <b>_</b> | BTEX     | (602/      | 8020),     | TPH (4                                                                                                          | 18.1 or 1  | B015), \ | VOLAT | LES (6    | 24/824  | 0), IGNITAB | ILITY, TOTAL LE          | AD (6010) |
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| Submitted by                                                                        | Bil                         | l to       |             |           |                                              | ΔΝ       | ALY   | eie        |            | 7        | ΓΤ           | 1        | Τ                  | Π      | 7                               | 7        | Lab use o      | only      |
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|                                                                                     | Name: Bak                   | 1.2-       |             |           |                                              |          |       | SIS<br>RED | ,          | / /      |              |          |                    |        |                                 | / /      | Due Date       | :         |
| Address: 1723 Levenne Blvd                                                          | Address: 420                | Rous       | FR          | PD.       | <u>.                                    </u> |          |       |            |            |          |              |          |                    |        |                                 |          | <u>``</u>      |           |
| JACK SONVILLE NK                                                                    | Coead                       | pole       | s Pa        | L         | _ [                                          |          |       |            |            |          |              |          |                    | / /    | / /                             |          |                |           |
| Address: 1723 Leyenne Blud.<br>Jack sonville NC<br>Contact: Jim Culp 28540          | Contact:R                   | Ho         | 4'5         | 5108      | <u> </u>                                     |          |       | POLATLES   | - IOTINA   | 7 /      | [ ].         |          |                    | ' /    |                                 |          |                |           |
| Phone: 910-353-3336                                                                 | Phone: 4(2-)                | 209-       | 209         | 29        |                                              |          |       |            | Ľ          | ' J      |              |          | ' /                | · /    |                                 | / [      | RCRA           |           |
| Fax:                                                                                | PO #: 624                   |            |             |           |                                              |          |       | 4          | 3          | ₫        |              | ' /      |                    | 1      | /~/                             |          | NPDES          | С         |
| · ux.                                                                               |                             |            |             |           |                                              |          | 3     | g v        | <i>א</i> ג |          | ' /          |          |                    |        | '/                              | ŀ        | Screened       | <br>Г     |
| By submitting these samples, you agree to the terms and o                           | conditions contained in NI  | ORC's Pric | e Scheo     | dule.     |                                              |          | J     |            | 1 .1       | " /      |              | / /      |                    |        | /                               |          | For Radioac    |           |
| Proj. No. Project Name<br>232 SLTE 35 - CAM                                         | PLEILER                     | No. d      | of Cont     | ainer     | 2<br>5                                       | f        | 2     | Η          | Ă          |          | / /          | / /      |                    | /      | /                               | Į        | Temp           | °(        |
| atrix Date Time m a b b                                                             |                             | VOA        | A/G<br>1 LL | 250<br>ml | P/0                                          |          |       |            |            |          | / /          |          |                    |        | /<br>L                          | _ab. Sar | mple ID        |           |
| 5 4/29 1800 × 35-5508-0                                                             | 0                           |            |             |           |                                              | ×        | X     | ×          |            |          |              |          |                    |        |                                 |          |                |           |
| 5 4/29 1812 × 35-5506-0                                                             |                             |            |             |           |                                              | x        | X     | X          |            |          |              |          |                    |        |                                 |          |                |           |
| S 4/29 1820 × 35-5505-0                                                             |                             |            |             |           |                                              | ×        | ¥     | ×          |            |          |              |          |                    |        |                                 |          |                |           |
| 5 4/29 1840 × 35-5503-0                                                             | oo                          |            |             |           |                                              | X        | X     | Ϋ́         |            |          |              | _        |                    |        |                                 |          |                |           |
| W X 35-TB23                                                                         |                             |            | <u> </u>    |           |                                              | <u>v</u> |       |            |            |          |              |          |                    |        | <u> </u>                        |          |                |           |
| W 1/29 1515 -K 35-RB10                                                              |                             |            |             |           |                                              | ×        | X     | ×          |            |          |              | <u> </u> |                    |        | $\left  \left( \right) \right $ | HOL      | D)             | 15 11     |
| W 4/30 1315 X 35- RB11                                                              |                             |            |             |           |                                              | ×        | x     | X          |            |          |              |          | $\left  - \right $ |        | ĥ                               | ot D     | C-oc<br>ate on | Botti     |
|                                                                                     | 05-03                       |            |             |           |                                              |          |       |            |            |          |              |          | ┝──┾               |        |                                 |          |                |           |
| 5 4/30 405 × 35 - 6400                                                              |                             |            |             |           |                                              | <u>χ</u> |       |            |            |          | _            | <u> </u> | $\left  - \right $ |        |                                 |          |                |           |
| S 4/30 1405 X 35- MW31<br>Turn around time Priority 1 or Standard D Priority 2 or 5 | -03                         |            | 4 685       |           |                                              | ×        | + BTE | X (602     | /8020      | TPH (    | 18.1 or      | 8015). \ |                    | ES (62 | 4/8240), (4                     | GNITABIL | ITY, TOTAL LI  | EAD (601( |
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|               |           |         | -                | _                | Servi                                 |            |                                       | KCL              | abora | tories.                    |           | -          |              |           | 191        |            | T H  |     | JRL        | ,<br>        | 10           | 89 E   | ast C    | ollin | s BTv     | d., Ri       | ichards  | son, T | _                 |                   | 238-559  |
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|               |           |         |                  | nitteo           |                                       | • • •      |                                       | -A.J.            |       | ~                          | Bill t    |            |              |           |            | A          | IALY | SIS |            | /            | /            | /      | /        | /     | /         | /            |          | / /    | Lab u<br>Due [    | ise only<br>Data: | /        |
| Ν             | lame:     | DA      | YE               | <u>R 1</u>       | ENUIR                                 | <u>son</u> | MEN                                   | N                | lame  | : <u>0</u> a               | KEP       | i En       | JUIR         | on        | NEL        | <b>PR</b>  | QUI  | RED | 1          | I.           | '            | '      | '        | ' /   | / /       | '            | / /      |        |                   | Jaie.             |          |
| Add           | lress:    |         | 219              | OR<br>na         | ous,                                  | PA         |                                       | Add              | iress | <u>420</u>                 | Ro        | <u>vse</u> | RAF          | Rd        | _          | _          |      |     |            | ฟ            | ฟ            | ./     |          |       |           |              |          | /      |                   |                   |          |
|               |           |         |                  |                  |                                       |            |                                       |                  |       | <u>COF</u><br>: <u>R</u> K | AOF       | oll        | 5_           | P         | <u>4 /</u> | 510        | 08   |     |            | ¥ !          | Ý            | 1.     | / ,      | 2     |           | /            |          | /      |                   |                   |          |
| Cor           | ntact:    | J       | <u>n (</u><br>A4 | <i>با يہ</i>     | D                                     | w-         |                                       | Co               | ntact | : AK                       | <u>H_</u> | HOP        | F            |           |            |            |      | . ] | 13         | / Ŋ          |              |        | X S      | 1     | / 🤉       | / ,          |          |        |                   |                   |          |
| Pł            | none:     | Ē       | AM<br>O 1/       | <u>P</u><br>2-   | ZN<br>553                             | -23        |                                       | Ø PI             | hone  | 4/2                        | <u></u> Z | -69        | -20          | 09        | 9          |            |      |     | Ŋ          | ່ 3          | n/           | Ň      | Ň        | ;/    |           | $\mathbb{A}$ |          |        | RCF               | łA                |          |
|               | Fax       |         |                  |                  |                                       |            | _                                     | F                | PO #: | ·                          |           |            |              |           |            |            |      |     | 8          | 31           | Ĭ            | Ĵ/ï    |          | 17    | · * '     | Ŋ.           |          |        | NPC               | DES               |          |
| <b>D</b>      |           |         |                  |                  | · · · · · · · · · · · · · · · · · · · |            |                                       | •                |       |                            |           |            |              |           |            |            |      |     | 7 i        | Ø.Š          |              | / K    | 76       | / {   | 73        | 9            | /        |        | Screen<br>For Rad | ed<br>dioactivity | , 🗆      |
| Proj.         |           |         |                  | lame             | ou agree f                            |            | 311118 8110                           | condi            |       |                            |           | T          | · · · ·      |           | 2          |            |      | 1   | ' <b>'</b> | 5            | $\checkmark$ | 'Ŋ     | ึ่งไ     |       | Friend I. | /            |          |        | Temp              | ·                 | _•C      |
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| 1<br>latrix [ | Date      | Time    | C<br>O<br>M<br>P | G<br>r<br>a<br>b | Identifyi                             | ng Mar     | rks                                   |                  | ·     |                            |           | VOA        | A/G<br>1 Lt. | 250<br>mi | P/0        |            |      |     | 7          | Ĺ            | /\$          | ŶŬ     |          | ) ¢   | 9         |              | La       | b. Sa  | mpie IC           | )                 |          |
| v 5           | pp        | 1600    |                  | X                | 35                                    |            | =BC                                   | )/               |       |                            |           |            |              |           |            |            | ×    | X   | X          | ×            |              |        |          |       |           |              |          |        |                   |                   |          |
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|               |           |         |                  |                  |                                       |            | · · · · · · · · · · · · · · · · · · · |                  |       |                            | <u> </u>  |            |              |           |            |            |      |     |            | _            |              |        |          |       |           |              |          |        |                   |                   |          |
|               |           |         |                  |                  |                                       | •          |                                       |                  |       |                            |           |            |              |           |            |            |      |     |            |              | _            |        |          |       |           |              |          |        |                   |                   |          |
|               |           |         |                  |                  |                                       |            |                                       |                  |       |                            |           |            | <br>  ·      |           |            |            |      |     |            |              |              |        |          |       |           |              |          |        |                   | <u></u> .         | <u>-</u> |
|               | round tir |         |                  |                  | or Standar                            |            |                                       |                  |       |                            |           |            | 4 ERS        |           |            |            | _    |     |            |              |              | or 801 | 15), VC  | DLATI | LES (6    | 24/82        | 40), IGN | ITABIL | ΙΤΥ, ΤΟΤ          | AL LEAD           | (6010)   |
| 2111          | Ast       | P       |                  | rit              |                                       |            | 1 150                                 | 20               | Hec   | ceived by                  | : (Signi  | H(U10)     |              |           | Date:      |            | Ŧſ   | ne: |            | emark<br>DIA |              |        |          |       |           |              | 15       |        |                   | 200               | <b>A</b> |
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| n           | ch           | ca         | pe                | _             |                        |                  |          |                      | ice            | 3        | ľ                     | DRC                          | Lab                | orat                   | orie   | 8.                                                                                           |                          |                     | IN O              | FC        | US            | TO       | DÝI               | REC            | OR               | D               | 1        | 089 I   | Cast (  | Collir    | ns Bly    | rd., R    | ichar        | rdson,      | , тх  | 7508                    | 31 (2:         | 14) 238          | 8-5591    |
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| A           | N            | am<br>ires | e: /<br>/<br>s: _ | S<br>Mi<br>DA | ubn<br>Ke<br>tre<br>zo |                  |          | by                   | h<br>TRU<br>SR | no<br>Re | me<br>st-             | STA<br>A                     | Nar                | ne:<br>ss:             | R. 4   | Bi<br>ZO<br>ZO<br>DE<br>DE<br>DE<br>DE<br>DE<br>DE<br>DE<br>DE<br>DE<br>DE<br>DE<br>DE<br>DE | ll to<br><u>Ha</u><br>Ro | OF<br>VSU<br>3      | F<br>CK           | R         | o/            | F        | Anal<br>Requ      | YSIS<br>JIREI  | 5<br>/           | /               | 127      | 5       |         | /         | //        | //        | //           | //          | 11    |                         | use o<br>Date: | •                |           |
| ¢           | Col          | ntac       | <u>م</u><br>ا: :  | .01<br>RE     | 3/-<br>2/1             | 0                | ec<br>He | DE<br>DE             | 1.5.<br>C      | , F      | 2A<br>                |                              | <i>CC</i><br>conta | act:                   | A<br>R | <u>opc</u><br>1z. h                                                                          | <u>L1.</u><br>4          | <u>s</u><br>401     | <u>   </u><br>= = | 7 /.      | 5/4           | B        |                   |                | /                |                 |          | \$/0    |         | ./        | /         | /         | /            | /           |       |                         |                |                  |           |
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| r           | oj. I        | No,<br>Z   |                   | Proj          | ect N                  | lame             | •        |                      |                |          |                       |                              |                    |                        |        | ed in N                                                                                      |                          |                     | e Sche<br>of Con  |           | 2             |          | /                 |                | /<br>\<br>\<br>\ | 5               | 4        | ۲ /     | //      | //        | //        | //        | /            |             |       |                         | 0              |                  | c         |
| trix        |              | )ate       | · Tir             | ne            | Comp                   | G<br>r<br>a<br>b | _        |                      | ying N         |          |                       |                              |                    |                        |        |                                                                                              |                          | VOA                 | A/G<br>1 LL       | 25<br>m   | р <i>Р/</i> С | <u>_</u> |                   | //             | Y                | <u>{</u>        | Y        |         |         | $\square$ | $\square$ | $\square$ | L            | ab. S       | Sam   | ple i                   | D              |                  |           |
| ,           | K            | pri<br>pri | 100               | 0             |                        | X<br>X           |          |                      | <u>5-</u>      |          |                       |                              |                    |                        |        | · · ·                                                                                        |                          |                     |                   |           | -             | -        | <u>×</u>          | -              | ×                | X               |          |         |         |           |           |           | •            |             |       |                         |                |                  |           |
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| _           |              |            |                   |               |                        |                  | ŀ        |                      |                | •        |                       |                              |                    |                        |        |                                                                                              |                          |                     |                   |           | ľ             | -        |                   |                |                  |                 |          |         |         |           |           |           |              |             |       |                         | • •            |                  |           |
| e<br>V      | inq          | uist       | ed b              | y: (5         |                        | ture)            |          | $\overline{\Lambda}$ | Date           |          |                       | or 50%<br>Fime:<br><u>00</u> |                    |                        |        | or 100%<br>by: (S                                                                            |                          |                     | 4 ERS             | •         | Date          | e:       |                   | EX (60<br>1me: | _                | ), TPH<br>Remai |          | 1 or 80 | 015), V | OLAT      | iles (    | 624/82    | 240), 10     | BNITAE      | BILIT | Υ, ΤΟΙ                  | AL LE/         | ND (6010         | ))        |
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| lati<br>Cor | rix<br>ıtair |            |                   |               | stewa<br>- 40 n        |                  |          | W - W<br>A/G         | /ater<br>- Amb |          | 3 - So<br>Dr Gl       |                              |                    | Solic                  |        | L - Liq<br>ni - Glas                                                                         |                          | A -<br>e mout       | - Air Ba<br>h     |           |               |          | rcoal tu<br>other | be             |                  | SL - 5          | Sludge   | 0       | - 01    |           |           | ND        | RC c<br>Plea | se Fa       | ax wi | cept<br>ritter<br>238-5 | ı chai         | l chan<br>nges t | ges.<br>0 |

| chc                                              | Te           | stir           | ig S              | Serv     | vic           | es                      | Г               | DRC L                              | abo             | ratories.                                      | CI                     | HAI      |              | · (       | 1      | יטט                | r HE         | :U                 | טאט      | •      | 10          | 18A F | ası C           | .uilii   | IS BIN         | 'a., r | ucnar          | usvii, | 1. 1. 1. |                                 | - 1 · 1          | 1          |
|--------------------------------------------------|--------------|----------------|-------------------|----------|---------------|-------------------------|-----------------|------------------------------------|-----------------|------------------------------------------------|------------------------|----------|--------------|-----------|--------|--------------------|--------------|--------------------|----------|--------|-------------|-------|-----------------|----------|----------------|--------|----------------|--------|----------|---------------------------------|------------------|------------|
| Name:<br>Address:                                | A            |                | Be                | mh       |               |                         | /               | <b>`</b>                           | lam             | 9:<br>s:                                       |                        |          |              | -         |        |                    | ALYS<br>QUIF |                    | . /      | 7      | /           |       |                 |          | †<br>_/        | .<br>  |                |        | /1       | b use i<br>e Date               | -                |            |
| Contact:<br>Phone:<br>Fax:                       | 41.          | 2 - Z<br>2 - Z | <u>69.</u><br>59. | 60       | 97            |                         |                 | P                                  | hon<br>PO       | ot:<br>e:<br>#:                                | •                      |          |              |           |        |                    |              | M                  | Take 1.  | /      | 19          |       |                 |          | and the second | /.     |                | -      | N<br>Scr | CRA<br>IPDES<br>eened<br>Radioa |                  |            |
| y submitting<br>roj. No.                         |              | samp<br>ect Na |                   | ou agr   | ee to         | the te                  | rms a           | Ind cond                           | litions         | contained i                                    |                        |          | of Cont      |           | ²<br>S |                    |              | (L' [UN            |          | hans-  | H. Part Pro | Lee L |                 |          | * /            | <br>   | /              |        | Te       | mp                              |                  | °C         |
| t<br>nix Date                                    | Time         | Como           | G<br>r<br>a<br>b  | Iden     | tifyin        | g Mar                   | ks              |                                    |                 |                                                |                        | VOA      | A/G<br>1 Lt. | 250<br>mi | P/0    |                    | /            | / 1                | 72       | 12     | i/ 2        |       |                 | J.       |                |        | L              | ab. S  | ample    | e ID                            |                  |            |
| 9-6-44 1                                         | 023          |                |                   | HC       | -5            | wo                      | 3               |                                    |                 |                                                |                        | 4        | 9            |           |        |                    |              | X                  | X        | X      | X           |       |                 |          |                |        | . 14           | 15/1   | msi      | <u>)</u>                        |                  | <u> </u>   |
| 5.691                                            | 023          |                | X                 | НĊ       | - :           | 5000                    | 3D              |                                    |                 |                                                |                        | 2        | 5            |           |        |                    | X            | X                  | X        |        | *           |       |                 | <u> </u> |                |        |                |        |          |                                 |                  |            |
| 5-6-9                                            | 1107         |                | X                 | HC       | - 5           | DO                      | 2-0             | 6                                  | /               |                                                |                        | 1        | <b> </b>     | 3         | 2      |                    | X            | X                  | X        | X      | <u>5-</u> 6 | X     | +               | -        | ļ              |        |                |        |          |                                 |                  |            |
| 5-6-44                                           | 1105         |                | *                 | HC       | - (           | S DO ;                  | 2-4             | 612                                | 1               |                                                |                        | <u> </u> | ·            | 3         |        |                    | X            | ×                  | X        | X      | 1           | X     | <u>]×</u>       |          |                |        |                |        |          |                                 |                  |            |
| 1 5-694                                          | 1055         |                | X                 | H        | <u>- 1</u>    | <u>sw</u>               | 02              |                                    |                 |                                                |                        | 2        | 5            | ļ         |        |                    | X            | X                  | <u>×</u> | X      | X           |       |                 |          | <u> </u>       |        |                |        |          |                                 |                  |            |
| 1 5-6-94                                         | 094          | -              | X                 | Hn       | 1.            | 5W                      | 07              |                                    |                 | · · ·                                          |                        | 2        | 5            |           |        |                    | X            | X                  | ×        | X      | X           |       | Ì               |          | ·              |        |                |        |          |                                 | -                |            |
| 5-6-24                                           | 0920         |                | r                 | Ни       | 4-            | 5 W                     | 03              | •                                  |                 |                                                |                        | 2        | 5            |           |        |                    | X            | *                  | 1        | X      | Х           |       |                 |          |                |        |                |        |          |                                 |                  |            |
| 1 5-691                                          | 1235         |                | X                 | W        | <u>c</u> -    | 54                      | 107             | <u> </u>                           |                 |                                                | •                      | 2        | 5            |           |        |                    | メ            | X                  | X        | X      | X           |       |                 |          |                |        |                | •<br>  |          |                                 |                  |            |
| 1 5-6-94                                         | 1205         |                | *                 |          |               | 54                      |                 |                                    |                 | • • •                                          |                        | 2        | 5            |           |        |                    | X            | X                  | X        | X      | X           |       |                 |          |                |        |                |        | •        |                                 |                  |            |
|                                                  |              |                |                   |          |               |                         |                 |                                    |                 |                                                |                        |          |              |           |        |                    |              |                    |          |        |             |       |                 |          |                |        |                | _      |          |                                 |                  |            |
| Purn around time<br>Relinguished<br>Relinguished | d by: (      | Signa          | ure)              | or Sta   | 5             | Date:<br>-6 44<br>Date: | <br> :          | 2 or 50%<br>Time:<br>3 00<br>Time: | F               | Priority 3 or 10<br>Received by<br>Received by | y: (Signati            | ure)     | 4 ERS        |           | Date   | ):<br>             | Tir          | (602<br>ne:<br>ne: |          | emar   | ks<br>(     | ton   | tec             | ,t       | RI             | 64     |                | FF     |          | YOU                             | EAD (60          | 10)        |
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| latrix W<br>Container                            | W - W<br>VOA | astewa         |                   |          | - Wat<br>VG - |                         | S - S<br>/ Or C | Soil<br>Glass 1 L                  | SD - :<br>Liter |                                                | - Liquid<br>Glass wide |          | Air Ba<br>th |           |        | Charco<br>lic or o |              | 9                  |          | SL - S | iludge      | . (   | ) <b>- O</b> il |          |                | N      | IDRC (<br>Plea | se Fa  | ix writ  | ept verl<br>ten ch<br>8-5592    | bai cha<br>anges | nge:<br>to |
| FICE US                                          | EON          | LY             |                   |          |               |                         |                 | · · ·,                             | <b>1</b>        |                                                |                        |          |              |           |        |                    |              |                    |          |        |             |       |                 |          |                |        |                |        |          |                                 | •                |            |
|                                                  |              |                |                   |          |               | _                       |                 |                                    |                 |                                                |                        |          |              |           |        | · ·                |              |                    |          |        |             |       |                 |          |                |        |                | _      |          |                                 | • •••            |            |

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| chcape Testing Services                                                    | NDRC Laboratories.                    | 01.01                             |            | 031      | ODY                   |             |                     |          | 1        | JO9 1.   | astu             | oinn    | 5 20190      | 1., IU      |         | TX 75081 (214) 238-559:                            |
|----------------------------------------------------------------------------|---------------------------------------|-----------------------------------|------------|----------|-----------------------|-------------|---------------------|----------|----------|----------|------------------|---------|--------------|-------------|---------|----------------------------------------------------|
| Submitted by<br>Name: Aaron Bernhund                                       |                                       | Bill to                           | \$         |          | 1                     | LYSI        |                     | Τ        | / /      | Τ        | $\left[ \right]$ | $\int$  | $\Gamma_{I}$ | / /         |         | Lab use only<br>Due Date:                          |
| Address: Batter Environmente                                               | / Address:                            |                                   | ·····      |          |                       |             | /                   | / /      | ' /      |          |                  | ./.     |              |             |         |                                                    |
| Contact: Rich Hoff                                                         | Contact:                              |                                   |            |          |                       |             |                     |          |          | /        |                  | .       | .,           | / /         |         |                                                    |
| Phone: 412-269-6000                                                        | Phone:                                |                                   |            |          |                       |             | Γ.                  | / /      | / /      |          | '.  .            | .1      | Ž            |             | / .     | RCRA                                               |
| Fax: 4/12-269-6097                                                         | PO #:                                 |                                   | <u></u>    |          |                       | Ý           | / /                 | y/       |          |          | ;   ·<br>;       | /       | ý            | /           | /       | NPDES                                              |
| By submitting these samples, you agree to the to                           | erms and conditions contained         | In NDRC's Price                   | Schedule   | ,<br>I.  | 1                     | . / .       | \$/>                | 5/ 32    | 42       |          |                  | Ceduri. |              | ·           | /       | For Radioactivity                                  |
| Proj. No. Project Name                                                     |                                       | / • No. o                         | Contain    | ers      |                       |             |                     | 2401     | 1.20     | E THE    |                  | ÿ       |              | ./          | • , _   | Temp °C                                            |
| trix Date Time C G Identifying Ma                                          | ks                                    | VOA                               | A/G 21     | 50 P/O   |                       | \$\$        | E.                  |          | ;/¥      |          |                  |         |              | /           | Lab. S  | Sample ID                                          |
| U 5-7-94 0847 + 71M-56                                                     | 02-06                                 | X                                 | 3          | ¥ 2      |                       | XV          | $\langle X \rangle$ | X        | ′        | X        | X                |         |              |             |         |                                                    |
| ) 5-7-94 0845 × Hm - 50                                                    |                                       |                                   | 1          | 1        |                       | X;          | < 1                 | X X      |          |          | X                |         |              |             |         |                                                    |
|                                                                            | 03-06 •                               | •                                 | 4          | 12       |                       | X :         | X X                 | <u> </u> |          | X        | X                |         |              |             |         |                                                    |
|                                                                            | 3-612                                 |                                   | 4          | 4        | •                     | * 7         | ( <u>)</u>          | ( X      |          |          | X                |         |              |             |         | •                                                  |
| 1 1 1 1 1                                                                  | 3-06                                  |                                   | 4          |          |                       | <u>x</u> :  | <u>x x</u>          | X        | <u> </u> | X        | X                |         | <b>I</b>     | • •         |         |                                                    |
| 0 5-7-940927 × Hr - 500                                                    | 3.060                                 | :                                 | <u> </u>   |          |                       | X           | XX                  | ( X      | <u></u>  | ļ        |                  |         |              |             |         |                                                    |
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| 1) 5-7-44 1002 X 161C - 5DO                                                | 3-06                                  |                                   | 4          |          |                       | <u>X </u> ; | <u>&lt;  x</u>      | X        |          | X        | A                |         |              |             |         |                                                    |
| D 5-7-94 1000 X WC - 5 D C                                                 |                                       |                                   | 4          | <u>′</u> |                       | XX          |                     | X        |          | ļ        | X                |         | · ·          |             |         |                                                    |
| 1/ 9-6-94 1445 X 35- AB/<br>Turn around time □ Priority 1 or Standard □ F  |                                       | 2<br>100% 🗆 Priority              | · <i>H</i> |          |                       | X           |                     |          |          | 1 07 8   | 015) \           |         |              | 624/92      |         | BILITY, TOTAL LEAD (6010)                          |
| Relinguished by: (Signatuye) Date:                                         | · · · · · · · · · · · · · · · · · · · | y: (Signature)                    |            | Date     |                       | Time        |                     | Rema     |          |          |                  |         | 1.2.0 (      | 024/02      |         | BILLIT, TOTAL LEAD (6010)                          |
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| Aatrix WW • Wastewater W - Water<br>Container VQA • 40 ml vial A/G - Ambei |                                       | L - Liquid A -<br>Glass wide mout | Air Bag    |          | Charco:<br>tic or oth |             |                     | SĽ•      | Sludge   | a \ (    | 10 - CI          |         |              | N           | RC cann | ot accept verbal changes.<br>ax written changes to |

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|             |          |             | -                | _                | by                                        |           | Bill                                    | CHAI      |                 |           |           |                    |      |         |               | 7       | 7                         | 7      | 7 7     |          | <u> </u> | -7          | <del></del> | TX 75081                       |         |
|-------------|----------|-------------|------------------|------------------|-------------------------------------------|-----------|-----------------------------------------|-----------|-----------------|-----------|-----------|--------------------|------|---------|---------------|---------|---------------------------|--------|---------|----------|----------|-------------|-------------|--------------------------------|---------|
| Ι.          |          |             |                  |                  | Bern Gern Gern Gern Gern Gern Gern Gern G | ·         |                                         |           |                 |           |           |                    | ALYS |         |               | 1       | '                         | / /    | '       | 1        | ' /      |             |             | Lab use                        | •       |
|             |          |             |                  |                  |                                           |           | Ime:                                    |           |                 |           |           | KE                 | QUIF | RED     |               |         | /                         |        |         |          |          |             |             |                                |         |
| Ad          | dress    | s: <u>B</u> | z Ke-            | 15.              | vuron in ontal                            | Addr      | ess:                                    |           |                 |           |           |                    |      |         |               |         |                           |        |         | /        | /        | / /         |             |                                |         |
|             |          |             |                  |                  |                                           |           |                                         | · ·· ·    |                 |           | [         |                    |      |         | /             | ŀ.      | /                         | /      |         | /        |          | ' /         |             |                                |         |
| Co          | ontac    | t: <u> </u> | ily              | Но               | ££                                        | Con       | tact:                                   |           |                 |           |           |                    |      | 1       | /     ,       | '       | ' · /                     | '      | ' ]     | /        | '. /·    |             | 1           |                                |         |
| F           | hone     | : <u>4</u>  | //2-:            | 269              | -6000                                     | Ph        | one:                                    |           |                 |           |           |                    |      | - /     | /             |         |                           | _ / ·  | and the | <i>\</i> | 1.       | 1.          | 1           | RCRA                           | ,       |
|             | Fax      | c 4         | //2-             | 269              | -6097                                     |           | 0 #:                                    |           |                 |           |           |                    |      |         |               |         | /~                        |        | 6/      | Γ.       | 1.       |             | ! .         | NPDE                           | 9       |
|             | 1 64     | ··          |                  |                  |                                           | ·         |                                         |           |                 |           |           |                    |      | /       | / 🖔           |         | $\langle \rangle$         | /- ]   |         | '        |          | [ ]·        |             | Screened                       |         |
| By s        | ubmitti  | ng thes     | e sam            | ples, y          | ou agree to the terms an                  | d conditi | ons contained in NDF                    | C's Price | e Schec         | lule.     | •         |                    | /    | 8       | 2             | - con   | $\mathbf{x}^{\mathbf{y}}$ | - Carl | '       | /        |          | /.          |             | For Radioa                     |         |
| Proj        | . No.    | Pr          | oject N          | lame             |                                           |           |                                         | No        | of Cont         | ainer     | 2         |                    |      | 3/      | Ŋ.            | 3/ 4    | 2 v                       | JY.    | M       | /        |          | /           |             | Temp                           | •       |
| <u> </u>    |          |             |                  |                  |                                           |           |                                         |           | 1               |           | -         |                    | 13   | THI LON | <i>`</i> ]`,' | 7:      |                           |        | ᢤ.      | /        | / .      | /           |             | L                              |         |
| 1<br>Matrix | Date     | Time        | U O E D          | G<br>r<br>a<br>b | Identifying Marks                         |           | •                                       | VOA       | A/G<br>1 LL     | 250<br>mi | P/0       |                    | /*   | /×      | TU Marials    | マン      | No.                       | / \{   | 1       | 1        | ' /      |             | Lab. S      | Sample ID                      |         |
| w           | 5-7-9    | \$1105      | ·                |                  | 35-RB13                                   |           |                                         | 2         | 4               |           | 1         |                    | X    | X       | X             | X       | 1                         | ſ      |         | 1        |          |             | . <u></u>   |                                |         |
|             |          | 144         |                  | X                | WC-5002-06                                |           |                                         |           |                 | 4         | Z         |                    | X    | X       | X             | X       | X                         | X      |         |          |          |             |             |                                |         |
| SD          | 5-6-99   | 1440        |                  |                  | WC- 5002.61                               |           |                                         |           |                 | 4         |           |                    | X    | X       | X             | X       | X                         |        |         |          |          |             |             |                                |         |
| ς₽          | 5-5-9    | 125         | 5                |                  | HM BNO3                                   |           | •                                       |           | 4               | 12        | Z         |                    |      |         |               |         |                           | X      |         |          |          |             |             |                                |         |
| W           | 5-7-4    | 130         | \$               |                  | +B 35-7B2                                 | 5         | •                                       | Z         |                 |           |           |                    | X    |         |               |         |                           |        |         |          |          |             |             |                                |         |
| \$1)        | 5-5-9    | 4142        | 2                |                  | HC-BNOZ                                   |           |                                         |           |                 |           | Ζ         |                    |      |         |               |         |                           | X      |         |          |          |             |             | -                              |         |
| 50          | 5-5-94   | 1020        | <b>)</b> .       | +                | HM-BNOZ                                   |           | •                                       |           |                 |           | Z         |                    |      |         |               |         |                           | X      |         |          |          |             |             |                                |         |
| sp (        | 5-6-94   | 1340        | >                | *                | WC-BNOZ                                   |           |                                         |           |                 | 11        | Z         |                    |      |         |               |         |                           | X      |         |          |          |             |             |                                |         |
| 50          | 5-5-9    | 1515        |                  |                  | HC-BNO3                                   | Ĵ         | <u></u>                                 | 1         |                 |           | 2         |                    |      |         |               |         | 1                         | X      |         |          |          |             |             |                                |         |
|             | -        |             | 1                |                  |                                           | ······    |                                         |           | 1               |           |           |                    |      |         |               |         |                           |        |         |          |          |             | ,           |                                |         |
| I           | around   |             |                  |                  | 1 or Standard D Priority 2                |           | Priority 3 or 100%                      |           | 4 ERS           |           | 4 <u></u> |                    |      |         |               |         |                           | or 801 | 5), VO  | ATIL     | ES (62   | 1/8240)     | , IGNITAE   | BILITY, TOTAL                  | LEAD (6 |
|             |          | ed by:      |                  |                  | Date: 1<br>5-7-44 1                       | "ime:     | Received by: (Sig                       | nature)   |                 |           | Date      | •                  | Tin  | ne:     | Re            | mark    | 5                         |        |         |          |          |             |             |                                |         |
| Reli        | nquish   | ed by:      | (Signa           | ature)           |                                           | îme:      | Received by: (Sig                       | nature)   |                 |           | Date      | <u> </u>           | Tir  | ne:     | -             | _       |                           |        |         |          |          |             |             |                                |         |
|             |          | -           |                  |                  |                                           |           |                                         |           | ,<br>           |           |           |                    |      |         | ] /           | -ed     | C f                       | #      | 08      | 22       | 41       | 185         | 5           |                                |         |
| Reli        | nquist   | ed by:      | (Sign            | ature)           | Date:                                     | īme:      | Received by: (Sig                       | nature)   |                 |           | Date      | : 1                | Tir  | ne:     |               | •       |                           |        |         |          |          |             |             |                                |         |
| Matr        | tainer   | ww - vo     | Vastev<br>A - 40 | /ater<br>ml viai | W - Water S - So<br>A/G - Amber / Or Git  |           | D - Solid L - Llqui<br>r 250 ml - Glass |           | - Air Bai<br>th |           |           | Charco<br>Ic or of |      | 8       | ls            | L - Slu | idge                      | 0      | Oil     | <u> </u> |          | NDRC<br>Ple | iase Fa     | ot accept ver<br>ix written cl | hanges  |
|             | <u> </u> | SE O        | NLY              |                  |                                           |           |                                         |           |                 |           |           | ;                  |      |         |               |         |                           |        |         |          | ····-    |             | 2           | 14-238-559                     |         |
| 188         |          | 60          |                  |                  |                                           |           | •                                       |           | •               |           |           |                    |      |         |               |         |                           |        |         |          |          |             |             |                                |         |

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| Name: <u>Ages Brenkerst</u>                                                                 | Bill to                               |         |                |                                               |                    | Analy<br>Requ              |       |              | .          | $\left  \right $ | /                                     | //         | / /                                       |         |              |             | Lab use on<br>D <u>u</u> e Date:                | y                  |
|---------------------------------------------------------------------------------------------|---------------------------------------|---------|----------------|-----------------------------------------------|--------------------|----------------------------|-------|--------------|------------|------------------|---------------------------------------|------------|-------------------------------------------|---------|--------------|-------------|-------------------------------------------------|--------------------|
| Address: <u>Birke Fouranentel</u><br>Contact: <u>Ann Inff</u><br>Phone: <u>U12-269-6000</u> | Address:<br>Contact:<br>Phone:        |         |                |                                               | 1                  |                            | /     | /            |            |                  | <br>                                  | /          | ,<br>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, |         |              |             | RCRA                                            |                    |
| Fax: <u>4/2-2696097</u><br>y submitting these samples, you agree to the terms and           | PO #:                                 |         |                |                                               |                    |                            | Kon   | 1~           | 14<br>14   | 2/~~/            |                                       |            |                                           |         | / /          |             | NPDES<br>Screened<br>For Radioactiv             |                    |
| roj. No. Project Name                                                                       |                                       | 1       | of Cont        |                                               | 2<br>rS            |                            |       | Vang.        | Part / PLA | Tetels           | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | cial crani |                                           |         | /            |             | Temp.                                           | •C                 |
| nx Date Time C G r Identifying Marks                                                        | <u> </u>                              | VOA     | A/G<br>1 LL    | 250<br>mi                                     | P/0                | //                         | 72    | Ĭ            |            | 12               | / <u>~</u>                            |            |                                           | [ ]     | /<br>        | Lab. Sa     | ample ID                                        |                    |
| 1 5-6-94 1132 X HC-5W04                                                                     |                                       | 2       | 5              |                                               |                    | <u> </u>                   |       |              | X          | X                |                                       |            |                                           |         |              |             | ····                                            |                    |
| 5-894 1200 X HC-Swol                                                                        |                                       | 2       | 5              | <u> </u>                                      |                    | X<br>  X                   |       |              | X          |                  |                                       |            | $\left  - \right $                        |         |              |             |                                                 |                    |
| 1 5-8-91 1200 × HC-SwolD                                                                    | ·•                                    | 2       | 4              | <u> </u>                                      | $\left  \right $   | X                          |       | X            | ×          | -                |                                       |            | $\left  - \right $                        |         |              |             |                                                 |                    |
| 5-8911240 × Hm-Swol                                                                         |                                       | 2       | 5              | 8                                             | $\left  \right $   | N<br>X                     |       |              |            | X                | -0,                                   | X          |                                           |         |              |             |                                                 |                    |
| 5-B941252 X HM-5D01-06                                                                      | · · · · · · · · · · · · · · · · · · · |         |                | 0<br>4                                        | $\left  - \right $ | ~<br>*                     |       | X            | X          |                  | N                                     |            | ┞──┨                                      |         |              | <u>15/m</u> | <i>\$0</i>                                      |                    |
| 5-8941252 × HM-SD01-06D                                                                     | · · · · · · · · · · · · · · · · · · · |         |                | 4                                             | +                  | 1                          |       | X            | Ŷ          |                  | X                                     | x          | A-8                                       |         |              | <u>.</u>    | -                                               |                    |
| 5-8441250 × HM- SD01-612<br>5-8441432 × He- SD04-06                                         |                                       |         |                | 4                                             | $\left  - \right $ |                            | X     | X            | X          |                  | X                                     | X          |                                           |         |              |             | ·····                                           |                    |
| 5-8-74/1430 X HC- 5004-612                                                                  | /                                     |         |                | 4                                             |                    | 7                          |       | X            | X          |                  | X                                     | <u>^</u>   |                                           |         |              |             |                                                 |                    |
| 5-8-94/617 × HC- SDOI-06                                                                    | $\int$                                | 1       |                |                                               |                    | X                          | -     | X            | X          | · · -            | X                                     | X          |                                           |         | m            | 5/4         | \$ D                                            |                    |
| Im around time Priority 1 or Standard Priority 2 o                                          | r 50%  Priority 3 or 100%             |         | 4 ERS          | ۱ <u>ــــــــــــــــــــــــــــــــــــ</u> | 1                  |                            |       | 2/8020       | ), TPH     | (418.1           |                                       |            |                                           | LES (62 |              |             | ILITY, TOTAL LEA                                | D (6010)           |
| elinquished by: (Signature) Date: T                                                         | ime: Received by: (Sign               | ature)` | · .            |                                               | Date               | ד :                        | 'ime: | <sup>R</sup> | lemar      | ks               |                                       |            |                                           |         |              |             |                                                 |                    |
|                                                                                             | ime: Received by: (Sign               |         |                | <u> </u>                                      | Date               |                            | lime: |              | Fe         | od ,             | E f                                   | H          | 08                                        | 9 Z     | Z:41)        | 187         | 0                                               |                    |
| elinquished by: (Signature) Date: T                                                         | ime: Received by: (Sign               | ature)  |                |                                               | Date               | : 1<br>                    | Fime: |              |            |                  |                                       |            |                                           |         |              |             |                                                 |                    |
| atrix WW - Wastewater W - Water S - Soi<br>ontainer VOA - 40 mi vial A/G - Amber / Or Gia   |                                       |         | - Air Ba<br>th |                                               | C - (<br>Plasti    | Charcoal tu<br>ic or other | ube   |              | SL - S     | Sludge           |                                       | D - Oil    |                                           | • ,     | NDRC<br>Plea | ase Fax     | t accept verba<br>x written char<br>14-238-5592 | changes.<br>ges to |
| FICE USE ONLY                                                                               |                                       |         |                |                                               |                    |                            |       |              |            |                  |                                       |            |                                           |         |              |             |                                                 |                    |

| [nc]        | hci            | ) <b>T</b> e                         | esti         | ng S             | Servi        | ices                   | NDRC La                           | boratories.                                      | CHAI      | N OF            | :(        | <u>}</u> | OD                | Y RE  | ECC     | ORD    |          | 10     | 89 Ea       | t Ċo   | llins  | Blvd      | ., Ric       | hardson,    | TX 75081 (214                                          | 559             |
|-------------|----------------|--------------------------------------|--------------|------------------|--------------|------------------------|-----------------------------------|--------------------------------------------------|-----------|-----------------|-----------|----------|-------------------|-------|---------|--------|----------|--------|-------------|--------|--------|-----------|--------------|-------------|--------------------------------------------------------|-----------------|
|             |                | : A                                  | 2~0          |                  | Ber,         | hard T                 | 1.                                | Bill to<br>me:<br>ess: <sup>:</sup>              |           |                 |           |          |                   | ALYS  |         | /      | /        | 1      |             | /      | /      | /         |              |             | Lab use only<br>Due Date:                              |                 |
| F<br>By s   | Fax            | : <u>4</u><br>: <u>4</u><br>ng these | /2-7<br>/2-, | 269<br>269       | ·600<br>·609 | C<br>><br>> to the ten | Ph<br>P                           | tact:                                            | C's Price |                 | dule.     | 2        |                   |       | Jul way | Front  | out Pris | ntels. | Emilia Carl |        |        | <br> <br> | !  <br> <br> |             | RCRA<br>NPDES<br>Screened<br>For Radioactivity<br>Temp | °               |
| ı<br>Matrix | Date           | Time                                 | Comp         | G<br>r<br>a<br>b | identif      | ying Mark              | \$                                |                                                  | VOA       | A/G<br>1 Lt.    | 250<br>ml | P/0      |                   |       |         | ]ž     | J.M.     | 1      |             | 1<br>/ |        |           | /            | Lab. S      | Sample ID                                              |                 |
| 50          | 5-8-94         | 1617                                 |              | X                | HC -         | · 5 D01-0              | 06D V                             | /                                                |           |                 | 4         |          |                   | X     | ¥       | X      | Х        |        |             |        |        |           |              |             |                                                        |                 |
|             | 5-8-94         |                                      |              | X                |              |                        | 612                               | · ·                                              |           |                 | 4         |          |                   | X     | X       | X      | X        | ×      |             |        |        |           |              |             |                                                        |                 |
|             | 5-844          |                                      |              | X                |              | AB14                   |                                   |                                                  | 2         | 4               |           |          |                   | X     | X       | X      | X        |        |             |        |        |           |              |             |                                                        |                 |
|             | 5-9.99         |                                      |              | X                |              | TBZ                    | 7                                 | •                                                | 2         |                 |           | Γ        |                   | х     |         |        |          |        | Ī           |        |        |           |              |             |                                                        |                 |
|             |                |                                      |              |                  |              |                        | •                                 |                                                  | T         |                 | 1         |          |                   |       |         |        |          |        |             |        |        |           |              |             | ·                                                      |                 |
|             |                |                                      |              |                  |              |                        |                                   |                                                  | 1         | ]               |           |          |                   |       |         |        |          |        |             |        | Ţ      |           |              |             |                                                        |                 |
|             |                |                                      |              | +                | · .          |                        | •                                 |                                                  |           |                 |           | Γ        |                   |       |         |        |          |        |             |        |        |           |              |             |                                                        |                 |
|             |                | †                                    |              |                  | ·····        |                        |                                   |                                                  |           |                 |           |          |                   |       |         |        |          |        |             |        |        |           |              |             |                                                        |                 |
|             |                |                                      |              |                  |              | . <u> </u>             | <u></u>                           |                                                  | <u> </u>  | +-              | 1         | ╎        |                   |       |         |        |          |        |             |        |        |           |              |             | · · · · · · · · · · · · · · · · · · ·                  |                 |
|             |                |                                      |              | +                |              |                        |                                   |                                                  |           |                 |           | $\vdash$ | <del> </del>      |       |         |        |          |        |             | -†     |        |           |              | <b></b>     | • <u> </u>                                             |                 |
| Turr        | around         | l<br>time                            |              | Priority         | 1 or Stand   | dard D Pri             | ority 2 or 50%                    | Priority 3 or 100%                               |           | 4 ERS           | •         | 1        | L                 | * BTE | X (802  | /8020) | , TPH    | (418.1 | l or 801    | 5), VC | DLATIL | ES (E     | 524/82       | 40), IGNITA | BILITY, TOTAL LEAD                                     | (6010)          |
| Rel         | inquish        | ed by:                               | (Signa       | ature)           |              | Date:                  | Time:                             | Received by: (Sign                               | ature)    |                 |           | Date     | »:<br>            | ŢÌI   | me;     | Re     | emar     | ks     |             |        |        |           |              |             |                                                        |                 |
| Rel         | inquish        | ed by:                               | (Sign        | ature)           | · · · · ·    | Date:                  | Time:                             | Received by: (Sign                               | ature)    | ,               |           | Date     | 9:<br>52          | TI    | me:     |        | Fe       | d E    | Ξį Ŧ        | 7      | 0      | ØZ        | 24           | 1187        | 0                                                      |                 |
| Rel         | inquish        | ed by:                               | (Sign        | ature)           |              | Date:                  | Time:                             | Received by: (Sign                               | ature)    |                 |           | Date     | e:<br>I           | Ti    | me:     |        |          |        |             |        |        |           |              |             |                                                        |                 |
| Mati<br>Con | rix<br>stainer | ww - v<br>vo                         |              | vater<br>mi vial |              |                        | J<br>S - Soil S<br>Or Glass 1 Lit | l<br>D - Solid L - Liquid<br>er 250 ml - Glass v |           | - Air Ba<br>Ith |           |          | Charc<br>tic or c |       | )e      |        | SL • S   | ludge  | 0           | Oil    |        |           | ND<br>1      | Please F    | ot accept verbal o<br>ax written chang<br>214-238-5592 | hanges<br>es to |
| OFF         | ICE U          | SE OI                                | NLY          |                  |              |                        |                                   |                                                  |           |                 |           |          |                   |       |         |        |          |        |             |        |        |           |              |             |                                                        |                 |

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| Submitted by                                                                            | Bill to                                | ) .                                    | · A                          | NALYSIS               | TT          | TT       | TT       | Lab use only                                                                     |
|-----------------------------------------------------------------------------------------|----------------------------------------|----------------------------------------|------------------------------|-----------------------|-------------|----------|----------|----------------------------------------------------------------------------------|
| Name: Harow Bernhardt                                                                   | Name:                                  |                                        | R                            |                       | '.          |          | ' / .    | Due Date:                                                                        |
| Address: Baker ENNIONmentel                                                             | Address:                               | ······································ |                              | /                     |             | '        |          |                                                                                  |
|                                                                                         |                                        |                                        |                              | /·                    | .           |          | / /      | /. /                                                                             |
| Contact: Ricy Huff                                                                      | Contact:                               |                                        |                              |                       |             |          |          | //                                                                               |
| Phone: 4/2-269-6000                                                                     | Phone:                                 |                                        |                              |                       |             |          |          |                                                                                  |
| Fax:6097                                                                                | PO #:                                  |                                        |                              |                       |             |          |          |                                                                                  |
| Fax                                                                                     |                                        |                                        |                              |                       | 8           | .        | 11       | Screened                                                                         |
| y submitting these samples, you agree to the terms a                                    | nd conditions contained in NDRC        | s Price Sched                          | ule.                         | X X                   |             |          | / /      | For Radioactivity                                                                |
| roj. No. Project Name                                                                   |                                        | No. of Conta                           | ainers                       | Han 5                 | 1011/1018   | / / /    |          | Temp °C                                                                          |
| C G Identifying Marks                                                                   | ······································ | VOA A/G.                               | 050 000                      |                       | :/ <u> </u> |          | / /      |                                                                                  |
| 1 <i>j</i><br>ix Date Time C G J<br>m a<br>p b                                          |                                        | VOA A/G.<br>1 Lt.                      | 250 P/O<br>mi                | $\frac{1}{1}$         | 17/         |          |          | Lab. Sample ID                                                                   |
| 5-9-9 1000 X 36-FS02.                                                                   | - CB01                                 |                                        | 1                            | XXX                   | X           |          |          | ···                                                                              |
| 5-9-11 1800 × 36-F502-                                                                  | LB03                                   |                                        | K                            | XXX                   | X           | <u></u>  |          |                                                                                  |
| 5444 1800 × 36-F502-                                                                    | LBOZ                                   |                                        | 1                            | XXX                   | ×           | <u></u>  |          |                                                                                  |
| 5-10-11 1010 × 36-F502-0                                                                | LB 04                                  | · ·                                    | 1                            | XXX                   | X           |          |          |                                                                                  |
| 5-10+11010 × 36-F502-0                                                                  | B05                                    |                                        | K                            | XXX                   | X           |          | <u> </u> | · · · · · · · · · · · · · · · · · · ·                                            |
| 5-9-94 1810 X 36-F503-C                                                                 | BOI                                    |                                        | *                            | XXX                   | X           |          |          |                                                                                  |
| - 5-9-94 1810 × 36-F502- C                                                              | BOZ                                    |                                        | ト                            | XXX                   |             |          | <u> </u> | · · · · · · · · · · · · · · · · · · ·                                            |
| = 5-9-94 1810 × 36-F503-C                                                               | B04                                    |                                        | 1                            | XXX                   |             |          |          |                                                                                  |
| = = - + + 1 BIO X 36-F503-C                                                             | BO 3                                   |                                        | F                            | * * Y                 | X           | <u> </u> | <u> </u> |                                                                                  |
| = 5494 1810 X 36- F503- C.                                                              | 305                                    |                                        |                              | X   Y                 | X           |          |          | 8240), IGNITABILITY, TOTAL LEAD (6010)                                           |
| um around time                                                                          | 2 or 50%                               |                                        | Date:                        |                       |             |          |          |                                                                                  |
| in Mal 5-10-44 1                                                                        |                                        |                                        |                              |                       | H           | old Fl   | r hi     | o who ys                                                                         |
| telinquished by: (Signature) Date:                                                      | Time: Received by: (Sign               | ature)                                 | Date:                        | Time:                 | Fac         | IE,      | # A1     | 922411897                                                                        |
| lelinguished by: (Signature) Date:                                                      | Time: Received by: (Sign               | ature)                                 | Date:                        | Time:                 | 1 64        | 7- X     | 01       | 16411042                                                                         |
|                                                                                         |                                        | ,                                      |                              |                       | •           |          |          |                                                                                  |
| latrix WW - Wastewater W - Water S - 5<br>container VOA - 40 ml vial A/G - Amber / Or 6 |                                        |                                        | g C - Cha<br>P/O - Plastic o | rcoal tube<br>r other | SL - Sludge | 0 - Oil  | 1        | IDRC cannot accept verbal chang<br>Please Fax written changes to<br>214-238-5592 |
| FFICE USE ONLY                                                                          |                                        |                                        | •                            |                       |             |          |          |                                                                                  |
|                                                                                         |                                        |                                        |                              |                       |             |          | •        |                                                                                  |

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|     | <b>Y</b> II | ica)      | hG          |       |       |                  |             |      | ces        |           |       | KC L      | aDo       | ratorie     |                              | CHA      |              |           | 151     |              | TH  |              |                 | ر<br>سرب          | 10        | 189 E               | ast (        | ollir                     | ns Blv       | /d., R   | ich        | ardsoi  | _     |        |           | ) 238-(  |
|-----|-------------|-----------|-------------|-------|-------|------------------|-------------|------|------------|-----------|-------|-----------|-----------|-------------|------------------------------|----------|--------------|-----------|---------|--------------|-----|--------------|-----------------|-------------------|-----------|---------------------|--------------|---------------------------|--------------|----------|------------|---------|-------|--------|-----------|----------|
|     | <b>.</b> .  |           |             |       |       |                  | d by        |      |            |           |       |           |           |             | Bill to                      |          |              |           |         | AN           | ALY | SIS          |                 | /                 | /         | /                   | /            | /                         | /            | /        | 1          |         |       |        | ise on    | ly       |
|     | N           | am        | e: 🛓        | SA!   | KEA   | 2 4              | EN          | 11   | <u>zon</u> | Me        | 18    |           | am        | e:          | BANE                         | K        | SEA          | R         | D       | Re           | QUI | RED          | ' J             | 10                | / /       | /                   | / ,          |                           |              |          |            | /       | /     | Due I  | Jale:     |          |
|     | Add         | Ires      | s: /        | 172   | 3     | LE               | J           | V    | VE.        | EL.       | 冲     | Add       | res       | s: A        | OP                           | BL       | Db           | 3         | 52      |              |     |              | 1               | ų́/               |           | <u>,</u> b/         | ŀ            | $\searrow$                | <u>'</u> 4/  |          |            |         | /     |        |           |          |
|     |             | JA        | Ŀ           | Son   | V     | ILL              | <u>E, 1</u> | N    | <u> 2</u>  | <u>85</u> | ¥¢    | ,         |           | 12          | DANE<br>ZO R<br>DR A<br>SIOS | 3        |              |           | /T      |              |     |              | 13              | <u>'</u> /1       | 5/5       | //                  | 2/3          | $\mathbb{N}_{\mathbb{N}}$ | $\mathbb{N}$ | /        | /          |         | ╞     |        |           |          |
|     | Co          | ntac      | : _         | ~~    | Γ     | <u>_</u>         | 14          | 2    |            | •         | _     | Ço        | ntac      | x: _2       | RICH                         | HO       | ĒĒ           | ·         |         |              |     |              | /\$             | $\langle \rangle$ | //        | $\langle N \rangle$ | /.¢          | / 8                       | y            | /        | /          | /       |       |        |           |          |
|     | Pl          | none      | e: <u>(</u> | 710   | ) -   | 35               | 3           | - 3  | 33         | 6         |       | P         | non       | e: <b>4</b> | <u>Ric н</u><br>12 — г       | 269      | -Z           | 299       | 2       |              |     | /            | 30/             | /.\               | 3/        | 3/                  | ÿ            | ×.                        | "n/          | '        | /          | /       |       | RC     | AF        |          |
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| E   | y su        | bmitti    | ing ti      | nese  | sam   | oles,            | you a       | gree | to the     | term      | s and | condi     | tions     | contair     | ed in NDR                    | C's Pric | e Sche       | dule.     | •       |              | 1   | 8            | / Ņ             | / 3               | (Q)       | <u>v</u>            | / S          |                           |              | ·        | /          |         | -     | For Ra | dioactivi |          |
|     | -           | No.<br>32 |             | -     |       | lame<br>TE       |             | 15   | 5 -        | c         | AN    | 18        | 6         | SEIG        | SER.                         | No. c    | of Cont      | ainer     | 2<br>'S |              |     | $\mathbb{N}$ |                 | אא.               | и/<br>v/\ | Ĩ,<br>I             | ð.           |                           |              |          |            |         |       | Temp   | )         | ℃<br>    |
| Vla |             | Date      |             | me    | Comp  | G<br>r<br>a<br>b |             |      | ring M     |           |       |           |           |             |                              | VOA      | A/G<br>1 Lt. | 250<br>ml | P/O     |              | / * | /ų           | y ,             | /N                | /ʎ        | 7                   | /            | Ť.                        |              | /-       |            | Lab.    | Sam   | ple IC | $\sim$    | ~        |
| u   | <u>'</u> 5  | 10        | 2           | 5     |       | X                | 3           | 35   | - M        | W         | 29    | A-        | 0         | /           |                              |          |              |           |         |              | X   | ×            |                 | *                 | +         | イ                   |              |                           | -            | -        | {≰         | TAN     | 1DA   | RD     | TUE       | -M-      |
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| ω   | 5           | 10        |             |       |       |                  |             |      | -7         |           |       | <u> </u>  |           |             |                              |          |              |           |         |              | •   |              | ×               |                   |           |                     |              |                           |              |          | C          | UER     | -0    |        |           |          |
| 5   | 5           | lo        | 08          | 40    |       |                  |             |      |            |           |       | B-        | - 0       | 23          |                              |          |              |           |         |              |     |              | X               |                   |           |                     |              |                           |              |          |            |         |       |        |           |          |
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|     | T           |           |             |       |       |                  |             |      |            |           |       |           | •         |             |                              |          |              |           |         |              |     |              |                 |                   |           |                     | 1            |                           |              |          |            |         |       |        |           |          |
|     | _           | round     |             |       |       |                  |             |      |            |           |       |           | r         |             | or 100% [                    |          | 4 ERS        |           |         |              |     |              |                 |                   |           | or 80               | 15), V       | OLAT                      | ILES (       | 624/82   | 240),      | IGNIT/  | BILIT | Y, TOT | AL LEAD   | ) (6010) |
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| Inc     | chca          | _        |                       |                  |                      | NDRC L   | aboratories.       |                  | IN OI          | = CL       | JST   | OD    | Y RI         | ECC          | ORE    | )        | 10                 | )89 E         | ast C         | ollins     | Blvo         | 1., Ri | chardson,     | , TX 75081 (                        | 214) 238-  |
|---------|---------------|----------|-----------------------|------------------|----------------------|----------|--------------------|------------------|----------------|------------|-------|-------|--------------|--------------|--------|----------|--------------------|---------------|---------------|------------|--------------|--------|---------------|-------------------------------------|------------|
|         |               |          |                       |                  | d by                 |          | Bill               |                  |                |            |       |       | ALY          |              |        | /        | /                  | F             |               | / 🔬        | Ϊ.           | /      |               | Lab use                             | •          |
|         | Nam           | e:C      | <u>//n</u>            | 2/               | ulp                  |          | ame: <u>Rich</u>   | HOF<br>Disco     | -0<br>-0       | 01         | [     | Re    | QUII         | RED          | 1      | ' I      | '                  | '^            |               | 8          |              | ' /    |               | Duo Du                              |            |
| A       | ddres         | s: ∠     | 72                    | 3                | lejeune              | Al wordd | ress: <u>420 K</u> | ouse             |                | <u>a</u> . | 7     |       |              |              |        |          | 1.                 | $\mathbf{A}$  | /.            | 3          |              |        |               | -                                   |            |
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|         |               |          |                       |                  | you agree to the ten |          |                    |                  |                |            |       | •     | Į V          | 'Y           | 'X     | 1        | '.n)               | '∛            | Ø             | ' /        | _ /          | /      |               | Temp.                               |            |
|         | oj. No.<br>32 |          | roject<br>S <i>77</i> | ivam<br>53       | 5-MCB                | Cam.     | 5 Gene             | No:              | of Con         | ainer      | rs    | . (   | $\mathbb{M}$ | $\mathbb{V}$ | y.     | M.       | \$                 | $\mathcal{M}$ | 7             |            |              |        |               |                                     |            |
| 1       | Date          | Tim      | 1 2                   | G<br>r<br>a<br>b | Identifying Marks    |          |                    |                  | A/G<br>1 Lt.   |            | P/Q   | . 4   | <b>}</b> / ( | Ĭ            | Ĭĥ     |          | 4 K                | ¥ ĸ           | ¥,            | / ,        | / ,          | /      | Lab. S        | Sample ID                           |            |
| S       | 5/11          | 080      | 6                     | X                | 35- MU               | 130BS    | -04 -11            |                  |                |            |       |       |              |              |        |          |                    | X             | Í             |            |              |        |               |                                     |            |
| W       | 5/11          | 14       | p                     |                  | 35-RB                |          |                    |                  |                | · <u>,</u> |       | X     | ¥            | ¥            | x      |          | X                  |               |               | ·          |              |        | (HOL          | لم.                                 |            |
| W       | 5/10          | 19       | 45_                   | X                | 35 - MU              | 1095-0.  | 2                  |                  |                |            |       | x     | x            | Y            | x      |          | x                  |               |               |            |              |        |               |                                     |            |
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| Turn    | around        | 1        |                       | Briarda          | 1 or Standard D Prio |          | Priority 3 or 100% |                  | 4 500          | ļ          |       |       | . DTE        |              | /90201 | TOU      | (410               |               |               |            | <b>FS</b> (6 | 24/92  |               | BILITY, TOTAL I                     | EAD (6010) |
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| Mat     | rix           | ww -     | Waste                 | water            | W - Water S          | S-Soll S | D-Solid L-Liqu     | A blu            | - Air Ba       | g          | C • C | harco | al tub       | 0            | ę      | SL - S   | ludge              | 0             | - Oil         |            |              |        |               | ot accept ver<br>ax written ch      |            |

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|            |                     |             |                |             |                  | Services                   |               |                 | Bill to                               |        |             |           |          |          | LYSIS      |                     | 7                            | 7        | 7        | 7 7           | 7      | <i>.</i><br>7 | 7              | ,<br>    | Lab use               |             |   |
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| C          | ontac               | :: _        | Ĵ              | m           | Ču               | mulle, NC                  | Con           | tact:           | Z. Hol                                | 4      | <u> </u>    |           | _1       |          |            |                     | <u>i</u> .                   | /        | E        | ' /           |        |               | / /            | 1        |                       |             |   |
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| -          | ubmitti             |             |                |             | les, y<br>lame   | you agree to the terms a   | nd conditi    | ons containe    | ed in NDRC                            | 1      |             |           | 2        |          | 1          | 91                  | 1 7                          | Y Y      | Mondary. |               | /      | / /           | /              |          | Temp.                 |             | ; |
|            | 32                  |             |                |             |                  | 35- Cam                    | p.Ge          | IGF R           | 1                                     | No. c  | of Cont     | ainers    | 3        | ò        | 1          | .,                  | $\mathbf{J}$                 | 1        |          |               |        | ' /           |                |          |                       |             |   |
| 1<br>atrix | Date                |             | me             | C<br>m<br>P | G<br>r<br>a<br>b | Identifying Marks          |               | -               |                                       | VOA    | A/G<br>1 LL | 250<br>ml | P/O      | Ý        | E.         | Ă                   |                              |          | 7/       | '             |        |               | La             | b. Sa    | mple ID               |             |   |
|            | 5/12                |             |                |             | X                | 35-MW14                    | 5-0           | 2               |                                       |        |             |           |          | x        | XX         | X                   | X                            |          |          |               |        |               |                |          |                       |             |   |
|            | 5/17                |             |                |             | ×                | 35-MW14                    | <u>D-02</u>   |                 |                                       |        |             |           |          | X        | <u>x</u> . |                     | 4 ×                          |          |          |               | _      |               | ļ              |          |                       |             |   |
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|            | <u> 12</u>          | 1           |                |             |                  | 35-HW10.                   |               | -               |                                       |        |             |           | <u> </u> |          |            | $\langle x \rangle$ |                              |          |          | ·             |        |               |                |          |                       |             |   |
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| ບ<br>      | 5/12                | <u>!</u>    |                |             | <u>×</u>         | 35-7830                    |               |                 |                                       |        |             |           | -        | +        |            |                     |                              | X        |          |               |        |               |                |          |                       |             | - |
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|            | around              |             |                | -           | _                | 1 or Standard D Priority 2 |               |                 |                                       |        | 4 ERS *     | · · · · · |          | * E      |            | <b></b>             |                              | · · · ·  | or 8015  | 5), VOL       | ATILES | (624/8        | 1<br>240), IGN | IITABILI | TY, TOTAL             | LEAD (6010) |   |
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| Submitted by                                                                                  | Bill to                               | 0          |              | 1                                      |        | IALYS | 219   |        |       | 7                                        | 7    | 7    | 7    | 7        | TT           | T     | Lab use only                           |        |
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| Name: BAKER ENV                                                                               | Name: BAKER                           | EA         | v.           |                                        |        | EQUIF |       |        |       |                                          |      | ./-  |      |          |              |       | Due Date:                              |        |
|                                                                                               | Address: 420 Rou                      | SER        | R            | ,                                      |        |       |       |        |       | /                                        | /    | / /  | / /  |          |              | /     |                                        |        |
| JACKSONVILLE, NC 28540                                                                        | CORADPOL                              | <u>15,</u> | Pa I         | 15108                                  |        |       |       | /      | / /   | 12                                       |      | ' /  |      |          | / /          | ′     |                                        |        |
| Contact: JIM CULP                                                                             |                                       | F          |              | ······································ | ,      |       |       |        | ' /   | (All all all all all all all all all all | THE  |      | /    | /        |              | ╞     | ······································ |        |
| Phone: 910 353 3336                                                                           | Phone: <u>412 26</u>                  |            |              |                                        |        |       | 1     | ₩.     |       | 3 k                                      | Ĭ    |      |      | '        | ' /          |       | RCRA [                                 |        |
| Fax:                                                                                          | PO #: 62470                           | 2 - 2      | <u>7 32</u>  | -                                      |        |       | 15    |        | JC    |                                          | ř    | 15/  |      |          | /            |       | NPDES                                  |        |
|                                                                                               | · · · · · · · · · · · · · · · · · · · |            |              |                                        |        |       | /     | ENLYD. | MEINE | T TALS                                   | 9    | TILL |      | /        | /            |       | Screened<br>For Radioactivity          | $\Box$ |
| By submitting these samples, you agree to the terms and                                       | conditions contained in NDR           | C's Pric   | e Scheo      | iule.                                  |        | 5     | N     | Ž      |       | Η, ſ                                     | ₹Ľ   | र्{  | / /  | / /      | /            | F     |                                        | °C     |
| Proj. No. Project Name<br>232 SITE 35 - CAMP GE                                               | - GER                                 | No. c      | of Cont      | alners                                 |        |       | 7.    | 7:     | ₹/ ÷  | 7 À                                      | /\$  | 1    | ' /  |          |              | L     | Tomp:                                  |        |
| t 1994 C G d Identifying Marks                                                                |                                       | VOA        | A/G<br>1 Lt. | 250<br>mi P/O                          |        |       |       | THE    | N.    |                                          | N/   |      |      | /        | Lab          | . San | nple ID                                |        |
| V 5/12 1600 X 35-MW165                                                                        | -02                                   | 4          | 4            |                                        | X      | X     |       | X.     | X     |                                          |      |      |      | -        |              |       |                                        |        |
| N 5/12 1730 X 35 - MW 195                                                                     |                                       | 4          | 4            |                                        | X      | X     | X     | x      | х     |                                          |      |      |      |          |              |       |                                        |        |
| 1 5/12 1730 X 35-MW195                                                                        | -02D                                  | 4          | 4            |                                        | X      | x     | x     | x      | x     |                                          |      |      |      |          |              |       | •                                      |        |
| V 5/12 1730 X 35- MW195                                                                       | - 0 <u>2.</u> MS                      | 4          | 4            | ·                                      | X      | X     | хĻ    | X      | хL    |                                          |      |      |      |          |              |       |                                        |        |
| V 5/12 1730 X 35-MW195                                                                        | - OZ MSD                              | 4          | 4            | <u> </u>                               | X_     | X     | X     | хŀ     | x     |                                          |      |      |      | ļ        |              |       |                                        |        |
| N 5/12 1910 X 35 - MW19D                                                                      |                                       | 4          | 4            |                                        | X      | X     | X     | X      | X     |                                          |      |      |      |          |              |       |                                        |        |
| N 413 1125 X 35- MWZ15                                                                        |                                       | 4          | 5            |                                        | X      | X     | X     | X      | ХĻ    | X                                        |      | _    |      | <u> </u> |              |       |                                        |        |
| N 5/3 1215 X 35 - MW 21 I                                                                     | )-02                                  | 4          | 5            |                                        | X      | X     | X     | X      | X L   | X                                        |      | _    |      |          |              |       |                                        |        |
| N 5/13 1450 X 35-RB21                                                                         |                                       | 4          | 43           |                                        | X      | X     | X     |        | X     |                                          |      |      |      |          | <u>  ( H</u> | 102   | 0)                                     |        |
| J     X     35 - TB31       Turn around time     Ø Priority 1 or Standard     □ Priority 2 or | 50% CI Diath: 0 100%                  | 2          |              |                                        |        |       | (802# |        |       |                                          | 8015 |      | THES | (624/B   | 240) IGNI    | TARIE | TY, TOTAL LEAD (60                     | 10)    |
|                                                                                               |                                       |            | 4 213        | -<br>Date                              |        |       |       |        |       | ' /F                                     | A    | NY   | Qυ   | ES       | TION         | is (  | CALL                                   |        |
|                                                                                               | ne: Received by: (Sign                | ature)     |              | Date                                   | e:     | Tir   | me:   |        |       | KI                                       | CH   | H    | off  | - (      | 41.Z.        | 26    | 9 2099                                 |        |
| Relinquished by: (Signature) Date: Tir                                                        | ne: Received by: (Sign                | ature)     |              | Date                                   | 0:<br> | Tir   | me:   | 1      |       |                                          |      |      |      |          |              |       |                                        |        |

| ħc           | hcar                 |       |                 |            | Services               | ÷ .               | boratories.      | . (       | CHAI     |              | <b>7</b>  |           | 1 C      |      |        |     |                | 10  | ンC<br>89 E | ast C      | ≠<br>Collir      | 55<br>Is Blv | <i>01</i><br>rd., R | lichar   | dson, T  | FX 75081   | (214) 238   |
|--------------|----------------------|-------|-----------------|------------|------------------------|-------------------|------------------|-----------|----------|--------------|-----------|-----------|----------|------|--------|-----|----------------|-----|------------|------------|------------------|--------------|---------------------|----------|----------|------------|-------------|
|              |                      | . 8   | Subr            | nitte      | d by                   |                   | 1                | Bill to   |          |              |           |           | AN       | IALY | SIS    |     |                | [÷. | /.         | /          |                  |              |                     |          | 77       | Lab us     | -           |
|              |                      |       |                 |            | ENV                    |                   |                  | -         |          |              | - MA -    |           | RE       | QUI  | RED    |     |                |     |            | /<br>• · / | $ _{\mathbb{C}}$ | / ,          |                     |          |          | Due D      | ate:        |
| Ad           | dress                |       |                 |            | ejeune Blv             |                   | ess: <u>420</u>  |           |          |              |           | _         |          |      |        |     |                |     |            |            |                  |              |                     | ' /      |          |            |             |
|              |                      |       |                 |            | ulle, NC 2859          |                   | Cor              | -         |          |              |           |           |          |      | 6      | /   | /              | /   | /          | /          |                  |              |                     |          |          |            |             |
| С            | ontact               | ہد :  | Im              | Cu         | ц <u>р</u>             | Con               | tact: 4/17       |           |          |              |           |           |          |      | 40/    | '   |                | '   | /<br>/     | /          | /                |              | /                   |          | /        |            |             |
|              |                      |       |                 |            | 3-3336                 | Ph                | one: <u>4/12</u> | 269       | - 20     | 99           |           | _         |          |      | N      | /   |                |     |            |            | '                | '            | '                   | '        |          | RCR        | ۹ <u>(</u>  |
|              | Fax                  | :     |                 |            |                        | P                 | 0 #: <u>624</u>  | 170 -     | 232      | 2            | :         | _         |          | 1    | Į.     |     | /              | /   | /          |            |                  |              |                     |          |          | NPD        | s [         |
|              |                      |       |                 |            |                        |                   |                  |           |          |              |           |           |          | 0    | The Es |     | / ,            | /   | /          | /          | /                | /            | /                   | /        |          | Screened   |             |
|              |                      | -     |                 |            | you agree to the terms | and condition     | ons contained    | in NDRC   | 's Price | Scheo        | iule.     |           |          |      | ' /    | /   | /              |     | /          | ' /        | / /              | / /          | / /                 | /        |          | For Radio  |             |
|              | . No.<br>2           |       | ا pject I<br>/ک | vame<br>TE | 35 - Camp              | GEIG              | EL               |           | No. o    | f Cont       | ainers    | 2         | ļ        | 2    |        | /   | /              | /   | /          |            | /                |              | /                   |          |          | Temp.      | °(          |
|              | 1994<br>Date         |       | Comp            |            | Identifying Marks      |                   |                  |           | VOA      | A/G<br>1 Lt. | 250<br>ml | P/0       |          |      |        | / / | / /            | / / | / /        |            |                  |              | /                   | L        | ab. Sa   | mple ID    |             |
| ŝ            | 5/13                 | 081   | 1               | X          | 35- MW26               | 85-0              | 24               |           |          |              |           | ·         | λ        |      |        |     |                |     |            |            |                  |              |                     |          |          |            |             |
|              |                      |       |                 |            |                        |                   |                  |           |          |              |           |           |          |      |        |     |                |     |            |            |                  |              |                     |          |          |            |             |
|              |                      |       |                 |            |                        |                   |                  |           |          |              |           |           |          |      |        |     |                |     |            |            |                  |              |                     |          |          |            |             |
| _            |                      |       |                 |            |                        |                   |                  |           |          | ÷            |           |           |          |      |        |     |                |     |            |            |                  |              |                     |          |          |            |             |
|              |                      |       |                 |            |                        |                   |                  |           |          |              |           |           | 1        |      |        |     |                |     |            |            |                  |              |                     |          |          |            |             |
|              |                      |       |                 |            |                        |                   |                  |           |          |              |           |           |          | `    |        |     |                |     |            |            |                  |              |                     |          |          |            |             |
| $\downarrow$ |                      |       | ļ               |            |                        |                   |                  |           |          |              | ·         |           |          |      |        |     |                |     |            |            |                  |              |                     |          |          |            |             |
| _            |                      |       |                 |            |                        |                   |                  |           |          |              |           | $\square$ |          |      |        |     |                |     |            |            |                  |              |                     |          |          |            |             |
| _            |                      |       | 1               |            |                        |                   |                  |           |          |              | 1         |           |          |      | _      |     |                |     |            |            |                  |              |                     |          |          |            |             |
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|              | around ti<br>nquishe | _     |                 |            | 1 or Standard Date:    | 2 or 50%<br>Time: | Received by      |           |          | 4 ERS *      |           | Date:     |          | BTEX |        | 1   | TPH (<br>marks |     | or 801     | 15), V     |                  | LES (        | 824/82              | 240), IG | INITABIL | ITY, TOTAL | LEAD (6010) |
|              |                      | tan   | ut              | <u>z.C</u> | ulf 5/13/94            | 1530              |                  |           |          | ·            |           |           |          |      |        | I   | F              | AN  | 14         | Â          | UE:              | ST/          | ON                  | い-       | CA       | KC         |             |
| Relir        | nquishe<br>(         | d/by: | (Sign:          | ature)     | Date:                  | Time:             | Received by      | : (Signat | ture)    |              |           | Date:     | 1        | Tin  | ne:    | R.  | CH             | H   | bF         | F          |                  | 41.          | 2- ,                | 26       | 9-2      | 099        |             |
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| ichcape Testing Services NDRC Laboratories. C<br>Submitted by Bill to                                                                           |              |                |             |        |      |              |        | •        | Τ        | 7           | 17        | 7    | 7           | 7        | 11            | / Lab use only                                                    |
|-------------------------------------------------------------------------------------------------------------------------------------------------|--------------|----------------|-------------|--------|------|--------------|--------|----------|----------|-------------|-----------|------|-------------|----------|---------------|-------------------------------------------------------------------|
| Name: <u>J. Curp</u> Name: <u>Baker</u>                                                                                                         |              |                |             |        |      | ALYS<br>QUIF |        | 1        | [        |             | ' /       | 7    |             | /        |               | Due Date:                                                         |
|                                                                                                                                                 |              |                |             |        |      | aon          |        |          |          |             | 2         | J .  |             |          | '             |                                                                   |
| JACKSONVILLE NC. Coraspalue                                                                                                                     | · /          | 2              |             | 0      |      |              |        | /        |          | W :         | 1 3       | 1    | ' /         |          |               |                                                                   |
| Address: <u>1723 Lejeune Bin</u> . Address: <u>420 Rou</u><br><u>JACKSONVILLE, NC.</u><br>Contact: <u>J.Cuip</u><br>Contact: <u>R. Har</u>      | а <u>,</u> е | a              | 2704        |        |      |              |        |          | / {      | Y à         | l y       |      |             | /        |               |                                                                   |
| Contact: <u>J. Curp</u> Contact: <u>A. Field</u>                                                                                                |              | 100            | 2           | -      |      |              |        | N.       | 4        | Ý           | <u>رم</u> | ฟ    | /           | / /      | / /           | RCRA                                                              |
| Phone: $9/0 - 353 - 3336$ Phone: $4/2 - 36$<br>Fax: PO #: $62470$                                                                               | -            | •              | 7           |        |      |              |        | Į.       | J.       | J.          | 7         | ¥,   |             | ' /      | /             | NPDES                                                             |
| Fax: PO #:PO #:                                                                                                                                 | <u></u>      | ×              |             | -      |      |              | / 、    | / ;      | ¥ 1      | y s         | E         |      |             |          | /             | Screened                                                          |
| y submitting these samples, you agree to the terms and conditions contained in NDRC                                                             | 's Price     | Sched          | dule.       |        |      | ,8           | ġ      | L.       | l ij     | ' .¥        | AL AL     |      | /           | /        | /             | For Radioactivity                                                 |
| roj. No. Project Name<br>232 SITE 35-CampAziaze Farm                                                                                            |              |                |             | 2<br>S |      | 8            |        | )<br>A F | J<br>J   | )<br>;<br>; | Ĵ.        | / /  |             | / /      | T             | Temp °C                                                           |
| ntx Date Time C G Identifying Marks                                                                                                             | VOA          | A/G<br>1 LL    | 250<br>mi   | P/0    | · 4  | Ϋ́           | Y i    |          |          |             | 1 /       |      |             |          | Lab.          | Sample ID                                                         |
| 5/14 0742 × 35-4W32B5-03                                                                                                                        |              |                |             |        |      |              |        |          |          | $\times$    |           |      |             |          |               |                                                                   |
| V 5/14 1210 X 35-EMW05-03                                                                                                                       |              |                |             |        | X    | ¥            | Y      | ×        | Y        | ×           |           |      |             |          | 115           | LADIE ID                                                          |
| 15/13 1750 × 35- MW220-02                                                                                                                       |              |                | ļ           |        | X    | $\times$     | ×      | ×        | ×        | ×           |           |      |             |          | 4154          | ed on C-O.                                                        |
| ) 5/15 1455 X 35-MW36BW-01                                                                                                                      |              |                | <b></b>     |        | X    | <u> </u> ¥   |        |          |          |             |           |      |             |          |               | ·                                                                 |
| 5/13 1900 X 35-MW255-02                                                                                                                         |              |                | <u> </u>    |        | X    | ×            | X      | X        | X        | X           |           |      |             |          |               |                                                                   |
| 5/14 1030 × 35- EMW0.3-03                                                                                                                       |              |                | <u> </u>    | ļ      | _X   | <u>_</u> X   | Y      | ×        | X        | ×           |           |      |             |          |               | · · ·                                                             |
| 5/14 1625 × 35-6WDW1-01                                                                                                                         |              |                |             |        | K    | X            |        |          |          | ·           |           |      |             | +        |               |                                                                   |
| 1 7/16 1020 X 35-MW34BW-01                                                                                                                      |              | <b></b>        |             |        | _X   | X            |        |          |          |             |           |      | _ <u> `</u> |          |               |                                                                   |
| 5/10 1115 × 35-MW34AW-01                                                                                                                        |              |                | <u> </u>    |        | χ    | X            |        |          | ,        |             |           |      |             |          |               |                                                                   |
| U 5/16 X 35-7831<br>urn around time Priority 1 or Standard D Priority 2 or 50% D Priority 3 or 100% D                                           | Right        | 4 509          |             |        |      | BTE          | ( (602 | /8020)   | TPH      | X           | or 801    |      | ATILE       | 3 (624/8 | 3240), IGNIT/ | ABILITY, TOTAL LEAD (6010)                                        |
| telinquished by: (Signature) Date: Time: Received by: (Signa                                                                                    |              |                |             | Date   |      |              | ne:    | · · ·    | -        |             |           |      |             |          |               | UESTIONS                                                          |
| winquished by: (Signature) Date: Time: Received by: (Signature)                                                                                 | iture)       |                |             | Date   | <br> | Ti           | me:    |          | Ļ,<br>Ča |             | ри<br>,   | П.,  | Hoi         | CF       | 17 U          | ucontone                                                          |
| telinquished by: (Signature) Date: Time: Received by: (Signa                                                                                    | iture)       |                |             | Date   |      | Th           | me:    |          | A        | 40          | A         | btr. | 37          | Ma       | 4 Hoi         | Ł                                                                 |
| latrix WW - Wastewater W - Water S - Soil SD - Solid L - Liquid<br>container VOA - 40 mi vial A/G - Amber / Or Glass 1 Liter 250 ml - Glass wid |              | - Air Ba<br>th | ig<br>P/O - |        |      | bal tub      | 00     |          | SL - S   | ludge       | 0-        | Oil  |             | N        | Please F      | not accept verbal chang<br>Fax written changes to<br>214-238-5592 |

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|                                                                                 | Bill to    |              |                |          |     |          |            |                        | 1     | 7             | 1    | 5   | 7          | 7       | TT     | / Lab use only                |
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| Name: Bake Name: Bak                                                            | er.        |              |                | <u></u>  |     | QUI      |            |                        | /     | 1.            | /    | Ϋ́́ | $\wedge$ / | '       | ' / /  | Due Date:                     |
| Address: 1723 Levene Address: 420                                               | Rou        | Ser          | Rd             | <b>.</b> | ļ   |          |            |                        | 1.    | /             | / 1) | 14  |            |         |        |                               |
| Jacksonville, NC (bra                                                           | opol       | is F         | à              |          | ŀ   |          |            | /                      | 14    | / /           | Å    | Ŕ   |            | /       |        |                               |
| Contact: <u>J.Curp</u> Contact: R.H                                             | tol-t      | -            | 150            | <u> </u> |     |          | 4          |                        | 14    | , / ·         | J.   | IJ. | / /        |         | / · /  |                               |
| Phone: 910-353-3336 Phone: 412                                                  |            | 2-20         | 190            | 2_       |     |          | ¥          |                        | ₹.    | Y J           | / !  | 1 1 | ".         |         |        | RCRA                          |
| Fax: PO #: 624                                                                  | 470        | -23          | 2              |          |     |          | Ň          |                        | 73    | Y IJ          | ',₫  | ' / |            |         | 1      | NPDES                         |
|                                                                                 |            |              |                |          |     | ب<br>۲   | ₹ à        | $\langle \eta \rangle$ | [.]   | $\mathcal{A}$ | ÚT.  |     |            | / /     | /      | Screened<br>For Radioactivity |
| By submitting these samples, you agree to the terms and conditions contained in | NDRC's     | Price Sch    | nedule.        |          |     | ¥.       | 'V         | Ÿ                      | Ň     | ¥.            | ¥ –  | / / | / /        | ' /     |        | Temp °C                       |
| Proj. No. Project Name<br>232 SITE 35                                           | ٢          | No. of Co    | ontaine        | ərs      |     | . V č    | \$\%       | ∜.∖                    | J.J   | 14            |      | './ |            |         |        |                               |
| t<br>atrix Date Time C G Identifying Marks                                      |            | VOA A/C      | 3 250<br>t. mi | ) P/O    | /   | 74       |            | ĬŔ                     | 1FJ   | ß             |      |     |            | /       | Lab. S | Sample ID                     |
| 5 \$16 0900 × 35-MW37BS-03 V                                                    |            |              |                |          |     | X        | Ķ          |                        |       |               |      |     |            |         |        |                               |
| W 5/15 1410 X 35-MW36AW-01                                                      |            |              |                |          |     | X        | X          |                        |       |               |      |     |            |         | U.5E   | ELABLE TI                     |
| U 5/10 35-TB32                                                                  |            |              |                |          | X   |          |            |                        |       |               | ·    |     |            |         | 1150   | ted ON C-C                    |
| 15/14/800 × 35-MarGWDW2-01                                                      |            |              |                |          | X   | X        | ×          |                        |       |               |      |     |            |         |        |                               |
| U 5/150920 X 35-GWDau 3-01                                                      |            |              | _              |          |     | $\times$ | $\times$   |                        |       |               |      |     |            |         |        |                               |
| 0 5/14 /745 × 35-MW35AW-01                                                      | _          |              |                | _        |     | X        | <b>X</b> - |                        |       |               |      |     |            |         |        |                               |
| 5 <u>7/5080</u> 3 × <u>35-Mu</u> 37BS-03 v                                      | <u>ہ</u> ا |              |                | -        | X   |          | ·          | _                      |       |               |      |     |            |         |        |                               |
| ·· · · · · · · · · · · · · · · · · · ·                                          |            |              |                |          |     |          |            | -                      |       | _             |      | -   |            |         |        |                               |
|                                                                                 |            |              |                |          |     |          |            |                        |       |               | -    |     |            |         |        | ,                             |
| Furn around time                                                                | 0% DP      | riority 4 ER | IS *           |          | L   | + BTE    | •          |                        |       |               |      |     |            |         |        | BILITY, TOTAL LEAD (6010)     |
| Relinquished by: (Signature) Date: Time: Received by:                           |            |              |                | Date     |     |          | ne:        | Re                     | marks | Uni           | , h  | ave | ? (        | 2m      | estio  | ns call-                      |
| Relinquisted by: (Sighature) Date: Time: Received by:                           | (Signatu   | ire)         |                | Date     |     | Th       | me:        | TZ                     |       | OFF           |      |     |            | • • - • |        | . –                           |
| Telingulshed by: (Signature) Date: Time: Received by:                           | (Signatu   | ire)         |                | Date     | . , | Ti       | me:        | 1                      | • •   | •             |      |     |            |         |        |                               |

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| chcape Testing Services NDRC Laboratorie<br>Submitted by                                                            | ∕Bill to                             |                 |           | STOE                  |              |                 |            |              | -7           | 7                   | 7 7  | T   | 1 1      | , TX 75081 (214) 238-559                                          |
|---------------------------------------------------------------------------------------------------------------------|--------------------------------------|-----------------|-----------|-----------------------|--------------|-----------------|------------|--------------|--------------|---------------------|------|-----|----------|-------------------------------------------------------------------|
|                                                                                                                     | Saher                                |                 |           |                       | NALY<br>EQUI |                 | 1          | '.           | 15           | XI                  | ŀ    |     | M        | Due Date:                                                         |
| Address: <u>420 Rouser Ra</u> Address: <u>4</u>                                                                     | W Rouse e                            | Da              |           | -   ''                |              |                 |            |              | 13           | <u>k</u>            |      | 1.1 | '   ]    |                                                                   |
|                                                                                                                     | raopolis                             | P               | )         | -                     |              |                 |            | hy           |              | $\dot{\mathcal{A}}$ |      |     |          | Rage                                                              |
|                                                                                                                     | PHALL                                | <u>/</u>        |           | -                     |              |                 | / 4        | ` <i>\</i> y | N/S          | 5                   |      |     |          |                                                                   |
| Contact: $(m)(u)p$ Contact: $\frac{1}{2}$                                                                           | 412-269-                             | 214             | 14        | -                     |              |                 | <i>й</i> ү |              | XK           | m/                  |      |     |          |                                                                   |
|                                                                                                                     | 62470-2                              |                 | /         | -                     |              | 2               | ₹¥.        | N. 5         | IN           | SI                  |      |     |          | NPDES                                                             |
| Fax: PO #:                                                                                                          | VY IU X                              | 24              | <u> </u>  | -                     | •            | $\sqrt{c}$      |            | YR           | $\mathbb{X}$ | Ŋ.                  |      | ' / | /        | Screened                                                          |
| submitting these samples, you agree to the terms and conditions contain                                             | ed in NDRC's Price                   | Sched           | ule.      | -                     | )<br>10      |                 |            | SY.          |              |                     | '. / |     | /        | For Radioactivity                                                 |
|                                                                                                                     | ·····                                |                 |           |                       | Ja/          | J               |            | 7            |              | <sup> .</sup>       |      |     |          | • Temp °C                                                         |
| 0]. No. Project Name<br>32 STE 35 - CAINPGEIGER H                                                                   | Le/FARM                              |                 | 1         |                       | &Y .         | V.E             | Y ž        | V R          | 3            |                     | / /  | / / |          | <b></b>                                                           |
| Date Time m a                                                                                                       | VOA                                  | A/G<br>1LL      | 250<br>ml | P/0                   | 1            | <b>y</b> ''     | 1']        | [']          | 7            |                     |      |     | Lab.     | Sample ID                                                         |
| 5/14 1450 × 35-EMW7-03                                                                                              |                                      |                 |           | Y                     | X            | ·¥              | v          | Ÿ            |              |                     |      |     |          |                                                                   |
| \$15 1630 × 35- HW30BW-01                                                                                           |                                      |                 |           | 2                     | X            |                 |            | ŀ            |              |                     | ·    | st. |          | 1                                                                 |
| 5/15 1612 × 35-6WDW5-01D                                                                                            |                                      |                 |           | X                     | ( ¥          | Y               | ×          | ×            |              |                     |      |     | USE      | LABLE ID                                                          |
| 5/15/16/2 × 35-6WDW5-01                                                                                             |                                      |                 |           | Y                     | Y Y          | ×               | Y          | V            |              |                     |      |     | 1151     | ED ON C-O-C                                                       |
| 5/14 1500 X 35-MW31AW-01                                                                                            |                                      |                 |           | X                     | Ύ            |                 |            |              |              |                     |      | 1   |          |                                                                   |
| 5/14 1500 X 35-MW3/AW-01<br>5/15 1130 X 35-GWDW102/15                                                               | 2                                    |                 |           | <u> </u>              | X            |                 |            |              |              |                     |      |     |          |                                                                   |
| 5/14 1500 × 35- MW31BW-01                                                                                           |                                      |                 |           | X                     | X            |                 |            |              |              |                     |      | _   | <u> </u> |                                                                   |
| 5/15 1450 X 35- MW35BW-01                                                                                           |                                      |                 |           | <u> </u>              | X            |                 |            |              |              |                     |      |     |          | ·                                                                 |
| 5/13 1820 × 35-MW225-02                                                                                             |                                      |                 |           | X                     | X            | Y               | ×          | ×            |              |                     |      |     |          |                                                                   |
| 5/13 1950 / 35-MW25D-02                                                                                             |                                      |                 |           | <u>×</u>              |              |                 | X          |              |              |                     |      |     | <u>L</u> |                                                                   |
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| atrix WW - Wastewater W - Water S - Soli SD - Solid<br>ontainer VOA - 40 ml vial A/G - Amber / Or Glass 1 Liter 250 | L - Liquid A<br>ml - Glass wide mout | - Air Bag<br>th |           | C - Cha<br>Plastic or |              | be              |            | SL - Slu     | lge          | 0 - Oli<br>-        |      | N   | Please F | ot accept verbal changes<br>ax written changes to<br>214-238-5592 |

| e: <u>B4</u><br>ss: <u>12</u><br><u>4</u><br>ct: <u>1</u><br>ee: <u>9</u><br>ux: <u></u><br>ting these<br><u>Proi</u> | 23<br>CKSU<br>Q- \$                  | - 6<br>10<br>17<br>17<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Euni<br>euni<br>ille,<br>1-33                  | - 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|                                                                                                                       | Signati                              | ure)<br>(;)[                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 2                                              | Date; A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | y. 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|                                                                                                                       | 1600<br>(800<br>0920<br>1115<br>1115 | I GOD           I GOD           I GOD           I GOD           I GOD           I GOD           I GOD           I GOD           I GOD           I GOD           I GOD           I GOD           I GOD           I GOD           I GOD           I GOD           I GOD           I GOD           I GOD           I GOD           I GOD           I GOD           I GOD           I GOD           I GOD           I GOD           I GOD           I GOD           I GOD           I GOD           I GOD           I GOD           I GOD           I GOD           I GOD           I GOD           I GOD           I GOD           I GOD           I GOD           I GOD           I GOD           I GOD           I GOD           I GOD           I GOD           I GOD           I GOD           I GOD< | 1600 X<br>1800 X<br>0920 X<br>1115 X<br>1115 X | 1600       X       35 - $1600$ X       35 - $1800$ X       35 - $0720$ X       35 - $1115$ X       X | I GOD         X         35-RB           I GOD         X         35-RB           I GOD         X         35-RB           I GOD         X         35-RB           I GOD         X         35-RB           I GOD         X         35-RB           I III5         X         35-RB           I III5         X         35-RB           I III6         Priority 1 or Standard         Private | I GOU       X       35 $\cdot$ RB 33         I WO       X       35 $\cdot$ RB 34         O 920       X       35 $\cdot$ MW 532         X       35 $\cdot$ MW 264         X       35 $\cdot$ TB34         Y       35 $\cdot$ TB34         Imme       Priority 1 or Standard       Priority 2 or 5 | I GOD       X       35 - $RB33$ I WO       X       35 - $RB34$ 0920       X       35 - $MW53BW$ X       35 - $MW26AW$ X       35 - $TB34$ V       35 - $TB34$ Imme       Priority 1 or Standard       Priority 2 or 50% | I GOU       X       35 - $RI333$ I WO       X       35 - $RI334$ 0920       X       35 - $MW53BW-01$ XIIS       X       35 - $MW26AW-62$ Y       35 - $TB34$ Imme       Priority 1 or Standard       Priority 2 or 50%       Priority 3 or 100 | I GOU       X       35 $\cdot$ RB 33         I WO       X       35 $\cdot$ RB 34         0920       X       35 $\cdot$ RB 34         0920       X       35 $\cdot$ MW 53 BW $\cdot$ 01         X       35 $\cdot$ MW 26 AW $\cdot$ 62         Y       35 $\cdot$ TB34         Imme       Priority 1 or Standard       Priority 2 or 50%       Priority 3 or 100%       Priority | I GOU       X       35 $\cdot$ RB 33         I WO       X       35 $\cdot$ RB 34         0920       X       35 $\cdot$ RB 34         0920       X       35 $\cdot$ MW 53 BW $\cdot$ O/         X       35 $\cdot$ MW 26 AW $\cdot$ 62         Y       35 $\cdot$ TB34         Imme       Priority 1 or Standard       Priority 2 or 50%       Priority 3 or 100%       Priority 4 ERS | I GOU       X       35 - RB 3 3         I WO       X       35 - RB 3 4         0920       X       35 - MW 53 BW - 01         X       35 - MW 26 AW - 62       I         X       35 - TB34       I         V       35 - TB34       I         Imme       Priority 1 or Standard       Priority 2 or 50%       Priority 3 or 100%       Priority 4 ERS * | I GOU       X       35 $\cdot$ R/3 3 3         I WO       X       35 $\cdot$ R/3 3 8       I         X       35 $\cdot$ R/3 3 RW $\cdot$ O/       I         X       35 $\cdot$ R/W 26 A W $\cdot$ 62       I         X       35 $\cdot$ TB34       I         I WO       Priority 1 or Standard       Priority 2 or 50%       Priority 3 or 100%       Priority 4 ERS + | 1600       X       35 - RB 33       X         1800       X       35 - RB 34       X         0920       X       35 - MW53BW-0/       X         1115       X       35 - MW26AW-62       X         Y       35 - TB34       X         Y       35 - TB34       X         Imme       Priority 1 or Standard       Priority 2 or 50%       Priority 3 or 100%       Priority 4 ERS + | I GOU       X       35 - RB 3 3       X       X         I WO       X       35 - 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MW 26 AW · 62       X       X       Y         Y       35 - 7B34       X       X       Y         Y       35 - 7B34       X       X       Y         Imme       Priority 1 or Standard       Priority 2 or 50%       Priority 3 or 100%       Priority 4 ERS *       * BTEX (602/6020 | 1600       X       35 - RB 3 3       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       Y       X       X       Y       X       X       Y       X       X       Y       X       X       Y       X       X       Y       X       X       Y       X       X       Y       X       X       Y       X       X       Y       X       X       Y       X       X       Y       X       X       Y       X       X       Y       X       X       Y       X       X       Y       X       X       Y       X       X       Y       X       X       Y       X       X       Y       X       X       Y       X       X       Y       X       X       Y       X       X       Y       X       X       X       Y | 1600       X       35 - RB 33       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       < | 1600       X       35       RB33       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X< | 1600       X       35       RB 33       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X | 1600       X       35 · RB 33       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       < | 1600       X       35       RB33       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X< | 1600       X       35 - RB 33       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       < | 1600       X       35       RB       X       X       X       X       1600         1600       X       35       RB       X       X       X       1600       1600         1800       X       35       RB       X       X       X       1600         1800       X       35       RB       X       X       X       1600         1920       X       35       RB       S       X       X       X       X         1115       X       35       RB       26       X       X       Y       X       X         1115       X       35       RB       Z       X       Y       X       X         1115       X       35       RB       Z       X       Y       X       X         1115       X       35       RB       Z       X       Z       Z       Z       Z       Z       Z       Z       Z       Z       Z       Z       Z       Z       Z       Z       Z       Z       Z       Z       Z       Z       Z       Z       Z       Z       Z       Z       Z       Z | 1600       X       35 - RB 3 3       X       X       X       (HOLD)         1600       X       35 - RB 3 3       X       X       X       (HOLD)         1800       X       35 - RB 3 4       X       X       (HOLD)         1900       X       35 - RB 3 4       X       X       (HOLD)         1900       X       35 - RB 3 4       X       X       X         1970       X       35 - MW 33 BW - 0/       X       X       X         1115       X       35 - MW 26 AW - 62       X       X       X         115       X       35 - TB34       X       X       X         116       Priority 1 or Standard       Priority 2 or 50%       Priority 4 ERS +       • BTEX (602/6020), TPH (418.1 or 8015), VOLATILES (624/6240), IGNITABILITY, TOTAL LE |

| Submitted by Name: Balle Name: Name:                                                                                       | Bill to<br><i>Bater</i>                 |       |                 |           | - F        |   |         | SIS<br>RED    |         |            | $\int$     | 1     | / <sub>S</sub>     | K.      | ALL CALLER |          |        | Lab use<br>Due Dat       | • .         |
|----------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|-------|-----------------|-----------|------------|---|---------|---------------|---------|------------|------------|-------|--------------------|---------|------------|----------|--------|--------------------------|-------------|
| Address: 1723 Legenne BLVD. Address:                                                                                       | 420 Rous<br>Coracipolis<br>Rich Hol     | ER T  | Pl.             |           | _          |   |         | ļ             |         | '  <br>    |            |       |                    | 93      |            |          | .      |                          |             |
| Phone: <u>910-353-3336</u> Phone:                                                                                          | - RICH HOL<br>- 412-269-<br>- 62478-    | 20    | <u> </u>        |           |            |   | ,<br>L  | L'ELLER       | ALLER . |            | and the    |       | The Preserver Lace | 7-5-Man | <br> .     |          | ,      | RCRA<br>NPDE<br>Screened |             |
| submitting these samples, you agree to the terms and conditions co<br>oj. No. Project Name<br>232 SITE 35 - CAMP GEIGER FR |                                         | · · · | Schedu<br>Conta |           | 2          |   | -lever. |               |         | ~          |            | L'ÉLA | (Lusse             |         |            | /        |        | For Radios               |             |
| x Date Time C G f Identifying Marks                                                                                        |                                         | 1     | A/G<br>1 Lt.    | 250<br>mi | P/0        | Ř | ĬŔ      |               | ñ (     |            | ĬŔ         |       |                    |         | //         | La       | ab. Sa | mple ID                  |             |
| 5/16 1710 X 35-GWDS4-02                                                                                                    |                                         |       |                 |           |            | X | X       |               |         |            |            |       |                    |         |            |          |        |                          |             |
| 5/12/720 × 75-GWDS3-03                                                                                                     | ·                                       |       |                 |           |            | X | X       | ×             |         |            | _          |       |                    |         |            | <u> </u> |        |                          | <del></del> |
| 5/16 1725 × 35-GWDS 3-04                                                                                                   |                                         |       |                 |           |            |   | •       |               |         | X          | X          | X     |                    |         |            |          |        |                          |             |
| 5/16 1800 X 35-GWD52-03<br>5/18 1135 X 35-SS12-00                                                                          | `                                       |       |                 |           |            | X | X       | X             |         |            |            |       |                    |         | _          | _        |        |                          |             |
| 5/18 1135 X 35-5512-00                                                                                                     |                                         |       |                 |           | <u>+</u> - | 시 | X       | X             | X       |            |            |       |                    | _       |            | _        |        |                          |             |
| 7/18 1120 X 35-SSIF-00                                                                                                     |                                         |       |                 |           |            | X | X       | X             | X       |            |            |       |                    |         |            | <u> </u> |        |                          |             |
| 5/18 0815 X 35-5507-000                                                                                                    |                                         |       |                 |           | `          | X | X       | $\times$      | X       |            |            |       |                    |         |            |          |        |                          |             |
| 5/18 0815 X 35-5507-00                                                                                                     |                                         |       |                 |           | `          | X | X       | X             | X       |            |            |       |                    |         |            |          |        | <u></u>                  | •<br>•      |
| 5/18 0840 X 35-5503-00                                                                                                     |                                         |       |                 |           |            | X | Χ.      | X             | X       |            |            |       |                    |         |            |          |        |                          |             |
| 5/18 0915 X 35-5504-00                                                                                                     |                                         |       |                 |           | <u> </u>   | X | X       | X             | X       |            |            |       |                    |         |            |          |        |                          |             |
|                                                                                                                            | rity 3 or 100% □ i<br>eived by: (Signat |       | ERS *           |           | Date:      | • |         | K (602<br>ne: | ۱Þ.     | emar<br>TF | ks<br>(/00 | u f   | HAL                | IE G    | Dues       | TION     |        | ITY, TOTAL<br>REA.       | LEAD (6010) |
|                                                                                                                            | elved by: (Signati                      | ure)  |                 | C         | Date:      |   | Ti      | ne:           |         | C          | oN         | тA    | СТ                 | R       | . HO       | FF       |        |                          |             |
| linquished by: (Signature) Date: Time: Rece                                                                                | eived by: (Signati                      | ure)  |                 |           | Date:      | 1 | Th      | ne:           |         |            |            |       |                    |         |            |          |        |                          |             |

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| nchcape Testing Services ND<br>Submitted by             | RC Laboratories.<br>Bill t    | CHA        |              |           |         |          |          |          | 7          | 7 7        | 7            | 7       | 77      | 1 7           | on, TX 75081 (214) 238-55              |
|---------------------------------------------------------|-------------------------------|------------|--------------|-----------|---------|----------|----------|----------|------------|------------|--------------|---------|---------|---------------|----------------------------------------|
|                                                         | R                             |            |              |           |         |          | ALYSI    |          |            | .          |              |         |         |               | Due Date:                              |
| Name: Baker                                             |                               |            | 14           | 7,        | - [ '   | HEC      | QUIRE    | D        |            | AS .       |              |         |         |               | /                                      |
| Address: <u>1723 Leieune Blva</u> .                     | Address: <u>420 Kol</u>       |            | $\sim$       |           |         |          |          |          | 4          | Ŋ.         |              |         |         |               |                                        |
| Contact: J. CULP 28540                                  | Cornopul                      |            | -a           | 151       | 08      |          |          | 1        | J.         | X /        |              | /       |         |               |                                        |
|                                                         | Contact: <u><i>K. HOF</i></u> |            |              | 1-0       | -       |          | ,        | 4        | Y 17       | r /        |              |         | / /     |               |                                        |
| Phone: <u>910-353-3336</u>                              | Phone:                        |            |              | 9         | _       |          | 4        | Y \      | 13         | 4          | 11           | '       |         |               |                                        |
| Fax:                                                    | PO #: _62470                  | <u>)-Z</u> | 32.          |           | _       |          | Ň        | ' ¥      | N L        | J I        | / /          |         | 11      | / /           | NPDES                                  |
|                                                         | ·                             |            |              |           |         |          | Y        | Å.       | A K        | 7 /        |              |         |         |               | Screened                               |
| By submitting these samples, you agree to the terms and | conditions contained in NDR   | C's Pric   | e Scheo      | dule.     |         |          | 1 12     | ¥Q       | YN         |            | /            |         |         | /             | For Radioactivity                      |
| Project Name<br>232 SITE 35 - Camp G                    | n<br>relaek                   | No. c      | of Cont      | ainers    | 2       |          | 7        | 1]       | Y.         |            |              |         |         | /             | Temp °C                                |
|                                                         |                               | VOA        | 4/0          |           |         | ß        | 181      | Ni       | ₽.         |            | ' /          |         |         |               |                                        |
| p b                                                     | ۰ <b>۴</b>                    |            | A/G<br>1 Lt. | 250<br>mi | -/0     | _7       | <u>'</u> | <u> </u> | <u>Y 1</u> |            |              |         | / /     | Lab           | . Sample ID                            |
| 5 5/18 0815 1 35-5507-0                                 | OMS/MSD                       |            |              |           |         | X        | XX       | . (      |            |            |              |         |         |               | •                                      |
| 1 5/17 1450 X 35-RB35                                   | · ·                           |            |              |           |         | X        | XX       | (   X    |            |            |              |         |         | (4            | HOLD)                                  |
| 5/18 1570 × 35- 283                                     | 6                             |            |              |           |         | X        | XX       | <   ×    |            |            |              |         |         | 195+          | AS ALE LABLED TB-3<br>CAD OF 35-FB36 F |
| 5/18 V 35-TB 35                                         |                               | 1          |              |           |         | X        |          |          |            |            |              |         |         | CORRE         |                                        |
| 5 5/17 1745 X 35-5509                                   | -08                           |            |              |           |         | X        | XX       | Y Y      |            |            |              |         |         |               | ·····                                  |
| S 5/17 16/5 X 35 - SSO1 -                               |                               |            |              |           |         | X        | XX       | X        |            |            |              |         |         |               |                                        |
| 5 5/17 1630 × 35-5510-                                  |                               |            |              |           |         | x        | XX       | X        |            |            |              |         |         |               |                                        |
| 5 5/17 1515 × 35-5502-0                                 |                               | -          |              |           |         | X        | XX       | X        |            |            |              |         |         |               | <b>N</b> .                             |
| J5/18. × 35-TB36                                        |                               |            |              |           |         | X        |          |          |            |            |              |         |         |               |                                        |
|                                                         |                               |            |              |           | _/      |          |          | 1        |            |            | -            |         |         |               | ·····                                  |
| urn around time Priority 1 or Standard Priority 2 or    | 50%                           | □ Priority | 4 ERS +      | · ·       |         | !<br>+   | BTEX (6  | 02/802   | о), трн (  | 418.1 or   | 8015), \     | /OLATIL | ES (624 | /8240), IGNIT | TABILITY, TOTAL LEAD (6010)            |
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|                                                         |                               | ,          | -            |           |         |          |          |          | Ca         | μ          | <i>K</i> . ( | 401     | 7.      |               |                                        |
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| Aatrix WW • Wastewater W • Water S • Soti               | SD - Solid L - Liquid         |            | - Air Bag    |           | C - Chi | <u> </u> |          |          | SL - Sli   |            | O - Oil      |         |         | 1000          | not accept verbai changes              |

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| chcape Testing Services NDRC Laboratories.                                                                                                                                | CHA          | IN OF    | CL        | JST    | OD.               | YR         | EC       | OR       | )         | 1          | 089 E     | ast C  | ollin    | s Blv | d., Ri | chards    | son, T | X 75081   | (214) 238-559              |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|----------|-----------|--------|-------------------|------------|----------|----------|-----------|------------|-----------|--------|----------|-------|--------|-----------|--------|-----------|----------------------------|
|                                                                                                                                                                           | ill to       |          |           |        | AN                | ALY        | SIS      |          | 1.        |            | 1         |        | /        | /     | /      |           | ΄Λ     | Lab us    | •                          |
| Name: <u>Haron Bernhardt</u> Name:                                                                                                                                        |              |          |           |        | Re                | QUI        | RED      | )        | /         |            | / /       | / /    | / /      | / /   | '      | '         |        | Due Da    | ite:                       |
| Address: <u>Baker Environmentel</u> Address:                                                                                                                              |              |          |           |        | <b>X</b> .        |            |          |          | '/        |            |           |        |          |       |        |           |        |           |                            |
| ·                                                                                                                                                                         | /            |          |           | /      |                   |            |          |          |           | /.         | /         |        |          | /     | /      |           | /      |           |                            |
| Contact: Contact:                                                                                                                                                         | /            |          |           |        |                   |            |          | /+ .     | /         | /          | <u> -</u> | / .    | / .      | / /   | / /    |           |        |           |                            |
| Phone: <u>4/2-269-2099</u> Phone:                                                                                                                                         |              |          |           | _      |                   |            |          |          | [ ]       | ' /        | ' /       | · /    |          |       |        |           |        | RCR       |                            |
| Fax: 4/12-264-6097 PO #:                                                                                                                                                  |              |          |           |        |                   |            |          | /        | ~/        |            |           |        |          |       |        |           |        | NPDE      | s 🗆                        |
|                                                                                                                                                                           |              |          |           |        |                   | X          | / 9      | 13       | $\forall$ |            | /         | /      | /        | /     | /      | /         | ľ      | Screeneo  |                            |
| submitting these samples, you agree to the terms and conditions contained in N                                                                                            | IDRC's Price | e Scheo  | lule.     |        |                   | Ŋ          | J.       |          | 1-5       | 1          | / /       | '      | '        | '     | '      | /         |        | For Radio |                            |
| roj. No. Project Name                                                                                                                                                     | No. c        | of Cont  | ainer     | 2<br>S | L                 | -11. YOM   | · ]/     | ?        | Ň         | /          |           |        | /        | /     |        |           |        | Temp.     | ℃                          |
| x Date Time m a                                                                                                                                                           | VOA          | A/G      | 250<br>ml | P/0    |                   | 7.         |          | ¥.       | IN. Tal.  | /          | /         | /      | /        | /     | /      | ا م       | ,<br>  | nple ID   |                            |
|                                                                                                                                                                           |              | 1 Lt.    |           |        |                   |            | <u> </u> | <u> </u> | <b>/</b>  | <b>/</b>   | $\square$ | 4      | <u>/</u> | 4     | /      |           | J. 3ai |           |                            |
| 5-17-94 0902 X 35-5003-06                                                                                                                                                 |              |          | 3         |        | X                 | X          | X        | X        |           |            |           |        |          |       |        |           |        |           | <u></u>                    |
| 5-17-94 0100 X 35- 5D03- 612                                                                                                                                              |              |          | 3         |        | X                 | X          | X        | X        |           |            |           |        |          |       |        |           |        |           |                            |
| 5-17-91357 × 35-5005-06                                                                                                                                                   | -            |          | 3         |        | X                 | <u>×</u>   | X        | ×        |           |            |           |        |          |       |        |           |        |           |                            |
| 5-17-91 1355 × 35- 5005-612                                                                                                                                               |              | <u> </u> | 3         |        | <u></u>           | X          | X        | X        |           |            |           |        |          | -     |        |           |        |           |                            |
| 5-1744 1429 × 35- 5106-06                                                                                                                                                 | -            | <b> </b> | 3         |        | X                 | X          | X        | X        |           |            |           |        |          |       |        |           |        |           |                            |
| 5-1748/1427 × 35-5006-612                                                                                                                                                 | /            |          | 3         |        | X                 | <u>×</u>   | X        | X        |           |            |           |        |          |       |        |           |        |           |                            |
| 5-17-4× 1632 × 36-5002-06                                                                                                                                                 |              | ļ        | 3         |        | X                 | <u>×</u> . |          | X        | <u> </u>  |            |           |        |          |       |        |           |        | I         |                            |
| 5-17-44 1632 × 36-5D02-06D                                                                                                                                                |              |          | 3         |        | X                 | <u>×</u>   | X        | X        |           |            |           |        |          |       |        |           |        |           |                            |
| 5-17-41 1630 × 36 · 5D02 - 6/2                                                                                                                                            |              |          | 3         |        | X                 | X          | X        | X        |           |            |           |        |          |       |        |           |        |           |                            |
| 5-18-4         0807         X         36 - 5 DO I - 06           In around time         □ Priority 1 or Standard         □ Priority 2 or 50%         □ Priority 3 or 100% |              | 4 689 4  | 3         |        | ×                 | ×          | × (602   | ×        |           | /418       |           | 15) \/ |          |       | 24/92  | 40) IGN   | TABI   |           | LEAD (6010)                |
| linquished by: (Signature) Date: Time: Received by: (5                                                                                                                    | ·            |          |           | Date:  |                   |            | ne:      |          | emar      |            |           | 10), 1 |          |       | /24/02 | -07, 1011 |        |           | . LEAD (0010)              |
| En alus 5-18-94 1700                                                                                                                                                      |              |          |           |        |                   |            |          |          | -         | <b>.</b> . | _         |        |          |       |        |           |        |           |                            |
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| trix WW - Wastewater W - Water S - Soil SD - Solid L - Li<br>ntainer VOA - 40 ml vial A/G - Amber / Or Glass 1 Liter 250 ml - Gla                                         |              | Air Bag  |           |        | Charco<br>c or ot |            | 0        |          | SL - S    | ludge      | 0         | - Oil  |          |       |        |           | Fax    |           | rbal changes.<br>hanges to |

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| Submitted by                                                | Bill to                  | )        | -            |           | -      |           | IALY     | 2010  |         | 7                   | 7      | 7         | 7       | 77     | 7       | 77           | n, TX 75081 (214) 238         |
|-------------------------------------------------------------|--------------------------|----------|--------------|-----------|--------|-----------|----------|-------|---------|---------------------|--------|-----------|---------|--------|---------|--------------|-------------------------------|
| Name: <u>Harver Berghardt</u>                               | lame:                    |          | - <b>-</b>   |           |        |           |          | REC   | )       | /                   |        |           |         | ' /    |         |              | / Due Date:                   |
| n 1 1 1                                                     | dress:/                  | 7        |              |           |        |           |          |       |         | /                   | / /    | '  <br> . |         |        |         | '            | · ·                           |
| Contact: Rich Hoff Co                                       | intact:                  |          |              |           |        |           |          |       | /       | /                   | /      | / /       |         | / /    |         |              |                               |
| Phone: <u>4/2·269·6+2099</u> P                              | hone:                    |          |              |           |        |           |          |       | ' /     | '·                  | '      | ' /       |         |        | / /     | / /          | RCRA                          |
| Fax: <u>4/2-269-6097</u>                                    | PO #:                    |          |              | <u></u>   |        |           |          |       |         | 3                   |        |           |         |        | ' /     |              | NPDES                         |
| / submitting these samples, you agree to the terms and cond | itions contained in NDRC | 's Pric  | e Sche       | dule.     |        |           | 101      |       | 15      | /                   | 7      | / /       | / /     |        | /       | /            | Screened<br>For Radioactivity |
| roj. No. Project Name                                       |                          | No. c    | of Cont      | ainer     | ²<br>S | ļ         | Tel. van | 3     | 1       | and a second second | ' /    |           |         |        |         | /            | Temp °(                       |
| t Date Time C G Identifying Marks                           |                          | VOA      | A/G<br>1 Lt. | 250<br>mi | P/O    |           | / '      | 7 2   | Ĭ       | Ĭ                   |        |           |         | / /    |         | Lab. S       | Sample ID                     |
| 5-18-94 0902 X 36-5 DU3-06                                  |                          | _ 1      |              | 3         |        | X         | X        | X     | X       |                     |        |           |         |        |         |              |                               |
| 5-18-94 0900 × 36. 5003-612                                 |                          | 1        |              | 3         |        | X         | X        | X     | X       |                     |        |           |         |        |         |              |                               |
| 5-14-94 1302 × 36- 5005-06                                  |                          | 2        |              | 6         |        | X         | X        | X     | X       |                     |        |           |         |        |         | ms/          | 45D                           |
| 5-18-94 1302 X 36- 5005-060                                 |                          | 1        |              | 3         |        | X         | X        | X     | X       |                     |        |           |         |        | Ţ       |              | ÷.                            |
| 5-18-14 1300 × 36-5005-612                                  |                          | 1        |              | 3         |        | x         | X        | ×     | X       |                     |        |           |         |        |         |              |                               |
| 5-18-94 1344 × 36- 5006-06                                  |                          | 1        |              | 3         |        | X         | X        | X     | X       |                     |        |           |         |        |         |              |                               |
| 5-18-401342 × 36-5006-612                                   |                          | <u>i</u> |              | 3         |        | $\lambda$ | X        | X     | ×       |                     |        |           |         |        | Ī       |              |                               |
| 5-16-94 1407 X 36- 4007-06                                  |                          | 1        |              | 3         |        | X         | X        | x     | X       |                     |        |           |         |        |         |              |                               |
| 5-18-94 1405 × 36-5007-612                                  |                          | 1        |              | 3         |        | +         | X        | ×     | X       |                     |        |           |         |        |         |              |                               |
| 5.18 9t -X                                                  |                          |          |              |           |        | *         | X        | X     | X       |                     |        |           |         |        |         |              |                               |
| m around time                                               | Priority 3 or 100%       |          | 4 ERS *      |           |        | •         | BTE)     | (602) | /8020), | , TPH               | (418.1 | or 801    | 5), VOI | ATILES | (624/82 | 40), IGNITAE | BILITY, TOTAL LEAD (6010)     |
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| Submitted by<br>Name: Baker Name: Baker                                                                                                       |         |                |           |                   | · .     |                 | SIS<br>RED  |              | 1            | /     |               | K        |        |             | <u>K</u> | A M             |            | Lab u<br>Due [               | se only<br>Date: | /                 |
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| Address: 1723 Loyeune BLyp Address: _ 420 Ro                                                                                                  | USE     | RF             | 2/1       | <u> </u>          | •       |                 |             | /            |              |       |               | אן<br>ע_ |        |             | 5/-      | EDUNGER HIL     | <u>5</u> / |                              |                  |                   |
| Contact: <u>J. Culp</u> Contact: <u>R. Hof</u>                                                                                                | t       | 1510           | 8         |                   |         |                 | /           |              |              | /     | K             | 4        | ?/     | דן.<br>מא   | 7¥       |                 | /          |                              |                  |                   |
| Phone: 910-353-3336 Phone: 42-26                                                                                                              |         | 200            | <u> </u>  | <u> </u>          |         |                 |             | 지/           | 5            |       | 5/            | 5        |        | 2           | ' ୟୁ/    | WAR .           |            | RCF                          | RA               |                   |
| Fax: PO #: _62470                                                                                                                             | 0-2     | 23.            | 2         | -                 |         | ō               | 202<br>202  |              | The feel     |       |               | Ĭ/       |        | ^]-<br>^/ { |          |                 |            | NPE                          | əd               |                   |
| y submitting these samples, you agree to the terms and conditions contained in NDRC                                                           | s Price | e Scheo        | lule.     |                   |         | Ň)              | ′ษั/        | ' Y          |              | 12    |               | 10       | [/<br> |             | HIER     | 7               |            | For Rac                      | lioactivit       |                   |
| roj. No. Project Name<br>232 SITE 35                                                                                                          | No. o   | of Cont        | ainer     | 2<br>S            | ₽0,     | <b>t</b> /c     | ₹/ j        | J<br>J       |              |       | $\frac{1}{E}$ |          |        |             | 172      |                 |            | Temp                         | •                | °C                |
| 1<br>rix Date Time C G o r<br>m a a p b ldentifying Marks                                                                                     | VOA     | A/G<br>1 LL    | 250<br>ml | P/0               | ~~<br>/ | / 4             |             | //           | [            |       |               | R        |        | 13          | Ĭ        | La              | b. Sa      | mple IC                      | )                |                   |
| 35-7838                                                                                                                                       |         |                |           |                   |         |                 |             |              |              |       | X             |          |        |             |          |                 |            |                              |                  |                   |
| 5/20 1035 X 35-MWZIS-02                                                                                                                       |         |                |           |                   |         |                 |             |              |              |       |               | <u>x</u> | X      | X           |          |                 |            |                              |                  |                   |
| \$19 140 X 35-MW33AW-01                                                                                                                       |         |                |           |                   | X       | X               |             | ×            | $\mathbf{x}$ | ×     |               |          |        |             | <u> </u> |                 |            |                              |                  |                   |
| 5/19 1120 X 35-MWB2AW-01                                                                                                                      |         | .<br>          |           |                   | X       | ×               |             |              |              |       |               |          |        | L           |          |                 |            |                              |                  |                   |
| 5/20 1205 X 35-MW-38BW-01                                                                                                                     |         |                |           |                   | X       | X               |             |              |              |       | <u> </u>      |          |        |             | ļ        |                 | ·          |                              |                  |                   |
| 5/20 0920 X 35-MW26BW-0X1                                                                                                                     |         |                |           |                   | X       | $\mathbf{\chi}$ |             |              |              |       |               |          |        |             |          |                 |            |                              |                  |                   |
| 5/19 1055 X 35-MW32BW-01                                                                                                                      |         |                |           |                   | X       | X               |             |              |              |       |               |          |        |             |          |                 |            |                              |                  |                   |
| 5/201315 X 35-MW38AW-01                                                                                                                       |         |                |           | Ť                 | Ŷ       | V               |             |              |              |       |               |          |        |             |          |                 |            |                              |                  |                   |
| 5/19 1845 × 35-MW37AW-01                                                                                                                      |         |                |           | '                 | γ       | $\star$         |             |              |              |       |               |          |        |             |          |                 |            |                              |                  |                   |
| 5/19 1600 x 35-RB37-                                                                                                                          |         |                |           |                   | X       | X               | <b>√</b>  • | X            | X            | У     |               |          |        |             |          |                 |            |                              |                  |                   |
| urn around time Priority 1 or Standard D Priority 2 or 50% D Priority 3 or 100% D                                                             |         | 4 ERS          |           |                   | *       |                 |             | 1            |              | -     | 1 or B        | 015), V  | 'OLAT  | ILES        | (624/8:  | 240), IGN       | ITABI      | LITY, TOT                    | AL LEAD          | 6010)             |
| telinquished by: (Signature) // Date: Time: Received by: (Signat                                                                              | ture) - |                |           | Date:             | 1       | Th              | ne:         | <sup>R</sup> | emar         | KS    |               |          |        |             |          |                 |            |                              |                  |                   |
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| atrix WW - Wastewater W - Water S - Soll SD - Solid L - Liquid<br>ontainer VOA - 40 ml vial A/G - Amber / Or Glass 1 Liter 250 ml - Glass wid |         | - Air Ba<br>th |           | C - Ci<br>Plastic |         |                 | 0           |              | SL - S       | ludge |               | ) - Oil  |        |             | N        | DRC ca<br>Pleas | e Fax      | accept<br>writter<br>4-238-5 | chang            | changes<br>ges to |

|         |                 |           |                |                  | _   | ervices            |                | aboratories.       |            |             |           |          |          |                         |          |       | ,<br> | 7             | 77       | V       | 7   | 7      | 7      | 7 7  |     |                         | 214) 238-5                            |
|---------|-----------------|-----------|----------------|------------------|-----|--------------------|----------------|--------------------|------------|-------------|-----------|----------|----------|-------------------------|----------|-------|-------|---------------|----------|---------|-----|--------|--------|------|-----|-------------------------|---------------------------------------|
|         |                 |           | Sub            |                  |     | -                  |                |                    | Bill to    |             |           |          |          | NALY                    |          |       | /     | /             | /\       | /       | /   | /      | / /    | / /  | 11  | Lab use<br>Due Date     | • .                                   |
|         | Name            | »:        |                |                  |     |                    | ·N             | lame:              |            |             |           |          | R        | EQUI                    | RED      |       | ' /   | ' /           | 1        | '       | ' / |        | '      |      |     | Due Dau                 | σ.                                    |
| Ac      | dress           | s:        |                |                  |     |                    | Ado            | lress:             |            | ·           |           | <u> </u> |          |                         |          |       |       |               | M.       | ป       |     |        |        | 11   | /   |                         |                                       |
|         |                 | •••••     |                | <del></del> .    |     |                    |                |                    | <u></u>    |             |           |          |          |                         |          | /4    |       |               | ĬĹ       | 7 A     |     | /      | /      |      |     |                         |                                       |
| C       | ontac           | l:        |                |                  |     |                    | Co             | ntact:             |            |             |           |          |          |                         | 1        | MTBE  | اند آ | $^{\prime}$   | $l \leq$ |         | 1   | / /    | .      | ' /  | -   |                         | · · · · · · · · · · · · · · · · · · · |
| F       | hone            | :         |                |                  |     |                    | P              | none:              |            |             |           |          | ļ        |                         |          | 5/    | J     | N             | Ŋ,       | Ą       |     |        |        |      |     | RCRA                    |                                       |
|         | Fax             |           |                | ~ · · ·          |     | ·····              |                | PO #:              |            |             |           |          |          |                         | /        | */    | ¥?    | $\frac{1}{2}$ | ₽́ŀ      | Y       | s/  |        |        | /    |     | NPDES                   | ; []                                  |
|         |                 |           |                |                  |     |                    |                |                    |            |             |           |          | ļ        | 0                       |          | Y     | HETCH | METER         | 1 [      | /6      | Y   | /      |        | /    |     | Screened<br>For Radioad |                                       |
|         | ubmittir<br>No. |           | se sa<br>oject |                  |     | u agree to the ter | ms and condi   | tions contained in |            |             |           | 2        |          | Ň                       | Y        | DEW T | Z     | Ą             | 27       | Ą       | /   | ' /    | ' /    |      |     | Temp                    |                                       |
|         |                 |           |                |                  | •   |                    |                |                    | No.        | of Con      | taine     | rs       |          | $\overline{\mathbf{N}}$ | $\nabla$ | · ]   | . V   | $\frac{1}{1}$ |          | Y       |     | /      |        |      |     |                         |                                       |
| 1<br>ix | Date            | Time      | þ              | G<br>r<br>a<br>b |     | Identifying Mark   | S              |                    | VOA        | A/G<br>1 LL | 250<br>mi | P/O      |          | U/ 4                    | 7/0      | J.F.  | 77    | <i>ק</i> ך    | 77       | 7       |     |        |        | Lab. | Sam | ,<br>ple ID             |                                       |
|         | 5/19_           | 151       | 0              | >                | <   | 35-MW:             | SIAW-          | 01                 |            |             |           |          | X        | $\checkmark$            |          |       |       |               |          |         |     |        |        |      |     |                         |                                       |
|         | 5/19            |           |                | X                |     | 35-MW3             | 7BW-C          | 01                 |            |             |           |          | X        | X                       |          |       |       |               |          |         |     |        |        |      |     |                         |                                       |
|         | 5/18            | 173       | 35             |                  |     | 35.5509            |                |                    |            | <u> </u>    | 1         |          | $\times$ | Ľ                       | X        |       | X     | X             | X        |         |     | ,<br>, |        |      |     |                         |                                       |
| ļ       | 5/18            | 165       | <u>ð</u>       | <u>×</u>         |     | <u>35- SSI3</u>    | -00            | <u> </u>           |            | <u> </u>    |           |          |          |                         | X        |       | X     | X             | X        |         |     |        |        |      |     |                         |                                       |
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| Jacksonville.NCCoracContact:J. CurpContact:R. HolPhone:910-353-3336Phone:412-2                                                             | F          |                | ·····      | 58       |              |                 | /        | Ge     | 7        |                |        | N LEV  | <br>_                    |            |           | /          | RCI              | RA                            |       |
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| By submitting these samples, you agree to the terms and conditions contained in NDR                                                        | C's Price  | Scheo          | iule.      |          |              | Å               | S)       | Ŵ      | J.       | ধ              | Ľ.     | Z      |                          |            | /         |            | Temp             |                               | °C    |
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| 5 30 1930 × 35 IDWEB-01                                                                                                                    |            |                |            |          |              |                 | X        | X      | <u> </u> | У              | X      |        |                          |            | 14        | DA.        | 1700             | 2 NI                          |       |
| N \$10815 Y 35- IDWTK-02                                                                                                                   |            |                |            |          | x            | ×               | ×        | ×      | $\times$ | $\times$       |        |        |                          |            | 14        | 1 DA       | VI TI            | IEN                           |       |
| 15/210730x 35-IDWTK-01                                                                                                                     |            |                |            |          | <u> </u>     | $\checkmark$    | ×        | ×      | ×        | x              |        | _      |                          |            | 1/        | 1 D        | F J.A            | URN                           |       |
| 1 5/19 2045 V 35-TOWDR-01                                                                                                                  |            |                |            |          | <u> </u>     | ×               | V        | Y      |          | ×              |        | _      | _                        |            | <i></i>   | <u>4 T</u> | T IVAC           | IL PN                         |       |
| N \$20 1830 × 35. JDWDE-02                                                                                                                 |            |                | <u> </u>   |          | <u>×</u>     | ×               | <u>×</u> | ×      | ~        | ┵┤             | _      | _      |                          |            | 1         | D          | Ay 1             | UEN                           |       |
| 1 5/20 1810 × 35-MW2684CI                                                                                                                  |            |                | <u> </u>   |          | $\mathbf{x}$ | X               |          |        |          |                |        |        |                          |            | · · ·     |            |                  | 5-MIW:                        |       |
| V 5/20 1810 × 35-MW26BFOID                                                                                                                 |            |                | ļ          | <b> </b> | <u>v</u>     | X               |          |        |          |                |        | 4      | -                        | +          |           |            |                  | 5.20                          | )-94  |
| N 5/30 1810 × 35-MW26BKOIMS                                                                                                                |            |                |            |          | X            | ×               |          |        |          |                |        |        |                          |            | -4        | ms -       | Sami             | 26                            |       |
| N 5/20 1810 × 35-MW26 BHCI MSD                                                                                                             |            |                | ļ          |          | ×            | _X              |          |        |          |                |        |        |                          |            | _         |            |                  |                               |       |
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| Aatrix WW - Wastewater W - Water S - Soll SD - Solid L - Liqui<br>Container VOA - 40 ml vial A/G - Amber / Or Glass 1 Liter 250 ml - Glass |            | - Air Ba<br>lh | g<br>P/O - |          |              | oal tub<br>ther | 0        |        | SL - SI  | udge           | 0      | ÓII    |                          |            |           | ise Fa     |                  | verbai ci<br>n change<br>5592 |       |

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