

FINAL
ANNUAL GROUNDWATER MONITORING REPORT 2005-2006

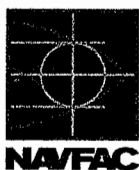
CAMPBELL STREET FUEL FARM

NCDENR Incident Number: 23297

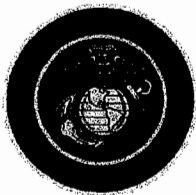
Marine Corps Air Station
New River, North Carolina

June 19, 2006

Prepared for:



Mr. David T. Cleland, P.G.
Marine Corps North Carolina IPT
Naval Facilities Engineering Command Mid-Atlantic
6506 Hampton Blvd
Norfolk, VA 23508-1278



Mr. Andrew Smith
I&E/EMD/EQB
Building 12, Post Lane
MCB Camp Lejeune, NC 28542

Prepared by:



Sovereign Consulting Inc.
405 Oakmeads Crescent, Suite 1
Virginia Beach, Virginia 23462

Contract Number: N62470-04-D-0205
Task Order: 0007

TABLE OF CONTENTS

EXECUTIVE SUMMARY	1
1.0 TITLE PAGE	3
2.0 INTRODUCTION	4
3.0 SITE HISTORY	4
4.0 SITE REMEDIATION	6
4.1 Soil	6
4.2 Groundwater	7
5.0 POST REMEDIATION SAMPLING	7
6.0 RECEPTOR SURVEY	9
7.0 CONCLUSIONS AND PETITION FOR SITE CLOSURE	9
8.0 PUBLIC NOTICE REQUIREMENTS	10
9.0 REFERENCES	11

TABLES

TABLE 1	WELL CONSTRUCTION INFORMATION
TABLE 2	GROUNDWATER ELEVATION DATA
TABLE 3	PRODUCT THICKNESS DATA
TABLE 4	SUMMARY OF GROUNDWATER SAMPLING RESULTS – EPA METHOD 602
TABLE 5	SUMMARY OF GROUNDWATER SAMPLING RESULTS – EPA METHOD 610
TABLE 6	SUMMARY OF GROUNDWATER SAMPLING RESULTS – EPA METHOD 504.1

FIGURES

FIGURE 1	GENERAL VICINITY TOPOGRAPHIC MAP
FIGURE 2	SITE MAP WITH MONITORING WELL LOCATIONS – CAMPBELL STREET FUEL FARM/AS-143 AREA
FIGURE 3	SITE MAP WITH MONITORING WELL LOCATIONS - BUILDING AS-4151 AREA
FIGURE 4A	SHALLOW WELL GROUNDWATER ELEVATIONS - SEPTEMBER 2005 CAMPBELL STREET FUEL FARM/AS-143 AREA
FIGURE 4B	SHALLOW WELL GROUNDWATER ELEVATIONS - SEPTEMBER 2005 BUILDING AS-4151 AREA
FIGURE 5A	SHALLOW WELL GROUNDWATER ELEVATIONS - DECEMBER 2005 CAMPBELL STREET FUEL FARM/AS-143 AREA
FIGURE 5B	SHALLOW WELL GROUNDWATER ELEVATIONS - DECEMBER 2005 BUILDING AS-4151 AREA
FIGURE 6A	SHALLOW WELL GROUNDWATER ELEVATIONS – MARCH 2006 CAMPBELL STREET FUEL FARM/AS-143 AREA
FIGURE 6B	SHALLOW WELL GROUNDWATER ELEVATIONS – MARCH 2006 BUILDING AS-4151 AREA
FIGURE 7A	SHALLOW WELL GROUNDWATER ELEVATIONS – MAY 2006 CAMPBELL STREET FUEL FARM/AS-143 AREA
FIGURE 7B	SHALLOW WELL GROUNDWATER ELEVATIONS – MAY 2006 BUILDING AS-4151 AREA
FIGURE 8	SITE MAP WITH GROUNDWATER SAMPLING RESULTS - EPA METHOD 602
FIGURE 9	SITE MAP WITH GROUNDWATER SAMPLING RESULTS - EPA METHOD 610
FIGURE 10	SITE MAP WITH GROUNDWATER SAMPLING RESULTS - EPA METHOD 504.1

APPENDICES

APPENDIX A	HISTORICAL DATA AND FIGURES
APPENDIX B	LABORATORY REPORTS AND CHAIN OF CUSTODY DOCUMENTATION FROM APRIL 2006 GROUNDWATER SAMPLING EVENT
APPENDIX C	FIELD DATA

LIST OF ACRONYMS

2000 Guidelines	Groundwater Section Guidelines for Investigation and Remediation of Soil and Groundwater
2001 Guidelines	Guidelines for Assessment and Corrective Action, North Carolina
2L GWQS	Underground Storage Tank Section (Effective July 1, 2001)
AS	NCAC T15A:02L Groundwater Quality Standards
AST	Air Sparge
BDL	Aboveground Storage Tank
BN	Below Detection Limit
BNA	Base/Neutral (extractables)
BQL	Base/Neutral/Acid (extractables)
BLS	Below Quantitation Limit
BTEX	Below Land Surface
CAP	Benzene, Toluene, Ethylbenzene, Xylenes
CFR	Corrective Action Plan
Cr	Code of Federal Regulations
CSA	Chromium
DIPE	Comprehensive Site Assessment
DO	Di-isopropyl Ether
DOD	Dissolved Oxygen
DPT	Department of Defense
DWQ	Direct Push Technology
DWM	Division of Water Quality
DTW	Division of Waste Management
EDB	Depth to Water
EMD	Ethylene dibromide
EPA	Environmental Management Division
EPH	Environmental Protection Agency
EQB	Extractable Petroleum Hydrocarbons
Fe	Environmental Quality Branch
FID	Iron
FT	Flame Ionization Detector
GCL	Feet
GIS	Gross Contaminant Level
GPS	Geographic Information System
Guidelines Vol. II	Global Positioning System
HDPE	Groundwater Section Guidelines for Investigation and Remediation of Soil and Groundwater, Volume II, Petroleum Underground Storage Tanks (January 2, 1998)
I/C	High Density Polyethylene
ID	Industrial/Commercial
I&E	Identification
IGWQS	Installations and Environment Department
IPE	Interim Groundwater Quality Standards
LSA	Isopropyl Ether
LUST	Limited Site Assessment
m	Leaking Underground Storage Tank
MADEP	Meter
MCAS	Massachusetts Department of Environmental Protection
MCB	Marine Corps Air Station
	Marine Corps Base

MDL	Method Detection Limit
mg/Kg	Milligrams per Kilogram
mg/L	Milligrams per Liter
MSCC	Maximum Soil Contaminant Concentration
MSL	Mean Sea Level
MTBE	Methyl tertiary butyl ether
µg/Kg	Micrograms per Kilogram
µg/L	Micrograms per Liter
NA	Not Analyzed
N/A	Not Applicable
NAVFAC	Naval Facilities Engineering Command Atlantic
NC	North Carolina
NCAC	North Carolina Administrative Code
NCDENR	North Carolina Department of Environment and Natural Resources
NE	None Established
NM	Not Measured
NMT	No Measurable Thickness
NS	Not Sampled
OVA	Organic Vapor Analyzer
PAH	Polynuclear Aromatic Hydrocarbons
Pb	Lead
PPB	Parts Per Billion
PPM	Parts Per Million
PID	Photo Ionization Detector
PQL	Practical Quantitation Limit
PVC	Polyvinyl chloride
RBCA	Risk-Based Corrective Action
RCRA	Resource Conservation and Recovery Act
Res	Residential
SOW	Scope of Work
STGW	Soil-to-Groundwater
SVE	Soil Vapor Extraction
SVOC	Semi Volatile Organic Compound
TCLP	Toxicity Characteristic Leaching Procedure
TIC	Tentatively Identified Compound
TOC	Top of Casing
TPH	Total Petroleum Hydrocarbons
US	United States
USCS	Unified Soil Classification System
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
UST	Underground Storage Tank
VOC	Volatile Organic Compounds
VPH	Volatile Petroleum Hydrocarbons
WiRO	NCDENR Wilmington Regional Office

EXECUTIVE SUMMARY

The Campbell Street Fuel Farm site is a bulk petroleum storage facility aboard Marine Corps Air Station New River, Jacksonville, North Carolina. It consists of four 215,000-gallon ASTs, which contain JP-5 fuel to be used in station aircraft. The site is located near the intersection of Campbell and White Streets and consists of two separate areas – one located at the fuel farm and Building AS-143 area and the second approximately 500 feet south near Building AS-4151. The remediation site is a result of leaks that occurred from former fuel farm USTs and the underground delivery line that lies between the fuel farm and the Air Station flightline.

There were eight former USTs that were removed from the fuel farm in 1985. They were replaced with the four previously described ASTs. Building AS-143 is an active fueling station, and Building AS-4151 is a steam generation plant.

Site assessments of the site were completed in the early to mid-1990s and identified petroleum impact to site soils and groundwater. As a result, a groundwater pump and treat remediation system was installed at the site. The system consists of three groundwater recovery trenches. One is located at the fuel farm, the second at Building AS-143, and the third at Building AS-4151. Groundwater is recovered from these trenches and piped to a central treatment compound located within the fuel farm. The contaminated groundwater is processed through an oil/water separator, an air stripper, and carbon filters before being discharged into a nearby drainage ditch. The system operated from 1996 – 2000 when portions of it was shut down in favor of aggressive fluid vapor recovery (AFVR) events.

Previous reports show that site soils comply with the Industrial/Commercial (I/C) maximum soil contaminant concentrations (MSCCs). In addition, groundwater contaminants are below gross contaminant levels (GCLs). NCDENR allowed the Base to discontinue operation of the groundwater remediation system in total as of July 2005. Monthly gauging of site monitoring wells was conducted to track the presence of free product. No measurable free product was identified until April 2006.

Sovereign Consulting Inc. (Sovereign) currently conducts monthly gauging of the site. This report details the findings of the September 2005 – May 2006 monitoring period. As previously stated, free product was identified in April and May 2006 at MW-13, which is within the fuel farm area. The product was hand bailed from the wells and properly disposed of upon discovery. Approximately 1.59 feet and 0.06 feet of product was measured. In April and May 2006, groundwater samples were taken from five wells in the Building AS-4151 area (122DW01, 122DW02, 122RW01, RWC1, and RWC2 (note well 4151RW01 and 122RW01 are one in the same)) as a result of a NCDENR letter dated February 28, 2006. Samples were tested for volatiles, semivolatiles, and ethylene dibromide using EPA Methods 602, 610, and 504.1, respectively. Only one compound was detected at or above the applicable groundwater standard. 1-Methylnaphthalene was detected in monitoring well 122RW01 at a concentration of 1.50 µg/L. There is not an established groundwater standard for 1-Methylnaphthalene, so the reporting limit is used as the action level.

Since free product was again detected at the site, monthly gauging should continue during the next monitoring period, employing free product recovery as needed. System operations should be evaluated once a trend is established regarding presence of the free product. Options for

remediation include reactivation of the remediation system, installation of sorbent socks, and/or conducting AFVR events. If free product remains present in only one well, then excavation activities in the area of the well should be evaluated as an option to remove the source.

TITLE PAGE

DATE OF REPORT: June 19, 2006

Facility I.D.: N/A

UST Incident Number: 23297

Site Name: Campbell Street Fuel Farm

Site Location: Marine Corps Air Station New River, North Carolina

Nearest City/Town: Jacksonville

County: Onslow

Risk Classification: Intermediate Risk

Land Use Classification: Industrial/Commercial

UST Owner: Commanding Officer – MCB Camp Lejeune

I&E/EMD/EQB

PSC Box 20004

Address: MCB Camp Lejeune, NC 28542-0004

Phone: (910) 451-5068

UST Operator: Same as above

Address: Same as above

Phone: Same as above

Property Owner: Same as above

Address: Same as above

Phone: Same as above

Property Occupant: Same as above

Address: MCB Camp Lejeune, NC

Phone: None

Consultant/Contractor: Sovereign Consulting Inc.

Address: 405 Oakmeads Crescent, Suite 1

Virginia Beach, VA 23462

Phone: 757-456-5093

Release Information

Date Discovered: Early 1990s

Latitude: 34° 43' 9.12" N

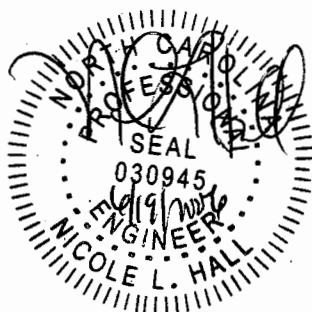
Longitude: 77° 27' 6.84" W

Estimated Quantity of Release: Unknown

Cause of Release: Unknown

Source of Release (Piping/UST): USTs and piping

Sizes and contents of UST system(s) from which the release occurred: The former system consisted of eight USTs in the vicinity of CSFF as well as a fuel delivery line which ran along White Street from the fuel farm to the Air Station flightline.



I, Nicole L. Hall a Professional Engineer for Sovereign Consulting Inc., do certify that the information contained in this report is correct and accurate to the best of my knowledge.

2.0 INTRODUCTION

The purpose of this report is to summarize data from recent groundwater gauging and sampling events at the Campbell Street Fuel Farm site aboard MCAS New River, Jacksonville, North Carolina. This data was collected from September 2005 through May 2006. The project's scope of work entailed monthly gauging of 26 site monitoring wells (each are preceded by the prefix USTCSFF/AS4151) - MW03, MW09, MW10, MW11, MW12, MW14, MW15, MW16, MW21, MW22, MW24, DW02, MWDW06, 13MW01, 13DW01, 122MW03, 122MW04, 122MW05, 122MW06, 122MW07, 122MW08, 122MW09, 122MW11, 122MW13, 122MW14, and 122RW01. The monitoring well list was expanded for the April and May 2006 gauging events to include 44 wells. Groundwater samples from Building AS-4151 area wells were also obtained in April 2006. These samples were requested from NCDENR in a letter dated February 28, 2006 and were taken from five wells - 122DW01, 122DW02, 122RW01, RWC1, and RWC2 (note well 4151RW01 and 122RW01 are one in the same). Analyses run included EPA Methods 601, 610, and 504.1. Results of Sovereign's 2006 gauging and sampling events are presented in this report.

3.0 SITE HISTORY

The Campbell Street Fuel Farm site is located at the intersection of Campbell and White Streets aboard MCAS New River, Jacksonville, North Carolina. The site consists of two separate areas - one includes the fuel farm and building AS-143 and the other includes the area around building AS-4151. This second area is located approximately 500 feet south of the Campbell Street Fuel Farm (Figures 1-3).

The Campbell Street Fuel Farm is an active fuel storage facility. Four 215,000-gallon steel aboveground storage tanks hold JP-5 jet fuel that is pumped to the tarmac helicopter refueling station via an underground delivery line. This underground line runs from the fuel farm along White Street and then out onto the flightline. The current underground fuel line was installed in 1985 and replaced a former pipeline that was abandoned in place by J.A. Jones Environmental Services, Inc. in 2000. The two lines are adjacent to one another. The four ASTs replaced a system of eight USTs in 1985. The eight USTs contained JP-5 and aviation gasoline and had varying capacities. Seven of the USTs were closed by removal and the eighth UST was reportedly closed in place. In May 2000, a 5,000-gallon concrete UST used to store JP-5 fuel was removed from the fuel farm area. Subsequent assessment indicated the tank site met criteria for classification as low risk and qualified for No Further Action. In addition, two surface releases occurred within the fuel farm area - in 2004 and 2005. Surface soil where the releases occurred was subsequently excavated. Additional soil excavation is planned for May 2006 in the 2005 release area.

Building AS-143 is an active gasoline fueling station that supplies gasoline to government owned vehicles. The station stores unleaded gasoline in an AST located at the station. This AST replaced a 10,000-gallon fiberglass UST that was removed in 2000. The predecessor to the UST was another 10,000-gallon UST; however, it was steel. A Phase I and Phase II Limited Site Assessment was conducted after the 2000 UST removal. The studies found no soil or groundwater contamination above applicable standards.

Building AS- 4151 is a steam generation plant. Three 100,000-gallon ASTs store No. 2 fuel oil, and one 1,000-gallon AST stores diesel fuel. One horizontal 30,000 gallon AST and one vertical 20,000 gallon AST are located on site, but are not in use. The fuel transfer line that runs from the Campbell Street Fuel Farm to the airfield runs along the eastern side of the site.

Various site assessments were conducted in the early to middle 1990s at the Fuel Farm/AS-143 and Building AS-4151 areas. These investigations identified petroleum constituents in soil and groundwater at the site, as well as the presence of free product. The contamination was attributed to leaks from former UST systems and from the former JP5 pipeline. In 1994, two corrective action plans (CAPs) were prepared, one for the Fuel Farm/AS-143 area and one for the Building AS-4151 area. The CAP for the Fuel Farm/AS-143 area recommended removal of petroleum affected soils and installation of groundwater recovery trenches. Groundwater recovered by the trenches would be treated by a groundwater treatment system that included an oil/water separator, air stripper, and granular activated carbon before being discharged into a nearby drainage ditch. The CAP for the Building AS-4151 area recommended cleaning and abandoning the JP5 pipeline, excavation of petroleum affected soils from beneath the underground fuel line along the east side of the site, and installation of another groundwater recovery trench. Excavation of soils at either location has not been completed to date; however, cleaning and abandonment of the pipeline was completed in 2000 by J.A. Jones.

In 1996, a groundwater pump and treat system was installed. Two groundwater recovery trenches were installed at the Fuel Farm/AS-143 area, and a third trench was installed at the Building AS-4151 site. Captured groundwater was pumped to a treatment system located within the fuel farm and includes an oil/water separator, a low profile air stripper, and granular activated carbon canisters. The treated effluent was discharged under permit to a drainage ditch south of the treatment building. In 1999, extraction wells were installed in both the Fuel Farm / AS-143 and Building AS-4151 areas and connected to the treatment system to enhance removal of contamination.

A remediation optimization study was conducted by Radian International in 2000. The study recommended that the pump and treat system be deactivated in favor of performing AFVR events as needed at the site. They also recommended implementation of monitored natural attenuation. Based on the recommendations of the Radian optimization study, the recovery trenches located at the Fuel Farm and Building AS-4151 were deactivated, while the AS-143 trench remained in operation. In 2001, the AS-4151 trench was reactivated due to the presence of free product.

Site groundwater monitoring activities were conducted in conjunction with operation of the treatment system. Data from the monitoring activities conducted from 1996 through 2002 indicated that concentrations of petroleum constituents in groundwater at some wells were above NCGWQSs; however, concentrations have decreased over time. Measurable free product was detected in site wells, with the last incidence of product recorded in 2002. AFVR events were conducted at the site, and sorbent socks were also used when needed.

CATLIN prepared an optimization study and revised CAP in May 2005 followed by an addendum in February 2006. The studies indicated that the site meets criteria for classification as Intermediate Risk and Industrial/Commercial land use. Soils were shown to meet I/C MSCCs, and groundwater contaminants were below established GCLs. As of the preparation of the

reports, no measurable free product was identified at the site since January 2002. As a result of the May 2005 optimization report, NCDENR recommended that the Base shut down the groundwater treatment system and gauge wells in the area for a period of one year. The groundwater treatment system was subsequently shut-down in July 2005.

J.A Jones, Shaw, and EEI conducted inspections, monitoring, and maintenance of the groundwater treatment system and site from 1996 – August 2005. Currently, Sovereign has cognizance over the current remediation operations at the site. Since the groundwater treatment system was deactivated in July 2005, Sovereign conducts only monthly gauging of site monitoring wells. Groundwater samples from six wells were obtained in April 2006 per a request made by NCDNER in a letter dated February 28, 2006.

This report summarizes the details associated with groundwater gauging and sampling activities at the Campbell Street Fuel Farm Site from September 2005 – May 2006.

4.0 GAUGING AND SAMPLING RESULTS

Upon submittal of the May 2005 CATLIN optimization report and revised CAP, NCDENR recommended in a letter dated June 28, 2005 that the groundwater treatment system be shut-down and site wells be gauged for rebound for a period of one year. Only monthly gauging events have, therefore, been conducted to date. EEI submitted previous monthly gauging data, as well as groundwater sampling data in the last annual monitoring report for the site dated December 2005. This report does not discuss operation and maintenance of the system since it is non-operational.

Upon system deactivation in July 2005, monthly gauging events have been conducted at 26 wells associated with the Campbell Street Fuel Farm site. The gauging list was expanded in April and May 2006 to include a total of 44 wells. This was done in order to gather up to date data on each well at the site. Sovereign gauged site monitoring wells monthly using an interface probe. Field personnel gauged 26 wells from September 2005 to May 2006 on a monthly basis. Those included MW03, MW09, MW10, MW11, MW12, MW14, MW15, MW16, MW21, MW22, MW24, DW02, DW06, 13MW01, 13DW01, 122MW03, 122MW04, 122MW05, 122MW06, 122MW07, 122MW08, 122MW09, 122MW11, 122MW13, 122MW14, and 122RW01. An additional 18 wells were added to the program with the April and May gauging events, which included MW04, MW05, MW06, MW07, MW08, MW13, MW17, MW18, DW01, DW04, DW05, 122MW01, 122MW02, MW02A, 122MW10, 122MW12, 122DW01, and 122DW02. Depth to water ranged from 1.20 feet to 8.98 feet across the site. Monitoring well MW13 contained measurable free product in the months of April and May 2006. The well contained 1.59 feet of free product in April 2006. Product was hand bailed from the well, and a sorbent sock inserted. The May 2006 gauging event showed the well contained 0.06 feet of measurable free product. This, however, was with the sock present. Sorbent socks will not be used for upcoming events, so that unaffected product thickness data can be recorded. Static groundwater depths during the monitoring period ranged from 1.20 (122MW04) to 8.98 (MW13) feet from top of casing.

Groundwater samples were taken from five wells in the Building AS-4151 area on April 24, 2006 and May 8, 2006 - 122DW01, 122DW02, 122RW01, RWC1, and RWC2 (note well

4151RW01 and 122RW01 are one in the same). These wells were sampled as a result of a NCDENR letter dated February 28, 2006. Sovereign purged and sampled the wells, then sent the samples under chain of custody for analysis to SGS/Paradigm Analytical Laboratories Inc. (Paradigm) in Wilmington, NC (NC Certification Number 481). The lab tested the groundwater samples for volatiles, semivolatiles, and ethylene dibromide using EPA Methods 602, 610, and 504.1, respectively.

Only two volatile compounds were detected. Monitoring well 122DW01 contained benzene at a concentration of 0.608 $\mu\text{g/L}$ as compared to the groundwater standard of 1 $\mu\text{g/L}$. Toluene was also present in monitoring well RWC-1 at a concentration of 0.374 $\mu\text{g/L}$ as compared to the 2L standard of 1000 $\mu\text{g/L}$. No other volatile compounds were detected in the wells.

Two semivolatile compounds were detected in well 122RW01 – 1-Methylnaphthalene and 2-Methylnaphthalene. These were present at concentrations of 1.50 $\mu\text{g/L}$ and 6.70 $\mu\text{g/L}$, respectively. There is not an established groundwater standard for 1-Methylnaphthalene. The standard for 2-Methylnaphthalene is 14 $\mu\text{g/L}$. No other semivolatile compounds were detected. Ethylene dibromide (EDB) was not detected above laboratory quantitation limits in the groundwater samples from the five wells. The standard for EDB is 0.0004 $\mu\text{g/L}$, however, which is less than the laboratory quantitation limits. The limits ranged from 0.0188 – 0.0193 $\mu\text{g/L}$ for the five samples. Laboratory results are summarized in Tables 4-6, and lab reports are in Appendix B.

5.0 RECEPTOR SURVEY

Sovereign reassessed site conditions and concluded that the receptor survey previously completed by CATLIN in the May 2005 RAO and RCAP report still applies. There have been no changes in receptor impact, and there have been no changes to land use of the site or the surrounding areas. The survey is in Appendix A.

6.0 CONCLUSIONS AND RECOMMENDATIONS

Based on fieldwork and laboratory analytical data gathered during the gauging and sampling events performed from September 2005 to May 2006, the following conclusions are presented:

1. No water supply wells are located within 1,500 feet of the site.
2. Groundwater flow in the vicinity of the Fuel Farm and Building AS-143 for the surficial aquifer is to the south and southeast, and in the vicinity of Building AS-4151, flow is to the east and south.
3. Soil and groundwater data from previous reports indicate no additional remediation action is required as soil meets the Industrial/Commercial MSCCs and groundwater meets GCLs.
4. Free product was observed within the fuel farm area in MW-13 during the April and May gauging events in the amounts of 1.59 feet and 0.06 feet, respectively.
5. Groundwater samples were collected from five wells in the Building AS-4151 area on April 24, 2006 and May 8, 2006 - 122DW01, 122DW02, 122RW01, RWC1, and RWC2 (note well

4151RW01 and 122RW01 are one in the same). Only one compound was detected at or above the applicable groundwater standard. 1-Methylnaphthalene was detected in monitoring well 122RW01 at a concentration of 1.50 µg/L. There is not an established groundwater standard for 1-Methylnaphthalene, so the reporting limit is used as the action level.

Free product was detected at the site (in MW-13) during the 2005-2006 monitoring period. Monitoring well MW-13 has not been gauged in recent history, so a trend should be established before a large scale corrective action is implemented. The following recommendations are offered for the next monitoring period:

1. Continue conducting monthly well gauging at all site wells. If encountered, free product should be removed immediately and properly disposed. Avoid using sorbent socks for the first six gauging events starting in June 2006, so that free product occurrence can be observed.
2. The groundwater remediation system should remain deactivated, as groundwater sampling results remain below GCLs.

At the conclusion of the next monitoring period, a report of findings should be generated and submitted to NCDENR. If data warrants, request No Further Action with LURs. If free product persists at the site, however, additional product removal activities should be conducted, which could include reactivation of the remediation system, installation of sorbent socks, and/or conducting AFVR events. If free product remains present in only one well, then excavation activities in the area of the well should be evaluated as an option to remove the source.

7.0 REFERENCES

- AH Environmental Consultants, *Final Report, Wellhead Protection Plan – 2002 Update, Marine Corps Base, Camp Lejeune*, August 2002.
- Baker Environmental, Inc., *Final Site Assessment Report, The Campbell Street Fuel Farm and UST System AS-143, New River Marine Corps Air Station, Jacksonville, North Carolina*, August 12, 1992.
- Baker Environmental, Inc., *Final Site Assessment Report, Additional Assessment Activities at The Campbell Street Fuel Farm and UST System AS-143, Marine Corps Air Station New River, Jacksonville, North Carolina*, April 1994.
- Baker Environmental, Inc., *Final Site Assessment Investigation, Building AS-4151 Steam Generating Plant, Marine Corps Air Station New River, Jacksonville, North Carolina*, June 8, 1994.
- Baker Environmental, Inc., *Final Corrective Action Plan, Campbell Street Fuel Farm and UST System AS-143, Marine Corps Air Station New River, Jacksonville, North Carolina*, 22 July 1994.
- Catlin Engineers and Scientists, *Remedial Action Optimization and Revised Corrective Action Plan, Campbell Street Fuel Farm, Marine Corps Air Station New River, North Carolina*, May 9, 2005.
- Catlin Engineers and Scientists, *Remedial Action Optimization and Revised Corrective Action Plan Addendum Report, Campbell Street Fuel Farm, Marine Corps Air Station New River, North Carolina*, February 22, 2006.
- Engineering and Environment, Inc., *Annual Groundwater Monitoring Report 2003-2005, Campbell Street Fuel Farm Site, Marine Corps Air Station New River, North Carolina*, December 19, 2005.
- Engineering and Environment, Inc., *Soil Contamination Report, Campbell Street Fuel Farm Site, Marine Corps Air Station New River, North Carolina*, September 22, 2005.
- North Carolina Department of Environment and Natural Resources, Division of Waste Management, Underground Storage Tank Section, *Guidelines for Assessment and Corrective Action*, April 2001.
- Radian International, *Remedial Action Operation Optimization Case Study, Campbell Street Fuel Farm, Marine Corps Base Camp Lejeune*, January 2000.
- Shaw Environmental, Inc., *Final Annual Monitoring Report, Soil and Groundwater Remediation, Campbell Street Fuel Farm, Marine Corps Base Camp Lejeune, Onslow County, North Carolina*, January 2004.

TABLES

TABLE 1
WELL CONSTRUCTION DATA
CAMPBELL STREET FUEL FARM - INCIDENT # 23297

Monitoring Well	Date Installed	Well Depth (feet below TOC)	Top of Casing Elevation (feet)
USTCSFF/AS4151-MW03	12/12/1991	17.39	21.69
USTCSFF/AS4151-MW04	12/12/1991	18.17	22.77
USTCSFF/AS4151-MW05	12/12/1991	18.25	23.85
USTCSFF/AS4151-MW06	12/13/1991	18.1	20.4
USTCSFF/AS4151-MW07	12/13/1991	17.54	21.04
USTCSFF/AS4151-MW08	11/19/1992	15.65	20.45
USTCSFF/AS4151-MW09	11/19/1992	16.45	20.45
USTCSFF/AS4151-MW10	11/19/1992	17.77	21.17
USTCSFF/AS4151-MW11	11/18/1992	18.73	22.03
USTCSFF/AS4151-MW12	11/19/1992	16.51	21.41
USTCSFF/AS4151-MW13	11/20/1992	17.8	22.8
USTCSFF/AS4151-MW14	11/20/1992	15.77	20.07
USTCSFF/AS4151-MW15	11/21/1992	18.68	21.08
USTCSFF/AS4151-MW16	11/20/1992	17.65	21.45
USTCSFF/AS4151-MW17	11/20/1992	15.71	22.51
USTCSFF/AS4151-MW18	11/22/1992	12.79	18.69
USTCSFF/AS4151-MW21	11/21/1992	16.66	21.76
USTCSFF/AS4151-MW22	11/23/1992	15.79	21.69
USTCSFF/AS4151-MW24	11/22/1992	13.56	21.56
USTCSFF/AS4151-DW01	12/18/1991	32.49	20.79
USTCSFF/AS4151-DW02	1/7/1992	33.41	22.91
USTCSFF/AS4151-DW04	11/22/1992	53.57	21.07
USTCSFF/AS4151-DW05	11/19/1992	45.79	22.79
USTCSFF/AS4151-DW06	12/2/1992	45.23	21.83
USTCSFF/AS4151-13MW01	12/1/1991	Unknown	21.84
USTCSFF/AS4151-13DW01	12/1/1991	Unknown	22.17
USTCSFF/AS4151-122DW01	6/23/1992	43.72	18.72
USTCSFF/AS4151-122DW02	6/24/1992	44.78	22.68
USTCSFF/AS4151-122MW01	6/18/1992	18.75	22.75
USTCSFF/AS4151-122MW02	6/18/1992	21.28	22.48
USTCSFF/AS4151-MW02A	Unknown	Unknown	Unknown
USTCSFF/AS4151-122MW03	6/18/1992	17.43	22.23
USTCSFF/AS4151-122MW04	6/18/1992	14	19.6
USTCSFF/AS4151-122MW05	6/19/1992	13.1	18.6
USTCSFF/AS4151-122MW06	6/20/1992	13.58	18.38
USTCSFF/AS4151-122MW07	6/20/1992	13.87	18.37
USTCSFF/AS4151-122MW08	1/14/1993	14.37	21.25
USTCSFF/AS4151-122MW09	1/13/1993	13.46	18.94
USTCSFF/AS4151-122MW10	1/12/1993	14.57	21.48
USTCSFF/AS4151-122MW11	1/13/1993	8.5	21.37
USTCSFF/AS4151-122MW12	1/14/1993	16.46	20.72
USTCSFF/AS4151-122MW13	1/14/1993	15.44	20.51
USTCSFF/AS4151-122MW14	1/13/1993	17.61	23.41
USTCSFF/AS4151-122RW01	1/31/1993	14.96	18.87

Wells not listed were either unable to be located or abandoned and, therefore, not gauged.

Wells above double line are associated with the CSFF/AS143 area; wells below the double line are associated with the AS4151 area.

TABLE 2
GROUNDWATER ELEVATION DATA - SEPTEMBER 2005 TO MAY 2005
CAMPBELL STREET FUEL FARM - INCIDENT # 23297

Monitoring Well	Top of Casing Elevation (feet)	Groundwater Elevation (feet)								
		9/21/2005	10/31/2005	11/18/2005	12/07/2005	1/18/2006	2/28/2006	3/10/2006	4/13/2006	5/3/2006
USTCSFF/AS4151-MW03	21.69	16.14	16.29	14.87	15.69	16.08	16.30	15.41	15.09	15.66
USTCSFF/AS4151-MW04	22.77	NM	NM	NM	NM	NM	NM	NM	14.50	14.91
USTCSFF/AS4151-MW05	23.85	NM	NM	NM	NM	NM	NM	NM	15.26	15.79
USTCSFF/AS4151-MW06	20.40	NM	NM	NM	NM	NM	NM	NM	13.88	14.04
USTCSFF/AS4151-MW07	21.04	NM	NM	NM	NM	NM	NM	NM	16.39	15.96
USTCSFF/AS4151-MW08	20.45	NM	NM	NM	NM	NM	NM	NM	15.75	16.02
USTCSFF/AS4151-MW09	20.45	15.09	15.85	14.85	15.22	15.64	15.68	15.22	14.67	15.05
USTCSFF/AS4151-MW10	21.17	16.20	16.54	15.27	16.18	16.77	16.79	16.15	15.89	16.02
USTCSFF/AS4151-MW11	22.03	15.18	16.07	14.95	15.46	15.95	16.01	15.49	14.93	15.31
USTCSFF/AS4151-MW12	21.41	15.05	14.95	14.41	14.56	15.78	14.93	14.52	14.53	14.71
USTCSFF/AS4151-MW13	22.80	NM	NM	NM	NM	NM	NM	NM	13.82	15.43
USTCSFF/AS4151-MW14	20.07	15.04	15.06	14.30	14.62	14.95	15.07	14.64	14.51	14.72
USTCSFF/AS4151-MW15	21.08	14.29	14.86	13.96	14.20	14.60	14.75	14.26	13.80	14.13
USTCSFF/AS4151-MW16	21.45	14.90	14.87	14.45	14.78	15.05	15.17	14.71	14.64	14.95
USTCSFF/AS4151-MW17	22.51	NM	NM	NM	NM	NM	NM	NM	17.29	17.83
USTCSFF/AS4151-MW18	18.69	NM	NM	NM	NM	NM	NM	NM	16.52	NM
USTCSFF/AS4151-MW21	21.76	15.18	15.52	14.70	15.09	15.31	15.68	15.08	14.76	15.11
USTCSFF/AS4151-MW22	21.69	15.19	15.27	14.74	14.96	15.16	15.41	14.94	14.82	14.97
USTCSFF/AS4151-MW24	21.56	14.84	15.04	14.24	14.51	14.81	15.15	14.57	14.47	14.70
USTCSFF/AS4151-DW01	20.79	NM	NM	NM	NM	NM	NM	NM	16.34	16.76
USTCSFF/AS4151-DW02	22.91	12.76	13.58	12.54	12.96	13.32	13.40	12.93	12.37	12.74
USTCSFF/AS4151-DW04	21.07	NM	NM	NM	NM	NM	NM	NM	14.64	15.03
USTCSFF/AS4151-DW05	22.79	NM	NM	NM	NM	NM	NM	NM	14.37	14.79
USTCSFF/AS4151-MWDW06	21.83	14.58	15.37	14.35	14.72	15.09	15.19	14.69	14.16	14.56
USTCSFF/AS4151-13MW01	21.84	16.52	16.32	15.86	15.84	16.02	16.27	15.87	15.80	16.07
USTCSFF/AS4151-13DW01	22.17	14.78	15.45	14.54	14.77	15.08	15.22	14.83	14.31	14.65
USTCSFF/AS4151-122DW01	18.72	NM	NM	NM	NM	NM	NM	NM	14.15	14.54
USTCSFF/AS4151-122DW02	22.68	NM	NM	NM	NM	NM	NM	NM	14.39	14.80
USTCSFF/AS4151-122MW01	22.75	NM	NM	NM	NM	NM	NM	NM	17.07	17.30
USTCSFF/AS4151-122MW02	22.48	NM	NM	NM	NM	NM	NM	NM	16.40	16.68
USTCSFF/AS4151-MW02A	Unknown	NM	NM	NM	NM	NM	NM	NM	Unknown	Unknown
USTCSFF/AS4151-122MW03	22.23	16.53	16.70	15.50	16.37	17.28	17.38	16.60	16.17	16.62
USTCSFF/AS4151-122MW04	19.60	18.40	17.32	16.43	16.51	16.65	18.08	16.49	16.26	16.78
USTCSFF/AS4151-122MW05	18.60	15.22	15.04	14.60	14.83	14.54	15.26	14.93	15.02	14.90
USTCSFF/AS4151-122MW06	18.38	12.13	12.25	11.78	NM	12.13	12.27	11.95	NM	NM
USTCSFF/AS4151-122MW07	18.37	15.83	15.51	14.80	15.04	15.43	16.72	15.12	15.00	15.22
USTCSFF/AS4151-122MW08	21.25	15.12	14.99	14.48	14.59	14.79	15.09	14.69	14.70	14.80
USTCSFF/AS4151-122MW09	18.94	14.60	14.33	13.96	14.12	14.32	14.37	14.16	14.31	14.33
USTCSFF/AS4151-122MW10	21.48	NM	NM	NM	NM	NM	NM	NM	15.41	15.61
USTCSFF/AS4151-122MW11	21.37	15.95	15.82	15.14	NM	15.51	15.81	15.26	15.45	15.50
USTCSFF/AS4151-122MW12	20.72	NM	NM	NM	NM	NM	NM	NM	15.00	15.25
USTCSFF/AS4151-122MW13	20.51	15.79	15.55	15.55	15.04	15.51	15.74	15.14	14.98	15.18
USTCSFF/AS4151-122MW14	23.41	17.00	16.85	16.29	16.96	17.73	17.95	17.30	17.06	17.24
USTCSFF/AS4151-122RW01	18.87	15.23	15.28	14.54	14.71	14.95	15.26	14.86	14.92	15.00

NM = Well not measured; either not accessible or not designated as part of gauging program.

Wells above double line are associated with the CSFF/AS143 area; wells below the double line are associated with the AS4151 area.

TABLE 3
PRODUCT THICKNESS DATA - SEPTEMBER 2005 TO MAY 2005
CAMPBELL STREET FUEL FARM - INCIDENT # 23297

Monitoring Well	Top of Casing Elevation (feet)	Product Thickness (feet)								
		9/21/2005	10/31/2005	11/18/2005	12/07/2005	1/18/2006	2/28/2006	3/10/2006	4/13/2006	5/3/2006
USTCSFF/AS4151-MW03	21.69	--	--	--	--	--	--	--	--	--
USTCSFF/AS4151-MW04	22.77	NM	NM	NM	NM	NM	NM	NM	--	--
USTCSFF/AS4151-MW05	23.85	NM	NM	NM	NM	NM	NM	NM	--	--
USTCSFF/AS4151-MW06	20.40	NM	NM	NM	NM	NM	NM	NM	--	--
USTCSFF/AS4151-MW07	21.04	NM	NM	NM	NM	NM	NM	NM	--	--
USTCSFF/AS4151-MW08	20.45	NM	NM	NM	NM	NM	NM	NM	--	--
USTCSFF/AS4151-MW09	20.45	--	--	--	--	--	--	--	--	--
USTCSFF/AS4151-MW10	21.17	--	--	--	--	--	--	--	--	--
USTCSFF/AS4151-MW11	22.03	--	--	--	--	--	--	--	--	--
USTCSFF/AS4151-MW12	21.41	--	--	--	--	--	--	--	--	--
USTCSFF/AS4151-MW13	22.80	NM	NM	NM	NM	NM	NM	NM	1.59	0.06
USTCSFF/AS4151-MW14	20.07	--	--	--	--	--	--	--	--	--
USTCSFF/AS4151-MW15	21.08	--	--	--	--	--	--	--	--	--
USTCSFF/AS4151-MW16	21.45	--	--	--	--	--	--	--	--	--
USTCSFF/AS4151-MW17	22.51	NM	NM	NM	NM	NM	NM	NM	--	--
USTCSFF/AS4151-MW18	18.69	NM	NM	NM	NM	NM	NM	NM	--	NM
USTCSFF/AS4151-MW21	21.76	--	--	--	--	--	--	--	--	--
USTCSFF/AS4151-MW22	21.69	--	--	--	--	--	--	--	--	--
USTCSFF/AS4151-MW24	21.56	--	--	--	--	--	--	--	--	--
USTCSFF/AS4151-DW01	20.79	NM	NM	NM	NM	NM	NM	NM	--	--
USTCSFF/AS4151-DW02	22.91	--	--	--	--	--	--	--	--	--
USTCSFF/AS4151-DW04	21.07	NM	NM	NM	NM	NM	NM	NM	--	--
USTCSFF/AS4151-DW05	22.79	NM	NM	NM	NM	NM	NM	NM	--	--
USTCSFF/AS4151-DW06	21.83	--	--	--	--	--	--	--	--	--
USTCSFF/AS4151-13MW01	21.84	--	--	--	--	--	--	--	--	--
USTCSFF/AS4151-13DW01	22.17	--	--	--	--	--	--	--	--	--
USTCSFF/AS4151-122DW01	18.72	NM	NM	NM	NM	NM	NM	NM	--	--
USTCSFF/AS4151-122DW02	22.68	NM	NM	NM	NM	NM	NM	NM	--	--
USTCSFF/AS4151-122MW01	22.75	NM	NM	NM	NM	NM	NM	NM	--	--
USTCSFF/AS4151-122MW02	22.48	NM	NM	NM	NM	NM	NM	NM	--	--
USTCSFF/AS4151-MW02A	Unknown	NM	NM	NM	NM	NM	NM	NM	--	--
USTCSFF/AS4151-122MW03	22.23	--	--	--	--	--	--	--	--	--
USTCSFF/AS4151-122MW04	19.60	--	--	--	--	--	--	--	--	--
USTCSFF/AS4151-122MW05	18.60	--	--	--	--	--	--	--	--	--
USTCSFF/AS4151-122MW06	18.38	--	--	--	NM	--	--	--	NM	NM
USTCSFF/AS4151-122MW07	18.37	--	--	--	--	--	--	--	--	--
USTCSFF/AS4151-122MW08	21.25	--	--	--	--	--	--	--	--	--
USTCSFF/AS4151-122MW09	18.94	Sheen	--	--	--	--	--	--	--	--
USTCSFF/AS4151-122MW10	21.48	NM	NM	NM	NM	NM	NM	NM	--	--
USTCSFF/AS4151-122MW11	21.37	--	--	--	NM	--	--	--	--	--
USTCSFF/AS4151-122MW12	20.72	NM	NM	NM	NM	NM	NM	NM	--	--
USTCSFF/AS4151-122MW13	20.51	--	--	--	--	--	--	--	--	--
USTCSFF/AS4151-122MW14	23.41	--	--	--	--	--	--	--	--	--
USTCSFF/AS4151-122RW01	18.87	Sheen	--	--	--	--	--	--	--	--

"--" = No measurable free product detected.

NM = Well not measured; either not accessible or not designated as part of gauging program.

BOLD and shaded - measurable free product thickness.

Wells above double line are associated with the CSFF/AS143 area; wells below the double line are associated with the AS4151 area.

TABLE 4
SUMMARY OF GROUNDWATER SAMPLING RESULTS

Date: June 2006
Incident Number and Name: 23297, CSFF
Facility ID#: N/A

Analytical Method: EPA Method 602

Contaminant of Concern			Benzene	Diisopropyl ether (DIPE)	Ethylbenzene	Methyl-tert butyl ether (MTBE)	Toluene	Total Xylenes
Well ID	Sample ID	Date Collected						
USTCSFF/AS4151-122DW01	USTCSFF/AS4151-122DW01	4/24/2006	0.608	BQL	BQL	BQL	BQL	BQL
USTCSFF/AS4151-122DW02	USTCSFF/AS4151-122DW02	4/24/2006	BQL	BQL	BQL	BQL	BQL	BQL
USTCSFF/AS4151-122RW01	USTCSFF/AS4151-122RW01	4/24/2006	BQL	BQL	BQL	BQL	BQL	BQL
RWC-1	RWC-1	4/24/2006	BQL	BQL	BQL	BQL	0.374	BQL
RWC-2	RWC-2	4/24/2006	BQL	BQL	BQL	BQL	BQL	BQL
2L Standard (µg/l)			1	70	550	200	1,000	530
GCL (µg/l)			5,000	70,000	84,500	200,000	257,500	87,500

- All results reported in µg/l
- µg/L =micrograms per liter
- GCL = gross contamination level
- BQL = Below Quantitation Limits; quantitation limits outlined in laboratory reports.

TABLE 5
SUMMARY OF GROUNDWATER SAMPLING RESULTS

Date: June 2006
Incident Number and Name: 23297, CSFF
Facility ID#: N/A

Analytical Method: EPA Method 610

Contaminant of Concern			1- Methylnaphthalene	2- Methylnaphthalene	All Other Compounds
Well ID	Sample ID	Date Collected			
USTCSFF/AS4151-122DW01	USTCSFF/AS4151-122DW01	4/24/2006	BQL	BQL	BQL
USTCSFF/AS4151-122DW02	USTCSFF/AS4151-122DW02	4/24/2006	BQL	BQL	BQL
USTCSFF/AS4151-122RW01	USTCSFF/AS4151-122RW01	4/24/2006	1.50	6.70	BQL
RWC-1	RWC-1	4/24/2006	BQL	BQL	BQL
RWC-2	RWC-2	4/24/2006	BQL	BQL	BQL
2L Standard (µg/l)			NE	14	Varies
GCL (µg/l)			NE	12,500	Varies

- All results reported in µg/l
- µg/L =micrograms per liter
- GCL = gross contamination level
- BQL = Below Quantitation Limits; quantitation limits outlined in laboratory reports.
- NE = Not Established
- **BOLD** = detected concentration; **SHADED** = detected concentration above State established standard.

TABLE 6
SUMMARY OF GROUNDWATER SAMPLING RESULTS

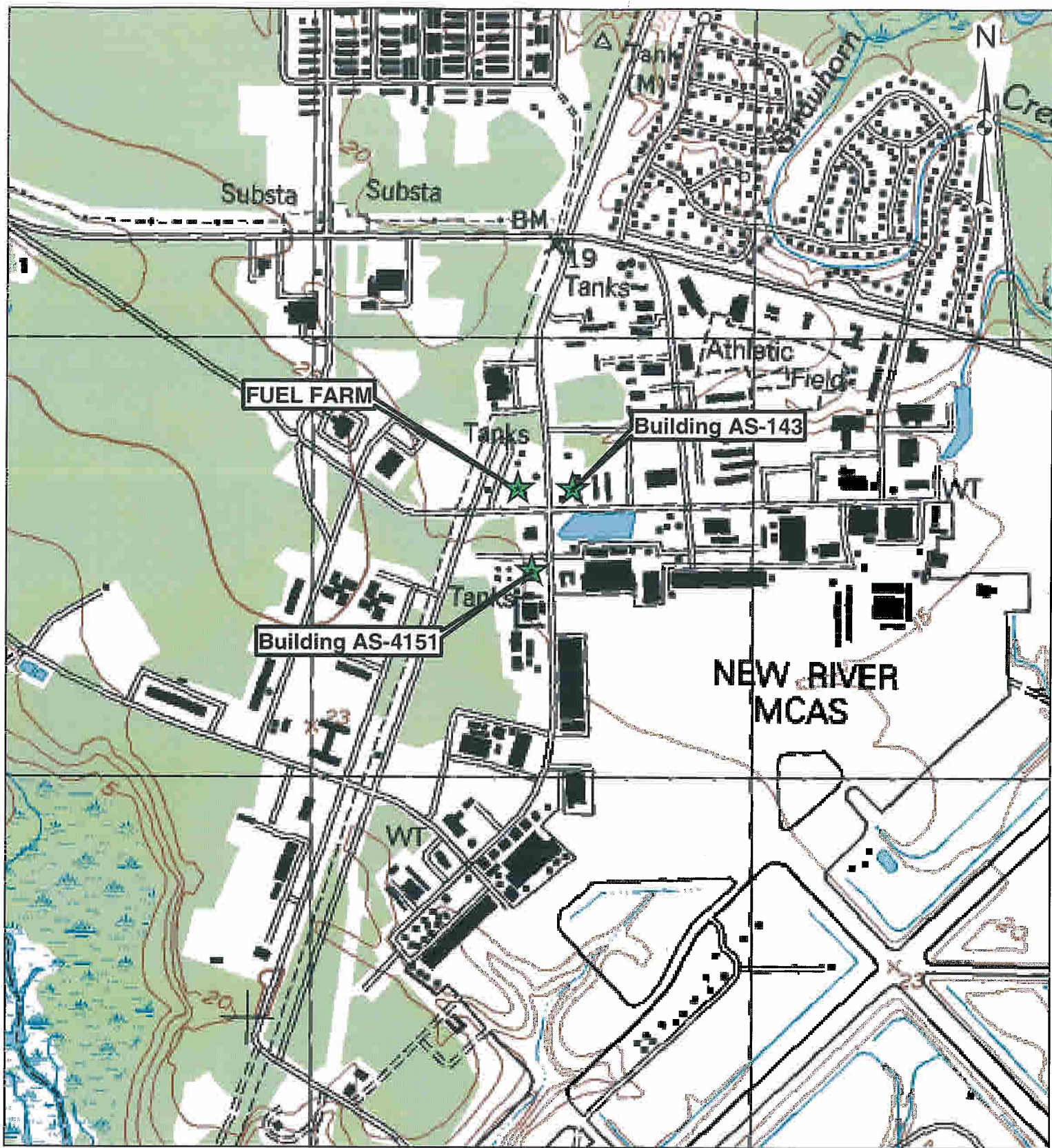
Date: June 2006
Incident Number and Name: 23297, CSFF
Facility ID#: N/A

Analytical Method: EPA Method 504.1

Contaminant of Concern			1,2-Dibromoethane (EDB)
Well ID	Sample ID	Date Collected	
USTCSFF/AS4151-122DW01	USTCSFF/AS4151-122DW01	4/24/2006	BQL
USTCSFF/AS4151-122DW02	USTCSFF/AS4151-122DW02	4/24/2006	BQL
USTCSFF/AS4151-122RW01	USTCSFF/AS4151-122RW01	4/24/2006	BQL
RWC-1	RWC-1	4/24/2006	BQL
RWC-2	RWC-2	4/24/2006	BQL
2L Standard (µg/l)			0.0004
GCL (µg/l)			50

- All results reported in µg/l
- µg/L =micrograms per liter
- GCL = gross contamination level
- BQL = Below Quantitation Limits; quantitation limits outlined in laboratory reports.

FIGURES



300 150 0 300 Feet

SCALE

From: USGS Jacksonville South, NC. Topographic Quadrangle (Dated 1997)



SOVEREIGN CONSULTING INC.
VIRGINIA BEACH, VIRGINIA

PROJECT

CAMPBELL STREET
FEUL FARM
CAMP LEJEUNE, N.C.

TITLE

GENERAL VICINITY TOPOGRAPHIC
SITE MAP

FIGURE

1

JOB NO.

206-063

DATE

JUNE 2006

SCALE

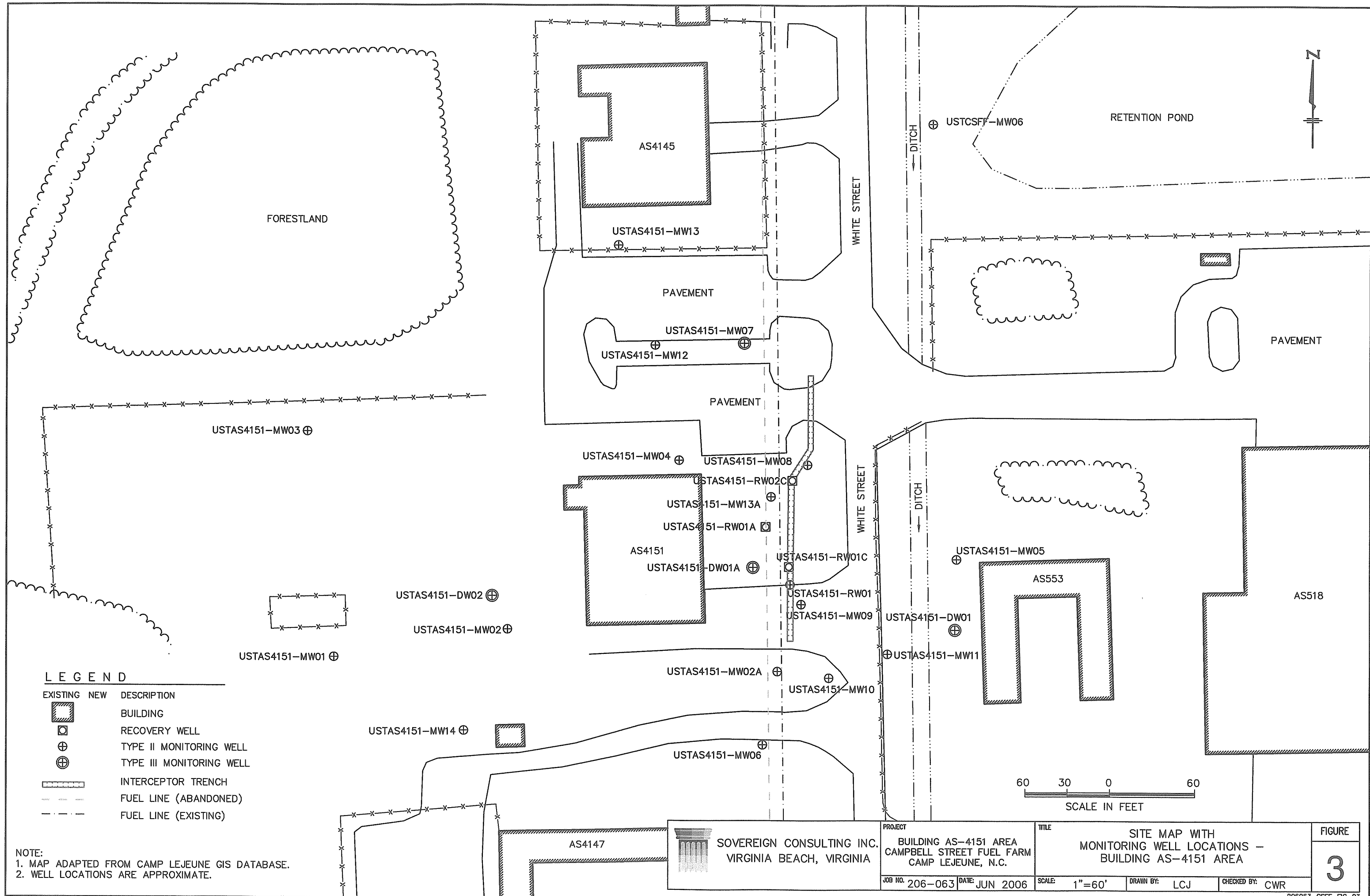
1"=500'

DRAWN BY

LCJ

CHECKED BY

CWR



LEGEND

EXISTING	NEW	DESCRIPTION
		BUILDING
		RECOVERY WELL
		TYPE II MONITORING WELL
		TYPE III MONITORING WELL
		INTERCEPTOR TRENCH
		FUEL LINE (ABANDONED)
		FUEL LINE (EXISTING)

NOTE:
1. MAP ADAPTED FROM CAMP LEJEUNE GIS DATABASE.
2. WELL LOCATIONS ARE APPROXIMATE.

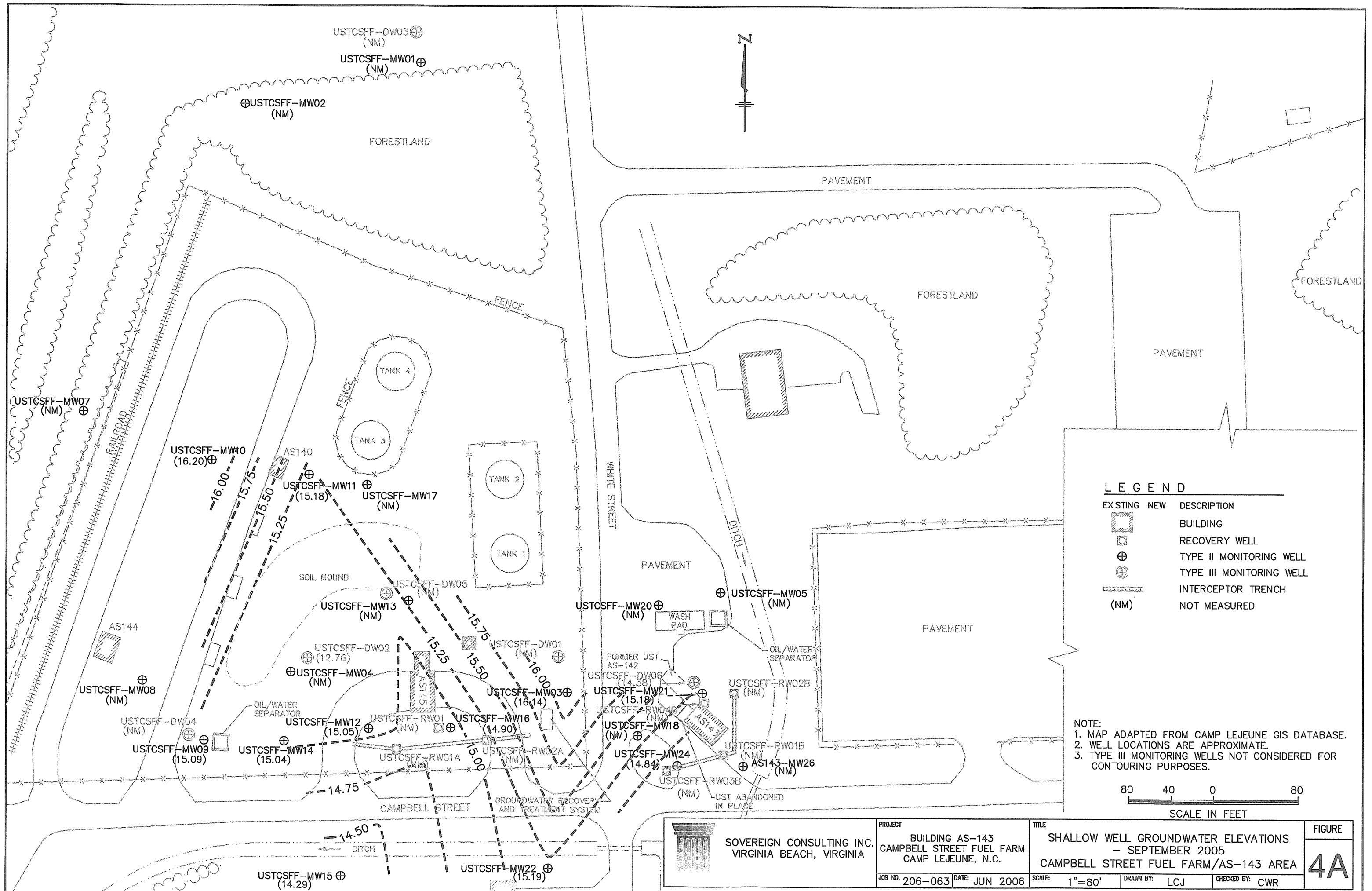


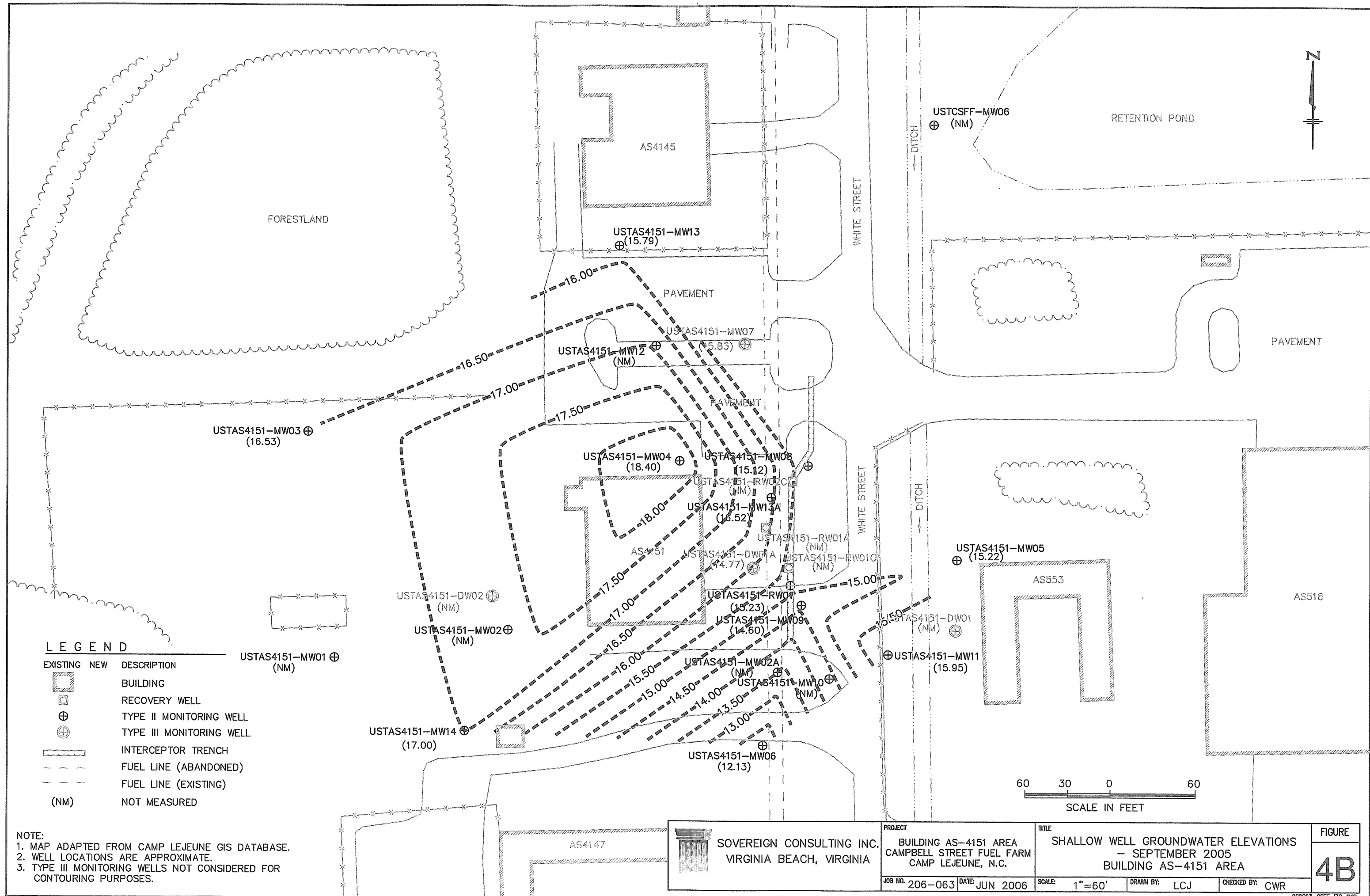
SOVEREIGN CONSULTING INC.
VIRGINIA BEACH, VIRGINIA

PROJECT
BUILDING AS-4151 AREA
CAMPBELL STREET FUEL FARM
CAMP LEJEUNE, N.C.
JOB NO. 206-063 DATE: JUN 2006

TITLE
SITE MAP WITH
MONITORING WELL LOCATIONS -
BUILDING AS-4151 AREA
SCALE: 1"=60' DRAWN BY: LCJ CHECKED BY: CWR

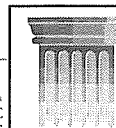
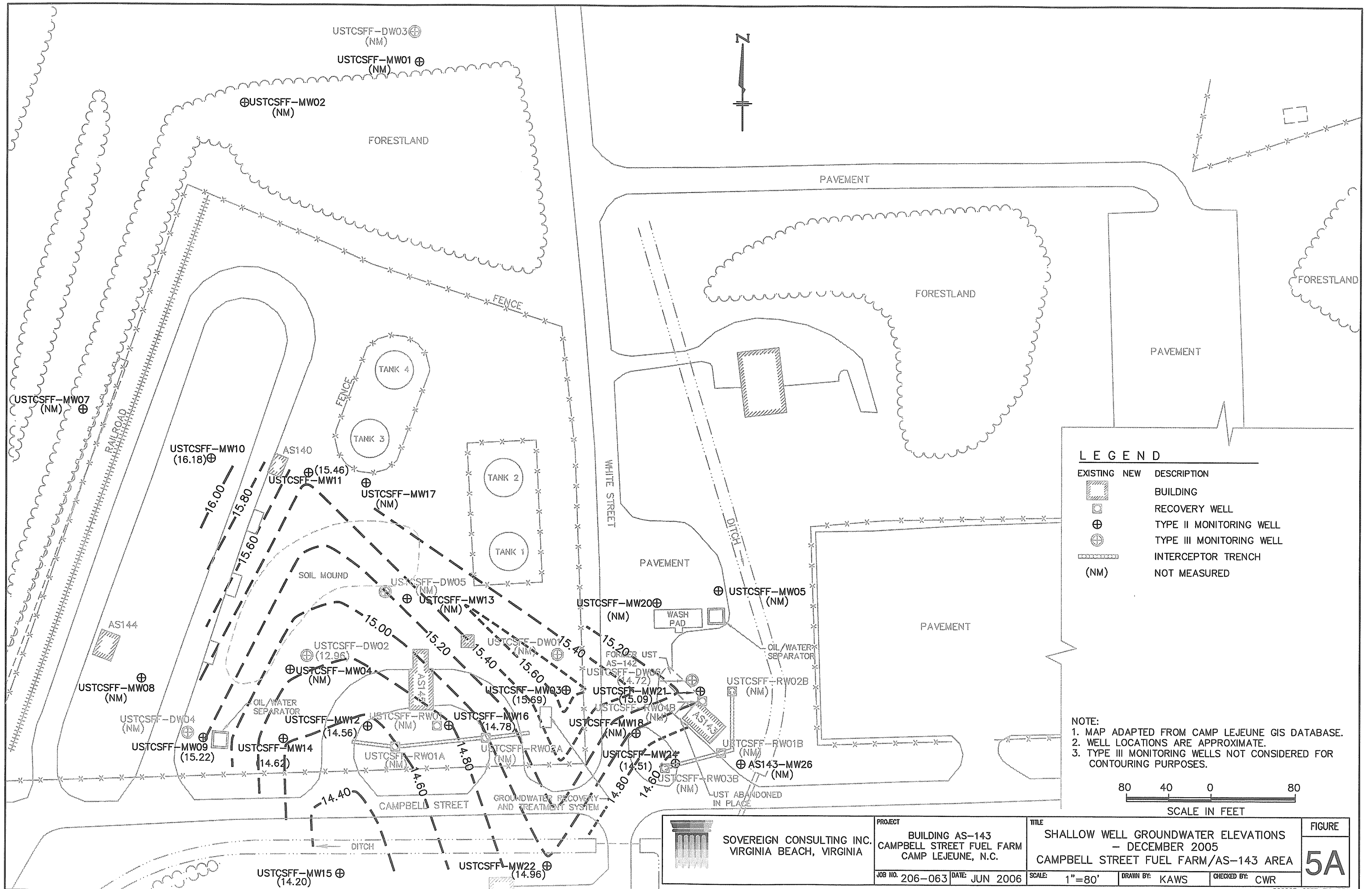
FIGURE
3





NOTE:
1. MAP ADAPTED FROM CAMP LEJEUNE GIS DATABASE.
2. WELL LOCATIONS ARE APPROXIMATE.
3. TYPE III MONITORING WELLS NOT CONSIDERED FOR CONTOURING PURPOSES.

	PROJECT		TITLE			FIGURE
	BUILDING AS-4151 AREA CAMPBELL STREET FUEL FARM CAMP LEJEUNE, N.C.		SHALLOW WELL GROUNDWATER ELEVATIONS - SEPTEMBER 2005 BUILDING AS-4151 AREA			
	JOB NO. 206-063	DATE: JUN 2006	SCALE: 1"=60'	DRAWN BY: LCJ	CHECKED BY: CWR	



SOVEREIGN CONSULTING INC.
VIRGINIA BEACH, VIRGINIA

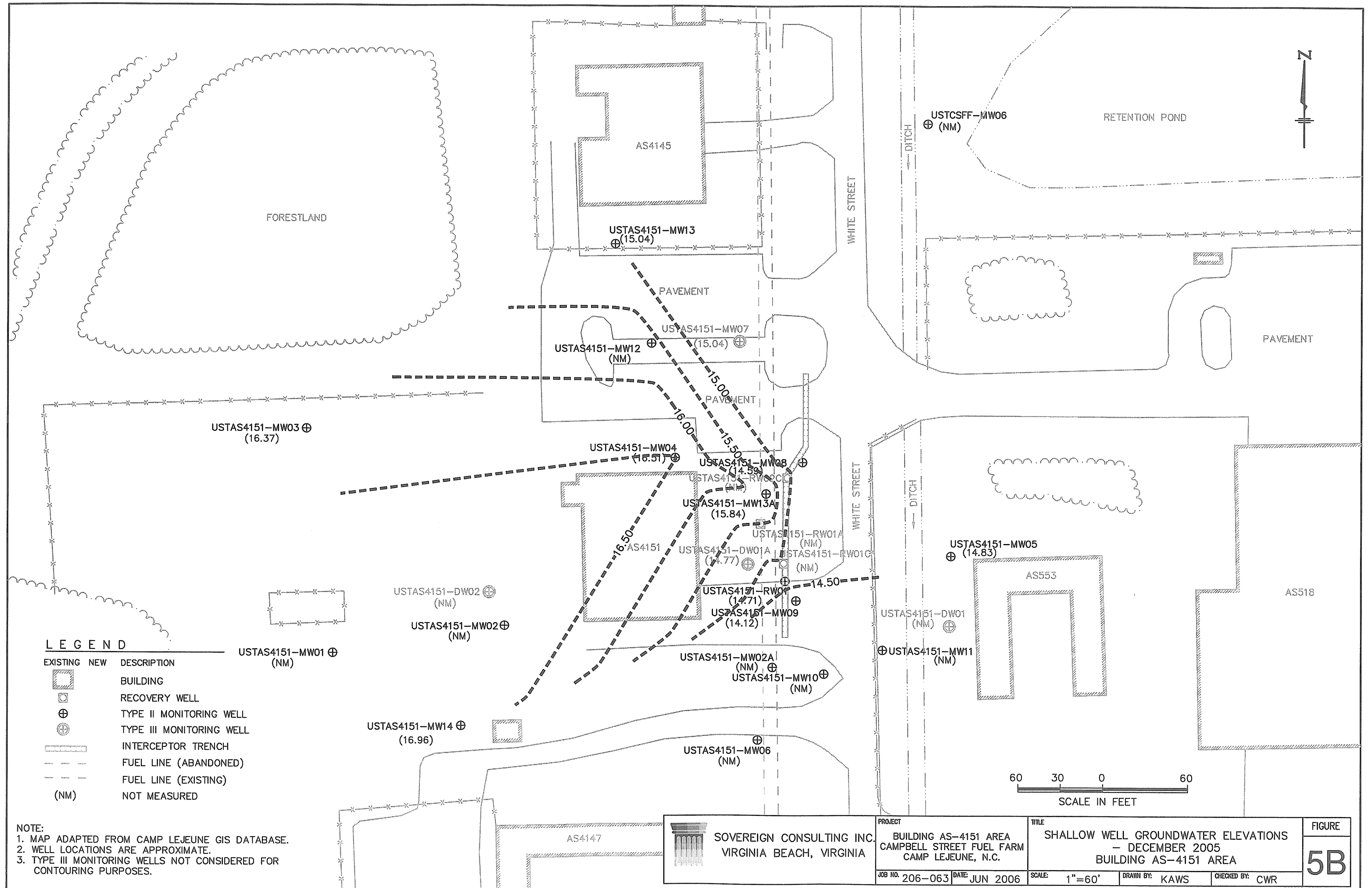
PROJECT
BUILDING AS-143
CAMPBELL STREET FUEL FARM
CAMP LEJEUNE, N.C.

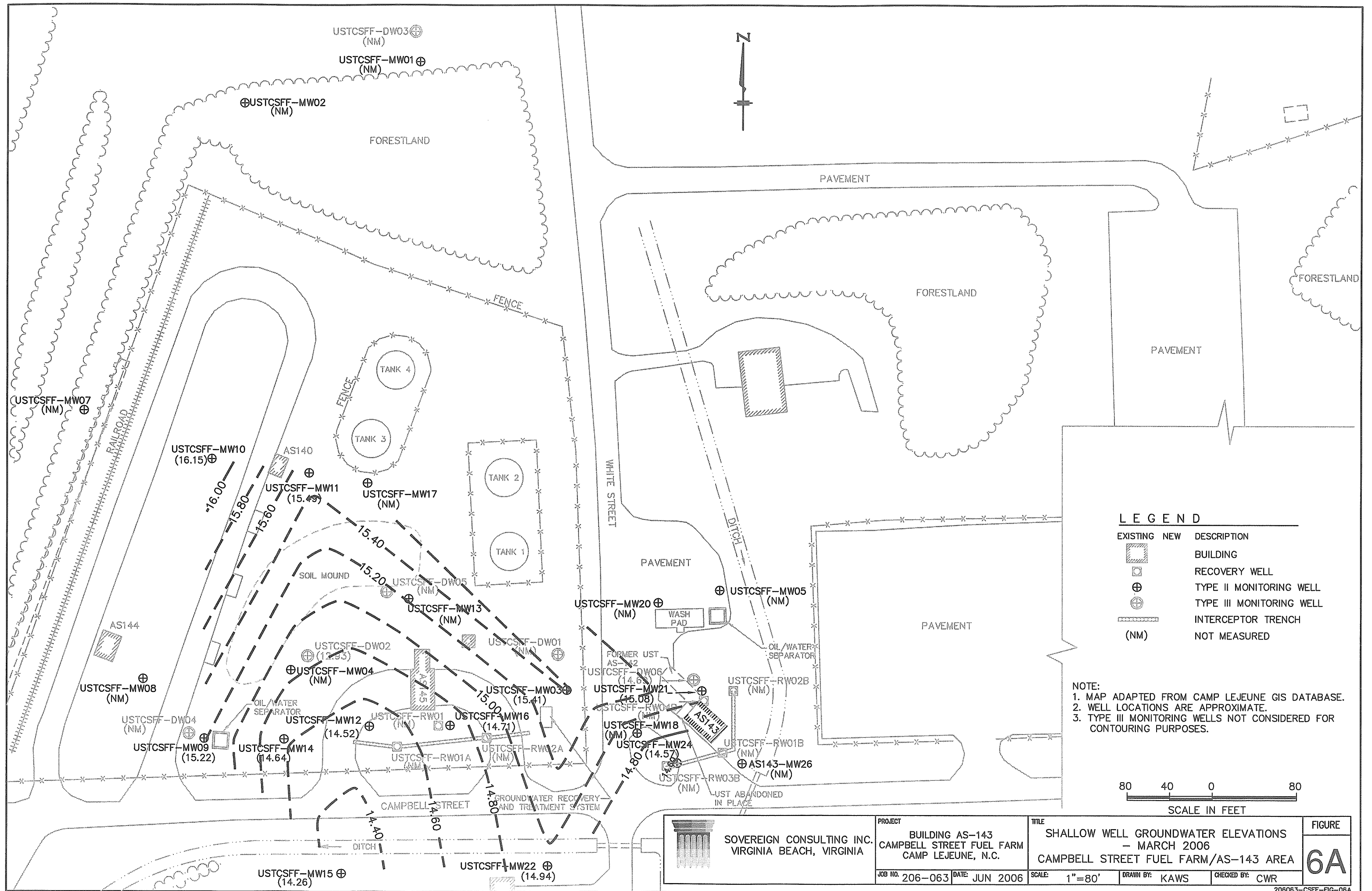
JOB NO. 206-063 DATE: JUN 2006

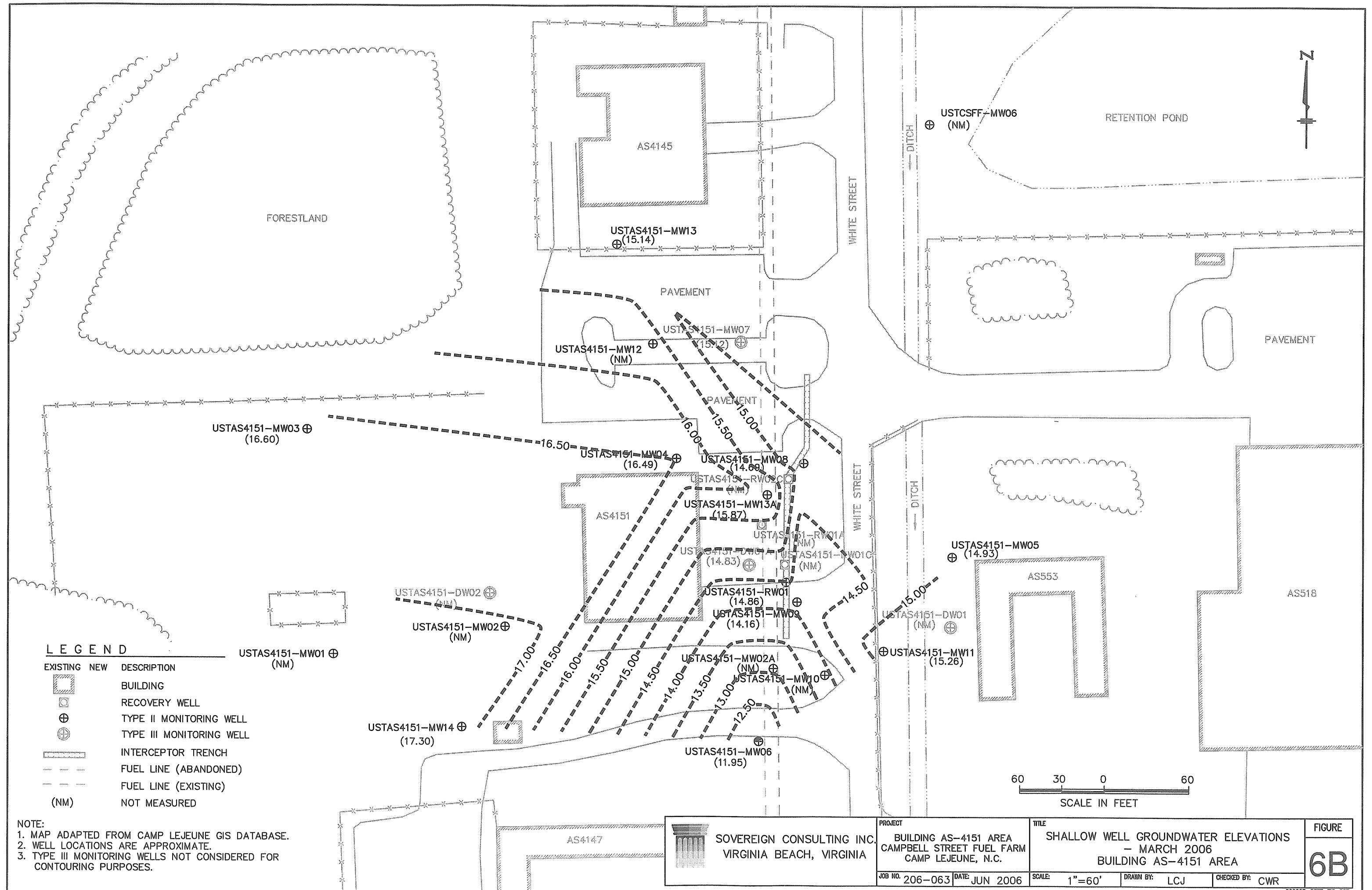
TITLE
SHALLOW WELL GROUNDWATER ELEVATIONS
- DECEMBER 2005
CAMPBELL STREET FUEL FARM/AS-143 AREA

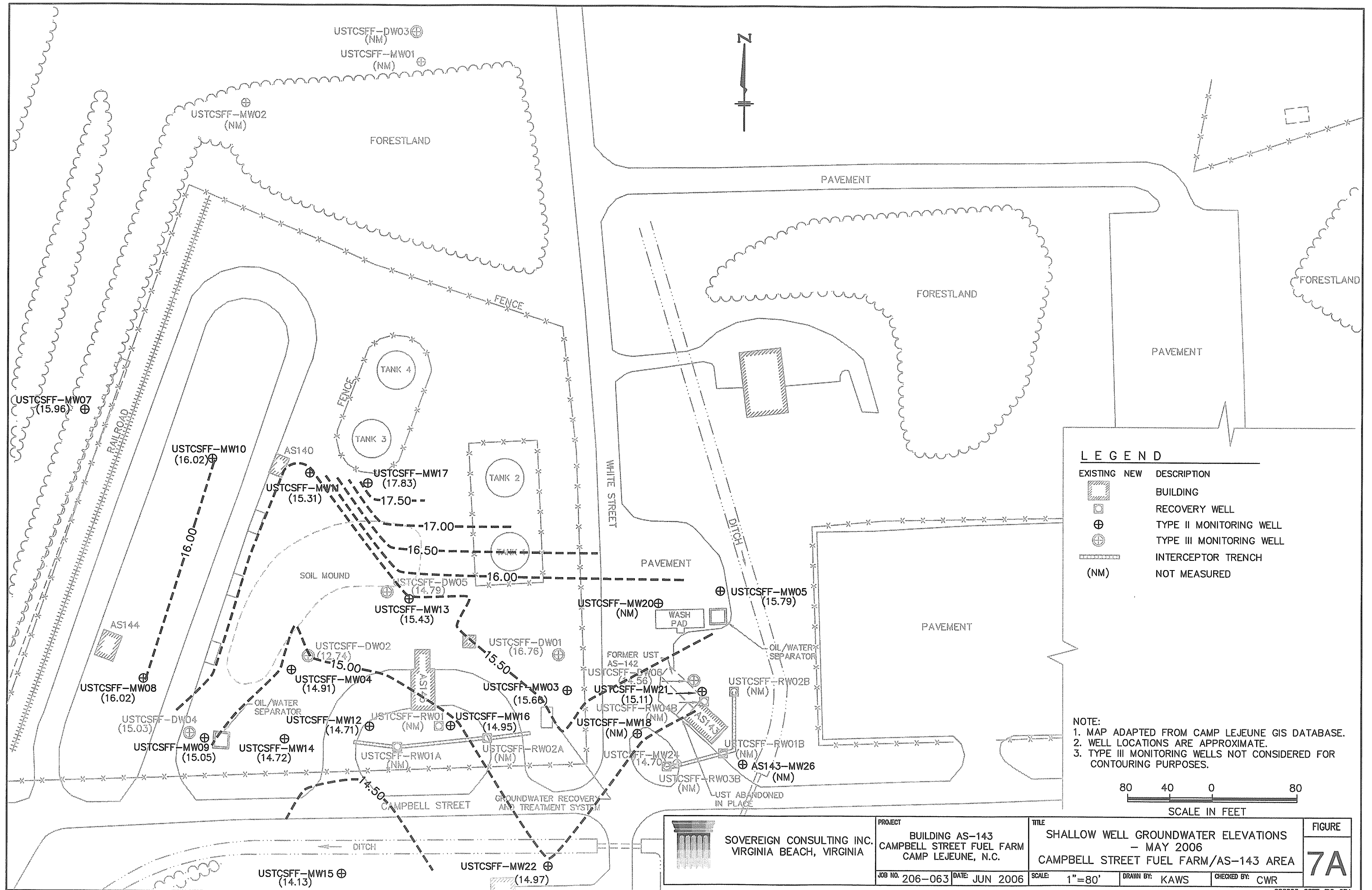
SCALE: 1"=80' DRAWN BY: KAWS CHECKED BY: CWR

FIGURE
5A









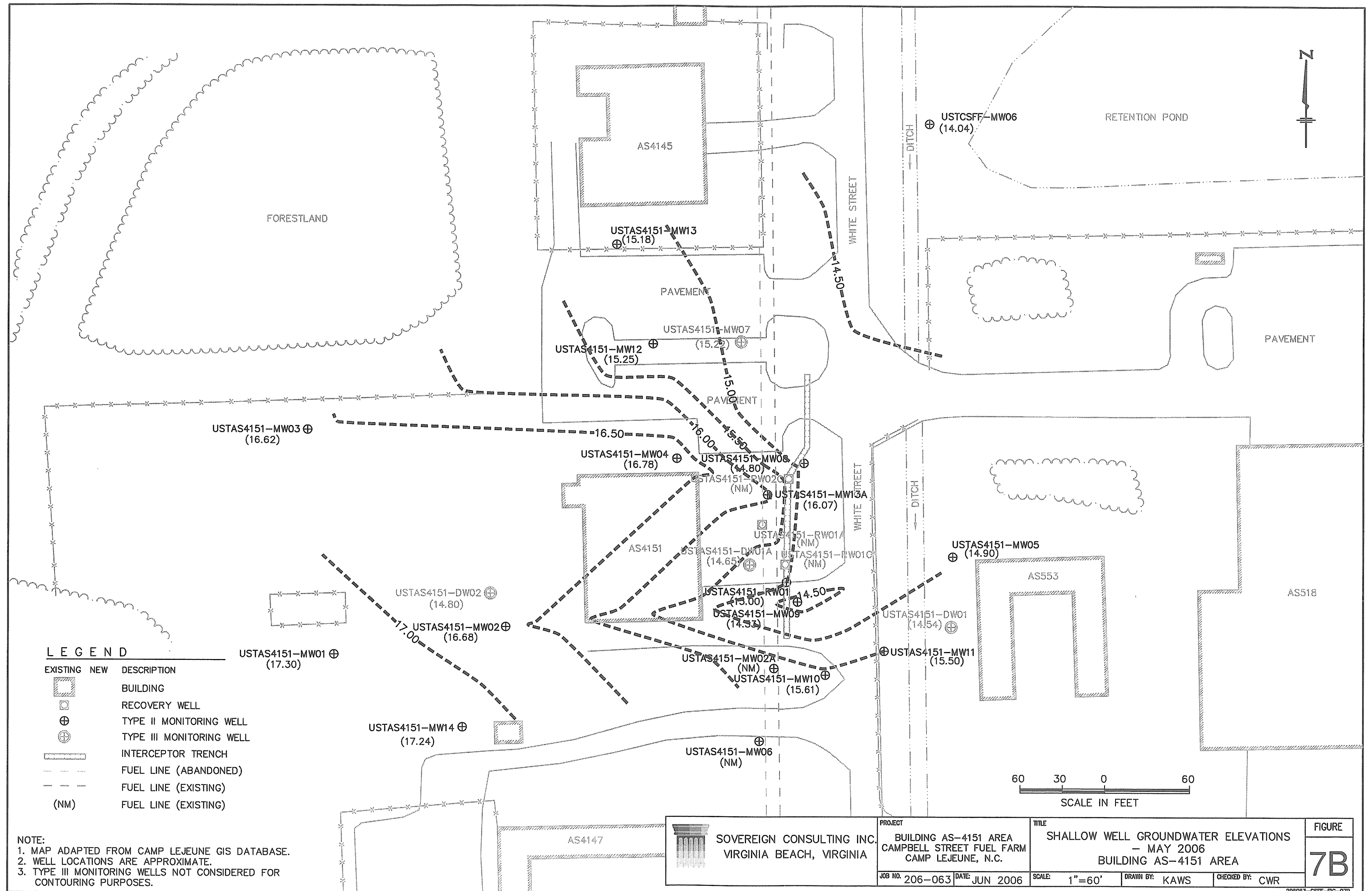
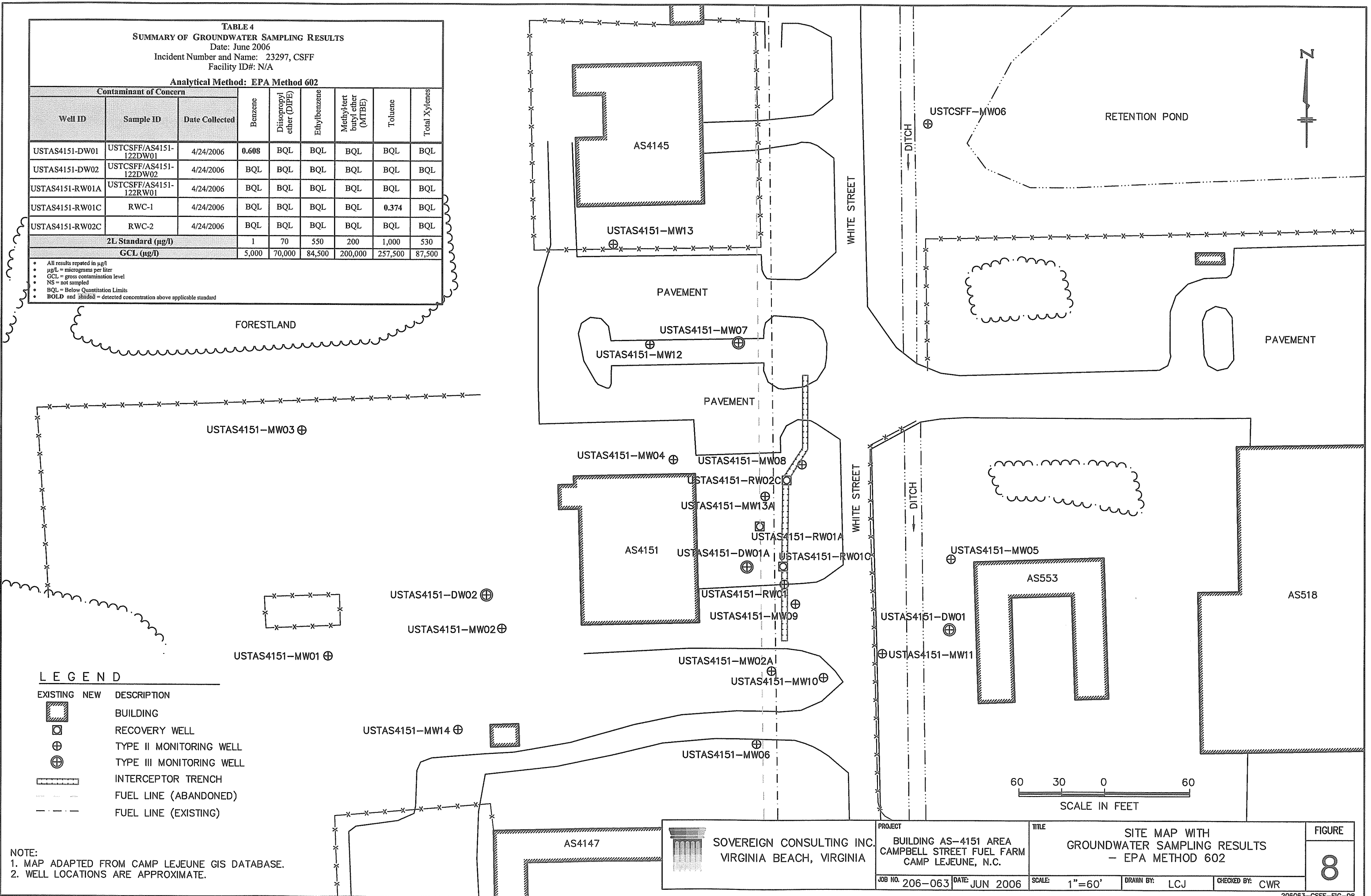


TABLE 4 SUMMARY OF GROUNDWATER SAMPLING RESULTS Date: June 2006 Incident Number and Name: 23297, CSFF Facility ID#: N/A Analytical Method: EPA Method 602								
Contaminant of Concern								
Well ID	Sample ID	Date Collected	Benzene	Diisopropyl ether (DIPE)	Ethylbenzene	Methyltert butyl ether (MTBE)	Toluene	Total Xylenes
USTAS4151-DW01	USTCSFF/AS4151-122DW01	4/24/2006	0.608	BQL	BQL	BQL	BQL	BQL
USTAS4151-DW02	USTCSFF/AS4151-122DW02	4/24/2006	BQL	BQL	BQL	BQL	BQL	BQL
USTAS4151-RW01A	USTCSFF/AS4151-122RW01	4/24/2006	BQL	BQL	BQL	BQL	BQL	BQL
USTAS4151-RW01C	RWC-1	4/24/2006	BQL	BQL	BQL	BQL	0.374	BQL
USTAS4151-RW02C	RWC-2	4/24/2006	BQL	BQL	BQL	BQL	BQL	BQL
2L Standard (µg/l)			1	70	550	200	1,000	530
GCL (µg/l)			5,000	70,000	84,500	200,000	257,500	87,500
• All results reported in µg/l • µg/L = micrograms per liter • GCL = gross contamination level • NS = not sampled • BQL = Below Quantitation Limits • BOLD and shaded = detected concentration above applicable standard								



NOTE:
 1. MAP ADAPTED FROM CAMP LEJEUNE GIS DATABASE.
 2. WELL LOCATIONS ARE APPROXIMATE.

 SOVEREIGN CONSULTING INC. VIRGINIA BEACH, VIRGINIA	PROJECT BUILDING AS-4151 AREA CAMPBELL STREET FUEL FARM CAMP LEJEUNE, N.C.	TITLE SITE MAP WITH GROUNDWATER SAMPLING RESULTS - EPA METHOD 602		FIGURE 8
	JOB NO. 206-063	DATE JUN 2006	SCALE: 1"=60'	DRAWN BY: LCJ CHECKED BY: CWR

SUMMARY OF GROUNDWATER SAMPLING RESULTS					
Date: June 2006					
Incident Number and Name: 23297, CSFF					
Facility ID#: N/A					
Analytical Method: EPA Method 610					
Contaminant of Concern			1-Methylnaphthalene	1-Methylnaphthalene	All Other Compounds
Well ID	Sample ID	Date Collected			
USTAS4151-DW01	USTCSFF/AS4151-122DW01	4/24/2006	BQL	BQL	BQL
USTAS4151-DW02	USTCSFF/AS4151-122DW02	4/24/2006	BQL	BQL	BQL
USTAS4151-RW01A	USTCSFF/AS4151-122RW01	4/24/2006	1.50	6.70	BQL
USTAS4151-RW01C	RWC-1	4/24/2006	BQL	BQL	BQL
USTAS4151-RW02C	RWC-2	4/24/2006	BQL	BQL	BQL
2L Standard (µg/l)			NE	14	VARIES
GCL (µg/l)			NE	12,500	VARIES
All results reported in µg/l µg/L = micrograms per liter GCL = gross contamination level NS = not sampled BQL = Below Quantitation Limits BOLD and shaded = detected concentration above applicable standard					

FORESTLAND

AS4145

USTAS4151-MW13

PAVEMENT

USTAS4151-MW07
USTAS4151-MW12

PAVEMENT

USTAS4151-MW04
USTAS4151-MW08

USTAS4151-RW02C
USTAS4151-MW13A
USTAS4151-RW01A
AS4151
USTAS4151-DW01A
USTAS4151-RW01C
USTAS4151-RW01
USTAS4151-MW09

USTAS4151-MW02A
USTAS4151-MW10

USTAS4151-MW14

USTAS4151-MW06

AS4147

USTCSFF-MW06

RETENTION POND

PAVEMENT

AS553

AS518

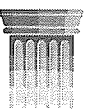
USTAS4151-MW05
USTAS4151-DW01
USTAS4151-MW11

60 30 0 60
SCALE IN FEET

LEGEND

EXISTING	NEW	DESCRIPTION
		BUILDING
		RECOVERY WELL
		TYPE II MONITORING WELL
		TYPE III MONITORING WELL
		INTERCEPTOR TRENCH
		FUEL LINE (ABANDONED)
		FUEL LINE (EXISTING)

NOTE:
1. MAP ADAPTED FROM CAMP LEJEUNE GIS DATABASE.
2. WELL LOCATIONS ARE APPROXIMATE.



SOVEREIGN CONSULTING INC.
VIRGINIA BEACH, VIRGINIA

PROJECT
BUILDING AS-4151 AREA
CAMPBELL STREET FUEL FARM
CAMP LEJEUNE, N.C.

JOB NO. 206-063 DATE JUN 2006

TITLE
SITE MAP WITH
GROUNDWATER SAMPLING RESULTS
- EPA METHOD 610

SCALE: 1"=60' DRAWN BY: LCJ CHECKED BY: CWR

FIGURE

9

SUMMARY OF GROUNDWATER SAMPLING RESULTS			
Date: June 2006			
Incident Number and Name: 23297, CSFF			
Facility ID#: N/A			
Analytical Method: EPA Method 504.1			
Contaminant of Concern			1,2-Dibromoethane (EDB)
Well ID	Sample ID	Date Collected	
USTAS4151-DW01	USTCSFF/AS4151-122DW01	4/24/2006	BQL
USTAS4151-DW02	USTCSFF/AS4151-122DW02	4/24/2006	BQL
USTAS4151-RW01A	USTCSFF/AS4151-122RW01	4/24/2006	BQL
USTAS4151-RW01C	RWC-1	4/24/2006	BQL
USTAS4151-RW02C	RWC-2	4/24/2006	BQL
2L Standard (µg/l)			0.0004
GCL (µg/l)			50
- All results reported in µg/l - µg/L = micrograms per liter - GCL = gross contamination level - NS = not sampled - BQL = Below Quantitation Limits; quantitation limits outlined in laboratory reports.			

FORESTLAND

AS4145

USTAS4151-MW13

USTAS4151-MW07

USTAS4151-MW12

PAVEMENT

USTAS4151-MW04

USTAS4151-MW08

USTAS4151-RW02C

USTAS4151-MW13A

AS4151

USTAS4151-DW01A

USTAS4151-RW01C

USTAS4151-RW01

USTAS4151-MW09

USTAS4151-MW02A

USTAS4151-MW10

USTAS4151-MW14

USTAS4151-MW06

AS4147

USTCSFF-MW06

RETENTION POND

PAVEMENT

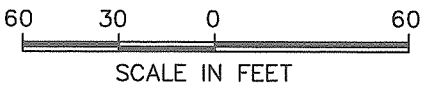
USTAS4151-MW05

AS553

AS518

USTAS4151-DW01

USTAS4151-MW11



LEGEND

EXISTING	NEW	DESCRIPTION
		BUILDING
		RECOVERY WELL
		TYPE II MONITORING WELL
		TYPE III MONITORING WELL
		INTERCEPTOR TRENCH
		FUEL LINE (ABANDONED)
		FUEL LINE (EXISTING)

NOTE:

- MAP ADAPTED FROM CAMP LEJEUNE GIS DATABASE.
- WELL LOCATIONS ARE APPROXIMATE.



SOVEREIGN CONSULTING INC.
VIRGINIA BEACH, VIRGINIA

PROJECT
BUILDING AS-4151 AREA
CAMPBELL STREET FUEL FARM
CAMP LEJEUNE, N.C.

JOB NO. 206-063 DATE: JUN 2006

TITLE
SITE MAP WITH
GROUNDWATER SAMPLING RESULTS
- EPA METHOD 504.1

SCALE: 1"=60' DRAWN BY: LCJ CHECKED BY: CWR

FIGURE

10

APPENDIX A

HISTORICAL SOIL AND GROUNDWATER DATA AND FIGURES

Submitted to NCDENR
12/21/2005 SAs
Hand Delivered

**ANNUAL GROUNDWATER MONITORING REPORT 2003-2005
CAMPBELL STREET FUEL FARM SITE
MARINE CORPS AIR STATION NEW RIVER
NORTH CAROLINA
VOLUME I
Revision 0**

Prepared for:

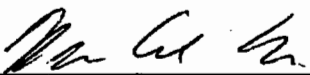
DEPARTMENT OF THE NAVY
Contract No. N62470-03-D-4000

Atlantic Division
Naval Facilities Engineering Command
6506 Hampton Boulevard
Building C, Room 311
Norfolk, Virginia 23508

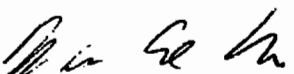
Prepared by:

Engineering and Environment, Inc.
824 Gum Branch Road, Suite S
Jacksonville, North Carolina, Virginia 28540

We hereby certify that the Report shown and marked in this submittal is proposed to be incorporated into Contract Number N62470-03-D-4000, is in compliance with the contract drawings and specifications, can be installed in the allocated spaces, and is submitted for Government approval.



Certified by QC Project Manager
William C. Morris, North Carolina P.G. #1218



Project Manager
William C. Morris, North Carolina P.G. #1218

19 December 2005

Mr. Carl Webb
12-20-05

Table 4-1 (1 of 8)
Summary of Laboratory Analyses for Groundwater - Campbell Street Fuel Fram Site
September 2003

	Sample Location	NCGWQS	GCL	MW-03	MW-11	MW-12	MW-14	MW-16	MW-21	MW-24	DW-02	DW-06
	Date Sampled			09/24/03	09/24/03	09/24/03	09/24/03	09/24/03	09/24/03	09/24/03	09/24/03	09/24/03
Campbell Street Fuel Farm and Building AS-143 Area	EPA 602 (µg/L)											
	Benzene	1	5,000	<1.0	<1.0	<1.0	<1.0	54.1	38.1	52.0	<1.0	<1.0
	1,2-Dichlorobenzene	620	72,500	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	1,3-Dichlorobenzene	620	61,500	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Ethylbenzene	29	29,000	<1.0	<1.0	<1.0	<1.0	7	156	347	<1.0	<1.0
	Toluene	1000	257,500	<1.0	<1.0	0.85 J	<1.0	<1.0	70	549	<1.0	<1.0
	Xylenes (total)	530	87,500	<3.0	<3.0	<3.0	<3.0	35.6	467	1020	<3.0	<3.0
	Methyl Tert Butyl Ether	200	200,000	<1.0	<1.0	<1.0	<1.0	<1.0	289	35.7	<1.0	<1.0
	EPA 610 (µg/L)											
	Acenaphthene	80	2,120	NA	NA	NA	NA	NA	NA	NA	21.8	<5.1
	Acenaphthylene	210	1,965	NA	NA	NA	NA	NA	NA	NA	<5.3	<5.1
	Anthracene	2100	2,100	NA	NA	NA	NA	NA	NA	NA	<5.3	<5.1
	Benzo(a)anthracene	0.05	22	NA	NA	NA	NA	NA	NA	NA	<5.3	<5.1
	Fluoranthene	280	280	NA	NA	NA	NA	NA	NA	NA	<5.3	<5.1
	Fluorene	280	950	NA	NA	NA	NA	NA	NA	NA	16	<5.1
	1-Methylnaphthalene	RL	NE	NA	NA	NA	NA	NA	NA	NA	<5.3	<5.1
	2-Methylnaphthalene	14	12,500	NA	NA	NA	NA	NA	NA	NA	<5.3	<5.1
	Naphthalene	21	15,500	NA	NA	NA	NA	NA	NA	NA	9.9	<5.1
	Phenanthrene	210	410	NA	NA	NA	NA	NA	NA	NA	<5.3	<5.1
	Pyrene	210	210	NA	NA	NA	NA	NA	NA	NA	<5.3	<5.1
	EPA 504.1 (µg/L)											
	1,2-Dibromoethane	0.0004	50	<0.018	<0.018	<0.019	<0.018	<0.019	<0.018	<0.018	<0.018	<0.019
Building AS-4151 Area	Sample Location	NCGWQS	GCL	13-MW01	13-DW01	122-MW03	122-MW04	122-MW07	122-MW08	122-MW09	122-MW11	
	Date Sampled			09/25/03	09/24/03	09/25/03	09/25/03	09/25/03	09/25/03	09/25/03	09/25/03	
	EPA 602 (µg/L)											
	Benzene	1	5,000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	1,2-Dichlorobenzene	620	72,500	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	1,3-Dichlorobenzene	620	61,500	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	Ethylbenzene	29	29,000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.57 J	<1.0	
	Toluene	1000	257,500	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	Xylenes (total)	530	87,500	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	
	Methyl Tert Butyl Ether	200	200,000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	EPA 610 (µg/L)											
	Acenaphthene	80	2,120	NA	<5.3	NA	NA	NA	NA	<5.0	NA	
	Acenaphthylene	210	1,965	NA	<5.3	NA	NA	NA	NA	<5.0	NA	
	Anthracene	2100	2,100	NA	<5.3	NA	NA	NA	NA	<5.0	NA	
	Benzo(a)anthracene	0.05	22	NA	<5.3	NA	NA	NA	NA	<5.0	NA	
	Fluoranthene	280	280	NA	<5.3	NA	NA	NA	NA	<5.0	NA	
	Fluorene	280	950	NA	<5.3	NA	NA	NA	NA	<5.0	NA	
	1-Methylnaphthalene	RL	NE	NA	<5.3	NA	NA	NA	NA	21.1	NA	
	2-Methylnaphthalene	14	12,500	NA	<5.3	NA	NA	NA	NA	41	NA	
	Naphthalene	21	15,500	NA	<5.3	NA	NA	NA	NA	47.1	NA	
	Phenanthrene	210	410	NA	<5.3	NA	NA	NA	NA	<5.0	NA	
	Pyrene	210	210	NA	<5.3	NA	NA	NA	NA	<5.0	NA	
	EPA 504.1 (µg/L)											
	1,2-Dibromoethane	0.0004	50	<0.019	<0.018	<0.019	<0.019	<0.018	<0.019	<0.018	<0.018	

NA: Not Analyzed; constituent not included in analytic suite

µg/L: micrograms per liter

<#: not detected at the indicated reporting limit

J: estimated concentration less than reporting limit

E: Concentration exceeds calibration range

GCL: Gross Contaminant Level

NE: Not Established; a gCL has not been established for the constituent

NCGWQS: North Carolina Groundwater Quality Standard

RL: Reporting Limit, no NCGWQS established for the constituent; therefore, the NCGWQS for the constituent is the reporting limit

Bold type indicates detectable concentrations.

Shaded area indicates detectable concentration above the North Carolina Groundwater Quality Standards

Table 4-1 (2 of 8)
Summary of Laboratory Analyses for Groundwater - Campbell Street Fuel Fram Site
December 2003

	Sample Location	NCGWQS	GCL	MW-03	MW-11	MW-12	MW-14	MW-16	MW-21	MW-24	DW-02	DW-02D*	DW-06
	Date Sampled			12/16/03	12/17/03	12/16/03	12/16/03	12/16/03	12/17/03	12/17/03	12/16/03	12/16/03	12/17/03
Campbell Street Fuel Ram and Building AS-143 Area	EPA 602 (µg/L)												
	Benzene	1	5,000	<1.0	<1.0	1.3	<1.0	41.7	273	40.1	<1.0	<1.0	<1.0
	1,2-Dichlorobenzene	620	72,500	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	1,3-Dichlorobenzene	620	61,500	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Ethylbenzene	29	29,000	<1.0	<1.0	0.77 J	<1.0	7.4	246	19.1	<1.0	<1.0	<1.0
	Toluene	1000	257,500	<1.0	<1.0	<1.0	<1.0	<1.0	95.2	58	<1.0	<1.0	<1.0
	Xylenes (total)	530	87,500	<3.0	<3.0	1.6 J	<3.0	32.4	1060	62.9	<3.0	<3.0	<3.0
	Methyl Tert Butyl Ether	200	200,000	<1.0	<1.0	<1.0	<1.0	0.88 J	180	16.5	<1.0	<1.0	<1.0
	EPA 610 (µg/L)												
	Acenaphthene	80	2,120	NA	NA	NA	NA	NA	NA	NA	35.4	35.1	<5.4
	Acenaphthylene	210	1,965	NA	NA	NA	NA	NA	NA	NA	<5.2	<5.1	<5.4
	Anthracene	2100	2,100	NA	NA	NA	NA	NA	NA	NA	<5.2	<5.1	<5.4
	Benzo(a)anthracene	0.05	22	NA	NA	NA	NA	NA	NA	NA	<5.2	<5.1	<5.4
	Fluoranthene	280	280	NA	NA	NA	NA	NA	NA	NA	<5.2	<5.1	<5.4
	Fluorene	280	950	NA	NA	NA	NA	NA	NA	NA	27.9	27.8	<5.4
	1-Methylnaphthalene	RL	NE	NA	NA	NA	NA	NA	NA	NA	4.6 J	4.6 J	<5.4
	2-Methylnaphthalene	14	12,500	NA	NA	NA	NA	NA	NA	NA	2.3 J	<5.1	<5.4
	Naphthalene	21	15,500	NA	NA	NA	NA	NA	NA	NA	36	36.9	<5.4
	Phenanthrene	210	410	NA	NA	NA	NA	NA	NA	NA	<5.2	<5.1	<5.4
	Pyrene	210	210	NA	NA	NA	NA	NA	NA	NA	<5.2	<5.1	<5.4
	EPA 504.1 (µg/L)												
	1,2-Dibromoethane	0.0004	50	<0.019	<0.019	<0.018	<0.018	<0.018	<0.018	<0.019	<0.019	<0.019	<0.019
Buildg AS-4151 Area	Sample Location	NCGWQS	GCL	13-MW01	13-DW01	122-MW03	122-MW04	122-MW07	122-MW08	122-MW09	122-MW11		
	Date Sampled			12/18/03	12/17/03	12/19/03	12/18/03	12/19/03	12/19/03	12/17/03	12/19/03		
	EPA 602 (µg/L)												
	Benzene	1	5,000	<1.0	9.1	<1.0	<1.0	<1.0	<1.0	0.79 J	<1.0		
	1,2-Dichlorobenzene	620	72,500	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0		
	1,3-Dichlorobenzene	620	61,500	14.6	<1.0	<1.0	<1.0	2.9	0.62 J	<1.0	<1.0		
	Ethylbenzene	29	29,000	1.2	7.9	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0		
	Toluene	1000	257,500	<1.0	2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0		
	Xylenes (total)	530	87,500	5	13.9	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0		
	Methyl Tert Butyl Ether	200	200,000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0		
	EPA 610 (µg/L)												
	Acenaphthene	80	2,120	NA	69.2	NA	NA	NA	NA	<5.7	NA		
	Acenaphthylene	210	1,965	NA	<5.1	NA	NA	NA	NA	<5.7	NA		
	Anthracene	2100	2,100	NA	<5.1	NA	NA	NA	NA	<5.7	NA		
	Benzo(a)anthracene	0.05	22	NA	<5.1	NA	NA	NA	NA	<5.7	NA		
	Fluoranthene	280	280	NA	<5.1	NA	NA	NA	NA	<5.7	NA		
	Fluorene	280	950	NA	27.5	NA	NA	NA	NA	<5.7	NA		
	1-Methylnaphthalene	RL	NE	NA	70.2	NA	NA	NA	NA	65	NA		
	2-Methylnaphthalene	14	12,500	NA	118	NA	NA	NA	NA	<46	NA		
	Naphthalene	21	15,500	NA	1510	NA	NA	NA	NA	84.1	NA		
	Phenanthrene	210	410	NA	<5.1	NA	NA	NA	NA	<5.7	NA		
	Pyrene	210	210	NA	<5.1	NA	NA	NA	NA	<5.7	NA		
	EPA 504.1 (µg/L)												
	1,2-Dibromoethane	0.0004	50	<0.018	<0.018	<0.018	<0.019	<0.019	<0.018	<0.019	<0.018		

* DW-02D is a duplicate sample collected at well DW-02

NA: Not Analyzed; constituent not included in analytic suite

GCL: Gross Contaminant Level

NE: Not Established; a gCL has not been established for the constituent

NCGWQS: North Carolina Groundwater Quality Standard

RL: Reporting Limit, no NCGWQS established for the constituent; therefore, the NCGWQS for the constituent is the reporting limit

Bold type indicates detectable concentrations.

Shaded area indicates detectable concentration above the North Carolina Groundwater Quality Standards

µg/L: micrograms per liter

<#: not detected at the indicated reporting limit

J: estimated concentration less than reporting limit

E: Concentration exceeds calibration range

Table 4-1 (3 of 8)
Summary of Laboratory Analyses for Groundwater - Campbell Street Fuel Fram Site
March 2004

March 2004												
Campbell Street Fuel Rarm and Building AS-143 Area	Sample Location	NCGWQS	GCL	MW-03	MW-11	MW-12	MW-14	MW-16	MW-21	MW-24	DW-02	DW-06
	Date Sampled			03/17/04	03/18/04	03/18/04	03/18/04	03/18/04	03/18/04	03/18/04	03/17/04	03/18/04
	EPA 602 (µg/L)											
	Benzene	1	5,000	<1.0	<1.0	<1.0	<1.0	42.7	236	576	<1.0	<1.0
	1,2-Dichlorobenzene	620	72,500	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	1,3-Dichlorobenzene	620	61,500	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Ethylbenzene	29	29,000	<1.0	<1.0	<1.0	<1.0	7	176	251	<1.0	<1.0
	Toluene	1000	257,500	<1.0	<1.0	<1.0	<1.0	<1.0	48.2	264	<1.0	<1.0
	Xylenes (total)	530	87,500	<3.0	<3.0	<3.0	<3.0	44.3	604	669	<3.0	<3.0
	Methyl Tert Butyl Ether	200	200,000	<1.0	<1.0	<1.0	<1.0	<1.0	153	57.7	<1.0	<1.0
	EPA 610 (µg/L)											
	Acenaphthene	80	2,120	NA	NA	NA	NA	NA	NA	NA	28.5	<5.1
	Acenaphthylene	210	1,965	NA	NA	NA	NA	NA	NA	NA	<5.1	<5.1
	Anthracene	2100	2,100	NA	NA	NA	NA	NA	NA	NA	<5.1	<5.1
	Benzo(a)anthracene	0.05	22	NA	NA	NA	NA	NA	NA	NA	<5.1	<5.1
	Fluoranthene	280	280	NA	NA	NA	NA	NA	NA	NA	<5.1	<5.1
	Fluorene	280	950	NA	NA	NA	NA	NA	NA	NA	24	<5.1
1-Methylnaphthalene	RL	NE	NA	NA	NA	NA	NA	NA	NA	<5.1	<5.1	
2-Methylnaphthalene	14	12,500	NA	NA	NA	NA	NA	NA	NA	<5.1	<5.1	
Naphthalene	21	15,500	NA	NA	NA	NA	NA	NA	NA	11	<5.1	
Phenanthrene	210	410	NA	NA	NA	NA	NA	NA	NA	<5.1	<5.1	
Pyrene	210	210	NA	NA	NA	NA	NA	NA	NA	<5.1	<5.1	
EPA 504.1 (µg/L)												
1,2-Dibromoethane	0.0004	50	<0.019	<0.019	<0.019	<0.019	<0.018	<0.018	<0.018	<0.018	<0.019	
Buildig AS-4151 Area	Sample Location	NCGWQS	GCL	13-MW01	DUP *	13-DW01	122-MW03	122-MW04	122-MW07	122-MW08	122-MW09	122-MW11
	Date Sampled			03/17/04	03/17/04	03/17/04	03/17/04	03/17/04	03/17/04	03/17/04	03/17/04	03/18/04
	EPA 602 (µg/L)											
	Benzene	1	5,000	<1.0	<1.0	9.3	<1.0	<1.0	<1.0	<1.0	0.87 J	<1.0
	1,2-Dichlorobenzene	620	72,500	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	1,3-Dichlorobenzene	620	61,500	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Ethylbenzene	29	29,000	1.6	1.7	8.7	<1.0	<1.0	<1.0	0.69 J	0.83 J	<1.0
	Toluene	1000	257,500	<1.0	<1.0	2.1	<1.0	<1.0	<1.0	2.6	<1.0	<1.0
	Xylenes (total)	530	87,500	5.7	6.1	14.5	<3.0	<3.0	<3.0	3.2	1.1 J	<3.0
	Methyl Tert Butyl Ether	200	200,000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	EPA 610 (µg/L)											
	Acenaphthene	80	2,120	NA	NA	72.8	NA	NA	NA	NA	<5.1	NA
	Acenaphthylene	210	1,965	NA	NA	<26	NA	NA	NA	NA	<5.1	NA
	Anthracene	2100	2,100	NA	NA	<5.1	NA	NA	NA	NA	<5.1	NA
	Benzo(a)anthracene	0.05	22	NA	NA	<5.1	NA	NA	NA	NA	<5.1	NA
	Fluoranthene	280	280	NA	NA	<5.1	NA	NA	NA	NA	<5.1	NA
	Fluorene	280	950	NA	NA	29	NA	NA	NA	NA	3.1 J	NA
	1-Methylnaphthalene	RL	NE	NA	NA	85.4	NA	NA	NA	NA	16 J	NA
	2-Methylnaphthalene	14	12,500	NA	NA	85.3	NA	NA	NA	NA	<25	NA
	Naphthalene	21	15,500	NA	NA	1370	NA	NA	NA	NA	21.6 J	NA
	Phenanthrene	210	410	NA	NA	<5.1	NA	NA	NA	NA	<5.1	NA
	Pyrene	210	210	NA	NA	<5.1	NA	NA	NA	NA	<5.1	NA
	EPA 504.1 (µg/L)											
	1,2-Dibromoethane	0.0004	50	<0.018	<0.019	<0.019	<0.018	<0.019	<0.018	<0.018	<0.018	<0.018

* DUP is a duplicate sample collected at well MW13-MW01

NA: Not Analyzed; constituent not included in analytic suite

µg/L: micrograms per liter

<#: not detected at the indicated reporting limit

J: estimated concentration less than reporting limit

E: Concentration exceeds calibration range

GCL: Gross Contaminant Level

NE: Not Established; a gCL has not been established for the constituent

NCGWQS: North Carolina Groundwater Quality Standard

RL: Reporting Limit, no NCGWQS established for the constituent; therefore, the NCGWQS for the constituent is the reporting limit

Bold type indicates detectable concentrations.

Shaded area indicates detectable concentration above the North Carolina Groundwater Quality Standards

Table 4-1 (4 of 8)
Summary of Laboratory Analyses for Groundwater - Campbell Street Fuel Fram Site
June 2004

	Sample Location	NCGWQS	GCL	MW-03	MW-11	MW-12	MW-14	MW-16	MW-21	MW-24	DW-02	DW-06
				06/21/04	06/21/04	06/21/04	06/21/04	06/21/04	06/23/04	06/23/04	06/21/04	06/23/04
Campbell Street Fuel Ram and Building AS-143 Area	EPA 602 (µg/L)											
	Benzene	1	5,000	<1.0	<1.0	<1.0	<1.0	58.3	183	188	<1.0	<1.0
	1,2-Dichlorobenzene	620	72,500	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	1,3-Dichlorobenzene	620	61,500	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Ethylbenzene	29	29,000	<1.0	<1.0	<1.0	<1.0	7.2	140	54.6	<1.0	<1.0
	Toluene	1000	257,500	<1.0	<1.0	0.56 J	<1.0	<1.0	41.9	20.1	<1.0	<1.0
	Xylenes (total)	530	87,500	<3.0	<3.0	<3.0	<3.0	16.7	429	114	<3.0	<3.0
	Methyl Tert Butyl Ether	200	200,000	<1.0	<1.0	<1.0	<1.0	<1.0	132	48.1	<1.0	<1.0
	EPA 610 (µg/L)											
	Acenaphthene	80	2,120	<5.1	<5.1	<5.0	<5.2	<5.2	<5.1	<5.1	26.5	<5.0
	Acenaphthylene	210	1,965	<5.1	<5.1	<5.0	<5.2	<5.2	<5.1	<5.1	<5.1	<5.0
	Anthracene	2100	2,100	<5.1	<5.1	<5.0	<5.2	<5.2	<5.1	<5.1	<5.1	<5.0
	Benzo(a)anthracene	0.05	22	<5.1	<5.1	<5.0	<5.2	<5.2	<5.1	<5.1	<5.1	<5.0
	Fluoranthene	280	280	<5.1	<5.1	<5.0	<5.2	<5.2	<5.1	<5.1	<5.1	<5.0
	Fluorene	280	950	<5.1	<5.1	<5.0	<5.2	<5.2	<5.1	<5.1	20.1	<5.0
	1-Methylnaphthalene	RL	NE	<5.1	<5.1	8.4	<5.2	94.5	9.3	6.9	<5.1	<5.0
	2-Methylnaphthalene	14	12,500	<5.1	<5.1	7.4	<5.2	54.2	15.1	9	<5.1	<5.0
	Naphthalene	21	15,500	<5.1	<5.1	16.7	<5.2	73.4	57.5	37.8	12.6	<5.0
	Phenanthrene	210	410	<5.1	<5.1	<5.0	<5.2	<5.2	<5.1	<5.1	<5.1	<5.0
	Pyrene	210	210	<5.1	<5.1	<5.0	<5.2	<5.2	<5.1	<5.1	<5.1	<5.0
	EPA 504.1 (µg/L)											
	1,2-Dibromoethane	0.0004	50	<0.019	<0.019	<0.018	<0.019	<0.018	<0.019	<0.018	<0.019	<0.019
Buildig AS-4151 Area	Sample Location	NCGWQS	GCL	13-MW01	DUP *	13-DW01	122-MW03	122-MW04	122-MW07	122-MW08	122-MW09	
	Date Sampled			06/22/04	06/22/04	06/22/04	06/22/04	06/22/04	06/22/04	06/22/04	06/22/04	
	EPA 602 (µg/L)											
	Benzene	1	5,000	<1.0	<1.0	8.7	<1.0	<1.0	<1.0	<1.0	<1.0	
	1,2-Dichlorobenzene	620	72,500	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	1,3-Dichlorobenzene	620	61,500	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	Ethylbenzene	29	29,000	0.67 J	0.7 J	7.7	<1.0	<1.0	<1.0	<1.0	<1.0	
	Toluene	1000	257,500	<1.0	<1.0	1.8	<1.0	<1.0	<1.0	<1.0	<1.0	
	Xylenes (total)	530	87,500	3.9	4.2	12.9	<3.0	<3.0	<3.0	<3.0	1.5 J	
	Methyl Tert Butyl Ether	200	200,000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	EPA 610 (µg/L)											
	Acenaphthene	80	2,120	<5.5	<5.1	76.2	<5.1	<5.1	<5.2	3.2 J	<5.2	
	Acenaphthylene	210	1,965	<5.5	<5.1	<20	<5.1	<5.1	<5.2	<5.0	<5.2	
	Anthracene	2100	2,100	<5.5	<5.1	<5.0	<5.1	<5.1	<5.2	<5.0	<5.2	
	Benzo(a)anthracene	0.05	22	<5.5	<5.1	<5.0	<5.1	<5.1	<5.2	<5.0	<5.2	
	Fluoranthene	280	280	<5.5	<5.1	<5.0	<5.1	<5.1	<5.2	<5.0	<5.2	
	Fluorene	280	950	<5.5	<5.1	30.9	<5.1	<5.1	<5.2	<5.0	<5.2	
	1-Methylnaphthalene	RL	NE	71.7	77.4	78.9	<5.1	<5.1	2.7 J	<5.0	16.2	
	2-Methylnaphthalene	14	12,500	89	97.4	128	<5.1	<5.1	<5.2	<5.0	<5.2	
	Naphthalene	21	15,500	132	139	1140	<5.1	17.7	4.5 J	3.6 J	22.2	
	Phenanthrene	210	410	<5.5	<5.1	2.5 J	<5.1	<5.1	<5.2	<5.0	<5.2	
	Pyrene	210	210	<5.5	<5.1	<5.0	<5.1	<5.1	<5.2	<5.0	<5.2	
	EPA 504.1 (µg/L)											
	1,2-Dibromoethane	0.0004	50	<0.018	<0.018	<0.019	<0.018	<0.019	<0.019	<0.019	<0.019	

* DUP is a duplicate sample collected at well MW13-MW01

NA: Not Analyzed; constituent not included in analytic suite

µg/L: micrograms per liter

<#: not detected at the indicated reporting limit

J: estimated concentration less than reporting limit

E: Concentration exceeds calibration range

GCL: Gross Contaminant Level

NE: Not Established; a gCL has not been established for the constituent

NCGWQS: North Carolina Groundwater Quality Standard

RL: Reporting Limit, no NCGWQS established for the constituent; therefore, the NCGWQS for the constituent is the reporting limit

Bold type indicates detectable concentrations.

Shaded area indicates detectable concentration above the North Carolina Groundwater Quality Standards

Table 4-1 (5 of 8)
Summary of Laboratory Analyses for Groundwater - Campbell Street Fuel Fram Site
September 2004

	Sample Location	NCGWQS	GCL	MW-03	MW-11	DUP *	MW-12	MW-14	MW-16	MW-21	MW-24	DW-02	DW-06
	Date Sampled			09/17/04	09/20/04	09/20/04	09/20/04	09/20/04	09/20/04	09/16/04	09/20/04	09/20/04	09/16/04
Campbell Street Fuel Ram and Building AS-143 Area	EPA 602 (µg/L)												
	Benzene	1	5,000	<1.0	<1.0	<1.0	<1.0	<1.0	62.5	250	104	<1.0	<1.0
	1,2-Dichlorobenzene	620	72,500	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	1,3-Dichlorobenzene	620	61,500	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Ethylbenzene	29	29,000	0.59 J	<1.0	<1.0	0.58 J	<1.0	6.8	236	62.4	<1.0	<1.0
	Toluene	1000	257,500	<1.0	<1.0	<1.0	1.4	0.54 J	1.3	55.4	79	<1.0	<1.0
	Xylenes (total)	530	87,500	1.2 J	<3.0	<3.0	2.1 J	<3.0	21.6	687	181	1.2 J	<3.0
	Methyl Tert Butyl Ether	200	200,000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	133	25.1	<1.0	<1.0
	EPA 610 (µg/L)												
	Acenaphthene	80	2,120	NA	NA	NA	NA	NA	NA	NA	NA	51.2	<4.9
	Acenaphthylene	210	1,965	NA	NA	NA	NA	NA	NA	NA	NA	<4.8	<4.9
	Anthracene	2100	2,100	NA	NA	NA	NA	NA	NA	NA	NA	4.7 J	<4.9
	Benzo(a)anthracene	0.05	22	NA	NA	NA	NA	NA	NA	NA	NA	<4.8	<4.9
	Fluoranthene	280	280	NA	NA	NA	NA	NA	NA	NA	NA	3.2 J	<4.9
	Fluorene	280	950	NA	NA	NA	NA	NA	NA	NA	NA	41.6	<4.9
	1-Methylnaphthalene	RL	NE	NA	NA	NA	NA	NA	NA	NA	NA	9.5	<4.9
	2-Methylnaphthalene	14	12,500	NA	NA	NA	NA	NA	NA	NA	NA	3.4	<4.9
	Naphthalene	21	15,500	NA	NA	NA	NA	NA	NA	NA	NA	83.2	<4.9
	Phenanthrene	210	410	NA	NA	NA	NA	NA	NA	NA	NA	3.2	<4.9
	Pyrene	210	210	NA	NA	NA	NA	NA	NA	NA	NA	<4.8	<4.9
	EPA 504.1 (µg/L)												
	1,2-Dibromoethane	0.0004	50	<0.019	<0.019	<0.019	<0.019	<0.019	<0.020	<0.020	<0.019	<0.019	<0.019
Buildig AS-4151 Area	Sample Location	NCGWQS	GCL	13-MW01	13-DW01	122-MW03	122-MW04	122-MW07	122-MW08	122-MW09			
	Date Sampled			09/16/04	09/16/04	09/16/04	09/16/04	09/16/04	09/16/04	09/16/04			
	EPA 602 (µg/L)												
	Benzene	1	5,000	<1.0	9.4	<1.0	<1.0	<1.0	<1.0	<1.0			
	1,2-Dichlorobenzene	620	72,500	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0			
	1,3-Dichlorobenzene	620	61,500	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0			
	Ethylbenzene	29	29,000	1.1	8.9	<1.0	<1.0	<1.0	<1.0	0.59 J			
	Toluene	1000	257,500	0.83 J	2.3	1.5	0.74 J	0.52 J	1.3	0.56 J			
	Xylenes (total)	530	87,500	4.3	15.5	<3.0	<3.0	<3.0	1.2 J	2.1 J			
	Methyl Tert Butyl Ether	200	200,000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0			
	EPA 610 (µg/L)												
	Acenaphthene	80	2,120	<19	79.7	NA	NA	NA	NA	NA			
	Acenaphthylene	210	1,965	<19	<19	NA	NA	NA	NA	NA			
	Anthracene	2100	2,100	<19	<19	NA	NA	NA	NA	NA			
	Benzo(a)anthracene	0.05	22	<19	<19	NA	NA	NA	NA	NA			
	Fluoranthene	280	280	<19	<19	NA	NA	NA	NA	NA			
	Fluorene	280	950	<19	31.6	NA	NA	NA	NA	NA			
	1-Methylnaphthalene	RL	NE	74.5	81.7	NA	NA	NA	NA	NA			
	2-Methylnaphthalene	14	12,500	97.6	144.0	NA	NA	NA	NA	NA			
	Naphthalene	21	15,500	137	1530	NA	NA	NA	NA	NA			
	Phenanthrene	210	410	<19	2.5 J	NA	NA	NA	NA	NA			
	Pyrene	210	210	<19	<19	NA	NA	NA	NA	NA			
	EPA 504.1 (µg/L)												
	1,2-Dibromoethane	0.0004	50	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019			

* DUP is a duplicate sample collected at well MW-11

NA: Not Analyzed; constituent not included in analytic suite

GCL: Gross Contaminant Level

NE: Not Established; a gCL has not been established for the constituent

NCGWQS: North Carolina Groundwater Quality Standard

RL: Reporting Limit, no NCGWQS established for the constituent; therefore, the NCGWQS for the constituent is the reporting limit

Bold type indicates detectable concentrations.

Shaded area indicates detectable concentration above the North Carolina Groundwater Quality Standards

µg/L: micrograms per liter

<#: not detected at the indicated reporting limit

J: estimated concentration less than reporting limit

E: Concentration exceeds calibration range

Table 4-1 (6 of 8)
Summary of Laboratory Analyses for Groundwater - Campbell Street Fuel Fram Site
December 2004

	Sample Location	NCGWQS	GCL	MW-03	MW-11	MW-12	MW-14	MW-16	MW-21	MW-24	DW-02	DW-06	DUP *
				12/28/04	12/28/04	12/28/04	12/28/04	12/28/04	12/28/04	12/28/04	12/27/04	12/28/04	12/28/04
Campbell Street Fuel Ram and Building AS-143 Area	EPA 602 (µg/L)												
	Benzene	1	5,000	<1.0	<1.0	<1.0	<1.0	65.4	8.3	598	9.2	<1.0	<1.0
	1,2-Dichlorobenzene	620	72,500	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	1,3-Dichlorobenzene	620	61,500	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Ethylbenzene	29	29,000	<1.0	<1.0	<1.0	<1.0	8.4	1.7	270	7.5	<1.0	<1.0
	Toluene	1000	257,500	<1.0	<1.0	0.77 J	<1.0	0.66 J	3.1	712	2.2	<1.0	<1.0
	Xylenes (total)	530	87,500	<3.0	<3.0	<1.0	<3.0	29.1	6.1	999	14.8	<3.0	<3.0
	Methyl Tert Butyl Ether	200	200,000	<1.0	<1.0	<1.0	<1.0	<1.0	50.6	46.9	<1.0	<1.0	<1.0
	EPA 610 (µg/L)												
	Acenaphthene	80	2,120	NA	NA	NA	NA	NA	NA	NA	27.4	<4.9	<4.8
	Acenaphthylene	210	1,965	NA	NA	NA	NA	NA	NA	NA	<4.8	<4.9	<4.8
	Anthracene	2100	2,100	NA	NA	NA	NA	NA	NA	NA	<4.8	<4.9	<4.8
	Benzo(a)anthracene	0.05	22	NA	NA	NA	NA	NA	NA	NA	<4.8	<4.9	<4.8
	Fluoranthene	280	280	NA	NA	NA	NA	NA	NA	NA	<4.8	<4.9	<4.8
	Fluorene	280	950	NA	NA	NA	NA	NA	NA	NA	21.5	<4.9	<4.8
	1-Methylnaphthalene	RL	NE	NA	NA	NA	NA	NA	NA	NA	<4.8	<4.9	<4.8
	2-Methylnaphthalene	14	12,500	NA	NA	NA	NA	NA	NA	NA	<4.8	<4.9	<4.8
	Naphthalene	21	15,500	NA	NA	NA	NA	NA	NA	NA	20.4	<4.9	<4.8
	Phenanthrene	210	410	NA	NA	NA	NA	NA	NA	NA	3.2	<4.9	<4.8
	Pyrene	210	210	NA	NA	NA	NA	NA	NA	NA	<4.8	<4.9	<4.8
	EPA 504.1 (µg/L)												
	1,2-Dibromoethane	0.0004	50	<0.020	<0.019	<0.019	<0.020	<0.019	<0.019	<0.019	<0.020	<0.019	<0.020
Buildig AS-4151 Area	Sample Location	NCGWQS	GCL	13-MW01	13-DW01	122-MW03	122-MW04	122-MW07	122-MW08	122-MW09	122-MW11		
	Date Sampled			12/27/04	12/27/04	12/28/04	12/27/04	12/28/04	12/27/04	12/27/04	12/28/04		
	EPA 602 (µg/L)												
	Benzene	1	5,000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.91 J	<1.0		
	1,2-Dichlorobenzene	620	72,500	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0		
	1,3-Dichlorobenzene	620	61,500	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0		
	Ethylbenzene	29	29,000	0.75 J	<1.0	<1.0	<1.0	<1.0	<1.0	1.1	<1.0		
	Toluene	1000	257,500	0.56 J	0.52 J	<1.0	<1.0	0.53 J	0.54 J	<1.0	<1.0		
	Xylenes (total)	530	87,500	2.5 J	1.4 J	<3.0	<3.0	<3.0	<3.0	1.8 J	<3.0		
	Methyl Tert Butyl Ether	200	200,000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0		
	EPA 610 (µg/L)												
	Acenaphthene	80	2,120	NA	81.9	NA	NA	NA	NA	<24	NA		
	Acenaphthylene	210	1,965	NA	3.7 J	NA	NA	NA	NA	<24	NA		
	Anthracene	2100	2,100	NA	<4.8	NA	NA	NA	NA	<24	NA		
	Benzo(a)anthracene	0.05	22	NA	<4.8	NA	NA	NA	NA	<24	NA		
	Fluoranthene	280	280	NA	<4.8	NA	NA	NA	NA	<24	NA		
	Fluorene	280	950	NA	36.1	NA	NA	NA	NA	<24	NA		
	1-Methylnaphthalene	RL	NE	NA	92.8	NA	NA	NA	NA	75.6	NA		
	2-Methylnaphthalene	14	12,500	NA	142	NA	NA	NA	NA	31.1	NA		
	Naphthalene	21	15,500	NA	1610	NA	NA	NA	NA	142	NA		
	Phenanthrene	210	410	NA	<4.8	NA	NA	NA	NA	<24	NA		
	Pyrene	210	210	NA	<4.8	NA	NA	NA	NA	<24	NA		
	EPA 504.1 (µg/L)												
	1,2-Dibromoethane	0.0004	50	<0.020	<0.020	<0.020	<0.020	<0.020	<0.019	<0.020	<0.019		

* DUP is a duplicate sample collected at well DW-06

NA: Not Analyzed; constituent not included in analytic suite

GCL: Gross Contaminant Level

NE: Not Established; a gCL has not been established for the constituent

NCGWQS: North Carolina Groundwater Quality Standard

RL: Reporting Limit, no NCGWQS established for the constituent; therefore, the NCGWQS for the constituent is the reporting limit

Bold type indicates detectable concentrations.

Shaded area indicates detectable concentration above the North Carolina Groundwater Quality Standards

µg/L: micrograms per liter

<#: not detected at the indicated reporting limit

J: estimated concentration less than reporting limit

E: Concentration exceeds calibration range

Table 4-1 (7 of 8)
Summary of Laboratory Analyses for Groundwater - Campbell Street Fuel Fram Site
March 2005

	Sample Location	NCGWQS	GCL	MW-03	MW-11	MW-12	MW-14	MW-16	MW-21	MW-24	DW-02	DW-06
				03/16/05	03/16/05	03/16/05	03/16/05	03/16/05	03/15/05	03/16/05	03/15/05	03/15/05
Campbell Street Fuel Ram and Building AS-143 Area	EPA 602 (µg/L)											
	Benzene	1	5,000	<1.0	<1.0	<1.0	<1.0	64.4	58.7	175	<1.0	<1.0
	1,2-Dichlorobenzene	620	72,500	<1.0	0.82 J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.9 J
	1,3-Dichlorobenzene	620	61,500	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Ethylbenzene	29	29,000	<1.0	<1.0	<1.0	<1.0	8.6	33.6	79.4	<1.0	<1.0
	Toluene	1000	257,500	<1.0	<1.0	<1.0	<1.0	<1.0	4.7	47.1	<1.0	<1.0
	Xylenes (total)	530	87,500	<3.0	<3.0	<1.0	<3.0	27.3	68.2	244	<3.0	<3.0
	Methyl Tert Butyl Ether	200	200,000	<1.0	<1.0	<1.0	<1.0	<1.0	102	36.9	<1.0	<1.0
	EPA 610 (µg/L)											
	Acenaphthene	80	2,120	NA	NA	NA	NA	NA	NA	NA	24.2	<4.8
	Acenaphthylene	210	1,965	NA	NA	NA	NA	NA	NA	NA	<5.2	<4.8
	Anthracene	2100	2,100	NA	NA	NA	NA	NA	NA	NA	<5.2	<4.8
	Benzo(a)anthracene	0.05	22	NA	NA	NA	NA	NA	NA	NA	<5.2	<4.8
	Fluoranthene	280	280	NA	NA	NA	NA	NA	NA	NA	<5.2	<4.8
	Fluorene	280	950	NA	NA	NA	NA	NA	NA	NA	19.7	<4.8
	1-Methylnaphthalene	RL	NE	NA	NA	NA	NA	NA	NA	NA	2.3 J	<4.8
	2-Methylnaphthalene	14	12,500	NA	NA	NA	NA	NA	NA	NA	<5.2	<4.8
	Naphthalene	21	15,500	NA	NA	NA	NA	NA	NA	NA	28.8	<4.8
	Phenanthrene	210	410	NA	NA	NA	NA	NA	NA	NA	<5.2	<4.8
	Pyrene	210	210	NA	NA	NA	NA	NA	NA	NA	<5.2	<4.8
	EPA 504.1 (µg/L)											
	1,2-Dibromoethane	0.0004	50	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019
Buildig AS-4151 Area	Sample Location	NCGWQS	GCL	13-MW01	13-DW01	122-MW03	122-MW04	122-MW07	122-MW08	122-MW09	DUP *	122-MW11
	Date Sampled			03/15/05	03/15/05	03/15/05	03/15/05	03/15/05	03/15/05	03/15/05	03/15/05	03/16/05
	EPA 602 (µg/L)											
	Benzene	1	5,000	8.7	7.9	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	1,2-Dichlorobenzene	620	72,500	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	1,3-Dichlorobenzene	620	61,500	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	9.6	6.1	<1.0
	Ethylbenzene	29	29,000	8.4	10.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Toluene	1000	257,500	1.9	1.9	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Xylenes (total)	530	87,500	13.6	16.9	<3.0	<3.0	<3.0	1.6 J	<3.0	<3.0	<3.0
	Methyl Tert Butyl Ether	200	200,000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	EPA 610 (µg/L)											
	Acenaphthene	80	2,120	NA	84.2 J	NA	NA	NA	NA	<5.0	<5.1	NA
	Acenaphthylene	210	1,965	NA	<190	NA	NA	NA	NA	<5.0	<5.1	NA
	Anthracene	2100	2,100	NA	<190	NA	NA	NA	NA	<5.0	<5.1	NA
	Benzo(a)anthracene	0.05	22	NA	<190	NA	NA	NA	NA	<5.0	<5.1	NA
	Fluoranthene	280	280	NA	<190	NA	NA	NA	NA	<5.0	<5.1	NA
	Fluorene	280	950	NA	<190	NA	NA	NA	NA	<5.0	<5.1	NA
	1-Methylnaphthalene	RL	NE	NA	90.8 J	NA	NA	NA	NA	33	21.6	NA
	2-Methylnaphthalene	14	12,500	NA	145 J	NA	NA	NA	NA	<5.0	<5.1	NA
	Naphthalene	21	15,500	NA	1660	NA	NA	NA	NA	36.5	40.6	NA
	Phenanthrene	210	410	NA	<190	NA	NA	NA	NA	<5.0	<5.1	NA
	Pyrene	210	210	NA	<190	NA	NA	NA	NA	<5.0	<5.1	NA
	EPA 504.1 (µg/L)											
	1,2-Dibromoethane	0.0004	50	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019

* DUP is a duplicate sample collected at well 122-MW09

NA: Not Analyzed; constituent not included in analytic suite

µg/L: micrograms per liter

<#: not detected at the indicated reporting limit

J: estimated concentration less than reporting limit

E: Concentration exceeds calibration range

GCL: Gross Contaminant Level

NE: Not Established; a gCL has not been established for the constituent

NCGWQS: North Carolina Groundwater Quality Standard

RL: Reporting Limit, no NCGWQS established for the constituent; therefore, the NCGWQS for the constituent is the reporting limit

Bold type indicates detectable concentrations.

Shaded area indicates detectable concentration above the North Carolina Groundwater Quality Standards

Table 4-1 (8 of 8)
Summary of Laboratory Analyses for Groundwater - Campbell Street Fuel Fram Site
June 2005

Campbell Street Fuel Rm and Building AS-143 Area	Sample Location	NCGWQS	GCL	MW-03	MW-11	MW-12	MW-14	MW-16	MW-21	MW-24	DW-02	DW-06
	Date Sampled			06/22/05	06/22/05	06/22/05	06/22/05	06/22/05	06/21/05	06/21/05	06/22/05	06/21/05
	EPA 602 (µg/L)											
	Benzene	1	5,000	<1.0	<1.0	<1.0	<1.0	49.6	58.4	130	<1.0	<1.0
	1,2-Dichlorobenzene	620	72,500	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	1,3-Dichlorobenzene	620	61,500	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Ethylbenzene	29	29,000	<1.0	<1.0	<1.0	<1.0	7	4.3	45.3	<1.0	<1.0
	Toluene	1000	257,500	<1.0	<1.0	0.71 J	<1.0	<1.0	2.8	15.6	<1.0	<1.0
	Xylenes (total)	530	87,500	<3.0	<3.0	<1.0	<3.0	20.4	7.3	182	<3.0	<3.0
	Methyl Tert Butyl Ether	200	200,000	<1.0	<1.0	<1.0	<1.0	<1.0	139 E	21.1	<1.0	<1.0
	EPA 610 (µg/L)											
	Acenaphthene	80	2,120	NA	NA	NA	NA	NA	NA	NA	12.9	<5.1
	Acenaphthylene	210	1,965	NA	NA	NA	NA	NA	NA	NA	<5.0	<5.1
	Anthracene	2100	2,100	NA	NA	NA	NA	NA	NA	NA	<5.0	<5.1
	Benzo(a)anthracene	0.05	22	NA	NA	NA	NA	NA	NA	NA	<5.0	<5.1
	Fluoranthene	280	280	NA	NA	NA	NA	NA	NA	NA	<5.0	<5.1
	Fluorene	280	950	NA	NA	NA	NA	NA	NA	NA	10.7	<5.1
	1-Methylnaphthalene	RL	NE	NA	NA	NA	NA	NA	NA	NA	<5.0	<5.1
	2-Methylnaphthalene	14	12,500	NA	NA	NA	NA	NA	NA	NA	<5.0	<5.1
	Naphthalene	21	15,500	NA	NA	NA	NA	NA	NA	NA	18.8	<5.1
	Phenanthrene	210	410	NA	NA	NA	NA	NA	NA	NA	<5.0	<5.1
	Pyrene	210	210	NA	NA	NA	NA	NA	NA	NA	<5.0	<5.1
	EPA 504.1 (µg/L)											
	1,2-Dibromoethane	0.0004	50	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Building AS-4151 Area	Sample Location	NCGWQS	GCL	13-MW01	13-DW01	122-MW03	122-MW04	122-MW07	122-MW08	122-MW09	DUP *	122-MW11
	Date Sampled			06/22/05	06/22/05	06/22/05	06/22/05	06/22/05	06/22/05	06/22/05	06/22/05	06/22/05
	EPA 602 (µg/L)											
	Benzene	1	5,000	<1.0	9.8	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	1,2-Dichlorobenzene	620	72,500	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	1,3-Dichlorobenzene	620	61,500	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Ethylbenzene	29	29,000	<1.0	9.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Toluene	1000	257,500	<1.0	2.3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Xylenes (total)	530	87,500	3.1	16.0	<3.0	<3.0	<3.0	<3.0	1.4 J	1.4 J	<3.0
	Methyl Tert Butyl Ether	200	200,000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	EPA 610 (µg/L)											
	Acenaphthene	80	2,120	NA	<190	NA	NA	NA	NA	<5.1	<5.0	NA
	Acenaphthylene	210	1,965	NA	<190	NA	NA	NA	NA	<5.1	<5.0	NA
	Anthracene	2100	2,100	NA	<190	NA	NA	NA	NA	<5.1	<5.0	NA
	Benzo(a)anthracene	0.05	22	NA	<190	NA	NA	NA	NA	<5.1	<5.0	NA
	Fluoranthene	280	280	NA	<190	NA	NA	NA	NA	<5.1	<5.0	NA
	Fluorene	280	950	NA	<190	NA	NA	NA	NA	<5.1	<5.0	NA
	1-Methylnaphthalene	RL	NE	NA	<190	NA	NA	NA	NA	3.8 J	5	NA
	2-Methylnaphthalene	14	12,500	NA	86.6 J	NA	NA	NA	NA	<5.1	<5.0	NA
	Naphthalene	21	15,500	NA	924	NA	NA	NA	NA	8.3	3.7 J	NA
	Phenanthrene	210	410	NA	<190	NA	NA	NA	NA	<5.1	<5.0	NA
	Pyrene	210	210	NA	<190	NA	NA	NA	NA	<5.1	<5.0	NA
	EPA 504.1 (µg/L)											
	1,2-Dibromoethane	0.0004	50	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020

* DUP is a duplicate sample collected at well 122-MW09

NA: Not Analyzed; constituent not included in analytic suite

µg/L: micrograms per liter

<#: not detected at the indicated reporting limit

J: estimated concentration less than reporting limit

E: Concentration exceeds calibration range

GCL: Gross Contaminant Level

NE: Not Established; a gCL has not been established for the constituent

NCGWQS: North Carolina Groundwater Quality Standard

RL: Reporting Limit, no NCGWQS established for the constituent; therefore, the NCGWQS for the constituent is the reporting limit

Bold type indicates detectable concentrations.

Shaded area indicates detectable concentration above the North Carolina Groundwater Quality Standards

**REMEDIAL ACTION OPTIMIZATION
&
REVISED CORRECTIVE ACTION PLAN ADDENDUM REPORT**

CAMPBELL STREET FUEL FARM

**MARINE CORPS AIR STATION
NEW RIVER, NORTH CAROLINA**

FEBRUARY 22, 2006

**Navy Contract No.: N62470-05-D-6200
Delivery Order No.: 005
CATLIN Project No.: 205-043**



Prepared by:

**CATLIN Engineers and Scientists
P.O. Box 10279
Wilmington, North Carolina 28404-0279
(910) 452-5861**

4.3.2 Soil

The remedial approaches implemented appear to have reduced soil contamination to concentrations below the I/C MSCCs.

4.3.3 Groundwater

In order to effectively evaluate the current remediation system suitability in regards to groundwater quality, a discussion of the shallow and deep conditions is provided in the following sections.

4.3.3.1 Shallow Conditions

Shallow groundwater conditions indicate contaminant concentrations below the remedial objectives established by the RBCA GCLs since July 22, 1994, as indicated on Table 3A. Therefore, the remedial systems implemented at this project site appear to have been suitable for achieving the remedial objective.

4.3.3.2 Deep Conditions

Shallow groundwater conditions indicate contaminant concentrations below the remedial objectives established by the RBCA GCLs since the site monitoring wells have been sampled, as indicated on Table 3B. Therefore, the remedial systems implemented at this project site appear to have been suitable for achieving the remedial objective.

5.0 UPDATED REMEDIATION MODIFICATIONS AND ALTERNATIVES

5.1 REGULATORY FRAMEWORK EVALUATION

A Risk Classification and Land Use Form, as presented in the 2001 Guidelines was completed as part of the May 9, 2005 RAO & RCAP to present the data necessary to allow NCDENR to assess the site's applicable risk classification. As previously stated, NCDENR stated in a June 28, 2005 letter that the site risk classification is intermediate risk until the absence of free-phase product is documented for one year following the deactivation of the pump and treat system. In the event that free-phase product is not identified at the conclusion of the one year time frame then the site should be reclassified as low risk.

The I/C land use classification was determined for this site as part of the May 9, 2005 RAO & RCAP. This classification appears to remain applicable for this site.

APPENDIX D

RISK CLASSIFICATION AND LAND USE FORM

A. RISK CHARACTERIZATION

Submit the following questionnaire in its entirety. Answer all questions completely. Attach additional pages as needed to fully explain answers. Base answers/explanations on information known or required to be obtained during the Limited Site Assessment.

NOTE: Source area means point of release from a UST system.

Limited Site Assessment Risk Classification and Land Use Form

Part I - Groundwater/Surface Water/Vapor Impacts

High Risk

1. *Has the release contaminated any water supply well including any used for non-drinking purposes?* YES NO

No. According to MCB Camp Lejeune and the latest Wellhead Protection Plan Update (2002), the closest active water supply well is located at a distance greater than 1,500 feet from the project site.
2. *Is a water supply well used for drinking water located within 1,000 feet of the source area of the discharge or release?* YES NO

No. According to water supply well data provided by MCB Camp Lejeune, there are no active water supply wells located within 1,000 feet of the subject site.
3. *Is a water supply well not used for drinking water (e.g., irrigation, washing cars, industrial cooling water, filling swimming pools) located within 250 feet of the source area of the release?* YES NO

No. Wells were not located within 250 feet of the source area of release.
4. *Does groundwater within 500 feet of the source area of the release have the potential for future use (there is no other source of water supply other than the groundwater)?* YES NO

No. There are an adequate number of locations for additional water supply wells to be installed on other portions of the base.
5. *Do vapors from the release pose a threat of explosion because of accumulation of the vapors in a confined space or pose any other serious threat to public health, public safety or the environment?* YES NO
If YES describe.

No. There has been no evidence or any reported to suggest an accumulation of vapors.
6. *Are there any other factors that would cause the discharge or release to pose an* YES NO

imminent danger to public health, public safety, or the environment?
If YES describe.

No, data collected during this investigation does not provide evidence to suggest other factors that would cause an imminent danger to public health, public safety or the environment.

Intermediate Risk

7. *Is a surface water body located within 500 feet of the source area of the discharge or release?* YES NO
If YES, does the maximum groundwater contaminant concentration exceed the surface water quality standards and criteria found in 15A NCAC 2B.0200 by a factor of 10? YES NO

A retention pond is located approximately 115 feet southeast of the Fuel Farm and AS-143 Area and 275 feet northeast of the AS-4151 Area. Additionally, a drainage ditch crosses the Fuel Farm and AS-143 Area. As illustrated on Table 4, the current maximum groundwater contaminant concentrations do not exceed the surface water quality standards by a factor of 10.

8. *Is the source area of the discharge or release located within an approved or planned wellhead protection area as defined in 42 USC 300h-7(e)?* YES NO
If YES describe.

Wellhead protection areas defined by 42 USC 200h-7(e) have not, as of this report, been designed by NCDENR for MCB, Camp Lejeune. However, MCB Camp Lejeune has identified wellhead protection areas on the base. Based on the most recent Wellhead Protection Plan Update (2002) performed for MCB Camp Lejeune, the site is located within a potential wellhead protection area.

9. *Is the release located in the Coastal Plain physiographic region as designated on a map entitled "Geology of North Carolina" published by the Department in 1985?* YES NO
If YES, is the source area of the release located in an area in which there is recharge to an unconfined or semi-confined deeper aquifer that is being used or may be used as a source of drinking water? YES NO
If YES describe.

Groundwater samples collected from Type III monitoring wells at the site were found to contain low levels of BTEX and naphthalene constituents. This indicates the potential for recharge to the deeper portions of the aquifer.

10. *Do the levels of groundwater contamination for any contaminant exceed the gross contamination levels established by the Department?* YES NO

Based on the current groundwater conditions and analytes analyzed for, the groundwater contaminant levels do not exceed the gross contamination levels.

Part II - Land Use

Property Containing Source Area of Release

The questions below pertain to the property containing the source area of the release.

1. *Does the property contain one or more primary or secondary residences (permanent or temporary)?* YES NO
Describe.

No. The project area does not contain any primary or secondary residences.

2. *Does the property contain a school, daycare center, hospital, playground, park, recreation area, church, nursing home, or other place of public assembly?* YES NO
Describe.

No. The project area does not contain any of the above referenced public assembly places.

3. *Does the property contain a commercial (e.g., retail, warehouse, office/business space, etc.) or industrial (e.g., manufacturing, utilities, industrial research and development, chemical/petroleum bulk storage, etc.) enterprise, an inactive commercial or industrial enterprise, or is the land undeveloped?* YES NO
Describe.

Yes. The subject areas consist of an active fuel storage facility (Fuel Farm), and active refueling facility (AS-143), and an active steam generating facility (AS-4151) located in the industrial area of MCAS, New River.

4. *Do children visit the property?* YES NO
Explain.

No. The site is used predominantly by active military personnel and children are unlikely to visit the property. However, the AS-4151 and AS-143 areas are not restricted.

Is access to the property reliably restricted consistent with its use (e.g., by fences, security personnel or both)? YES NO
Explain.

Yes. The Fuel Farm is restricted, the AS-143 Area is not restricted, and a portion of the AS-4151 Area is not restricted. The restrictions are consistent with their use.

5. *Do pavement, buildings, or other structures cap the contaminated soil?* YES NO
Describe.

The areas of the release are covered predominantly with grass. A small portion of the impacted area is covered with concrete.

If YES, what mechanisms are in place or can be put into place to ensure that the contaminated soil will remain capped in the foreseeable future?

As necessary, appropriate land use restrictions will insure that any potentially impacted soils will remain capped.

6. *What is the zoning status of the property?*

The MCB Camp Lejeune is not subject to local or county zoning requirements. The surrounding properties have been developed for military support purposes.

7. *Is the use of the property likely to change in the next 20 years?
Explain.*

YES NO

No. The designated use of military property is not likely to change within the foreseeable future.

Property Surrounding Source Area of Release

The questions below pertain to the area within 1500 feet of the source area of the release (excludes property containing source area of the release):

1. *What is the distance from the source area of the release to the nearest primary or secondary residence (permanent or temporary)?*

The nearest residence appears to be military bachelor quarters located approximately 1,100 feet east of the release at Building AS-143.

2. *What is the distance from the source area of the release to the nearest school, daycare center, hospital, playground, park, recreation area, church, nursing home or other place of public assembly?*

Athletic fields are located within a 1,500-foot radius of the subject source areas, refer to Figures 1A and 1B.

3. *What is the zoning status of properties in the surrounding area?*

As previously mentioned, the MCB Camp Lejeune is not subject to local or county zoning requirements. The surrounding property has been developed for military support purposes.

4. *Briefly characterize the use and activities of the land in the surrounding area.*

The land surrounding the source area has been developed for military support purposes, including a fuel farm, associated distribution system, and other various support facilities.

B. RECEPTOR INFORMATION

1. Water Supply Wells

Physical reconnaissance and review of the Wellhead Protection Plan – 2002 Update prepared by AH Environmental indicated that there are no active water supply wells located within 1,500 feet of the subject areas. Water supply wells located within 1,500 feet of the subject site are listed as “closed” within the latest database provided by Camp Lejeune to CATLIN include AS-4140 and AS-131.

2. Public Water Supplies

Are public water supplies available within 1,500 feet of the source area of the release? **YES** NO

If YES, where is the location of the nearest public water lines and the source(s) of the public water supply (indicate on map). Describe.

Public water is provided to buildings within 1,500 feet of the subject site by water mains which carry treated potable water. Potable water is supplied to the site and surrounding areas by the MCB water supply system. Potable water for Camp Lejeune is obtained from various water treatment facilities throughout the base. Groundwater obtained from the Castle Hayne Aquifer is the raw water source for the treatment facilities.

3. Surface Water

Identify all surface water bodies (e.g., ditch, pond, stream, lake, river) within 1,500 feet of the source area of the release. This information must be shown on the USGS topographic map.

There are numerous surface water bodies located within 1,500 feet of the source area of release including detention/retention ponds and drainage ditches. A retention pond is located approximately 115 feet southeast of the Fuel Farm/AS-143 site and 275 feet northeast of the AS-4151 site. Additionally, a drainage ditch crosses the Fuel Farm/AS-143 site. See attached Figures 1A and 1B for surface water locations. All information regarding potential surface water receptors was provided by MCB Camp Lejeune, and is shown on the site location map, Figures 1A and 1B.

4. Wellhead Protection Areas

Identify all planned or approved wellhead protection areas (e.g., ditch, pond, stream, lake, river) within 1,500 feet of the source area of the release. This information must be shown on the USGS topographic map. Wellhead protection areas are defined in 42 USC 300h-7(e).

According to the Wellhead Protection Plan – 2002 Update prepared by AH Environmental Consultants, the site is located within a wellhead protection area.

5. Deep Aquifers in the Coastal Plain Physiographic Region

(Refer to page 19 of the guidelines) NOTE: This requirement only pertains to releases in the Coastal Plain physiographic region as designated on a map entitled "Geology of North Carolina" published by the Department in 1985.

As identified in the Geologic Map of North Carolina (North Carolina Department of Natural Resources and Community Development 1985), the subject site lies within the Coastal Plain physiographic province. Results of the groundwater analysis conducted on samples collected from the Type III monitoring wells indicates that the deeper portions of the aquifer have been slightly impacted by petroleum constituents possibly associated with this site.

To some degree seven of the ten aquifers identified to date in the North Carolina Coastal Plain are typically present beneath portions of the MCB Camp Lejeune. In order of increasing depth, these aquifers include the Surficial, Castle Hayne, Beaufort, Peedee, Black Creek, and upper and lower Cape Fear aquifers.

Aquifers below the surficial aquifer in the area typically include the Castle Hayne Aquifer, the Beaufort Aquifer, and the Peedee Aquifer, in order of increasing depth. Both the Beaufort and Peedee Aquifers contain saltwater in portions of the MCB Camp Lejeune and are not generally used for water supply. The Castle Hayne Aquifer contains freshwater and is the principal aquifer used in the area for water supply.

6. Subsurface Structures

Numerous underground utilities are present throughout the site. These utilities are located above the shallow groundwater table and are not considered potential receptors.

7. Property Owners and Occupants

The subject site is owned and operated by the Commanding General – Marine Corps Base, Camp Lejeune.

APPENDIX B

LABORATORY REPORTS AND CHAIN OF CUSTODY DOCUMENTATION FROM APRIL 2006 SAMPLING EVENT



Mr. Chris Murray
Sovereign Consulting
606 Thimble Shoals Rd.
Suite A1
Newport-News VA 23606
Report Number: G650-53
Client Project: NV007

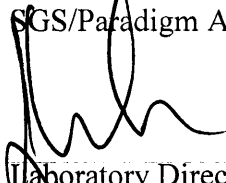
Dear Mr. Murray:

Enclosed are the results of the analytical services performed under the referenced project. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of five years in the event they are required for future reference. Any samples submitted to our laboratory will be retained for a maximum of thirty (30) days from the date of this report unless other arrangements are requested.

If there are any questions about the report or the services performed during this project, please call SGS/Paradigm at (910) 350-1903. We will be happy to answer any questions or concerns which you may have.

Thank you for using SGS/Paradigm Analytical Labs for your analytical services. We look forward to working with you again on any additional analytical needs which you may have.

Sincerely,
SGS/Paradigm Analytical Laboratories, Inc.



Laboratory Director
J. Patrick Weaver

5/16/2006
Date

**Results for Organics
by EPA 504.1**

Client Sample ID: USTAS4151-RW01A
Client Project ID: NV007
Lab Sample ID: G650-53-1C
Lab Project ID: G650-53

Analyzed By: CLP
Date Collected: 5/8/06 10:35
Date Received: 5/8/06 12:00
Matrix: Water

Compound	Result ug/L	Quantitation Limit ug/L	Dilution Factor	Date Analyzed
Ethylene Dibromide	BQL	0.0193	1	5/15/06

Reviewed By:

A handwritten signature in black ink, consisting of stylized, overlapping loops and lines.

**Results for Organics
by EPA 504.1**

Client Sample ID: USTAS4151-RW01C
Client Project ID: NV007
Lab Sample ID: G650-53-2C
Lab Project ID: G650-53

Analyzed By: CLP
Date Collected: 5/8/06 10:35
Date Received: 5/8/06 12:00
Matrix: Water

Compound	Result ug/L	Quantitation Limit ug/L	Dilution Factor	Date Analyzed
Ethylene Dibromide	BQL	0.0192	1	5/15/06

Reviewed By:

A handwritten signature in black ink, appearing to be "S. J. [unclear]", written over a horizontal line.

**Results for Organics
by EPA 504.1**

Client Sample ID: USTAS4151-RW02C

Client Project ID: NV007

Lab Sample ID: G650-53-3C

Lab Project ID: G650-53

Analyzed By: CLP

Date Collected: 5/8/06 10:50

Date Received: 5/8/06 12:00

Matrix: Water

Compound	Result ug/L	Quantitation Limit ug/L	Dilution Factor	Date Analyzed
Ethylene Dibromide	BQL	0.0188	1	5/15/06

Reviewed By:

A handwritten signature in black ink, appearing to be 'VH', written over a horizontal line.

**Results for Organics
by EPA 504.1**

Client Sample ID: USTAS4151-DW02
Client Project ID: NV007
Lab Sample ID: G650-53-4C
Lab Project ID: G650-53

Analyzed By: CLP
Date Collected: 5/8/06 10:50
Date Received: 5/8/06 12:00
Matrix: Water

Compound	Result ug/L	Quantitation Limit ug/L	Dilution Factor	Date Analyzed
Ethylene Dibromide	BQL	0.0188	1	5/15/06

Reviewed By:

A handwritten signature in black ink, appearing to be 'J. J. J.', written over a horizontal line.

**Results for Organics
by EPA 504.1**

Client Sample ID: USTAS4151-DW01A

Client Project ID: NV007

Lab Sample ID: G650-53-5C

Lab Project ID: G650-53

Analyzed By: CLP

Date Collected: 5/8/06 11:15

Date Received: 5/8/06 12:00

Matrix: Water

Compound	Result ug/L	Quantitation Limit ug/L	Dilution Factor	Date Analyzed
Ethylene Dibromide	BQL	0.0190	1	5/15/06

Reviewed By:

A handwritten signature in black ink, appearing to be 'MJD', written over a horizontal line.

**Results for Organics
by EPA 504.1**

Client Sample ID: USTAS4151-Duplicate
Client Project ID: NV007
Lab Sample ID: G650-53-6C
Lab Project ID: G650-53

Analyzed By: CLP
Date Collected: 5/8/06 0:00
Date Received: 5/8/06 12:00
Matrix: Water

Compound	Result ug/L	Quantitation Limit ug/L	Dilution Factor	Date Analyzed
Ethylene Dibromide	BQL	0.0191	1	5/15/06

Reviewed By:

A handwritten signature in black ink, consisting of stylized, overlapping loops and curves.

**Results for Organics
by EPA 504.1**

Client Sample ID: Trip Blank
Client Project ID: NV007
Lab Sample ID: G650-53-7B
Lab Project ID: G650-53

Analyzed By: CLP
Date Collected: 5/8/06 0:00
Date Received: 5/8/06 12:00
Matrix: Water

Compound	Result ug/L	Quantitation Limit ug/L	Dilution Factor	Date Analyzed
Ethylene Dibromide	BQL	0.0191	1	5/15/06

Reviewed By:

A handwritten signature in black ink, consisting of several loops and a long horizontal stroke at the end.



List of Reporting Abbreviations and Data Qualifiers

B = Compound also detected in batch blank

BQL = Below Quantitation Limit (RL or MDL)

DF = Dilution Factor

Dup = Duplicate

D = Detected, but RPD is > 40% between results in dual column method.

E = Estimated concentration, exceeds calibration range.

J = Estimated concentration, below calibration range and above MDL

LCS(D) = Laboratory Control Spike (Duplicate)

MDL = Method Detection Limit

MS(D) = Matrix Spike (Duplicate)

PQL = Practical Quantitation Limit

RL = Reporting Limit

RPD = Relative Percent Difference

mg/kg = milligram per kilogram, ppm, parts per million

ug/kg = micrograms per kilogram, ppb, parts per billion

mg/L = milligram per liter, ppm, parts per million

ug/L = micrograms per liter, ppb, parts per billion

% Rec = Percent Recovery

% solids = Percent Solids

Special Notes:

- 1) Metals and mercury samples are digested with a hot block, see the standard operating procedure document for details.
- 2) Uncertainty for all reported data is less than or equal to 30 percent.



RECORD

Locations Nationwide

- Alaska
- Hawaii

APPENDIX C
EXAMPLE FIELD DATA

Duplicate Sample on RWOLA

WELL: _____

Observations During Sampling (e.g. slow recharge, turbidity, odor, sheen, PID/FID readings, or change in pump interval setting):

Sampling Sequence:

Analysis	Method	Container	Number of Bottles	Preservative	Comments
Volatile Organics					
EDB					
BNs/PAHs					
Total Metals					
Dissolved Metals					

Stabilization Ranges

Dissolved Oxygen: +/- 10%

Turbidity: +/- 10%

Specific Conductance: +/- 3%

Temperature: +/- 3 %

pH: +/- 0.1 unit

Redox Potential: +/- 10mv

RW01A
28.32
4.32

WELL: _____

Observations During Sampling (e.g. slow recharge, turbidity, odor, sheen, PID/FID readings, or change in pump interval setting):

Sampling Sequence:

Analysis	Method	Container	Number of Bottles	Preservative	Comments
Volatile Organics					
EDB					
BNs/PAHs					
Total Metals					
Dissolved Metals					

Stabilization Ranges

Dissolved Oxygen: +/- 10%

Turbidity: +/- 10%

Specific Conductance: +/- 3%

Temperature: +/- 3 %

pH: +/- 0.1 unit

Redox Potential: +/- 10mv

✓

Weather:

CSFF/AS4151
04/24/06

Well Condition:

RW02C
USTAS4151-RW02C

Total Depth from TOC (feet):

6^h

4.17

14.78

Sampler Name:

15.58

0925

1101

1102

SF

[illegible]

WELL: _____

Observations During Sampling (e.g. slow recharge, turbidity, odor, sheen, PID/FID readings, or change in pump interval setting):

Sampling Sequence:

Analysis	Method	Container	Number of Bottles	Preservative	Comments
Volatile Organics					
EDB					
BNs/PAHs					
Total Metals					
Dissolved Metals					

Stabilization Ranges

Dissolved Oxygen: +/- 10%

Turbidity: +/- 10%

Specific Conductance: +/- 3%

Temperature: +/- 3 %

pH: +/- 0.1 unit

Redox Potential: +/- 10mv

[illegible]

WELL: _____

Observations During Sampling (e.g. slow recharge, turbidity, odor, sheen, PID/FID readings, or change in pump interval setting):

Sampling Sequence:

Analysis	Method	Container	Number of Bottles	Preservative	Comments
Volatile Organics					
EDB					
BNs/PAHs					
Total Metals					
Dissolved Metals					

Stabilization Ranges

Dissolved Oxygen: +/- 10%

Turbidity: +/- 10%

Specific Conductance: +/- 3%

Temperature: +/- 3 %

pH: +/- 0.1 unit

Redox Potential: +/- 10mv

[illegible]

WELL: _____

Observations During Sampling (e.g. slow recharge, turbidity, odor, sheen, PID/FID readings, or change in pump interval setting):

Sampling Sequence:

Analysis	Method	Container	Number of Bottles	Preservative	Comments
Volatile Organics					
EDB					
BNs/PAHs					
Total Metals					
Dissolved Metals					

Stabilization Ranges

Dissolved Oxygen: +/- 10%

Turbidity: +/- 10%

Specific Conductance: +/- 3%

Temperature: +/- 3 %

pH: +/- 0.1 unit

Redox Potential: +/- 10mv