FINAL

ANNUAL GROUNDWATER MONITORING REPORT 2007-2008

CAMPBELL STREET FUEL FARM

NCDENR Incident Number: 23297
Marine Corps Air Station
New River, North Carolina

June 27, 2008

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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 Underground Storage Tank Section (Effective July 1, 2001)
2L GWQS	NCAC T15A:02L Groundwater Quality Standards
AS	Air Sparge
AST	Aboveground Storage Tank
BDL	Below Detection Limit
BN	Base/Neutral (extractables)
BNA	Base/Neutral/Acid (extractables)
BQL	Below Quantitation Limit
BLS	Below Land Surface
BTEX	Benzene, Toluene, Ethylbenzene, Xylenes
CAP	Corrective Action Plan
CFR	Code of Federal Regulations
Cr	Chromium
CSA	Comprehensive Site Assessment
DIPE	Di-isopropyl Ether
DO	Dissolved Oxygen
DOD	Department of Defense
DPT	Direct Push Technology
DWQ	Division of Water Quality
DWM	Division of Waste Management
DTW	Depth to Water
EDB	Ethylene dibromide
EMD	Environmental Management Division
EPA	Environmental Protection Agency
EPH	Extractable Petroleum Hydrocarbons
EQB	Environmental Quality Branch
Fe	Iron
FID	Flame Ionization Detector
FT	Feet
GCL	Gross Contaminant Level
GIS	Geographic Information System
GPS	Global Positioning System
Guidelines Vol. II	Groundwater Section Guidelines for Investigation and Remediation of Soil and Groundwater, Volume II, Petroleum Underground Storage Tanks (January 2, 1998)
HDPE	High Density Polyethylene
I/C	Industrial/Commercial
ID	Identification
I&E	Installations and Environment Department
IGWQS	Interim Groundwater Quality Standards
IPE	Isopropyl Ether
LSA	Limited Site Assessment
LUST	Leaking Underground Storage Tank
m	Meter
MADEP	Massachusetts Department of Environmental Protection
MCAS	Marine Corps Air Station
MCB	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 (CSFF) site is an active bulk petroleum storage facility aboard Marine Corps Air Station (MCAS) New River, Jacksonville, North Carolina. It consists of four 215,000-gallon aboveground storage tanks (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 underground storage tanks (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 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 (no longer active). The system consisted 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 was recovered from these trenches and piped to a central treatment compound located within the fuel farm. The contaminated groundwater was formerly 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 were shut down in favor of aggressive fluid vapor recovery (AFVR) events. Note that the system is currently off and in the post-operational phase, which is explained below.

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). The North Carolina Department of Environment and Natural Resources (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. Groundwater elevations were generated from depth to water (DTW) measurements taken each month. Free product data was also obtained. One monitoring well within the CSFF area, USTCSFF-MW13, exhibited product beginning in April 2006. Product accumulations were recorded each month through February 2007. All product was hand bailed and properly disposed at each gauging event.

In February 2007, MCB Camp Lejeune conducted a localized soil excavation of the USTCSFF-MW13 area. Approximately 45.77 tons of petroleum contaminated soil was removed from the subsurface. The excavation centered around USTCSFF-MW13 and measured six feet in diameter and 12 feet deep. Laboratory analysis of soil samples taken from the excavation sidewalls showed the presence of iodomethane and 4-isopropyltoluene above the soil to

groundwater, residential, and industrial/commercial MSCCs. There are no established MSCCs for these two compounds, so any detection is considered reportable. Two monitoring wells, USTCSFF-MW-26 and USTCSFF-MW27 were installed to replace USTCSFF-MW13.

Sovereign also conducted soil excavation activities in the area of a 2005 surface release (NCDENR incident number 87537) in June 2006. Approximately, 1,100 tons of petroleum impacted soils were excavated and properly disposed[1] from the project site. Remedial actions were summarized and reported to NCDENR Division of Water Quality, Aquifer Protection Section in a report titled *FINAL Soil Cleanup Report, Campbell Street Fuel Farm, September 21, 2006* by Sovereign. The site remains open as additional soil remediation is required.

Based on historical data and fieldwork performed from June 2007 to May 2008, no recurrence of free product has been measured in the vicinity of former monitoring well USTCSFF-MW13. Accordingly, a request for No Further Action with LURs should be submitted to NCDENR. Sovereign recommends the continuance of monthly well gauging of the six currently gauged monitoring wells (USTCSFF-MW03, USTCSFF-MW04, USTCSFF-MW16, USTCSFF-MW17, USTCSFF-MW26, and USTCSFF-MW27) pending a response from NCDENR.

1.0 TITLE PAGE

DATE OF REPORT: June 2008
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 Oakmears 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, **Kevin P. Wheeler** a Professional Geologist 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 events at the Campbell Street Fuel Farm site aboard MCAS New River, Jacksonville, North Carolina. This data was collected from June 2007 through April 2008. The project's scope of work entailed monthly gauging of six site monitoring wells USTCSFF-MW03, MW04, MW16, MW17, MW26, and MW27. The monitoring plan was amended to reduce gauging events to monthly monitoring of only six monitoring wells (USTCSFF-MW03, USTCSFF-MW04, USTCSFF-MW16, USTCSFF-MW17, USTCSFF-MW26, and USTCSFF-MW27) for the duration of the 2007-2008 monitoring period, with an annual event to gauge 44 monitoring wells associated with the site. Results of Sovereign's 2007-2008 gauging 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). Review of MCB Camp Lejeune water supply well data shows there are no active water supply wells within 1,500 feet of the site.

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. (J.A. Jones) 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, three surface releases occurred within the fuel farm area - in 2004, 2005, and 2006. Surface soil where the releases occurred was subsequently excavated during three separate excavation events. These incidents were all reported to NCDENR, Division of Water Quality, Aquifer Protection Section. Only the 2005 (Incident #87537) and 2006 (Incident # pending) incidents are active; the 2004 release is closed, as impacted soils were removed with confirmation soil sample results indicating no contamination above NCDENR action limits.

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. Phase I and Phase II Limited Site Assessments were 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 and put into operation. 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, which included 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 monitoring activities conducted from 1996 through 2002 indicated that concentrations of petroleum constituents in groundwater at some monitoring wells were above NCGWQSs; however, concentrations have decreased over time. Measurable free product was detected in site monitoring 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. As of the preparation of the reports, soils were shown to meet I/C MSCCs, and groundwater contaminants were below established

GCLs. In addition, 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 monitoring 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 Environmental and Infrastructure, Inc. (Shaw), and Engineering and Environment, Inc. (EEI) conducted inspections, monitoring, and maintenance of the groundwater treatment system and site from 1996 – August 2005. Sovereign has had cognizance over current remediation operations at the site since October 2005. Since the groundwater treatment system was deactivated in July 2005, Sovereign conducts only monthly gauging of the site. Sovereign recommendations from the 2005-2006 monitoring period included the continuance of monthly monitoring well gauging at all site monitoring wells. Sovereign also recommended that the groundwater remediation system remain deactivated, as groundwater sampling results were below GCLs.

Sovereign conducted a large scale soil excavation within CSFF in June 2006 in response to a surface release of approximately 200 gallons of JP-5 jet fuel on August 15, 2005. Approximately 1,100 tons of petroleum impacted soils were excavated and disposed of from the project site. Two soil samples collected from this event had results above NCDENR action levels for TPH-GRO and TPH-DRO. This site remains open as additional soil remediation is required. Groundwater quality was assessed in this excavation area by installing monitoring well USTCSFF-MW25. No contaminants were detected above 2L standards.

On November 27, 2006, CSFF personnel were draining standing water from the bermed areas of the fuel farm, including the fuel tanks and piping areas. Water is drained from the bermed areas into a manhole through a 6" diameter pipe. The water then drains from the manhole through a 4" pipe into the site's oil/water separator. The 4" pipe could not handle the incoming flow from the larger 6" pipe, and as a result, approximately 75 gallons of fuel/water was released out of the top of the manhole. The release impacted an area around the manhole measuring approximately 12 feet by 60 feet. The discharge lasted an estimated 30 minutes before it was discovered by personnel. The drainage was immediately stopped and the release was reported to the appropriate Base and Station first responders. A total of 153.90 tons of petroleum impacted soil was excavated from the release area. During the removal event, the excavated soil was immediately loaded and transported for disposal at Speights Chapel Rd Landfill (NC Permit #SR0500106). Soil contaminants were identified along excavation boundaries above applicable standards; however, it is believed the detections are due to historical releases at the site and not the 75 gallon fuel/water mixture.

In February 2007, monitoring well USTCSFF-MW13 was abandoned in an effort to remove free phase product that had not been detected since 2001. Osage of Virginia (Osage) removed approximately 45.77 tons of contaminated soil centering around MW13. Soil samples collected from this excavation area contained detectable amounts of idomethane and 4-isopropyltoluene. There are no established MSCCs for these compounds, so any detection is considered an exceedance.

4.0 MONITORING PERIOD ACTIVITIES – 2007-2008

The remaining sections of this report summarize the details associated with groundwater gauging activities at the Campbell Street Fuel Farm Site from June 2007 – May 2008.

5.0 GAUGING 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 monitoring wells be gauged for rebound for a period of one year. Only monthly gauging events have, therefore, been conducted to date. EEI submitted monthly gauging data, as well as groundwater sampling data in an annual monitoring report for the site dated December 2005. Sovereign then submitted a follow on annual report dated June 2006. This report does not discuss operation and maintenance of the system since it is currently non-operational.

Upon system deactivation in July 2005, monthly gauging events were conducted at 26 monitoring wells associated with the Campbell Street Fuel Farm site. The gauging list was expanded in 2006 and currently includes a total of 44 monitoring wells. Sovereign field personnel gauged six site monitoring wells using an interface probe monthly from June 2007 to April 2008. Those included USTCSFF-MW03, MW04, MW16, MW17, MW26, and MW27. In January 2008, Sovereign field personnel gauged 44 site monitoring wells. That list of monitoring wells included USTCSFF-MW03, MW04, MW05, MW06, MW07, MW08, MW09, MW10, MW11, MW12, MW14, MW15, MW16, MW17, MW20, MW21, MW22, MW24, MW25, MW26, MW27, DW01, DW02, DW04, DW05, DW06, USTAS142-MW01 (previously reported as MW18), USTAS143-MW26, as well as monitoring wells USTAS4151- DW01A, DW02, MW02, MW02A, MW03, MW04, MW07, MW08, MW09, MW10, MW11, MW12, MW13, MW13A, MW14, and RW01.

Depth to water in the CSFF/AS-143 area ranged from 6.82 feet (USTCSFF-MW17 in June 2007) to 9.58 feet (USTCSFF-MW04 in January 2008) across the site. Depth to water in the AS-4151 area ranged from 2.37 feet (USTAS4151-MW04 in January 2008) to 9.57 feet (USTAS4151-DW02 in January 2008). Groundwater elevation and product thickness data is summarized in Table 2.

Groundwater flow in the CSFF/AS-143 area generally flowed to the south and south southwest in the AS-143 and eastern fuel farm area. A southeastern flow was observed in the western part of the fuel farm area. Figure 4A shows groundwater elevations from the January 2008 gauging event.

Groundwater flow in the AS-4151 area was observed to be mainly in the eastern direction. From the figure, one observes a relative high point in the vicinity of USTAS4151-MW04. Figure 4B shows groundwater elevations and associated contours from the January 2008 event.

6.0 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 can be located in the May 2005 CATLIN report as well as in the 2005-2006 Sovereign Annual Groundwater Monitoring Report.

7.0 CONCLUSIONS AND RECOMMENDATIONS

Based on historical data and fieldwork performed from June 2007 to May 2008, 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, south southwest, and southeast; and in the vicinity of Building AS-4151, flow is generally to the east.

3. Historical groundwater data shows that dissolved phase groundwater impacts do not exceed GCLs.

4. Free product was observed within the fuel farm area in USTCSFF-MW13 from April 2006 to February 2007. Detected amounts ranged from a low of 0.03 feet to a high of 1.59 feet. In an attempt to remove the free product, soil excavation activities were performed in the vicinity of the monitoring well area on February 9, 2007. No free product has been detected since this excavation took place.

5. Monitoring well USTCSFF-MW13 has been replaced with USTCSFF-MW26 and USTCSFF-27. Free product has not been detected in these monitoring wells during monthly gauging events.

6. Monitoring wells USTAS4151-MW01 AND USTAS4151-MW03 were abandoned to complete construction activities behind Building AS-4151 in February 2007.

Based on historical data and fieldwork performed from June 2007 to May 2008, no recurrence of free product has been measured in the vicinity of former monitoring well USTCSFF-MW13. Accordingly, a request for No Further Action with LURs should be submitted to NCDENR. Sovereign recommends the continuance of monthly well gauging of the six currently gauged monitoring wells (USTCSFF-MW03, USTCSFF-MW04, USTCSFF-MW16, USTCSFF-MW17, USTCSFF-MW26, and USTCSFF-MW27) pending a response from NCDENR.

7.0 REFERENCES

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TABLES

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

Well Construction Information
Campbell Street Fuel Farm - Incident # 23297

Monitoring Well	Date Installed	Measured Well Depth (feet below TOC)	Top of Casing Elevation (feet)
USTCSFF-MW03	12/12/1991	17.80	21.07
USTCSFF-MW04	12/12/1991	18.01	21.90
USTCSFF-MW05	12/12/1991	18.06	23.05
USTCSFF-MW06	12/13/1991	18.51	19.55
USTCSFF-MW07	12/13/1991	17.78	20.43
USTCSFF-MW08	11/19/1992	15.50	19.56
USTCSFF-MW09	11/19/1992	16.51	19.49
USTCSFF-MW10	11/19/1992	17.85	20.22
USTCSFF-MW11	11/18/1992	18.65	21.11
USTCSFF-MW12	11/19/1992	16.70	20.64
USTCSFF-MW13	11/20/1992	17.71	21.61
USTCSFF-MW14	11/20/1992	15.62	19.14
USTCSFF-MW15	11/21/1992	18.55	20.72
USTCSFF-MW16	11/20/1992	14.52	20.55
USTCSFF-MW17	11/20/1992	16.62	21.70
USTAS142-MW01	11/22/1992	17.00	17.35
USTCSFF-MW20	11/23/1992	13.72	18.64
USTCSFF-MW21	11/21/1992	16.51	20.95
USTCSFF-MW22	11/23/1992	16.00	20.15
USTCSFF-MW24	11/22/1992	13.61	20.62
USTCSFF-MW25	7/22/2006	18.05	19.07
USTCSFF-MW26	6/20/2007	15.30	16.98
USTCSFF-MW27	7/24/2007	20.00	16.82
USTCSFF-DW01	12/18/1991	32.68	19.92
USTCSFF-DW02	1/7/1992	32.10	22.06
USTCSFF-DW04	11/22/1992	55.10	20.12
USTCSFF-DW05	11/19/1992	44.12	21.78
USTCSFF-DW06	12/2/1992	48.95	20.94
USTAS4151-DW01	12/1/1991	31.90	21.28
USTAS4151-DW01A	6/23/1992	43.49	17.90
USTAS4151-DW02	6/24/1992	43.16	21.87
USTAS4151-MW01A	6/18/1992	18.65	21.88
USTAS4151-MW02	6/18/1992	21.27	21.67
USTAS4151-MW02A	Unknown	18.13	21.11
USTAS4151-MW03	6/18/1992	16.45	21.31
USTAS4151-MW04	6/18/1992	13.80	18.82
USTAS4151-MW05	6/19/1992	13.11	17.77
USTAS4151-MW07	6/20/1992	13.09	17.52
USTAS4151-MW08	1/14/1993	14.73	20.34
USTAS4151-MW09	1/13/1993	14.21	18.04
USTAS4151-MW10	1/12/1993	13.98	20.80
USTAS4151-MW11	1/13/1993	8.43	20.56
USTAS4151-MW12	1/14/1993	16.87	20.00
USTAS4151-MW13	1/14/1993	15.51	19.72
USTAS4151-MW13A	12/1/1991	16.49	21.09
USTAS4151-MW14	1/13/1993	17.56	22.57
USTAS4151-RW01	1/31/1993	14.90	18.00

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

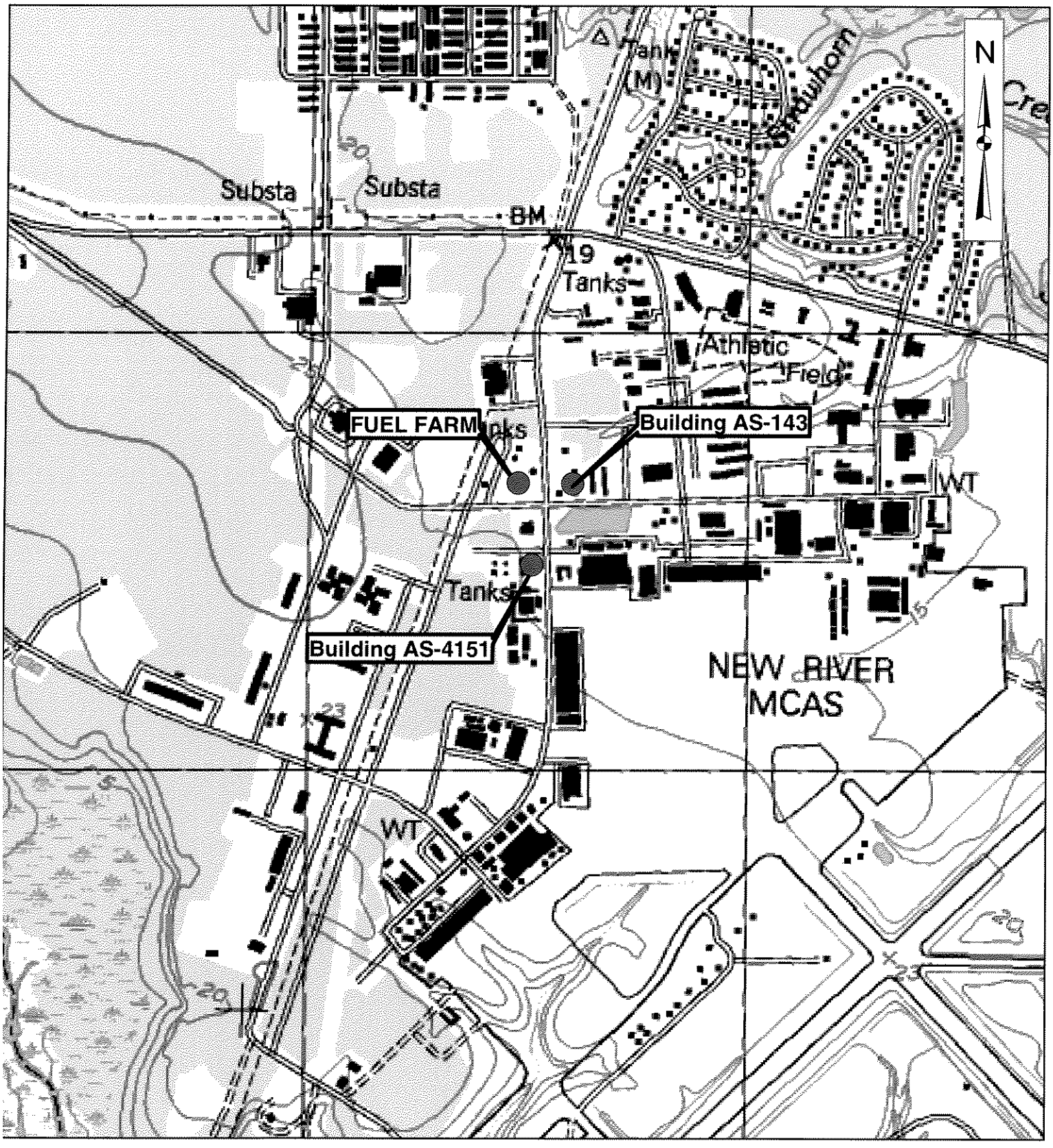
TABLE 2
GROUNDWATER ELEVATION DATA
CAMPBELL STREET FUEL FARM - INCIDENT # 23297

Monitoring Well	Top of Casing Elevation (feet)	Groundwater Elevation (feet)										
		6/29/2007	7/30/2007	8/31/2007	9/28/2007	10/22/2007	11/30/2007	12/31/2007	1/09/2008	2/20/2008	3/24/2008	4/9/2008
USTCSFF-MW03	21.07	14.17	15.85	15.09	13.78	14.07	13.55	15.08	14.49	14.76	15.54	15.48
USTCSFF-MW04	21.90	13.52	14.01	16.47	12.67	12.44	12.43	13.29	13.19	13.45	NM	NM
USTCSFF-MW05	23.05	NM	NM	NM	NM	NM	NM	NM	14.46	NM	NM	NM
USTCSFF-MW06	19.55	NM	NM	NM	NM	NM	NM	NM	13.53	NM	NM	NM
USTCSFF-MW07	20.43	NM	NM	NM	NM	NM	NM	NM	15.17	NM	NM	NM
USTCSFF-MW08	19.56	NM	NM	NM	NM	NM	NM	NM	15.17	NM	NM	NM
USTCSFF-MW09	19.49	NM	NM	NM	NM	NM	NM	NM	12.93	NM	NM	NM
USTCSFF-MW10	20.22	NM	NM	NM	NM	NM	NM	NM	14.56	NM	NM	NM
USTCSFF-MW11	21.11	NM	NM	NM	NM	NM	NM	NM	13.36	NM	NM	NM
USTCSFF-MW12	20.64	NM	NM	NM	NM	NM	NM	NM	13.81	NM	NM	NM
USTCSFF-MW13	21.61	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
USTCSFF-MW14	19.14	NM	NM	NM	NM	NM	NM	NM	13.88	NM	NM	NM
USTCSFF-MW15	20.72	NM	NM	NM	NM	NM	NM	NM	12.75	NM	NM	NM
USTCSFF-MW16	20.55	14.24	14.64	14.70	14.17	13.73	13.49	14.22	14.05	13.98	14.41	14.46
USTCSFF-MW17	21.70	15.69	16.76	15.67	14.94	14.28	14.90	15.53	16.59	15.96	17.24	17.33
USTCSFF-MW21	20.95	NM	NM	NM	NM	NM	NM	NM	13.51	NM	NM	NM
USTCSFF-MW22	20.15	NM	NM	NM	NM	NM	NM	NM	14.31	NM	NM	NM
USTCSFF-MW24	20.62	NM	NM	NM	NM	NM	NM	NM	13.66	NM	NM	NM
USTCSFF-MW26	16.98	14.18	15.63	14.95	14.88	13.50	13.07	13.41	13.77	14.30	15.00	15.25
USTCSFF-MW27	16.82	NM	NM	9.17	9.45	9.56	9.21	9.13	9.05	9.15	9.18	9.77
USTCSFF-DW01	19.92	NM	NM	NM	NM	NM	NM	NM	12.89	NM	NM	NM
USTCSFF-DW02	22.06	NM	NM	NM	NM	NM	NM	NM	13.00	NM	NM	NM
USTCSFF-DW04	20.12	NM	NM	NM	NM	NM	NM	NM	13.16	NM	NM	NM
USTCSFF-DW05	21.78	NM	NM	NM	NM	NM	NM	NM	11.99	NM	NM	NM
USTCSFF-DW06	20.94	NM	NM	NM	NM	NM	NM	NM	12.78	NM	NM	NM
USTAS4151-DW01	21.28	NM	NM	NM	NM	NM	NM	NM	8.25	NM	NM	NM
USTAS4151-DW01A	17.90	NM	NM	NM	NM	NM	NM	NM	8.82	NM	NM	NM
USTAS4151-DW02	21.87	NM	NM	NM	NM	NM	NM	NM	12.30	NM	NM	NM
USTAS4151-MW02	21.67	NM	NM	NM	NM	NM	NM	NM	14.39	NM	NM	NM
USTAS4151-MW02A	21.11	NM	NM	NM	NM	NM	NM	NM	14.41	NM	NM	NM
USTAS4151-MW03	21.31	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM

Monitoring Well	Top of Casing Elevation (feet)	Groundwater Elevation (feet)										
		6/29/2007	7/30/2007	8/31/2007	9/28/2007	10/22/2007	11/30/2007	12/31/2007	1/09/2008	2/20/2008	3/24/2008	4/9/2008
USTAS4151-MW04	18.82	NM	NM	NM	NM	NM	NM	NM	16.45	NM	NM	NM
USTAS4151-MW05	17.77	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
USTAS4151-MW07	17.52	NM	NM	NM	NM	NM	NM	NM	13.74	NM	NM	NM
USTAS4151-MW08	20.34	NM	NM	NM	NM	NM	NM	NM	13.43	NM	NM	NM
USTAS4151-MW09	18.04	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
USTAS4151MW10	20.80	NM	NM	NM	NM	NM	NM	NM	13.88	NM	NM	NM
USTAS4151-MW11	20.56	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
USTAS4151-MW12	20.00	NM	NM	NM	NM	NM	NM	NM	13.82	NM	NM	NM
USTAS4151-MW13A	21.09	NM	NM	NM	NM	NM	NM	NM	14.51	NM	NM	NM
USTAS4151-MW13	19.72	NM	NM	NM	NM	NM	NM	NM	13.72	NM	NM	NM
USTAS4151-MW14	22.57	NM	NM	NM	NM	NM	NM	NM	15.16	NM	NM	NM
USTAS4151-RW01	18.00	NM	NM	NM	NM	NM	NM	NM	12.89	NM	NM	NM

NM = Well DTW not measured; either not accessible or not designated as part of gauging program; groundwater elevation not calculated.
Wells above double line are associated with the CSFF/AS143 area; wells below the double line are associated with the AS4151 area.

FIGURES



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

SOVEREIGN CONSULTING INC.
VIRGINIA BEACH, VIRGINIA

PROJECT	TITLE	FIGURE
CAMPBELL STREET FUEL FARM CAMP LEJEUNE, N.C.	**GENERAL VICINITY TOPOGRAPHIC SITE MAP**	**1**

JOB NO.	DATE	SCALE	DRAWN BY	CHECKED BY
206-063	FEB 2007	1"=500'	KAWS	JAC

USTCSFF-DW03
USTCSFF-MW01
USTCSFF-MW02
FORESTLAND
FENCE
TANK 4
TANK 3
TANK 2
TANK 1
CSFF-MW25
USTCSFF-MW07
RAILROAD
USTCSFF-MW10
AS140
USTCSFF-MW11
USTCSFF-MW17
WHITE STREET
DITCH
PAVEMENT
FORESTLAND
FORESTLAND
PAVEMENT
PAVEMENT
USTCSFF-DW05
USTCSFF-MW27
USTCSFF-MW26
USTCSFF-MW20
WASH PAD
USTCSFF-MW05
OIL/WATER SEPARATOR
AS144
USTCSFF-DW01
USTCSFF-DW02
USTCSFF-MW04
AS145
USTCSFF-MW08
USTCSFF-MW03
USTCSFF-DW06
USTCSFF-MW21
USTCSFF-RW04B
USTCSFF-RW02B
AS143
OIL/WATER SEPARATOR
USTCSFF-DW04
USTCSFF-RW01
USTCSFF-MW12
USTCSFF-MW16
USTCSFF-MW18
USTCSFF-MW09
USTCSFF-MW14
USTCSFF-RW01A
USTCSFF-RW02A
USTCSFF-MW24
USTCSFF-RW01B
AS143-MW26
USTCSFF-RW03B
UST ABANDONED IN PLACE
CAMPBELL STREET
GROUNDWATER RECOVERY AND TREATMENT SYSTEM
DITCH
USTCSFF-MW15
USTCSFF-MW22
N
80 40 0 80
SCALE IN FEET

LEGEND

EXISTING	NEW	DESCRIPTION
		BUILDING
		RECOVERY WELL
		TYPE II MONITORING WELL
		TYPE III MONITORING WELL
		INTERCEPTOR TRENCH

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

SOVEREIGN CONSULTING INC.
VIRGINIA BEACH, VIRGINIA

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

TITLE: SITE MAP WITH MONITORING WELL LOCATIONS - CAMPBELL STREET FUEL FARM/AS-143 AREA

FIGURE 2

JOB NO. 206-063 | DATE: JUNE 2008 | SCALE: 1"=80' | DRAWN BY: THW | CHECKED BY: SAC

206063-CSFF-JUNE08-02

FORESTLAND

AS4145

USTAS4151–MW13

PAVEMENT

USTAS4151–MW07

USTAS4151–MW12

PAVEMENT

USTAS4151–MW03

USTAS4151–MW04

USTAS4151–MW08

USTAS4151–RW02C

USTAS4151–MW13A

USTAS4151–RW01A

AS4151

USTAS4151–DW01A

USTAS4151–RW01C

USTAS4151–RW01

USTAS4151–MW09

USTAS4151–DW02

USTAS4151–MW02

USTAS4151–MW01A

USTAS4151–MW02A

USTAS4151–MW10

USTAS4151–MW14

USTAS4151–MW06

AS4147

WHITE STREET

DITCH

USTCSFF–MW06

RETENTION POND

N

PAVEMENT

WHITE STREET

DITCH

USTAS4151–MW05

AS553

AS518

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.

TITLE: SITE MAP WITH
MONITORING WELL LOCATIONS –
BUILDING AS–4151 AREA

FIGURE 3

JOB NO. 206–063 | DATE: JUNE 2008 | SCALE: 1"=60' | DRAWN BY: THW | CHECKED BY: SAC

206063–CSFF–JUNE08–03

USTCSFF-DW03
USTCSFF-MW01
USTCSFF-MW02
FORESTLAND
FENCE
TANK 4
TANK 3
TANK 2
TANK 1
CSFF-MW25
USTCSFF-MW07
15.17
RAILROAD TRACK
14.56
USTCSFF-MW10
AS140
12.36
16.59
USTCSFF-MW11
USTCSFF-MW17
WHITE STREET
DITCH
PAVEMENT
FORESTLAND
N
14
15
14.5
13.77
USTCSFF-DW05
USTCSFF-MW27
USTCSFF-MW26
AS114
15.17
USTCSFF-MW08
13.19
USTCSFF-DW02
USTCSFF-MW04
AS145
USTCSFF-MW03
13.81
14.05
USTCSFF-RW01
USTCSFF-MW12
USTCSFF-MW16
USTCSFF-DW04
12.93
OIL/WATER SEPARATOR
USTCSFF-MW09
USTCSFF-MW14
USTCSFF-RW01A
USTCSFF-RW02A
CAMPBELL STREET
GROUNDWATER RECOVERY AND TREATMENT SYSTEM
12.79
DITCH
14.31
USTCSFF-MW15
USTCSFF-MW22
PAVEMENT
14.46
USTCSFF-MW05
USTCSFF-MW20
WASH PAD
OIL/WATER SEPARATOR
USTCSFF-DW01
14.49
13.51
USTCSFF-DW06
USTCSFF-RW02B
USTCSFF-MW21
USTCSFF-RW04B
AS143
USTCSFF-MW18
13.66
USTCSFF-RW01B
USTCSFF-MW24
AS143-MW26
USTCSFF-RW03B
UST ABANDONED IN PLACE
PAVEMENT
FORESTLAND
PAVEMENT
80 40 0 80
SCALE IN FEET

LEGEND

EXISTING	NEW	DESCRIPTION
		BUILDING
		RECOVERY WELL
		TYPE II MONITORING WELL
		TYPE III MONITORING WELL
		INTERCEPTOR TRENCH
		GROUNDWATER ELEVATION ISOPLETHS (FOOT MSL)
		APPARENT GROUNDWATER FLOW DIRECTION

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

SOVEREIGN CONSULTING INC.
VIRGINIA BEACH, VIRGINIA

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

TITLE: SHALLOW WELL GROUNDWATER ELEVATIONS
JANUARY 2008
CAMPBELL STREET FUEL FARM / AS-143 AREA

FIGURE: 4A

JOB NO. 206-063 | DATE: JUNE 2008 | SCALE: 1"=80' | DRAWN BY: THW | CHECKED BY: SAC

206063-CSFF-JUNE08-02

FORESTLAND

AS4145

PAVEMENT

WHITE STREET

DITCH

RETENTION POND

PAVEMENT

AS4147

AS4151

AS553

AS518

USTAS4151–MW03

USTAS4151–MW01A

USTAS4151–MW02

USTAS4151–DW02

USTAS4151–MW13

USTAS4151–MW12

USTAS4151–MW07

USTAS4151–MW04

USTAS4151–MW08

USTAS4151–RW02C

USTAS4151–MW13A

USTAS4151–RW01A

USTAS4151–DW01A

USTAS4151–RW01C

USTAS4151–RW01

USTAS4151–MW09

USTAS4151–MW02A

USTAS4151–MW10

USTAS4151–MW14

USTAS4151–MW06

USTCSFF–MW06

USTAS4151–MW05

USTAS4151–DW01

USTAS4151–MW11

13.72

13.82

13.74

16.45

13.43

14.51

13.39

14.39

14.41

13.88

15.16

13.53

13.5

14

14.5

15

N

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)
		GROUNDWATER ELEVATION ISOPLETHS (FOOT MSL)
		APPARENT GROUNDWATER FLOW DIRECTION

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. | DATE

TITLE: SHALLOW WELL GROUNDWATER ELEVATIONS
JANUARY 2008
BUILDING AS-4151 AREA

SCALE: 1"=60' | DRAWN BY: | CHECKED BY:

FIGURE 4B

206063–CSFF–FEB07–03

APPENDIX A
HISTORICAL DATA

Table 4-1 (1 of 8)

Summary of Laboratory Analyses for Groundwater - Campbell Street Fuel Farm 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	[redacted]	[redacted]	[redacted]	<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	[redacted]	[redacted]	<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	[redacted]	<3.0	<3.0
	Methyl Tert Butyl Ether	200	200,000	<1.0	<1.0	<1.0	<1.0	<1.0	[redacted]	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

	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
Building AS-4151 Area	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	[redacted]	NA
	2-Methylnaphthalene	14	12,500	NA	<5.3	NA	NA	NA	NA	[redacted]	NA
	Naphthalene	21	15,500	NA	<5.3	NA	NA	NA	NA	[redacted]	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.
[redacted] 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 Farm Site
December 2003

Campbell Street Fuel Farm 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-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
EPA 602 (µg/L)												
Benzene	1	5,000	<1.0	<1.0	[redacted]	<1.0	[redacted]	[redacted]	[redacted]	<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	[redacted]	19.1	<1.0	<1.0	<1.0
Toluene	1000	257,500	<1.0	<1.0	<1.0	<1.0	<1.0	95.2	98	<1.0	<1.0	<1.0
Xylenes (total)	530	87,500	<3.0	<3.0	1.8 J	<3.0	32.4	[redacted]	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	36.1	<5.4
Acenaphthylene	210	1,985	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	[redacted] J	[redacted] J	<5.4
2-Methylnaphthalene	14	12,500	NA	NA	NA	NA	NA	NA	NA	2.9 J	<5.1	<5.4
Naphthalene	21	15,500	NA	NA	NA	NA	NA	NA	NA	[redacted]	[redacted]	<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

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			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	[redacted]	<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	1,985	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	[redacted]	NA	NA	NA	NA	[redacted]	NA
2-Methylnaphthalene	14	12,500	NA	[redacted]	NA	NA	NA	NA	<45	NA
Naphthalene	21	15,500	NA	[redacted]	NA	NA	NA	NA	[redacted]	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

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 cell indicates detectable concentration above the North Carolina Groundwater Quality Standards

Table 4-1 (3 of 8)

Summary of Laboratory Analyses for Groundwater - Campbell Street Fuel Fram Site

March 2004

	Sample Location	NCGWQS	GCL	MW-03	MW-11	MW-12	MW-14	MW-18	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
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	[redacted]	[redacted]	[redacted]	<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	[redacted]	[redacted]	<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	[redacted]	[redacted]	<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

	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
Building AS-4151 Area	EPA 602 (µg/L)											
	Benzene	1	5,000	<1.0	<1.0	[redacted]	<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	1.8	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	[redacted]	NA	NA	NA	NA	[redacted] J	NA
	2-Methylnaphthalene	14	12,500	NA	NA	[redacted]	NA	NA	NA	NA	<25	NA
	Naphthalene	21	15,500	NA	NA	[redacted]	NA	NA	NA	NA	[redacted] 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	<0.019

* 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.

[redacted] 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 Frm Site

June 2004

Campbell Street Fuel Farm 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			06/21/04	06/21/04	06/21/04	06/21/04	06/21/04	06/23/04	06/23/04	06/21/04	06/23/04
EPA 602 (µg/L)											
Benzene	1	5,000	<1.0	<1.0	<1.0	<1.0	[illegible]	[illegible]	[illegible]	<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	[illegible]	[illegible]	<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	28.5	<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	[illegible]	<5.2	[illegible]	[illegible]	[illegible]	<5.1	<5.0
2-Methylnaphthalene	14	12,500	<5.1	<5.1	7.4	<5.2	[illegible]	[illegible]	9	<5.1	<5.0
Naphthalene	21	15,500	<5.1	<5.1	16.7	<5.2	[illegible]	[illegible]	[illegible]	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	[illegible]	<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	[illegible]	<5.1	<5.1	[illegible] J	<5.0	16.2
2-Methylnaphthalene	14	12,500	[illegible]	[illegible]	[illegible]	<5.1	<5.1	<5.2	<5.0	<5.2
Naphthalene	21	15,500	[illegible]	[illegible]	[illegible]	<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 Farm Site

September 2004

	Sample Location	NCGWQS	GCL	MW-03	MW-11	DUP *	MW-12	MW-14	MW-18	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 Farm and Building AS-143 Area	EPA 602 (µg/L)												
	Benzene	1	5,000	<1.0	<1.0	<1.0	<1.0	<1.0	[redacted]	[redacted]	[redacted]	<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	[redacted]	[redacted]	<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	[redacted]	161	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	[redacted]	<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	[redacted]	<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

	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
Building AS-4151 Area	EPA 602 (µg/L)									
	Benzene	1	5,000	<1.0	[redacted]	<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	[redacted]	[redacted]	NA	NA	NA	NA	NA
	2-Methylnaphthalene	14	12,500	[redacted]	[redacted]	NA	NA	NA	NA	NA
	Naphthalene	21	15,500	[redacted]	[redacted]	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

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.

[redacted] indicated detectable concentration above the North Carolina Groundwater Quality Standards

Table 4-1 (6 of 8)

Summary of Laboratory Analyses for Groundwater - Campbell Street Fuel Fram Site

December 2004

Campbell Street Fuel Farm 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	DUP *
Date Sampled			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
EPA 602 (µg/L)												
Benzene	1	5,000	<1.0	<1.0	<1.0	<1.0	[illegible]	[illegible]	[illegible]	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	[illegible]	14.8	<3.0	<3.0
Methyl Tert Butyl Ether	200	200,000	<1.0	<1.0	<1.0	<1.0	<1.0	50.8	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

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			12/27/04	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	[illegible]	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	38.1	NA	NA	NA	NA	<24	NA
1-Methylnaphthalene	RL	NE	NA	[illegible]	NA	NA	NA	NA	[illegible]	NA
2-Methylnaphthalene	14	12,500	NA	[illegible]	NA	NA	NA	NA	[illegible]	NA
Naphthalene	21	15,500	NA	1610	NA	NA	NA	NA	[illegible]	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

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

Area	Sample Location	NCGWQS	GCL	MW-03	MW-11	MW-12	MW-14	MW-16	MW-21	MW-24	DW-02	DW-06
Campbell Street Fuel Ram and Building AS-143 Area	Date Sampled			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
	EPA 602 (µg/L)											
	Benzene	1	5,000	<1.0	<1.0	<1.0	<1.0	64.4	99.7	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	33.8	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	38.9	<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	12,600	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

Area	Sample Location	NCGWQS	GCL	13-MW01	13-DW01	122-MW03	122-MW04	122-MW07	122-MW08	122-MW09	DUP *	122-MW11
Buildg AS-4151 Area	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	1650	NA	NA	NA	NA	38.5	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

Area	Sample Location	NCGWQS	GCL	MW-03	MW-11	MW-12	MW-14	MW-18	MW-21	MW-24	DW-02	DW-06
Campbell Street Fuel Rarm and Building AS-143 Area	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	[illegible]	[illegible]	[illegible]	<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**	[illegible]	<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
Area	**Sample Location**	**NCGWQS**	**GCL**	**13-MW01**	**13-DW01**	**122-MW03**	**122-MW04**	**122-MW07**	**122-MW08**	**122-MW09**	**DUP ***	**122-MW11**
Buildig AS-4151 Area	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	[illegible]	<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	[illegible] J	[illegible]	NA
	2-Methylnaphthalene	14	12,500	NA	[illegible] J	NA	NA	NA	NA	<5.1	<5.0	NA
	Naphthalene	21	15,500	NA	[illegible]	NA	NA	NA	NA	**6.3**	**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

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.

TABLE 4
FEBRUARY 2007 MW13 AREA EXCAVATION SOIL SAMPLING RESULTS
CAMPBELL STREET FUEL FARM - INCIDENT # 23297
Analytical Method – EPA Method 8260

Sample ID	Contaminant of Concern →		Acetone	Benzene	2-Butanone	n-Butylbenzene	Sec-Butylbenzene	Carbon disulfide	Ethylbenzene	Iodomethane	Isopropylbenzene	4-Isopropyltoluene	Naphthalene	n-Propyl benzene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	m-,p-Xylene
	Date Collected	**Sample Depth** (ft BGS)															
CSFF-MW13-SS01	2/9/2007	4-5	<4.64	<0.186	<4.64	**1.09**	0.497	<0.186	**0.312**	**0.258**	<0.186	**0.531**	**1.59**	**0.432**	**3.13**	**1.01**	<0.371
CSFF-MW13-SS02	2/9/2007	4-5	<11.7	<0.467	<11.7	**2.33**	**0.981**	<0.467	**0.532**	**0.537**	<0.467	**1.35**	**2.28**	**0.701**	**4.99**	**1.59**	<0.934
CSFF-MW13-SS03	2/9/2007	4-5	**0.0878**	**0.00589**	**0.0309**	<0.00474	<0.00474	**0.0136**	**0.00807**	<0.00474	<0.00474	<0.00474	**0.0257**	<0.00474	**0.0211**	**0.0108**	<0.00948
CSFF-MW13-SS04	2/9/2007	4-5	<30.1	<1.2	<30.1	**14.7**	**6.39**	<1.2	**3.38**	<1.2	**1.84**	**5.56**	**12.8**	**4.96**	**33.3**	**11.7**	**2.44**
Soil to groundwater MSCC (mg/kg)			2.8	0.0056	17	4.3	3.3	4.3	4.6	NE	1.7	NE	0.58	1.7	7.5	7.3	5
Residential MSCC (mg/kg)			1,564	18	9,385	626	626	1,564	1,560	NE	1,564	NE	313	626	782	782	3,129
Industrial/Commercial MSCC (mg/kg)			40,880	164	245,280	16,350	16,350	40,880	40,000	NE	40,880	NE	8,176	16,350	20,440	20,440	81,760

- MSCC = maximum soil contamination concentration
- ft. BGS = feet below ground surface
- Results reported in mg/kg.
- mg/kg =milligrams per kilogram
- **BOLD =** Detected concentration.

TABLE 5
FEBRUARY 2007 MW13 AREA EXCAVATION SOIL SAMPLING RESULTS
CAMPBELL STREET FUEL FARM - INCIDENT # 23297
Analytical Method – EPA Method 8270

Sample ID	Contaminant of Concern →		Benzo[a]anthracene	Chrysene	Fluoranthene	2-Methylnaphthalene	Naphthalene	Phenanthrene	Pyrene	All Other Compounds
	Date Collected	**Sample Depth** (ft BGS)								
CSFF-MW13-SS01	2/9/2007	4-5	<0.358	<0.358	**0.426**	**5.55**	**3.45**	**0.537**	**0.401**	BQL
CSFF-MW13-SS02	2/9/2007	4-5	**0.379**	**0.386**	**1.29**	**3.87**	**2.62**	**1.06**	**1.42**	BQL
CSFF-MW13-SS03	2/9/2007	4-5	<0.348	<0.348	<0.348	<0.348	<0.348	<0.348	<0.348	BQL
CSFF-MW13-SS04	2/9/2007	4-5	<3.57	<3.57	<3.57	**24.1**	**14.3**	<3.57	<3.57	BQL
Soil to groundwater MSCC (mg/kg)			0.34	38	280	1.7	0.58	60	290	Varies
Residential MSCC (mg/kg)			0.88	88	620	63	313	469	469	Varies
Industrial/Commercial MSCC (mg/kg)			8	780	16,400	1,635	8,176	12,264	12,264	Varies

- MSCC = maximum soil contamination concentration
- ft. BGS = feet below ground surface
- Results reported in mg/kg.
- mg/kg =milligrams per kilogram
- **BOLD =** Detected concentration.

TABLE 6
FEBRUARY 2007 MW13 AREA EXCAVATION SOIL SAMPLING RESULTS
CAMPBELL STREET FUEL FARM - INCIDENT # 23297
Analytical Method: MADEP Method VPH/EPH

Contaminant of Concern →			C_5-C_8 Aliphatics	C_9-C_{12} Aliphatics	C_9-C_{10} Aromatics	C_9-C_{18} Aliphatics	C_{19}-C_{36} Aliphatics	C_{11}-C_{22} Aromatics
Sample ID	**Date Collected**	**Sample Depth** (ft BGS)						
CSFF-MW13-SS01	2/9/2007	4-5	**47**	**180**	**160**	**450**	<20	**240**
CSFF-MW13-SS02	2/9/2007	4-5	**58**	**210**	**200**	<10	<10	<10
CSFF-MW13-SS03	2/9/2007	4-5	<10	<10	<10	<10	<10	<10
CSFF-MW13-SS04	2/9/2007	4-5	**580**	**760**	**460**	**6,500**	<200	**790**

TABLE 7
FEBRUARY 2007 MW13 AREA EXCAVATION SOIL SAMPLING RESULTS
CAMPBELL STREET FUEL FARM - INCIDENT # 23297
Analytical Method: MADEP Method VPH/EPH as compared to NCDENR MSCCs

Contaminant of Concern →			C_5-C_8 Aliphatics	C_9-C_{18} Aliphatics	C_{19}-C_{36} Aliphatics	C_9-C_{22} Aromatics
Sample ID	**Date Collected**	**Sample Depth** (ft BGS)				
CSFF-MW13-SS01	2/9/2007	4-5	**47**	**630**	<20	**400**
CSFF-MW13-SS02	2/9/2007	4-5	**58**	**<220**	<10	**<210**
CSFF-MW13-SS03	2/9/2007	4-5	<10	<20	<10	<20
CSFF-MW13-SS04	2/9/2007	4-5	**580**	**7,260**	<200	**1,250**
Soil to Groundwater MSCC (mg/kg)			72	3,300	##	34
Residential MSCC (mg/kg)			939	9,386	93,860	469
Industrial/Commercial MSCC (mg/kg)			24,528	245,280	#	12,264

- All results reported in mg/kg
- mg/kg = milligrams per kilogram
- MSCC = Maximum Soil Contaminant Concentration
- <# = less than the reporting limit
- # = Health Based Level >100%
- ## = Considered immobile
- **BOLD** = detected concentration

APPENDIX B
FIELD DATA

GROUNDWATER MONITORING WELL GAUGING DATA

Date: 4/9/2008
SITE: CSFF
MCB Camp LeJeune and New River MCAS
Gauged By: AW

WELL NUMBER	DEPTH TO BOTTOM MEASURED FROM TOC		TIME OF GAUGING	DEPTH TO WATER FROM TOP OF CASING	DEPTH TO LNAPL FROM TOP OF CASING	LNAPL THICKNESS	COMMENTS
	Installed	Measured					
USTCSFF-MW03		-	1206	6.21	-	-	
USTCSFF-MW04		-	-	-	-	-	Blocked off by excavation area
USTCSFF-MW16		-	1159	6.99	-	-	
USTCSFF-MW17		-	1227	5.18	-	-	
USTCSFF-MW26		-	1220	1.73	-	-	
USTCSFF-MW27		-	1215	7.05	-	-	

GROUNDWATER MONITORING WELL GAUGING DATA

Date: 3/24/2008
SITE: CSFF
MCB Camp LeJeune and New River MCAS
Gauged By: AW

WELL NUMBER	DEPTH TO BOTTOM MEASURED FROM TOC		TIME OF GAUGING	DEPTH TO WATER FROM TOP OF CASING	DEPTH TO LNAPL FROM TOP OF CASING	LNAPL THICKNESS	COMMENTS
	Installed	Measured					
USTCSFF-MW03		-	1206	6.15	-	-	
USTCSFF-MW04		-	-	-	-	-	Blocked off by excavation area
USTCSFF-MW16		-	1200	7.04	-	-	
USTCSFF-MW17		-	1225	5.27	-	-	
USTCSFF-MW26		-	1217	1.98	-	-	
USTCSFF-MW27		-	1212	7.64	-	-	

GROUNDWATER MONITORING WELL GAUGING DATA

Date: 02/20/08
SITE: CSFF
MCB Camp LeJeune and New River MCAS
Gauged By: AW

WELL NUMBER	DEPTH TO BOTTOM MEASURED FROM TOC		TIME OF GAUGING	DEPTH TO WATER FROM TOP OF CASING	DEPTH TO LNAPL FROM TOP OF CASING	LNAPL THICKNESS	COMMENTS
	Installed	Measured					
USTCSFF-MW03	–	–	1128	6.93	–	–	
MW04		–	1100	9.32	–	–	
MW16		–	1122	7.47	–	–	
MW17		–	1135	6.55	–	–	
MW26		–	1112	2.68	–	–	
MW27		–	1107	7.67	–	–	

GROUNDWATER MONITORING WELL GAUGING DATA

Date: 01/09/00
SITE: CSFF
MCB Camp LeJeune and New River MCAS
Gauged By: AW/SM

WELL NUMBER	DEPTH TO BOTTOM MEASURED FROM TOC		TIME OF GAUGING	DEPTH TO WATER FROM TOP OF CASING	DEPTH TO LNAPL FROM TOP OF CASING	LNAPL THICKNESS	COMMENTS
	Installed	Measured					
USTCSFF-MW03		17.65	0907	7.20	–	–	
MW04		18.00	0942	9.58	–	–	
MW05		18.03	0830	9.39	–	–	
MW06		18.45	1100	6.87	–	–	
MW07		17.78	1037	5.87	–	–	
MW08		15.54	0937	5.28	–	–	
MW09		16.58	0927	7.52	–	–	
MW10		17.47	1027	6.61	–	–	
MW11		12.55	1014	8.67	–	–	
MW12		16.50	0917	7.60	–	–	
MW14		15.78	0922	6.19	–	–	
MW15		18.53	1224	8.33	–	–	
MW16		14.55	0916	7.40	–	–	
MW17		16.58	1008	5.92	–	–	
USTAS142-MW01		25.50	0843	9.10	–	–	
USTCSFF-MW20		13.75	0836	4.99	–	–	
MW21		16.50	0853	8.25	–	–	
MW22		16.11	1047	7.38	–	–	
MW24		13.60	0859	7.96	–	–	
MW25		18.12	1021	6.70	–	–	
MW26		15.10	1003	3.21	–	–	
MW27		19.80	0959	7.77	–	–	

GROUNDWATER MONITORING WELL GAUGING DATA

Date: 01/09/08
SITE: CSFF
MCB Camp LeJeune and New River MCAS
Gauged By: AW/SM

WELL NUMBER	DEPTH TO BOTTOM MEASURED FROM TOC		TIME OF GAUGING	DEPTH TO WATER FROM TOP OF CASING	DEPTH TO LNAPL FROM TOP OF CASING	LNAPL THICKNESS	COMMENTS
	Installed	Measured					
USTCSFF-DN01		32.64	0912	7.90	—	—	
DN02		32.12	0947	9.91	—	—	
DN04		35.10	0933	7.91	—	—	
DN05		44.34	0953	10.80	—	—	
DN06		45.90	0848	9.05	—	—	
UST AS4151-DN01A		31.93	1118	9.09			
DN02		43.15	1136	9.57	—	—	
MW01		—	—	—	—	—	Paved over
MW02		21.22	1141	7.28	—	—	
MW02A		18.05	1112	6.70	—	—	
MW03		—	—	—	—	—	Paved over
MW04		13.77	1153	2.37	—	—	
MW07		10.36	1205	3.78	—	—	
MW08		14.67	1159	6.91	—	—	
MW10		13.91	1107	6.92	—	—	
MW12		16.82	1147	6.18	—	—	
MW13A		16.45	1124	6.58	—	—	
MW13		15.70	1211	6.00	—	—	
MW14		17.54	1217	7.41	—	—	
RW01		14.92	1130	5.11	—	—	
UST JP5-MW01		12.05	1053	3.95	—	—	

GROUNDWATER MONITORING WELL GAUGING DATA

Date: 12/31/07
SITE: CSFF
MCB Camp LeJeune and New River MCAS
Gauged By: AW

WELL NUMBER	DEPTH TO BOTTOM MEASURED FROM TOC		TIME OF GAUGING	DEPTH TO WATER FROM TOP OF CASING	DEPTH TO LNAPL FROM TOP OF CASING	LNAPL THICKNESS	COMMENTS
	Installed	Measured					
USTCSFF-MW03		—	1036	6.61	—	—	
MW04		—	1025	9.48	—	—	
MW16		—	1031	7.23	—	—	
MW17		—	1054	6.98	—	—	
MW26		—	1042	3.57	—	—	
MW27		—	1047	7.69	—	—	

GROUNDWATER MONITORING WELL GAUGING DATA

Date: 11/30/07
SITE: CSFF
MCB Camp LeJeune and New River MCAS
Gauged By: AW

WELL NUMBER	DEPTH TO BOTTOM MEASURED FROM TOC		TIME OF GAUGING	DEPTH TO WATER FROM TOP OF CASING	DEPTH TO LNAPL FROM TOP OF CASING	LNAPL THICKNESS	COMMENTS
	Installed	Measured					
USTCSFF-MW03		–	1215	8.14	–	–	
MW04		–	1154	10.34	–	–	
MW16		–	1200	7.96	–	–	
MW17		–	1220	7.61	–	–	
MW26		–	1206	3.91	–	–	
MW27		–	1210	7.61	–	–	

GROUNDWATER MONITORING WELL GAUGING DATA

Date: 10/22/07
SITE: CSFF
MCB Camp LeJeune and New River MCAS
Gauged By: KM

WELL NUMBER	DEPTH TO BOTTOM MEASURED FROM TOC		TIME OF GAUGING	DEPTH TO WATER FROM TOP OF CASING	DEPTH TO LNAPL FROM TOP OF CASING	LNAPL THICKNESS	COMMENTS
	Installed	Measured					
USTCSFF-MW03		–	1249	7.62	–	–	
MW04		–	1232	10.33	–	–	
MW16		–	1257	7.72	–	–	
MW17		–	1240	8.23	–	–	
MW26		–	1215	3.48	–	–	
MW27		–	1226	7.26	–	–	

GROUNDWATER MONITORING WELL GAUGING DATA

Date: 09/28/07
SITE: CSFF
MCB Camp LeJeune and New River MCAS
Gauged By: KM

WELL NUMBER	DEPTH TO BOTTOM MEASURED FROM TOC		TIME OF GAUGING	DEPTH TO WATER FROM TOP OF CASING	DEPTH TO LNAPL FROM TOP OF CASING	LNAPL THICKNESS	COMMENTS
	Installed	Measured					
USTCSFF-MW03		–	0831	7.91	–	–	
MW04		–	0846	10.10	–	–	
MW16		–	0839	7.28	–	–	
MW17		–	0854	7.57	–	–	
MW26		–	0902	2.10	–	–	
MW27		–	0911	7.37	–	–	

GROUNDWATER MONITORING WELL GAUGING DATA

Date: 08/31/07
SITE: CSFF
MCB Camp LeJeune and New River MCAS
Gauged By: KM

WELL NUMBER	DEPTH TO BOTTOM MEASURED FROM TOC		TIME OF GAUGING	DEPTH TO WATER FROM TOP OF CASING	DEPTH TO LNAPL FROM TOP OF CASING	LNAPL THICKNESS	COMMENTS
	Installed	Measured					
USTCSFF-MW03		–	0820	6.60	–	–	
MW04		–	0835	6.30	–	–	
MW16		–	0827	6.75	–	–	
MW17		–	0842	6.84	–	–	
MW26		–	0850	2.03	–	–	
MW27		–	0900	7.65	–	–	

GROUNDWATER MONITORING WELL GAUGING DATA

Date: 07/30/07
SITE: CSFF
MCB Camp LeJeune and New River MCAS
Gauged By: KM

WELL NUMBER	DEPTH TO BOTTOM MEASURED FROM TOC		TIME OF GAUGING	DEPTH TO WATER FROM TOP OF CASING	DEPTH TO LNAPL FROM TOP OF CASING	LNAPL THICKNESS	COMMENTS
	Installed	Measured					
USTCSFF-MW03		—	1510	5.84	—	—	
MW04		—	1526	8.76	—	—	
MW16		—	1500	6.81	—	—	
MW17		—	1537	5.75	—	—	
MW26		—	1517	1.35	—	—	

GROUNDWATER MONITORING WELL GAUGING DATA

Date: 06/29/07
SITE: CSFF
MCB Camp LeJeune and New River MCAS
Gauged By: KM

WELL NUMBER	DEPTH TO BOTTOM MEASURED FROM TOC		TIME OF GAUGING	DEPTH TO WATER FROM TOP OF CASING	DEPTH TO LNAPL FROM TOP OF CASING	LNAPL THICKNESS	COMMENTS
	Installed	Measured					
USTCSFF-MW03		–	1205	7.52	–	–	
MW04		–	1220	9.25	–	–	
MW16		–	1225	7.21	–	–	
MW17		–	1215	6.82	–	–	
MW26		–	1210	2.80	–	–	

GROUNDWATER MONITORING WELL GAUGING DATA

Date: 05/07/07
SITE: CSFF
MCB Camp LeJeune and New River MCAS
Gauged By: KM

WELL NUMBER	DEPTH TO BOTTOM MEASURED FROM TOC		TIME OF GAUGING	DEPTH TO WATER FROM TOP OF CASING	DEPTH TO LNAPL FROM TOP OF CASING	LNAPL THICKNESS	COMMENTS
	Installed	Measured					
USTCSFF-MW03		–	1120	6.95	–	–	
MW04		–	1125	8.40	–	–	
MW16		–	1122	6.86	–	–	
MW17		–	1127	6.06	–	–	