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SUPPLEMENTAL ASSESSMENT REPORT FORMER UNDERGROUND STORAGE TANK
1817 (UST 1817) ON DUNCAN ROAD MCB CAMP LEJEUNE NC
7/1/2011
CH2M HILL

**Supplemental Assessment Report
Former UST-1817, Building 1817 on Duncan Road**

**Marine Corps Base Camp Lejeune
Jacksonville, Onslow County, North Carolina**

Contract Number: N62470-08-D-1000

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Acronyms and Abbreviations

AHEC	AH Environmental Consultants
Base	Marine Corps Base Camp Lejeune
bgs	below ground surface
Catlin	Richard Catlin and Associates Inc.
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
Clean East	Clean East Associates, Inc.
CSI	Confirmatory Sampling Investigation
CVOC	chlorinated volatile organic compound
DCE	dichloroethene
DOT	Department of Transportation
EPH	extractable petroleum hydrocarbons
FID	flame ionization detector
Fm	formation
ft	foot/feet
ft/day	feet per day
GCL	gross contamination level
HPIA	Hadnot Point Industrial Area
ID	inner diameter
IDW	investigation-derived waste
IRP	Installation Restoration Program
MADEP	Massachusetts Department of Environmental Protection
MCB CamLej	Marine Corps Base Camp Lejeune
µg/L	micrograms per liter
mg/kg	milligrams per kilogram
MSCC	maximum soil contamination concentration
NAVFAC	Naval Facilities Engineering Command Mid-Atlantic
NC	North Carolina
NCAC	North Carolina Administrative Code
NCDEH	North Carolina Department of Environmental Health
NCDENR	North Carolina Department of Environment and Natural Resources
NCGWQS	North Carolina Groundwater Quality Standard
O&G	Oil & Grease
ONWASA	Onslow Water and Sewer Authority
ORP	oxidation reduction potential
PCE	tetrachloroethene

ppm	parts per million
PSW	public supply well
RCRA	Resource Conservation and Recovery Act
RFI	RCRA Facility Investigation
SAR	Supplemental Assessment Report
SVOC	semivolatile organic compound
SWAP	Source Water Assessment Program
SWMU	solid waste management unit
TCE	trichloroethene
TIC	tentatively identified compounds
TPH	total petroleum hydrocarbons
USEPA	United States Environmental Protection Agency
UST	underground storage tank
VOC	volatile organic compound
VPH	volatile petroleum hydrocarbons
WHPP	Wellhead Protection Plan
WTP	water treatment plant

Purpose of Investigation

The purpose of this Supplemental Assessment Report (SAR) is to provide the North Carolina Department of Environment and Natural Resources (NCDENR) Underground Storage Tank (UST) section with the necessary information to classify the level of environmental risk associated with a potential petroleum release at former UST Site 1817. This SAR was conducted by CH2M HILL for the Naval Facilities Engineering Command Mid-Atlantic (NAVFAC) in accordance with the December 2008, NCDENR *Guidelines for Assessment and Corrective Action for UST Releases (UST Guidelines)*, amended with updated regulatory standards in January 2010 (NCDENR, 2008, 2010a, and 2010b), and the *Work Plan for Phase I Limited Site Assessments and Administrative Closure at UST/AST Sites* (CH2M HILL, 2010b).

Site Information

1.1 Site Identification

Date of Report: June 2011

Facility ID: 0-002740

UST Incident #: 23338

Site Name: Former UST-1817, Building 1817 on Duncan Road

Location: MCB CamLej, Onslow County, North Carolina

Nearest City/Town: Jacksonville

UST Owner: U.S. Department of Defense
Commanding General
I&E/EMD/EQB
PSC 20004
MCB Camp Lejeune, NC 28542-0004
910-451-5068

UST Operator: Same As Above

Property Owner: Same As Above

Property Occupant: Storage and maintenance facility located on Duncan Street near
McHugh Boulevard

Consultant/Contractor: CH2M HILL, Inc.
3201 Beechleaf Court, Suite 300
Raleigh, NC 27604

Analytical Laboratory: Katahdin Analytical (NC Certification #341)
600 Technology Way
Scarborough, ME 04074

1.2 Release Information

Date Release Discovered: 1996

Estimated Quantity of Release: Unknown

Potential Source of Release: Leaking UST

Size and Content of UST: (1) 300-gallon waste oil tank

Latitude and Longitude: N 34° 39' 32.04"
W 77° 20' 6.08"

1.3 Certification

I, Daniel Hockett a certified Professional Engineer / Licensed Geologist (circle one) for CH2M HILL, do certify that the information contained in this report is correct and accurate to the best of my knowledge.

Daniel Hockett

Daniel Hockett, P.G.
NC License No. 2122



Site Information

2.1 Site Description

Marine Corps Base Camp Lejeune (MCB CamLej or the Base) encompasses approximately 236 square miles of land in Onslow County, North Carolina (NC), adjacent to the southern boundary of the City of Jacksonville (**Figure 2-1**). Jacksonville is the largest city near MCB CamLej and contains approximately half of the county's total population. Since 1990, much of the MCB CamLej complex has been part of Jacksonville. The remaining areas adjacent to the Base are generally rural. MCB CamLej is bordered by the Atlantic Ocean to the south, U.S. Route 17 to the west, State Route 24 to the north, the town of Hubert, North Carolina to the east, and is bisected by the New River, which flows into the Atlantic Ocean in a southeasterly direction.

The former UST system was located adjacent to Building 1817, approximately 200 feet (ft) west of Duncan Road near McHugh Boulevard (**Figure 2-2**). The site is within the Hadnot Point Industrial Area (HPIA) of MCB CamLej. The property consists of a steel-frame warehouse building used to store and maintain military equipment, and the site is used as a maintenance and production facility. The area directly surrounding the site is developed with maintenance and production facilities, asphalt, and gravel lots.

2.2 Environmental History of UST-1817

Former UST-1817 was located adjacent to Building 1817 in the HPIA (**Figure 2-2**) and consisted of one 300-gallon waste oil tank. The tank and associated piping (**Appendix A**) were installed in 1977 and removed by Clean East Associates, Inc. (Clean East) in 1996 (Clean East, 1996). According to the tank closure report, the UST was observed to be in poor condition with visible holes (Clean East, 1996). Approximately 28 tons of petroleum contaminated soils were removed from the UST excavation. One confirmatory soil sample was collected from approximately one foot (ft) below the base of the tank, and one composite soil sample was collected from the excavated soil stockpile. Petroleum-related hydrocarbons were detected in the soil samples. Additionally, the total petroleum hydrocarbons (TPH) Oil & Grease (O&G) concentration exceeded the North Carolina action level in both samples (Clean East, 1996). A Limited Site Assessment was conducted by Richard Catlin and Associates Inc. (Catlin) in December 1997 to assess the nature and extent of contamination at UST-1817. TPH O&G was detected in the subsurface soil at a concentration below the 250 milligrams per kilogram (mg/kg) NC action level. Tetrachloroethene (PCE), a chlorinated volatile organic compound (CVOC), was also detected in the soil. Petroleum-related hydrocarbons were not detected in groundwater; however, several CVOCs were detected in the groundwater sample at concentrations exceeding North Carolina Groundwater Quality Standards (NCGWQS).

In a letter dated June 21, 2001, MCB CamLej informed NCDENR that the UST site would be transferred to the Resource Conservation and Recovery Act (RCRA) program due to the

detection of CVOCs in groundwater samples collected next to the former waste oil tank. UST-1817 was incorporated into the RCRA program as Solid Waste Management Unit (SWMU) 360.

Additional site assessments have been on-going under the RCRA program, and included a Confirmatory Sampling Investigation (CSI) and RCRA Facility Investigation (RFI). The CSI was conducted for SWMU 360 in March and April, 2002. Several CVOCs, semivolatile organic compounds (SVOCs), pesticides, and metals were detected in soil and groundwater samples at concentrations exceeding applicable screening criteria; however, petroleum-related hydrocarbons were not detected at concentrations exceeding regulatory criteria.

The RFI was completed in October 2005, and included sampling of surface soil, subsurface soil, and groundwater media throughout SWMU 360, for target analytes VOCs, SVOCs, pesticides, and metals. The RFI concluded that PCE impacted subsurface soil was present at SWMU 360, but limited to the vicinity of Building 1817. PCE and trichloroethene (TCE) were detected in groundwater samples, and an additional investigation was recommended to define the extent of the contamination. As a result, former SWMU 360 has been transferred to the Installation Restoration Program (IRP) as Site 96 to further assess potential environmental and human health risks under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) framework. No pesticides or petroleum related hydrocarbons were detected at concentrations exceeding regulatory criteria during the RFI investigation activities.

Risk Characterization

This section presents a summary of the information necessary to assign a risk classification for the site. The questionnaire format was provided in the *UST Guidelines – Appendix B* (NCDENR, 2008).

3.1 Groundwater/Surface Water/Vapor Impacts

3.1.1 High Risk

1. *Has the release contaminated any water supply well including any well used for non-drinking purposes?*

NO: The release has not contaminated any water supply well, either potable or non-potable.

2. *Is a water supply well used for drinking water located within 1,000 ft of the source area of the release?*

NO: There are no water supply wells within 1,000 ft of the source area. The nearest supply well is an active public supply well (PSW), well PSW-HP652, located approximately 9,000 ft to the northeast.

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 ft of the source area of the release?*

NO: There are no water supply wells located within 250 ft of the source area.

4. *Does groundwater within 500 ft 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)?*

NO: Treated municipal water supply is available to the site and surrounding area from Onslow Water and Sewer Authority (ONWASA) or Base Water Treatment Plants (WTPs), both receiving their raw water supply from PSWs. There are no PSWs located within 500 ft of the source area.

5. *Do vapors from the release pose a threat of explosion because of accumulation of the vapors in a confined space or pose other threats to public health, public safety or the environment?*

NO: Vapors from the source area do not pose a threat of explosion in a confined space or pose a threat to public health, public safety, or the environment. The maximum flame ionization detector (FID) reading from the headspace of a resealable plastic bag containing subsurface soil samples was 0.1 parts per million (ppm) and the air

monitoring during soil sampling activities indicated that the explosive gas concentrations were below the lower explosive limit.

6. *Are there any other factors that would cause the release to pose an imminent danger to public health, public safety, or the environment?*

NO: There are no other factors that would cause the release to pose an imminent danger to public health, public safety, or the environment.

3.1.2 Intermediate Risk

1. *Is a surface water body located within 500 ft of the source area of the release?*

YES: An intermittent tributary of Codgels Creek is located approximately 350 ft north of the former source area. Recent construction activities have resulted in the intermittent tributary being buried or diverted through an underground culvert (**Figure 3-1**).

2. *If YES, does the maximum groundwater contaminant concentration exceed the surface water quality standards and criteria found in 15A North Carolina Administrative Code (NCAC) 2B .0200 by a factor of 10?*

YES: The maximum groundwater contaminant concentration was reported to be PCE at 1,700 micrograms per liter ($\mu\text{g}/\text{L}$) which exceeds the North Carolina surface water quality standard of $0.7 \mu\text{g}/\text{L}$.

3. *Is the source area of the release located within an approved or planned wellhead protection area as defined in 42 USC 300h-7(e)?*

NO: According to the NCDENR Public Water Supply Well Section's Wellhead Protection Program (WHPP) Source Water Assessment Program (SWAP) website, the nearest wellhead protection area is located approximately 6 miles northeast of the site (NCDENR, 2007). The source area is not located within a MCB CamLej designated wellhead protection area. According to the most recent Wellhead Protection Plan- 2002 Update (AHEC, 2002) the nearest MCB CamLej designated wellhead protection area is approximately 0.7 mile northeast of the source area.

4. *Is the discharge or 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: MCB CamLej is located within the Atlantic Coastal Plain physiographic province.

5. *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?*

NO: The Castle Hayne confining unit is present in the vicinity of former UST-1817 at an average thickness of 12 ft (Catlin, 1997). The potential source area is located above the semi-confined Castle Hayne aquifer. While there is potential for recharge to the surficial and Castle Hayne aquifers, untreated groundwater is not used aboard MCB CamLej as drinking water. Groundwater obtained from the Castle Hayne aquifer is the raw water

source for the MCB CamLej potable water treatment facilities. There is not a raw water supply well located within 9,000 ft of the potential source area.

6. *Do the levels of groundwater contamination for any contaminant exceed the gross contamination levels (GCLs) (see Table 9) established by the Department?*

YES: PCE was detected at a concentration of 1,700 µg/L, exceeding the GCL of 700 µg/L.

3.2 Land Use

3.2.1 Property Containing Source Area of Release

1. *Does the property contain one or more primary or secondary residences (permanent or temporary)?*

NO: The property does not contain any primary or secondary residences. The property consists of a steel-frame warehouse building used to store and maintain military equipment.

2. *Does the property contain a school, daycare center, hospital, playground, park, recreation area, church, nursing home, or other place of public assembly?*

NO: The property does not contain a school, daycare center, hospital, playground, park, recreation area, church, nursing home, or other place of public assembly. The property is used as a storage and maintenance facility. The nearest place of public assembly is a recreational field complex located approximately 1,450 ft south of the source area.

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: The property is currently used as a storage and maintenance building.

4. *Do children visit the property?*

NO: As it is an active military facility, and due to the nature of activities onsite, children are not expected to visit the property at any time.

5. *Is access to the property reliably restricted consistent with its use (e.g., by fences, security personnel or both)?*

YES: The property site is located within the MCB CamLej military installation. There is a minimum of one layer of security designed to prohibit trespassers or other unauthorized access to facilities on the base. At the site, the former source area is locked within a chain-link fence and only authorized military personnel have access.

6. *Do pavements, buildings, or other structures cap the contaminated soil?*

NO: The former tank area is covered by gravel.

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

N/A

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

MCB CamLej is not subject to local zoning requirements; however, the site is consistent with Industrial/Commercial properties.

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

NO: The site has historically been used as a maintenance and production facility and the use of the site is not likely to change in the next 20 years.

3.2.2 Property Surrounding Source Area of Release

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

The distance from the source area to the nearest primary residence (permanent or temporary) is approximately 1,200 ft, as shown on **Figure 3-1**. The nearest primary residences are military barracks located south and southwest of the site.

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?*

The nearest place of public assembly is the recreational field complex located approximately 1,450 ft south of the source area shown in **Figure 3-1**.

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

MCB CamLej is not subject to local zoning requirements; however, the surrounding properties are consistent with Industrial/Commercial properties.

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

The surrounding area is located within the HPIA of MCB CamLej and is used for administrative, training, and maintenance and production facilities to support base-wide activities.

Receptor Information

4.1 Water Supply Wells

There are no water supply wells located within 1,500 ft of Building 1817 (**Figure 3-1**). The nearest active supply well, PSW-HP652, is located approximately 9,000 ft to the northeast of the source area.

4.2 Public Water Supplies

There are no public water supply sources present within 1,500 ft of Building 1817. Potable water is supplied to the base by the MCB CamLej water supply system. The raw water supply for MCB CamLej and the surrounding areas is provided by water supply wells that pump groundwater from the Castle Hayne aquifer.

4.3 Surface Water

The nearest surface water body is an intermittent tributary of Codgels Creek located approximately 350 ft north of the former UST-1817 source area (**Figure 4-1**). Recent construction activities have resulted in the intermittent tributary being buried or diverted through an underground culvert. The intermittent tributary drains into Codgels Creek, which ultimately drains into the New River.

4.4 Wellhead Protection Area

Based upon information provided by the North Carolina Department of Environmental Health (NCDEH) – Public Water Supply Section, as of January 2011, there are no approved wellhead protection areas with 1,500 ft of former UST-1817. Additionally, MCB CamLej has established wellhead protection areas in the Wellhead Protection Plan – 2002 Update (AHEC, 2002). According to the WHPP, the site is not located within a wellhead protection area.

4.5 Deep Aquifers in the Coastal Plain Physiographic Region

Southeastern NC and MCB CamLej are within the Tidewater region of the Atlantic Coastal Plain physiographic province. Within the MCB CamLej area, approximately 1,500 ft of sediment overlies the basement rock. These sediments contain seven aquifers and their associated confining units, including the surficial, Castle Hayne, Beaufort, Peedee, Black Creek, and Upper and Lower Cape Fear aquifers (Cardinell, et al., 1993).

Data were obtained from boring logs generated for the SWMU 360 investigations. Hydrogeologic units in the vicinity of the source area are summarized in **Table 4-1**.

TABLE 4-1
 Deep Aquifers of the Coastal Plain
 Former UST-1817 SAR Report
 MCB CamLej, North Carolina

Hydrogeologic Unit	Approximate Depth Interval (ft bgs)
Surficial aquifer	8 to 20
Castle Hayne Confining Unit	20 to 35
Castle Hayne Aquifer	35 to 175
Beaufort Confining Unit	175 to 185
Beaufort Aquifer	185

The nearest area of groundwater discharge is Codgels Creek, located approximately 1,500 ft to the southeast, which ultimately drains to the New River, located approximately 3,500 ft southeast of the source area.

4.6 Subsurface Structures

Several utilities are located in the vicinity of the source area including water, sanitary sewer, wastewater, heating/cooling, and telephone as shown on **Figure 2-2**. The threat of explosion due to the accumulation of vapors from an underground contaminant source to a confined space is not expected based on air monitoring results collected during soil sampling activities, as no detectable concentrations were measured during intrusive activities.

4.7 Property Owners and Occupants

Table 4-2 lists the property owner and occupant information as required by NCDENR (NCDENR, 2008):

TABLE 4-2
 Property Owners and Occupants
 Former UST-1817 SAR Report
 MCB CamLej, North Carolina

Tax Parcel Number	Owner/Occupant Name	Address
Unknown – 236 square miles of land within MCB CamLej	Commanding General – MCB CamLej, NC	I&E/EMD/EQD PSC 20004 MCB Camp Lejeune, NC 28542

Geology and Hydrogeology

5.1 Site Geology

Site-specific geological information was obtained during the installation of monitoring well UST1817-MW01, constructed within the former UST-1817 basin. The soil boring log and well completion diagram for monitoring well UST187-MW01 are included as **Appendix B**. Additional information pertaining to site geology and hydrogeology was obtained from a detailed discussion of the site physical characteristics in the SWMU 360 vicinity presented in the *Final SWMU 360 RCRA Facility Investigation Report* (CH2M HILL, 2005).

Shallow soils of the undifferentiated formation (Fm) near the source area consist of silty sand from the ground surface to approximately 9 ft below ground surface (bgs), underlain by sandy clay and clayey sand to 19 ft bgs. A clay layer of the Belgrade Fm is present to 25 ft bgs. In the vicinity of UST-1817, the Belgrade Fm is underlain by the River Bend and Castle Hayne Fms, which are composed of fine- to medium-grained sands with intermittent layers of partially cemented and shelly sands to approximately 150 ft bgs.

5.2 Site Hydrogeology

Investigations of SWMU 360 and UST-1817 have focused upon the surficial aquifer and underlying Castle Hayne aquifer, which occur within the shallow deposits of the undifferentiated formation, and the River Bend and Castle Hayne Formations, respectively. Clay lenses observed across the site act to inhibit localized downward migration of groundwater.

The hydraulic conductivity values in the surficial aquifer at UST-1817 range from 1.7 feet per day (ft/day) to 7.6 ft/day, with an average of 4.2 ft/day. Within the Castle Hayne aquifer, hydraulic conductivity values at UST-1817 range from 0.6 ft/day to 36.6 ft/day, with an average of 18.3 ft/day.

On December 1, 2010, the water table within the vicinity of Building 1817 was measured at 20.32 ft bgs. Groundwater flow in the surficial aquifer near UST-1817 is generally to the southeast, towards Codgels Creek (CH2M HILL, 2005).

Subsurface Investigation

The SAR investigation included collection of a groundwater sample from existing well UST1817-MW01 and installation of one soil boring immediately adjacent to the former UST tank basin, as shown on **Figure 2-2**. Analytical results from the SAR activities are discussed below.

6.1 Soil Sampling

The soil sampling location was selected to evaluate subsurface soil conditions within the former UST basin.

A soil boring was advanced in the former UST basin using a stainless steel hand auger, to a depth of roughly 17 ft bgs. Samples of the soil cuttings were placed in zip-top bags for field screening purposes. The bagged samples were field screened for the presence of VOCs using a FID. The FID readings did not detect the presence of VOCs, and the results are recorded on the soil boring log (**Appendix B**). Soil samples were collected at five-foot intervals between the land surface and the water table. Three subsurface soil samples were collected (5-7 ft bgs, 10-12 ft bgs, and 15-17 ft bgs) and submitted for laboratory analysis.

The soil samples were analyzed by the following laboratory methods:

- VOCs (United States Environmental Protection Agency [USEPA] Method 8260B)
- SVOCs (USEPA Method 8270D)
- Volatile petroleum hydrocarbons (VPH) (MADEP VPH)
- Extractable petroleum hydrocarbons (EPH) (MADEP EPH)
- Total chromium and lead (USEPA 3050C or 3051A prep)

A portion of the sample, intended for VOC analysis, was field preserved by field preparation method 5035 to limit volatilization of VOCs. The remaining soil sample was placed into a stainless steel bowl, homogenized, and then transferred into the appropriate bottleware. The soil samples were placed into an ice-filled sample cooler, accompanied by chain-of-custody, and shipped by Federal Express to Katahdin Analytical Services in Scarborough, Maine.

6.1.1 Soil Analytical Results

A summary of analytes detected in soil is presented in **Table 6-1**. The complete analytical laboratory report is in **Appendix D**.

Three VOCs (cis-1,2-dichloroethene [DCE], PCE, and TCE) were detected in soil. All concentrations were below the applicable Industrial/Commercial and Residential maximum soil contamination concentrations (MSCCs). PCE was detected in soil samples UST1817-SB01-5-7-10D and UST1817-SB01-10-12-10D at concentrations above the Soil-to-Groundwater MSCC. PCE, however, is not associated with petroleum releases and will be addressed within the IRP as Site 96.

SVOCs were not detected in the soil samples submitted for analysis.

Chromium was detected in soil samples UST1817-SB01-5-7 and UST1817-SB01-10-12 at concentrations exceeding Soil-to-Groundwater MSCC. However, the concentrations were below the Residential and Industrial/Commercial MSCCs and were less than the twice the mean Base Background concentration. Therefore, the chromium concentrations are consistent with naturally occurring background concentrations. Lead was also detected but the concentration did not exceed any of the MSCCs.

VPH/EPH hydrocarbon fractions were not detected above method detection limits.

6.2 Groundwater Sampling

A groundwater sample was collected from monitoring well UST1817-MW01 (**Figure 2-2**), located adjacent to the former tank basin. This monitoring well is screened in the surficial aquifer. Well construction information for UST1817-MW01 is summarized in **Table 6-2**.

Prior to sample collection, the monitoring well was purged under low-flow conditions using a submersible bladder pump equipped with new ¼-inch inner diameter (ID) polyethylene tubing. The sample intake was placed in the middle of the well screen. In order to assess the effectiveness of the purging activities, water quality parameters (pH, temperature, oxidation reduction potential [ORP], turbidity, and conductivity) were monitored using a calibrated YSI 556 multi-parameter flow-through cell and recorded on groundwater sampling data sheets (**Appendix C**). A summary of groundwater quality parameters is shown in **Table 6-3**.

Once the water quality parameters had stabilized and at least one well volume had been removed, a sample was collected for the following laboratory analyses:

- VOCs (USEPA Method 6200B)
- PAHs (USEPA 625 – Base/Neutral/Acid [BNAs] plus 10 Tentatively Identified Compounds [TICs])
- MADEP VPH
- MADEP EPH
- Metals chromium and lead (USEPA Method 3030C prep)

The groundwater sample was placed into an ice-filled sample cooler, accompanied by chain-of-custody, and shipped by Federal Express to Katahdin Analytical Services in Scarborough, Maine.

6.3 Groundwater Analytical Results

A summary of detections in the groundwater sample collected from well UST1817-MW01 is presented as **Table 6-4**. The complete analytical laboratory report is included as **Appendix D**.

As indicated in **Table 6-4**, five VOCs (chloroform, cis-1,2-DCE, PCE, trans-1,2-DCE, and TCE) were detected. PCE was detected above the NCGWQS, and TCE and cis-1,2-DCE exceeded their respective NCGWQS. Chloroform and trans-1,2-DCE were detected below

their respective NCGWQS. Chlorinated solvents are not typically associated with petroleum releases and will be addressed within the IRP as Site 96.

SVOCs were not detected in groundwater.

Metals were not detected in groundwater.

VPH constituent Aliphatics C5-C8 was detected in the groundwater sample at a concentration of 590 µg/L which exceeded the NCGWQS of 400 µg/L.

6.4 Free Product Investigation/Recovery

Free product was not detected in monitoring well UST1817-MW01; therefore, this section is not applicable.

6.5 Investigation-derived Waste Management

Soil and water investigation-derived waste (IDW) generated during SAR field activities was containerized in Department of Transportation (DOT)-approved 55-gallon steel drums and staged at the temporary storage facility located at Mainside at MCB CamLej. IDW will be disposed offsite at an approved Base disposal facility in accordance with the 2010 Base Waste Management Plan.

Conclusions and Recommendations

7.1 Conclusions

Based on the results of this SAR for the former UST-1817 tank basin at MCB CamLej, the following conclusions are presented:

- There are no active water supply wells within 1,500 ft of UST-1817.
- Potable water is supplied by the Base WTP.
- The former UST tank basin is not located in a designated wellhead protection area.
- An intermittent tributary of Codgels Creek is located approximately 350 ft northwest of the former source area. However, recent construction activities have resulted in the intermittent tributary being buried or diverted through an underground culvert.
- VOCs, SVOCs, and metals were not detected in the soil samples at concentrations exceeding the Industrial/Commercial or Residential MSCCs. PCE and chromium were detected at concentrations that exceeded their respective Soil-to-Groundwater MSCCs. However, chromium was below the twice the mean Base Background concentration, and is likely consistent with naturally occurring concentrations.
- Three CVOCs were detected in the groundwater sample at concentrations that exceeded their respective NCGWQS. In addition, the contaminant detected at the greatest concentration (PCE) also exceeded the GCL.
- Approximately 28 tons of petroleum contaminated soil was excavated during removal of the UST. Historically, petroleum compounds have not been detected in soil and groundwater samples collected from this site, with the exception of aliphatic C5-C8 hydrocarbon fraction which was detected in the 2010 groundwater sample collected from UST1817-MW01.

7.2 Recommendations

Based on the data collected during the SAR and the conclusions presented above, it is recommended that the UST incident at Building 1817 at MCB CamLej be considered for **No Further Action** status. Other potential environmental and human health risks associated with this release are being investigated and managed within the IRP under the CERCLA program.

SECTION 8

References

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- NCDENR. 2010a. *Maximum Soil Contaminant Concentration Levels (MSCCs)*. Division of Waste Management, Underground Storage Tank Section. January. <http://portal.ncdenr.org/web/wm/ust/guidance>.
- NCDENR. 2010b. *Gross Contamination Levels for Groundwater Table*. Division of Waste Management, Underground Storage Tank Section. January. <http://portal.ncdenr.org/web/wm/ust/guidance>.
- Richard Catlin & Associates, Inc. (Catlin). 1997. *Leaking Underground Storage Tank Well Installation and Monitoring, Limited Site Assessments, 10 UST Sites, Marine Corps Base Camp Lejeune, Jacksonville, North Carolina*. December.

Figures



- Legend**
- Highways
 - LSA Site
 - IR Site Boundary
 - Installation Boundary

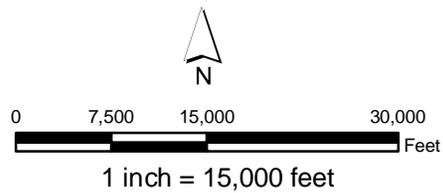


Figure 2-1
Base Location Map
Former UST-1817 UCEJ Report
MCB CamLej
North Carolina





- Legend**
- Monitoring Well
 - Soil Sampling Location
 - Electrical Cable Line
 - Power Pole
 - Sanitary Sewer
 - Fence
 - Heating/Cooling Utilities
 - Buried Communication Lines
 - Water Utilities
 - Wastewater Utilities
 - Approximate Former UST Location
 - Aquifer Use Control Boundary
 - Non-Industrial Use Control Boundary
 - Intrusive Activities Control Boundary (Groundwater)
 - IR Site Boundaries

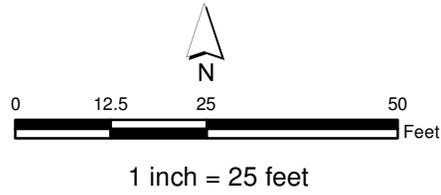
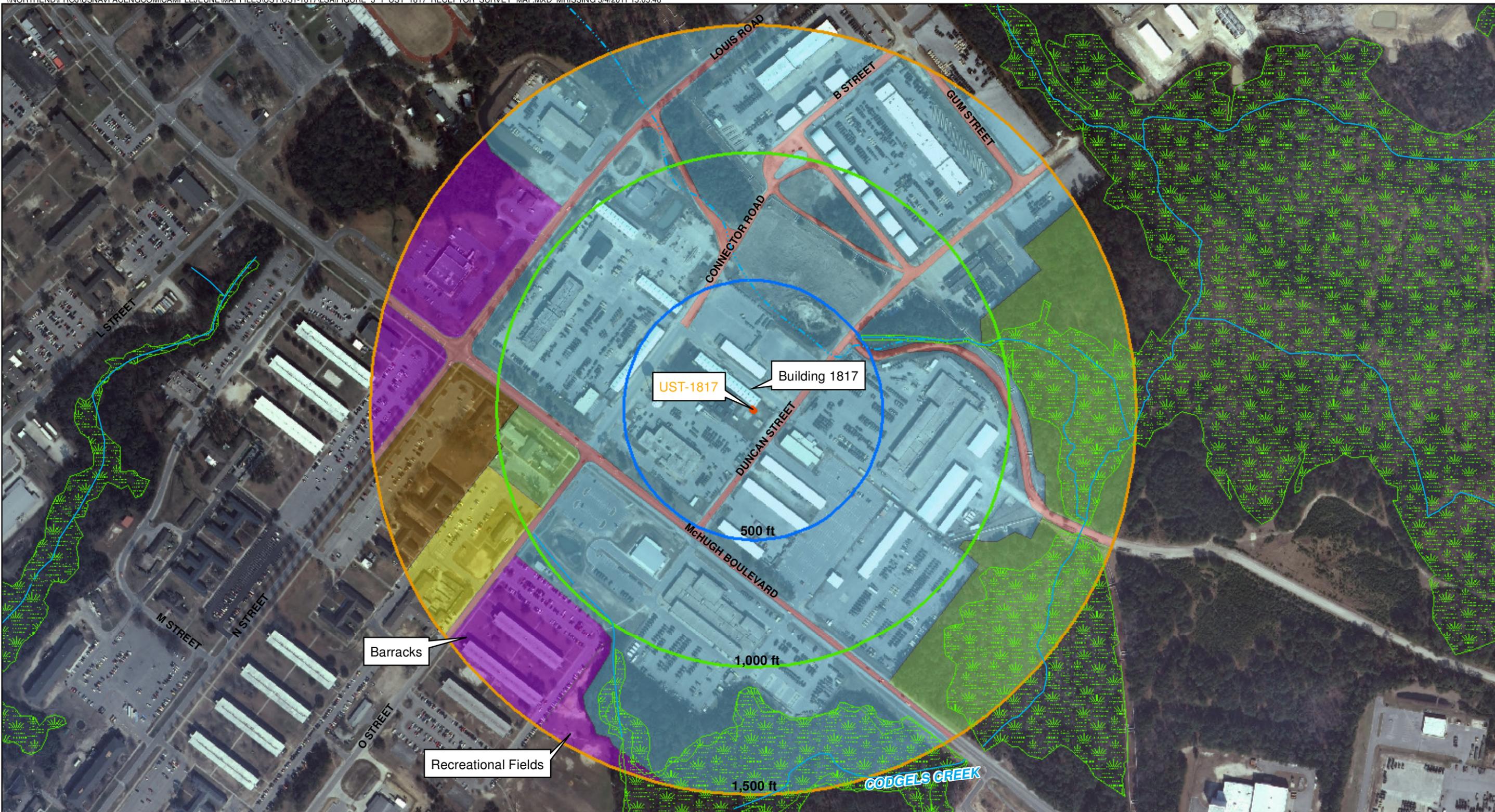


Figure 2-2
Site Map
Former UST-1817 LSA Report
MCB CamLej
North Carolina





- Legend**
- Intermittent Stream
 - Surface Water Centerline
 - ▨ Jurisdictional Wetland Area
 - 500 foot radius
 - 1,000 foot radius
 - 1,500 foot radius
- Land Use**
- Administrative Facilities
 - Housing and Community Facilities
 - Maintenance and Production Facilities
 - Operational and Training Facilities
 - Supply Facilities
 - Utilities and Ground Improvements

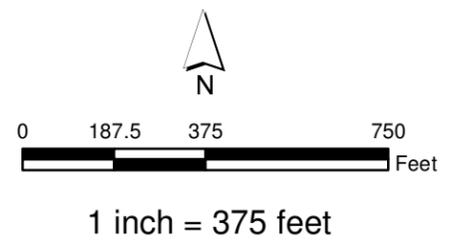
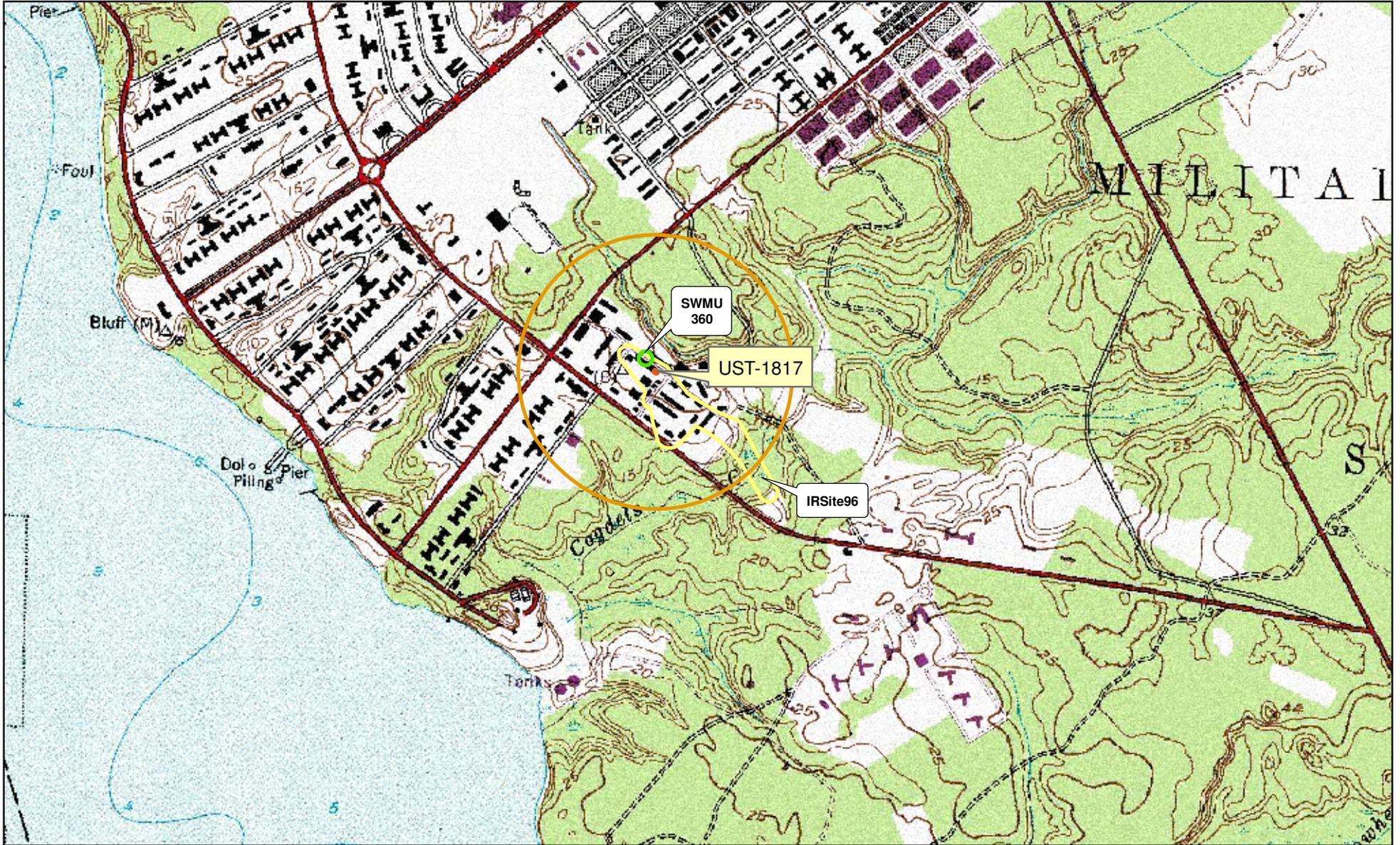
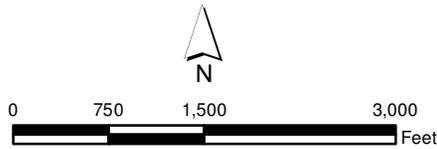


Figure 3-1
Receptor Survey Map
Former UST-1817 LSA Report
MCB CamLej
North Carolina





- Legend**
- IR Site Boundary
 - SWMU Boundary
 - 1,500 foot radius



1 inch = 1,500 feet

Figure 4-1
 Topographic Map
 Former UST-1817 LSA Report
 MCB CamLej
 North Carolina



Tables

TABLE 6-1
 Soil Analytical Results
 Former UST-1817 SAR Report
 MCB CamLej, North Carolina

Station ID	Soil-to-Groundwater MSCC	Residential MSCC	Industrial/Commercial MSCC	UST1817-MW01		
				UST1817-SB01-10-12-10D 12/13/10	UST1817-SB01-15-17-10D 12/13/10	UST1817-SB01-5-7-10D 12/13/10
Sample ID						
Sample Date						
Chemical Name						
Volatile Organic Compounds (µg/kg)						
cis-1,2-Dichloroethene	350	156,000	4,000,000	12	1.6 J	3.2 U
Tetrachloroethene	7.4	1,100	10,000	54	8.3 U	28
Trichloroethene	19	4,600	120,000	6 J	3.2 U	1.8 J
Semivolatile Organic Compounds (µg/kg)						
No Detections						
Metals (mg/kg)						
Chromium	5.4	47	1,226	11.9	5.2	7.1
Lead	270	400	400	5.4	3.7	7
Wet Chemistry (pct)						
% Solids	--	--	--	88	89	86
Total Petroleum Hydrocarbons (µg/kg)						
No Detections						

Notes:
Bold text indicates exceedance of Soil-to-Groundwater MSCC
Underlined text indicates exceedance of Residential MSCC
Boxed text indicates exceedance of Industrial/Commercial MSCC

MSCC- maximum soil contaminant concentration
 U - The material was analyzed for, but not detected
 J - Analyte present, value may or may not be accurate or precise
 mg/kg - Milligrams per kilogram
 pct - Percent
 µg/kg - Micrograms per kilogram

TABLE 6-2
 Well Construction Information
 Former UST-1817 SAR Report
 MCB CamLej, North Carolina

Monitoring Well ID	Date Installed	Date Water Level Measured	Casing Diameter (in)	Screened Interval (ft bgs)	TOC Elev. (ft amsl)	Well Depth (ft bgs)	Depth to water (ft btoc)	Water Elevation (ft amsl)
UST1817-MW01	08/14/97	12/01/10	2.0	15 to 25	21.25	25.0	20.32	0.93

Notes:
 in - inches
 ft - feet
 bgs- below ground surface
 btoc- below top of casing
 amsl - above mean sea level

TABLE 6-3
 Groundwater Quality Parameters
 Former UST-1817 SAR Report
 MCB CamLej, North Carolina

Monitoring Well ID	Date Sampled	Depth to Water (ft btoc)	pH (SU)	Conductivity (mS/cm)	Dissolved Oxygen (mg/L)	Temperature (Celsius)	Turbidity (NTU)	ORP (mV)
UST1817-MW01	12/1/2010	20.32	6.23	0.698	0.21	22.29	9.15	140.5

Notes:

ft - feet

btoc- below top of casing

SU- standard units

mS/cm- milliSiemens per centimeter

mg/L - milligram per liter

NTU - nephelometric turbidity units

mV - millivolts

OPR - oxidation reduction potential

TABLE 6-4
 Groundwater Analytical Results
 Former UST-1817 SAR Report
 MCB CamLej, North Carolina

Station ID	NCGWQS (January, 2010) *	GCL	UST1817-MW01
Sample ID			UST1817-GW01-10D
Sample Date			12/01/10
Chemical Name			
Volatile Organic Compounds (µg/l)			
Chloroform	70	70,000	0.41 J
cis-1,2-Dichloroethene	70	70,000	260
Tetrachloroethene	0.7	700	1,700
trans-1,2-Dichloroethene	100	100,000	1.6 J
Trichloroethene	3	3,000	160 J
Semivolatile Organic Compounds (µg/l)			
No Detections			
Total Metals (µg/l)			
No Detections			
Dissolved Metals (µg/l)			
No Detections			
Total Petroleum Hydrocarbons (µg/l)			
Aliphatics C5-C8	400	--	590
Aliphatics C5-C8 Unadjusted	--	--	590

Notes:

Bold box indicates exceedance of NCGWQS or the more conservative MCL

Bold text indicates exceedance of GCL

J - Analyte present, value may or may not be accurate or precise

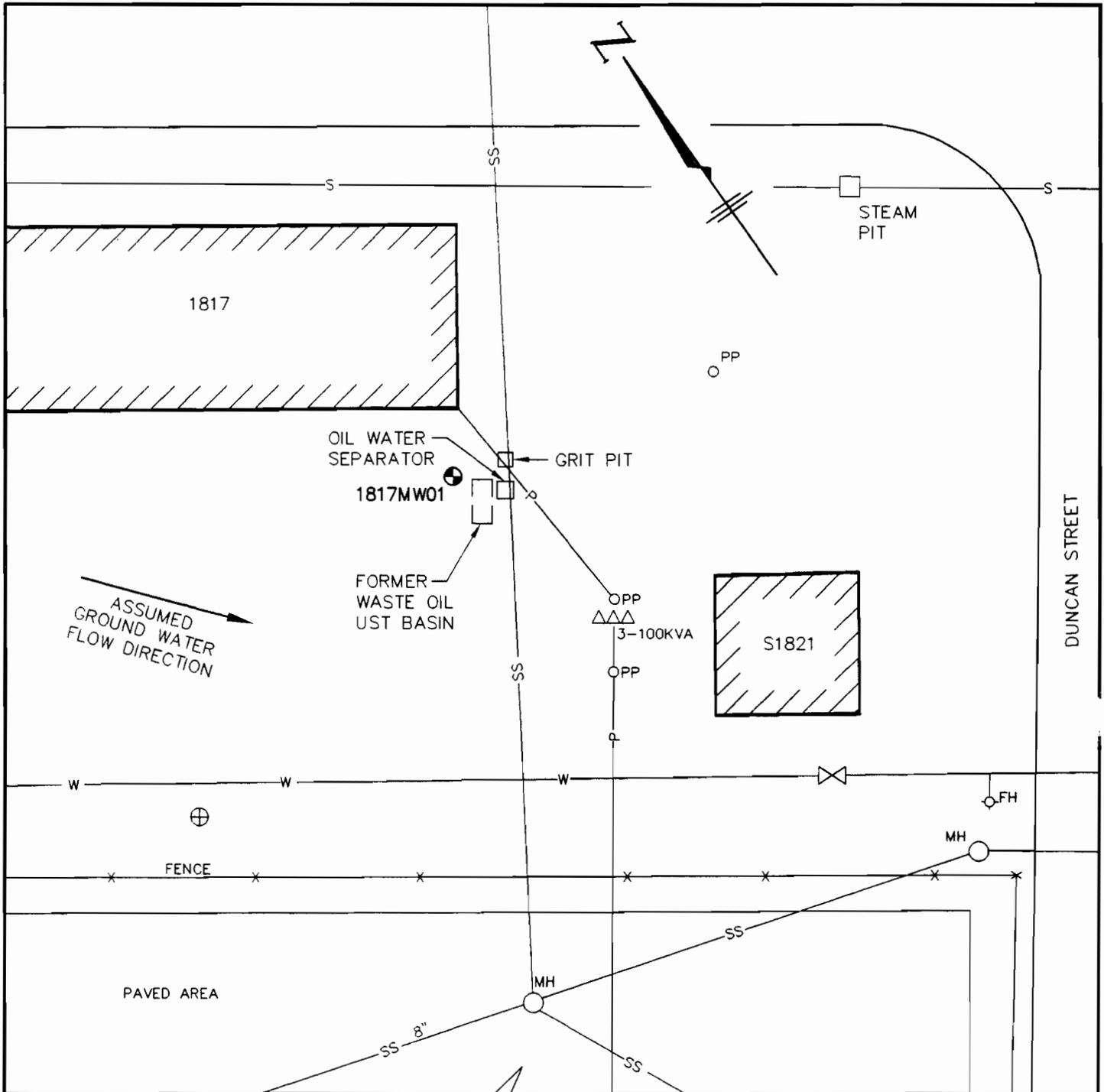
µg/l - Micrograms per liter

NCGWQS - North Carolina groundwater quality standard

GCL - gross contaminant level

* - The MCL-is reported in place of the NCGWQS where the MCL value is more conservative.

Appendix A
Historical Underground Storage Tank
Schematic



LEGEND

NEW	EXISTING	
⊕	⊕	TYPE II WELL

- NOTES:
- 1) MAP ADAPTED FROM CAMP LEJEUNE DATABASE AND FIELD MEASUREMENTS.
 - 2) ASSUMED GROUND WATER FLOW DIRECTION BASED ON DRAFT UST CLOSURE REPORT.
 - 3) MONITORING WELL LOCATION APPROXIMATED.



 WILMINGTON, NORTH CAROLINA	PROJECT 10 UST SITES MARINE CORPS BASE CAMP LEJEUNE, N.C.	TITLE SITE PLAN- 1817	FIGURE 5.9
	JOB NO: 97147 DATE: DEC 1997	SCALE: 1"=30'	DRAWN BY: WHW CHECKED BY: TMP

Appendix B
Soil Boring Logs and Well Completion Records



Boring Number: UST1817-SB01

Client: NAVFAC
Project: CTO-WE31
Location: MCB CamLej
Project Number: 408943.FI.FS

Driller: Applied Resources Mgmt. (ARM)
Drilling Method: Hollow Stem Auger
Sampling Method: Hand Auger/Split Spoon
Logged by: Dan Brown/CLT
Start/Finish Date: 12/13/10

Depth (ft)	Sample Information			Soil Log	Soil Description	FID (ppm)	Comments
	Sample #	Sample Type	Recovery (in)				
0					Ground Surface		
	HA-1	HA	--		Gravel (GW) Light grey, dry, dense, 2" gravel clasts, subangular medium grained sand	0.0	5'-7': Collected UST1817-SB01-5-7-10D @ 1120 for VOC, SVOC, EPH, VPH, and total chromium and lead analysis
					Sand (SP) Light grey, moist, loose, fine grained	0.0	
5					Silty Sand (SM) Light brown, moist, loose, fine grained, some silt	0.0	
	SS-1	SS	--			0.0	
	SS-2	SS	--		Clayey Sand (SC) Brown/yellow, moist, dense, fine grained	0.0	
						0.1	
10					Silty Sand (SM) Light brown, moist, loose, fine	0.0	10'-12': Collected UST1817-SB01-10-12-10D @ 1140 for analysis (see above)
	SS-3	SS	--			0.0	
	SS-4	SS	--			0.0	
	SS-5	SS	--		Sand (SP) Grey/orange, moist, loose, fine grained	0.0	15'-17': Collected UST1817-SB01-15-17-10D @ 1200 for analysis (see above)
15						0.0	
	SS-6	SS	--			0.0	Boring terminated at 17'
						0.0	
20							DTW @ 20.28 ft btoc

BORING LOG

BORING NUMBER 1817MW01
 TOTAL DEPTH 25.0'

SITE LOCATION Building 1817
MCB Camp Lejeune, NC

DRILLED BY B. FOWLER
 LOGGED BY E. CANDLER

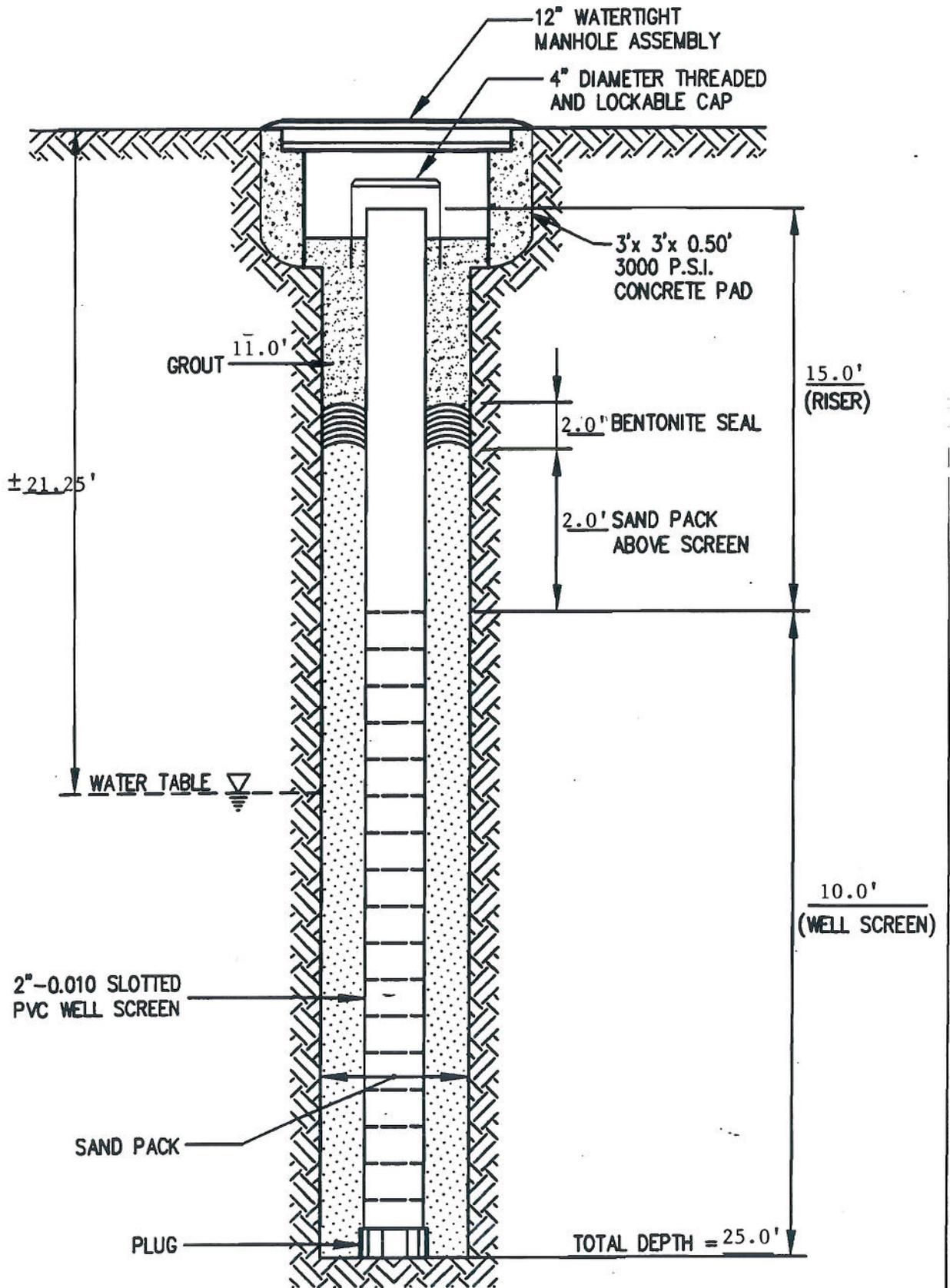
DRILLING DATE 8/14/97

SAMPLE DEPTH (FT.)	SAMPLE DESCRIPTION	USCS	WATER CONTENT	ODOR	PID/FID PPM	BLOW COUNT
0 3	Overburden of crushed gravel underlain by greenish-gray, SILTY SAND.	SM	Low	No	6	Grab
3 5	Yellowish-orange/greenish-gray, SILTY SAND, loose.	SM	Low	No	0	HP
5 7	Yellowish-orange/greenish-gray, SILTY SAND, loose.	SM	Low	No	0	HP
7 9	Yellowish-orange/greenish-gray, SILTY SAND, loose.	SM	Low	No	0	HP
9 11	Yellowish-orange, SANDY CLAY, low plasticity.	CL	Low	No	0	HP
11 13	Yellowish-orange, SANDY CLAY, low plasticity.	CL	Low	No	0	HP
13 15	Yellowish-orange, SANDY CLAY, low plasticity.	CL	Low	No	0	HP
15 17	Light gray, fine grained CLAYEY SAND.	SC	Low	Strong	0	HP
17 19	Light gray, fine grained CLAYEY SAND.	SC	Low	Strong	0	HP
19 21	Yellowish-orange, SILTY CLAY, underlain by yellowish-orange clay.	CL	Medium	Strong	0	HP
21 23	Yellowish-orange CLAY.	CL	Medium	Strong	0	HP
23 25	Yellowish-orange CLAY.	CL	Medium	Strong	0	HP

REMARKS Grab = Grab Sample; HP = Hydraulic Push

PAGE 1 OF 1

1817MW01



CAMP LEJEUNE ONLY (FLUSH-II)

Richard Collin & Associates, Inc.
ENVIRONMENTAL ENGINEERS AND HYDROGEOLOGISTS
WILMINGTON, NC CHARLESTON, SC ATLANTA, GA CHARLOTTE, NC

PROJECT
BUILDING 1817
MARINE CORPS BASE
CAMP LEJEUNE, NC
JOB NO: 97147 DATE: SEPT 97

TITLE
FLUSH TYPE II
MONITORING WELL DETAIL
SCALE: DRAWN BY: CHECKED BY: EAC

FIGURE
9 OF
9

Appendix C
Groundwater Sampling Data Sheets



GROUNDWATER SAMPLING DATA SHEET

Client: NAVFAC Mid-Atlantic
 Location: MCB CAMP LEJEUNE
 Event: CTO-WE31 SITES
 Date: 12/1/10
 Weather: clear, lot of windy

Project Number: 408943.FI.FS
 Well ID: VST1817-HW01
 Sample ID: V. Cunningham/RDU @ UST1817-GW01-10D
 Sampling Team: V. Cunningham/RDU @ 1135

Total Depth: 25 FT.(BTOC)
 Depth to water: (-) 20.32 FT.(BTOC)
 Water Column: 4.68 FT.
 (x) 0.163 GAL/FT.
 Well Volume: 0.763 GAL x 3 = 2.29
 Total Purge Vol.: 2.75 GAL

Measuring Device: VSI 556# 13076
 Hanna # 09010
 Date and Time: See table below

Well Dia. (inches)	Volume (gallons/foot)
0.75	0.023
1	0.041
2	0.163
4	0.653
6	1.469

Purge Device: bladder pump

FIELD PARAMETERS

Time	Depth to Water (ft bgs)	Temp. °C	Cond. mS/cm	DO mg/L	pH SU	ORP mV	Turbidity NTU	Flow Rate (mL/min)	Color / Odor / Comments
Stabilization Criteria		± 10%	± 3%	± 10%	± 0.1	± 10 mV	± 10% or <10	(300-500)	
1105	20.44	21.88	0.700	0.84	6.26	136.0	10.3	300	
1110	20.42	22.17	0.699	0.62	6.25	162.5	71.4	11	
1115	20.42	22.28	0.701	0.39	6.25	143.5	30.1	11	
1120	20.42	22.29	0.699	0.33	6.24	143.5	18.4	11	
1125	20.43	22.34	0.699	0.27	6.23	142.8	12.9	11	
1130	20.43	22.32	0.698	0.23	6.23	141.3	9.28	11	
1135	20.43	22.29	0.698	0.21	6.23	140.5	9.15	11	

SAMPLE DATA

Date: 12/1/10	Temp. °C	Cond. mS/cm	DO mg/L	pH SU	ORP mV	Turbidity NTU	Other: _____	Color / Odor / Comments
Time: 1135								
Method: low-flow	22.29	0.698	0.21	6.23	140.5	9.15	11	

Sample information: method, container number, size, and type, preservative used.

Analysis	Preservative	Container requirements	No. of containers
VOCs	HCL	40 mL VOAs	3
SVOCs (EPA 8270D)	NA	1 Liter Ambers	
MADEP VPH	HCL	40 mL VOAs	2
MADEP EPH	HCL	1 Liter Ambers	2
EPA 625 BNA + 10 TICS	NA	1 Liter Ambers	2
LEAD & CHROMIUM	HNO3	250 mL or 500 mL Poly	2 (press + Total)

Observations/Notes:
 Total Volume Purged: 2.75 gal
 pump started at 1101 FID = 0.0ppm
 pump set at 22'

MS/MSD: YES NO MS ID: VST1817-GW01-10D-MS @ 1135
 SD ID: VST1817-GW01-10D-SD @ 1135

Duplicate: YES NO Duplicate ID:

Signature(s): Verd Lara Corp

Appendix D
Soil and Groundwater Analytical Laboratory
Report

Report of Analytical Results

Client: CH2MHill
Lab ID: SD7472-8
Client ID: UST1817-GW01-10D
Project: MCB Camp Lejeune CTO-WI
SDG: WE31-1

Sample Date: 01-DEC-10
Received Date: 02-DEC-10
Extract Date: 06-DEC-10
Extracted By: DJP
Extraction Method: SW846 8260B
Lab Prep Batch: WG85941

Analysis Date: 06-DEC-10
Analyst: DJP
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-JAN-11

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene		1.6	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene	E	240	ug/L	1	1	1.0	0.21	0.50
Chloroform	J	0.41	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene		160	ug/L	1	1	1.0	0.28	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	E	1300	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

Report of Analytical Results

Client: CH2MHill
Lab ID: SD7472-8
Client ID: UST1817-GW01-10D
Project: MCB Camp Lejeune CTO-WJ
SDG: WE31-1

Sample Date: 01-DEC-10
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Extraction Method: SW846 8260B
Lab Prep Batch: WG85941

Analysis Date: 06-DEC-10
Analyst: DJP
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-JAN-11

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dibromo-3-Chloropropane	U	1.0	ug/L	1	2	2.0	0.50	1.0
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Di-Isopropyl Ether	U	0.50	ug/L	1	1	1.0	0.21	0.50
n-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
m+p-Xylene	U	1.0	ug/L	1	2	2.0	0.59	1.0
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
P-Bromofluorobenzene		99.8	%					
Toluene-d8		94.5	%					
1,2-Dichloroethane-d4		116.	%					
Dibromofluoromethane		104.	%					

Report of Analytical Results

Client: CH2MHill
Lab ID: SD7472-8DL
Client ID: UST1817-GW01-10D
Project: MCB Camp Lejeune CTO-WI
SDG: WE31-1

Sample Date: 01-DEC-10
Received Date: 02-DEC-10
Extract Date: 12-DEC-10
Extracted By: DJP
Extraction Method: SW846 8260B
Lab Prep Batch: WG86195

Analysis Date: 12-DEC-10
Analyst: DJP
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-JAN-11

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U	10.	ug/L	10	2	20.	2.4	10.
Chloromethane	U	10.	ug/L	10	2	20.	3.6	10.
Vinyl Chloride	U	10.	ug/L	10	2	20.	2.5	10.
Bromomethane	U	10.	ug/L	10	2	20.	4.9	10.
Chloroethane	U	10.	ug/L	10	2	20.	5.5	10.
Trichlorofluoromethane	U	10.	ug/L	10	2	20.	2.4	10.
1,1-Dichloroethene	U	5.0	ug/L	10	1	10.	3.5	5.0
Carbon Disulfide	U	5.0	ug/L	10	1	10.	2.5	5.0
Freon-113	U	5.0	ug/L	10	1	10.	3.1	5.0
Methylene Chloride	U	25.	ug/L	10	5	50.	11.	25.
Acetone	U	25.	ug/L	10	5	50.	22.	25.
trans-1,2-Dichloroethene	U	5.0	ug/L	10	1	10.	2.5	5.0
Methyl tert-butyl Ether	U	5.0	ug/L	10	1	10.	3.6	5.0
1,1-Dichloroethane	U	5.0	ug/L	10	1	10.	2.1	5.0
cis-1,2-Dichloroethene		260	ug/L	10	1	10.	2.1	5.0
Chloroform	U	5.0	ug/L	10	1	10.	3.2	5.0
1,1,1-Trichloroethane	U	5.0	ug/L	10	1	10.	2.0	5.0
2-Butanone	U	25.	ug/L	10	5	50.	13.	25.
Cyclohexane	U	5.0	ug/L	10	1	10.	3.1	5.0
Carbon Tetrachloride	U	5.0	ug/L	10	1	10.	2.2	5.0
Benzene	U	5.0	ug/L	10	1	10.	2.6	5.0
1,2-Dichloroethane	U	5.0	ug/L	10	1	10.	2.0	5.0
Trichloroethene		150	ug/L	10	1	10.	2.8	5.0
1,2-Dichloropropane	U	5.0	ug/L	10	1	10.	2.5	5.0
Bromodichloromethane	U	5.0	ug/L	10	1	10.	3.3	5.0
cis-1,3-Dichloropropene	U	5.0	ug/L	10	1	10.	1.9	5.0
Toluene	U	5.0	ug/L	10	1	10.	2.7	5.0
4-Methyl-2-Pentanone	U	25.	ug/L	10	5	50.	13.	25.
trans-1,3-Dichloropropene	U	5.0	ug/L	10	1	10.	2.0	5.0
1,1,2-Trichloroethane	U	5.0	ug/L	10	1	10.	3.3	5.0
Tetrachloroethene		1700	ug/L	10	1	10.	4.0	5.0
Dibromochloromethane	U	5.0	ug/L	10	1	10.	3.0	5.0
1,2-Dibromoethane	U	5.0	ug/L	10	1	10.	2.2	5.0
2-Hexanone	U	25.	ug/L	10	5	50.	17.	25.
Chlorobenzene	U	5.0	ug/L	10	1	10.	2.2	5.0

Report of Analytical Results

Client: CH2MHill
Lab ID: SD7472-8DL
Client ID: UST1817-GW01-10D
Project: MCB Camp Lejeune CTO-WI
SDG: WE31-1

Sample Date: 01-DEC-10
Received Date: 02-DEC-10
Extract Date: 12-DEC-10
Extracted By: DJP
Extraction Method: SW846 8260B
Lab Prep Batch: WG86195

Analysis Date: 12-DEC-10
Analyst: DJP
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-JAN-11

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Ethylbenzene	U	5.0	ug/L	10	1	10.	2.1	5.0
Styrene	U	5.0	ug/L	10	1	10.	2.3	5.0
Bromoform	U	5.0	ug/L	10	1	10.	2.3	5.0
Isopropylbenzene	U	5.0	ug/L	10	1	10.	2.3	5.0
1,1,2,2-Tetrachloroethane	U	5.0	ug/L	10	1	10.	3.8	5.0
1,3-Dichlorobenzene	U	5.0	ug/L	10	1	10.	2.6	5.0
1,4-Dichlorobenzene	U	5.0	ug/L	10	1	10.	2.4	5.0
1,2-Dichlorobenzene	U	5.0	ug/L	10	1	10.	1.5	5.0
1,2-Dibromo-3-Chloropropane	U	10.	ug/L	10	2	20.	5.0	10.
1,2,4-Trichlorobenzene	U	5.0	ug/L	10	1	10.	3.7	5.0
Methyl Acetate	U	7.5	ug/L	10	1	10.	5.3	7.5
Methylcyclohexane	U	5.0	ug/L	10	1	10.	3.0	5.0
1,2,4-Trimethylbenzene	U	5.0	ug/L	10	1	10.	1.9	5.0
1,3,5-Trimethylbenzene	U	5.0	ug/L	10	1	10.	2.0	5.0
Di-Isopropyl Ether	U	5.0	ug/L	10	1	10.	2.1	5.0
n-Butylbenzene	U	5.0	ug/L	10	1	10.	2.3	5.0
sec-Butylbenzene	U	5.0	ug/L	10	1	10.	2.1	5.0
tert-Butylbenzene	U	5.0	ug/L	10	1	10.	3.1	5.0
m+p-Xylene	U	10.	ug/L	10	2	20.	5.9	10.
o-Xylene	U	5.0	ug/L	10	1	10.	2.5	5.0
Naphthalene	U	5.0	ug/L	10	1	10.	3.0	5.0
P-Bromofluorobenzene		95.6	%					
Toluene-d8		93.0	%					
1,2-Dichloroethane-d4		102.	%					
Dibromofluoromethane		97.8	%					

Report of Analytical Results

Client: CH2MHill
Lab ID: SD7749-1
Client ID: ST1817-SB01-5-7-10D
Project: MCB Camp Lejeune CTO-WI
SDG: WE31-1

Sample Date: 13-DEC-10
Received Date: 15-DEC-10
Extract Date: 16-DEC-10
Extracted By: JSS
Extraction Method: SW846 8260B
Lab Prep Batch: WG86371

Analysis Date: 16-DEC-10
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: SL
% Solids: 86.
Report Date: 04-JAN-11

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U	6.5	ug/Kgdrywt	1	10	13.	1.2	6.5
Chloromethane	U	6.5	ug/Kgdrywt	1	10	13.	1.8	6.5
Vinyl Chloride	U	6.5	ug/Kgdrywt	1	10	13.	1.1	6.5
Bromomethane	U	6.5	ug/Kgdrywt	1	10	13.	1.4	6.5
Chloroethane	U	6.5	ug/Kgdrywt	1	10	13.	1.7	6.5
Trichlorofluoromethane	U	6.5	ug/Kgdrywt	1	10	13.	1.2	6.5
1,1-Dichloroethene	U	3.2	ug/Kgdrywt	1	5	6.5	1.2	3.2
Carbon Disulfide	U	3.2	ug/Kgdrywt	1	5	6.5	1.0	3.2
Freon-113	U	3.2	ug/Kgdrywt	1	5	6.5	1.2	3.2
Methylene Chloride	U	16.	ug/Kgdrywt	1	25	32.	10.	16.
Acetone	J	15.	ug/Kgdrywt	1	25	32.	6.6	16.
trans-1,2-Dichloroethene	U	3.2	ug/Kgdrywt	1	5	6.5	0.92	3.2
Methyl tert-butyl Ether	U	3.2	ug/Kgdrywt	1	5	6.5	1.4	3.2
1,1-Dichloroethane	U	3.2	ug/Kgdrywt	1	5	6.5	2.2	3.2
cis-1,2-Dichloroethene	U	3.2	ug/Kgdrywt	1	5	6.5	1.2	3.2
Chloroform	U	3.2	ug/Kgdrywt	1	5	6.5	0.46	3.2
Carbon Tetrachloride	U	3.2	ug/Kgdrywt	1	5	6.5	1.7	3.2
1,1,1-Trichloroethane	U	3.2	ug/Kgdrywt	1	5	6.5	0.55	3.2
2-Butanone	U	16.	ug/Kgdrywt	1	25	32.	7.7	16.
Benzene	U	3.2	ug/Kgdrywt	1	5	6.5	1.2	3.2
Cyclohexane	U	3.2	ug/Kgdrywt	1	5	6.5	1.8	3.2
1,2-Dichloroethane	U	3.2	ug/Kgdrywt	1	5	6.5	1.3	3.2
Trichloroethene	J	1.8	ug/Kgdrywt	1	5	6.5	0.77	3.2
1,2-Dichloropropane	U	3.2	ug/Kgdrywt	1	5	6.5	1.8	3.2
Bromodichloromethane	U	3.2	ug/Kgdrywt	1	5	6.5	0.78	3.2
cis-1,3-Dichloropropene	U	3.2	ug/Kgdrywt	1	5	6.5	0.94	3.2
Toluene	U	3.2	ug/Kgdrywt	1	5	6.5	1.8	3.2
4-Methyl-2-Pentanone	U	16.	ug/Kgdrywt	1	25	32.	7.7	16.
Tetrachloroethene		28.	ug/Kgdrywt	1	5	6.5	1.6	3.2
trans-1,3-Dichloropropene	U	3.2	ug/Kgdrywt	1	5	6.5	1.1	3.2
1,1,2-Trichloroethane	U	3.2	ug/Kgdrywt	1	5	6.5	1.3	3.2
Dibromochloromethane	U	3.2	ug/Kgdrywt	1	5	6.5	1.3	3.2
1,2-Dibromoethane	U	3.2	ug/Kgdrywt	1	5	6.5	1.6	3.2
2-Hexanone	U	16.	ug/Kgdrywt	1	25	32.	6.2	16.
Chlorobenzene	U	3.2	ug/Kgdrywt	1	5	6.5	0.66	3.2

Report of Analytical Results

Client: CH2MHill
Lab ID: SD7749-1
Client ID: ST1817-SB01-5-7-10D
Project: MCB Camp Lejeune CTO-WI
SDG: WE31-1

Sample Date: 13-DEC-10
Received Date: 15-DEC-10
Extract Date: 16-DEC-10
Extracted By: JSS
Extraction Method: SW846 8260B
Lab Prep Batch: WG86371

Analysis Date: 16-DEC-10
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: SL
% Solids: 86.
Report Date: 04-JAN-11

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Ethylbenzene	U	3.2	ug/Kgdrywt	1	5	6.5	0.84	3.2
Styrene	U	3.2	ug/Kgdrywt	1	5	6.5	0.66	3.2
Bromoform	U	3.2	ug/Kgdrywt	1	5	6.5	0.91	3.2
Isopropylbenzene	U	3.2	ug/Kgdrywt	1	5	6.5	1.2	3.2
1,1,2,2-Tetrachloroethane	U	3.2	ug/Kgdrywt	1	5	6.5	1.1	3.2
1,3-Dichlorobenzene	U	3.2	ug/Kgdrywt	1	5	6.5	0.81	3.2
1,4-Dichlorobenzene	U	3.2	ug/Kgdrywt	1	5	6.5	0.57	3.2
1,2-Dichlorobenzene	U	3.2	ug/Kgdrywt	1	5	6.5	1.0	3.2
1,2-Dibromo-3-Chloropropane	U	3.2	ug/Kgdrywt	1	5	6.5	2.0	3.2
1,2,4-Trichlorobenzene	U	3.2	ug/Kgdrywt	1	5	6.5	1.0	3.2
Methyl Acetate	U	3.9	ug/Kgdrywt	1	5	6.5	3.5	3.9
Methylcyclohexane	U	3.2	ug/Kgdrywt	1	5	6.5	1.2	3.2
1,2,4-Trimethylbenzene	U	3.2	ug/Kgdrywt	1	5	6.5	1.1	3.2
1,3,5-Trimethylbenzene	U	3.2	ug/Kgdrywt	1	5	6.5	0.87	3.2
Di-isopropyl ether	U	3.2	ug/Kgdrywt	1	5	6.5	2.7	3.2
n-Butylbenzene	U	3.2	ug/Kgdrywt	1	5	6.5	1.2	3.2
sec-Butylbenzene	U	3.2	ug/Kgdrywt	1	5	6.5	1.2	3.2
tert-Butylbenzene	U	3.2	ug/Kgdrywt	1	5	6.5	1.2	3.2
m+p-Xylene	U	3.2	ug/Kgdrywt	1	5	6.5	2.2	3.2
o-Xylene	U	3.2	ug/Kgdrywt	1	5	6.5	1.7	3.2
Naphthalene	U	3.2	ug/Kgdrywt	1	5	6.5	1.1	3.2
p-Bromofluorobenzene		91.4	%					
Toluene-D8		113.	%					
1,2-Dichloroethane-D4		127.	%					
Dibromofluoromethane		121.	%					

Report of Analytical Results

Client: CH2MHill
Lab ID: SD7749-2RA
Client ID: 1817-SB01-10-12-10D
Project: MCB Camp Lejeune CTO-WI
SDG: WE31-1

Sample Date: 13-DEC-10
Received Date: 15-DEC-10
Extract Date: 17-DEC-10
Extracted By: JSS
Extraction Method: SW846 8260B
Lab Prep Batch: WG86416

Analysis Date: 17-DEC-10
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: SL
% Solids: 88.
Report Date: 04-JAN-11

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U	9.0	ug/Kgdrywt	1	10	18.	1.6	9.0
Chloromethane	U	9.0	ug/Kgdrywt	1	10	18.	2.5	9.0
Vinyl Chloride	U	9.0	ug/Kgdrywt	1	10	18.	1.6	9.0
Bromomethane	U	9.0	ug/Kgdrywt	1	10	18.	2.0	9.0
Chloroethane	U	9.0	ug/Kgdrywt	1	10	18.	2.3	9.0
Trichlorofluoromethane	U	9.0	ug/Kgdrywt	1	10	18.	1.6	9.0
1,1-Dichloroethene	U	4.5	ug/Kgdrywt	1	5	9.0	1.7	4.5
Carbon Disulfide	JB	2.1	ug/Kgdrywt	1	5	9.0	1.4	4.5
Freon-113	U	4.5	ug/Kgdrywt	1	5	9.0	1.6	4.5
Methylene Chloride	U	22.	ug/Kgdrywt	1	25	45.	14.	22.
Acetone		47.	ug/Kgdrywt	1	25	45.	9.2	22.
trans-1,2-Dichloroethene	U	4.5	ug/Kgdrywt	1	5	9.0	1.3	4.5
Methyl tert-butyl Ether	U	4.5	ug/Kgdrywt	1	5	9.0	2.0	4.5
1,1-Dichloroethane	U	4.5	ug/Kgdrywt	1	5	9.0	3.1	4.5
cis-1,2-Dichloroethene		12.	ug/Kgdrywt	1	5	9.0	1.6	4.5
Chloroform	U	4.5	ug/Kgdrywt	1	5	9.0	0.63	4.5
Carbon Tetrachloride	U	4.5	ug/Kgdrywt	1	5	9.0	2.3	4.5
1,1,1-Trichloroethane	U	4.5	ug/Kgdrywt	1	5	9.0	0.76	4.5
2-Butanone	U	22.	ug/Kgdrywt	1	25	45.	11.	22.
Benzene	U	4.5	ug/Kgdrywt	1	5	9.0	1.6	4.5
Cyclohexane	U	4.5	ug/Kgdrywt	1	5	9.0	2.5	4.5
1,2-Dichloroethane	U	4.5	ug/Kgdrywt	1	5	9.0	1.8	4.5
Trichloroethene	J	6.0	ug/Kgdrywt	1	5	9.0	1.1	4.5
1,2-Dichloropropane	U	4.5	ug/Kgdrywt	1	5	9.0	2.5	4.5
Bromodichloromethane	U	4.5	ug/Kgdrywt	1	5	9.0	1.1	4.5
cis-1,3-Dichloropropene	U	4.5	ug/Kgdrywt	1	5	9.0	1.3	4.5
Toluene	U	4.5	ug/Kgdrywt	1	5	9.0	2.5	4.5
4-Methyl-2-Pentanone	U	22.	ug/Kgdrywt	1	25	45.	11.	22.
Tetrachloroethene		54.	ug/Kgdrywt	1	5	9.0	2.2	4.5
trans-1,3-Dichloropropene	U	4.5	ug/Kgdrywt	1	5	9.0	1.5	4.5
1,1,2-Trichloroethane	U	4.5	ug/Kgdrywt	1	5	9.0	1.7	4.5
Dibromochloromethane	U	4.5	ug/Kgdrywt	1	5	9.0	1.8	4.5
1,2-Dibromoethane	U	4.5	ug/Kgdrywt	1	5	9.0	2.2	4.5
2-Hexanone	U	22.	ug/Kgdrywt	1	25	45.	8.6	22.
Chlorobenzene	U	4.5	ug/Kgdrywt	1	5	9.0	0.92	4.5

Report of Analytical Results

Client: CH2MHill
Lab ID: SD7749-2RA
Client ID: 1817-SB01-10-12-10D
Project: MCB Camp Lejeune CTO-WJ
SDG: WE31-1

Sample Date: 13-DEC-10
Received Date: 15-DEC-10
Extract Date: 17-DEC-10
Extracted By: JSS
Extraction Method: SW846 8260B
Lab Prep Batch: WG86416

Analysis Date: 17-DEC-10
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: SL
% Solids: 88.
Report Date: 04-JAN-11

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U	9.0	ug/Kgdrywt	1	10	18.	1.6	9.0
Chloromethane	U	9.0	ug/Kgdrywt	1	10	18.	2.5	9.0
Vinyl Chloride	U	9.0	ug/Kgdrywt	1	10	18.	1.6	9.0
Bromomethane	U	9.0	ug/Kgdrywt	1	10	18.	2.0	9.0
Chloroethane	U	9.0	ug/Kgdrywt	1	10	18.	2.3	9.0
Trichlorofluoromethane	U	9.0	ug/Kgdrywt	1	10	18.	1.6	9.0
1,1-Dichloroethene	U	4.5	ug/Kgdrywt	1	5	9.0	1.7	4.5
Carbon Disulfide	J	2.1	ug/Kgdrywt	1	5	9.0	1.4	4.5
Freon-113	U	4.5	ug/Kgdrywt	1	5	9.0	1.6	4.5
Methylene Chloride	U	22.	ug/Kgdrywt	1	25	45.	14.	22.
Acetone		47.	ug/Kgdrywt	1	25	45.	9.2	22.
trans-1,2-Dichloroethene	U	4.5	ug/Kgdrywt	1	5	9.0	1.3	4.5
Methyl tert-butyl Ether	U	4.5	ug/Kgdrywt	1	5	9.0	2.0	4.5
1,1-Dichloroethane	U	4.5	ug/Kgdrywt	1	5	9.0	3.1	4.5
cis-1,2-Dichloroethene		12.	ug/Kgdrywt	1	5	9.0	1.6	4.5
Chloroform	U	4.5	ug/Kgdrywt	1	5	9.0	0.63	4.5
Carbon Tetrachloride	U	4.5	ug/Kgdrywt	1	5	9.0	2.3	4.5
1,1,1-Trichloroethane	U	4.5	ug/Kgdrywt	1	5	9.0	0.76	4.5
2-Butanone	U	22.	ug/Kgdrywt	1	25	45.	11.	22.
Benzene	U	4.5	ug/Kgdrywt	1	5	9.0	1.6	4.5
Cyclohexane	U	4.5	ug/Kgdrywt	1	5	9.0	2.5	4.5
1,2-Dichloroethane	U	4.5	ug/Kgdrywt	1	5	9.0	1.8	4.5
Trichloroethene	J	6.0	ug/Kgdrywt	1	5	9.0	1.1	4.5
1,2-Dichloropropane	U	4.5	ug/Kgdrywt	1	5	9.0	2.5	4.5
Bromodichloromethane	U	4.5	ug/Kgdrywt	1	5	9.0	1.1	4.5
cis-1,3-Dichloropropene	U	4.5	ug/Kgdrywt	1	5	9.0	1.3	4.5
Toluene	U	4.5	ug/Kgdrywt	1	5	9.0	2.5	4.5
4-Methyl-2-Pentanone	U	22.	ug/Kgdrywt	1	25	45.	11.	22.
Tetrachloroethene		54.	ug/Kgdrywt	1	5	9.0	2.2	4.5
trans-1,3-Dichloropropene	U	4.5	ug/Kgdrywt	1	5	9.0	1.5	4.5
1,1,2-Trichloroethane	U	4.5	ug/Kgdrywt	1	5	9.0	1.7	4.5
Dibromochloromethane	U	4.5	ug/Kgdrywt	1	5	9.0	1.8	4.5
1,2-Dibromoethane	U	4.5	ug/Kgdrywt	1	5	9.0	2.2	4.5
2-Hexanone	U	22.	ug/Kgdrywt	1	25	45.	8.6	22.
Chlorobenzene	U	4.5	ug/Kgdrywt	1	5	9.0	0.92	4.5

Report of Analytical Results

Client: CH2MHill
Lab ID: SD7749-2RA
Client ID: 1817-SB01-10-12-10D
Project: MCB Camp Lejeune CTO-W1
SDG: WE31-1

Sample Date: 13-DEC-10
Received Date: 15-DEC-10
Extract Date: 17-DEC-10
Extracted By: JSS
Extraction Method: SW846 8260B
Lab Prep Batch: WG86416

Analysis Date: 17-DEC-10
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: SL
% Solids: 88.
Report Date: 04-JAN-11

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Ethylbenzene	U	4.5	ug/Kgdrywt	1	5	9.0	1.2	4.5
Styrene	U	4.5	ug/Kgdrywt	1	5	9.0	0.92	4.5
Bromoform	U	4.5	ug/Kgdrywt	1	5	9.0	1.3	4.5
Isopropylbenzene	U	4.5	ug/Kgdrywt	1	5	9.0	1.6	4.5
1,1,2,2-Tetrachloroethane	U	4.5	ug/Kgdrywt	1	5	9.0	1.5	4.5
1,3-Dichlorobenzene	U	4.5	ug/Kgdrywt	1	5	9.0	1.1	4.5
1,4-Dichlorobenzene	U	4.5	ug/Kgdrywt	1	5	9.0	0.79	4.5
1,2-Dichlorobenzene	U	4.5	ug/Kgdrywt	1	5	9.0	1.4	4.5
1,2-Dibromo-3-Chloropropane	U	4.5	ug/Kgdrywt	1	5	9.0	2.7	4.5
1,2,4-Trichlorobenzene	U	4.5	ug/Kgdrywt	1	5	9.0	1.4	4.5
Methyl Acetate	U	5.4	ug/Kgdrywt	1	5	9.0	4.9	5.4
Methylcyclohexane	U	4.5	ug/Kgdrywt	1	5	9.0	1.7	4.5
1,2,4-Trimethylbenzene	U	4.5	ug/Kgdrywt	1	5	9.0	1.6	4.5
1,3,5-Trimethylbenzene	U	4.5	ug/Kgdrywt	1	5	9.0	1.2	4.5
Di-isopropyl ether	U	4.5	ug/Kgdrywt	1	5	9.0	3.8	4.5
n-Butylbenzene	U	4.5	ug/Kgdrywt	1	5	9.0	1.6	4.5
sec-Butylbenzene	U	4.5	ug/Kgdrywt	1	5	9.0	1.6	4.5
tert-Butylbenzene	U	4.5	ug/Kgdrywt	1	5	9.0	1.6	4.5
m+p-Xylene	U	4.5	ug/Kgdrywt	1	5	9.0	3.1	4.5
o-Xylene	U	4.5	ug/Kgdrywt	1	5	9.0	2.3	4.5
Naphthalene	U	4.5	ug/Kgdrywt	1	5	9.0	1.6	4.5
p-Bromofluorobenzene		109.	%					
Toluene-D8		115	%					
1,2-Dichloroethane-D4		126.	%					
Dibromofluoromethane		117.	%					

Report of Analytical Results

Client: CH2MHill
Lab ID: SD7749-3RA
Client ID: 1817-SB01-15-17-10D
Project: MCB Camp Lejeune CTO-WI
SDG: WE31-1

Sample Date: 13-DEC-10
Received Date: 15-DEC-10
Extract Date: 17-DEC-10
Extracted By: JSS
Extraction Method: SW846 8260B
Lab Prep Batch: WG86416

Analysis Date: 17-DEC-10
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: SL
% Solids: 89.
Report Date: 04-JAN-11

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U	6.5	ug/Kgdrywt	1	10	13.	1.2	6.5
Chloromethane	U	6.5	ug/Kgdrywt	1	10	13.	1.8	6.5
Vinyl Chloride	U	6.5	ug/Kgdrywt	1	10	13.	1.1	6.5
Bromomethane	U	6.5	ug/Kgdrywt	1	10	13.	1.4	6.5
Chloroethane	U	6.5	ug/Kgdrywt	1	10	13.	1.7	6.5
Trichlorofluoromethane	U	6.5	ug/Kgdrywt	1	10	13.	1.2	6.5
1,1-Dichloroethene	U	3.2	ug/Kgdrywt	1	5	6.5	1.2	3.2
Carbon Disulfide	J	1.5	ug/Kgdrywt	1	5	6.5	1.0	3.2
Freon-113	U	3.2	ug/Kgdrywt	1	5	6.5	1.2	3.2
Methylene Chloride	U	16.	ug/Kgdrywt	1	25	32.	10.	16.
Acetone	J	10.	ug/Kgdrywt	1	25	32.	6.6	16.
trans-1,2-Dichloroethene	U	3.2	ug/Kgdrywt	1	5	6.5	0.92	3.2
Methyl tert-butyl Ether	U	3.2	ug/Kgdrywt	1	5	6.5	1.4	3.2
1,1-Dichloroethane	U	3.2	ug/Kgdrywt	1	5	6.5	2.2	3.2
cis-1,2-Dichloroethene	J	1.6	ug/Kgdrywt	1	5	6.5	1.2	3.2
Chloroform	U	3.2	ug/Kgdrywt	1	5	6.5	0.46	3.2
Carbon Tetrachloride	U	3.2	ug/Kgdrywt	1	5	6.5	1.7	3.2
1,1,1-Trichloroethane	U	3.2	ug/Kgdrywt	1	5	6.5	0.55	3.2
2-Butanone	U	16.	ug/Kgdrywt	1	25	32.	7.7	16.
Benzene	U	3.2	ug/Kgdrywt	1	5	6.5	1.2	3.2
Cyclohexane	U	3.2	ug/Kgdrywt	1	5	6.5	1.8	3.2
1,2-Dichloroethane	U	3.2	ug/Kgdrywt	1	5	6.5	1.3	3.2
Trichloroethene	U	3.2	ug/Kgdrywt	1	5	6.5	0.77	3.2
1,2-Dichloropropane	U	3.2	ug/Kgdrywt	1	5	6.5	1.8	3.2
Bromodichloromethane	U	3.2	ug/Kgdrywt	1	5	6.5	0.78	3.2
cis-1,3-Dichloropropene	U	3.2	ug/Kgdrywt	1	5	6.5	0.94	3.2
Toluene	U	3.2	ug/Kgdrywt	1	5	6.5	1.8	3.2
4-Methyl-2-Pentanone	U	16.	ug/Kgdrywt	1	25	32.	7.7	16.
Tetrachloroethene		8.3	ug/Kgdrywt	1	5	6.5	1.6	3.2
trans-1,3-Dichloropropene	U	3.2	ug/Kgdrywt	1	5	6.5	1.1	3.2
1,1,2-Trichloroethane	U	3.2	ug/Kgdrywt	1	5	6.5	1.3	3.2
Dibromochloromethane	U	3.2	ug/Kgdrywt	1	5	6.5	1.3	3.2
1,2-Dibromoethane	U	3.2	ug/Kgdrywt	1	5	6.5	1.6	3.2
2-Hexanone	U	16.	ug/Kgdrywt	1	25	32.	6.2	16.
Chlorobenzene	U	3.2	ug/Kgdrywt	1	5	6.5	0.66	3.2

Report of Analytical Results

Client: CH2MHill
 Lab ID: SD7749-3RA
 Client ID: 1817-SB01-15-17-10D
 Project: MCB Camp Lejeune CTO-WI
 SDG: WE31-1

Sample Date: 13-DEC-10
 Received Date: 15-DEC-10
 Extract Date: 17-DEC-10
 Extracted By: JSS
 Extraction Method: SW846 8260B
 Lab Prep Batch: WG86416

Analysis Date: 17-DEC-10
 Analyst: JSS
 Analysis Method: SW846 8260B
 Matrix: SL
 % Solids: 89.
 Report Date: 04-JAN-11

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Ethylbenzene	U	3.2	ug/Kgdrywt	1	5	6.5	0.84	3.2
Styrene	U	3.2	ug/Kgdrywt	1	5	6.5	0.66	3.2
Bromoform	U	3.2	ug/Kgdrywt	1	5	6.5	0.91	3.2
Isopropylbenzene	U	3.2	ug/Kgdrywt	1	5	6.5	1.2	3.2
1,1,2,2-Tetrachloroethane	U	3.2	ug/Kgdrywt	1	5	6.5	1.1	3.2
1,3-Dichlorobenzene	U	3.2	ug/Kgdrywt	1	5	6.5	0.81	3.2
1,4-Dichlorobenzene	U	3.2	ug/Kgdrywt	1	5	6.5	0.57	3.2
1,2-Dichlorobenzene	U	3.2	ug/Kgdrywt	1	5	6.5	1.0	3.2
1,2-Dibromo-3-Chloropropane	U	3.2	ug/Kgdrywt	1	5	6.5	2.0	3.2
1,2,4-Trichlorobenzene	U	3.2	ug/Kgdrywt	1	5	6.5	1.0	3.2
Methyl Acetate	U	3.9	ug/Kgdrywt	1	5	6.5	3.5	3.9
Methylcyclohexane	U	3.2	ug/Kgdrywt	1	5	6.5	1.2	3.2
1,2,4-Trimethylbenzene	U	3.2	ug/Kgdrywt	1	5	6.5	1.1	3.2
1,3,5-Trimethylbenzene	U	3.2	ug/Kgdrywt	1	5	6.5	0.87	3.2
Di-isopropyl ether	U	3.2	ug/Kgdrywt	1	5	6.5	2.7	3.2
n-Butylbenzene	U	3.2	ug/Kgdrywt	1	5	6.5	1.2	3.2
sec-Butylbenzene	U	3.2	ug/Kgdrywt	1	5	6.5	1.2	3.2
tert-Butylbenzene	U	3.2	ug/Kgdrywt	1	5	6.5	1.2	3.2
m+p-Xylene	U	3.2	ug/Kgdrywt	1	5	6.5	2.2	3.2
o-Xylene	U	3.2	ug/Kgdrywt	1	5	6.5	1.7	3.2
Naphthalene	U	3.2	ug/Kgdrywt	1	5	6.5	1.1	3.2
p-Bromofluorobenzene		100.	%					
Toluene-D8		108.	%					
1,2-Dichloroethane-D4		119.	%					
Dibromofluoromethane		112.	%					

Report of Analytical Results

Client: CH2MHill
Lab ID: SD7749-1
Client ID: ST1817-SB01-5-7-10D
Project: MCB Camp Lejeune CTO-WJ
SDG: WE31-1

Sample Date: 13-DEC-10
Received Date: 15-DEC-10
Extract Date: 16-DEC-10
Extracted By: KF
Extraction Method: SW846 3550
Lab Prep Batch: WG86318

Analysis Date: 20-DEC-10
Analyst: WAS
Analysis Method: SW846 8270C
Matrix: SL
% Solids: 86.
Report Date: 05-JAN-11

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bis(2-Chloroethyl) Ether	U	270	ug/Kgdrywt	1	330	360	89.	270
1,3-Dichlorobenzene	U	270	ug/Kgdrywt	1	330	360	85.	270
1,4-Dichlorobenzene	U	270	ug/Kgdrywt	1	330	360	94.	270
1,2-Dichlorobenzene	U	270	ug/Kgdrywt	1	330	360	96.	270
n-Nitroso-di-n-propylamine	U	270	ug/Kgdrywt	1	330	360	91.	270
Hexachloroethane	U	270	ug/Kgdrywt	1	330	360	100	270
Nitrobenzene	U	270	ug/Kgdrywt	1	330	360	100	270
Isophorone	U	270	ug/Kgdrywt	1	330	360	82.	270
Bis(2-chloroethoxy)methane	U	270	ug/Kgdrywt	1	330	360	100	270
1,2,4-Trichlorobenzene	U	270	ug/Kgdrywt	1	330	360	89.	270
Hexachlorobutadiene	U	270	ug/Kgdrywt	1	330	360	91.	270
Dimethyl phthalate	U	270	ug/Kgdrywt	1	330	360	85.	270
2,6-Dinitrotoluene	U	270	ug/Kgdrywt	1	330	360	86.	270
2,4-Dinitrotoluene	U	270	ug/Kgdrywt	1	330	360	93.	270
Diethylphthalate	U	270	ug/Kgdrywt	1	330	360	88.	270
4-Chlorophenyl-phenylether	U	270	ug/Kgdrywt	1	330	360	85.	270
4-Bromophenyl-phenylether	U	270	ug/Kgdrywt	1	330	360	93.	270
Hexachlorobenzene	U	270	ug/Kgdrywt	1	330	360	90.	270
Anthracene	U	270	ug/Kgdrywt	1	330	360	92.	270
Di-n-butylphthalate	U	270	ug/Kgdrywt	1	330	360	110	270
Butylbenzylphthalate	U	270	ug/Kgdrywt	1	330	360	100	270
3,3'-Dichlorobenzidine	U	270	ug/Kgdrywt	1	330	360	120	270
Bis(2-ethylhexyl)phthalate	J	160	ug/Kgdrywt	1	330	360	110	270
Di-n-octylphthalate	U	270	ug/Kgdrywt	1	330	360	230	270
2-Fluorophenol		66.6						
Phenol-d6		71.2						
Nitrobenzene-d5		63.7						
2-Fluorobiphenyl		76.4						
2,4,6-Tribromophenol		76.7						
Terphenyl-d14		80.8						

Report of Analytical Results

Client: CH2MHill
Lab ID: SD7749-2
Client ID: 1817-SB01-10-12-10D
Project: MCB Camp Lejeune CTO-WI
SDG: WE31-1

Sample Date: 13-DEC-10
Received Date: 15-DEC-10
Extract Date: 16-DEC-10
Extracted By: KF
Extraction Method: SW846 3550
Lab Prep Batch: WG86318

Analysis Date: 20-DEC-10
Analyst: WAS
Analysis Method: SW846 8270C
Matrix: SL
% Solids: 88.
Report Date: 05-JAN-11

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bis(2-Chloroethyl) Ether	U	280	ug/Kgdrywt	1	330	370	90.	280
1,3-Dichlorobenzene	U	280	ug/Kgdrywt	1	330	370	87.	280
1,4-Dichlorobenzene	U	280	ug/Kgdrywt	1	330	370	96.	280
1,2-Dichlorobenzene	U	280	ug/Kgdrywt	1	330	370	98.	280
n-Nitroso-di-n-propylamine	U	280	ug/Kgdrywt	1	330	370	93.	280
Hexachloroethane	U	280	ug/Kgdrywt	1	330	370	110	280
Nitrobenzene	U	280	ug/Kgdrywt	1	330	370	100	280
Isophorone	U	280	ug/Kgdrywt	1	330	370	84.	280
Bis(2-chloroethoxy)methane	U	280	ug/Kgdrywt	1	330	370	110	280
1,2,4-Trichlorobenzene	U	280	ug/Kgdrywt	1	330	370	90.	280
Hexachlorobutadiene	U	280	ug/Kgdrywt	1	330	370	93.	280
Dimethyl phthalate	U	280	ug/Kgdrywt	1	330	370	87.	280
2,6-Dinitrotoluene	U	280	ug/Kgdrywt	1	330	370	88.	280
2,4-Dinitrotoluene	U	280	ug/Kgdrywt	1	330	370	95.	280
Diethylphthalate	U	280	ug/Kgdrywt	1	330	370	89.	280
4-Chlorophenyl-phenylether	U	280	ug/Kgdrywt	1	330	370	87.	280
4-Bromophenyl-phenylether	U	280	ug/Kgdrywt	1	330	370	95.	280
Hexachlorobenzene	U	280	ug/Kgdrywt	1	330	370	92.	280
Anthracene	U	280	ug/Kgdrywt	1	330	370	94.	280
Di-n-butylphthalate	U	280	ug/Kgdrywt	1	330	370	110	280
Butylbenzylphthalate	U	280	ug/Kgdrywt	1	330	370	100	280
3,3'-Dichlorobenzidine	U	280	ug/Kgdrywt	1	330	370	130	280
Bis(2-ethylhexyl)phthalate		650	ug/Kgdrywt	1	330	370	110	280
Di-n-octylphthalate	U	280	ug/Kgdrywt	1	330	370	240	280
2-Fluorophenol		69.9						
Phenol-d6		73.4						
Nitrobenzene-d5		69.4						
2-Fluorobiphenyl		78.5						
2,4,6-Tribromophenol		74.5						
Terphenyl-d14		71.0						

Report of Analytical Results

Client: CH2MHill
Lab ID: SD7749-3
Client ID: 1817-SB01-15-17-10D
Project: MCB Camp Lejeune CTO-WI
SDG: WE31-1

Sample Date: 13-DEC-10
Received Date: 15-DEC-10
Extract Date: 16-DEC-10
Extracted By: KF
Extraction Method: SW846 3550
Lab Prep Batch: WG86318

Analysis Date: 20-DEC-10
Analyst: WAS
Analysis Method: SW846 8270C
Matrix: SL
% Solids: 89.
Report Date: 05-JAN-11

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bis(2-Chloroethyl) Ether	U	260	ug/Kgdrywt	1	330	340	84.	260
1,3-Dichlorobenzene	U	260	ug/Kgdrywt	1	330	340	80.	260
1,4-Dichlorobenzene	U	260	ug/Kgdrywt	1	330	340	89.	260
1,2-Dichlorobenzene	U	260	ug/Kgdrywt	1	330	340	91.	260
n-Nitroso-di-n-propylamine	U	260	ug/Kgdrywt	1	330	340	86.	260
Hexachloroethane	U	260	ug/Kgdrywt	1	330	340	99.	260
Nitrobenzene	U	260	ug/Kgdrywt	1	330	340	94.	260
Isophorone	U	260	ug/Kgdrywt	1	330	340	77.	260
Bis(2-chloroethoxy)methane	U	260	ug/Kgdrywt	1	330	340	99.	260
1,2,4-Trichlorobenzene	U	260	ug/Kgdrywt	1	330	340	84.	260
Hexachlorobutadiene	U	260	ug/Kgdrywt	1	330	340	86.	260
Dimethyl phthalate	U	260	ug/Kgdrywt	1	330	340	80.	260
2,6-Dinitrotoluene	U	260	ug/Kgdrywt	1	330	340	82.	260
2,4-Dinitrotoluene	U	260	ug/Kgdrywt	1	330	340	88.	260
Diethylphthalate	U	260	ug/Kgdrywt	1	330	340	83.	260
4-Chlorophenyl-phenylether	U	260	ug/Kgdrywt	1	330	340	80.	260
4-Bromophenyl-phenylether	U	260	ug/Kgdrywt	1	330	340	88.	260
Hexachlorobenzene	U	260	ug/Kgdrywt	1	330	340	85.	260
Anthracene	U	260	ug/Kgdrywt	1	330	340	87.	260
Di-n-butylphthalate	U	260	ug/Kgdrywt	1	330	340	100	260
Butylbenzylphthalate	U	260	ug/Kgdrywt	1	330	340	96.	260
3,3'-Dichlorobenzidine	U	260	ug/Kgdrywt	1	330	340	120	260
Bis(2-ethylhexyl)phthalate		420	ug/Kgdrywt	1	330	340	100	260
Di-n-octylphthalate	U	260	ug/Kgdrywt	1	330	340	220	260
2-Fluorophenol		61.9						
Phenol-d6		65.4						
Nitrobenzene-d5		61.0						
2-Fluorobiphenyl		72.1						
2,4,6-Tribromophenol		66.6						
Terphenyl-d14		69.2						

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: UST1817-GW01-10D

Matrix: WATER

SDG Name: WE31-1

Percent Solids: 0.00

Lab Sample ID: SD7472-008

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED		
							LOQ	MDL	LOD
7440-47-3	CHROMIUM, TOTAL	0.57	J		P	1	15	0.32	4.0
7439-92-1	LEAD, TOTAL	4.0	U		P	1	5.0	0.73	4.0

Bottle ID: R

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: UST1817-GW01-10D

Matrix: WATER

SDG Name: WE31-1

Percent Solids: 0.00

Lab Sample ID: SD7472-009

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED		
							LOQ	MDL	LOD
7440-47-3	CHROMIUM, DISSOLVED	0.33	J		P	1	15	0.32	4.0
7439-92-1	LEAD, DISSOLVED	4.0	U		P	1	5.0	0.73	4.0

Bottle ID: C

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: ST1817-SB01-5-7-10D

Matrix: SOIL

SDG Name: WE31-1

Percent Solids: 85.6

Lab Sample ID: SD7749-001

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED		
							LOQ	MDL	LOD
7440-47-3	CHROMIUM, TOTAL	7.1			P	1	1.4	0.03	0.37
7439-92-1	LEAD, TOTAL	7.0			P	1	0.46	0.09	0.37

Bottle ID: G

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: 1817-SB01-10-12-10D

Matrix: SOIL

SDG Name: WE31-1

Percent Solids: 87.8

Lab Sample ID: SD7749-002

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED		
							LOQ	MDL	LOD
7440-47-3	CHROMIUM, TOTAL	11.9			P	1	1.6	0.03	0.41
7439-92-1	LEAD, TOTAL	5.4			P	1	0.52	0.11	0.41

Bottle ID: G

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: 1817-SB01-15-17-10D

Matrix: SOIL

SDG Name: WE31-1

Percent Solids: 89.1

Lab Sample ID: SD7749-003

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED		
							LOQ	MDL	LOD
7440-47-3	CHROMIUM, TOTAL	5.2			P	1	1.4	0.03	0.39
7439-92-1	LEAD, TOTAL	3.7			P	1	0.48	0.10	0.39

Bottle ID: G

Comments:

5A
SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services
 Matrix: WATER
 Percent Solids: 0.00

Client Field ID: UST1817-GW01-10DS
 SDG Name: WE31-1
 Lab Sample ID: SD7472-008P

Concentration Units : ug/L

Analyte	Spiked		Sample		Spike Added	%R	Q	Control Limits (%R)		M
	Sample	Result	Result	C				Low	High	
CHROMIUM, TOTAL	201.7000		0.5714	J	200	100.6		80	120	P
LEAD, TOTAL	99.2700		0.4766	U	100	99.3		80	120	P

Comments:

5A
SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services

Client Field ID: UST1817-GW01-10DS

Matrix: WATER

SDG Name: WE31-1

Percent Solids: 0.00

Lab Sample ID: SD7472-008S

Concentration Units : ug/L

Analyte	Spiked		Sample		Spike Added	%R	Q	Control Limits (%R)		M
	Sample	Result	Result	C				Low	High	
CHROMIUM, TOTAL	201.5000		0.5714	J	200	100.5		80	120	P
LEAD, TOTAL	98.4300		0.4766	U	100	98.4		80	120	P

Comments:

5A
SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services

Client Field ID: UST1817-GW01-10DS

Matrix: WATER

SDG Name: WE31-1

Percent Solids: 0.00

Lab Sample ID: SD7472-009P

Concentration Units : ug/L

Analyte	Spiked		Sample		Spike	%R	Q	Control Limits (%R)		M
	Sample	Result	Result	C				Added	Low	
CHROMIUM, DISSOLVED	198.7000		0.3322	J	200	99.2		80	120	P
LEAD, DISSOLVED	98.7100		0.0129	U	100	98.7		80	120	P

Comments:

5A
SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services
Matrix: WATER
Percent Solids: 0.00

Client Field ID: UST1817-GW01-10DS
SDG Name: WE31-1
Lab Sample ID: SD7472-009S

Concentration Units : ug/L

Analyte	Spiked		Sample		Spike	%R	Q	Control Limits (%R)		M
	Sample	Result	Result	C				Added	Low	
CHROMIUM, DISSOLVED	199.6000		0.3322	J	200	99.6		80	120	P
LEAD, DISSOLVED	99.4100		0.0129	U	100	99.4		80	120	P

Comments:

POST DIGEST SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services

Client Field ID: UST1817-GW01-10DS

Matrix: WATER

SDG Name: WE31-1

Percent Solids: 0.00

Lab Sample ID: SD7472-008A

Concentration Units : ug/L

Analyte	Spiked		Sample		Spike Added	%R	Q	Control Limits (%R)		M
	Sample	Result	Result	C				Low	High	
CHROMIUM, TOTAL	487.8000		0.5714	J	500	97.4		75	125	P
LEAD, TOTAL	478.8000		0.4766	U	500	95.8		75	125	P

Comments:

5B

POST DIGEST SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services

Client Field ID: UST1817-GW01-10DS

Matrix: WATER

SDG Name: WE31-1

Percent Solids: 0.00

Lab Sample ID: SD7472-009A

Concentration Units : ug/L

Analyte	Spiked		Sample		Spike Added	%R	Q	Control Limits (%R)		M
	Sample	Result	Result	C				Low	High	
CHROMIUM, DISSOLVED	478.7000		0.3322	J	500	95.7		75	125	P
LEAD, DISSOLVED	474.9000		0.0129	U	500	95.0		75	125	P

Comments:

5D
SPIKE DUPLICATES

Lab Name: Katahdin Analytical Services

Client Field ID: UST1817-GW01-10D

Matrix: WATER

SDG Name: WE31-1

Percent Solids: 0.00

Lab Sample ID: SD7472-008

Concentration Units : ug/L

Analyte	Control Limits	Spike Result	C	Spike Dup. Result	C	RPD	Q	M
CHROMIUM, TOTAL		201.5000		201.7000		0.1		P
LEAD, TOTAL		98.4300		99.2700		0.8		P

Comments:

5D
SPIKE DUPLICATES

Lab Name: Katahdin Analytical Services

Client Field ID: UST1817-GW01-10D

Matrix: WATER

SDG Name: WE31-1

Percent Solids: 0.00

Lab Sample ID: SD7472-009

Concentration Units : ug/L

Analyte	Control Limits	Spike Result	C	Spike Dup. Result	C	RPD	Q	M
CHROMIUM, DISSOLVED		199.6000		198.7000		0.5		P
LEAD, DISSOLVED		99.4100		98.7100		0.7		P

Comments:

ICP SERIAL DILUTION

Lab Name: Katahdin Analytical Services

Client Field ID: UST1817-GW01-1ODL

Matrix: WATER

SDG Name: WE31-1

Lab Sample ID: SD7472-008L

Concentration Units: ug/L

Analyte	Sample Result	C	Dilution	Result	C	% Difference	Q	M
CHROMIUM, TOTAL	0.57	J		1.24	U	100.0		P
LEAD, TOTAL	0.48	U		-1.09	U			P

ICP SERIAL DILUTION

Lab Name: Katahdin Analytical Services

Client Field ID: UST1817-GW01-10DL

Matrix: WATER

SDG Name: WE31-1

Lab Sample ID: SD7472-009L

Concentration Units: ug/L

Analyte	Sample Result	C	Dilution	Result	C	% Difference	Q	M
CHROMIUM, DISSOLVED	0.33	J		0.60	U	100.0		P
LEAD, DISSOLVED	0.01	U		-2.02	U			P

Report of Analytical Results

Client: Rebekha Shaw
 CH2MHill
 5700 Cleveland St.
 Virginia Beach, VA 23462

Lab Sample ID: SD7749-1
Report Date: 28-DEC-10
Client PO: N62470-08-D-1000 942
Project: MCB Camp Lejeune CTO
SDG: WE31-1

Sample Description

ST1817-SB01-5-7-10D

<u>Matrix</u>	<u>Date Sampled</u>	<u>Date Received</u>
SL	13-DEC-10	15-DEC-10

<u>Parameter</u>	<u>Result</u>	<u>Adj LOQ</u>	<u>Adj LOD</u>	<u>Anal. Method</u>	<u>QC.Batch</u>	<u>Anal. Date</u>	<u>Prep. Method</u>	<u>Prep. Date</u>	<u>Footnotes</u>
Total Solids	86. %	1	N/A	SM2540G	WG86619	23-DEC-10 09:21:00	ASTM D2216	22-DEC-10	

Report of Analytical Results

Client: Rebekha Shaw
 CH2MHill
 5700 Cleveland St.
 Virginia Beach, VA 23462

Lab Sample ID: SD7749-2
Report Date: 28-DEC-10
Client PO: N62470-08-D-1000 942
Project: MCB Camp Lejeune CTO
SDG: WE31-1

Sample Description

1817-SB01-10-12-10D

<u>Matrix</u>	<u>Date Sampled</u>	<u>Date Received</u>
SL	13-DEC-10	15-DEC-10

<u>Parameter</u>	<u>Result</u>	<u>Adj LOQ</u>	<u>Adj LOD</u>	<u>Anal. Method</u>	<u>QC.Batch</u>	<u>Anal. Date</u>	<u>Prep. Method</u>	<u>Prep. Date</u>	<u>Footnotes</u>
Total Solids	88. %	1	N/A	SM2540G	WG86619	23-DEC-10 09:21:00	ASTM D2216	22-DEC-10	

Report of Analytical Results

Client: Rebekha Shaw
 CH2MHill
 5700 Cleveland St.
 Virginia Beach, VA 23462

Lab Sample ID: SD7749-3
Report Date: 28-DEC-10
Client PO: N62470-08-D-1000 942
Project: MCB Camp Lejeune CTO
SDG: WE31-1

Sample Description

1817-SB01-15-17-10D

<u>Matrix</u>	<u>Date Sampled</u>	<u>Date Received</u>
SL	13-DEC-10	15-DEC-10

<u>Parameter</u>	<u>Result</u>	<u>Adj LOQ</u>	<u>Adj LOD</u>	<u>Anal. Method</u>	<u>QC.Batch</u>	<u>Anal. Date</u>	<u>Prep. Method</u>	<u>Prep. Date</u>	<u>Footnotes</u>
Total Solids	89. %	1	N/A	SM2540G	WG86619	23-DEC-10 09:22:00	ASTM D2216	22-DEC-10	

Report of Analytical Results

Client: CH2MHill
Lab ID: SD7472-8
Client ID: UST1817-GW01-10D
Project: MCB Camp Lejeune CTO-WI
SDG: WE31-1

Sample Date: 01-DEC-10
Received Date: 02-DEC-10
Extract Date: 03-DEC-10
Extracted By: CB
Extraction Method: SW846 3510
Lab Prep Batch: WG85798

Analysis Date: 16-DEC-10
Analyst: JCG
Analysis Method: SW846 M8270C
Matrix: AQ
% Solids: NA
Report Date: 23-DEC-10

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	JB	0.12	ug/L	1	.2	0.19	0.060	0.094
2-Methylnaphthalene	U	0.094	ug/L	1	.2	0.19	0.073	0.094
Acenaphthylene	U	0.094	ug/L	1	.2	0.19	0.051	0.094
Acenaphthene	U	0.094	ug/L	1	.2	0.19	0.060	0.094
Fluorene	U	0.094	ug/L	1	.2	0.19	0.058	0.094
Phenanthrene	U	0.094	ug/L	1	.2	0.19	0.048	0.094
Anthracene	U	0.094	ug/L	1	.2	0.19	0.042	0.094
Fluoranthene	U	0.094	ug/L	1	.22	0.21	0.069	0.094
Pyrene	U	0.094	ug/L	1	.2	0.19	0.056	0.094
Benzo (a) anthracene	U	0.094	ug/L	1	.2	0.19	0.043	0.094
Chrysene	U	0.094	ug/L	1	.2	0.19	0.034	0.094
Benzo (b) Fluoranthene	U	0.094	ug/L	1	.27	0.25	0.084	0.094
Benzo(k)fluoranthene	U	0.094	ug/L	1	.2	0.19	0.046	0.094
Benzo(a)pyrene	U	0.094	ug/L	1	.2	0.19	0.062	0.094
Indeno (1,2,3-cd) pyrene	U	0.094	ug/L	1	.2	0.19	0.049	0.094
Dibenzo (a,h) anthracene	U	0.094	ug/L	1	.21	0.20	0.066	0.094
Benzo(g,h,i)perylene	U	0.094	ug/L	1	.2	0.19	0.061	0.094
2-Chloronaphthalene	U	0.094	ug/L	1	.2	0.19	0.068	0.094
2-Methylnaphthalene-D10	*	108.	%					
Fluorene-D10		71.2	%					
pyrene-d10		109.	%					

Report of Analytical Results

Client: CH2MHill
Lab ID: SD7749-2
Client ID: 1817-SB01-10-12-10D
Project: MCB Camp Lejeune CTO-WI
SDG: WE31-1

Sample Date: 13-DEC-10
Received Date: 15-DEC-10
Extract Date: 16-DEC-10
Extracted By: KF
Extraction Method: SW846 3550
Lab Prep Batch: WG86319

Analysis Date: 21-DEC-10
Analyst: JCG
Analysis Method: SW846 M8270C
Matrix: SL
% Solids: 88.
Report Date: 23-DEC-10

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	11.	ug/Kgdrywt	1	20	22.	2.9	11.
2-Methylnaphthalene	U	11.	ug/Kgdrywt	1	20	22.	2.4	11.
Acenaphthylene	U	11.	ug/Kgdrywt	1	20	22.	1.3	11.
Acenaphthene	U	11.	ug/Kgdrywt	1	20	22.	1.7	11.
Fluorene	U	11.	ug/Kgdrywt	1	20	22.	3.6	11.
Phenanthrene	J	4.8	ug/Kgdrywt	1	20	22.	2.0	11.
Fluoranthene	U	11.	ug/Kgdrywt	1	20	22.	2.0	11.
Pyrene	U	11.	ug/Kgdrywt	1	20	22.	2.3	11.
Benzo (a) anthracene	U	11.	ug/Kgdrywt	1	20	22.	2.1	11.
Chrysene	U	11.	ug/Kgdrywt	1	20	22.	1.9	11.
Benzo (b) Fluoranthene	U	11.	ug/Kgdrywt	1	20	22.	2.7	11.
Benzo(k)fluoranthene	U	11.	ug/Kgdrywt	1	20	22.	3.5	11.
Benzo(a)pyrene	U	11.	ug/Kgdrywt	1	20	22.	3.7	11.
Indeno (1,2,3-cd) pyrene	U	11.	ug/Kgdrywt	1	20	22.	2.1	11.
Dibenzo (a,h) anthracene	U	11.	ug/Kgdrywt	1	20	22.	2.0	11.
Benzo(g,h,i)perylene	U	11.	ug/Kgdrywt	1	20	22.	2.2	11.
2-Chloronaphthalene	U	11.	ug/Kgdrywt	1	20	22.	4.0	11.
2-Methylnaphthalene-D10		74.2	%					
Fluorene-D10		48.6	%					
Pyrene-D10		79.4	%					

Report of Analytical Results

Client: CH2MHill
Lab ID: SD7749-3
Client ID: 1817-SB01-15-17-10D
Project: MCB Camp Lejeune CTO-WJ
SDG: WE31-1

Sample Date: 13-DEC-10
Received Date: 15-DEC-10
Extract Date: 16-DEC-10
Extracted By: KF
Extraction Method: SW846 3550
Lab Prep Batch: WG86319

Analysis Date: 21-DEC-10
Analyst: JCG
Analysis Method: SW846 M8270C
Matrix: SL
% Solids: 89.
Report Date: 23-DEC-10

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	21.	2.7	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	21.	2.3	10.
Acenaphthylene	U	10.	ug/Kgdrywt	1	20	21.	1.2	10.
Acenaphthene	U	10.	ug/Kgdrywt	1	20	21.	1.5	10.
Fluorene	U	10.	ug/Kgdrywt	1	20	21.	3.3	10.
Phenanthrene	J	4.2	ug/Kgdrywt	1	20	21.	1.8	10.
Fluoranthene	U	10.	ug/Kgdrywt	1	20	21.	1.8	10.
Pyrene	U	10.	ug/Kgdrywt	1	20	21.	2.2	10.
Benzo (a) anthracene	U	10.	ug/Kgdrywt	1	20	21.	2.0	10.
Chrysene	U	10.	ug/Kgdrywt	1	20	21.	1.8	10.
Benzo (b) Fluoranthene	U	10.	ug/Kgdrywt	1	20	21.	2.5	10.
Benzo(k)fluoranthene	U	10.	ug/Kgdrywt	1	20	21.	3.2	10.
Benzo(a)pyrene	U	10.	ug/Kgdrywt	1	20	21.	3.4	10.
Indeno (1,2,3-cd) pyrene	U	10.	ug/Kgdrywt	1	20	21.	2.0	10.
Dibenzo (a,h) anthracene	U	10.	ug/Kgdrywt	1	20	21.	1.8	10.
Benzo(g,h,i)perylene	U	10.	ug/Kgdrywt	1	20	21.	2.1	10.
2-Chloronaphthalene	U	10.	ug/Kgdrywt	1	20	21.	3.7	10.
2-Methylnaphthalene-D10		47.9	%					
Fluorene-D10		44.3	%					
Pyrene-D10		87.4	%					

Extractable Petroleum Hydrocarbon (EPH) Analysis

Client: CH2MHill	SDG: WE31-1
Client Sample ID: UST1817-GW01-10D	Date Collected: 01-DEC-10
KAS Sample ID: SD7472-8RE	Date Received: 02-DEC-10
Analytical Method: MA DEP EPH 04-1.1	Date Extracted: 13-DEC-10
Prep Method: SW846 3520	Date Reported: 05-JAN-11
Matrix: AQ	Percent Solids: NA

EPH Range Results	Results	PQL	LOD	MDL	Units	DF	Date Analyzed	Qual
Unadjusted C11-C22 Aromatics	71	95	71	48	ug/L	1	18-DEC-10	U
C9-C18 Aliphatics	71	95	71	48	ug/L	1	18-DEC-10	U
C19-C36 Aliphatics	71	95	71	48	ug/L	1	18-DEC-10	U
C11-C22 Aromatics	71	95	71	48	ug/L	1	18-DEC-10	U

EPH Surrogate Recoveries	Recovery	Acceptance Range	Date Analyzed	Qual
5-alpha androstane	59	40-140	18-DEC-10	
1-Chlorooctadecane	63	40-140	18-DEC-10	
o-Terphenyl	76	40-140	18-DEC-10	
2-Fluorobiphenyl	99	40-140	18-DEC-10	
2-Bromonaphthalene	53	40-140	18-DEC-10	

* Fractionation Surrogates.

1 Hydrocarbon Range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range.

2 C11-C22 Aromatic Hydrocarbons exclude the concentration of Target PAH Analytes.

3 Diesel PAH Analytes.

Extractable Petroleum Hydrocarbon (EPH) Analysis

Client: CH2MHill	SDG: WE31-1
Client Sample ID: ST1817-SB01-5-7-10D	Date Collected: 13-DEC-10
KAS Sample ID: SD7749-1	Date Received: 15-DEC-10
Analytical Method: MA DEP EPH 04-1.1	Date Extracted: 20-DEC-10
Prep Method: SW846 3540	Date Reported: 05-JAN-11
Matrix: SL	Percent Solids: 86.

EPH Range Results	Results	PQL	LOD	MDL	Units	DF	Date Analyzed	Qual
Unadjusted C11-C22 Aromatics	16	21	16	11	mg/Kgdrywt	1	23-DEC-10	U
C9-C18 Aliphatics	16	21	16	11	mg/Kgdrywt	1	23-DEC-10	U
C19-C36 Aliphatics	16	21	16	11	mg/Kgdrywt	1	23-DEC-10	U
C11-C22 Aromatics	16	21	16	11	mg/Kgdrywt	1	23-DEC-10	U

EPH Surrogate Recoveries	Recovery	Acceptance Range	Date Analyzed	Qual
5-alpha androstane	75	40-140	23-DEC-10	
1-Chlorooctadecane	77	40-140	23-DEC-10	
o-Terphenyl	73	40-140	23-DEC-10	
2-Fluorobiphenyl	87	40-140	23-DEC-10	
2-Bromonaphthalene	68	40-140	23-DEC-10	

* Fractionation Surrogates.

1 Hydrocarbon Range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range.

2 C11-C22 Aromatic Hydrocarbons exclude the concentration of Target PAH Analytes.

3 Diesel PAH Analytes.

Extractable Petroleum Hydrocarbon (EPH) Analysis

Client: CH2MHill	SDG: WE31-1
Client Sample ID: 1817-SB01-10-12-10D	Date Collected: 13-DEC-10
KAS Sample ID: SD7749-2	Date Received: 15-DEC-10
Analytical Method: MA DEP EPH 04-1.1	Date Extracted: 20-DEC-10
Prep Method: SW846 3540	Date Reported: 05-JAN-11
Matrix: SL	Percent Solids: 88.

EPH Range Results	Results	PQL	LOD	MDL	Units	DF	Date Analyzed	Qual
Unadjusted C11-C22 Aromatics	17	22	17	11	mg/Kgdrywt	1	23-DEC-10	U
C9-C18 Aliphatics	17	22	17	11	mg/Kgdrywt	1	23-DEC-10	U
C19-C36 Aliphatics	17	22	17	11	mg/Kgdrywt	1	23-DEC-10	U
C11-C22 Aromatics	17	22	17	11	mg/Kgdrywt	1	23-DEC-10	U

EPH Surrogate Recoveries	Recovery	Acceptance Range	Date Analyzed	Qual
5-alpha androstane	65	40-140	23-DEC-10	
1-Chlorooctadecane	65	40-140	23-DEC-10	
o-Terphenyl	65	40-140	23-DEC-10	
2-Fluorobiphenyl	76	40-140	23-DEC-10	
2-Bromonaphthalene	63	40-140	23-DEC-10	

*** Fractionation Surrogates.**

- 1 Hydrocarbon Range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range.
- 2 C11-C22 Aromatic Hydrocarbons exclude the concentration of Target PAH Analytes.
- 3 Diesel PAH Analytes.

Extractable Petroleum Hydrocarbon (EPH) Analysis

Client: CH2MHill	SDG: WE31-1
Client Sample ID: 1817-SB01-15-17-10D	Date Collected: 13-DEC-10
KAS Sample ID: SD7749-3	Date Received: 15-DEC-10
Analytical Method: MA DEP EPH 04-1.1	Date Extracted: 20-DEC-10
Prep Method: SW846 3540	Date Reported: 05-JAN-11
Matrix: SL	Percent Solids: 89.

EPH Range Results	Results	PQL	LOD	MDL	Units	DF	Date Analyzed	Qual
Unadjusted C11-C22 Aromatics	15	20	15	9.9	mg/Kgdrywt	1	23-DEC-10	U
C9-C18 Aliphatics	15	20	15	9.9	mg/Kgdrywt	1	23-DEC-10	U
C19-C36 Aliphatics	15	20	15	9.9	mg/Kgdrywt	1	23-DEC-10	U
C11-C22 Aromatics	15	20	15	9.9	mg/Kgdrywt	1	23-DEC-10	U

EPH Surrogate Recoveries	Recovery	Acceptance Range	Date Analyzed	Qual
5-alpha androstane	72	40-140	23-DEC-10	
1-Chlorooctadecane	40	40-140	23-DEC-10	
o-Terphenyl	82	40-140	23-DEC-10	
2-Fluorobiphenyl	105	40-140	23-DEC-10	
2-Bromonaphthalene	96	40-140	23-DEC-10	

*** Fractionation Surrogates.**

1 Hydrocarbon Range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range.

2 C11-C22 Aromatic Hydrocarbons exclude the concentration of Target PAH Analytes.

3 Diesel PAH Analytes.

Volatile Petroleum Hydrocarbon (VPH) Analysis

Client: CH2MHill	SDG: WE31-1
Client Sample ID: UST1817-GW01-10D	Date Collected: 01-DEC-10
KAS Sample ID: SD7472-8	Date Received: 02-DEC-10
Analytical Method: MA DEP VPH 04-1.1	Date Extracted: 06-DEC-10
Prep Method: SW846 5030B	Date Reported: 04-JAN-11
Matrix: AQ	Percent Solids: NA

VPH Range Results	Results	PQL	LOD	MDL	Units	DF	Date Analyzed	Qual
Unadjusted C5-C8 Aliphatics	590	100	75	50	ug/L	1	06-DEC-10	
Unadjusted C9-C12 Aliphatics	75	100	75	50	ug/L	1	06-DEC-10	U
C5-C8 Aliphatics	590	100	75	50	ug/L	1	06-DEC-10	
C9-C12 Aliphatics	75	100	75	50	ug/L	1	06-DEC-10	U
C9-C10 Aromatics	75	100	75	50	ug/L	1	06-DEC-10	U

VPH Surrogate Recoveries	Recovery	Acceptance Range	Date Analyzed	Qual
2,5-Dibromotoluene (FID)	71	70-130	06-DEC-10	
2,5-Dibromotoluene (PID)	88	70-130	06-DEC-10	

1 Hydrocarbon Range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range.

2 C5-C8 Aliphatic Hydrocarbons exclude the concentration of Target Analytes eluting in that range.

3 C9-C12 Aliphatic Hydrocarbons exclude the concentration of Target Analytes eluting in that range AND concentration of C9-C10 Aromatic Hydrocarbons.

Volatile Petroleum Hydrocarbon (VPH) Analysis

Client: CH2MHill	SDG: WE31-1
Client Sample ID: ST1817-SB01-5-7-10D	Date Collected: 13-DEC-10
KAS Sample ID: SD7749-1	Date Received: 15-DEC-10
Analytical Method: MA DEP VPH 04-1.1	Date Extracted: 17-DEC-10
Prep Method: SW846 5030B	Date Reported: 05-JAN-11
Matrix: SL	Percent Solids: 86.

VPH Range Results	Results	PQL	LOD	MDL	Units	DF	Date Analyzed	Qual
Unadjusted C5-C8 Aliphatics	33	47	33	25	mg/Kgdrywt	1	17-DEC-10	U
Unadjusted C9-C12 Aliphatics	33	47	33	25	mg/Kgdrywt	1	17-DEC-10	U
C5-C8 Aliphatics	33	47	33	25	mg/Kgdrywt	1	17-DEC-10	U
C9-C12 Aliphatics	33	47	33	25	mg/Kgdrywt	1	17-DEC-10	U
C9-C10 Aromatics	33	47	33	25	mg/Kgdrywt	1	17-DEC-10	U

VPH Surrogate Recoveries	Recovery	Acceptance Range	Date Analyzed	Qual
2,5-Dibromotoluene (FID)	96	70-130	17-DEC-10	
2,5-Dibromotoluene (PID)	94	70-130	17-DEC-10	

1 Hydrocarbon Range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range.

2 C5-C8 Aliphatic Hydrocarbons exclude the concentration of Target Analytes eluting in that range.

3 C9-C12 Aliphatic Hydrocarbons exclude the concentration of Target Analytes eluting in that range AND concentration of C9-C10 Aromatic Hydrocarbons.

Volatile Petroleum Hydrocarbon (VPH) Analysis

Client: CH2Mhill	SDG: WE31-1
Client Sample ID: 1817-SB01-10-12-10D	Date Collected: 13-DEC-10
KAS Sample ID: SD7749-2	Date Received: 15-DEC-10
Analytical Method: MA DEP VPH 04-1.1	Date Extracted: 17-DEC-10
Prep Method: SW846 5030B	Date Reported: 05-JAN-11
Matrix: SL	Percent Solids: 88.

VPH Range Results	Results	PQL	LOD	MDL	Units	DF	Date Analyzed	Qual
Unadjusted C5-C8 Aliphatics	28	40	28	20	mg/Kgdrywt	1	17-DEC-10	U
Unadjusted C9-C12 Aliphatics	28	40	28	20	mg/Kgdrywt	1	17-DEC-10	U
C5-C8 Aliphatics	28	40	28	20	mg/Kgdrywt	1	17-DEC-10	U
C9-C12 Aliphatics	28	40	28	20	mg/Kgdrywt	1	17-DEC-10	U
C9-C10 Aromatics	28	40	28	20	mg/Kgdrywt	1	17-DEC-10	U

VPH Surrogate Recoveries	Recovery	Acceptance Range	Date Analyzed	Qual
2,5-Dibromotoluene (FID)	100	70-130	17-DEC-10	
2,5-Dibromotoluene (PID)	94	70-130	17-DEC-10	

- 1 Hydrocarbon Range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range.
- 2 C5-C8 Aliphatic Hydrocarbons exclude the concentration of Target Analytes eluting in that range.
- 3 C9-C12 Aliphatic Hydrocarbons exclude the concentration of Target Analytes eluting in that range AND concentration of C9-C10 Aromatic Hydrocarbons.

Volatile Petroleum Hydrocarbon (VPH) Analysis

Client: CH2MHill	SDG: WE31-1
Client Sample ID: 1817-SB01-15-17-10D	Date Collected: 13-DEC-10
KAS Sample ID: SD7749-3	Date Received: 15-DEC-10
Analytical Method: MA DEP VPH 04-1.1	Date Extracted: 17-DEC-10
Prep Method: SW846 5030B	Date Reported: 05-JAN-11
Matrix: SL	Percent Solids: 89.

VPH Range Results	Results	PQL	LOD	MDL	Units	DF	Date Analyzed	Qual
Unadjusted C5-C8 Aliphatics	34	48	34	25	mg/Kgdrywt	1	17-DEC-10	U
Unadjusted C9-C12 Aliphatics	34	48	34	25	mg/Kgdrywt	1	17-DEC-10	U
C5-C8 Aliphatics	34	48	34	25	mg/Kgdrywt	1	17-DEC-10	U
C9-C12 Aliphatics	34	48	34	25	mg/Kgdrywt	1	17-DEC-10	U
C9-C10 Aromatics	34	48	34	25	mg/Kgdrywt	1	17-DEC-10	U

VPH Surrogate Recoveries	Recovery	Acceptance Range	Date Analyzed	Qual
2,5-Dibromotoluene (FID)	99	70-130	17-DEC-10	
2,5-Dibromotoluene (PID)	101	70-130	17-DEC-10	

1 Hydrocarbon Range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range.

2 C5-C8 Aliphatic Hydrocarbons exclude the concentration of Target Analytes eluting in that range.

3 C9-C12 Aliphatic Hydrocarbons exclude the concentration of Target Analytes eluting in that range AND concentration of C9-C10 Aromatic Hydrocarbons.