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# INITIAL ABATEMENT ACTION REPORT SITE 1932 UNDERGROUND STORAGE TANK (UST) CLOSURE MCB CAMP LEJEUNE NC

04/01/2014

TETRA TECH

**DEPARTMENT OF THE NAVY**
**NAVAL FACILITIES ENGINEERING COMMAND, ATLANTIC**
**REMEDIAL ACTION CONTRACT (RAC)**
**CONTRACT NO. N62470-13-D-8007**
**CONTRACT TASK ORDER NO. WE03**

# INITIAL ABATEMENT ACTION REPORT
# SITE 1932 – UST CLOSURE

## UST DEMOLITION
## MARINE CORPS INSTALLATIONS EAST – MARINE CORPS BASE CAMP LEJEUNE
## JACKSONVILLE, NORTH CAROLINA

**APRIL 2014**

*Prepared for*

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# TABLE OF CONTENTS

**A. SITE INFORMATION ..... 1**
**B. SITE HISTORY AND CHARACTERIZATION ..... 4**
**C. UST CLOSURE ..... 7**
**D. INITIAL RESPONSE AND ABATEMENT ACTION ..... 10**
**E. EXCAVATION OF CONTAMINATED SOIL ..... 10**
**F. GROUNDWATER INVESTIGATION ..... 13**
**G. CONCLUSIONS ..... 14**
**H. REFERENCES ..... 15**

## LIST OF TABLES

Table 1 Site History – UST/AST Owner/Operator and Other Responsible Party Information *(Based on Guidelines Table B-2)*
Table 2 Site History – UST/AST System and Other Release Information *(Based on Guidelines Table B-1)*
Table 3 Public and Private Water Supply Well and Other Receptor Information *(Based on Guidelines Table B-5)*
Table 4 Monitoring Well Construction Information *(Based on Guidelines Table B-7)*
Table 5 Summary of Groundwater Sampling Results *(Based on Guidelines Table B-4)*
Table 6 Summary of Soil TPH and VOC Sampling Results *(Based on Guidelines Table B-3)*

## LIST OF FIGURES

Figure 1 Site 1932 Location Map
Figure 2 Paradise Point 1932 UST Area Site Plan
Figure 3 Site 1932 Excavation and Sample Location Map

## LIST OF APPENDICES

Appendix A Photographic Log
Appendix B UST-3 Notice of Intent
Appendix C UST-2 Site Investigation Report for Permanent Closure of UST
Appendix D UST-61 24-Hour Release and UST Leak Reporting Form
Appendix E Well Construction Records
Appendix F Certificate of UST Disposal
Appendix G Sample Logsheets and GPS Data
Appendix H Soil Analytical Report
Appendix I Rhea Sample Investigation Report
Appendix J Soil Waste Manifests
Appendix K Groundwater Sampling Records
Appendix L Groundwater Analytical Report
Appendix M Risk Classification and Land Use Form

# ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| BGS | Below Ground Surface |
| DRO | Diesel Range Organics |
| EMD | Environmental Management Division |
| GRO | Gasoline Range Organics |
| GPS | Global Positioning System |
| IPE | Isopropyl Ether |
| LEL | Lower Explosive Limit |
| LSA | Limited Site Assessment |
| MCIEAST-MCB CAMLEJ | Marine Corps Installations East-Marine Corps Base Camp Lejeune |
| mg/kg | Milligrams per Kilogram |
| MS | Matrix Spike |
| MSD | Matrix Spike Duplicate |
| MSCC | Maximum Soil Contaminant Concentration |
| MTBE | Methyl Tertiary Butyl Ether |
| NAVFAC | Naval Facilities Engineering Command |
| NCAC | North Carolina Administrative Code |
| NCDENR | North Carolina Department of Environment and Natural Resources |
| $O_2$ | Oxygen |
| OICC | Officer In Charge of Construction |
| PCB | Polychlorinated Biphenyls |
| PG | Professional Geologist |
| PPM | Parts Per Million |
| Rhea | Rhea Engineers and Consultants, Inc. |
| SVOC | Semi-Volatile Organic Compound |
| TPH | Total Petroleum Hydrocarbons |
| TtEC | Tetra Tech EC, Inc. |
| UST | Underground Storage Tank |
| VOC | Volatile Organic Compound |
| µg/L | Micrograms per Liter |

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## A. SITE INFORMATION

Under Task Order WE03 of Contract N6270-13-D-8007, the Department of the Navy, Naval Facilities Engineering Command (NAVFAC) Atlantic, tasked Tetra Tech EC, Inc. (TtEC) with performing underground storage tank (UST) removals at Marine Corps Installations East – Marine Corps Base Camp Lejeune (MCIEAST-MCB CAMLEJ). This UST Closure and Initial Abatement Action Report was developed to document the removal, investigation, and abatement activities performed at Site 1932.

### 1. Site Identification

a. Date of Report: February 28, 2014

b. Facility ID: 08-0-0000002740

c. UST Incident No.: Pending

d. Site Name: 1932 – Paradise Point Golf Course Maintenance Area

e. Site Street Address: 1932 Brewster Boulevard

f. City/ State/Zip: Camp Lejeune/ NC/28542

g. County: Onslow

h. Description of Geographical Data Point

Approximate center of UST 1932

i. Location Method: Handheld global positioning system (GPS)

j. Latitude: 34.717304 degrees N

k. Longitude: 77.385866 degrees W

### 2. Information about Contacts Associated with the Leaking UST System

a. UST Property Owner:

Commanding General, MCIEAST-MCB CAMLEJ, G-F/EMD/EQB

12 Post Lane

Camp Lejeune, NC 28542

(910) 451-9017

b. UST Operator:

MCIEAST – MCB CAMLEJ, G-F/EMD/EQB

c. Property Occupant/Owner Point of Contact:

Ms. Jenni Reed

MCIEAST – MCB CAMLEJ, G-F/EMD/EQB

12 Post Lane

Camp Lejeune, NC 28542

(910) 451-9017

d. Consultant/Contractor:

Tetra Tech EC, Inc.

5250 Challedon Drive

Virginia Beach, Virginia 23462

(757) 518-8491 ext. 136

e. Analytical Laboratory

Accutest Laboratories Southeast, Inc.

4405 Vineland Road, Suite C15

Orlando, Florida 32811

(407) 425-6700

N.C. Certification No. 573

## 3. Information about Release

a. Date Discovered: 12/18/2013 During UST Removal

b. Estimated Quantity of Release: Unknown

c. Cause of Release: Unknown

d. Source of Release: Unknown

e. Sizes and contents of UST system from which the release occurred:

One 1,000 gallon gasoline UST

## 4. Professional Geologist Certification

I, Robert M Sok II, a Professional Geologist for Tetra Tech, do certify that the information contained in this report is correct and accurate to the best of my knowledge and the UST removal was conducted in accordance with good engineering practice and all applicable MCB and NCDENR regulations and guidelines.

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## B. SITE HISTORY AND CHARACTERIZATION

### 1. UST Owner and Operator Information

Information about the owner/operator and other responsible party for the UST at 1932 is provided in **Table 1**.

### 2. UST information

UST 1932 was located approximately 40 feet west of the Land Use Control (LUC) boundary of Operable Unit 11 (Site 80) in the Paradise Point Golf Course Maintenance Area at Camp Lejeune. Site 80 encompasses an area approximately 3 acres in size. UST 1932 was a 1,000 gallon fiberglass tank that contained gasoline. The tank had reached its service life and will be replaced with a 500 gallon gasoline aboveground storage tank (AST) approximately 100 ft to the north of UST Site 1932. The site location is shown in **Figure 1**. A site layout showing the former UST location and other pertinent site features is presented in **Figure 2**. Additional information about the UST is provided in **Table 2**.

### 3. Non-UST information

OU No. 11 (Site 80) is referred to as the Paradise Point Golf Course Maintenance Area and is located just east of UST 1932. Site 80 encompasses approximately 3 acres centered on the rear of a machine shop (Building 1916) and included the former maintenance wash area south of Building 1916 consisting of a concrete wash pad and sump. Golf course maintenance equipment was cleaned on the wash pad. The sump was used to collect the water and oil runoff generated from the cleaning of the equipment, and the water and oil from the sump was discharged into an oil/water separator located a few feet to the southeast of the former wash pad.

Golf course maintenance operations included work at the machine shop (a potential source of waste oils), and the routine spraying of pesticides and herbicides may have contributed to potential contamination at this site. It was unknown when the wash pad was constructed, and what the exact procedure was for cleaning the maintenance equipment prior to the construction of the wash pad. The disposition of wash water may have been completely uncontrolled based on information collected during historical investigations at Site 80.

A Site Investigation was conducted at Site 80 (Halliburton NUS, 1991) and revealed the presence of pesticides and polychlorinated biphenyls (PCBs) in soil, volatile organic compounds (VOCs) in groundwater, and VOCs and petroleum hydrocarbons in surface water. A Remedial Investigation (Baker, 1995) was completed to characterize the nature and extent of contamination and potential impact to human health and the environment. Pesticides were detected in soil samples and low levels of pesticides, semi-volatile organic compounds (SVOCs), and metals were detected in groundwater. The Remedial Investigation determined that there was potential unacceptable risk for exposure to pesticide impacted soils but there was no unacceptable ecological risk. A Time Critical Removal Action was conducted (OHM, 1996) which removed approximately 988 tons of contaminated soil. In 2007, Land Use Controls were established to limit land activities to prohibit non-industrial use and intrusive activities. Land Use

Controls from Site 80 exist along western edge of the unnamed gravel access road and extend to the east. From UST 1932, the western boundary of Site 80 Land Use Controls (LUC) is approximately 40 feet east. The specific LUC boundary objectives are as follows:

- Prohibit the development and use of property for residential housing, elementary and secondary schools, day care facilities, and recreational areas within the site boundary.
- Prohibit intrusive activities within the site boundary.

Potential sources of contamination at Site 80 included management and application of herbicides and pesticides as well as machine shop operations supporting golf course maintenance.

The pesticide contamination at Site 80 is most likely related to past pesticide mixing and storage activities at the Golf Course Maintenance Area. VOCs, SVOCs, and petroleum hydrocarbons were likely related to minor spills from machinery and wash pad activities at Site 80.

## 4. Historical UST Release Information

Two former USTs associated with Building 1932 were removed in July 1993 by Jones and Frank and reported by Environmental & Regulatory Consultants, Inc. (ERC) (Tank Removal Reports, ERC, 1993). These tanks included one 500 gallon steel tank used for diesel fuel and one 1,000 gallon steel tank used for gasoline at the golf course maintenance area. These USTs were adjacent to one another and located approximately 10 feet south of Building 1932 and 20 feet north of the current 1,000 gallon UST. During the tank removal, elevated levels of Total Petroleum Hydrocarbons (TPH) were observed in the soil samples collected beneath the USTs in both the diesel and gasoline range. In June 1994, three soil borings and monitoring wells were installed for a Site Check by R.E. Wright Associates Inc., and the soil sampling indicated TPH-DRO at 440 mg/kg in the sample collected in the soil boring (2-4 feet bgs) associated with MW-1. Based on a letter dated June 8, 2000 from NCDENR, Catlin Engineers and Scientists completed a soil assessment in January 2001 and based on the results, requested no further action. Notice of no further action was issued by NCDENR on June 14, 2001 (Notice of No Further Action, NCDENR 2001). The two former USTs were replaced with a 1,000 gallon AST for diesel fuel and a 1,000 gallon UST for gasoline.

## 5. Brief Description of Site Characteristics

The UST 1932 was located in the Paradise Point Golf Course Maintenance area of MCIEAST-MCB CAMLEJ (**Figure 1**). The site is immediately surrounded by a gravel lot, access road, grass, and a wooded area. Building 1932 is located approximately 60 feet to the north of UST 1932. A 1,000 gallon diesel fuel AST was located adjacent and directly north of the UST. The area north of the AST and south of Building 1932 is where the former USTs were located.

A group of supply wells (S2006A, S2006B, S2006C, and S902) are located approximately 700 to 1200 feet northwest of the UST area. It is assumed that these wells are down-gradient of UST 1932 (based only on historical groundwater flow in the area near Site 80) and also assumed that these wells are used for irrigation purposes for the golf course. The closest potable water supply well is PSW-700 which is located approximately 3,400 feet southeast of the UST 1932 and is

assumed in an up-gradient direction. These supply wells would likely not be affected by any groundwater contamination from UST 1932 given the distance away from UST 1932. PSW-700 is currently waiting demolition. The list of public supply wells and other receptor information is provided in **Table 3**.

The following sections briefly discuss the site topography and hydrogeologic setting.

### Topography

The project area has relatively flat topography and the nearest mapped body of surface water is Northeast Creek, located approximately 1,200 feet from the UST location.

### Regional Geology and Hydrogeology

The site lies within the Tidewater region of Coastal Plain Physiographic Province of North Carolina, where large streams and many of their tributaries are affected by ocean tides. The site is underlain by Quaternary age sediments which can be characterized by sand, sandy silt, and silty clay with isolated silt lenses. The shallow (<50 feet below ground surface [bgs]) geology generally becomes much sandier with depth. The depth to the underlying Tertiary age Castle Hayne Formation is approximately 53 feet.

The nearest surface water body is Northeast Creek which is approximately 1,200 feet north of the UST location. Northeast Creek is a tributary of New River. During past investigations at Site 80, groundwater flow direction in the surficial aquifer was generally to the north towards Northeast Creek. However, the site well check conducted for the former USTs in 1994 showed shallow groundwater flowing to the south. All groundwater in project area is included in the CERCLA Operable Unit (OU) 11 with the Site 80 LUC boundary (>3 acres in size) located approximately 40 feet to the east of UST 1932.

## C. UST CLOSURE

The following section describes the procedures and activities performed in order to complete the UST removal at Site 1932. A site layout showing the former UST location and other pertinent site features is presented in **Figure 2**. Photographs documenting the field activities are included in **Appendix A**.

### 1. Preparation

A Notification of Intent form (UST-3) to remove the UST was submitted to North Carolina Department of Environment and Natural Resources (NCDENR), Wilmington Regional Office by the MCB Camp Lejeune Environmental Management Division (EMD), and signed on November 25, 2013. A photocopy of the completed UST-3 form is provided in **Appendix B**. Upon completion of the removal, a Site Investigation Report (UST-2) was completed and is included in **Appendix C**.

A pre-construction meeting was held on November 12, 2013 with TtEC, Cape Environmental, EMD, Officer in Charge of Construction (OICC), and Base points of contact. Initial field activities began on December 11, 2013 with the removal of residual fuel from the UST. North Carolina 811 was notified in advance of ground penetrating activities to perform a utility locate. In addition, a third party utility locator was subcontracted to perform a utility mark-out of the area on November 18, 2013.

Cape Environmental was subcontracted to perform UST removal activities using heavy equipment, including a rubber tired backhoe, an excavator, and a dump truck. The initial site preparation activities included:

- Examining the site to determine access to the proposed excavation area
- Delineation of the job site perimeter and work zones
- Location of all utilities within the project area
- Construction of soil and tank staging areas
- Placement of temporary fence/barricades surrounding the work area
- Procurement of required equipment and materials

After initial setup, the remaining product was drained from the product lines into the tank. The residual fuel was then removed from the UST and transferred to a temporary fuel tank.

## 2. Closure Procedure

UST removal activities began on December 17, 2013 with the removal of over-lying concrete and excavation of overburden material. A North Carolina Licensed Professional Geologist (PG) was present to oversee the onsite removal activities. The overburden material was staged adjacent to the excavation area on poly-sheeting with a berm for containment. The top of the tank was encountered approximately 3 to 4 feet bgs.

Air monitoring via MultiRAE 4-gas meter was conducted for screening the overburden material, monitoring the work zone during the excavation process, and determining the oxygen content and lower explosive limit ($O_2$/LEL) of the tank interior. The tank was inerted using dry ice until MultiRAE 4-gas readings indicated that the flammable vapors had been adequately purged. After successfully inerting the tank, the UST was removed on December 18, 2013 by Cape Environmental. An excavator was used to remove the tank from the excavation and place the UST on poly-sheeting.

Following removal of the UST from the excavation, the outside of the tank was cleaned of excess soil, and the tank was visually inspected. The inspection did not identify any evidence of petroleum leakage. The UST interior was cleaned and flushed above ground on January 7, 2014. A pressure washer was used to clean the tank interior and the residual fuel/water mix was removed using a vacuum truck.

Groundwater was observed at approximately 9 feet bgs and no further excavation was completed beyond the water table. However, some visible staining and odors indicated potential soil

contamination in the sidewalls. In addition, organic vapor readings collected from the saturated soils in the excavation bottom indicated the presence of petroleum contamination (>100 ppm). Upon these observations, the base EMD was notified and a UST-61 form was completed (**Appendix D**).

Soil confirmation samples were collected along the excavation walls, pipe line trench (< 10 feet), and at the dispenser location. The first round of confirmation samples was collected on December 18, 2013. The soil sample results indicated contaminated soil was still present in the excavation sidewalls at three sample locations. The sidewalls where these three samples were collected were over-excavated and the second round of confirmation sampling was performed on January 8, 2014. The second round of confirmation sample results indicated contamination was still present in one sidewall sample location. Over-excavation continued in this area and an additional 8 feet was excavated to the east and stopped before the excavation got too close to the Land Use Control boundary of Site 80. However, visible staining and PID readings indicated impacted soil was still present in the east, north, and south sidewalls of the excavation. The soil samples were analyzed in accordance with the NCDENR UST Guidelines. The results of the analyses are discussed in **Section E**. The approximate final excavation extents are shown in **Figure 3**. The final excavation depth was to the depth of groundwater at approximately 9 feet below ground surface.

Due to encountering groundwater in the excavation, soil samples were not obtained in the excavation bottom. A monitoring well (1932-MW04) was therefore constructed to collect a groundwater sample. The monitoring well was constructed on February 10, 2014 in accordance with North Carolina Administrative Code (NCAC) Title 15A Subchapter 2C .0108. Well construction records are provided in **Appendix E** and summarized in **Table 4**. A groundwater sample was collected on February 13, 2014 and analyzed in accordance to NCDENR UST Guidelines. The results of the analysis are discussed in **Section F**.

Following receipt of the soil confirmation sampling results and completing the additional excavation to the east (short of the LUC boundary for Site 80), restoration activities commenced. Restoration in the location of the UST included common soil backfill topped with ABC stone. Backfill was placed in 6-inch thick compacted lifts. The area was graded to match existing topography. In addition, the excavation extents were physically marked to enable further investigation, delineation, and subsequent removal of remaining impacted soil.

## 3. Residual Material

The remaining product within the UST and associated product lines and dispensers was removed on December 11, 2013. Approximately 40 gallons of product was recovered and stored in a temporary fuel cell. Once above ground, the tank was triple-rinsed to ensure removal of residual material prior to disposal. Additionally, the brine solution was drained from the interstitial space of the tank. Approximately 85 gallons of residual fuel/water mix and brine solution was collected in a vacuum truck and disposed of offsite by FCC Environmental. .

The product lines and dispensers associated with UST 1932 were removed on December 18, 2013, along with the UST. The product lines consisted of one HDPE supply and one HDPE

return line, approximately 2 inches in diameter, encased in separate 3.5-inch fiberglass pipes. The product lines ran side-by-side a distance of 6 feet, for a total of 12 linear feet of piping. The UST was crushed to destroy its integrity, and then disposed of at the ES& J facility located in Autryville, North Carolina. Approximately 5,680 lbs of tank and product line material was disposed of and the weight ticket as certification of disposal of the tank is provided in **Appendix F**. The dispensers and scrap metal were sent to J&E Salvage for recycling.

The excavated soil was sampled and characterized as non-hazardous waste. The material was disposed of as petroleum contaminated soil at the ES&J Enterprises disposal facility. Approximately 62 tons of soil was loaded out for transportation and disposal as part of the 1932 UST removal.

## D. INITIAL RESPONSE AND ABATEMENT ACTION

Removal activities did reveal some shallow soil staining and the presence of a strong petroleum odor in the bottom of the UST excavation, even though the UST itself showed no evidence of leaking. A UST-61 24-Hour Release form was completed and submitted on December 19, 2013. The completed form is included in **Appendix D**. No free product was observed in the excavation.

Confirmation samples were collected and analyzed in accordance with the NCDENR Guidelines. Confirmation soil sample results indicated exceedances in several locations. Over-excavation was completed and a second round of confirmation samples were collected and analyzed. The second round indicated that there were still MSCC exceedances in one sample location (1932-UST-SW09). Soil confirmation sample results are discussed further in **Section E**.

Per the request of the Navy, additional excavation was performed to the east of soil sample 1932-UST-SW09 that showed MSCC exceedances. Upon excavating an additional 8 feet to the east, the presence of odor and visible staining indicated potential soil contamination was still present in the east, south, and north sidewalls. Excavation activities were discontinued due to approaching the Site 80 Land Use Control area boundary and the area was backfilled, pending further investigation. A total of approximately 62 tons of soil were removed during UST removal activities. Excavation limits were marked with high visibility material and cut a few inches above ground surface for future reference. No soil samples were collected during the second over-excavation event. Visual observations were recorded. Due to the remaining undefined lateral extents of the contamination, the source and impact area of the release remains to be determined.

## E. EXCAVATION OF CONTAMINATED SOIL

### 1. Extent of Soil Contamination

The source of the soil contamination is uncertain, but could potentially be from historical surface spills and former equipment washing activities in and around the maintenance area. The extent of soil contamination has been fairly well defined except to the east of UST 1932. TPH-

GRO/DRO, 1-Methylnaphthalene, and Naphthalene were observed at concentrations above the soil to groundwater MSCCs. The sample locations and depths, tank system location, and excavation dimensions are indicated in the following sections of this report.

Sampling was conducted in accordance with NC UST guidance and facility guidelines. Soil samples were collected using soil grabbers and sterile disposable trowels. Immediately after collection, the samples were placed into a cooler and preserved on ice. Chain-of-Custody forms were completed for each of the sampling events and custody seals were placed on each cooler. Quality control samples included duplicate samples, trip blanks, matrix spike/matrix spike duplicates (MS/MSD), and temperature blanks.

## 2. Excavation Process

UST removal activities began on December 17, 2013 with the removal of concrete and excavation of overburden material. A North Carolina Licensed PG was present to oversee the onsite removal activities. The overburden material was staged adjacent to the excavation area on poly-sheeting with a berm for containment.

The UST was removed on December 18, 2013 and staged on poly-sheeting separate from the overburden material. An excavator was used to remove the tank from the excavation. Groundwater was observed at approximately 9 feet bgs and no further excavation was completed beyond the water table. However, visible staining and odors indicated that the sidewalls were contaminated. Upon observation, the base EMD was notified and a UST-61 form was completed (**Appendix D**). The excavation continued laterally as directed by the PG. After two rounds of soil confirmation sampling, the results indicated exceedances of either 10 mg/kg TPH-DRO/GRO or soil to groundwater MSCCs. The south-eastern sidewall was completed to approximately 8 feet beyond the second round sample (1932-UST-SW09). The final excavation dimensions are shown in **Figure 3**. The excavated material was staged in a bermed lined area with poly-sheeting for waste characterization sampling and subsequent transportation and disposal.

## 3. Post-Excavation Confirmation Sampling

Comparison criteria for 1932 were based on NCDENR guidelines for tank closure and EMD tank management plan requirements. **Tables 5 and 6** summarize the samples collected, date and time collected, source areas, sampling methods, and analytical results. Following excavation activities, confirmation soil samples were collected from the excavation sidewalls, piping, and dispensers as well. Sample locations are shown on **Figure 3**. The locations of confirmation samples were mapped using a hand held GPS device and their coordinates are included in **Appendix G**. A sampling matrix, detailed analysis, and laboratory reports (with photocopies of chains-of-custody) are included in **Appendix H**. Quality control samples included one duplicate sample, a MS/MSD, and temperature blanks.

## 4. Soil Investigation

### UST Excavation Samples

Eight soil samples were collected during the first round of confirmation sampling (1932-UST-SW01 through -SW06, -PL01, and -DS01). In addition, one duplicate sample (1932-UST-SW05A) was collected on December 18, 2013 as shown on **Table 6**. The samples were collected from the excavation sidewalls from approximately 8-8.5 feet bgs. No samples were collected from the excavation bottom because groundwater was encountered.

After over-excavation, the second round of confirmation samples (1932-UST-SW07 – SW09) were collected on January 8, 2014 in locations where sample results indicated TPH-DRO/GRO concentrations greater than 10 mg/kg.

First round samples were analyzed for TPH GRO, TPH DRO and VOCs (EPA SW846 8260B). Second round samples were analyzed for VOCs (EPA SW846 8260B), SVOCs (SW846 8270D and 3550C), MADEP EPH, and MADEP VPH. The soil sample results are included in **Table 6**.

### Dispenser and Piping Excavation Samples

The initial sampling event included one sample (1932-UST-DS01) from beneath the dispenser at approximately 2 feet bgs and one sample (1932-UST-PL01) was collected from beneath the product piping at approximately 4-5 feet bgs. These samples were collected during the initial sampling on December 18, 2013. Sample results are included in **Table 6**.

### Soil Sample Results

Confirmation samples were collected and analyzed in accordance with the NCDENR Guidelines. The results from the first round of soil confirmation samples indicated total petroleum hydrocarbons (TPH) diesel range organics (DRO)/gasoline range organics (GRO) concentrations ranging from non-detect to 279 milligrams per kilogram (mg/kg) for TPH-GRO and non-detect to 28.5 mg/kg for TPH-DRO with three of the eight soil samples exceeding 10 mg/kg TPH (sample ID No.s 1932-UST-SW01, 1932-UST-SW03, and 1932-UST-SW06). Results from the second round of soil samples indicated exceedances of the soil to groundwater maximum soil contaminant concentration (MSCC) levels in 1932-UST-SW09. The compounds exceeding the MSCC were 1-Methylnaphthalene (1.31 mg/kg) and naphthalene (0.773 mg/kg and 0.39 mg/kg). However, these concentrations were below the residential MSCCs. There were no other exceedances observed in second round over-excavation soil samples. The analytical reports for the soil samples are included in **Appendix H** and summarized in **Table 6**.

### Additional Investigative Sampling

Additional sampling was performed by Rhea Engineers and Consultants, Inc. (Rhea) to delineate the lateral extent of residual contamination in the UST area. Fourteen hand auger locations were advanced and PID readings were recorded from 0-2 feet, 2-4 feet, and 4-6 feet bgs at each boring. Eight soil samples were also collected from these locations and sent to a laboratory for TPH-DRO, TPH-GRO, and VOC analysis. The results of the investigative sampling event

revealed one location (HA-3 from 2-4 feet bgs) with a TPH concentration of 16 mg/kg, which is above the screening level of 10 ppm. Acetone was only VOC detected in the soil samples and at very low levels well below both soil to groundwater and residential MSCCs. A copy of the Rhea Site Investigation Report is included in **Appendix I.**

### 5. Disposal of Contaminated Soil

One five-point composite soil sample, including a discrete grab for VOC analysis, was collected from the excavated soils on January 8, 2014 for disposal characterization. The composite sample 1932-UST-SP01 was analyzed for VOCs (EPA 8260B), TPH-GRO, TPH-DRO, SVOCs, herbicides, pesticides, metals, PCBs, and RCRA characteristics needed for disposal.

The results of the stockpiled excavation material sample indicated that the material was non-hazardous and suitable for disposal at ES&J Enterprises, Inc., located at 1555 Holland Road, Autryville, NC. The soil was shipped on January 24, and February 4, 2014. Photocopies of the completed waste transportation and disposal manifests are included in **Appendix J**. The fiberglass UST and piping were purged, cleaned, and disposed of at ES & J Enterprises, Inc. A photo copy of the completed tank disposal manifest is included in **Appendix F**.

## F. GROUNDWATER INVESTIGATION

### 1. Investigative Actions

Groundwater was encountered in the 1932 excavation at approximately 9 feet bgs. No free product was observed. A groundwater monitoring well (1932-MW04) was constructed according to Title 15A NCAC 2C and was installed within the excavation footprint. Installation was performed on February 10, 2014, and well development was performed on February 11, 2014. On February 13, 2014, the well was sampled via low-flow methods and in accordance with NCDENR Guidelines.

Sampling techniques followed the procedures laid out in the Work Plan. Dedicated polyethylene and silicone tubing was used for groundwater sampling. Immediately after collection, the samples were placed into a cooler and preserved with double-bagged ice. Chain-of-Custody forms were completed for the sampling events and tamper seal tape was placed on each cooler. Quality control samples included a duplicate sample, trip blanks, a matrix spike/matrix spike duplicate (MS/MSD), and temperature blanks.

### 2. Groundwater Investigation

#### Groundwater Sampling Information

The permanent well was sampled using a peristaltic pump, low-flow sampling methods, and field parameters were collected using a Horiba multi-meter. Field parameters included temperature, specific conductivity, dissolved oxygen, oxidation-reduction potential, and pH. Well sampling records are included in **Appendix K**. The groundwater sample was analyzed using the following methods:

- VOCs EPA SM6200B (with ethanol, isopropyl ether [IPE], and methyl tertiary butyl ether [MTBE]),
- SVOCs EPA 625,
- EDB EPA 504.1,
- MADEP VPH Rev 1.1,
- MADEP EPH Rev 1.1 SW846 3510C, and
- Lead (SW846 6010C).

A trip blank was also included as a quality control measure.

**Groundwater Investigation Results**

The results of the groundwater sample (1932-MW4) indicated concentrations of C5-C8 Aliphatics, C9-C10 Aliphatics, 1-Methylnaphthalene, and Naphthalene exceeded the North Carolina Groundwater Quality Standards found in 15A NCAC 2L 0202. The sample contained 425 micrograms per liter (µg/L) C5-C8 Aliphatics, and 1,030 µg/L C9-C10 Aliphatics compared to the groundwater standards of 400 and 700 µg/L, respectively. 1-Methylnaphthalene (10.2 µg/L) and naphthalene (35.7 and 43.9 µg/L) were detected above the NC 2L groundwater standards of 1 and 6 µg/L, respectively. The sample results are summarized in **Table 5** and the laboratory analytical report is included in **Appendix L**.

## G. CONCLUSIONS

Between December 18, 2013, and January 26, 2014, one 1,000 gallon UST (1932) and its associated piping and dispensers were removed and properly disposed of along with approximately 62 tons of soil during removal activities. The UST previously contained gasoline for use in golf course maintenance equipment. During the removal activities, no visual evidence of the tank leaking was observed, but some soil staining was observed in the sidewalls and the presence of a strong petroleum odor (> 100 ppm reading) originating from the excavation was evident following the UST removal. Initial excavation samples indicated levels above 10 mg/kg TPH in three of the six sidewall samples. Over-excavation was conducted and one of the three second round samples indicated concentrations above the soil to groundwater MSCCs and below residential MSCCs. Further excavation was conducted to the east and stopped short of the Site 80 LUC boundary. No additional soil samples were collected by TtEC. However, additional soil sampling was performed by Rhea to determine the lateral extent of residual contamination in the area. The results of the additional sampling revealed one location with a TPH concentration of 16 mg/kg, and no VOCs detected above the soil to groundwater and residential MSCCs. A copy of the Rhea Site Investigation Report is included in **Appendix I.**

Groundwater was encountered in the excavation at approximately 9 feet bgs and soil sampling was not possible below the UST. A groundwater monitoring well was installed within the excavation footprint and sampled. Sample results indicated concentrations above the NC 2L standards, but below the Gross Contaminant Levels (GCLs). A Risk Classification and Land Use Form is included in **Appendix M** which will allow NCDENR to formerly assign a Risk Classification and Land Use designation.

Based on the information provided in this report, it is believed that the intent and requirements of a Limited Site Assessment (LSA) have been met. The site should be considered Low Risk with soil concentrations below the residential MSCCs and GCLs for groundwater. Based on the recent soil and groundwater sampling results and the current and assumed future potential land use commercial/industrial classification, a Notice of Residual Petroleum (NRP) and Land Use Restrictions (LUR) are recommended for groundwater due to contaminants present above the NC 2L standards. Following NRP recordation, the site should meet the requirement for No Further Action.

## H. REFERENCES

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# TABLES

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## Reporting Tables

1. Table 1 Site History – UST/AST Owner/Operator and Other Responsible Party Information
2. Table 2 Site History- UST/AST System and Other Release Information
3. Table 3 Public and Private Water Supply Well and Other Receptor Information
4. Table 4 Monitoring and Remediation Well Construction Information
5. Table 5 Summary of Groundwater and Surface Water Sampling Results
6. Table 6 Summary of Soil Sampling Results

**Table 1: Site History - UST/AST Owner/Operator and Other Responsible Party Information**

Revision Date: 02/28/14 Incident Number and Name: 1932 UST Closure

| | | | |
|---|---|---|---|
| UST ID Number | 1932 | Facility ID Number | 08-0-0000002740 |
| Name of Owner | | Dates of Operation (mm/dd/yy to mm/dd/yy) | |
| Commanding General, MCIEAST-MCB CAMLEJ, G-F/EMD/EQB | | 12/15/1992 to 12/18/2013 | |
| Street Address | | | |
| 12 Post Lane | | | |
| City | State | Zip | Telephone Number |
| Camp Lejeune | NC | 28542 | 910-451-9017 |
| Name of Operator | | Dates of Operation (mm/dd/yy to mm/dd/yy) | |
| MCIEAST – MCB CAMLEJ, G-F/EMD/EQB | | Unknown to 12/18/14 | |
| Street Address | | | |
| 1932 Brewster Boulevard | | | |
| City | State | Zip | Telephone Number |
| Camp Lejeune | NC | 28542 | 910-451-9017 |
| Incident Number | | | |
| Name of Other Responsible Party | | Dates of Release(s) (mm/dd/yy to mm/dd/yy) | |
| Jenni Reed | | Unknown | |
| Street Address | | | |
| | | | |
| City | State | Zip | Telephone Number |
| | | | |

*Add additional records for all owners, operators and responsible parties as necessary.*

# Table 2: Site History – UST/AST System and Other Release Information

Revision Date: 02/28/14 Incident Number and Name: 1932 UST Closure

| UST ID Number | Current/Last Contents * | Previous Contents * | Capacity (in gallons) | Construction Details ** | Tank Dimensions | Description of Associated Piping and Pumps | Date Tank Installed | Status of UST *** | Was release associated with the UST System? |
|---|---|---|---|---|---|---|---|---|---|
| 1932 | Gasoline/ Gas Mix | Gasoline/ Gas Mix | 1000 | Double Walled Fiberglass | 4'4" dia x 11'4" L | Underground product line and dispenser | 12/15/1992 | Permanently Closed by Removal (12/18/13) | Unknown |

*Add additional records as necessary*

| AST ID Number | Current/Last Contents * | Previous Contents * | Capacity (in gallons) | Construction Details ** | Tank Dimensions | Description of Associated Piping and Pumps | Date Tank Installed | Status of AST *** | Was release associated with the AST System? |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |

*Add additional records as necessary*

| Incident Number | Material Released | Date of Release | Description of Release |
|---|---|---|---|
| Pending | Gasoline | 12/18/13 | Petroleum odor and visible staining present in excavation during UST 1932 removal |

*Add additional records as necessary*

* Gasoline (unleaded or leaded), diesel, used oil, waste oil, aviation fuel, etc., or pesticides, non-halogenated or halogenated solvents, etc.

** Fiberglass (single- or double-walled), steel (single- or double-walled), steel with FRP (single- or double-walled), steel with liner, other, unknown.

*** Currently operational, not in use or temporarily closed (specify date), permanently closed in place (specify date), permanently closed by removal (specify date)

# Table 3: Public and Private Water Supply Well and Other Receptor Information

Revision Date: 2/28/14 Incident Number and Name: 1932 UST Closure Facility ID#: 08-0-0000002740

**Public and Private Water Supply Wells**

| Well # | Well Owner/ User (indicate which) | Address | Phone Number | Latitude/ Longitude * (decimal degrees) | Well Use | Well Depth (ft BGS) ** | Type of Well | Well Casing Depth (ft. BGS) | Well Screen Interval (x to y ft. BGS) | Distance from source area of release (ft.) | Up or downgradient |
|---|---|---|---|---|---|---|---|---|---|---|---|
| S2006A | Camp Lejeune | N/A | N/A | N/A | Irrigation | N/A | Supply Well | N/A | N/A | 700 NW | Down-gradient |
| S2006B | Camp Lejeune | N/A | N/A | N/A | Irrigation | N/A | Supply Well | N/A | N/A | 700 NW | Down-gradient |
| S2006C | Camp Lejeune | N/A | N/A | N/A | Irrigation | N/A | Supply Well | N/A | N/A | 700 NW | Down-gradient |
| S902 | Camp Lejeune | N/A | N/A | N/A | Irrigation | N/A | Supply Well | N/A | N/A | 700 NW | Down-gradient |
| | | | | | | | | | | | |

## Other Receptors

(Other public water supplies, reservoirs, supply lines, surface water bodies, wellhead protection areas, recharge areas for deep aquifers, subsurface structures)

| Receptor ID | Description | Location | Latitude/ Longitude of any significant point(s)* *(describe to left)* (decimal degrees) | Contact | Phone Number | Usage | Up or down-gradient | Distance from source area of release (ft.) |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

* The location must be sufficiently accurate and precise to allow easy recovery of lost or damaged wells or replication of sampling points.

** Ft BGS = feet below ground surface

## Table 4: Monitoring and Remediation Well Construction Information

Revision Date: 2/28/14 Incident Number and Name: 1932-MW-4 Construction Facility ID#: 08-0-0000002740

| **Well ID** | **Date Installed** (m/dd/yy) | **Date Water Level Measured** (m/dd/yy) | **Well Casing Diameter (in.)** | **Well Casing Depth** (ft. BGS) | **Screened Interval** (x to y ft. BGS) | **Depth of Well** (ft. BGS) | **Top of Casing Elevation*** (ft.) | **Depth to Water from Top of Casing** (ft.) | **Free Product Thickness** ** (ft.) | **Groundwater Elevation*** (ft.) | **Latitude/ Longitude (decimal degrees)***** |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1932-MW-4 | 2/10/14 | 2/10/14 | 2 | 16.5 | 6.5 to 16.5 | 20.5 | N/A | 9.4 | N/A | N/A | 34.4302325 N/ 77.230918 W |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |

Ft BGS = feet below ground surface

* Reference Point for Elevation Measurements_____, Assumed Elevation: _____ ft.

** If free product is present in a well, groundwater elevation is calculated by: [Top of Casing Elevation - Depth to Water] + [free product thickness x 0.8581]

*** The location must be sufficiently accurate and precise to allow easy recovery of lost or damaged wells.

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## Table 5: Summary of Groundwater and Surface Water Sampling Results

Revision Date: 2/28/14 Incident Number and Name: 1932 UST Closure Facility ID#: 08-0-0000002740

| **Analytical Method (e.g., VOC by SM6000B) or Field Measurement (FM) -->** | | | EPA 504.1 | 6010C | MADEP VPH Rev 1.1 | | | MADEP VPH Rev 1.1 SW846 3510C | | | EPA 625 | | | | | SM6200B | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Contaminant of Concern -->** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Well or SW ID** | **Northing (feet)** | **Easting (feet)** | Ethyl dimobride (EOB) (ug/l) | Lead (ug/l) | C5-C8 Aliphatics (ug/l) | C9-C12 Aliphatics (ug/l) | C9-C10 Aromatics (ug/l) | C11-C22 Aromatics (ug/l) | C9-C18 Aliphatics (ug/l) | C19-C36 Aliphatics (ug/l) | 1-Methylnaphthalene (ug/l) | 2-Methylnaphthalene (ug/l) | Naphthalene (ug/l) | Total Tentatively Identified Compounds, Semi-Volatile ug/l) | All other EPA 625Target Analytes | n-Butylbenzene (ug/l) | Ethylbenzene (ug/l) | Isopropylbenzene (ug/l) | Naphthalene (ug/l) | n-Propylbenzene (ug/l) | 1, 2, 4-Trimethylbenzene (ug/l) | 1, 3, 5-Trimethylbenzene (ug/l) | Xylene (total) (ug/l) | m, p-Xylene (ug/l) | o-Xylene (ug/l) | All other 6200B Target Analytes |
| 1932-MW4 | 3844286.6 | 718484.2 | BMDL | 4.0 J | 425 | 288 | 1030 | 159 | 138 | BMDL | 10.2 | 21.6 | 35.7 | 841 | BMDL | 2.9 | 29.5 | 8.9 | 43.9 | 32.9 | 283 | 74.3 | 105 | 97.2 | 7.9 | BMDL |
| **Minimum Reporting Limit (ug/l)** | | | 0.0097 | 2 | 35 | 180 | 180 | 150 | 100 | 100 | 0.96 | 0.96 | 0.96 | varies | varies | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 6 | 4 | 2 | varies |
| **Gross Contamination Levels (ug/l)** | | | 50 | 15000 | Not Listed | Not Listed | Not Listed | Not Listed | Not Listed | Not Listed | 1000 | 12500 | 6000 | varies | varies | 6900 | 84500 | 25000 | 6000 | 30000 | 28500 | 25000 | 85500 | 85500 | 85500 | varies |
| **2L Standard (ug/l)** | | | 0.02 | 15 | 400 | 700 | 200 | 200 | 700 | 10000 | 1 | 30 | 6 | varies | varies | 70 | 600 | 70 | 6 | 70 | 400 | 400 | 500 | 500 | 500 | varies |

J=Indicates a result >= Limit of Detection but < Limits of Quantification
BMDL=Below Method Detection Limit

Field measurement parameters include temperature, pH, dissolved oxygen, specific conductivity, Eh, and alkalinity.
Include in the table all of the target analytes listed for the method in App. B of the *Guidelines for Sampling*, current version.
Results must be reported in ug/l
ug/l =micrograms per liter
GCL = gross contamination level
Highlighted items indicate a result >= 2L Standard

## Table 6: Summary of Soil Sampling Results

Revision Date: 2/28/14 Incident Number and Name: 1932 UST Closure Facility ID#: 08-0-0000002740

| **Analytical Method (e.g., VOC by EPA 8260) -->** | | | | | EPA 8015C | EPA 8015C | SW846 8270D & 3550C | | | | MADEP EPH Rev 1.1 SW846 3546 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Contaminant of Concern -->** | | | | | TPH DRO (mg/kg) | TPH GRO (mg/kg) | 1-Methylnaphthalene (mg/kg) | 2-Methylnaphthalene (mg/kg) | Naphthalene (mg/kg) | All Other SW846 8270D & 3550C Compounds | C9-C12 Aliphatics (mg/kg) | C9-C10 Aliphatics (mg/kg) | C9-C18 Aliphatics (mg/kg) | C19-C36 Aliphatics (mg/kg) | All Other MADEP EPH Rev 1.1 SW846 3546 Compounds |
| **Sample ID** | **Date Collected** (m/dd/yy) | **Source Area** (eg. Tank pit 1) | **Sample Depth** (ft BGS) | **Incident Phase** (Closure, 20Day, LSA, etc.) | | | | | | | | | | | |
| 1932-UST-PL01 | 12/18/2013 | Beneath Product Line | 4-5 | Closure | BMDL | BMDL | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 1932-UST-SW01 | 12/18/2013 | Tank Pit Side Wall | 8-8.5 | Closure | 28.5 | 46.5 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 1932-UST-SW02 | 12/18/2013 | Tank Pit Side Wall | 8-8.5 | Closure | BMDL | BMDL | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 1932-UST-SW03 | 12/18/2013 | Tank Pit Side Wall | 8-8.5 | Closure | 6.15 | 279 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 1932-UST-SW04 | 12/18/2013 | Tank Pit Side Wall | 8-8.5 | Closure | 6.32 | 8.17 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 1932-UST-SW05 | 12/18/2013 | Tank Pit Side Wall | 8-8.5 | Closure | BMDL | BMDL | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 1932-UST-SW05A | 12/18/2013 | Side Wall Duplicate | 8-8.5 | Closure | 8.75 | BMDL | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 1932-UST-DS01 | 12/18/2013 | Beneath Dispenser Pump | 1.5-2 | Closure | 4.02 | BMDL | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 1932-UST-SW06 | 12/18/2013 | Tank Pit Side Wall | 8-8.5 | Closure | 11.5 | 48.4 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 1932-UST-SW07 | 1/8/2014 | Tank Pit Side Wall | 4-5 | Closure - Rnd 2 sample | N/A | N/A | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL |
| 1932-UST-SW08 | 1/8/2014 | Tank Pit Side Wall | 4-5 | Closure - Rnd 2 sample | N/A | N/A | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL |
| 1932-UST-SW08 | 1/8/2014 | Tank Pit Side Wall | 4-5 | Closure - Rnd 2 sample | N/A | N/A | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL |
| 1932-UST-SW09 | 1/8/2014 | Tank Pit Side Wall | 4-5 | Closure - Rnd 2 sample | N/A | N/A | 1.31 | 2.9 | 0.773 | BMDL | 4.18 | 16.6 | 7.22 | 5.84 | BMDL |
| **Minimum Reporting Limit (mg/kg)** | | | | | 10 | 10 | 0.039 | 0.039 | 0.039 | Varies | 1.1 | 2.2 | 5.8 | 5.8 | Varies |
| **Soil to groundwater MSCC (mg/kg)** | | | | | Not Listed | Not Listed | 0.004 | 3.6 | 0.16 | Varies | 540 | 540 | 540 | Not Listed | Varies |
| **Residential MSCC (mg/kg)** | | | | | Not Listed | Not Listed | 20 | 63 | 313 | Varies | 1500 | 1500 | 1500 | 31000 | Varies |
| **Industrial/Commercial MSCC (mg/kg)** | | | | | Not Listed | Not Listed | 100 | 1635 | 8176 | Varies | 40000 | 40000 | 40000 | 810000 | Varies |

MSCC = maximum soil contaminant concentration
ft. BGS = feet below ground surface
Results must be reported in mg/kg.
mg/kg =milligrams per kilogram
J=Indicates an estimated value
BMDL=Below Method Detection Limit
N/A = Not applicable. Sample not tested for this analyte.
Highlighted items indicate a result >= Soil to groundwater MSCC or NCDENR Action Limit

## Table 6 (Continued): Summary of Soil Sampling Results

| **Analytical Method (e.g., VOC by EPA 8260) -->** | | | | | EPA SW846 8260B | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Contaminant of Concern -->** | | | | | | | | | | | | | | | | | | |
| **Sample ID** | **Date Collected** (m/dd/yy) | **Source Area** (eg. Tank pit 1) | **Sample Depth** (ft BGS) | **Incident Phase** (Closure, 20Day, LSA, etc.) | Acetone (mg/kg) | n-Butylbenzene (mg/kg) | sec-Butylbenzene (mg/kg) | Ethylbenzene (mg/kg) | Isopropylbenzene (mg/kg) | p-Isopropyltoluene (mg/kg) | n-Propylbenzene (mg/kg) | Naphthalene (mg/kg) | 1,2,4-Trimethylbenzene (mg/kg) | 1,3,5-Trimethylbenzene (mg/kg) | Xylene (mg/kg) | m,p-Xylene (mg/kg) | o-Xylene (mg/kg) | All Other SW846 8260B Compounds |
| 1932-UST-PL01 | 12/18/2013 | Beneath Product Line | 4-5 | Closure | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL |
| 1932-UST-SW01 | 12/18/2013 | Tank Pit Side Wall | 8-8.5 | Closure | 0.153 | 0.0075 | 0.0169 | BMDL | BMDL | 0.0178 | BMDL | 0.0367 | 0.294 | 0.151 | BMDL | BMDL | BMDL | BMDL |
| 1932-UST-SW02 | 12/18/2013 | Tank Pit Side Wall | 8-8.5 | Closure | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL |
| 1932-UST-SW03 | 12/18/2013 | Tank Pit Side Wall | 8-8.5 | Closure | 0.137 | 0.0377 | 0.0191 | 0.008 | 0.0057 | 0.011 | 0.0284 | BMDL | 0.0665 | 0.0072 | 0.0074 | 0.0074 | BMDL | BMDL |
| 1932-UST-SW04 | 12/18/2013 | Tank Pit Side Wall | 8-8.5 | Closure | 0.171 | 0.0032 | 0.0045 | 0.0098 | 0.0019 | 0.0019 | 0.0106 | BMDL | 0.0022 | 0.0055 | BMDL | BMDL | BMDL | BMDL |
| 1932-UST-SW05 | 12/18/2013 | Tank Pit Side Wall | 8-8.5 | Closure | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL |
| 1932-UST-SW05A | 12/18/2013 | Side Wall Duplicate | 8-8.5 | Closure | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL |
| 1932-UST-DS01 | 12/18/2013 | Beneath Dispenser Pump | 1.5-2 | Closure | 0.0293 | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL |
| 1932-UST-SW06 | 12/18/2013 | Tank Pit Side Wall | 8-8.5 | Closure | 0.0953 | 0.789 | 0.0251 | BMDL | 0.004 | 0.0227 | 0.0285 | BMDL | 2.03 | 0.556 | BMDL | BMDL | BMDL | BMDL |
| 1932-UST-SW07 | 1/8/2014 | Tank Pit Side Wall | 4-5 | Closure - Rnd 2 sample | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL |
| 1932-UST-SW08 | 1/8/2014 | Tank Pit Side Wall | 4-5 | Closure - Rnd 2 sample | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL |
| 1932-UST-SW08 | 1/8/2014 | Tank Pit Side Wall | 4-5 | Closure - Rnd 2 sample | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL |
| 1932-UST-SW09 | 1/8/2014 | Tank Pit Side Wall | 4-5 | Closure - Rnd 2 sample | BMDL | 0.125 | BMDL | 0.303 | BMDL | BMDL | 0.335 | 0.392 | BMDL | 0.89 | 1.1 | 1.01 | 0.0925 | BMDL |
| **Minimum Reporting Limit (mg/kg)** | | | | | 0.05 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.015 | 0.005 | 0.062 | Varies |
| **Soil to groundwater MSCC (mg/kg)** | | | | | 24 | 4.3 | 3.3 | 4.9 | 1.7 | 0.12 | 1.7 | 0.16 | 8.5 | 8.3 | 4.6 | 4.6 | 4.6 | Varies |
| **Residential MSCC (mg/kg)** | | | | | 14000 | 626 | 626 | 1560 | 1564 | 100 | 626 | 313 | 782 | 782 | 3129 | 3129 | 3129 | Varies |
| **Industrial/Commercial MSCC (mg/kg)** | | | | | 360000 | 16350 | 16350 | 40000 | 40880 | 4000 | 16350 | 8176 | 20440 | 20440 | 81760 | 81760 | 81760 | Varies |

MSCC = maximum soil contaminant concentration
ft. BGS = feet below ground surface
Results must be reported in mg/kg.
mg/kg =milligrams per kilogram
J=Indicates an estimated value
BMDL=Below Method Detection Limit
N/A = Not applicable. Sample not tested for this analyte.
Highlighted items indicate a result >= Soil to groundwater MSCC or NCDENR Action Limit

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# FIGURES

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SOURCE: GOOGLE EARTH PRO

SOURCE: GOOGLE MAPS

**BASE LOCATION MAP**

CAD FILE: WE03-UST1932-FIGURE 1_REV0330314.DWG

TETRA TECH EC, INC.

MARINE CORPS BASE CAMP LEJEUNE JACKSONVILLE, NORTH CAROLINA

**UST REMOVAL SITE 1932 LOCATION MAP**

| PREP | CHK | APPR | DATE |
|---|---|---|---|
| - | - | - | - |

**FIGURE 1**

N

LEGEND

- wastewater_line
- underground_storage_tank_point
- slab_area
- structure_existing_area
- road_area (1)
- road_bridge_area
- storm_sewer_line
- fence_line
- ditch_aqueduct_centerline
- aboveground_storage_tank_point

0 20 40
SCALE IN FEET

SOURCE: MARINE CORP INSTALLATIONS EAST MARINE CORPS BASE CAMP LEJEUNE GIS

CAD FILE: WE03-UST1932-FIGURE-2 REV033014.DWG

TETRA TECH EC, INC.

MARINE CORPS INSTALLATIONS EAST MARINE CORPS BASE CAMP LEJEUNE JACKSONVILLE, NORTH CAROLINA

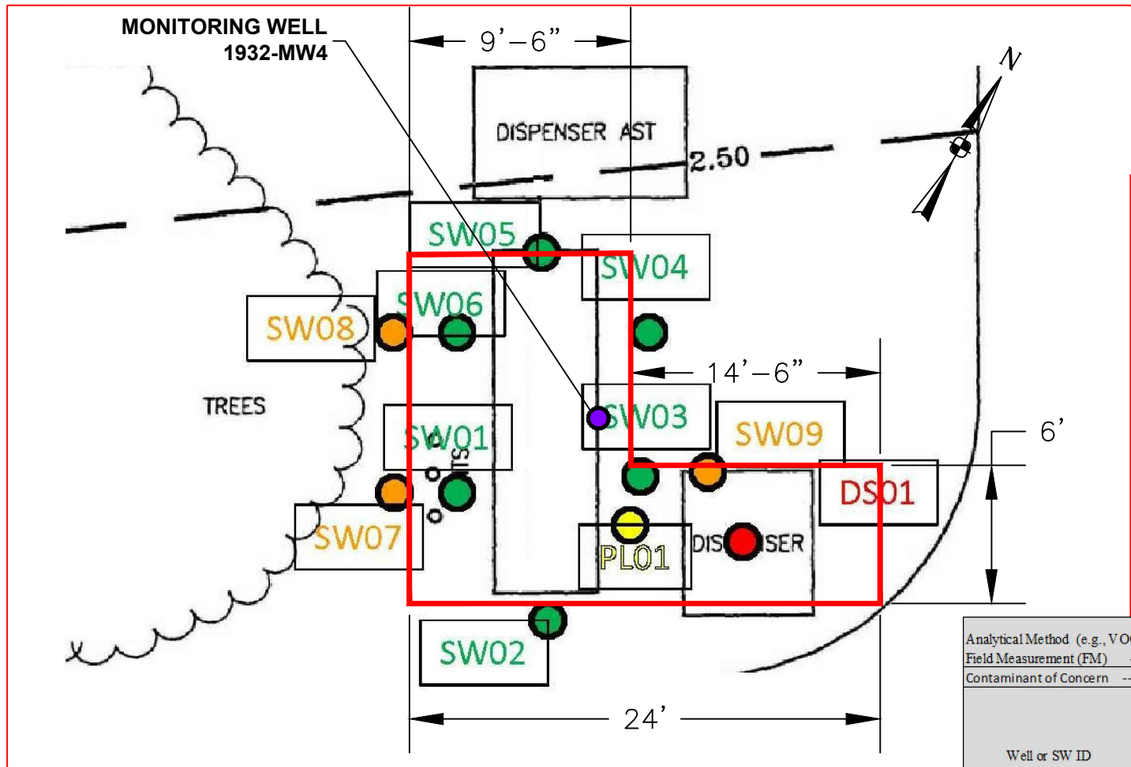
**UST REMOVALS**

PARADISE POINT 1932 UST AREA

SITE PLAN

| PREP | CHK | APPR | DATE |
|---|---|---|---|
| - | - | | - |

**FIGURE 2**



**UST 1932 EXCAVATION AREA**
**NOT TO SCALE**

BMDL= Below Method Detection Limit
J= Indicates a result > = Limit of Detection but < Limits of Quantification
Highlighted items indicate a result >= 2L Standard

| Analytical Method (e.g., VOC by SM6000B) or Field Measurement (FM) --> | | | EPA 504.1 | 6010C | MADEP VPH Rev 1.1 | | | MADEP VPH Rev 1.1 SW846 3510C | | | EPA 625 | | | | | SM6200B | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Contaminant of Concern --> | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Well or SW ID | Northing (feet) | Easting (feet) | Ethyl dimobride (EOB) (ug/l) | Lead (ug/l) | C5-C8 Aliphatics (ug/l) | C9-C12 Aliphatics (ug/l) | C9-C10 Aromatics (ug/l) | C11-C22 Aromatics (ug/l) | C9-C18 Aliphatics (ug/l) | C19-C36 Aliphatics (ug/l) | 1-Methylnaphthalene (ug/l) | 2-Methylnaphthalene (ug/l) | Naphthalene (ug/l) | Total Tentatively Identified Compounds, Semi-Volatile ug/l) | All other EPA 625 Target Analytes | n-Butylbenzene (ug/l) | Ethylbenzene (ug/l) | Isopropylbenzene (ug/l) | Naphthalene (ug/l) | n-Propylbenzene (ug/l) | 1, 2, 4-Trimethylbenzene (ug/l) | 1, 3, 5-Trimethylbenzene (ug/l) | Xylene (total) (ug/l) | m, p-Xylene (ug/l) | o-Xylene (ug/l) | All other 6200B Target Analytes |
| 1932-MW4 | 3844286.6 | 718484.2 | BMDL | 4.0 J | 425 | 288 | 1030 | 159 | 138 | BMDL | 10.2 | 21.6 | 35.7 | 841 | BMDL | 2.9 | 29.5 | 8.9 | 43.9 | 32.9 | 283 | 74.3 | 105 | 97.2 | 7.9 | BMDL |
| Minimum Reporting Limit (ug/l) | | | 0.0097 | 2 | 35 | 180 | 180 | 150 | 100 | 100 | 0.96 | 0.96 | 0.96 | varies | varies | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 6 | 4 | 2 | varies |
| 2L Standard (ug/l) | | | 0.02 | 15 | 400 | 700 | 200 | 200 | 700 | 10000 | 1 | 30 | 6 | varies | varies | 70 | 600 | 70 | 6 | 70 | 400 | 400 | 500 | 500 | 500 | varies |

LEGEND:

- AREA OF EXCAVATION
- PRODUCT LINE (PL) SOIL SAMPLE LOCATION POINT
- FIRST ROUND SIDE WALL (SW) SOIL SAMPLE LOCATION POINT
- SECOND ROUND SIDE WALL (SW) SOIL SAMPLE LOCATION POINT
- DISPENSER (DS) SOII SAMPLE LOCATION POINT
- GROUNDWATER (GW) SAMPLE LOCATION POINT

NOTE: DEPTH OF EXCAVATION = 9 FEET.

| Analytical Method (e.g., VOC by EPA 8260) --> | | | | | EPA 8015C | EPA 8015C | SW846 8270D & 3550C | | | | MADEP EPH Rev 1.1 SW846 3546 | | | | | EPA SW846 8260B | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Contaminant of Concern --> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sample ID | Date Collected (m/dd/yy) | Source Area (eg. Tank pit 1) | Sample Depth (ft BGS) | Incident Phase (Closure, 20Day, LSA, etc.) | TPH DRO (mg/kg) | TPH GRO (mg/kg) | 1-Methylnaphthalene (mg/kg) | 2-Methylnaphthalene (mg/kg) | Naphthalene (mg/kg) | All Other SW846 8270D & 3550C Compounds | C9-C12 Aliphatics (mg/kg) | C9-C10 Aliphatics (mg/kg) | C9-C18 Aliphatics (mg/kg) | C19-C36 Aliphatics (mg/kg) | All Other MADEP EPH Rev 1.1 SW846 3546 Compounds | Acetone (mg/kg) | n-Butylbenzene (mg/kg) | sec-Butylbenzene (mg/kg) | Ethylbenzene (mg/kg) | Isopropylbenzene (mg/kg) | p-Isopropyltoluene (mg/kg) | n-Propylbenzene (mg/kg) | Naphthalene (mg/kg) | 1,2,4-Trimethylbenzene (mg/kg) | 1,3,5-Trimethylbenzene (mg/kg) | Xylene (mg/kg) | m,p-Xylene (mg/kg) | o-Xylene (mg/kg) | All Other SW846 8260B Compounds |
| 1932-UST-PL01 | 12/18/2013 | Beneath Product Line | 4-5 | Closure | BMDL | BMDL | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL |
| 1932-UST-SW01 | 12/18/2013 | Tank Pit Side Wall | 8-8.5 | Closure | 28.5 | 46.5 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | 0.153 | 0.0075 | 0.0169 | BMDL | BMDL | 0.0178 | BMDL | 0.0367 | 0.294 | 0.151 | BMDL | BMDL | BMDL | BMDL |
| 1932-UST-SW02 | 12/18/2013 | Tank Pit Side Wall | 8-8.5 | Closure | BMDL | BMDL | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL |
| 1932-UST-SW03 | 12/18/2013 | Tank Pit Side Wall | 8-8.5 | Closure | 6.15 | 279 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | 0.137 | 0.0377 | 0.0191 | 0.008 | 0.0057 | 0.011 | 0.0284 | BMDL | 0.0665 | 0.0072 | 0.0074 | 0.0074 | BMDL | BMDL |
| 1932-UST-SW04 | 12/18/2013 | Tank Pit Side Wall | 8-8.5 | Closure | 6.32 | 8.17 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | 0.171 | 0.0032 | 0.0045 | 0.0098 | 0.0019 | 0.0019 | 0.0106 | BMDL | 0.0022 | 0.0055 | BMDL | BMDL | BMDL | BMDL |
| 1932-UST-SW05 | 12/18/2013 | Tank Pit Side Wall | 8-8.5 | Closure | BMDL | BMDL | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL |
| 1932-UST-SW05A | 12/18/2013 | Side Wall Duplicate | 8-8.5 | Closure | 8.75 | BMDL | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL |
| 1932-UST-DS01 | 12/18/2013 | Beneath Dispenser Pump | 1.5-2 | Closure | 4.02 | BMDL | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | 0.0293 | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL |
| 1932-UST-SW06 | 12/18/2013 | Tank Pit Side Wall | 8-8.5 | Closure | 11.5 | 48.4 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | 0.0953 | 0.789 | 0.0251 | BMDL | 0.004 | 0.0227 | 0.0285 | BMDL | 2.03 | 0.556 | BMDL | BMDL | BMDL | BMDL |
| 1932-UST-SW07 | 1/9/2014 | Tank Pit Side Wall | 4-5 | Closure - Rnd 2 sample | N/A | N/A | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL |
| 1932-UST-SW08 | 1/9/2014 | Tank Pit Side Wall | 4-5 | Closure - Rnd 2 sample | N/A | N/A | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL |
| 1932-UST-SW08 | 1/9/2014 | Tank Pit Side Wall | 4-5 | Closure - Rnd 2 sample | N/A | N/A | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL | BMDL |
| 1932-UST-SW09 | 1/9/2014 | Tank Pit Side Wall | 4-5 | Closure - Rnd 2 sample | N/A | N/A | 1.31 | 2.9 | 0.773 | BMDL | 4.18 | 16.6 | 7.22 | 5.84 | BMDL | BMDL | 0.125 | BMDL | 0.303 | BMDL | BMDL | 0.335 | 0.392 | BMDL | 0.89 | 1.1 | 1.01 | 0.0925 | BMDL |
| **NCDENR Action Limit (mg/kg)** | | | | | 10 | 10 | | | | | | | | | | | | | | | | | | | | | | | |
| **Soil to groundwater MSCC (mg/kg)** | | | | | Not Listed | Not Listed | 0.004 | 1 | 0.16 | Varies | 540 | 540 | 540 | # | Varies | 24 | 4.3 | 3.3 | 4.9 | 1.7 | 0.12 | 1.7 | 0.16 | 8.5 | 8.3 | 4.6 | 4.6 | 4.6 | Varies |
| **Residential MSCC (mg/kg)** | | | | | Not Listed | Not Listed | 20 | 700 | 313 | Varies | 1500 | 1500 | 1500 | 31000 | Varies | 14000 | 626 | 626 | 1560 | 1564 | 100 | 626 | 313 | 782 | 782 | 3129 | 3129 | 3129 | Varies |
| **Industrial/Commercial MSCC (mg/kg)** | | | | | Not Listed | Not Listed | 100 | 20000 | 8176 | Varies | 40000 | 40000 | 40000 | 810000 | Varies | 360000 | 16350 | 16350 | 40000 | 40880 | 4000 | 16350 | 8176 | 20440 | 20440 | 81760 | 81760 | 81760 | Varies |

BMDL= Below Method Detection Limit
N/A= Not applicable: sample not tested for this analyte
Highlighted items indicate a result >= Soil to groundwater MSCC or NCDENR Action Limit

CAD FILE: WE03–UST1932–FIGURE 3–REV.DWG

TETRA TECH EC, INC.

**MARINE CORPS INSTALLATIONS EAST MARINE CORPS BASE CAMP LEJEUNE JACKSONVILLE, NORTH CAROLINA**

**UST REMOVALS - SITE 1932**

SAMPLE LOCATION AND EXCAVATION MAP

| PREP | CHK | APPR | DATE |
|---|---|---|---|
| – | – | | – |

**FIGURE 3**

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# APPENDIX A

# PHOTOGRAPHIC LOG

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| TETRA TECH | Photographic Log | Log No. 1932-1 |
|---|---|---|

Project: UST Demolition

Project No.: WE03

Location: Camp Lejeune - Site 1932

Photographer: Gary Phelps

Photo # : 1

Date Taken: 11/20/13

Time Taken: N/A

Location: Site 1932

Photographer facing: South-East

Description: Pre-construction condition

Photo # : 2

Date Taken: 12/17/13

Time Taken: N/A

Location: Site 1932

Photographer facing: South-West

Description: Breaking of concrete

Photo # : 3

Date Taken: 2013-12-18

Time Taken: N/A

Location: Site 1932

Photographer facing:

Description: Excavation of over-burden material.

only

| TETRA TECH | Photographic Log | Log No. 1932-2 |
|---|---|---|

Project: UST Demolition

Project No.: WE03

Location: Camp Lejeune - Site 1932

Photographer: Gary Phelps

Photo # : 4

Date Taken: 12/18/13

Time Taken: N/A

Location: Site 1932

Photographer facing: South-East

Description: First round soil sampling

Photo # : 5

Date Taken: 1/24/14

Time Taken: N/A

Location: Site 1932

Photographer facing: South-East

Description: Open excavation. Shows over-excavation of side wall.

Photo # : 6

Date Taken: 1/30/14

Time Taken: N/A

Location: Site 1932

Photographer facing:

Description: Backfill of UST excavation. High visibility material is shown to bookmark edge of clean fill.

only

| TETRA TECH | Photographic Log | Log No. 1932-3 |
|---|---|---|

Project: UST Demolition

Project No.: WE03

Location: Camp Lejeune - Site 1932

Photographer: Gary Phelps

Photo # : 7

Date Taken: 2014-2-25

Time Taken: N/A

Location: Site 1932

Photographer facing: North

Description: Restored site

Photo # :

Date Taken:

Time Taken:

Location:

Photographer facing:

Description:

Photo # :

Date Taken:

Time Taken:

Location:

Photographer facing:

Description:

Draft Only

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# APPENDIX B

# UST-3 NOTIFICATION OF INTENT: UST PERMANENT CLOSURE

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# UST-3 Notice of Intent: UST Permanent Closure or Change-in-Service

**Return completed form to:**
The DWM Regional Office located in the area where the facility is located. Send a copy to the Central Office in Raleigh so that the status of the tank may be changed to "PERMANENTLY CLOSED" and your tank fee account can be closed out.
SEE MAP ON THE BACK OF THIS FORM FOR THE CENTRAL AND REGIONAL OFFICE ADDRESSES.

STATE USE ONLY
I.D. #_____
Date Received_____

## INSTRUCTIONS (READ THIS FIRST)

Complete and return at least **thirty (30) days** prior to closure or change-in-service activities. If a Professional Engineer (P.E.) or a Licensed Geologist (L.G.) provides supervision for closure or change-in-service site assessment activities and signs and seals all closure reports then at least a **five (5) working days** notice is acceptable.

Completed UST closure or change-in-service site assessment reports, along with a copy of the UST-2 form, should be submitted to the appropriate Division of Waste Management (DWM) Regional Office within thirty (30) days following closure activities. The UST-2 form should also be submitted to the Central Office in Raleigh so that the status of the tanks may be changed to permanently closed and your tank fee account can be closed out.

UST closure and change-in-service site assessments must be completed in accordance with the latest version of the *Guidelines for Tank Closure*. The *Guidelines for Tank Closure* can be obtained at www.wastenotnc.org.

You must make sure that USTs removed from your property are disposed of properly. When choosing a closure contractor, ask where the tank(s) will be taken for disposal. Usually, USTs are cleaned and cut up for scrap metal. This is dangerous work and must be performed by a qualified company. Tanks disposed of illegally in fields or other dumpsites can leak petroleum products and sludge into the environment. If your tanks are disposed of improperly, you could be held responsible for the cleanup of any environmental damage that occurs.

| I. OWNERSHIP OF TANKS | | II. LOCATION | | |
|---|---|---|---|---|
| Owner Name (Corporation, Individual, Public Agency, or Other Entity)<br>Commanding General, MCIEAST-MCB CAMLEJ, G-F/EMD/EQB | | Facility Name or Company<br>Golf Course Maintenance | | |
| Street Address<br>12 Post Lane | | Facility ID # (If known)<br>08-0-0000002740 | | |
| City<br>Camp Lejeune | County<br>Onslow | Street Address<br>1932 Brewster Boulevard | | |
| State<br>NC | Zip Code<br>28542 | City<br>Camp Lejeune | County<br>Onslow | Zip Code<br>28542 |
| Phone Number<br>(910) 451-9017 | | Phone Number | | |

## III. CONTACT PERSONNEL

| Name: | Company Name: | Job Title: | Phone Number: |
|---|---|---|---|
| Jenni Reed | MCIEAST-MCB CAMLJE, G-F/EMD/EQB | Environmental Engineer | (910) 451-9017 |

## IV. TANK REMOVAL, CLOSURE IN PLACE, CHANGE-IN SERVICE

1. Contact local fire marshal.
2. Plan entire closure event.
3. Conduct Site Soil Assessment.
4. If removing tanks or closing in place, refer to API Publication 2015 *Cleaning Petroleum Storage Tanks* and 1604 *Removal and Disposal of Used Underground Petroleum Storage Tanks.*
5. Provide a sketch locating piping, tanks and soil sampling locations.
6. Submit a closure report in the format of UST-12 (including the form UST-2) within thirty (30) days following the site investigation.
7. If a release from the tanks has occurred, the site assessment portion of the tank closure must be conducted under the supervision of a P.E. or L.G., with all closure site assessment reports bearing the signature and seal of the P.E. or L.G. If a release has not occurred, the supervision, signature or seal of a P.E. or L.G. is not required.
8. Keep closure records for three (3) years.

## V. WORK TO BE PERFORMED BY

| Contractor Name: | Contractor Company Name: | | |
|---|---|---|---|
| Tetra Tech EC, Inc. | Tetra Tech, Inc. | | |
| Address:<br>5250 Challedon Drive | State:<br>VA | Zip Code:<br>23462 | Phone No:<br>(757) 518-8491 |
| Primary Consultant Name:<br>Robert Sok, P.G. | Primary Consultant Company Name:<br>Tetra Tech, Inc. | | Consultant Phone No:<br>(757) 466-4904 |

## VI. TANKS SCHEDULED FOR CLOSURE OR CHANGE-IN-SERVICE

| Tank ID No. | Size in Gallons | Last Contents | Proposed Activity: Closure: Removal | Closure: Abandonment in Place * | Change-In-Service: New Contents Stored |
|---|---|---|---|---|---|
| 1932/S-1920 | 1000 | Gasoline, Gas Mix | ☒ | ☐ | |
| | | | ☐ | ☐ | |
| | | | ☐ | ☐ | |
| | | | ☐ | ☐ | |
| | | | ☐ | ☐ | |

* Prior written approval to abandon a tank in place must be received from a DWM Regional Office.

## VII. OWNER OR OWNER'S AUTHORIZED REPRESENTATIVE

I understand that I can be held responsible for environmental damage resulting from the improper disposal of my USTs.

Print name and official title: John R. Townson, Director, Environmental Management

| Signature | Date Signed | SCHEDULED REMOVAL DATE | Notify your DWM Regional Office 48 hours before this date if scheduled removal date changes |
|---|---|---|---|
| J. R. Townson | 11/25/13 | January 15, 2014 through January 29, 2014 | |

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# APPENDIX C

# UST-2 SITE INVESTIGATION REPORT FOR PERMANENT CLOSURE OF UST

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# UST-2 Site Investigation Report for Permanent Closure or Change-in-Service of UST

**Return completed form to:**
The DWM Regional Office located in the area where the facility is located. Send a copy to the Central Office in Raleigh so that the status of the tank may be changed to "PERMANENTLY CLOSED" and your tank fee account can be closed out.
SEE MAP ON THE BACK OF THIS FORM FOR THE CENTRAL AND REGIONAL OFFICE ADDRESSES.

STATE USE ONLY:
I.D. #_____
Date Received_____

## INSTRUCTIONS (READ THIS FIRST)

For more than five UST systems you may attach additional forms as needed.

Permanent closure – For permanent closure, complete all sections of this form.

Change-in-service – For change-in-service where UST systems will be converted from containing a regulated substance to storing a non-regulated substance, complete sections I, II, III, IV, and VIII

Effective February 1, 1995, all UST closure/change-in-service reports must be submitted in the format provided in the UST-12 form. UST closure and change-in-services must be completed in accordance with the latest version of the *Guidelines for Tank Closure*. A copy of the UST-12 form and the *Guidelines for Tank Closure* can be obtained at www.wastenotnc.org.

You must make sure that USTs removed from your property are disposed of properly. When choosing a closure contractor, ask where the tank(s) will be taken for disposal. Usually, USTs are cleaned and cut up for scrap metal. This is dangerous work and must be performed by a qualified company. Tanks disposed of illegally in fields or other dumpsites can leak petroleum products and sludge into the environment. If your tanks are disposed of improperly, you could be held responsible for the cleanup of any environmental damage that occurs.

**NOTE:** If a release from the tank(s) has occurred, the site assessment portion of the tank closure must be conducted under the supervision of a P.E. or L.G., with all closure site assessment reports bearing the signature and seal of the P.E. or L.G.

| I. OWNERSHIP OF TANKS | | II. LOCATION OF TANKS | | |
|---|---|---|---|---|
| Owner Name (Corporation, Individual, Public Agency, or Other Entity)<br>Commanding General, MCIEAST-MCB CAMLEJ, G-F/EMD/EQB | | Facility Name or Company<br>Golf Course Maintenance | | |
| Street Address<br>12 Post Lane | | Facility ID # (If known)<br>08-0-0000002740 | | |
| City<br>Camp Lejeune | County<br>Onslow | Street Address<br>1932 Brewster Boulevard | | |
| State<br>NC | Zip Code<br>28542 | City<br>Camp Lejeune | County<br>Onslow | Zip Code<br>28542 |
| Phone Number<br>(910) 451-9017 | | Phone Number | | |

## III. CONTACT PERSONNEL

| | | | |
|---|---|---|---|
| Contact for Facility:<br>Jenni Reed | | Job Title:<br>Environmental Engineer | Phone. No:<br>(910) 451-9017 |
| Closure Contractor Name:<br>Tetra Tech EC, Inc. | Closure Contractor Company:<br>Tetra Tech, Inc. | Address:<br>5250 Challedon Dr, Virginia Bch, VA | Phone. No:<br>(757) 518-8491 |
| Primary Consultant Name:<br>Robert Sok, P.G. | Primary Consultant Company:<br>Tetra Tech, Inc. | Address:<br>5700 Lakewright Dr,#309,Norfolk,VA | Phone. No:<br>(757) 466-4904 |

## IV. UST INFORMATION FOR REGISTERED UST SYSTEMS / V. EXCAVATION CONDITION

| Tank ID No. | Size in Gallons | Tank Dimensions | Last Contents | Last Use Date | Permanent Close Date | Change-in-Service Date | Water in excavation | | Free product | | Notable odor or visible soil contamination | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Yes | No | Yes | No | Yes | No |
| 1932/ S-1920 | 1000 | | Gasoline, Ga | Unknown | | N/A | ☐ | ☒ | ☐ | ☒ | ☒ | ☐ |
| | | | | | | | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| | | | | | | | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| | | | | | | | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| | | | | | | | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

## VI. UST INFORMATION FOR UNREGISTERED UST SYSTEMS / VII. EXCAVATION CONDITION

| Tank ID No. | Size in Gallons | Tank Dimensions | Last Contents | Last Use Date | Permanent Close Date | Tank Owner Name * | Water in excavation | | Free product | | Notable odor or visible soil contamination | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Yes | No | Yes | No | Yes | No |
| | | | | | | | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| | | | | | | | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| | | | | | | | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| | | | | | | | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| | | | | | | | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

* If the tank owner address is different from the one listed in Section I., then enter the street address, city, state, zip code and telephone no. below:

## VIII. CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true accurate and complete.

| Print name and official title of owner or owner's authorized representative | Signature | Date Signed |
|---|---|---|
| John R. Townson, Director, Environmental Management | | |

**North Carolina Department of Environment and Natural Resources**

Division of Waste Management
UST Section Central Office
1637 Mail Service Center
Raleigh, NC 27699-1637
(919) 707-8171 FAX (919) 715-1117
portal.ncdenr.org/web/wm/

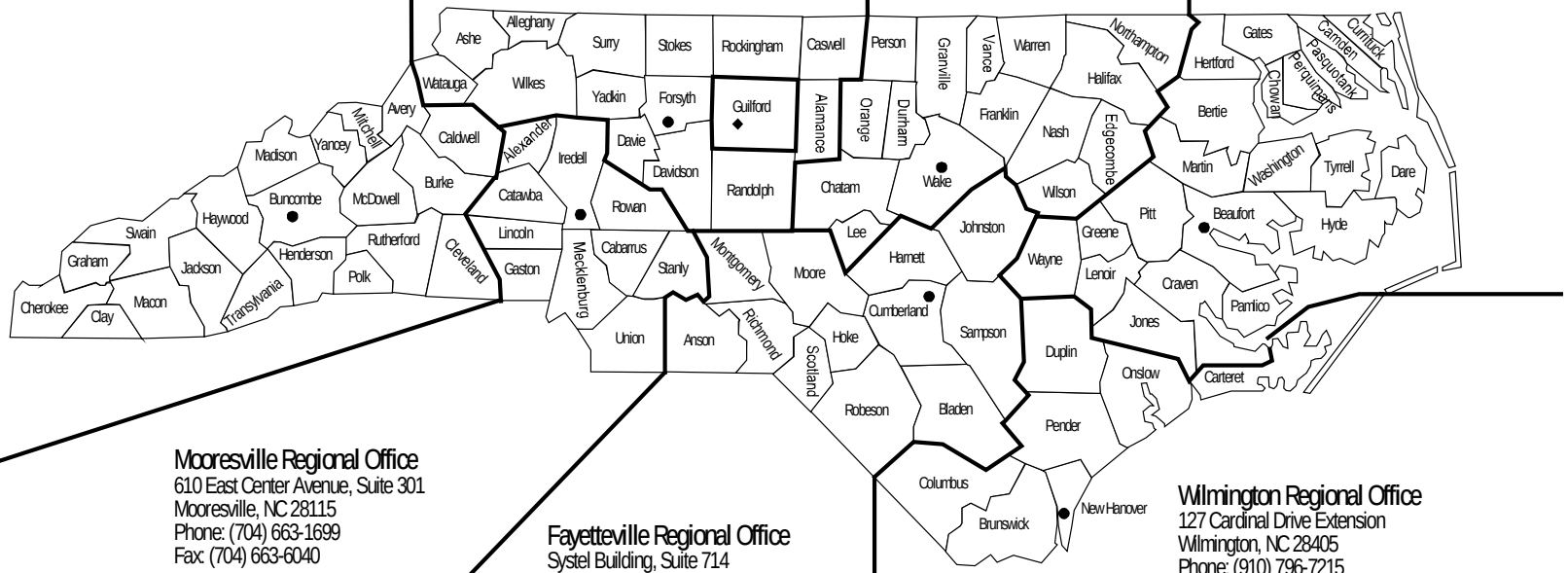
### Asheville Regional Office
2090 U.S. Highway 70
Swannanoa, NC 28778
Phone: (828) 296-4500
Fax: (828) 299-7043

### Winston-Salem Regional Office
585 Waughtown Street
Winston-Salem, NC 27107
Phone: (336) 771-5000
Fax: (336) 771-4632

Guilford County Dept. of Public Health
1203 Maple Street
Greensboro, NC 27405
Phone: (336) 641-3771
Fax: (336) 641-4812

### Raleigh Regional Office
3800 Barrett Drive
Raleigh, NC 27609
Phone: (919) 791-4200
Fax: (919) 571-4718

### Washington Regional Office
943 Washington Square Mall
Washington, NC 27889
Phone: (252) 946-6481
Fax: (252) 975-3716




### Mooresville Regional Office
610 East Center Avenue, Suite 301
Mooresville, NC 28115
Phone: (704) 663-1699
Fax: (704) 663-6040

### Fayetteville Regional Office
Systel Building, Suite 714
225 Green Street
Fayetteville, NC 28301
Phone: (910) 433-3300
Fax: (910) 486-0707

### Wilmington Regional Office
127 Cardinal Drive Extension
Wilmington, NC 28405
Phone: (910) 796-7215
Fax: (910) 350-2004

● Regional Office

*8/06*

# APPENDIX D

# UST-61 24-HOUR RELEASE AND UST LEAK REPORTING FORM

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# UST-61 — 24-Hour Release and UST Leak Reporting Form.

**For Releases in NC**

This form should be completed and submitted to the UST Section's regional office following a known or suspected release from an underground storage tank (UST) system. This form is required to be submitted within 24 hours of discovery of a known or suspected release

(DWM USE ONLY)
Incident # _____ Risk (H,I,L,U)_____
Received On _____ Received By _____
Reported by (*circle one*): Phone, Fax or Report
Region _____

Suspected Contamination? (Y/N) Y
Confirmed GW Contamination? (Y/N) N
Confirmed Soil Contamination ?(Y/N) N
Samples Taken?(Y/N) Y
Free Product? (Y/N) N If Yes, State Greatest Thickness _____

Facility ID Number 08-0-0000002740
Date Leak Discovered 12-18-2013
Comm/Non-Commercial? NON
Reg/Non-regulated? NON

## INCIDENT DESCRIPTION

Incident Name: GOLF COURSE MAINTENANCE - UST 1932

Address: 1932 BREWSTER BOULEVARD — County: ONSLOW

City/Town: CAMP LEJEUNE — Zip Code: 28542 — Regional Office (*circle one*): Asheville, Mooresville, Fayetteville, Raleigh, Washington, (Wilmington), Winston-Salem

Latitude (decimal degrees): 34.717304 N — Longitude (decimal degrees): 77.385866 W

Obtained by:
- [x] GPS
- [ ] Topographic map
- [ ] GIS Address matching
- [ ] Other
- [ ] Unknown

Describe location: GOLF COURSE MAINTENANCE FACILITY

Briefly describe suspected or confirmed release: *(including but not limited to: nature of release, date of release, amount of release, amount of free product present and recovery efforts, initial responses conducted, impacts to receptors)*

UPON REMOVAL OF A 1,000 GALLON FRP UST AT THE GOLF COURSE MAINTENANCE FACILITY ON 12-18-13, SIGNIFICANT SOIL STAINING & PETROLEUM-LIKE ODORS WERE APPARENT AT THE FLOOR OF THE EXCAVATION WHICH IS APPROXIMATELY 9-10 FT bgs. THE EXCAVATION BOTTOM IS ALSO IMPACTED BY GROUNDWATER. EXCAVATION SIDE-WALL SAMPLES WERE COLLECTED ON 12-18-13 AS REQUIRED. NO OTHER ACTIONS TAKEN TO DATE.

## HOW RELEASE WAS DISCOVERED (Release Code)

*(Check one)*

- [ ] Release Detection Equipment or Methods
- [x] During UST Closure/Removal
- [ ] Property Transfer
- [ ] Visual/Odor
- [ ] Water in Tank
- [ ] Water Supply Well Contamination
- [ ] Groundwater Contamination
- [ ] Surface Water Contamination
- [ ] Other (specify) _____

## SOURCE OF CONTAMINATION

**Source of Release** *(Check one to indicate primary source)*
- [ ] Tank
- [ ] Piping
- [ ] Dispenser
- [ ] Submersible Turbine Pump
- [ ] Delivery Problem
- [ ] Other
- [x] Unknown

*Definitions presented on reverse*

**Cause of Release** *(Check one to indicate primary cause)*
- [ ] Spill
- [ ] Overfill
- [ ] Corrosion
- [ ] Physical or Mechanical Damage
- [ ] Install Problem
- [ ] Other
- [x] Unknown

*Definitions presented on reverse*

**Type of Release** *(Check one)*
- [x] Petroleum
- [ ] Non-Petroleum
- [ ] Both

**Location** *(Check one)*
- [x] Facility
- [ ] Residence
- [ ] Other

**Product Type Released** *(Check one to indicate primary product type released)*
- [x] Gasoline/ Diesel/ Kerosene
- [ ] Heating Oil
- [ ] Other Petroleum Products
- [ ] Metals
- [ ] Other Inorganics
- [ ] Other Organics
- [ ] Diesel/Veg. Oil Blend
- [ ] Vegetable Oil 100%
- [ ] E10 – E20
- [ ] E21 – E84
- [ ] E85 – E99
- [ ] Ethanol 100%
- [ ] E01 – E09

**Ownership**
1. Municipal 2. (Military) 3. Unknown 4. Private 5. Federal 6. County 7. State

**Operation Type**
(1. Public Service) 2. Agricultural 3. Residential 4. Education/Relig. 5. Industrial 6. Commercial 7. Mining

## IMPACT ON DRINKING WATER SUPPLIES

Water Supply Wells Affected? 1. Yes (2. No) 3. Unknown

Number of Water Supply Wells Affected _____

Water Supply Wells Contaminated: (*Include Users Names, Addresses and Phone Numbers. Attach additional sheet if necessary*)

1. N/A
2.
3.

## UST SYSTEM OWNER

| UST Owner/Company | | | |
|---|---|---|---|
| COMMANDING GENERAL, MCIEAST-MCB CAMLEJ, G-F/EMD/EQB | | | |
| Point of Contact: JENNI Reed | | Address: 12 POST LANE | |
| City: CAMP LeJeune | State: NC | Zip Code: 28542 | Telephone Number: 910-451-9017 |

## UST SYSTEM OPERATOR

| UST Operator/Company | | | |
|---|---|---|---|
| COMMANDING GENERAL, MCIEAST-MCB CAMLEJ | | Address: 12 POST LANE | |
| City: CAMP LeJeune | State: NC | Zip Code: 28542 | Telephone Number: 910-451-9017 |

## LANDOWNER AT LOCATION OF UST INCIDENT

| Landowner | | | |
|---|---|---|---|
| COMMANDING GENERAL, MCIEAST-MCB CAMLEJ | | Address: 12 POST LANE | |
| City: CAMP LeJeune | State: NC | Zip Code: 28542 | Telephone Number: 910-451-9017 |

## Draw Sketch of Area (showing two major road intersections) or Attach Map

SEE ATTACHED MAPS

| | | |
|---|---|---|
| Person Reporting Incident: JENNI Reed | Company: MCIEAST-MCBCAMLEJ G-F/EMD/EQB | Telephone Number: 910-451-9017 |
| Title: ENV. ENGINEER | Address: 12 POST LANE, CAMP LeJeune, NC 28542 | Date: 12-19-2013 |

UST Form 61 (02/08)



**Definitions of Sources**

Tank: means the tank that stores the product and is part of the underground storage tank system

Piping: means the piping and connectors running from the tank or submersible turbine pump to the dispenser or other end-use equipment (Vent, vapor recovery, or fill lines are excluded.)

Dispenser: includes the dispenser and the equipment used to connect the dispenser to the piping (e.g., a release from a suction pump or from components located above the shear valve)

Submersible Turbine Pump (STP) Area includes the submersible turbine pump head (typically located in the tank sump), the line leak detector, and the piping that connects the submersible turbine pump to the tank

Delivery Problem: identifies releases that occurred during product delivery to the tank. (Typical causes associated with this source are spills and overfills.)

Other: serves as the option to use when the release source is known but does not fit into one of the preceding categories (e.g., for releases from vent lines, vapor recovery lines, and fill lines)

Unknown: identifies releases for which the source has not been determined

**Definitions of Causes**

Spill: use this cause when a spill occurs (e.g., when the delivery hose is disconnected from the tank fill pipe or when the nozzle is removed from the dispenser)

Overfill: use when an overfill occurs (e.g., overfills may occur from the fill pipe at the tank or when the nozzle fails to shut off at the dispenser)

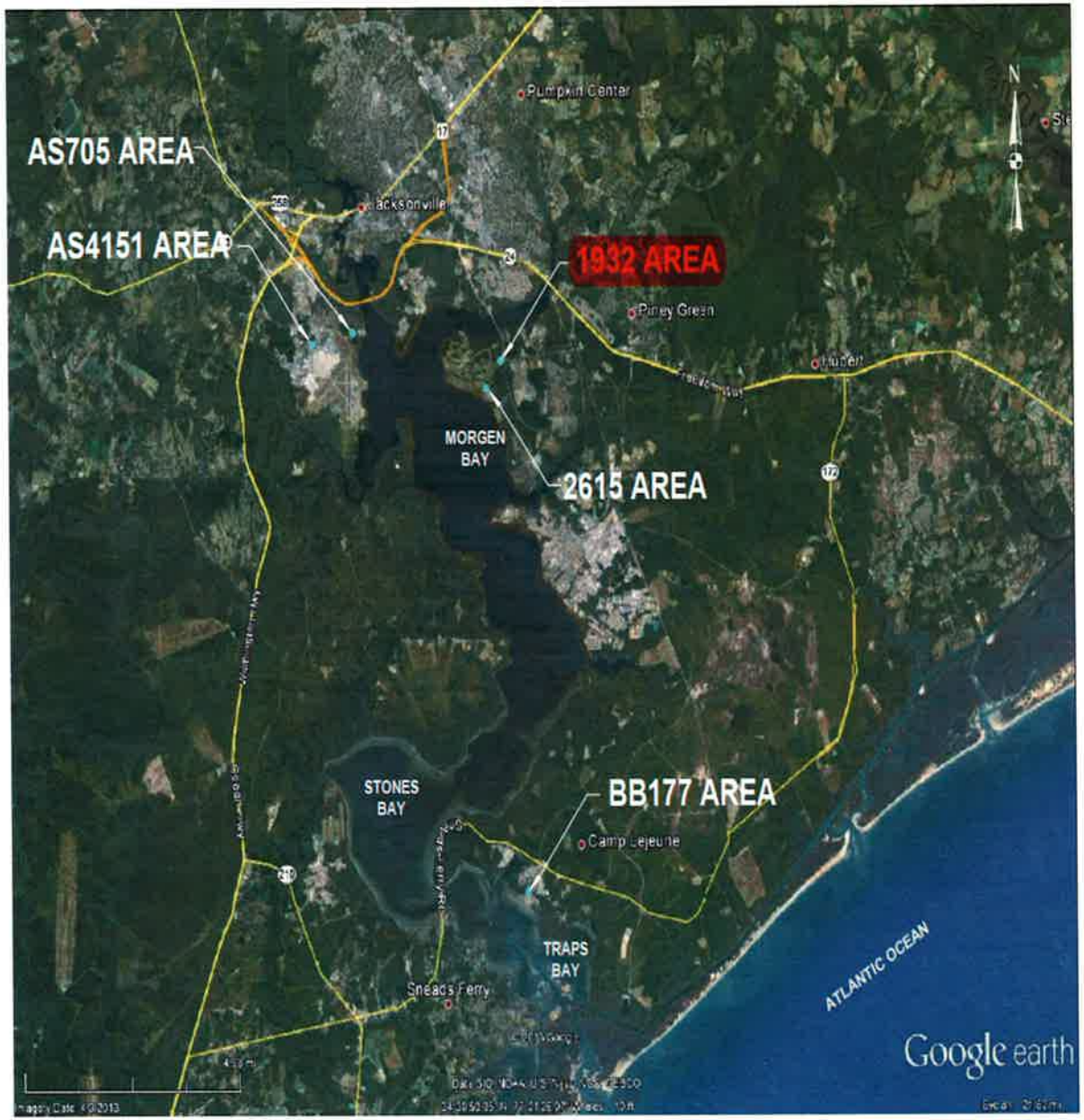
Physical or Mechanical Damage: use for all types of physical or mechanical damage, except corrosion (e.g., puncture of tank or piping, loose fittings, broken components, and components that have changed dimension)

Corrosion: use when a metal tank, piping, or other component has a release due to corrosion (e.g., for steel, corrosion takes the form of rust)

Installation Problem: use when the problem is determined to have occurred specifically because the UST system was not installed properly

Other: use this option when the cause is known but does not fit into one of the preceding categories (e.g., putting regulated substances into monitoring wells)

Unknown: use when the cause has not been determined

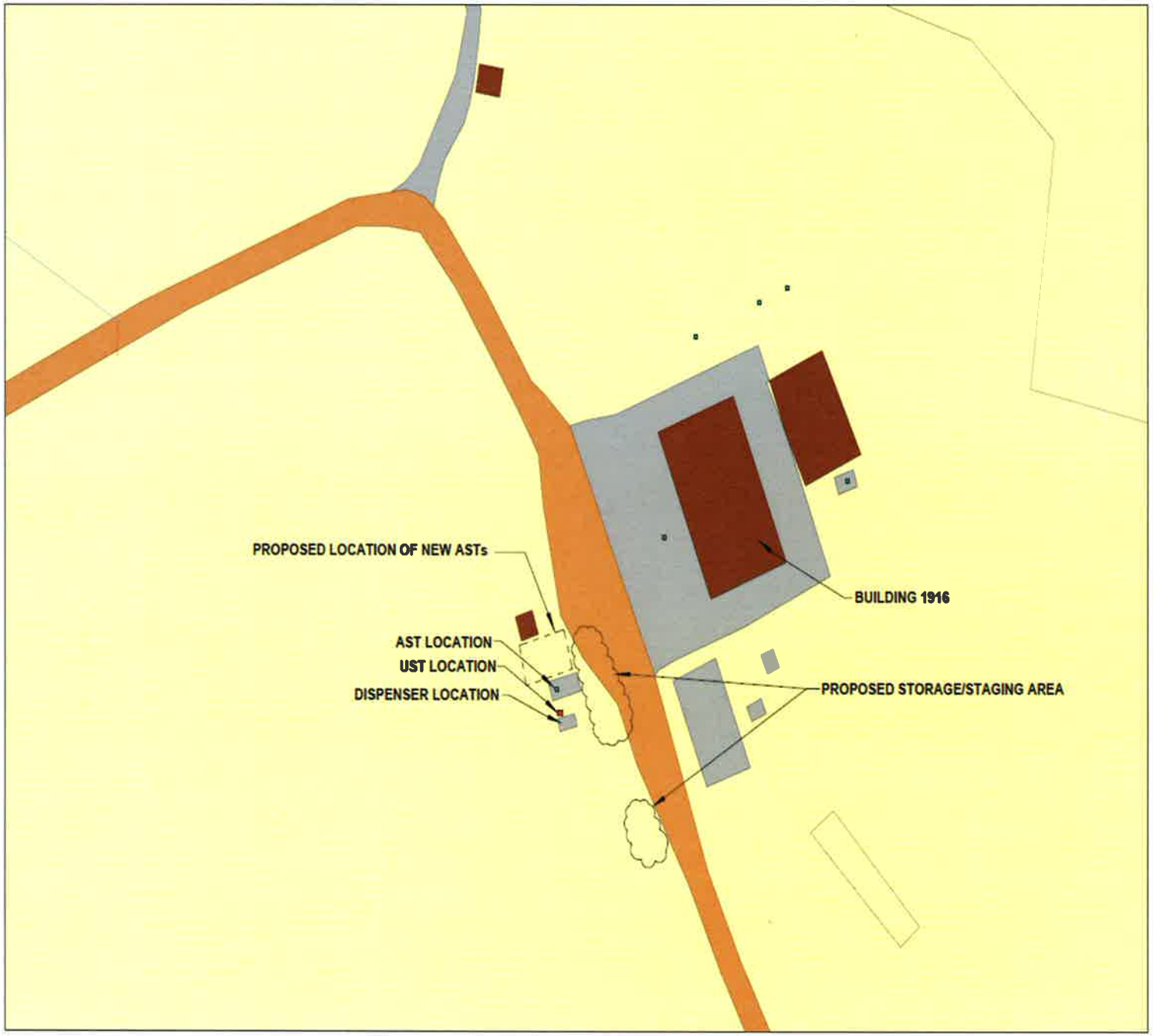



SOURCE: GOOGLE EARTH PRO

SOURCE: GOOGLE MAPS

**BASE LOCATION MAP**

CAD FILE: WE03-2615-FIGURE 1.DWG




N

LEGEND

- wstewat_oil_wat_separatr_point
- wastewater_line
- vehicle_parking_area
- vehicle_driveway_area
- underground_storage_tank_point
- surface_water_course_area
- surface_water_body_area
- slab_area
- structure_existing_area
- storm_sewer_reservoir_area
- road_area (1)
- road_bridge_area
- mooring_facility_area
- storm_sewer_line
- stmswr_drainage_basin_area
- railroad_centerline
- gwt_well_nonencroach_area
- fence_line
- ditch_aqueduct_centerline
- airfield_surface_area
- aboveground_storage_tank_point

0 20 40
SCALE IN FEET

SOURCE: MARINE CORP INSTALLATIONS EAST MARINE CORPS BASE CAMP LEJEUNE GIS

CAD FILE: WED3-1932-FIGURE-5.DWG

# APPENDIX E

# CERTIFICATE OF UST DISPOSAL

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ONSLOW COUNTY SOLID WASTE
415 MEADOWVIEW ROAD
JACKSONVILLE, NC 28540

000010 WASTE INDUSTRIES, INC.
21 EAST THOMPSON ST.
JACKSONVILLE NC 28540

| SITE | TICKET | GRID | WEIGHMASTER |
|---|---|---|---|
| 03 | 069494 | LANDFILL | DONNA C/REBECCA |

| DATE IN | DATE OUT | TIME IN | TIME OUT | VEHICLE | ROLL OFF |
|---|---|---|---|---|---|
| 01/15/14 | 01/15/14 | 11:27 | 11:40 | 610/2416 | |

| REFERENCE | ORIGIN |
|---|---|
| CAPEENVIRO | ONSLOW COUNTY |

Scale 1 Gross Wt. 39780 LB
Scale 2 Tare Wt. 36760 LB
Net Weight 3020 LB

Inbound - Charge ticket

| QTY. | UNIT | DESCRIPTION | RATE | EXTENSION | FEE | TOTAL |
|---|---|---|---|---|---|---|
| 1.51 | TON | C&D | 47.00 | 70.97 | 3.02 | 73.99 |

Cape Enviromental

0005294671

Operating hours 6:30 AM TO 5PM MON THRU SAT
This is to certify that this load does not contain any hazardous materials, medical waste or liquids of any type, and originated in Onslow County.

| NET AMOUNT |
|---|
| 73.99 |
| TENDERED |
| |
| CHANGE |
| |
| CHECK NO. |
| |

.6T1 TO REORDER CONTACT CAROLINA SOFTWARE (910) 799-6767 SIGNATURE

1932 1,000 UST
AND OTHER
DEBRIS

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# APPENDIX F

# WELL CONSTRUCTION RECORDS

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CATLIN
Engineers and Scientists

Post Office Box 10279
Wilmington, North Carolina 28404-0279

Telephone: (910) 452-5861
Fax: (910) 452-7563

www.catlinusa.com

February 25, 2014

North Carolina Department of Environment and Natural Resources
Division of Water Quality
Information Processing
1617 Mail Service Center
Raleigh, North Carolina 27699-1617

**Re: NC Well Construction and/or Abandonment Record(s)**
**Sites 1932 and AS705**
**Jacksonville, North Carolina**
**CATLIN Project No.: 213159**

To Whom It May Concern:

CATLIN Engineers and Scientists (CATLIN) recently constructed and/or abandoned well(s) at the above referenced site. Attached to this letter are completed North Carolina Well Construction Records and/or North Carolina Well Abandonment Records with associated Attachment(s) for the above referenced sites located in the vicinity of Jacksonville, North Carolina.

If you have any questions or require any additional information, please feel free to contact us at (910) 452-5861.

Sincerely,

Jeffery K. Becken, P.E.
Project Manager

Enclosures

cc: Mark Piscarik - Tetra Tech

S:\GINT\PROJECTS\213159_TETRA_TECH.GPJ,S:\WPMKTG\PROJECT\2013\213159 TETRA TECH FIELD SERVICES AT CAMP LEJEUNE\BB177-GW01_LOG-WELLCON-TRANS.GDW

# WELL CONSTRUCTION RECORD

This form can be used for single or multiple wells

**1. Well Contractor Information:**

William J. Miller
Well Contractor Name

2927A — 1932-MW-4
NC Well Contractor Certification Number — Well Identification:

CATLIN Engineers and Scientists
Company Name

**2. Well Construction Permit #:** N/A
*List all applicable well permits (i.e. County, State, Variance, Injection, etc.) if known*

**3. Well use (check well use):**

**Water Supply Well:**
- ☐ Agricultural
- ☐ Municipal/Public
- ☐ Geothermal (Heating/Cooling Supply)
- ☐ Residential Water Supply (single)
- ☐ Industrial/Commercial
- ☐ Residential Water Supply (shared)
- ☐ Irrigation

**Non-Water Supply Well:**
- ■ Monitoring
- ☐ Recovery

**Injection Well:**
- ☐ Aquifer Recharge
- ☐ Groundwater Remediation
- ☐ Aquifer Storage and Recovery
- ☐ Salinity Barrier
- ☐ Aquifer Test
- ☐ Stormwater Drainage
- ☐ Experimental Technology
- ☐ Subsidence Control
- ☐ Geothermal (Closed Loop)
- ☐ Tracer
- ☐ Geothermal (Heating/Cooling Return)
- ☐ Other (explain under #4 Remarks)

**4. Date Well(s) Completed:** 2/10/2014

**5a. Well Location:**

Building 1932 — N/A
Facility/Owner Name — Facility ID# (if applicable)

1932 ~~B[illegible]27~~, Jacksonville
Physical Address, City, and Zip

Onslow
County — Parcel Identification No. (PIN)

**5b. Latitude and longitude in degrees/minutes/seconds or decimal degrees:**
(if well field, one lat/long is sufficient)

34.4302325 N — 77.230918 W

**6. Is (are) the well(s):** ■ **Permanent** or ☐ **Temporary**

**7. Is this a repair to an existing well:** ☐ **Yes** or ■ **No**
*If this is a repair, fill out known well construction information and explain the nature of the repair under #21 remarks section or on the back of this form.*

**8. Number of wells constructed:** 1
*For multiple injection or non-water supply wells **ONLY** with the **same construction**, you can submit one form.*

**9. Total well depth below land surface:** 16.5 (ft.)
*For multiple wells list all depths if different (example - 3@200' and 2@100')*

**10. Static water level below top of casing:** 9.4 (ft.)
*If water level is above use "+"*

**11. Borehole diameter:** 8.25 (in.)

**12. Well construction method:** H.S.A.
*(i.e. auger, rotary, cable, direct push, etc.)*

**FOR WATER SUPPLY WELLS ONLY:**

**13a. Yield (gpm):** _____ **Method of test:** _____

**13b. Disinfection type:** _____ **Amount:** _____

For Internal Use ONLY:

**14. WATER ZONES**

| FROM | TO | DESCRIPTION |
|---|---|---|
| ft. | ft. | |
| ft. | ft. | |

**15. OUTER CASING (for multi-cased wells) OR LINER (if applicable)**

| FROM | TO | DIAMETER | THICKNESS | MATERIAL |
|---|---|---|---|---|
| 0 ft. | 6.5 ft. | 2 in. | Sch. 40 | PVC |
| ft. | ft. | in. | | |

**16. INNER CASING OR TUBING (geothermal closed-loop)**

| FROM | TO | DIAMETER | THICKNESS | MATERIAL |
|---|---|---|---|---|
| ft. | ft. | in. | | |
| ft. | ft. | in. | | |

**17. SCREEN**

| FROM | TO | DIAMETER | SLOT SIZE | THICKNESS | MATERIAL |
|---|---|---|---|---|---|
| 6.5 ft. | 16.5 ft. | 2 in. | Slot .010 | Sch. 40 | PVC |
| ft. | ft. | in. | | | |

**18. GROUT**

| FROM | TO | MATERIAL | EMPLACEMENT METHOD & AMOUNT |
|---|---|---|---|
| ft. | ft. | | |
| 2 ft. | 4 ft. | Bent. Pellets | Surface Pour |
| ft. | ft. | | |

**19. SAND/GRAVEL PACK (if applicable)**

| FROM | TO | MATERIAL | EMPLACEMENT METHOD |
|---|---|---|---|
| ft. | ft. | | Surface Pour |
| ft. | ft. | | |

**20. DRILLING LOG (attach additional sheets if necessary)**

| FROM | TO | DESCRIPTION |
|---|---|---|
| ft. | ft. | |
| ft. | ft. | |
| ft. | ft. | |
| ft. | ft. | |
| ft. | ft. | |
| ft. | ft. | |

SEE ATTACHED

**21. REMARKS**

**22. Certification:**

Signature of Certified Well Contractor — Date: 2-28-14

*By signing this form I hereby certify that the well(s) was (were) constructed in accordance with 15A NCAC 02C .0100 or 2C Well Construction Standards and that a copy of this record has been provided to the well owner.*

**23. Site diagram or additional well details:**
You may use the back of this page to provide additional well site details or well construction details. You may also attach additional pages if necessary.

## SUBMITTAL INSTRUCTIONS

**24a. For All Wells:** Submit this form within 30 days of completion of well construction to the following:

**Division of Water Resources, Information Processing Unit, 1617 Mail Service Center, Raleigh, NC 27699-1617**

**24b. For Injection Wells:** In addition to sending the form to the address in 24a above, also submit one copy of this form within 30 days of completion of well construction to the following:

**Division of Water Resources, Underground Injection Control Program, 1636 Mail Service Center, Raleigh, NC 27699-1636**

**24c. For Water Supply & Injection Wells:**
Also submit one copy of this form within 30 days of completion of well construction to the county health department of the county where constructed.

# WELL LOG

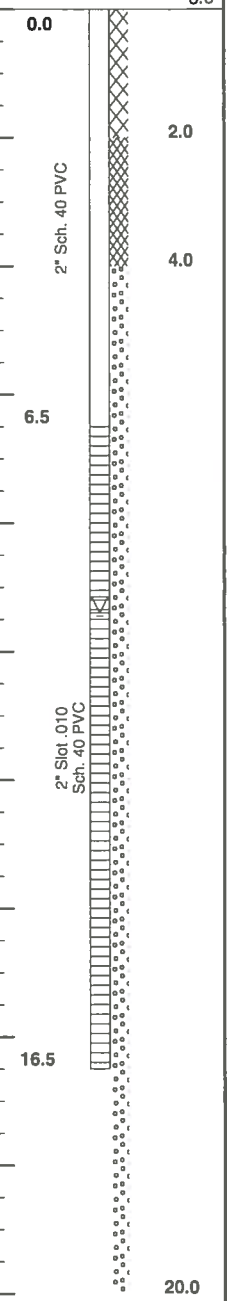
CATLIN Engineers and Scientists
213159 Wilmington, NC

SHEET 1 OF 1

| | | | |
|---|---|---|---|
| PROJECT NO.: 213159 | STATE: NC | COUNTY: Onslow | LOCATION: Jacksonville |
| PROJECT NAME: Building 1932 | | LOGGED BY: Tetra Tech | WELL ID: 1932-MW-4 |
| | | DRILLER: William J. Miller | |
| NORTHING: | EASTING: | CREW: Larry Wessell | |
| SYSTEM: | BORING LOCATION: | | T.O.C. ELEV.: |
| DRILL MACHINE: CME-45B | METHOD: H.S.A. | 0 HOUR DTW: 9.4 | TOTAL DEPTH: 20.5 |
| START DATE: 2/10/14 | FINISH DATE: 2/10/14 | 24 HOUR DTW: N/A | WELL DEPTH: 16.5 |

| DEPTH | BLOW COUNT 0.5ft | 0.5ft | 0.5ft | 0.5ft | OVA (ppm) | LAB. | MOIS | LOG | DEPTH | SOIL AND ROCK DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | 0.0 | LAND SURFACE |
| 3.5 | WOH | WOH | 1 | 2 | | | D | | 3.5 / 5.5 | (SP) - SAND. Fill. |
| 8.5 | 1 | 2 | 3 | 5 | | | W | | 8.5 / 10.5 | (GW/GC) - GRAVEL and CLAY (Fill). Black staining and hydrocarbon odor. |
| 13.5 | WOH | WOH | 1 | 10 | | | W | | 13.5 / 15.5 | (GW/GC) - Same As Above |
| | | | | | | | | | 18.5 / 20.5 | (SP/ML) - Gray, Sandy SILT w/interbedded orange Sand. Hydrocarbon odor in orange sands. |
| 20.5 | | | | | | | | | | Boring Terminated at Depth 20.5 ft |

WELL DETAIL




Bentonite Grout | Bentonite Pellets | Coarse Gravel Pack

CATLIN BORING LOG 213159 TETRA TECH.GPJ CATLIN.GDT 2/25/14

# WELL CONSTRUCTION RECORD

This form can be used for single or multiple wells

**1. Well Contractor Information:**

William J. Miller
Well Contractor Name

2927A — AS705-MW01
NC Well Contractor Certification Number — Well Identification

CATLIN Engineers and Scientists
Company Name

**2. Well Construction Permit #:** N/A
*List all applicable well permits (i.e. County, State, Variance, Injection, etc.) if known*

**3. Well use (check well use):**

**Water Supply Well:**
- ☐ Agricultural
- ☐ Municipal/Public
- ☐ Geothermal (Heating/Cooling Supply)
- ☐ Residential Water Supply (single)
- ☐ Industrial/Commercial
- ☐ Residential Water Supply (shared)
- ☐ Irrigation

**Non-Water Supply Well:**
- ■ Monitoring
- ☐ Recovery

**Injection Well:**
- ☐ Aquifer Recharge
- ☐ Groundwater Remediation
- ☐ Aquifer Storage and Recovery
- ☐ Salinity Barrier
- ☐ Aquifer Test
- ☐ Stormwater Drainage
- ☐ Experimental Technology
- ☐ Subsidence Control
- ☐ Geothermal (Closed Loop)
- ☐ Tracer
- ☐ Geothermal (Heating/Cooling Return)
- ☐ Other (explain under #4 Remarks)

**4. Date Well(s) Completed:** 2/10/2014

**5a. Well Location:**

Building AS705 — N/A
Facility/Owner Name — Facility ID# (if applicable)

AS-705 ~~BB127~~, Jacksonville
Physical Address, City, and Zip

Onslow
County — Parcel Identification No. (PIN)

**5b. Latitude and longitude in degrees/minutes/seconds or decimal degrees:**
(if well field, one lat/long is sufficient)

34.4323516 N — -77.255497 W

**6. Is (are) the well(s):** ■ **Permanent** or ☐ **Temporary**

**7. Is this a repair to an existing well:** ☐ **Yes** or ■ **No**
*If this is a repair, fill out known well construction information and explain the nature of the repair under #21 remarks section or on the back of this form.*

**8. Number of wells constructed:** 1
*For multiple injection or non-water supply wells **ONLY** with the **same construction**, you can submit one form.*

**9. Total well depth below land surface:** 14 (ft.)
*For multiple wells list all depths if different (example - 3@200' and 2@100')*

**10. Static water level below top of casing:** 4.3 (ft.)
*If water level is above use "+"*

**11. Borehole diameter:** 8.25 (in.)

**12. Well construction method:** H.S.A.
*(i.e. auger, rotary, cable, direct push, etc.)*

**FOR WATER SUPPLY WELLS ONLY:**

**13a. Yield (gpm):** _____ **Method of test:** _____

**13b. Disinfection type:** _____ **Amount:** _____

For Internal Use ONLY:

**14. WATER ZONES**

| FROM | TO | DESCRIPTION |
|---|---|---|
| ft. | ft. | |
| ft. | ft. | |

**15. OUTER CASING (for multi-cased wells) OR LINER (if applicable)**

| FROM | TO | DIAMETER | THICKNESS | MATERIAL |
|---|---|---|---|---|
| 0 ft. | 4 ft. | 2 in. | Sch. 40 | PVC |
| ft. | ft. | in. | | |

**16. INNER CASING OR TUBING (geothermal closed-loop)**

| FROM | TO | DIAMETER | THICKNESS | MATERIAL |
|---|---|---|---|---|
| ft. | ft. | in. | | |
| ft. | ft. | in. | | |

**17. SCREEN**

| FROM | TO | DIAMETER | SLOT SIZE | THICKNESS | MATERIAL |
|---|---|---|---|---|---|
| 4 ft. | 14 ft. | 2 in. | Slot .010 | Sch. 40 | PVC |
| ft. | ft. | in. | | | |

**18. GROUT**

| FROM | TO | MATERIAL | EMPLACEMENT METHOD & AMOUNT |
|---|---|---|---|
| ft. | ft. | | |
| 1.5 ft. | 3.5 ft. | Bent. Pellets | Surface Pour |
| ft. | ft. | | |

**19. SAND/GRAVEL PACK (if applicable)**

| FROM | TO | MATERIAL | EMPLACEMENT METHOD |
|---|---|---|---|
| ft. | ft. | | Surface Pour |
| ft. | ft. | | |

**20. DRILLING LOG (attach additional sheets if necessary)**

| FROM | TO | DESCRIPTION |
|---|---|---|
| ft. | ft. | |
| ft. | ft. | |
| ft. | ft. | |
| ft. | ft. | |
| ft. | ft. | |
| ft. | ft. | |

SEE ATTACHED

**21. REMARKS**

**22. Certification:**

Signature of Certified Well Contractor — Date: 2-28-14

*By signing this form I hereby certify that the well(s) was (were) constructed in accordance with 15A NCAC 02C .0100 or 2C Well Construction Standards and that a copy of this record has been provided to the well owner.*

**23. Site diagram or additional well details:**
You may use the back of this page to provide additional well site details or well construction details. You may also attach additional pages if necessary.

## SUBMITTAL INSTRUCTIONS

**24a. For All Wells:** Submit this form within 30 days of completion of well construction to the following:

**Division of Water Resources, Information Processing Unit, 1617 Mail Service Center, Raleigh, NC 27699-1617**

**24b. For Injection Wells:** In addition to sending the form to the address in 24a above, also submit one copy of this form within 30 days of completion of well construction to the following:

**Division of Water Resources, Underground Injection Control Program, 1636 Mail Service Center, Raleigh, NC 27699-1636**

**24c. For Water Supply & Injection Wells:**
Also submit one copy of this form within 30 days of completion of well construction to the county health department of the county where constructed.

# WELL LOG

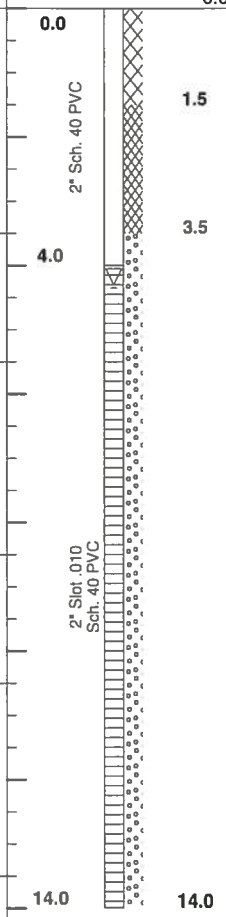
CATLIN Engineers and Scientists
213159 Wilmington, NC



| | | | |
|---|---|---|---|
| PROJECT NO.: 213159 | STATE: NC | COUNTY: Onslow | LOCATION: Jacksonville |
| PROJECT NAME: Building AS705 | LOGGED BY: Tetra Tech | | WELL ID: AS705-MW01 |
| | DRILLER: William J. Miller | | |
| NORTHING: | EASTING: | CREW: Larry Wessell | |
| SYSTEM: | BORING LOCATION: | | T.O.C. ELEV.: |
| DRILL MACHINE: CME-45B | METHOD: H.S.A. | 0 HOUR DTW: 4.3 | TOTAL DEPTH: 15.5 |
| START DATE: 2/10/14 | FINISH DATE: 2/10/14 | 24 HOUR DTW: N/A | WELL DEPTH: 14.0 |

| DEPTH | BLOW COUNT 0.5ft | 0.5ft | 0.5ft | 0.5ft | OVA (ppm) | LAB. | MOIS | LOG | DEPTH | SOIL AND ROCK DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | 0.0 | LAND SURFACE |
| 3.5 | 2 | 1 | 1 | 1 | | | W | | 3.5 | (SP/SC) - Gray, SAND to Clayey SAND. BACKFILL |
| 8.5 | 1 | 1 | 1 | 1 | | | W | | 5.5 | |
| | | | | | | | | | 8.5 | (CL) - CLAY w/Gravel (backfill from tank) to Sandy SILT (Saturated). Root frags. |
| 13.5 | 3 | 3 | 2 | 2 | | | W | | 10.5 | |
| | | | | | | | | | 13.5 | (SP/SM) - Gray, SAND to Silty SAND. Root frags. |
| 15.5 | | | | | | | | | 15.2 | |
| | | | | | | | | | 15.5 | (CL) - Gray CLAY. |
| | | | | | | | | | 15.5 | Boring Terminated at Depth 15.5 ft |

WELL DETAIL




Bentonite Grout | Bentonite Pellets | Coarse Gravel Pack

CATLIN BORING LOG 213159 TETRA TECH.GPJ CATLIN.GDT 2/25/14

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# APPENDIX G

# SAMPLE LOGSHEETS AND GPS DATA

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Appendix I

Sample Location GPS Data

| Sample ID | GPS_Date | Easting (feet) | Northing (feet) |
|---|---|---|---|
| ds01 | 12/18/2013 | 281520.442 | 3844284.864 |
| pl01 | 12/18/2013 | 281519.5 | 3844285.866 |
| sw01 | 12/18/2013 | 281515.408 | 3844285.285 |
| sw02 | 12/18/2013 | 281518.007 | 3844283.679 |
| sw03 | 12/18/2013 | 281519.986 | 3844286.284 |
| sw04 | 12/18/2013 | 281518.711 | 3844287.628 |
| sw05 | 12/18/2013 | 281516.336 | 3844288.562 |
| sw06 | 12/18/2013 | 281515.069 | 3844286.423 |
| sw07 | 1/9/2014 | 281513.9755 | 3844284.965 |
| sw08 | 1/9/2014 | 281513.5424 | 3844286.048 |
| sw09 | 1/9/2014 | 281520.9904 | 3844286.321 |

Tetra Tech

# SOIL & SEDIMENT SAMPLE LOG SHEET



Project Site Name: Camp Lejeune UST Removal
Project No.: 112IG06199

[] Surface Soil
[X] Subsurface Soil Sidewall
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 1932-UST-SW01
Sample Location: 1932-UST-SW01
Sampled By: R. Sok
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

**GRAB SAMPLE DATA:**

| | Depth Interval | Color | Description (Sand, Silt, Clay, Moisture, etc.) |
|---|---|---|---|
| Date: 12-18-13<br>Time: 1030<br>Method: Disp. Trowl<br>Monitor Reading (ppm): 100.0 | 8-8.5' bgs | light brn w/ blk staining | Silty Clay some F. sand moist |

**COMPOSITE SAMPLE DATA:**

| Date: | Time | Depth Interval | Color | Description (Sand, Silt, Clay, Moisture, etc.) |
|---|---|---|---|---|
| | | | | |
| Method: | | | | |
| | | | | |
| Monitor Readings (Range in ppm): | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

**SAMPLE COLLECTION INFORMATION:**

| Analysis | Container Requirements | Collected | Other |
|---|---|---|---|
| GRO (8015C) | 2 MeOH 40 mL vials each with 5g soil | yes | |
| VOCs (8260B) | 2 DI H20 and 1 MeOH 40 mL vials each with 5g soil | yes | |
| DRO and % Moisture | 1 4-oz jar | yes | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

**OBSERVATIONS / NOTES:**

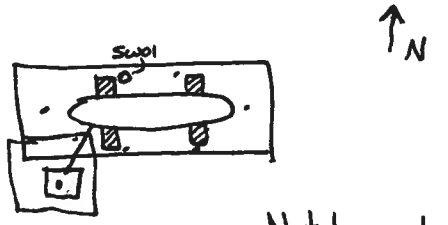
| | Yes | No |
|---|---|---|
| Soil Staining | [X] | [ ] |
| Odors | [X] | [ ] |

diesel

Tank 4'4" x 11'4" fiberglass w/brine 1,000gal

GW table at 9'bgs

**MAP:**




**Circle if Applicable:**

| MS/MSD | Duplicate ID No.: |
|---|---|
| — | — |

**Signature(s):** for RS

Tetra Tech

# SOIL & SEDIMENT SAMPLE LOG SHEET



Project Site Name: Camp Lejeune UST Removal
Project No.: 112IG06199

[] Surface Soil
[X] Subsurface Soil Sidewall
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 1932-UST-SW02
Sample Location: 1932-UST-SW02
Sampled By: R. Sok
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

**GRAB SAMPLE DATA:**

| | Depth Interval | Color | Description (Sand, Silt, Clay, Moisture, etc.) |
|---|---|---|---|
| Date: 12-18-13<br>Time: 1035<br>Method: Disp. Trowl<br>Monitor Reading (ppm): 0.0 | 8-8.5' bgs | light brn | Silty clay some F sand moist |

**COMPOSITE SAMPLE DATA:**

| Date: | Time | Depth Interval | Color | Description (Sand, Silt, Clay, Moisture, etc.) |
|---|---|---|---|---|
| | | | | |
| Method: | | | | |
| | | | | |
| Monitor Readings (Range in ppm): | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

**SAMPLE COLLECTION INFORMATION:**

| Analysis | Container Requirements | Collected | Other |
|---|---|---|---|
| GRO (8015C) | 2 MeOH 40 mL vials each with 5g soil | yes | |
| VOCs (8260B) | 2 DI H20 and 1 MeOH 40 mL vials each with 5g soil | yes | |
| DRO and % Moisture | 1 4-oz jar | yes | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

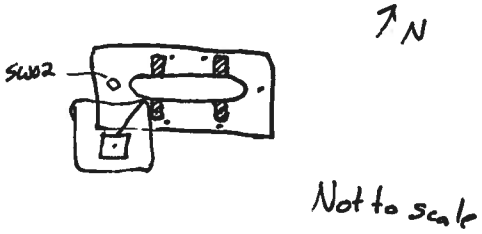
**OBSERVATIONS / NOTES:**

| | Yes | No |
|---|---|---|
| Soil Staining | [ ] | [X] |
| Odors | [ ] | [X] |

Tank 4'4" x 11'4" Fiberglass 1,000 gal

GW table at 9' bgs

**MAP:**




**Circle if Applicable:**

MS/MSD

Duplicate ID No.:

**Signature(s):**

for RS

Tetra Tech

# SOIL & SEDIMENT SAMPLE LOG SHEET



Project Site Name: Camp Lejeune UST Removal
Project No.: 112IG06199

[] Surface Soil
[X] Subsurface Soil Sidewall
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 1932-UST- SW03
Sample Location: 1932-UST- SW03
Sampled By: R. Sok
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

**GRAB SAMPLE DATA:**

| | Depth Interval | Color | Description (Sand, Silt, Clay, Moisture, etc.) |
|---|---|---|---|
| Date: 12-18-13<br>Time: 1040<br>Method: Disp. Trowl<br>Monitor Reading (ppm): 0.0 | light bra → ← | 8-8.5 bgs | Silty Clay some F. sand moist |

**COMPOSITE SAMPLE DATA:**

| Date: | Time | Depth Interval | Color | Description (Sand, Silt, Clay, Moisture, etc.) |
|---|---|---|---|---|
| | | | | |
| Method: | | | | |
| | | | | |
| Monitor Readings (Range in ppm): | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

**SAMPLE COLLECTION INFORMATION:**

| Analysis | Container Requirements | Collected | Other |
|---|---|---|---|
| GRO (8015C) | 2 MeOH 40 mL vials each with 5g soil | yes | |
| VOCs (8260B) | 2 DI H20 and 1 MeOH 40 mL vials each with 5g soil | yes | |
| DRO and % Moisture | 1 4-oz jar | yes | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

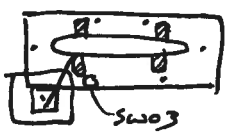
**OBSERVATIONS / NOTES:**

| | Yes | No |
|---|---|---|
| Soil Staining | [ ] | [X] |
| Odors | [ ] | [X] |

Tank 4'4"x11'4" fiberglass w/brine 1,000 gal

GW at 9' bgs

**MAP:**




↗N

Not to scale

**Circle if Applicable:**

| MS/MSD | Duplicate ID No.: |
|---|---|
| — | — |

Signature(s): For RS

Tetra Tech

# SOIL & SEDIMENT SAMPLE LOG SHEET



Project Site Name: Camp Lejeune UST Removal
Project No.: 112IG06199

[] Surface Soil
[X] Subsurface Soil Sidewall
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 1932-UST-SW04
Sample Location: 1932-UST-SW04
Sampled By: R. Sok
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

**GRAB SAMPLE DATA:**

| | Depth Interval | Color | Description (Sand, Silt, Clay, Moisture, etc.) |
|---|---|---|---|
| Date: 12-18-13<br>Time: 1200<br>Method: Disp. Trowl<br>Monitor Reading (ppm): 0.0 | 8-8.5' bgs | light brn | Silty clay some F. sand moist |

**COMPOSITE SAMPLE DATA:**

| Date: | Time | Depth Interval | Color | Description (Sand, Silt, Clay, Moisture, etc.) |
|---|---|---|---|---|
| | | | | |
| Method: | | | | |
| | | | | |
| Monitor Readings (Range in ppm): | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

**SAMPLE COLLECTION INFORMATION:**

| Analysis | Container Requirements | Collected | Other |
|---|---|---|---|
| GRO (8015C) | 6 ~~2~~ MeOH 40 mL vials each with 5g soil | yes | |
| VOCs (8260B) | 6 ~~2~~ DI H20 and ~~1~~ 3 MeOH 40 mL vials each with 5g soil | yes | |
| DRO and % Moisture | 3 ~~1~~ 4-oz jar | yes | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

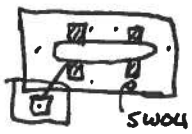
**OBSERVATIONS / NOTES:**

| | Yes | No |
|---|---|---|
| Soil Staining | [ ] | [X] |
| Odors | [ ] | [X] |

Tank 4'4" x 11'4" fiberglass w/brine 1,000 gal

GW table at 9' bgs

**MAP:**




↑ N

Not to scale

**Circle if Applicable:**

| MS/MSD | Duplicate ID No.: |
|---|---|
| yes | — |

**Signature(s):**

For RS

Tetra Tech

# SOIL & SEDIMENT SAMPLE LOG SHEET



Project Site Name: Camp Lejeune UST Removal
Project No.: 112IG06199

[] Surface Soil
[X] Subsurface Soil Sidewall
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 1932-UST-SW05
Sample Location: 1932-UST- SW05
Sampled By: R. Sok
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

**GRAB SAMPLE DATA:**

| | Depth Interval | Color | Description (Sand, Silt, Clay, Moisture, etc.) |
|---|---|---|---|
| Date: 12-18-13<br>Time: 1210<br>Method: Disp. Trowl<br>Monitor Reading (ppm): 0.0 | 8-8.5' bgs | light bra | Silty Clay some F. sand moist |

**COMPOSITE SAMPLE DATA:**

| Date: ~~12-18-13~~ | Time | Depth Interval | Color | Description (Sand, Silt, Clay, Moisture, etc.) |
|---|---|---|---|---|
| Method: | | | | |
| Monitor Readings (Range in ppm): | | | | |

**SAMPLE COLLECTION INFORMATION:**

| Analysis | Container Requirements | Collected | Other |
|---|---|---|---|
| GRO (8015C) | 2 MeOH 40 mL vials each with 5g soil | Yes | |
| VOCs (8260B) | 2 DI H20 and 1 MeOH 40 mL vials each with 5g soil | Yes | |
| DRO and % Moisture | 1 4-oz jar | Yes | |

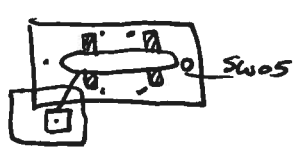
**OBSERVATIONS / NOTES:**

| | Yes | No |
|---|---|---|
| Soil Staining | [ ] | [X] |
| Odors | [ ] | [X] |

Tank 4'4" x 11'4" fiberglass w/ brine 1,000 gal

GW table at 9' bgs

**MAP:**




N

Not to scale

**Circle if Applicable:**

MS/MSD —

Duplicate ID No.: 1210
1932-UST-SW05 A

**Signature(s):** [signature] for RS

Tetra Tech

# SOIL & SEDIMENT SAMPLE LOG SHEET



Project Site Name: Camp Lejeune UST Removal
Project No.: 112IG06199

[] Surface Soil
[X] Subsurface Soil Sidewall
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 1932-UST-SW06
Sample Location: 1932-UST-SW06
Sampled By: R. Sok
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

**GRAB SAMPLE DATA:**

| | Depth Interval | Color | Description (Sand, Silt, Clay, Moisture, etc.) |
|---|---|---|---|
| Date: 12-18-13<br>Time: 1215<br>Method: Disp. Trowl<br>Monitor Reading (ppm): 100.0 | 8-8.5'bgs | light brn w/blk staining | Silty Clay some F. sand moist |

**COMPOSITE SAMPLE DATA:**

| Date: | Time | Depth Interval | Color | Description (Sand, Silt, Clay, Moisture, etc.) |
|---|---|---|---|---|
| | | | | |
| Method: | | | | |
| | | | | |
| Monitor Readings (Range in ppm): | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

**SAMPLE COLLECTION INFORMATION:**

| Analysis | Container Requirements | Collected | Other |
|---|---|---|---|
| GRO (8015C) | 2 MeOH 40 mL vials each with 5g soil | yes | |
| VOCs (8260B) | 2 DI H20 and 1 MeOH 40 mL vials each with 5g soil | yes | |
| DRO and % Moisture | 1 4-oz jar | yes | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

**OBSERVATIONS / NOTES:**

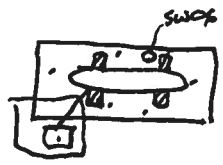
| | Yes | No |
|---|---|---|
| Soil Staining | [X] | [ ] |
| Odors | [X] | [ ] |

diesel

Tank 4'4" x 11'4" fiberglass w/brine 1,000gal

GW table at 9'bgs

**MAP:**




N

Not to scale

**Circle if Applicable:**

| MS/MSD | Duplicate ID No.: |
|---|---|
| | |

**Signature(s):** for RS

Tetra Tech

# SOIL & SEDIMENT SAMPLE LOG SHEET



Project Site Name: Camp Lejeune UST Removal
Project No.: 112IG06199

[] Surface Soil
[X] Subsurface Soil Product Line
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 1932-UST-PL01
Sample Location: 1932-UST-PL01
Sampled By: R. Sok
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

**GRAB SAMPLE DATA:**

| | Depth Interval | Color | Description (Sand, Silt, Clay, Moisture, etc.) |
|---|---|---|---|
| Date: 12-18-13<br>Time: 0850<br>Method: Disp. Trowl<br>Monitor Reading (ppm): 0.0 | 4-5' | lt brn | Silty clay tr. VF sand moist |

**COMPOSITE SAMPLE DATA:**

| Date: | Time | Depth Interval | Color | Description (Sand, Silt, Clay, Moisture, etc.) |
|---|---|---|---|---|
| | | | | |
| Method: | | | | |
| | | | | |
| Monitor Readings | | | | |
| (Range in ppm): | | | | |
| | | | | |
| | | | | |
| | | | | |

**SAMPLE COLLECTION INFORMATION:**

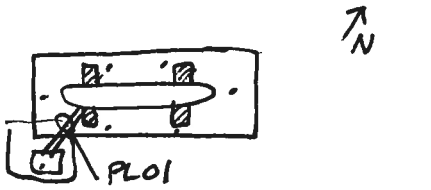
| Analysis | Container Requirements | Collected | Other |
|---|---|---|---|
| GRO (8015C) | 2 MeOH 40 mL vials each with 5g soil | yes | |
| VOCs (8260B) | 2 DI H20 and 1 MeOH 40 mL vials each with 5g soil | yes | |
| DRO and % Moisture | 1 4-oz jar | yes | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

**OBSERVATIONS / NOTES:**

| | Yes | No |
|---|---|---|
| Soil Staining | [ ] | [X] |
| Odors | [ ] | [X] |

Collected 1.5' below product line

**MAP:**




Not to scale

**Circle if Applicable:**

| MS/MSD | Duplicate ID No.: |
|---|---|
| — | — |

**Signature(s):** for RS

Tetra Tech

# SOIL & SEDIMENT SAMPLE LOG SHEET



Project Site Name: Camp Lejeune UST Removal
Project No.: 112IG06199

[] Surface Soil
[X] Subsurface Soil Dispenser
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 1932-UST- DS01
Sample Location: 1932-UST- DS01
Sampled By: R. Sok
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

**GRAB SAMPLE DATA:**

| | Depth Interval | Color | Description (Sand, Silt, Clay, Moisture, etc.) |
|---|---|---|---|
| Date: 12-18-13<br>Time: 1235<br>Method: Disp. Trowl<br>Monitor Reading (ppm): 0.0 | 1.5-2' | light bra | Silty Clay some F. sand moist |

**COMPOSITE SAMPLE DATA:**

| Date: | Time | Depth Interval | Color | Description (Sand, Silt, Clay, Moisture, etc.) |
|---|---|---|---|---|
| | | | | |
| Method: | | | | |
| | | | | |
| Monitor Readings (Range in ppm): | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

**SAMPLE COLLECTION INFORMATION:**

| Analysis | Container Requirements | Collected | Other |
|---|---|---|---|
| GRO (8015C) | 2 MeOH 40 mL vials each with 5g soil | yes | |
| VOCs (8260B) | 2 DI H20 and 1 MeOH 40 mL vials each with 5g soil | yes | |
| DRO and % Moisture | 1 4-oz jar | yes | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

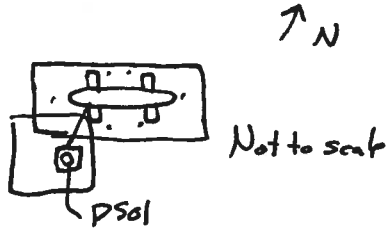
**OBSERVATIONS / NOTES:**

| | Yes | No |
|---|---|---|
| Soil Staining | [ ] | [X] |
| Odors | [ ] | [X] |

Tank 4'4" x 11'4" Fiberglass w/ brine 1,000gal

GW table at 9' bgs

**MAP:**




**Circle if Applicable:**

| MS/MSD | Duplicate ID No.: |
|---|---|
| — | — |

**Signature(s):**

For RS

Tetra Tech

# SOIL & SEDIMENT SAMPLE LOG SHEET



Project Site Name: Camp Lejeune UST Removal
Project No.: 112IG06199

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 1932-UST- SW07
Sample Location: 1932-UST- SW07
Sampled By: JG
C.O.C. No.:

Type of Sample:
[] Low Concentration
[] High Concentration

**GRAB SAMPLE DATA:**

| | Depth Interval | Color | Description (Sand, Silt, Clay, Moisture, etc.) |
|---|---|---|---|
| Date: 01/08/2014<br>Time: 0920<br>Method: Disp. Trowel<br>Monitor Reading (ppm): 0.0 | 4-5 bgs | tan | F-M Sand tr. silt and C. Sand |

**COMPOSITE SAMPLE DATA:**

| Date: | Time | Depth Interval | Color | Description (Sand, Silt, Clay, Moisture, etc.) |
|---|---|---|---|---|
| | | | | |
| Method: | | | | |
| | | | | |
| Monitor Readings (Range in ppm): | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

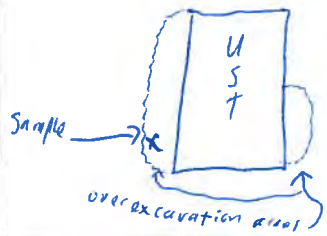
**SAMPLE COLLECTION INFORMATION:**

| Analysis | Container Requirements | Collected | Other |
|---|---|---|---|
| MADEP VPH | 2 MeOH 40 mL vials each with 5g soil | yes | |
| VOCs w/ IPE and MTBE (8260B) | 2 DI H20 and 1 MeOH 40 mL vials each with 5g soil | yes | |
| MADEP EPH | 1 8 oz jar | yes | |
| SVOCs (8270B) | 1 8 oz jar | yes | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

**OBSERVATIONS / NOTES:**

| | Yes | No |
|---|---|---|
| Soil Staining | [ ] | [X] |
| Odors | [ ] | [X] |

**MAP:**




**Circle if Applicable:**

| MS/MSD | Duplicate ID No.: |
|---|---|
| — | — |

**Signature(s):** John J. Gallo

Tetra Tech

# SOIL & SEDIMENT SAMPLE LOG SHEET



Project Site Name: Camp Lejeune UST Removal
Project No.: 112IG06199

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 1932-UST-SW08
Sample Location: 1932-UST-SW08
Sampled By: JG.
C.O.C. No.:

Type of Sample:
[] Low Concentration
[] High Concentration

**GRAB SAMPLE DATA:**

| | Depth Interval | Color | Description (Sand, Silt, Clay, Moisture, etc.) |
|---|---|---|---|
| Date: 01/08/2019<br>Time: 0940<br>Method: Disp. Trowel<br>Monitor Reading (ppm): 0.0 | 4-5' bgs | tan | F-M sand w/ trace silt and C. sand |

**COMPOSITE SAMPLE DATA:**

| Date: | Time | Depth Interval | Color | Description (Sand, Silt, Clay, Moisture, etc.) |
|---|---|---|---|---|
| | | | | |
| Method: | | | | |
| | | | | |
| Monitor Readings (Range in ppm): | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

**SAMPLE COLLECTION INFORMATION:**

| Analysis | Container Requirements | Collected | Other |
|---|---|---|---|
| MADEP VPH | 2 MeOH 40 mL vials each with 5g soil | yes | |
| VOCs w/ IPE and MTBE (8260B) | 2 DI H20 and 1 MeOH 40 mL vials each with 5g soil | yes | |
| MADEP EPH | 1 8 oz jar | yes | |
| SVOCs (8270B) | 1 8 oz jar | yes | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

**OBSERVATIONS / NOTES:**

| | Yes | No |
|---|---|---|
| Soil Staining | ☐ | ☑ |
| Odors | ☐ | ☑ |

**MAP:**

**Circle if Applicable:**

| MS/MSD | Duplicate ID No.: |
|---|---|
| | 1932-UST-SW084 |

**Signature(s):**

Tetra Tech

# SOIL & SEDIMENT SAMPLE LOG SHEET



Project Site Name: Camp Lejeune UST Removal
Project No.: 112IG06199

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 1932-UST- SW09
Sample Location: 1932-UST- SW09
Sampled By: J. G.
C.O.C. No.:

Type of Sample:
[] Low Concentration
[] High Concentration

**GRAB SAMPLE DATA:**

| | Depth Interval | Color | Description (Sand, Silt, Clay, Moisture, etc.) |
|---|---|---|---|
| Date: 01/08/2011<br>Time: 1000<br>Method: Disp. Trowel<br>Monitor Reading (ppm): 0.0 | 4-5' bgs | tan | F-M sand w trace silt and C. sand |

**COMPOSITE SAMPLE DATA:**

| Date: | Time | Depth Interval | Color | Description (Sand, Silt, Clay, Moisture, etc.) |
|---|---|---|---|---|
| | | | | |
| Method: | | | | |
| | | | | |
| Monitor Readings (Range in ppm): | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

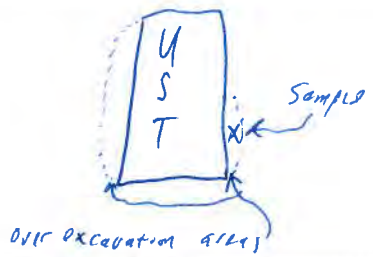
**SAMPLE COLLECTION INFORMATION:**

| Analysis | Container Requirements | Collected | Other |
|---|---|---|---|
| MADEP VPH | 2 MeOH 40 mL vials each with 5g soil | yes | |
| VOCs w/ IPE and MTBE (8260B) | 2 DI H20 and 1 MeOH 40 mL vials each with 5g soil | Yes | |
| MADEP EPH | 1 8 oz jar | yes | |
| SVOCs (8270B) | 1 8 oz jar | yes | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

**OBSERVATIONS / NOTES:**

| | Yes | No |
|---|---|---|
| Soil Staining | [ ] | [X] |
| Odors | [ ] | [X] |

**MAP:**




**Circle if Applicable:**

| MS/MSD | Duplicate ID No.: |
|---|---|
| | |

**Signature(s):**

Tetra Tech

# SOIL & SEDIMENT SAMPLE LOG SHEET



Project Site Name: Camp Lejeune UST Removal
Project No.: 112IG06199

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 1932-UST- SP01
Sample Location: 1932-UST- SP01
Sampled By: J.G.
C.O.C. No.:

Type of Sample:
[] Low Concentration
[] High Concentration

**GRAB SAMPLE DATA:**

| | Depth Interval | Color | Description (Sand, Silt, Clay, Moisture, etc.) |
|---|---|---|---|
| Date: 01/08/2019 | | | |
| Time: 1100 | | | |
| Method: Disp. Trowel | | | |
| Monitor Reading (ppm): 0.0 | | | |

**COMPOSITE SAMPLE DATA:**

| Date: | Time | Depth Interval | Color | Description (Sand, Silt, Clay, Moisture, etc.) |
|---|---|---|---|---|
| 01/08/2019 | 1100 | 0-0.5' | tan | F-M sand w/ trace silt |
| Method: | 1100 | 0'-0.5' | brown | Silty clay |
| 5 point composite | 1101 | 0-0.5' | black | organic rich material, surface O.A layer |
| Monitor Readings | 1101 | 0-0.5' | tan | F-M sand w/ trace silt |
| (Range in ppm): | 1102 | 0-0.5' | tan | F-M sand w/ trace C sand |
| | | | | |
| 0-0 | | | | |
| | | | | |

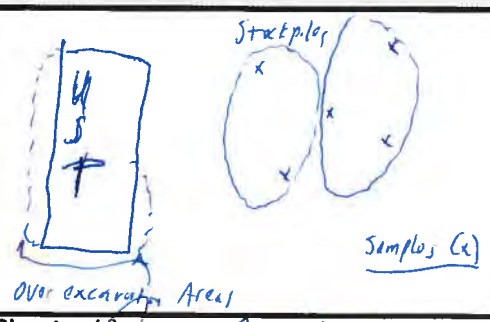
**SAMPLE COLLECTION INFORMATION:**

| Analysis | Container Requirements | Collected | Other |
|---|---|---|---|
| ~~MADEP VPH~~ | ~~2 MeOH 40 mL vials each with 5g soil~~ | ~~Y~~ | |
| ~~VOCs w/ IPE and MTBE (8260B)~~ | ~~2 DI H20 and 1 MeOH 40 mL vials each with 5g soil~~ | | |
| ~~MADEP EPH~~ | ~~1 8 oz jar~~ | | |
| ~~SVOCs (8270B)~~ | ~~1 8 oz jar~~ | | |
| TPH-GRO | 2 Methanol vials | yes | |
| VOC (8260B) | 4 oz jar | yes | |
| Sulf, Hard, Alk, Metals + Hg, PCBs, PRO, RCRA | 3 8 oz jars | yes | |
| | | | |
| | | | |
| | | | |

**OBSERVATIONS / NOTES:**

| | Yes | No |
|---|---|---|
| Soil Staining | [ ] | [X] |
| Odors | [ ] | [X] |

**MAP:**




**Circle if Applicable:**

| MS/MSD | Duplicate ID No.: |
|---|---|
| – | |

**Signature(s):**

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# APPENDIX H

# SOIL ANALYTICAL REPORT

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ROUND 1 SOIL SAMPLE ANALYTICAL REPORT

# Sample Summary

Tetra Tech EC, Inc

**Job No:** FA11056

WE03, Camp Lejuene, NC
Project No: 4659WE03

| Sample Number | Collected Date | Time | By | Received | Matrix Code | Type | Client Sample ID |
|---|---|---|---|---|---|---|---|
| FA11056-1 | 12/18/13 | 08:50 | RS | 12/19/13 | SO | Soil | 1932-UST-PL01 |
| FA11056-2 | 12/18/13 | 10:30 | RS | 12/19/13 | SO | Soil | 1932-UST-SW01 |
| FA11056-3 | 12/18/13 | 10:35 | RS | 12/19/13 | SO | Soil | 1932-UST-SW02 |
| FA11056-4 | 12/18/13 | 10:40 | RS | 12/19/13 | SO | Soil | 1932-UST-SW03 |
| FA11056-5 | 12/18/13 | 12:00 | RS | 12/19/13 | SO | Soil | 1932-UST-SW04 |
| FA11056-5D | 12/18/13 | 12:00 | RS | 12/19/13 | SO | Soil Dup/MSD | 1932-UST-SW04 |
| FA11056-5S | 12/18/13 | 12:00 | RS | 12/19/13 | SO | Soil Matrix Spike | 1932-UST-SW04 |
| FA11056-6 | 12/18/13 | 12:10 | RS | 12/19/13 | SO | Soil | 1932-UST-SW05 |
| FA11056-7 | 12/18/13 | 12:10 | RS | 12/19/13 | SO | Soil | 1932-UST-SW05A |
| FA11056-8 | 12/18/13 | 12:35 | RS | 12/19/13 | SO | Soil | 1932-UST-DS01 |
| FA11056-9 | 12/18/13 | 12:15 | RS | 12/19/13 | SO | Soil | 1932-UST-SW06 |

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

# Report of Analysis



| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-PL01 | | |
| **Lab Sample ID:** | FA11056-1 | **Date Sampled:** | 12/18/13 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/19/13 |
| **Method:** | SW846 8260B | **Percent Solids:** | 83.6 |
| **Project:** | WE03, Camp Lejuene, NC | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | Y12301.D | 1 | 12/20/13 | EP | n/a | n/a | VY545 |
| Run #2 | | | | | | | |

| | Initial Weight |
|---|---|
| Run #1 | 6.13 g |
| Run #2 | |

**VOA List for NC, May 2012**

| CAS No. | Compound | Result | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|
| 67-64-1 | Acetone | 24 U | 49 | 24 | ug/kg | |
| 71-43-2 | Benzene | 2.0 U | 4.9 | 2.0 | ug/kg | |
| 108-86-1 | Bromobenzene | 2.0 U | 4.9 | 2.0 | ug/kg | |
| 74-97-5 | Bromochloromethane | 2.0 U | 4.9 | 2.0 | ug/kg | |
| 75-27-4 | Bromodichloromethane | 2.0 U | 4.9 | 2.0 | ug/kg | |
| 75-25-2 | Bromoform | 2.0 U | 4.9 | 2.0 | ug/kg | |
| 104-51-8 | n-Butylbenzene | 2.0 U | 4.9 | 2.0 | ug/kg | |
| 135-98-8 | sec-Butylbenzene | 2.0 U | 4.9 | 2.0 | ug/kg | |
| 98-06-6 | tert-Butylbenzene | 2.0 U | 4.9 | 2.0 | ug/kg | |
| 108-90-7 | Chlorobenzene | 2.0 U | 4.9 | 2.0 | ug/kg | |
| 75-00-3 | Chloroethane | 3.9 U | 4.9 | 3.9 | ug/kg | |
| 67-66-3 | Chloroform | 2.0 U | 4.9 | 2.0 | ug/kg | |
| 95-49-8 | o-Chlorotoluene | 2.0 U | 4.9 | 2.0 | ug/kg | |
| 106-43-4 | p-Chlorotoluene | 2.0 U | 4.9 | 2.0 | ug/kg | |
| 56-23-5 | Carbon tetrachloride | 2.0 U | 4.9 | 2.0 | ug/kg | |
| 75-34-3 | 1,1-Dichloroethane | 2.0 U | 4.9 | 2.0 | ug/kg | |
| 75-35-4 | 1,1-Dichloroethylene | 2.0 U | 4.9 | 2.0 | ug/kg | |
| 563-58-6 | 1,1-Dichloropropene | 2.0 U | 4.9 | 2.0 | ug/kg | |
| 106-93-4 | 1,2-Dibromoethane | 2.0 U | 4.9 | 2.0 | ug/kg | |
| 107-06-2 | 1,2-Dichloroethane | 2.0 U | 4.9 | 2.0 | ug/kg | |
| 78-87-5 | 1,2-Dichloropropane | 2.0 U | 4.9 | 2.0 | ug/kg | |
| 142-28-9 | 1,3-Dichloropropane | 2.0 U | 4.9 | 2.0 | ug/kg | |
| 108-20-3 | Di-Isopropyl ether | 2.0 U | 4.9 | 2.0 | ug/kg | |
| 594-20-7 | 2,2-Dichloropropane | 2.0 U | 4.9 | 2.0 | ug/kg | |
| 124-48-1 | Dibromochloromethane | 2.0 U | 4.9 | 2.0 | ug/kg | |
| 75-71-8 | Dichlorodifluoromethane | 2.0 U | 4.9 | 2.0 | ug/kg | |
| 156-59-2 | cis-1,2-Dichloroethylene | 2.0 U | 4.9 | 2.0 | ug/kg | |
| 10061-01-5 | cis-1,3-Dichloropropene | 2.0 U | 4.9 | 2.0 | ug/kg | |
| 541-73-1 | m-Dichlorobenzene | 2.0 U | 4.9 | 2.0 | ug/kg | |
| 95-50-1 | o-Dichlorobenzene | 2.0 U | 4.9 | 2.0 | ug/kg | |
| 106-46-7 | p-Dichlorobenzene | 2.0 U | 4.9 | 2.0 | ug/kg | |
| 156-60-5 | trans-1,2-Dichloroethylene | 2.0 U | 4.9 | 2.0 | ug/kg | |

U = Not detected LOD - Limit of Detection
LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis



| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-PL01 | | |
| **Lab Sample ID:** | FA11056-1 | **Date Sampled:** | 12/18/13 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/19/13 |
| **Method:** | SW846 8260B | **Percent Solids:** | 83.6 |
| **Project:** | WE03, Camp Lejuene, NC | | |

**VOA List for NC, May 2012**

| CAS No. | Compound | Result | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|
| 10061-02-6 | trans-1,3-Dichloropropene | 2.0 U | 4.9 | 2.0 | ug/kg | |
| 64-17-5 | Ethyl alcohol | 200 U | 390 | 200 | ug/kg | |
| 100-41-4 | Ethylbenzene | 2.0 U | 4.9 | 2.0 | ug/kg | |
| 637-92-3 | Ethyl tert-Butyl Ether | 2.0 U | 4.9 | 2.0 | ug/kg | |
| 591-78-6 | 2-Hexanone | 9.8 U | 24 | 9.8 | ug/kg | |
| 98-82-8 | Isopropylbenzene | 2.0 U | 4.9 | 2.0 | ug/kg | |
| 99-87-6 | p-Isopropyltoluene | 2.0 U | 4.9 | 2.0 | ug/kg | |
| 108-10-1 | 4-Methyl-2-pentanone | 9.8 U | 24 | 9.8 | ug/kg | |
| 74-83-9 | Methyl bromide | 3.9 U | 4.9 | 3.9 | ug/kg | |
| 74-87-3 | Methyl chloride | 3.9 U | 4.9 | 3.9 | ug/kg | |
| 75-09-2 | Methylene chloride | 4.9 U | 9.8 | 4.9 | ug/kg | |
| 78-93-3 | Methyl ethyl ketone | 9.8 U | 24 | 9.8 | ug/kg | |
| 1634-04-4 | Methyl Tert Butyl Ether | 2.0 U | 4.9 | 2.0 | ug/kg | |
| 91-20-3 | Naphthalene | 3.9 U | 4.9 | 3.9 | ug/kg | |
| 103-65-1 | n-Propylbenzene | 2.0 U | 4.9 | 2.0 | ug/kg | |
| 100-42-5 | Styrene | 2.0 U | 4.9 | 2.0 | ug/kg | |
| 75-85-4 | Tert-Amyl Alcohol | 24 U | 49 | 24 | ug/kg | |
| 994-05-8 | Tert-Amyl Methyl Ether | 2.0 U | 4.9 | 2.0 | ug/kg | |
| 75-65-0 | Tert-Butyl Alcohol | 24 U | 49 | 24 | ug/kg | |
| 762-75-4 | tert-Butyl Formate | 24 U | 49 | 24 | ug/kg | |
| 630-20-6 | 1,1,1,2-Tetrachloroethane | 2.0 U | 4.9 | 2.0 | ug/kg | |
| 71-55-6 | 1,1,1-Trichloroethane | 2.0 U | 4.9 | 2.0 | ug/kg | |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 2.0 U | 4.9 | 2.0 | ug/kg | |
| 79-00-5 | 1,1,2-Trichloroethane | 2.0 U | 4.9 | 2.0 | ug/kg | |
| 87-61-6 | 1,2,3-Trichlorobenzene | 2.0 U | 4.9 | 2.0 | ug/kg | |
| 96-18-4 | 1,2,3-Trichloropropane | 2.0 U | 4.9 | 2.0 | ug/kg | |
| 120-82-1 | 1,2,4-Trichlorobenzene | 2.0 U | 4.9 | 2.0 | ug/kg | |
| 95-63-6 | 1,2,4-Trimethylbenzene | 2.0 U | 4.9 | 2.0 | ug/kg | |
| 108-67-8 | 1,3,5-Trimethylbenzene | 2.0 U | 4.9 | 2.0 | ug/kg | |
| 127-18-4 | Tetrachloroethylene | 2.0 U | 4.9 | 2.0 | ug/kg | |
| 108-88-3 | Toluene | 2.0 U | 4.9 | 2.0 | ug/kg | |
| 79-01-6 | Trichloroethylene | 2.0 U | 4.9 | 2.0 | ug/kg | |
| 75-69-4 | Trichlorofluoromethane | 3.9 U | 4.9 | 3.9 | ug/kg | |
| 75-01-4 | Vinyl chloride | 2.0 U | 4.9 | 2.0 | ug/kg | |
| 108-05-4 | Vinyl Acetate | 20 U | 24 | 20 | ug/kg | |
| 1330-20-7 | Xylene (total) | 5.9 U | 15 | 5.9 | ug/kg | |
| | m,p-Xylene | 3.9 U | 9.8 | 3.9 | ug/kg | |
| 95-47-6 | o-Xylene | 2.0 U | 4.9 | 2.0 | ug/kg | |

U = Not detected LOD - Limit of Detection
LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis



| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-PL01 | | |
| **Lab Sample ID:** | FA11056-1 | **Date Sampled:** | 12/18/13 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/19/13 |
| **Method:** | SW846 8260B | **Percent Solids:** | 83.6 |
| **Project:** | WE03, Camp Lejuene, NC | | |

**VOA List for NC, May 2012**

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 1868-53-7 | Dibromofluoromethane | 102% | | 75-124% |
| 2037-26-5 | Toluene-D8 | 93% | | 75-126% |
| 460-00-4 | 4-Bromofluorobenzene | 101% | | 71-133% |
| 17060-07-0 | 1,2-Dichloroethane-D4 | 101% | | 72-135% |

U = Not detected LOD - Limit of Detection
LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis



| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-PL01 | | |
| **Lab Sample ID:** | FA11056-1 | **Date Sampled:** | 12/18/13 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/19/13 |
| **Method:** | SW846 8015C | **Percent Solids:** | 83.6 |
| **Project:** | WE03, Camp Lejuene, NC | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | QR080473.D | 1 | 12/20/13 | MM | n/a | n/a | GQR3425 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume | Methanol Aliquot |
|---|---|---|---|
| Run #1 | 5.27 g | 5.0 ml | 100 ul |
| Run #2 | | | |

| CAS No. | Compound | Result | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|
| | TPH-GRO (C6-C10) | 3.3 U | 6.7 | 3.3 | mg/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 460-00-4 | 4-Bromofluorobenzene | 114% | | 56-149% |
| 98-08-8 | aaa-Trifluorotoluene | 108% | | 66-132% |

U = Not detected LOD - Limit of Detection
LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis



| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-PL01 | | |
| **Lab Sample ID:** | FA11056-1 | **Date Sampled:** | 12/18/13 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/19/13 |
| **Method:** | SW846 8015C SW846 3550C | **Percent Solids:** | 83.6 |
| **Project:** | WE03, Camp Lejuene, NC | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | JJ000759.D | 1 | 12/23/13 | ME | 12/21/13 | OP49859 | GJJ35 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 30.4 g | 1.0 ml |
| Run #2 | | |

| CAS No. | Compound | Result | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|
| | TPH (C10-C28) | 3.9 U | 4.9 | 3.9 | mg/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 84-15-1 | o-Terphenyl | 69% | | 56-122% |

U = Not detected LOD - Limit of Detection
LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis



| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-SW01 | | |
| **Lab Sample ID:** | FA11056-2 | **Date Sampled:** | 12/18/13 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/19/13 |
| **Method:** | SW846 8260B | **Percent Solids:** | 82.1 |
| **Project:** | WE03, Camp Lejuene, NC | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | Y12302.D | 1 | 12/20/13 | EP | n/a | n/a | VY545 |
| Run #2 | | | | | | | |

| | Initial Weight |
|---|---|
| Run #1 | 3.28 g |
| Run #2 | |

**VOA List for NC, May 2012**

| CAS No. | Compound | Result | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|
| 67-64-1 | Acetone | 153 | 93 | 46 | ug/kg | |
| 71-43-2 | Benzene | 3.7 U | 9.3 | 3.7 | ug/kg | |
| 108-86-1 | Bromobenzene | 3.7 U | 9.3 | 3.7 | ug/kg | |
| 74-97-5 | Bromochloromethane | 3.7 U | 9.3 | 3.7 | ug/kg | |
| 75-27-4 | Bromodichloromethane | 3.7 U | 9.3 | 3.7 | ug/kg | |
| 75-25-2 | Bromoform | 3.7 U | 9.3 | 3.7 | ug/kg | |
| 104-51-8 | n-Butylbenzene | 7.5 | 9.3 | 3.7 | ug/kg | J |
| 135-98-8 | sec-Butylbenzene | 16.9 | 9.3 | 3.7 | ug/kg | |
| 98-06-6 | tert-Butylbenzene | 3.7 U | 9.3 | 3.7 | ug/kg | |
| 108-90-7 | Chlorobenzene | 3.7 U | 9.3 | 3.7 | ug/kg | |
| 75-00-3 | Chloroethane | 7.4 U | 9.3 | 7.4 | ug/kg | |
| 67-66-3 | Chloroform | 3.7 U | 9.3 | 3.7 | ug/kg | |
| 95-49-8 | o-Chlorotoluene | 3.7 U | 9.3 | 3.7 | ug/kg | |
| 106-43-4 | p-Chlorotoluene | 3.7 U | 9.3 | 3.7 | ug/kg | |
| 56-23-5 | Carbon tetrachloride | 3.7 U | 9.3 | 3.7 | ug/kg | |
| 75-34-3 | 1,1-Dichloroethane | 3.7 U | 9.3 | 3.7 | ug/kg | |
| 75-35-4 | 1,1-Dichloroethylene | 3.7 U | 9.3 | 3.7 | ug/kg | |
| 563-58-6 | 1,1-Dichloropropene | 3.7 U | 9.3 | 3.7 | ug/kg | |
| 106-93-4 | 1,2-Dibromoethane | 3.7 U | 9.3 | 3.7 | ug/kg | |
| 107-06-2 | 1,2-Dichloroethane | 3.7 U | 9.3 | 3.7 | ug/kg | |
| 78-87-5 | 1,2-Dichloropropane | 3.7 U | 9.3 | 3.7 | ug/kg | |
| 142-28-9 | 1,3-Dichloropropane | 3.7 U | 9.3 | 3.7 | ug/kg | |
| 108-20-3 | Di-Isopropyl ether | 3.7 U | 9.3 | 3.7 | ug/kg | |
| 594-20-7 | 2,2-Dichloropropane | 3.7 U | 9.3 | 3.7 | ug/kg | |
| 124-48-1 | Dibromochloromethane | 3.7 U | 9.3 | 3.7 | ug/kg | |
| 75-71-8 | Dichlorodifluoromethane | 3.7 U | 9.3 | 3.7 | ug/kg | |
| 156-59-2 | cis-1,2-Dichloroethylene | 3.7 U | 9.3 | 3.7 | ug/kg | |
| 10061-01-5 | cis-1,3-Dichloropropene | 3.7 U | 9.3 | 3.7 | ug/kg | |
| 541-73-1 | m-Dichlorobenzene | 3.7 U | 9.3 | 3.7 | ug/kg | |
| 95-50-1 | o-Dichlorobenzene | 3.7 U | 9.3 | 3.7 | ug/kg | |
| 106-46-7 | p-Dichlorobenzene | 3.7 U | 9.3 | 3.7 | ug/kg | |
| 156-60-5 | trans-1,2-Dichloroethylene | 3.7 U | 9.3 | 3.7 | ug/kg | |

U = Not detected LOD - Limit of Detection
LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis



| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-SW01 | | |
| **Lab Sample ID:** | FA11056-2 | **Date Sampled:** | 12/18/13 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/19/13 |
| **Method:** | SW846 8260B | **Percent Solids:** | 82.1 |
| **Project:** | WE03, Camp Lejuene, NC | | |

**VOA List for NC, May 2012**

| CAS No. | Compound | Result | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|
| 10061-02-6 | trans-1,3-Dichloropropene | 3.7 U | 9.3 | 3.7 | ug/kg | |
| 64-17-5 | Ethyl alcohol | 370 U | 740 | 370 | ug/kg | |
| 100-41-4 | Ethylbenzene | 3.7 U | 9.3 | 3.7 | ug/kg | |
| 637-92-3 | Ethyl tert-Butyl Ether | 3.7 U | 9.3 | 3.7 | ug/kg | |
| 591-78-6 | 2-Hexanone | 19 U | 46 | 19 | ug/kg | |
| 98-82-8 | Isopropylbenzene | 3.7 U | 9.3 | 3.7 | ug/kg | |
| 99-87-6 | p-Isopropyltoluene | 17.8 | 9.3 | 3.7 | ug/kg | |
| 108-10-1 | 4-Methyl-2-pentanone | 19 U | 46 | 19 | ug/kg | |
| 74-83-9 | Methyl bromide | 7.4 U | 9.3 | 7.4 | ug/kg | |
| 74-87-3 | Methyl chloride | 7.4 U | 9.3 | 7.4 | ug/kg | |
| 75-09-2 | Methylene chloride | 9.3 U | 19 | 9.3 | ug/kg | |
| 78-93-3 | Methyl ethyl ketone | 19 U | 46 | 19 | ug/kg | |
| 1634-04-4 | Methyl Tert Butyl Ether | 3.7 U | 9.3 | 3.7 | ug/kg | |
| 91-20-3 | Naphthalene | 36.7 | 9.3 | 7.4 | ug/kg | |
| 103-65-1 | n-Propylbenzene | 3.7 U | 9.3 | 3.7 | ug/kg | |
| 100-42-5 | Styrene | 3.7 U | 9.3 | 3.7 | ug/kg | |
| 75-85-4 | Tert-Amyl Alcohol | 46 U | 93 | 46 | ug/kg | |
| 994-05-8 | Tert-Amyl Methyl Ether | 3.7 U | 9.3 | 3.7 | ug/kg | |
| 75-65-0 | Tert-Butyl Alcohol | 46 U | 93 | 46 | ug/kg | |
| 762-75-4 | tert-Butyl Formate | 46 U | 93 | 46 | ug/kg | |
| 630-20-6 | 1,1,1,2-Tetrachloroethane | 3.7 U | 9.3 | 3.7 | ug/kg | |
| 71-55-6 | 1,1,1-Trichloroethane | 3.7 U | 9.3 | 3.7 | ug/kg | |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 3.7 U | 9.3 | 3.7 | ug/kg | |
| 79-00-5 | 1,1,2-Trichloroethane | 3.7 U | 9.3 | 3.7 | ug/kg | |
| 87-61-6 | 1,2,3-Trichlorobenzene | 3.7 U | 9.3 | 3.7 | ug/kg | |
| 96-18-4 | 1,2,3-Trichloropropane | 3.7 U | 9.3 | 3.7 | ug/kg | |
| 120-82-1 | 1,2,4-Trichlorobenzene | 3.7 U | 9.3 | 3.7 | ug/kg | |
| 95-63-6 | 1,2,4-Trimethylbenzene | 294 | 9.3 | 3.7 | ug/kg | |
| 108-67-8 | 1,3,5-Trimethylbenzene | 151 | 9.3 | 3.7 | ug/kg | |
| 127-18-4 | Tetrachloroethylene | 3.7 U | 9.3 | 3.7 | ug/kg | |
| 108-88-3 | Toluene | 3.7 U | 9.3 | 3.7 | ug/kg | |
| 79-01-6 | Trichloroethylene | 3.7 U | 9.3 | 3.7 | ug/kg | |
| 75-69-4 | Trichlorofluoromethane | 7.4 U | 9.3 | 7.4 | ug/kg | |
| 75-01-4 | Vinyl chloride | 3.7 U | 9.3 | 3.7 | ug/kg | |
| 108-05-4 | Vinyl Acetate | 37 U | 46 | 37 | ug/kg | |
| 1330-20-7 | Xylene (total) | 11 U | 28 | 11 | ug/kg | |
| | m,p-Xylene | 7.4 U | 19 | 7.4 | ug/kg | |
| 95-47-6 | o-Xylene | 3.7 U | 9.3 | 3.7 | ug/kg | |

U = Not detected LOD - Limit of Detection
LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis



| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-SW01 | | |
| **Lab Sample ID:** | FA11056-2 | **Date Sampled:** | 12/18/13 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/19/13 |
| **Method:** | SW846 8260B | **Percent Solids:** | 82.1 |
| **Project:** | WE03, Camp Lejuene, NC | | |

**VOA List for NC, May 2012**

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 1868-53-7 | Dibromofluoromethane | 103% | | 75-124% |
| 2037-26-5 | Toluene-D8 | 87% | | 75-126% |
| 460-00-4 | 4-Bromofluorobenzene | 93% | | 71-133% |
| 17060-07-0 | 1,2-Dichloroethane-D4 | 107% | | 72-135% |

U = Not detected LOD - Limit of Detection
LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis



| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-SW01 | | |
| **Lab Sample ID:** | FA11056-2 | **Date Sampled:** | 12/18/13 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/19/13 |
| **Method:** | SW846 8015C | **Percent Solids:** | 82.1 |
| **Project:** | WE03, Camp Lejuene, NC | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | QR080490.D | 1 | 12/20/13 | MM | n/a | n/a | GQR3425 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume | Methanol Aliquot |
|---|---|---|---|
| Run #1 | 4.80 g | 5.0 ml | 100 ul |
| Run #2 | | | |

| CAS No. | Compound | Result | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|
| | TPH-GRO (C6-C10) | 46.5 | 7.4 | 3.7 | mg/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 460-00-4 | 4-Bromofluorobenzene | 145% | | 56-149% |
| 98-08-8 | aaa-Trifluorotoluene | 105% | | 66-132% |

U = Not detected LOD - Limit of Detection
LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis



| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-SW01 | | |
| **Lab Sample ID:** | FA11056-2 | **Date Sampled:** | 12/18/13 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/19/13 |
| **Method:** | SW846 8015C SW846 3550C | **Percent Solids:** | 82.1 |
| **Project:** | WE03, Camp Lejuene, NC | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | JJ000760.D | 1 | 12/23/13 | ME | 12/21/13 | OP49859 | GJJ35 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 30.5 g | 1.0 ml |
| Run #2 | | |

| CAS No. | Compound | Result | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|
| | TPH (C10-C28) | 28.5 | 5.0 | 4.0 | mg/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 84-15-1 | o-Terphenyl | 72% | | 56-122% |

U = Not detected LOD - Limit of Detection
LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis



| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-SW02 | | |
| **Lab Sample ID:** | FA11056-3 | **Date Sampled:** | 12/18/13 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/19/13 |
| **Method:** | SW846 8260B | **Percent Solids:** | 80.5 |
| **Project:** | WE03, Camp Lejuene, NC | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | Y12310.D | 1 | 12/20/13 | EP | n/a | n/a | VY545 |
| Run #2 | | | | | | | |

| | Initial Weight |
|---|---|
| Run #1 | 6.72 g |
| Run #2 | |

**VOA List for NC, May 2012**

| CAS No. | Compound | Result | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|
| 67-64-1 | Acetone | 23 U | 46 | 23 | ug/kg | |
| 71-43-2 | Benzene | 1.8 U | 4.6 | 1.8 | ug/kg | |
| 108-86-1 | Bromobenzene | 1.8 U | 4.6 | 1.8 | ug/kg | |
| 74-97-5 | Bromochloromethane | 1.8 U | 4.6 | 1.8 | ug/kg | |
| 75-27-4 | Bromodichloromethane | 1.8 U | 4.6 | 1.8 | ug/kg | |
| 75-25-2 | Bromoform | 1.8 U | 4.6 | 1.8 | ug/kg | |
| 104-51-8 | n-Butylbenzene | 1.8 U | 4.6 | 1.8 | ug/kg | |
| 135-98-8 | sec-Butylbenzene | 1.8 U | 4.6 | 1.8 | ug/kg | |
| 98-06-6 | tert-Butylbenzene | 1.8 U | 4.6 | 1.8 | ug/kg | |
| 108-90-7 | Chlorobenzene | 1.8 U | 4.6 | 1.8 | ug/kg | |
| 75-00-3 | Chloroethane | 3.7 U | 4.6 | 3.7 | ug/kg | |
| 67-66-3 | Chloroform | 1.8 U | 4.6 | 1.8 | ug/kg | |
| 95-49-8 | o-Chlorotoluene | 1.8 U | 4.6 | 1.8 | ug/kg | |
| 106-43-4 | p-Chlorotoluene | 1.8 U | 4.6 | 1.8 | ug/kg | |
| 56-23-5 | Carbon tetrachloride | 1.8 U | 4.6 | 1.8 | ug/kg | |
| 75-34-3 | 1,1-Dichloroethane | 1.8 U | 4.6 | 1.8 | ug/kg | |
| 75-35-4 | 1,1-Dichloroethylene | 1.8 U | 4.6 | 1.8 | ug/kg | |
| 563-58-6 | 1,1-Dichloropropene | 1.8 U | 4.6 | 1.8 | ug/kg | |
| 106-93-4 | 1,2-Dibromoethane | 1.8 U | 4.6 | 1.8 | ug/kg | |
| 107-06-2 | 1,2-Dichloroethane | 1.8 U | 4.6 | 1.8 | ug/kg | |
| 78-87-5 | 1,2-Dichloropropane | 1.8 U | 4.6 | 1.8 | ug/kg | |
| 142-28-9 | 1,3-Dichloropropane | 1.8 U | 4.6 | 1.8 | ug/kg | |
| 108-20-3 | Di-Isopropyl ether | 1.8 U | 4.6 | 1.8 | ug/kg | |
| 594-20-7 | 2,2-Dichloropropane | 1.8 U | 4.6 | 1.8 | ug/kg | |
| 124-48-1 | Dibromochloromethane | 1.8 U | 4.6 | 1.8 | ug/kg | |
| 75-71-8 | Dichlorodifluoromethane | 1.8 U | 4.6 | 1.8 | ug/kg | |
| 156-59-2 | cis-1,2-Dichloroethylene | 1.8 U | 4.6 | 1.8 | ug/kg | |
| 10061-01-5 | cis-1,3-Dichloropropene | 1.8 U | 4.6 | 1.8 | ug/kg | |
| 541-73-1 | m-Dichlorobenzene | 1.8 U | 4.6 | 1.8 | ug/kg | |
| 95-50-1 | o-Dichlorobenzene | 1.8 U | 4.6 | 1.8 | ug/kg | |
| 106-46-7 | p-Dichlorobenzene | 1.8 U | 4.6 | 1.8 | ug/kg | |
| 156-60-5 | trans-1,2-Dichloroethylene | 1.8 U | 4.6 | 1.8 | ug/kg | |

U = Not detected LOD - Limit of Detection
LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis



| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-SW02 | | |
| **Lab Sample ID:** | FA11056-3 | **Date Sampled:** | 12/18/13 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/19/13 |
| **Method:** | SW846 8260B | **Percent Solids:** | 80.5 |
| **Project:** | WE03, Camp Lejuene, NC | | |

**VOA List for NC, May 2012**

| CAS No. | Compound | Result | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|
| 10061-02-6 | trans-1,3-Dichloropropene | 1.8 U | 4.6 | 1.8 | ug/kg | |
| 64-17-5 | Ethyl alcohol | 180 U | 370 | 180 | ug/kg | |
| 100-41-4 | Ethylbenzene | 1.8 U | 4.6 | 1.8 | ug/kg | |
| 637-92-3 | Ethyl tert-Butyl Ether | 1.8 U | 4.6 | 1.8 | ug/kg | |
| 591-78-6 | 2-Hexanone | 9.2 U | 23 | 9.2 | ug/kg | |
| 98-82-8 | Isopropylbenzene | 1.8 U | 4.6 | 1.8 | ug/kg | |
| 99-87-6 | p-Isopropyltoluene | 1.8 U | 4.6 | 1.8 | ug/kg | |
| 108-10-1 | 4-Methyl-2-pentanone | 9.2 U | 23 | 9.2 | ug/kg | |
| 74-83-9 | Methyl bromide | 3.7 U | 4.6 | 3.7 | ug/kg | |
| 74-87-3 | Methyl chloride | 3.7 U | 4.6 | 3.7 | ug/kg | |
| 75-09-2 | Methylene chloride | 4.6 U | 9.2 | 4.6 | ug/kg | |
| 78-93-3 | Methyl ethyl ketone | 9.2 U | 23 | 9.2 | ug/kg | |
| 1634-04-4 | Methyl Tert Butyl Ether | 1.8 U | 4.6 | 1.8 | ug/kg | |
| 91-20-3 | Naphthalene | 3.7 U | 4.6 | 3.7 | ug/kg | |
| 103-65-1 | n-Propylbenzene | 1.8 U | 4.6 | 1.8 | ug/kg | |
| 100-42-5 | Styrene | 1.8 U | 4.6 | 1.8 | ug/kg | |
| 75-85-4 | Tert-Amyl Alcohol | 23 U | 46 | 23 | ug/kg | |
| 994-05-8 | Tert-Amyl Methyl Ether | 1.8 U | 4.6 | 1.8 | ug/kg | |
| 75-65-0 | Tert-Butyl Alcohol | 23 U | 46 | 23 | ug/kg | |
| 762-75-4 | tert-Butyl Formate | 23 U | 46 | 23 | ug/kg | |
| 630-20-6 | 1,1,1,2-Tetrachloroethane | 1.8 U | 4.6 | 1.8 | ug/kg | |
| 71-55-6 | 1,1,1-Trichloroethane | 1.8 U | 4.6 | 1.8 | ug/kg | |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 1.8 U | 4.6 | 1.8 | ug/kg | |
| 79-00-5 | 1,1,2-Trichloroethane | 1.8 U | 4.6 | 1.8 | ug/kg | |
| 87-61-6 | 1,2,3-Trichlorobenzene | 1.8 U | 4.6 | 1.8 | ug/kg | |
| 96-18-4 | 1,2,3-Trichloropropane | 1.8 U | 4.6 | 1.8 | ug/kg | |
| 120-82-1 | 1,2,4-Trichlorobenzene | 1.8 U | 4.6 | 1.8 | ug/kg | |
| 95-63-6 | 1,2,4-Trimethylbenzene | 1.8 U | 4.6 | 1.8 | ug/kg | |
| 108-67-8 | 1,3,5-Trimethylbenzene | 1.8 U | 4.6 | 1.8 | ug/kg | |
| 127-18-4 | Tetrachloroethylene | 1.8 U | 4.6 | 1.8 | ug/kg | |
| 108-88-3 | Toluene | 1.8 U | 4.6 | 1.8 | ug/kg | |
| 79-01-6 | Trichloroethylene | 1.8 U | 4.6 | 1.8 | ug/kg | |
| 75-69-4 | Trichlorofluoromethane | 3.7 U | 4.6 | 3.7 | ug/kg | |
| 75-01-4 | Vinyl chloride | 1.8 U | 4.6 | 1.8 | ug/kg | |
| 108-05-4 | Vinyl Acetate | 18 U | 23 | 18 | ug/kg | |
| 1330-20-7 | Xylene (total) | 5.5 U | 14 | 5.5 | ug/kg | |
| | m,p-Xylene | 3.7 U | 9.2 | 3.7 | ug/kg | |
| 95-47-6 | o-Xylene | 1.8 U | 4.6 | 1.8 | ug/kg | |

U = Not detected LOD - Limit of Detection
LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis



| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-SW02 | | |
| **Lab Sample ID:** | FA11056-3 | **Date Sampled:** | 12/18/13 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/19/13 |
| **Method:** | SW846 8260B | **Percent Solids:** | 80.5 |
| **Project:** | WE03, Camp Lejuene, NC | | |

**VOA List for NC, May 2012**

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 1868-53-7 | Dibromofluoromethane | 98% | | 75-124% |
| 2037-26-5 | Toluene-D8 | 95% | | 75-126% |
| 460-00-4 | 4-Bromofluorobenzene | 98% | | 71-133% |
| 17060-07-0 | 1,2-Dichloroethane-D4 | 93% | | 72-135% |

U = Not detected LOD - Limit of Detection
LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis



| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-SW02 | | |
| **Lab Sample ID:** | FA11056-3 | **Date Sampled:** | 12/18/13 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/19/13 |
| **Method:** | SW846 8015C | **Percent Solids:** | 80.5 |
| **Project:** | WE03, Camp Lejuene, NC | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | QR080477.D | 1 | 12/20/13 | MM | n/a | n/a | GQR3425 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume | Methanol Aliquot |
|---|---|---|---|
| Run #1 | 6.58 g | 5.0 ml | 100 ul |
| Run #2 | | | |

| CAS No. | Compound | Result | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|
| | TPH-GRO (C6-C10) | 3.0 U | 5.9 | 3.0 | mg/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 460-00-4 | 4-Bromofluorobenzene | 117% | | 56-149% |
| 98-08-8 | aaa-Trifluorotoluene | 106% | | 66-132% |

U = Not detected LOD - Limit of Detection
LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis



| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-SW02 | | |
| **Lab Sample ID:** | FA11056-3 | **Date Sampled:** | 12/18/13 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/19/13 |
| **Method:** | SW846 8015C SW846 3550C | **Percent Solids:** | 80.5 |
| **Project:** | WE03, Camp Lejuene, NC | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | JJ000761.D | 1 | 12/23/13 | ME | 12/21/13 | OP49859 | GJJ35 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 29.9 g | 1.0 ml |
| Run #2 | | |

| CAS No. | Compound | Result | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|
| | TPH (C10-C28) | 4.2 U | 5.2 | 4.2 | mg/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 84-15-1 | o-Terphenyl | 71% | | 56-122% |

U = Not detected LOD - Limit of Detection
LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis



| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-SW03 | | |
| **Lab Sample ID:** | FA11056-4 | **Date Sampled:** | 12/18/13 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/19/13 |
| **Method:** | SW846 8260B | **Percent Solids:** | 77.4 |
| **Project:** | WE03, Camp Lejuene, NC | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | Y12304.D | 1 | 12/20/13 | EP | n/a | n/a | VY545 |
| Run #2 | | | | | | | |

| | Initial Weight |
|---|---|
| Run #1 | 6.05 g |
| Run #2 | |

**VOA List for NC, May 2012**

| CAS No. | Compound | Result | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|
| 67-64-1 | Acetone | 137 | 53 | 27 | ug/kg | |
| 71-43-2 | Benzene | 2.1 U | 5.3 | 2.1 | ug/kg | |
| 108-86-1 | Bromobenzene | 2.1 U | 5.3 | 2.1 | ug/kg | |
| 74-97-5 | Bromochloromethane | 2.1 U | 5.3 | 2.1 | ug/kg | |
| 75-27-4 | Bromodichloromethane | 2.1 U | 5.3 | 2.1 | ug/kg | |
| 75-25-2 | Bromoform | 2.1 U | 5.3 | 2.1 | ug/kg | |
| 104-51-8 | n-Butylbenzene | 37.7 | 5.3 | 2.1 | ug/kg | |
| 135-98-8 | sec-Butylbenzene | 19.1 | 5.3 | 2.1 | ug/kg | |
| 98-06-6 | tert-Butylbenzene | 2.1 U | 5.3 | 2.1 | ug/kg | |
| 108-90-7 | Chlorobenzene | 2.1 U | 5.3 | 2.1 | ug/kg | |
| 75-00-3 | Chloroethane | 4.3 U | 5.3 | 4.3 | ug/kg | |
| 67-66-3 | Chloroform | 2.1 U | 5.3 | 2.1 | ug/kg | |
| 95-49-8 | o-Chlorotoluene | 2.1 U | 5.3 | 2.1 | ug/kg | |
| 106-43-4 | p-Chlorotoluene | 2.1 U | 5.3 | 2.1 | ug/kg | |
| 56-23-5 | Carbon tetrachloride | 2.1 U | 5.3 | 2.1 | ug/kg | |
| 75-34-3 | 1,1-Dichloroethane | 2.1 U | 5.3 | 2.1 | ug/kg | |
| 75-35-4 | 1,1-Dichloroethylene | 2.1 U | 5.3 | 2.1 | ug/kg | |
| 563-58-6 | 1,1-Dichloropropene | 2.1 U | 5.3 | 2.1 | ug/kg | |
| 106-93-4 | 1,2-Dibromoethane | 2.1 U | 5.3 | 2.1 | ug/kg | |
| 107-06-2 | 1,2-Dichloroethane | 2.1 U | 5.3 | 2.1 | ug/kg | |
| 78-87-5 | 1,2-Dichloropropane | 2.1 U | 5.3 | 2.1 | ug/kg | |
| 142-28-9 | 1,3-Dichloropropane | 2.1 U | 5.3 | 2.1 | ug/kg | |
| 108-20-3 | Di-Isopropyl ether | 2.1 U | 5.3 | 2.1 | ug/kg | |
| 594-20-7 | 2,2-Dichloropropane | 2.1 U | 5.3 | 2.1 | ug/kg | |
| 124-48-1 | Dibromochloromethane | 2.1 U | 5.3 | 2.1 | ug/kg | |
| 75-71-8 | Dichlorodifluoromethane | 2.1 U | 5.3 | 2.1 | ug/kg | |
| 156-59-2 | cis-1,2-Dichloroethylene | 2.1 U | 5.3 | 2.1 | ug/kg | |
| 10061-01-5 | cis-1,3-Dichloropropene | 2.1 U | 5.3 | 2.1 | ug/kg | |
| 541-73-1 | m-Dichlorobenzene | 2.1 U | 5.3 | 2.1 | ug/kg | |
| 95-50-1 | o-Dichlorobenzene | 2.1 U | 5.3 | 2.1 | ug/kg | |
| 106-46-7 | p-Dichlorobenzene | 2.1 U | 5.3 | 2.1 | ug/kg | |
| 156-60-5 | trans-1,2-Dichloroethylene | 2.1 U | 5.3 | 2.1 | ug/kg | |

U = Not detected LOD - Limit of Detection
LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis



| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-SW03 | | |
| **Lab Sample ID:** | FA11056-4 | **Date Sampled:** | 12/18/13 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/19/13 |
| **Method:** | SW846 8260B | **Percent Solids:** | 77.4 |
| **Project:** | WE03, Camp Lejuene, NC | | |

**VOA List for NC, May 2012**

| CAS No. | Compound | Result | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|
| 10061-02-6 | trans-1,3-Dichloropropene | 2.1 U | 5.3 | 2.1 | ug/kg | |
| 64-17-5 | Ethyl alcohol | 210 U | 430 | 210 | ug/kg | |
| 100-41-4 | Ethylbenzene | 8.0 | 5.3 | 2.1 | ug/kg | |
| 637-92-3 | Ethyl tert-Butyl Ether | 2.1 U | 5.3 | 2.1 | ug/kg | |
| 591-78-6 | 2-Hexanone | 11 U | 27 | 11 | ug/kg | |
| 98-82-8 | Isopropylbenzene | 5.7 | 5.3 | 2.1 | ug/kg | |
| 99-87-6 | p-Isopropyltoluene | 11.0 | 5.3 | 2.1 | ug/kg | |
| 108-10-1 | 4-Methyl-2-pentanone | 11 U | 27 | 11 | ug/kg | |
| 74-83-9 | Methyl bromide | 4.3 U | 5.3 | 4.3 | ug/kg | |
| 74-87-3 | Methyl chloride | 4.3 U | 5.3 | 4.3 | ug/kg | |
| 75-09-2 | Methylene chloride | 5.3 U | 11 | 5.3 | ug/kg | |
| 78-93-3 | Methyl ethyl ketone | 11 U | 27 | 11 | ug/kg | |
| 1634-04-4 | Methyl Tert Butyl Ether | 2.1 U | 5.3 | 2.1 | ug/kg | |
| 91-20-3 | Naphthalene | 4.3 U | 5.3 | 4.3 | ug/kg | |
| 103-65-1 | n-Propylbenzene | 28.4 | 5.3 | 2.1 | ug/kg | |
| 100-42-5 | Styrene | 2.1 U | 5.3 | 2.1 | ug/kg | |
| 75-85-4 | Tert-Amyl Alcohol | 27 U | 53 | 27 | ug/kg | |
| 994-05-8 | Tert-Amyl Methyl Ether | 2.1 U | 5.3 | 2.1 | ug/kg | |
| 75-65-0 | Tert-Butyl Alcohol | 27 U | 53 | 27 | ug/kg | |
| 762-75-4 | tert-Butyl Formate | 27 U | 53 | 27 | ug/kg | |
| 630-20-6 | 1,1,1,2-Tetrachloroethane | 2.1 U | 5.3 | 2.1 | ug/kg | |
| 71-55-6 | 1,1,1-Trichloroethane | 2.1 U | 5.3 | 2.1 | ug/kg | |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 2.1 U | 5.3 | 2.1 | ug/kg | |
| 79-00-5 | 1,1,2-Trichloroethane | 2.1 U | 5.3 | 2.1 | ug/kg | |
| 87-61-6 | 1,2,3-Trichlorobenzene | 2.1 U | 5.3 | 2.1 | ug/kg | |
| 96-18-4 | 1,2,3-Trichloropropane | 2.1 U | 5.3 | 2.1 | ug/kg | |
| 120-82-1 | 1,2,4-Trichlorobenzene | 2.1 U | 5.3 | 2.1 | ug/kg | |
| 95-63-6 | 1,2,4-Trimethylbenzene | 66.5 | 5.3 | 2.1 | ug/kg | |
| 108-67-8 | 1,3,5-Trimethylbenzene | 7.2 | 5.3 | 2.1 | ug/kg | |
| 127-18-4 | Tetrachloroethylene | 2.1 U | 5.3 | 2.1 | ug/kg | |
| 108-88-3 | Toluene | 2.1 U | 5.3 | 2.1 | ug/kg | |
| 79-01-6 | Trichloroethylene | 2.1 U | 5.3 | 2.1 | ug/kg | |
| 75-69-4 | Trichlorofluoromethane | 4.3 U | 5.3 | 4.3 | ug/kg | |
| 75-01-4 | Vinyl chloride | 2.1 U | 5.3 | 2.1 | ug/kg | |
| 108-05-4 | Vinyl Acetate | 21 U | 27 | 21 | ug/kg | |
| 1330-20-7 | Xylene (total) | 7.4 | 16 | 6.4 | ug/kg | J |
| | m,p-Xylene | 7.4 | 11 | 4.3 | ug/kg | J |
| 95-47-6 | o-Xylene | 2.1 U | 5.3 | 2.1 | ug/kg | |

U = Not detected LOD - Limit of Detection
LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis



| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-SW03 | | |
| **Lab Sample ID:** | FA11056-4 | **Date Sampled:** | 12/18/13 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/19/13 |
| **Method:** | SW846 8260B | **Percent Solids:** | 77.4 |
| **Project:** | WE03, Camp Lejuene, NC | | |

**VOA List for NC, May 2012**

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 1868-53-7 | Dibromofluoromethane | 96% | | 75-124% |
| 2037-26-5 | Toluene-D8 | 92% | | 75-126% |
| 460-00-4 | 4-Bromofluorobenzene | 96% | | 71-133% |
| 17060-07-0 | 1,2-Dichloroethane-D4 | 109% | | 72-135% |

U = Not detected LOD - Limit of Detection
LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis



| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-SW03 | | |
| **Lab Sample ID:** | FA11056-4 | **Date Sampled:** | 12/18/13 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/19/13 |
| **Method:** | SW846 8015C | **Percent Solids:** | 77.4 |
| **Project:** | WE03, Camp Lejuene, NC | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | QR080478.D | 1 | 12/20/13 | MM | n/a | n/a | GQR3425 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume | Methanol Aliquot |
|---|---|---|---|
| Run #1 | 4.38 g | 5.0 ml | 10.0 ul |
| Run #2 | | | |

| CAS No. | Compound | Result | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|
| | TPH-GRO (C6-C10) | 279 | 88 | 44 | mg/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 460-00-4 | 4-Bromofluorobenzene | 142% | | 56-149% |
| 98-08-8 | aaa-Trifluorotoluene | 99% | | 66-132% |

U = Not detected LOD - Limit of Detection
LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis



| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-SW03 | | |
| **Lab Sample ID:** | FA11056-4 | **Date Sampled:** | 12/18/13 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/19/13 |
| **Method:** | SW846 8015C SW846 3550C | **Percent Solids:** | 77.4 |
| **Project:** | WE03, Camp Lejuene, NC | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | LL52803.D | 1 | 12/26/13 | SJL | 12/26/13 | OP49895 | GLL1985 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 30.0 g | 1.0 ml |
| Run #2 | | |

| CAS No. | Compound | Result | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|
| | TPH (C10-C28) | 6.15 | 5.4 | 4.3 | mg/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 84-15-1 | o-Terphenyl | 68% | | 56-122% |

U = Not detected LOD - Limit of Detection
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J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis



| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-SW04 | | |
| **Lab Sample ID:** | FA11056-5 | **Date Sampled:** | 12/18/13 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/19/13 |
| **Method:** | SW846 8260B | **Percent Solids:** | 84.6 |
| **Project:** | WE03, Camp Lejuene, NC | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | Y12305.D | 1 | 12/20/13 | EP | n/a | n/a | VY545 |
| Run #2 | | | | | | | |

| | Initial Weight |
|---|---|
| Run #1 | 6.58 g |
| Run #2 | |

**VOA List for NC, May 2012**

| CAS No. | Compound | Result | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|
| 67-64-1 | Acetone | 171 | 45 | 22 | ug/kg | |
| 71-43-2 | Benzene | 1.8 U | 4.5 | 1.8 | ug/kg | |
| 108-86-1 | Bromobenzene | 1.8 U | 4.5 | 1.8 | ug/kg | |
| 74-97-5 | Bromochloromethane | 1.8 U | 4.5 | 1.8 | ug/kg | |
| 75-27-4 | Bromodichloromethane | 1.8 U | 4.5 | 1.8 | ug/kg | |
| 75-25-2 | Bromoform | 1.8 U | 4.5 | 1.8 | ug/kg | |
| 104-51-8 | n-Butylbenzene | 3.2 | 4.5 | 1.8 | ug/kg | J |
| 135-98-8 | sec-Butylbenzene | 4.5 | 4.5 | 1.8 | ug/kg | |
| 98-06-6 | tert-Butylbenzene | 1.8 U | 4.5 | 1.8 | ug/kg | |
| 108-90-7 | Chlorobenzene | 1.8 U | 4.5 | 1.8 | ug/kg | |
| 75-00-3 | Chloroethane | 3.6 U | 4.5 | 3.6 | ug/kg | |
| 67-66-3 | Chloroform | 1.8 U | 4.5 | 1.8 | ug/kg | |
| 95-49-8 | o-Chlorotoluene | 1.8 U | 4.5 | 1.8 | ug/kg | |
| 106-43-4 | p-Chlorotoluene | 1.8 U | 4.5 | 1.8 | ug/kg | |
| 56-23-5 | Carbon tetrachloride | 1.8 U | 4.5 | 1.8 | ug/kg | |
| 75-34-3 | 1,1-Dichloroethane | 1.8 U | 4.5 | 1.8 | ug/kg | |
| 75-35-4 | 1,1-Dichloroethylene | 1.8 U | 4.5 | 1.8 | ug/kg | |
| 563-58-6 | 1,1-Dichloropropene | 1.8 U | 4.5 | 1.8 | ug/kg | |
| 106-93-4 | 1,2-Dibromoethane | 1.8 U | 4.5 | 1.8 | ug/kg | |
| 107-06-2 | 1,2-Dichloroethane | 1.8 U | 4.5 | 1.8 | ug/kg | |
| 78-87-5 | 1,2-Dichloropropane | 1.8 U | 4.5 | 1.8 | ug/kg | |
| 142-28-9 | 1,3-Dichloropropane | 1.8 U | 4.5 | 1.8 | ug/kg | |
| 108-20-3 | Di-Isopropyl ether | 1.8 U | 4.5 | 1.8 | ug/kg | |
| 594-20-7 | 2,2-Dichloropropane | 1.8 U | 4.5 | 1.8 | ug/kg | |
| 124-48-1 | Dibromochloromethane | 1.8 U | 4.5 | 1.8 | ug/kg | |
| 75-71-8 | Dichlorodifluoromethane | 1.8 U | 4.5 | 1.8 | ug/kg | |
| 156-59-2 | cis-1,2-Dichloroethylene | 1.8 U | 4.5 | 1.8 | ug/kg | |
| 10061-01-5 | cis-1,3-Dichloropropene | 1.8 U | 4.5 | 1.8 | ug/kg | |
| 541-73-1 | m-Dichlorobenzene | 1.8 U | 4.5 | 1.8 | ug/kg | |
| 95-50-1 | o-Dichlorobenzene | 1.8 U | 4.5 | 1.8 | ug/kg | |
| 106-46-7 | p-Dichlorobenzene | 1.8 U | 4.5 | 1.8 | ug/kg | |
| 156-60-5 | trans-1,2-Dichloroethylene | 1.8 U | 4.5 | 1.8 | ug/kg | |

U = Not detected LOD - Limit of Detection
LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis



| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-SW04 | | |
| **Lab Sample ID:** | FA11056-5 | **Date Sampled:** | 12/18/13 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/19/13 |
| **Method:** | SW846 8260B | **Percent Solids:** | 84.6 |
| **Project:** | WE03, Camp Lejuene, NC | | |

**VOA List for NC, May 2012**

| CAS No. | Compound | Result | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|
| 10061-02-6 | trans-1,3-Dichloropropene | 1.8 U | 4.5 | 1.8 | ug/kg | |
| 64-17-5 | Ethyl alcohol | 180 U | 360 | 180 | ug/kg | |
| 100-41-4 | Ethylbenzene | 9.8 | 4.5 | 1.8 | ug/kg | |
| 637-92-3 | Ethyl tert-Butyl Ether | 1.8 U | 4.5 | 1.8 | ug/kg | |
| 591-78-6 | 2-Hexanone | 9.0 U | 22 | 9.0 | ug/kg | |
| 98-82-8 | Isopropylbenzene | 3.1 | 4.5 | 1.8 | ug/kg | J |
| 99-87-6 | p-Isopropyltoluene | 1.9 | 4.5 | 1.8 | ug/kg | J |
| 108-10-1 | 4-Methyl-2-pentanone | 9.0 U | 22 | 9.0 | ug/kg | |
| 74-83-9 | Methyl bromide | 3.6 U | 4.5 | 3.6 | ug/kg | |
| 74-87-3 | Methyl chloride | 3.6 U | 4.5 | 3.6 | ug/kg | |
| 75-09-2 | Methylene chloride | 4.5 U | 9.0 | 4.5 | ug/kg | |
| 78-93-3 | Methyl ethyl ketone | 9.0 U | 22 | 9.0 | ug/kg | |
| 1634-04-4 | Methyl Tert Butyl Ether | 1.8 U | 4.5 | 1.8 | ug/kg | |
| 91-20-3 | Naphthalene | 3.6 U | 4.5 | 3.6 | ug/kg | |
| 103-65-1 | n-Propylbenzene | 10.6 | 4.5 | 1.8 | ug/kg | |
| 100-42-5 | Styrene | 1.8 U | 4.5 | 1.8 | ug/kg | |
| 75-85-4 | Tert-Amyl Alcohol | 22 U | 45 | 22 | ug/kg | |
| 994-05-8 | Tert-Amyl Methyl Ether | 1.8 U | 4.5 | 1.8 | ug/kg | |
| 75-65-0 | Tert-Butyl Alcohol | 22 U | 45 | 22 | ug/kg | |
| 762-75-4 | tert-Butyl Formate | 22 U | 45 | 22 | ug/kg | |
| 630-20-6 | 1,1,1,2-Tetrachloroethane | 1.8 U | 4.5 | 1.8 | ug/kg | |
| 71-55-6 | 1,1,1-Trichloroethane | 1.8 U | 4.5 | 1.8 | ug/kg | |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 1.8 U | 4.5 | 1.8 | ug/kg | |
| 79-00-5 | 1,1,2-Trichloroethane | 1.8 U | 4.5 | 1.8 | ug/kg | |
| 87-61-6 | 1,2,3-Trichlorobenzene | 1.8 U | 4.5 | 1.8 | ug/kg | |
| 96-18-4 | 1,2,3-Trichloropropane | 1.8 U | 4.5 | 1.8 | ug/kg | |
| 120-82-1 | 1,2,4-Trichlorobenzene | 1.8 U | 4.5 | 1.8 | ug/kg | |
| 95-63-6 | 1,2,4-Trimethylbenzene | 2.2 | 4.5 | 1.8 | ug/kg | J |
| 108-67-8 | 1,3,5-Trimethylbenzene | 5.5 | 4.5 | 1.8 | ug/kg | |
| 127-18-4 | Tetrachloroethylene | 1.8 U | 4.5 | 1.8 | ug/kg | |
| 108-88-3 | Toluene | 1.8 U | 4.5 | 1.8 | ug/kg | |
| 79-01-6 | Trichloroethylene | 1.8 U | 4.5 | 1.8 | ug/kg | |
| 75-69-4 | Trichlorofluoromethane | 3.6 U | 4.5 | 3.6 | ug/kg | |
| 75-01-4 | Vinyl chloride | 1.8 U | 4.5 | 1.8 | ug/kg | |
| 108-05-4 | Vinyl Acetate | 18 U | 22 | 18 | ug/kg | |
| 1330-20-7 | Xylene (total) | 5.4 U | 13 | 5.4 | ug/kg | |
| | m,p-Xylene | 3.6 U | 9.0 | 3.6 | ug/kg | |
| 95-47-6 | o-Xylene | 1.8 U | 4.5 | 1.8 | ug/kg | |

U = Not detected LOD - Limit of Detection
LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis



| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-SW04 | | |
| **Lab Sample ID:** | FA11056-5 | **Date Sampled:** | 12/18/13 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/19/13 |
| **Method:** | SW846 8260B | **Percent Solids:** | 84.6 |
| **Project:** | WE03, Camp Lejuene, NC | | |

**VOA List for NC, May 2012**

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 1868-53-7 | Dibromofluoromethane | 101% | | 75-124% |
| 2037-26-5 | Toluene-D8 | 93% | | 75-126% |
| 460-00-4 | 4-Bromofluorobenzene | 100% | | 71-133% |
| 17060-07-0 | 1,2-Dichloroethane-D4 | 107% | | 72-135% |

U = Not detected LOD - Limit of Detection
LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis



| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-SW04 | | |
| **Lab Sample ID:** | FA11056-5 | **Date Sampled:** | 12/18/13 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/19/13 |
| **Method:** | SW846 8015C | **Percent Solids:** | 84.6 |
| **Project:** | WE03, Camp Lejuene, NC | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | QR080479.D | 1 | 12/20/13 | MM | n/a | n/a | GQR3425 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume | Methanol Aliquot |
|---|---|---|---|
| Run #1 | 6.23 g | 5.0 ml | 100 ul |
| Run #2 | | | |

| CAS No. | Compound | Result | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|
| | TPH-GRO (C6-C10) | 8.17 | 5.7 | 2.8 | mg/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 460-00-4 | 4-Bromofluorobenzene | 119% | | 56-149% |
| 98-08-8 | aaa-Trifluorotoluene | 105% | | 66-132% |

U = Not detected LOD - Limit of Detection
LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis



| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-SW04 | | |
| **Lab Sample ID:** | FA11056-5 | **Date Sampled:** | 12/18/13 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/19/13 |
| **Method:** | SW846 8015C SW846 3550C | **Percent Solids:** | 84.6 |
| **Project:** | WE03, Camp Lejuene, NC | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | JJ000794.D | 1 | 12/24/13 | ME | 12/21/13 | OP49859 | GJJ36 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 29.9 g | 1.0 ml |
| Run #2 | | |

| CAS No. | Compound | Result | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|
| | TPH (C10-C28) [a] | 6.32 | 4.9 | 4.0 | mg/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 84-15-1 | o-Terphenyl | 67% | | 56-122% |

(a) Petroleum hydrocarbon pattern extends beyond C28.

U = Not detected LOD - Limit of Detection
LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis



| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-SW05 | | |
| **Lab Sample ID:** | FA11056-6 | **Date Sampled:** | 12/18/13 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/19/13 |
| **Method:** | SW846 8260B | **Percent Solids:** | 84.1 |
| **Project:** | WE03, Camp Lejuene, NC | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | Y12313.D | 1 | 12/20/13 | EP | n/a | n/a | VY545 |
| Run #2 | | | | | | | |

| | Initial Weight |
|---|---|
| Run #1 | 8.00 g |
| Run #2 | |

**VOA List for NC, May 2012**

| CAS No. | Compound | Result | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|
| 67-64-1 | Acetone | 19 U | 37 | 19 | ug/kg | |
| 71-43-2 | Benzene | 1.5 U | 3.7 | 1.5 | ug/kg | |
| 108-86-1 | Bromobenzene | 1.5 U | 3.7 | 1.5 | ug/kg | |
| 74-97-5 | Bromochloromethane | 1.5 U | 3.7 | 1.5 | ug/kg | |
| 75-27-4 | Bromodichloromethane | 1.5 U | 3.7 | 1.5 | ug/kg | |
| 75-25-2 | Bromoform | 1.5 U | 3.7 | 1.5 | ug/kg | |
| 104-51-8 | n-Butylbenzene | 1.5 U | 3.7 | 1.5 | ug/kg | |
| 135-98-8 | sec-Butylbenzene | 1.5 U | 3.7 | 1.5 | ug/kg | |
| 98-06-6 | tert-Butylbenzene | 1.5 U | 3.7 | 1.5 | ug/kg | |
| 108-90-7 | Chlorobenzene | 1.5 U | 3.7 | 1.5 | ug/kg | |
| 75-00-3 | Chloroethane | 3.0 U | 3.7 | 3.0 | ug/kg | |
| 67-66-3 | Chloroform | 1.5 U | 3.7 | 1.5 | ug/kg | |
| 95-49-8 | o-Chlorotoluene | 1.5 U | 3.7 | 1.5 | ug/kg | |
| 106-43-4 | p-Chlorotoluene | 1.5 U | 3.7 | 1.5 | ug/kg | |
| 56-23-5 | Carbon tetrachloride | 1.5 U | 3.7 | 1.5 | ug/kg | |
| 75-34-3 | 1,1-Dichloroethane | 1.5 U | 3.7 | 1.5 | ug/kg | |
| 75-35-4 | 1,1-Dichloroethylene | 1.5 U | 3.7 | 1.5 | ug/kg | |
| 563-58-6 | 1,1-Dichloropropene | 1.5 U | 3.7 | 1.5 | ug/kg | |
| 106-93-4 | 1,2-Dibromoethane | 1.5 U | 3.7 | 1.5 | ug/kg | |
| 107-06-2 | 1,2-Dichloroethane | 1.5 U | 3.7 | 1.5 | ug/kg | |
| 78-87-5 | 1,2-Dichloropropane | 1.5 U | 3.7 | 1.5 | ug/kg | |
| 142-28-9 | 1,3-Dichloropropane | 1.5 U | 3.7 | 1.5 | ug/kg | |
| 108-20-3 | Di-Isopropyl ether | 1.5 U | 3.7 | 1.5 | ug/kg | |
| 594-20-7 | 2,2-Dichloropropane | 1.5 U | 3.7 | 1.5 | ug/kg | |
| 124-48-1 | Dibromochloromethane | 1.5 U | 3.7 | 1.5 | ug/kg | |
| 75-71-8 | Dichlorodifluoromethane | 1.5 U | 3.7 | 1.5 | ug/kg | |
| 156-59-2 | cis-1,2-Dichloroethylene | 1.5 U | 3.7 | 1.5 | ug/kg | |
| 10061-01-5 | cis-1,3-Dichloropropene | 1.5 U | 3.7 | 1.5 | ug/kg | |
| 541-73-1 | m-Dichlorobenzene | 1.5 U | 3.7 | 1.5 | ug/kg | |
| 95-50-1 | o-Dichlorobenzene | 1.5 U | 3.7 | 1.5 | ug/kg | |
| 106-46-7 | p-Dichlorobenzene | 1.5 U | 3.7 | 1.5 | ug/kg | |
| 156-60-5 | trans-1,2-Dichloroethylene | 1.5 U | 3.7 | 1.5 | ug/kg | |

U = Not detected LOD - Limit of Detection
LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis



| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-SW05 | | |
| **Lab Sample ID:** | FA11056-6 | **Date Sampled:** | 12/18/13 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/19/13 |
| **Method:** | SW846 8260B | **Percent Solids:** | 84.1 |
| **Project:** | WE03, Camp Lejuene, NC | | |

**VOA List for NC, May 2012**

| CAS No. | Compound | Result | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|
| 10061-02-6 | trans-1,3-Dichloropropene | 1.5 U | 3.7 | 1.5 | ug/kg | |
| 64-17-5 | Ethyl alcohol | 150 U | 300 | 150 | ug/kg | |
| 100-41-4 | Ethylbenzene | 1.5 U | 3.7 | 1.5 | ug/kg | |
| 637-92-3 | Ethyl tert-Butyl Ether | 1.5 U | 3.7 | 1.5 | ug/kg | |
| 591-78-6 | 2-Hexanone | 7.4 U | 19 | 7.4 | ug/kg | |
| 98-82-8 | Isopropylbenzene | 1.5 U | 3.7 | 1.5 | ug/kg | |
| 99-87-6 | p-Isopropyltoluene | 1.5 U | 3.7 | 1.5 | ug/kg | |
| 108-10-1 | 4-Methyl-2-pentanone | 7.4 U | 19 | 7.4 | ug/kg | |
| 74-83-9 | Methyl bromide | 3.0 U | 3.7 | 3.0 | ug/kg | |
| 74-87-3 | Methyl chloride | 3.0 U | 3.7 | 3.0 | ug/kg | |
| 75-09-2 | Methylene chloride | 3.7 U | 7.4 | 3.7 | ug/kg | |
| 78-93-3 | Methyl ethyl ketone | 7.4 U | 19 | 7.4 | ug/kg | |
| 1634-04-4 | Methyl Tert Butyl Ether | 1.5 U | 3.7 | 1.5 | ug/kg | |
| 91-20-3 | Naphthalene | 3.0 U | 3.7 | 3.0 | ug/kg | |
| 103-65-1 | n-Propylbenzene | 1.5 U | 3.7 | 1.5 | ug/kg | |
| 100-42-5 | Styrene | 1.5 U | 3.7 | 1.5 | ug/kg | |
| 75-85-4 | Tert-Amyl Alcohol | 19 U | 37 | 19 | ug/kg | |
| 994-05-8 | Tert-Amyl Methyl Ether | 1.5 U | 3.7 | 1.5 | ug/kg | |
| 75-65-0 | Tert-Butyl Alcohol | 19 U | 37 | 19 | ug/kg | |
| 762-75-4 | tert-Butyl Formate | 19 U | 37 | 19 | ug/kg | |
| 630-20-6 | 1,1,1,2-Tetrachloroethane | 1.5 U | 3.7 | 1.5 | ug/kg | |
| 71-55-6 | 1,1,1-Trichloroethane | 1.5 U | 3.7 | 1.5 | ug/kg | |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 1.5 U | 3.7 | 1.5 | ug/kg | |
| 79-00-5 | 1,1,2-Trichloroethane | 1.5 U | 3.7 | 1.5 | ug/kg | |
| 87-61-6 | 1,2,3-Trichlorobenzene | 1.5 U | 3.7 | 1.5 | ug/kg | |
| 96-18-4 | 1,2,3-Trichloropropane | 1.5 U | 3.7 | 1.5 | ug/kg | |
| 120-82-1 | 1,2,4-Trichlorobenzene | 1.5 U | 3.7 | 1.5 | ug/kg | |
| 95-63-6 | 1,2,4-Trimethylbenzene | 1.5 U | 3.7 | 1.5 | ug/kg | |
| 108-67-8 | 1,3,5-Trimethylbenzene | 1.5 U | 3.7 | 1.5 | ug/kg | |
| 127-18-4 | Tetrachloroethylene | 1.5 U | 3.7 | 1.5 | ug/kg | |
| 108-88-3 | Toluene | 1.5 U | 3.7 | 1.5 | ug/kg | |
| 79-01-6 | Trichloroethylene | 1.5 U | 3.7 | 1.5 | ug/kg | |
| 75-69-4 | Trichlorofluoromethane | 3.0 U | 3.7 | 3.0 | ug/kg | |
| 75-01-4 | Vinyl chloride | 1.5 U | 3.7 | 1.5 | ug/kg | |
| 108-05-4 | Vinyl Acetate | 15 U | 19 | 15 | ug/kg | |
| 1330-20-7 | Xylene (total) | 4.5 U | 11 | 4.5 | ug/kg | |
| | m,p-Xylene | 3.0 U | 7.4 | 3.0 | ug/kg | |
| 95-47-6 | o-Xylene | 1.5 U | 3.7 | 1.5 | ug/kg | |

U = Not detected LOD - Limit of Detection
LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis



| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-SW05 | | |
| **Lab Sample ID:** | FA11056-6 | **Date Sampled:** | 12/18/13 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/19/13 |
| **Method:** | SW846 8260B | **Percent Solids:** | 84.1 |
| **Project:** | WE03, Camp Lejuene, NC | | |

**VOA List for NC, May 2012**

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 1868-53-7 | Dibromofluoromethane | 104% | | 75-124% |
| 2037-26-5 | Toluene-D8 | 94% | | 75-126% |
| 460-00-4 | 4-Bromofluorobenzene | 101% | | 71-133% |
| 17060-07-0 | 1,2-Dichloroethane-D4 | 102% | | 72-135% |

U = Not detected LOD - Limit of Detection
LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis



| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-SW05 | | |
| **Lab Sample ID:** | FA11056-6 | **Date Sampled:** | 12/18/13 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/19/13 |
| **Method:** | SW846 8015C | **Percent Solids:** | 84.1 |
| **Project:** | WE03, Camp Lejuene, NC | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | QR080483.D | 1 | 12/20/13 | MM | n/a | n/a | GQR3425 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume | Methanol Aliquot |
|---|---|---|---|
| Run #1 | 6.29 g | 5.0 ml | 100 ul |
| Run #2 | | | |

| CAS No. | Compound | Result | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|
| | TPH-GRO (C6-C10) | 2.8 U | 5.7 | 2.8 | mg/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 460-00-4 | 4-Bromofluorobenzene | 121% | | 56-149% |
| 98-08-8 | aaa-Trifluorotoluene | 103% | | 66-132% |

U = Not detected LOD - Limit of Detection
LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis



| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-SW05 | | |
| **Lab Sample ID:** | FA11056-6 | **Date Sampled:** | 12/18/13 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/19/13 |
| **Method:** | SW846 8015C SW846 3550C | **Percent Solids:** | 84.1 |
| **Project:** | WE03, Camp Lejuene, NC | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | JJ000763.D | 1 | 12/23/13 | ME | 12/21/13 | OP49859 | GJJ35 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 30.2 g | 1.0 ml |
| Run #2 | | |

| CAS No. | Compound | Result | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|
| | TPH (C10-C28) | 3.9 U | 4.9 | 3.9 | mg/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 84-15-1 | o-Terphenyl | 72% | | 56-122% |

U = Not detected LOD - Limit of Detection
LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis



| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-SW05A | | |
| **Lab Sample ID:** | FA11056-7 | **Date Sampled:** | 12/18/13 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/19/13 |
| **Method:** | SW846 8260B | **Percent Solids:** | 85.3 |
| **Project:** | WE03, Camp Lejuene, NC | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | Y12307.D | 1 | 12/20/13 | EP | n/a | n/a | VY545 |
| Run #2 | | | | | | | |

| | Initial Weight |
|---|---|
| Run #1 | 7.61 g |
| Run #2 | |

**VOA List for NC, May 2012**

| CAS No. | Compound | Result | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|
| 67-64-1 | Acetone | 19 U | 39 | 19 | ug/kg | |
| 71-43-2 | Benzene | 1.5 U | 3.9 | 1.5 | ug/kg | |
| 108-86-1 | Bromobenzene | 1.5 U | 3.9 | 1.5 | ug/kg | |
| 74-97-5 | Bromochloromethane | 1.5 U | 3.9 | 1.5 | ug/kg | |
| 75-27-4 | Bromodichloromethane | 1.5 U | 3.9 | 1.5 | ug/kg | |
| 75-25-2 | Bromoform | 1.5 U | 3.9 | 1.5 | ug/kg | |
| 104-51-8 | n-Butylbenzene | 1.5 U | 3.9 | 1.5 | ug/kg | |
| 135-98-8 | sec-Butylbenzene | 1.5 U | 3.9 | 1.5 | ug/kg | |
| 98-06-6 | tert-Butylbenzene | 1.5 U | 3.9 | 1.5 | ug/kg | |
| 108-90-7 | Chlorobenzene | 1.5 U | 3.9 | 1.5 | ug/kg | |
| 75-00-3 | Chloroethane | 3.1 U | 3.9 | 3.1 | ug/kg | |
| 67-66-3 | Chloroform | 1.5 U | 3.9 | 1.5 | ug/kg | |
| 95-49-8 | o-Chlorotoluene | 1.5 U | 3.9 | 1.5 | ug/kg | |
| 106-43-4 | p-Chlorotoluene | 1.5 U | 3.9 | 1.5 | ug/kg | |
| 56-23-5 | Carbon tetrachloride | 1.5 U | 3.9 | 1.5 | ug/kg | |
| 75-34-3 | 1,1-Dichloroethane | 1.5 U | 3.9 | 1.5 | ug/kg | |
| 75-35-4 | 1,1-Dichloroethylene | 1.5 U | 3.9 | 1.5 | ug/kg | |
| 563-58-6 | 1,1-Dichloropropene | 1.5 U | 3.9 | 1.5 | ug/kg | |
| 106-93-4 | 1,2-Dibromoethane | 1.5 U | 3.9 | 1.5 | ug/kg | |
| 107-06-2 | 1,2-Dichloroethane | 1.5 U | 3.9 | 1.5 | ug/kg | |
| 78-87-5 | 1,2-Dichloropropane | 1.5 U | 3.9 | 1.5 | ug/kg | |
| 142-28-9 | 1,3-Dichloropropane | 1.5 U | 3.9 | 1.5 | ug/kg | |
| 108-20-3 | Di-Isopropyl ether | 1.5 U | 3.9 | 1.5 | ug/kg | |
| 594-20-7 | 2,2-Dichloropropane | 1.5 U | 3.9 | 1.5 | ug/kg | |
| 124-48-1 | Dibromochloromethane | 1.5 U | 3.9 | 1.5 | ug/kg | |
| 75-71-8 | Dichlorodifluoromethane | 1.5 U | 3.9 | 1.5 | ug/kg | |
| 156-59-2 | cis-1,2-Dichloroethylene | 1.5 U | 3.9 | 1.5 | ug/kg | |
| 10061-01-5 | cis-1,3-Dichloropropene | 1.5 U | 3.9 | 1.5 | ug/kg | |
| 541-73-1 | m-Dichlorobenzene | 1.5 U | 3.9 | 1.5 | ug/kg | |
| 95-50-1 | o-Dichlorobenzene | 1.5 U | 3.9 | 1.5 | ug/kg | |
| 106-46-7 | p-Dichlorobenzene | 1.5 U | 3.9 | 1.5 | ug/kg | |
| 156-60-5 | trans-1,2-Dichloroethylene | 1.5 U | 3.9 | 1.5 | ug/kg | |

U = Not detected LOD - Limit of Detection
LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis



| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-SW05A | | |
| **Lab Sample ID:** | FA11056-7 | **Date Sampled:** | 12/18/13 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/19/13 |
| **Method:** | SW846 8260B | **Percent Solids:** | 85.3 |
| **Project:** | WE03, Camp Lejuene, NC | | |

**VOA List for NC, May 2012**

| CAS No. | Compound | Result | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|
| 10061-02-6 | trans-1,3-Dichloropropene | 1.5 U | 3.9 | 1.5 | ug/kg | |
| 64-17-5 | Ethyl alcohol | 150 U | 310 | 150 | ug/kg | |
| 100-41-4 | Ethylbenzene | 1.5 U | 3.9 | 1.5 | ug/kg | |
| 637-92-3 | Ethyl tert-Butyl Ether | 1.5 U | 3.9 | 1.5 | ug/kg | |
| 591-78-6 | 2-Hexanone | 7.7 U | 19 | 7.7 | ug/kg | |
| 98-82-8 | Isopropylbenzene | 1.5 U | 3.9 | 1.5 | ug/kg | |
| 99-87-6 | p-Isopropyltoluene | 1.5 U | 3.9 | 1.5 | ug/kg | |
| 108-10-1 | 4-Methyl-2-pentanone | 7.7 U | 19 | 7.7 | ug/kg | |
| 74-83-9 | Methyl bromide | 3.1 U | 3.9 | 3.1 | ug/kg | |
| 74-87-3 | Methyl chloride | 3.1 U | 3.9 | 3.1 | ug/kg | |
| 75-09-2 | Methylene chloride | 3.9 U | 7.7 | 3.9 | ug/kg | |
| 78-93-3 | Methyl ethyl ketone | 7.7 U | 19 | 7.7 | ug/kg | |
| 1634-04-4 | Methyl Tert Butyl Ether | 1.5 U | 3.9 | 1.5 | ug/kg | |
| 91-20-3 | Naphthalene | 3.1 U | 3.9 | 3.1 | ug/kg | |
| 103-65-1 | n-Propylbenzene | 1.5 U | 3.9 | 1.5 | ug/kg | |
| 100-42-5 | Styrene | 1.5 U | 3.9 | 1.5 | ug/kg | |
| 75-85-4 | Tert-Amyl Alcohol | 19 U | 39 | 19 | ug/kg | |
| 994-05-8 | Tert-Amyl Methyl Ether | 1.5 U | 3.9 | 1.5 | ug/kg | |
| 75-65-0 | Tert-Butyl Alcohol | 19 U | 39 | 19 | ug/kg | |
| 762-75-4 | tert-Butyl Formate | 19 U | 39 | 19 | ug/kg | |
| 630-20-6 | 1,1,1,2-Tetrachloroethane | 1.5 U | 3.9 | 1.5 | ug/kg | |
| 71-55-6 | 1,1,1-Trichloroethane | 1.5 U | 3.9 | 1.5 | ug/kg | |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 1.5 U | 3.9 | 1.5 | ug/kg | |
| 79-00-5 | 1,1,2-Trichloroethane | 1.5 U | 3.9 | 1.5 | ug/kg | |
| 87-61-6 | 1,2,3-Trichlorobenzene | 1.5 U | 3.9 | 1.5 | ug/kg | |
| 96-18-4 | 1,2,3-Trichloropropane | 1.5 U | 3.9 | 1.5 | ug/kg | |
| 120-82-1 | 1,2,4-Trichlorobenzene | 1.5 U | 3.9 | 1.5 | ug/kg | |
| 95-63-6 | 1,2,4-Trimethylbenzene | 1.5 U | 3.9 | 1.5 | ug/kg | |
| 108-67-8 | 1,3,5-Trimethylbenzene | 1.5 U | 3.9 | 1.5 | ug/kg | |
| 127-18-4 | Tetrachloroethylene | 1.5 U | 3.9 | 1.5 | ug/kg | |
| 108-88-3 | Toluene | 1.5 U | 3.9 | 1.5 | ug/kg | |
| 79-01-6 | Trichloroethylene | 1.5 U | 3.9 | 1.5 | ug/kg | |
| 75-69-4 | Trichlorofluoromethane | 3.1 U | 3.9 | 3.1 | ug/kg | |
| 75-01-4 | Vinyl chloride | 1.5 U | 3.9 | 1.5 | ug/kg | |
| 108-05-4 | Vinyl Acetate | 15 U | 19 | 15 | ug/kg | |
| 1330-20-7 | Xylene (total) | 4.6 U | 12 | 4.6 | ug/kg | |
| | m,p-Xylene | 3.1 U | 7.7 | 3.1 | ug/kg | |
| 95-47-6 | o-Xylene | 1.5 U | 3.9 | 1.5 | ug/kg | |

U = Not detected LOD - Limit of Detection
LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis



| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-SW05A | | |
| **Lab Sample ID:** | FA11056-7 | **Date Sampled:** | 12/18/13 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/19/13 |
| **Method:** | SW846 8260B | **Percent Solids:** | 85.3 |
| **Project:** | WE03, Camp Lejuene, NC | | |

**VOA List for NC, May 2012**

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 1868-53-7 | Dibromofluoromethane | 99% | | 75-124% |
| 2037-26-5 | Toluene-D8 | 98% | | 75-126% |
| 460-00-4 | 4-Bromofluorobenzene | 98% | | 71-133% |
| 17060-07-0 | 1,2-Dichloroethane-D4 | 93% | | 72-135% |

U = Not detected LOD - Limit of Detection
LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis



| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-SW05A | | |
| **Lab Sample ID:** | FA11056-7 | **Date Sampled:** | 12/18/13 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/19/13 |
| **Method:** | SW846 8015C | **Percent Solids:** | 85.3 |
| **Project:** | WE03, Camp Lejuene, NC | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | QR080484.D | 1 | 12/20/13 | MM | n/a | n/a | GQR3425 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume | Methanol Aliquot |
|---|---|---|---|
| Run #1 | 6.41 g | 5.0 ml | 100 ul |
| Run #2 | | | |

| CAS No. | Compound | Result | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|
| | TPH-GRO (C6-C10) | 2.7 U | 5.4 | 2.7 | mg/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 460-00-4 | 4-Bromofluorobenzene | 119% | | 56-149% |
| 98-08-8 | aaa-Trifluorotoluene | 101% | | 66-132% |

U = Not detected LOD - Limit of Detection
LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis



| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-SW05A | | |
| **Lab Sample ID:** | FA11056-7 | **Date Sampled:** | 12/18/13 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/19/13 |
| **Method:** | SW846 8015C SW846 3550C | **Percent Solids:** | 85.3 |
| **Project:** | WE03, Camp Lejuene, NC | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | JJ000764.D | 1 | 12/23/13 | ME | 12/21/13 | OP49859 | GJJ35 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 29.7 g | 1.0 ml |
| Run #2 | | |

| CAS No. | Compound | Result | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|
| | TPH (C10-C28) [a] | 8.75 | 4.9 | 3.9 | mg/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 84-15-1 | o-Terphenyl | 72% | | 56-122% |

(a) Petroleum hydrocarbon pattern extends beyond C28.

U = Not detected LOD - Limit of Detection
LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis



| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-DS01 | | |
| **Lab Sample ID:** | FA11056-8 | **Date Sampled:** | 12/18/13 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/19/13 |
| **Method:** | SW846 8260B | **Percent Solids:** | 83.7 |
| **Project:** | WE03, Camp Lejuene, NC | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | Y12308.D | 1 | 12/20/13 | EP | n/a | n/a | VY545 |
| Run #2 | | | | | | | |

| | Initial Weight |
|---|---|
| Run #1 | 5.76 g |
| Run #2 | |

**VOA List for NC, May 2012**

| CAS No. | Compound | Result | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|
| 67-64-1 | Acetone | 29.3 | 52 | 26 | ug/kg | J |
| 71-43-2 | Benzene | 2.1 U | 5.2 | 2.1 | ug/kg | |
| 108-86-1 | Bromobenzene | 2.1 U | 5.2 | 2.1 | ug/kg | |
| 74-97-5 | Bromochloromethane | 2.1 U | 5.2 | 2.1 | ug/kg | |
| 75-27-4 | Bromodichloromethane | 2.1 U | 5.2 | 2.1 | ug/kg | |
| 75-25-2 | Bromoform | 2.1 U | 5.2 | 2.1 | ug/kg | |
| 104-51-8 | n-Butylbenzene | 2.1 U | 5.2 | 2.1 | ug/kg | |
| 135-98-8 | sec-Butylbenzene | 2.1 U | 5.2 | 2.1 | ug/kg | |
| 98-06-6 | tert-Butylbenzene | 2.1 U | 5.2 | 2.1 | ug/kg | |
| 108-90-7 | Chlorobenzene | 2.1 U | 5.2 | 2.1 | ug/kg | |
| 75-00-3 | Chloroethane | 4.1 U | 5.2 | 4.1 | ug/kg | |
| 67-66-3 | Chloroform | 2.1 U | 5.2 | 2.1 | ug/kg | |
| 95-49-8 | o-Chlorotoluene | 2.1 U | 5.2 | 2.1 | ug/kg | |
| 106-43-4 | p-Chlorotoluene | 2.1 U | 5.2 | 2.1 | ug/kg | |
| 56-23-5 | Carbon tetrachloride | 2.1 U | 5.2 | 2.1 | ug/kg | |
| 75-34-3 | 1,1-Dichloroethane | 2.1 U | 5.2 | 2.1 | ug/kg | |
| 75-35-4 | 1,1-Dichloroethylene | 2.1 U | 5.2 | 2.1 | ug/kg | |
| 563-58-6 | 1,1-Dichloropropene | 2.1 U | 5.2 | 2.1 | ug/kg | |
| 106-93-4 | 1,2-Dibromoethane | 2.1 U | 5.2 | 2.1 | ug/kg | |
| 107-06-2 | 1,2-Dichloroethane | 2.1 U | 5.2 | 2.1 | ug/kg | |
| 78-87-5 | 1,2-Dichloropropane | 2.1 U | 5.2 | 2.1 | ug/kg | |
| 142-28-9 | 1,3-Dichloropropane | 2.1 U | 5.2 | 2.1 | ug/kg | |
| 108-20-3 | Di-Isopropyl ether | 2.1 U | 5.2 | 2.1 | ug/kg | |
| 594-20-7 | 2,2-Dichloropropane | 2.1 U | 5.2 | 2.1 | ug/kg | |
| 124-48-1 | Dibromochloromethane | 2.1 U | 5.2 | 2.1 | ug/kg | |
| 75-71-8 | Dichlorodifluoromethane | 2.1 U | 5.2 | 2.1 | ug/kg | |
| 156-59-2 | cis-1,2-Dichloroethylene | 2.1 U | 5.2 | 2.1 | ug/kg | |
| 10061-01-5 | cis-1,3-Dichloropropene | 2.1 U | 5.2 | 2.1 | ug/kg | |
| 541-73-1 | m-Dichlorobenzene | 2.1 U | 5.2 | 2.1 | ug/kg | |
| 95-50-1 | o-Dichlorobenzene | 2.1 U | 5.2 | 2.1 | ug/kg | |
| 106-46-7 | p-Dichlorobenzene | 2.1 U | 5.2 | 2.1 | ug/kg | |
| 156-60-5 | trans-1,2-Dichloroethylene | 2.1 U | 5.2 | 2.1 | ug/kg | |

U = Not detected LOD - Limit of Detection
LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis



| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-DS01 | | |
| **Lab Sample ID:** | FA11056-8 | **Date Sampled:** | 12/18/13 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/19/13 |
| **Method:** | SW846 8260B | **Percent Solids:** | 83.7 |
| **Project:** | WE03, Camp Lejuene, NC | | |

**VOA List for NC, May 2012**

| CAS No. | Compound | Result | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|
| 10061-02-6 | trans-1,3-Dichloropropene | 2.1 U | 5.2 | 2.1 | ug/kg | |
| 64-17-5 | Ethyl alcohol | 210 U | 410 | 210 | ug/kg | |
| 100-41-4 | Ethylbenzene | 2.1 U | 5.2 | 2.1 | ug/kg | |
| 637-92-3 | Ethyl tert-Butyl Ether | 2.1 U | 5.2 | 2.1 | ug/kg | |
| 591-78-6 | 2-Hexanone | 10 U | 26 | 10 | ug/kg | |
| 98-82-8 | Isopropylbenzene | 2.1 U | 5.2 | 2.1 | ug/kg | |
| 99-87-6 | p-Isopropyltoluene | 2.1 U | 5.2 | 2.1 | ug/kg | |
| 108-10-1 | 4-Methyl-2-pentanone | 10 U | 26 | 10 | ug/kg | |
| 74-83-9 | Methyl bromide | 4.1 U | 5.2 | 4.1 | ug/kg | |
| 74-87-3 | Methyl chloride | 4.1 U | 5.2 | 4.1 | ug/kg | |
| 75-09-2 | Methylene chloride | 5.2 U | 10 | 5.2 | ug/kg | |
| 78-93-3 | Methyl ethyl ketone | 10 U | 26 | 10 | ug/kg | |
| 1634-04-4 | Methyl Tert Butyl Ether | 2.1 U | 5.2 | 2.1 | ug/kg | |
| 91-20-3 | Naphthalene | 4.1 U | 5.2 | 4.1 | ug/kg | |
| 103-65-1 | n-Propylbenzene | 2.1 U | 5.2 | 2.1 | ug/kg | |
| 100-42-5 | Styrene | 2.1 U | 5.2 | 2.1 | ug/kg | |
| 75-85-4 | Tert-Amyl Alcohol | 26 U | 52 | 26 | ug/kg | |
| 994-05-8 | Tert-Amyl Methyl Ether | 2.1 U | 5.2 | 2.1 | ug/kg | |
| 75-65-0 | Tert-Butyl Alcohol | 26 U | 52 | 26 | ug/kg | |
| 762-75-4 | tert-Butyl Formate | 26 U | 52 | 26 | ug/kg | |
| 630-20-6 | 1,1,1,2-Tetrachloroethane | 2.1 U | 5.2 | 2.1 | ug/kg | |
| 71-55-6 | 1,1,1-Trichloroethane | 2.1 U | 5.2 | 2.1 | ug/kg | |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 2.1 U | 5.2 | 2.1 | ug/kg | |
| 79-00-5 | 1,1,2-Trichloroethane | 2.1 U | 5.2 | 2.1 | ug/kg | |
| 87-61-6 | 1,2,3-Trichlorobenzene | 2.1 U | 5.2 | 2.1 | ug/kg | |
| 96-18-4 | 1,2,3-Trichloropropane | 2.1 U | 5.2 | 2.1 | ug/kg | |
| 120-82-1 | 1,2,4-Trichlorobenzene | 2.1 U | 5.2 | 2.1 | ug/kg | |
| 95-63-6 | 1,2,4-Trimethylbenzene | 2.1 U | 5.2 | 2.1 | ug/kg | |
| 108-67-8 | 1,3,5-Trimethylbenzene | 2.1 U | 5.2 | 2.1 | ug/kg | |
| 127-18-4 | Tetrachloroethylene | 2.1 U | 5.2 | 2.1 | ug/kg | |
| 108-88-3 | Toluene | 2.1 U | 5.2 | 2.1 | ug/kg | |
| 79-01-6 | Trichloroethylene | 2.1 U | 5.2 | 2.1 | ug/kg | |
| 75-69-4 | Trichlorofluoromethane | 4.1 U | 5.2 | 4.1 | ug/kg | |
| 75-01-4 | Vinyl chloride | 2.1 U | 5.2 | 2.1 | ug/kg | |
| 108-05-4 | Vinyl Acetate | 21 U | 26 | 21 | ug/kg | |
| 1330-20-7 | Xylene (total) | 6.2 U | 16 | 6.2 | ug/kg | |
| | m,p-Xylene | 4.1 U | 10 | 4.1 | ug/kg | |
| 95-47-6 | o-Xylene | 2.1 U | 5.2 | 2.1 | ug/kg | |

U = Not detected LOD - Limit of Detection
LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis



| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-DS01 | | |
| **Lab Sample ID:** | FA11056-8 | **Date Sampled:** | 12/18/13 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/19/13 |
| **Method:** | SW846 8260B | **Percent Solids:** | 83.7 |
| **Project:** | WE03, Camp Lejuene, NC | | |

**VOA List for NC, May 2012**

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 1868-53-7 | Dibromofluoromethane | 106% | | 75-124% |
| 2037-26-5 | Toluene-D8 | 96% | | 75-126% |
| 460-00-4 | 4-Bromofluorobenzene | 110% | | 71-133% |
| 17060-07-0 | 1,2-Dichloroethane-D4 | 108% | | 72-135% |

U = Not detected LOD - Limit of Detection
LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis



| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-DS01 | | |
| **Lab Sample ID:** | FA11056-8 | **Date Sampled:** | 12/18/13 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/19/13 |
| **Method:** | SW846 8015C | **Percent Solids:** | 83.7 |
| **Project:** | WE03, Camp Lejuene, NC | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | QR080485.D | 1 | 12/20/13 | MM | n/a | n/a | GQR3425 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume | Methanol Aliquot |
|---|---|---|---|
| Run #1 | 5.63 g | 5.0 ml | 100 ul |
| Run #2 | | | |

| CAS No. | Compound | Result | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|
| | TPH-GRO (C6-C10) | 3.1 U | 6.3 | 3.1 | mg/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 460-00-4 | 4-Bromofluorobenzene | 128% | | 56-149% |
| 98-08-8 | aaa-Trifluorotoluene | 98% | | 66-132% |

U = Not detected LOD - Limit of Detection
LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis



| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-DS01 | | |
| **Lab Sample ID:** | FA11056-8 | **Date Sampled:** | 12/18/13 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/19/13 |
| **Method:** | SW846 8015C SW846 3550C | **Percent Solids:** | 83.7 |
| **Project:** | WE03, Camp Lejuene, NC | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | JJ000770.D | 1 | 12/23/13 | ME | 12/21/13 | OP49859 | GJJ35 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 30.4 g | 1.0 ml |
| Run #2 | | |

| CAS No. | Compound | Result | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|
| | TPH (C10-C28) [a] | 4.02 | 4.9 | 3.9 | mg/kg | J |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 84-15-1 | o-Terphenyl | 71% | | 56-122% |

(a) Petroleum hydrocarbon pattern extends beyond C28.

U = Not detected LOD - Limit of Detection
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J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis



| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-SW06 | | |
| **Lab Sample ID:** | FA11056-9 | **Date Sampled:** | 12/18/13 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/19/13 |
| **Method:** | SW846 8260B | **Percent Solids:** | 83.5 |
| **Project:** | WE03, Camp Lejuene, NC | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | Y12314.D | 1 | 12/20/13 | EP | n/a | n/a | VY545 |
| Run #2 | Y12315.D | 1 | 12/20/13 | EP | n/a | n/a | VY545 |

| | Initial Weight | Methanol Aliquot |
|---|---|---|
| Run #1 | 6.03 g | |
| Run #2 | 5.76 g | 100 ul |

**VOA List for NC, May 2012**

| CAS No. | Compound | Result | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|
| 67-64-1 | Acetone | 95.3 | 50 | 25 | ug/kg | |
| 71-43-2 | Benzene | 2.0 U | 5.0 | 2.0 | ug/kg | |
| 108-86-1 | Bromobenzene | 2.0 U | 5.0 | 2.0 | ug/kg | |
| 74-97-5 | Bromochloromethane | 2.0 U | 5.0 | 2.0 | ug/kg | |
| 75-27-4 | Bromodichloromethane | 2.0 U | 5.0 | 2.0 | ug/kg | |
| 75-25-2 | Bromoform | 2.0 U | 5.0 | 2.0 | ug/kg | |
| 104-51-8 | n-Butylbenzene | 789 [a] | 310 | 120 | ug/kg | |
| 135-98-8 | sec-Butylbenzene | 25.1 | 5.0 | 2.0 | ug/kg | |
| 98-06-6 | tert-Butylbenzene | 2.0 U | 5.0 | 2.0 | ug/kg | |
| 108-90-7 | Chlorobenzene | 2.0 U | 5.0 | 2.0 | ug/kg | |
| 75-00-3 | Chloroethane | 4.0 U | 5.0 | 4.0 | ug/kg | |
| 67-66-3 | Chloroform | 2.0 U | 5.0 | 2.0 | ug/kg | |
| 95-49-8 | o-Chlorotoluene | 2.0 U | 5.0 | 2.0 | ug/kg | |
| 106-43-4 | p-Chlorotoluene | 2.0 U | 5.0 | 2.0 | ug/kg | |
| 56-23-5 | Carbon tetrachloride | 2.0 U | 5.0 | 2.0 | ug/kg | |
| 75-34-3 | 1,1-Dichloroethane | 2.0 U | 5.0 | 2.0 | ug/kg | |
| 75-35-4 | 1,1-Dichloroethylene | 2.0 U | 5.0 | 2.0 | ug/kg | |
| 563-58-6 | 1,1-Dichloropropene | 2.0 U | 5.0 | 2.0 | ug/kg | |
| 106-93-4 | 1,2-Dibromoethane | 2.0 U | 5.0 | 2.0 | ug/kg | |
| 107-06-2 | 1,2-Dichloroethane | 2.0 U | 5.0 | 2.0 | ug/kg | |
| 78-87-5 | 1,2-Dichloropropane | 2.0 U | 5.0 | 2.0 | ug/kg | |
| 142-28-9 | 1,3-Dichloropropane | 2.0 U | 5.0 | 2.0 | ug/kg | |
| 108-20-3 | Di-Isopropyl ether | 2.0 U | 5.0 | 2.0 | ug/kg | |
| 594-20-7 | 2,2-Dichloropropane | 2.0 U | 5.0 | 2.0 | ug/kg | |
| 124-48-1 | Dibromochloromethane | 2.0 U | 5.0 | 2.0 | ug/kg | |
| 75-71-8 | Dichlorodifluoromethane | 2.0 U | 5.0 | 2.0 | ug/kg | |
| 156-59-2 | cis-1,2-Dichloroethylene | 2.0 U | 5.0 | 2.0 | ug/kg | |
| 10061-01-5 | cis-1,3-Dichloropropene | 2.0 U | 5.0 | 2.0 | ug/kg | |
| 541-73-1 | m-Dichlorobenzene | 2.0 U | 5.0 | 2.0 | ug/kg | |
| 95-50-1 | o-Dichlorobenzene | 2.0 U | 5.0 | 2.0 | ug/kg | |
| 106-46-7 | p-Dichlorobenzene | 2.0 U | 5.0 | 2.0 | ug/kg | |
| 156-60-5 | trans-1,2-Dichloroethylene | 2.0 U | 5.0 | 2.0 | ug/kg | |

U = Not detected LOD - Limit of Detection
LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis



| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-SW06 | | |
| **Lab Sample ID:** | FA11056-9 | **Date Sampled:** | 12/18/13 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/19/13 |
| **Method:** | SW846 8260B | **Percent Solids:** | 83.5 |
| **Project:** | WE03, Camp Lejuene, NC | | |

**VOA List for NC, May 2012**

| CAS No. | Compound | Result | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|
| 10061-02-6 | trans-1,3-Dichloropropene | 2.0 U | 5.0 | 2.0 | ug/kg | |
| 64-17-5 | Ethyl alcohol | 200 U | 400 | 200 | ug/kg | |
| 100-41-4 | Ethylbenzene | 2.0 U | 5.0 | 2.0 | ug/kg | |
| 637-92-3 | Ethyl tert-Butyl Ether | 2.0 U | 5.0 | 2.0 | ug/kg | |
| 591-78-6 | 2-Hexanone | 9.9 U | 25 | 9.9 | ug/kg | |
| 98-82-8 | Isopropylbenzene | 4.0 | 5.0 | 2.0 | ug/kg | J |
| 99-87-6 | p-Isopropyltoluene | 22.7 | 5.0 | 2.0 | ug/kg | |
| 108-10-1 | 4-Methyl-2-pentanone | 9.9 U | 25 | 9.9 | ug/kg | |
| 74-83-9 | Methyl bromide | 4.0 U | 5.0 | 4.0 | ug/kg | |
| 74-87-3 | Methyl chloride | 4.0 U | 5.0 | 4.0 | ug/kg | |
| 75-09-2 | Methylene chloride | 5.0 U | 9.9 | 5.0 | ug/kg | |
| 78-93-3 | Methyl ethyl ketone | 9.9 U | 25 | 9.9 | ug/kg | |
| 1634-04-4 | Methyl Tert Butyl Ether | 2.0 U | 5.0 | 2.0 | ug/kg | |
| 91-20-3 | Naphthalene | 250 U [a] | 310 | 250 | ug/kg | |
| 103-65-1 | n-Propylbenzene | 28.5 | 5.0 | 2.0 | ug/kg | |
| 100-42-5 | Styrene | 2.0 U | 5.0 | 2.0 | ug/kg | |
| 75-85-4 | Tert-Amyl Alcohol | 25 U | 50 | 25 | ug/kg | |
| 994-05-8 | Tert-Amyl Methyl Ether | 2.0 U | 5.0 | 2.0 | ug/kg | |
| 75-65-0 | Tert-Butyl Alcohol | 25 U | 50 | 25 | ug/kg | |
| 762-75-4 | tert-Butyl Formate | 25 U | 50 | 25 | ug/kg | |
| 630-20-6 | 1,1,1,2-Tetrachloroethane | 2.0 U | 5.0 | 2.0 | ug/kg | |
| 71-55-6 | 1,1,1-Trichloroethane | 2.0 U | 5.0 | 2.0 | ug/kg | |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 2.0 U | 5.0 | 2.0 | ug/kg | |
| 79-00-5 | 1,1,2-Trichloroethane | 2.0 U | 5.0 | 2.0 | ug/kg | |
| 87-61-6 | 1,2,3-Trichlorobenzene | 2.0 U | 5.0 | 2.0 | ug/kg | |
| 96-18-4 | 1,2,3-Trichloropropane | 2.0 U | 5.0 | 2.0 | ug/kg | |
| 120-82-1 | 1,2,4-Trichlorobenzene | 2.0 U | 5.0 | 2.0 | ug/kg | |
| 95-63-6 | 1,2,4-Trimethylbenzene | 2030 [a] | 310 | 120 | ug/kg | |
| 108-67-8 | 1,3,5-Trimethylbenzene | 556 [a] | 310 | 120 | ug/kg | |
| 127-18-4 | Tetrachloroethylene | 2.0 U | 5.0 | 2.0 | ug/kg | |
| 108-88-3 | Toluene | 2.0 U | 5.0 | 2.0 | ug/kg | |
| 79-01-6 | Trichloroethylene | 2.0 U | 5.0 | 2.0 | ug/kg | |
| 75-69-4 | Trichlorofluoromethane | 4.0 U | 5.0 | 4.0 | ug/kg | |
| 75-01-4 | Vinyl chloride | 2.0 U | 5.0 | 2.0 | ug/kg | |
| 108-05-4 | Vinyl Acetate | 20 U | 25 | 20 | ug/kg | |
| 1330-20-7 | Xylene (total) | 6.0 U | 15 | 6.0 | ug/kg | |
| | m,p-Xylene | 4.0 U | 9.9 | 4.0 | ug/kg | |
| 95-47-6 | o-Xylene | 2.0 U | 5.0 | 2.0 | ug/kg | |

U = Not detected LOD - Limit of Detection
LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis



| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-SW06 | | |
| **Lab Sample ID:** | FA11056-9 | **Date Sampled:** | 12/18/13 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/19/13 |
| **Method:** | SW846 8260B | **Percent Solids:** | 83.5 |
| **Project:** | WE03, Camp Lejuene, NC | | |

**VOA List for NC, May 2012**

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 1868-53-7 | Dibromofluoromethane | 102% | 99% | 75-124% |
| 2037-26-5 | Toluene-D8 | 87% | 91% | 75-126% |
| 460-00-4 | 4-Bromofluorobenzene | 95% | 95% | 71-133% |
| 17060-07-0 | 1,2-Dichloroethane-D4 | 105% | 98% | 72-135% |

(a) Result is from Run# 2

U = Not detected LOD - Limit of Detection
LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis



| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-SW06 | | |
| **Lab Sample ID:** | FA11056-9 | **Date Sampled:** | 12/18/13 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/19/13 |
| **Method:** | SW846 8015C | **Percent Solids:** | 83.5 |
| **Project:** | WE03, Camp Lejuene, NC | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | QR080486.D | 1 | 12/20/13 | MM | n/a | n/a | GQR3425 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume | Methanol Aliquot |
|---|---|---|---|
| Run #1 | 5.82 g | 5.0 ml | 100 ul |
| Run #2 | | | |

| CAS No. | Compound | Result | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|
| | TPH-GRO (C6-C10) | 48.4 | 6.1 | 3.1 | mg/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 460-00-4 | 4-Bromofluorobenzene | 122% [a] | | 56-149% |
| 460-00-4 | 4-Bromofluorobenzene | 168% [b] | | 56-149% |
| 98-08-8 | aaa-Trifluorotoluene | 103% | | 66-132% |

(a) Result reported from PID.
(b) Outside control limits due to matrix interference.

U = Not detected LOD - Limit of Detection
LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis



| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-SW06 | | |
| **Lab Sample ID:** | FA11056-9 | **Date Sampled:** | 12/18/13 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/19/13 |
| **Method:** | SW846 8015C SW846 3550C | **Percent Solids:** | 83.5 |
| **Project:** | WE03, Camp Lejuene, NC | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | JJ000771.D | 1 | 12/23/13 | ME | 12/21/13 | OP49859 | GJJ35 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 30.2 g | 1.0 ml |
| Run #2 | | |

| CAS No. | Compound | Result | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|
| | TPH (C10-C28) | 11.5 | 5.0 | 4.0 | mg/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 84-15-1 | o-Terphenyl | 70% | | 56-122% |

U = Not detected LOD - Limit of Detection
LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Accutest Laboratories Southeast
## Chain of Custody

ACCUTEST LABORATORIES

4405 Vineland Road, Suite C-15 Orlando, Fl 32811
TEL. 407-425-6700 • FAX: 407-425-0707
www.accutest.com

Accutest JOB # FA11056 PAGE 1 OF 1

Accutest Quote # | SKIFF#

**Client / Reporting Information**

Company Name: Tetra Tech
Address: 17885 Von Karman, Suite 500
City: Irvine State: CA Zip: 92614
Project Contact: Sidney Sedako E-mail:
Phone#: 949-859-5022
Sampler(s) Name(s) (Printed):

**Project Information**

Project Name: UST Demo Camp Lejeune
Street:
City: Jacksonville State: NC
Project #: 4659WE03
Fax #:
Client Purchase Order #: 1036773-20

**Analytical Information** / **Matrix Codes**

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL - Sludge; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe

| Accutest Sample # | Field ID / Point of Collection | Collection DATE | Collection TIME | SAMPLED BY | MATRIX | TOTAL # OF BOTTLES | OTHER | NONE | HCl | NaOH | HNO3 | H2SO4 | NaOH+ZNAC | DI WATER | MEOH | GRO | DRO | 8260 VOC | LAB USE ONLY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1932-UST-PL01 | 12/18 | 0850 | RMS | SO | 6 | | 1 | | | | | | 2 | 3 | X | X | X | |
| 2 | 1932-UST-SW01 | | 1030 | | | 6 | | 1 | | | | | | 2 | 3 | | | | |
| 3 | 1932-UST-SW02 | | 0935 | | | 6 | | 1 | | | | | | 2 | 3 | | | | |
| 4 | 1932-UST-SW03 | | 1010 | | | 6 | | 1 | | | | | | 2 | 3 | | | | |
| 5 | 1932-UST-SW04 | | 1200 | | | 18 | | 3 | | | | | | 6 | 9 | | | | MS/MSD |
| 6 | 1932-UST-SW05 | | 1100 | | | 6 | | 1 | | | | | | 2 | 3 | | | | |
| 7 | 1932-UST-SW05A | | 1210 | | | 6 | | 1 | | | | | | 2 | 3 | | | | |
| 8 | 1932-UST-DS01 | | 1335 | | | 6 | | 1 | | | | | | 2 | 3 | | | | |
| 9 | 1932-UST-SW06 | 12/18 | 1215 | RMS | SO | 6 | | 1 | | | | | | 2 | 3 | | | | |

**TURNAROUND TIME (Business Days)**

Approved By: / Rush Code

- [ ] 10 Days Standard
- [ ] 7 Day RUSH
- [x] 5 Day RUSH — 5 Day TAT
- [ ] 3 Day EMERGENCY
- [ ] 2 Day EMERGENCY
- [ ] 1 Day EMERGENCY
- [ ] OTHER

Emergency or Rush T/A Data Available VIA Email or Lablink

**Data Deliverable Information**

- [ ] COMMERCIAL "A" (RESULTS ONLY)
- [x] COMMERCIAL "B" (RESULTS PLUS QC)
- [ ] REDT1 (EPA LEVEL 3)
- [ ] FULT1 (EPA LEVEL 4)
- [x] EDD'S

**Comments / Remarks**

Fed Ex# 8047 2600 6840

Sample Custody must be documented below each time samples change possession, including courier delivery.

| Relinquished by Sampler: | Date Time: | Received By: | Relinquished by: | Date Time: | Received By: |
|---|---|---|---|---|---|
| 1 | 12/18 1700 | 2 FX | 3 FX | 12/19/13 1600 | 4 12/19/13 16:00 |
| Relinquished by: 5 | Date Time: | Received By: 6 | Relinquished by: 7 | Date Time: | Received By: 8 |

**Lab Use Only:** Custody Seal in Place: Y N Temp Blank Provided: Y N Preserved where Applicable: Y N Total # of Coolers: Cooler Temperature (s) Celsius: 2.4

**FA11056: Chain of Custody**
**Page 1 of 2**

# ACCUTEST LABORATORIES SAMPLE RECEIPT CONFIRMATION

ACCUTEST'S JOB NUMBER: FA11056 CLIENT: Tetratech PROJECT: UST Demo

DATE/TIME RECEIVED: 12/19/13 10:00 (MM/DD/YY 24:00) NUMBER OF COOLERS RECEIVED: 1

METHOD OF DELIVERY: (FEDEX) UPS ACCUTEST COURIER GREYHOUND DELIVERY OTHER

AIRBILL NUMBERS: 8047 2600 6840

## COOLER INFORMATION

- [ ] CUSTODY SEAL NOT PRESENT OR NOT INTACT
- [ ] CHAIN OF CUSTODY NOT RECEIVED (COC)
- [ ] ANALYSIS REQUESTED IS UNCLEAR OR MISSING
- [ ] SAMPLE DATES OR TIMES UNCLEAR OR MISSING
- [ ] TEMPERATURE CRITERIA NOT MET
- [ ] WET ICE PRESENT

## TRIP BLANK INFORMATION

- [x] TRIP BLANK PROVIDED
- [ ] TRIP BLANK NOT PROVIDED
- [ ] TRIP BLANK NOT ON COC
- [x] TRIP BLANK INTACT
- [ ] TRIP BLANK NOT INTACT
- [ ] RECEIVED WATER TRIP BLANK
- [x] RECEIVED SOIL TRIP BLANK

## MISC. INFORMATION

NUMBER OF ENCORES ? 25-GRAM ____ 5-GRAM ____

NUMBER OF 5035 FIELD KITS ? 11

NUMBER OF LAB FILTERED METALS ? ____

## TEMPERATURE INFORMATION

- [ ] IR THERM ID 1 CORR. FACTOR -.04
- [ ] OBSERVED TEMPS: 3.3
- [ ] CORRECTED TEMPS: 2.9

## SAMPLE INFORMATION

- [ ] SAMPLE LABELS PRESENT ON ALL BOTTLES
- [ ] INCORRECT NUMBER OF CONTAINERS USED
- [ ] SAMPLE RECEIVED IMPROPERLY PRESERVED
- [ ] INSUFFICIENT VOLUME FOR ANALYSIS
- [ ] DATES/TIMES ON COC DO NOT MATCH SAMPLE LABEL
- [ ] ID'S ON COC DO NOT MATCH LABEL
- [ ] VOC VIALS HAVE HEADSPACE (MACRO BUBBLES)
- [ ] BOTTLES RECEIVED BUT ANALYSIS NOT REQUESTED
- [ ] NO BOTTLES RECEIVED FOR ANALYSIS REQUESTED
- [ ] UNCLEAR FILTERING OR COMPOSITING INSTRUCTIONS
- [ ] SAMPLE CONTAINER(S) RECEIVED BROKEN
- [ ] % SOLIDS JAR NOT RECEIVED
- [ ] 5035 FIELD KIT FROZEN WITHIN 48 HOUR'S
- [ ] RESIDUAL CHLORINE PRESENT

(APPICABLE TO EPA 600 SERIES OR NORTH CAROLINA ORGANICS)

SUMMARY OF COMMENTS:

TECHNICIAN SIGNATURE/DATE [signature] 12/19/13 REVIEWER SIGNATURE/DATE [signature] 12/19/13

NF 12/10

receipt confirmation 122910.xls

**FA11056: Chain of Custody**

**Page 2 of 2**

ROUND 2 SOIL SAMPLE ANALYTICAL REPORT

Southeast ACCUTEST LABORATORIES

01/20/14

# Technical Report for

Tetra Tech EC, Inc

WE03, Camp Lejuene, NC

4659 WEO3

Accutest Job Number: FA11487

Sampling Date: 01/08/14

Report to:

Tetra Tech EC, Inc
17885 Von Karman Ave Suite 500
Irvine, CA 92614
lisa.bienkowski@tetratech.com; sabina.sudoko@tetratech.com

ATTN: Lisa Bienkowski

Total number of pages in report: **121**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Harry Behzadi, Ph.D.
Laboratory Director

Client Service contact: Andrea Colby 407-425-6700

Certifications: FL (E83510), LA (03051), KS (E-10327), IA (366), IL (200063), NC (573), NJ (FL002), SC (96038001) DoD ELAP (L-A-B L2229), CA (04226CA), TX (T104704404), PA (68-03573), VA (460177), AK, AR, GA, KY, MA, NV, OK, UT, WA

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Test results relate only to samples analyzed.



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Sections: 1 2 3 4 5 6 7 8 9 10 11

# Table of Contents

-1-


**Section 1: Sample Summary** ..... **4**
**Section 2: Case Narrative/Conformance Summary** ..... **5**
**Section 3: Summary of Hits** ..... **9**
**Section 4: Sample Results** ..... **10**
**4.1:** FA11487-1: 1932-UST-SW07 ..... 11
**4.2:** FA11487-2: 1932-UST-SW08 ..... 18
**4.3:** FA11487-3: 1932-UST-SW08A ..... 26
**4.4:** FA11487-4: 1932-UST-SW09 ..... 33
**4.5:** FA11487-5: 1932-UST-SP01 ..... 40
**4.6:** FA11487-5L: 1932-UST-SP01 ..... 44
**Section 5: Misc. Forms** ..... **49**
**5.1:** Chain of Custody ..... 50
**Section 6: GC/MS Volatiles - QC Data Summaries** ..... **53**
**6.1:** Method Blank Summary ..... 54
**6.2:** Leachate Blank Summary ..... 57
**6.3:** Blank Spike Summary ..... 58
**6.4:** Matrix Spike/Matrix Spike Duplicate Summary ..... 63
**6.5:** Duplicate Summary ..... 67
**Section 7: GC/MS Semi-volatiles - QC Data Summaries** ..... **68**
**7.1:** Method Blank Summary ..... 69
**7.2:** Leachate Blank Summary ..... 71
**7.3:** Blank Spike Summary ..... 72
**7.4:** Matrix Spike/Matrix Spike Duplicate Summary ..... 75
**7.5:** Duplicate Summary ..... 78
**Section 8: GC Volatiles - QC Data Summaries** ..... **79**
**8.1:** Method Blank Summary ..... 80
**8.2:** Blank Spike Summary ..... 83
**8.3:** Blank Spike/Blank Spike Duplicate Summary ..... 84
**8.4:** Matrix Spike/Matrix Spike Duplicate Summary ..... 86
**8.5:** Duplicate Summary ..... 88
**Section 9: GC Semi-volatiles - QC Data Summaries** ..... **89**
**9.1:** Method Blank Summary ..... 90
**9.2:** Leachate Blank Summary ..... 94
**9.3:** Blank Spike Summary ..... 96
**9.4:** Blank Spike/Blank Spike Duplicate Summary ..... 101
**9.5:** Matrix Spike/Matrix Spike Duplicate Summary ..... 102
**9.6:** Duplicate Summary ..... 106
**Section 10: Metals Analysis - QC Data Summaries** ..... **108**
**10.1:** Prep QC MP26677: Hg ..... 109
**10.2:** Prep QC MP26678: As,Ba,Cd,Cr,Pb,Se,Ag ..... 114
**Section 11: General Chemistry - QC Data Summaries** ..... **119**
**11.1:** Method Blank and Spike Results Summary ..... 120

# Table of Contents



**11.2:** Duplicate Results Summary ..... 121

Accutest Laboratories

# Sample Summary

Tetra Tech EC, Inc

**Job No:** FA11487

WE03, Camp Lejuene, NC
Project No: 4659 WEO3

| Sample Number | Collected Date | Time | By | Received | Matrix Code | Type | Client Sample ID |
|---|---|---|---|---|---|---|---|
| FA11487-1 | 01/08/14 | 09:20 | JG | 01/09/14 | SO | Soil | 1932-UST-SW07 |
| FA11487-2 | 01/08/14 | 09:40 | JG | 01/09/14 | SO | Soil | 1932-UST-SW08 |
| FA11487-3 | 01/08/14 | 09:40 | JG | 01/09/14 | SO | Soil | 1932-UST-SW08A |
| FA11487-4 | 01/08/14 | 10:00 | JG | 01/09/14 | SO | Soil | 1932-UST-SW09 |
| FA11487-4D | 01/08/14 | 10:00 | JG | 01/09/14 | SO | Soil Dup/MSD | 1932-UST-SW09 |
| FA11487-4S | 01/08/14 | 10:00 | JG | 01/09/14 | SO | Soil Matrix Spike | 1932-UST-SW09 |
| FA11487-5 | 01/08/14 | 11:00 | JG | 01/09/14 | SO | Soil | 1932-UST-SP01 |
| FA11487-5L | 01/08/14 | 11:00 | JG | 01/09/14 | SO | Soil | 1932-UST-SP01 |

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

# SAMPLE DELIVERY GROUP CASE NARRATIVE

**Client:** Tetra Tech EC, Inc **Job No:** FA11487

**Site:** WE03, Camp Lejuene, NC **Report Date** 1/20/2014 2:48:27 PM

5 Samples were collected on 01/08/2014 and were received at Accutest SE on 01/09/2014 properly preserved, at 2.4 Deg. C and intact. These Samples received an Accutest job number of FA11487. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

## Volatiles by GCMS By Method SW846 8260B

**Matrix:** SO **Batch ID:** VY555

All samples were analyzed within the recommended method holding time.

All method blanks for this batch meet method specific criteria.

Sample(s) FA11487-4MS, FA11487-4MSD were used as the QC samples indicated.

Blank Spike Recovery(s) for 4-Methyl-2-pentanone, tert-Butyl Formate are outside control limits. Within DOD QSM control limits.

Matrix Spike Recovery(s) for 1,1-Dichloroethylene, Dichlorodifluoromethane, tert-Butyl Formate, Tetrachloroethylene, Vinyl chloride are outside control limits. Probable cause is due to matrix interference.

Matrix Spike Duplicate Recovery(s) for Ethyl tert-Butyl Ether, Methylene chloride, tert-Butyl Formate are outside control limits. Probable cause is due to matrix interference.

Matrix Spike / Matrix Spike Duplicate Recovery(s) for 1,2,4-Trimethylbenzene are outside control limits. Outside control limits due to high level in sample relative to spike amount.

RPD(s) for MSD for Tert-Amyl Methyl Ether are outside control limits for sample FA11487-4MSD. Probable cause is due to sample non-homogeneity.

**Matrix:** SO **Batch ID:** VN3204

All samples were analyzed within the recommended method holding time.

All method blanks for this batch meet method specific criteria.

Sample(s) FA11566-2LMS, FA11566-2LMSD, FA11517-1DUP were used as the QC samples indicated.

## Extractables by GCMS By Method SW846 8270D

**Matrix:** LEACHATE **Batch ID:** OP50097

All samples were extracted within the recommended method holding time.

All samples were analyzed within the recommended method holding time.

All method blanks for this batch meet method specific criteria.

Sample(s) FA11487-5LDUP, FA11566-3LMS, FA11566-3LMSD were used as the QC samples indicated.

Sample(s) FA11487-2 has surrogates outside control limits. Probable cause is due to matrix interference.

**Matrix:** SO **Batch ID:** OP50033

All samples were extracted within the recommended method holding time.

All samples were analyzed within the recommended method holding time.

All method blanks for this batch meet method specific criteria.

Sample(s) FA11487-4MS, FA11487-4MSD were used as the QC samples indicated.

Blank Spike Recovery(s) for N-Nitroso-di-n-propylamine are outside control limits. Sporadic marginal failure.

Matrix Spike / Matrix Spike Duplicate Recovery(s) for 2-Methylnaphthalene, Hexachloroethane are outside control limits. Probable cause is due to matrix interference.

Sample(s) FA11487-2 has surrogates outside control limits. Probable cause is due to matrix interference.

FA11487-2 for Terphenyl-d14: Outside control limits. However, sample was ND.

## Extractables by GCMS By Method SW846 8270D

**Matrix:** SO **Batch ID:** OP50033

FA11487-1 for N-Nitroso-di-n-propylamine: Associated BS recovery outside DOD QSM control limits.

FA11487-2 for N-Nitroso-di-n-propylamine: Associated BS recovery outside DOD QSM control limits.

FA11487-3 for N-Nitroso-di-n-propylamine: Associated BS recovery outside DOD QSM control limits.

FA11487-4 for N-Nitroso-di-n-propylamine: Associated BS recovery outside DOD QSM control limits.

## Volatiles by GC By Method MADEP VPH REV 1.1

**Matrix:** SO **Batch ID:** GUU301

All samples were analyzed within the recommended method holding time.

All method blanks for this batch meet method specific criteria.

Sample(s) FA11487-4MS, FA11487-4MSD were used as the QC samples indicated.

Matrix Spike / Matrix Spike Duplicate Recovery(s) for C5- C8 Aliphatics (Unadj.), C9- C10 Aromatics (Unadj.), C9- C12 Aliphatics (Unadj.) are outside control limits. Probable cause is due to matrix interference. For method performance in a clean matrix, refer to Blank Spike.

Sample(s) FA11487-4MS, FA11487-4MSD, FA11487-4DUP, FA11487-1, FA11487-2, FA11487-3 have surrogates outside control limits. Probable cause is due to matrix interference.

FA11487-1 for BFB: Outside control limits; however, sample is ND.

FA11487-2 for BFB: Outside control limits; however, sample is ND.

FA11487-3 for BFB: Outside control limits; however, sample is ND.

FA11487-4 for BFB: Outside control limits.

FA11487-4: Confirmation run.

**Matrix:** SO **Batch ID:** GUU302

All samples were analyzed within the recommended method holding time.

All method blanks for this batch meet method specific criteria.

Sample(s) FA11487-4DUP were used as the QC samples indicated.

Sample(s) FA11487-4 has compounds reported with “E” qualifiers indicating estimated value exceeding calibration range.

Sample(s) FA11487-4MS, FA11487-4MSD, FA11487-4DUP, FA11487-1, FA11487-2, FA11487-3 have surrogates outside control limits. Probable cause is due to matrix interference.

FA11487-4 for BFB: Outside control limits.

FA11487-4DUP for BFB: Outside control limits.

FA11487-4 for C9- C12 Aliphatics (Unadj.): Result is below RL at higher dilution.

**Matrix:** SO **Batch ID:** GUU303

Sample(s) FA11487-4MS, FA11487-4MSD, FA11487-4DUP, FA11487-1, FA11487-2, FA11487-3 have surrogates outside control limits. Probable cause is due to matrix interference.

FA11487-4 for BFB: Outside control limits.

FA11487-4: Confirmation run.

## Volatiles by GC By Method SW846 8015C

**Matrix:** SO **Batch ID:** GQR3434

All samples were analyzed within the recommended method holding time.

Sample(s) FA11487-5MS, FA11487-5MSD were used as the QC samples indicated.

All method blanks for this batch meet method specific criteria.

## Extractables by GC By Method MADEP EPH REV 1.1

**Matrix:** SO **Batch ID:** OP50045

All samples were extracted within the recommended method holding time.

All samples were analyzed within the recommended method holding time.

All method blanks for this batch meet method specific criteria.

Sample(s) FA11487-4DUP was used as the QC samples indicated.

## Extractables by GC By Method SW846 8015C

**Matrix:** SO **Batch ID:** OP50034

All samples were extracted within the recommended method holding time.
All samples were analyzed within the recommended method holding time.
All method blanks for this batch meet method specific criteria.
Sample(s) FA11486-5MS, FA11486-5MSD were used as the QC samples indicated.

## Extractables by GC By Method SW846 8081B

**Matrix:** LEACHATE **Batch ID:** OP50095

All samples were extracted within the recommended method holding time.
All samples were analyzed within the recommended method holding time.
All method blanks for this batch meet method specific criteria.
Sample(s) FA11487-5LMS, FA11487-5LMSD, FA11566-1LDUP were used as the QC samples indicated.

## Extractables by GC By Method SW846 8082A

**Matrix:** SO **Batch ID:** OP50052

All samples were extracted within the recommended method holding time.
All samples were analyzed within the recommended method holding time.
All method blanks for this batch meet method specific criteria.
Sample(s) FA11487-5MS, FA11487-5MSD were used as the QC samples indicated.

## Extractables by GC By Method SW846 8151A

**Matrix:** LEACHATE **Batch ID:** OP50098

All samples were extracted within the recommended method holding time.
All samples were analyzed within the recommended method holding time.
All method blanks for this batch meet method specific criteria.
Sample(s) FA11487-5LMS, FA11487-5LMSD were used as the QC samples indicated.

## Metals By Method SW846 6010C

**Matrix:** LEACHATE **Batch ID:** MP26678

All samples were digested within the recommended method holding time.
All samples were analyzed within the recommended method holding time.
All method blanks for this batch meet method specific criteria.
Sample(s) FA11487-5LDUP, FA11566-1LMS, FA11566-1LMSD, FA11566-1LSDL were used as the QC samples for metals.

## Metals By Method SW846 7470A

**Matrix:** LEACHATE **Batch ID:** MP26677

All samples were digested within the recommended method holding time.
All samples were analyzed within the recommended method holding time.
All method blanks for this batch meet method specific criteria.
Sample(s) FA11487-5LDUP, FA11566-1LMS, FA11566-1LMSD, FA11566-1LSDL were used as the QC samples for metals.

## Wet Chemistry By Method SM19 2540G

**Matrix:** SO **Batch ID:** GN59638

Sample(s) FA11487-4DUP was used as the QC samples for Solids, Percent.

## Wet Chemistry By Method SW846 1010

**Matrix:** SO **Batch ID:** GN59675

Sample(s) FA11445-1DUP was used as the QC samples for Ignitability (Flashpoint).
FA11487-5 for Ignitability (Flashpoint): Not ignitable.

## Wet Chemistry By Method SW846 CHAP7

**Matrix:** SO **Batch ID:** GN59751

Sample(s) FA11487-5DUP was used as the QC samples for Corrosivity as pH.

**Matrix:** SO **Batch ID:** GP23249

All samples were prepped within the recommended method holding time.

All samples were analyzed within the recommended method holding time.

All method blanks for this batch meet method specific criteria.

Sample(s) FA11487-5DUP was used as the QC samples for Cyanide Reactivity.

**Matrix:** SO **Batch ID:** GP23250

All samples were prepped within the recommended method holding time.

All samples were analyzed within the recommended method holding time.

All method blanks for this batch meet method specific criteria.

Sample(s) FA11487-5DUP was used as the QC samples for Sulfide Reactivity.

RPD(s) for Duplicate for Sulfide Reactivity are outside control limits for sample GP23250-D1. RPD acceptable due to low duplicate and sample concentrations.

Accutest Laboratories Southeast (ALSE) certifies that this report meets the project requirements for analytical data produced for the samples as received at ALSE and as stated on the COC. ALSE certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the ALSE Quality Manual except as noted above. This report is to be used in its entirety. ALSE is not responsible for any assumptions of data quality if partial data packages are used

Narrative prepared by:

Date: January 20, 2014

_____

Lovelie Metzgar, QA Officer (signature on file)

# Summary of Hits



**Job Number:** FA11487
**Account:** Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC
**Collected:** 01/08/14

3

| Lab Sample ID<br>Analyte | Client Sample ID | Result/<br>Qual | LOQ | LOD | Units | Method |
|---|---|---|---|---|---|---|
| **FA11487-1** | **1932-UST-SW07** | | | | | |
| No hits reported in this sample. | | | | | | |
| **FA11487-2** | **1932-UST-SW08** | | | | | |
| No hits reported in this sample. | | | | | | |
| **FA11487-3** | **1932-UST-SW08A** | | | | | |
| No hits reported in this sample. | | | | | | |
| **FA11487-4** | **1932-UST-SW09** | | | | | |
| n-Butylbenzene | | 125 J | 160 | 62 | ug/kg | SW846 8260B |
| Ethylbenzene | | 303 | 160 | 62 | ug/kg | SW846 8260B |
| Naphthalene | | 392 | 160 | 120 | ug/kg | SW846 8260B |
| n-Propylbenzene | | 335 | 160 | 62 | ug/kg | SW846 8260B |
| 1,2,4-Trimethylbenzene | | 3440 | 160 | 62 | ug/kg | SW846 8260B |
| 1,3,5-Trimethylbenzene | | 890 | 160 | 62 | ug/kg | SW846 8260B |
| Xylene (total) | | 1100 | 470 | 190 | ug/kg | SW846 8260B |
| m,p-Xylene | | 1010 | 310 | 120 | ug/kg | SW846 8260B |
| o-Xylene | | 92.5 J | 160 | 62 | ug/kg | SW846 8260B |
| 1-Methylnaphthalene | | 1310 | 190 | 39 | ug/kg | SW846 8270D |
| 2-Methylnaphthalene | | 2900 | 190 | 39 | ug/kg | SW846 8270D |
| Naphthalene | | 773 | 190 | 39 | ug/kg | SW846 8270D |
| C9- C12 Aliphatics (Unadj.) [a] | | 4180 E | 3200 | 1100 [b] | ug/kg | MADEP VPH REV 1.1 |
| C9- C10 Aromatics (Unadj.) | | 16600 | 6300 | 2200 [b] | ug/kg | MADEP VPH REV 1.1 |
| C9-C18 Aliphatics | | 7220 J | 12000 | 5800 [b] | ug/kg | MADEP EPH REV 1.1 |
| C19-C36 Aliphatics | | 5840 J | 12000 | 5800 [b] | ug/kg | MADEP EPH REV 1.1 |
| **FA11487-5** | **1932-UST-SP01** | | | | | |
| Corrosivity as pH | | 7.4 | | [b] | su | SW846 CHAP7 |
| Ignitability (Flashpoint) [c] | | > 200 | | [b] | Deg. F | SW846 1010 |
| **FA11487-5L** | **1932-UST-SP01** | | | | | |
| Barium | | 0.12 J | 2.0 | 0.050 | mg/l | SW846 6010C |

(a) Result is below RL at higher dilution.
(b) Value reported is laboratory DL (MDL).
(c) Not ignitable.

Southeast ACCUTEST LABORATORIES



Sample Results

Report of Analysis

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-SW07 | | |
| **Lab Sample ID:** | FA11487-1 | **Date Sampled:** | 01/08/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 01/09/14 |
| **Method:** | SW846 8260B | **Percent Solids:** | 83.4 |
| **Project:** | WE03, Camp Lejuene, NC | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | Y12540.D | 1 | 01/09/14 | EP | n/a | n/a | VY555 |
| Run #2 | | | | | | | |

| | Initial Weight |
|---|---|
| Run #1 | 7.59 g |
| Run #2 | |

**VOA List for NC, May 2012**

| CAS No. | Compound | Result | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|
| 67-64-1 | Acetone | 20 U | 39 | 20 | ug/kg | |
| 71-43-2 | Benzene | 1.6 U | 3.9 | 1.6 | ug/kg | |
| 108-86-1 | Bromobenzene | 1.6 U | 3.9 | 1.6 | ug/kg | |
| 74-97-5 | Bromochloromethane | 2.0 U | 3.9 | 2.0 | ug/kg | |
| 75-27-4 | Bromodichloromethane | 1.6 U | 3.9 | 1.6 | ug/kg | |
| 75-25-2 | Bromoform | 1.6 U | 3.9 | 1.6 | ug/kg | |
| 104-51-8 | n-Butylbenzene | 1.6 U | 3.9 | 1.6 | ug/kg | |
| 135-98-8 | sec-Butylbenzene | 1.6 U | 3.9 | 1.6 | ug/kg | |
| 98-06-6 | tert-Butylbenzene | 1.6 U | 3.9 | 1.6 | ug/kg | |
| 108-90-7 | Chlorobenzene | 1.6 U | 3.9 | 1.6 | ug/kg | |
| 75-00-3 | Chloroethane | 3.2 U | 3.9 | 3.2 | ug/kg | |
| 67-66-3 | Chloroform | 1.6 U | 3.9 | 1.6 | ug/kg | |
| 95-49-8 | o-Chlorotoluene | 1.6 U | 3.9 | 1.6 | ug/kg | |
| 106-43-4 | p-Chlorotoluene | 1.6 U | 3.9 | 1.6 | ug/kg | |
| 56-23-5 | Carbon tetrachloride | 1.6 U | 3.9 | 1.6 | ug/kg | |
| 75-34-3 | 1,1-Dichloroethane | 1.6 U | 3.9 | 1.6 | ug/kg | |
| 75-35-4 | 1,1-Dichloroethylene | 1.6 U | 3.9 | 1.6 | ug/kg | |
| 563-58-6 | 1,1-Dichloropropene | 1.6 U | 3.9 | 1.6 | ug/kg | |
| 106-93-4 | 1,2-Dibromoethane | 2.0 U | 3.9 | 2.0 | ug/kg | |
| 107-06-2 | 1,2-Dichloroethane | 1.6 U | 3.9 | 1.6 | ug/kg | |
| 78-87-5 | 1,2-Dichloropropane | 1.6 U | 3.9 | 1.6 | ug/kg | |
| 142-28-9 | 1,3-Dichloropropane | 1.6 U | 3.9 | 1.6 | ug/kg | |
| 108-20-3 | Di-Isopropyl ether | 1.6 U | 3.9 | 1.6 | ug/kg | |
| 594-20-7 | 2,2-Dichloropropane | 1.6 U | 3.9 | 1.6 | ug/kg | |
| 124-48-1 | Dibromochloromethane | 1.6 U | 3.9 | 1.6 | ug/kg | |
| 75-71-8 | Dichlorodifluoromethane | 1.6 U | 3.9 | 1.6 | ug/kg | |
| 156-59-2 | cis-1,2-Dichloroethylene | 1.6 U | 3.9 | 1.6 | ug/kg | |
| 10061-01-5 | cis-1,3-Dichloropropene | 1.6 U | 3.9 | 1.6 | ug/kg | |
| 541-73-1 | m-Dichlorobenzene | 1.6 U | 3.9 | 1.6 | ug/kg | |
| 95-50-1 | o-Dichlorobenzene | 1.6 U | 3.9 | 1.6 | ug/kg | |
| 106-46-7 | p-Dichlorobenzene | 1.6 U | 3.9 | 1.6 | ug/kg | |
| 156-60-5 | trans-1,2-Dichloroethylene | 1.6 U | 3.9 | 1.6 | ug/kg | |

U = Not detected LOD - Limit of Detection
LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-SW07 | | |
| **Lab Sample ID:** | FA11487-1 | **Date Sampled:** | 01/08/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 01/09/14 |
| **Method:** | SW846 8260B | **Percent Solids:** | 83.4 |
| **Project:** | WE03, Camp Lejuene, NC | | |

**VOA List for NC, May 2012**

| CAS No. | Compound | Result | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|
| 10061-02-6 | trans-1,3-Dichloropropene | 1.6 U | 3.9 | 1.6 | ug/kg | |
| 64-17-5 | Ethyl alcohol | 160 U | 320 | 160 | ug/kg | |
| 100-41-4 | Ethylbenzene | 1.6 U | 3.9 | 1.6 | ug/kg | |
| 637-92-3 | Ethyl tert-Butyl Ether | 1.6 U | 3.9 | 1.6 | ug/kg | |
| 591-78-6 | 2-Hexanone | 7.9 U | 20 | 7.9 | ug/kg | |
| 98-82-8 | Isopropylbenzene | 1.6 U | 3.9 | 1.6 | ug/kg | |
| 99-87-6 | p-Isopropyltoluene | 1.6 U | 3.9 | 1.6 | ug/kg | |
| 108-10-1 | 4-Methyl-2-pentanone | 7.9 U | 20 | 7.9 | ug/kg | |
| 74-83-9 | Methyl bromide | 3.2 U | 3.9 | 3.2 | ug/kg | |
| 74-87-3 | Methyl chloride | 3.2 U | 3.9 | 3.2 | ug/kg | |
| 75-09-2 | Methylene chloride | 3.9 U | 7.9 | 3.9 | ug/kg | |
| 78-93-3 | Methyl ethyl ketone | 7.9 U | 20 | 7.9 | ug/kg | |
| 1634-04-4 | Methyl Tert Butyl Ether | 1.6 U | 3.9 | 1.6 | ug/kg | |
| 91-20-3 | Naphthalene | 3.2 U | 3.9 | 3.2 | ug/kg | |
| 103-65-1 | n-Propylbenzene | 1.6 U | 3.9 | 1.6 | ug/kg | |
| 100-42-5 | Styrene | 1.6 U | 3.9 | 1.6 | ug/kg | |
| 75-85-4 | Tert-Amyl Alcohol | 20 U | 39 | 20 | ug/kg | |
| 994-05-8 | Tert-Amyl Methyl Ether | 1.6 U | 3.9 | 1.6 | ug/kg | |
| 75-65-0 | Tert-Butyl Alcohol | 20 U | 39 | 20 | ug/kg | |
| 762-75-4 | tert-Butyl Formate | 20 U | 39 | 20 | ug/kg | |
| 630-20-6 | 1,1,1,2-Tetrachloroethane | 1.6 U | 3.9 | 1.6 | ug/kg | |
| 71-55-6 | 1,1,1-Trichloroethane | 1.6 U | 3.9 | 1.6 | ug/kg | |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 1.6 U | 3.9 | 1.6 | ug/kg | |
| 79-00-5 | 1,1,2-Trichloroethane | 2.0 U | 3.9 | 2.0 | ug/kg | |
| 87-61-6 | 1,2,3-Trichlorobenzene | 1.6 U | 3.9 | 1.6 | ug/kg | |
| 96-18-4 | 1,2,3-Trichloropropane | 2.0 U | 3.9 | 2.0 | ug/kg | |
| 120-82-1 | 1,2,4-Trichlorobenzene | 1.6 U | 3.9 | 1.6 | ug/kg | |
| 95-63-6 | 1,2,4-Trimethylbenzene | 1.6 U | 3.9 | 1.6 | ug/kg | |
| 108-67-8 | 1,3,5-Trimethylbenzene | 1.6 U | 3.9 | 1.6 | ug/kg | |
| 127-18-4 | Tetrachloroethylene | 1.6 U | 3.9 | 1.6 | ug/kg | |
| 108-88-3 | Toluene | 1.6 U | 3.9 | 1.6 | ug/kg | |
| 79-01-6 | Trichloroethylene | 1.6 U | 3.9 | 1.6 | ug/kg | |
| 75-69-4 | Trichlorofluoromethane | 3.2 U | 3.9 | 3.2 | ug/kg | |
| 75-01-4 | Vinyl chloride | 1.6 U | 3.9 | 1.6 | ug/kg | |
| 108-05-4 | Vinyl Acetate | 16 U | 20 | 16 | ug/kg | |
| 1330-20-7 | Xylene (total) | 4.7 U | 12 | 4.7 | ug/kg | |
| | m,p-Xylene | 3.2 U | 7.9 | 3.2 | ug/kg | |
| 95-47-6 | o-Xylene | 1.6 U | 3.9 | 1.6 | ug/kg | |

U = Not detected LOD - Limit of Detection
LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-SW07 | | |
| **Lab Sample ID:** | FA11487-1 | **Date Sampled:** | 01/08/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 01/09/14 |
| **Method:** | SW846 8260B | **Percent Solids:** | 83.4 |
| **Project:** | WE03, Camp Lejuene, NC | | |

**VOA List for NC, May 2012**

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 1868-53-7 | Dibromofluoromethane | 97% | | 75-124% |
| 2037-26-5 | Toluene-D8 | 101% | | 75-126% |
| 460-00-4 | 4-Bromofluorobenzene | 89% | | 71-133% |
| 17060-07-0 | 1,2-Dichloroethane-D4 | 102% | | 72-135% |

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LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-SW07 | | |
| **Lab Sample ID:** | FA11487-1 | **Date Sampled:** | 01/08/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 01/09/14 |
| **Method:** | SW846 8270D SW846 3550C | **Percent Solids:** | 83.4 |
| **Project:** | WE03, Camp Lejuene, NC | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | X032658.D | 1 | 01/10/14 | FS | 01/09/14 | OP50033 | SX1541 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 29.6 g | 1.0 ml |
| Run #2 | | |

**ABN List for NC, May 2012**

| CAS No. | Compound | Result | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|
| 65-85-0 | Benzoic Acid | 410 U | 1000 | 410 | ug/kg | |
| 95-57-8 | 2-Chlorophenol | 41 U | 200 | 41 | ug/kg | |
| 59-50-7 | 4-Chloro-3-methyl phenol | 41 U | 200 | 41 | ug/kg | |
| 120-83-2 | 2,4-Dichlorophenol | 41 U | 200 | 41 | ug/kg | |
| 105-67-9 | 2,4-Dimethylphenol | 81 U | 200 | 81 | ug/kg | |
| 51-28-5 | 2,4-Dinitrophenol | 810 U | 1000 | 810 | ug/kg | |
| 534-52-1 | 4,6-Dinitro-o-cresol | 160 U | 410 | 160 | ug/kg | |
| 95-48-7 | 2-Methylphenol | 41 U | 200 | 41 | ug/kg | |
| | 3&4-Methylphenol | 81 U | 200 | 81 | ug/kg | |
| 88-75-5 | 2-Nitrophenol | 41 U | 200 | 41 | ug/kg | |
| 100-02-7 | 4-Nitrophenol | 410 U | 1000 | 410 | ug/kg | |
| 87-86-5 | Pentachlorophenol | 410 U | 1000 | 410 | ug/kg | |
| 108-95-2 | Phenol | 41 U | 200 | 41 | ug/kg | |
| 88-06-2 | 2,4,6-Trichlorophenol | 41 U | 200 | 41 | ug/kg | |
| 83-32-9 | Acenaphthene | 41 U | 200 | 41 | ug/kg | |
| 208-96-8 | Acenaphthylene | 41 U | 200 | 41 | ug/kg | |
| 120-12-7 | Anthracene | 41 U | 200 | 41 | ug/kg | |
| 56-55-3 | Benzo(a)anthracene | 41 U | 200 | 41 | ug/kg | |
| 50-32-8 | Benzo(a)pyrene | 41 U | 200 | 41 | ug/kg | |
| 205-99-2 | Benzo(b)fluoranthene | 41 U | 200 | 41 | ug/kg | |
| 191-24-2 | Benzo(g,h,i)perylene | 41 U | 200 | 41 | ug/kg | |
| 207-08-9 | Benzo(k)fluoranthene | 41 U | 200 | 41 | ug/kg | |
| 101-55-3 | 4-Bromophenyl phenyl ether | 41 U | 200 | 41 | ug/kg | |
| 85-68-7 | Butyl benzyl phthalate | 81 U | 200 | 81 | ug/kg | |
| 100-51-6 | Benzyl Alcohol | 81 U | 200 | 81 | ug/kg | |
| 91-58-7 | 2-Chloronaphthalene | 41 U | 200 | 41 | ug/kg | |
| 106-47-8 | 4-Chloroaniline | 41 U | 200 | 41 | ug/kg | |
| 218-01-9 | Chrysene | 41 U | 200 | 41 | ug/kg | |
| 111-91-1 | bis(2-Chloroethoxy)methane | 41 U | 200 | 41 | ug/kg | |
| 111-44-4 | bis(2-Chloroethyl)ether | 41 U | 200 | 41 | ug/kg | |
| 108-60-1 | bis(2-Chloroisopropyl)ether | 41 U | 200 | 41 | ug/kg | |
| 7005-72-3 | 4-Chlorophenyl phenyl ether | 41 U | 200 | 41 | ug/kg | |

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E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-SW07 | | |
| **Lab Sample ID:** | FA11487-1 | **Date Sampled:** | 01/08/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 01/09/14 |
| **Method:** | SW846 8270D SW846 3550C | **Percent Solids:** | 83.4 |
| **Project:** | WE03, Camp Lejuene, NC | | |

**ABN List for NC, May 2012**

| CAS No. | Compound | Result | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|
| 95-50-1 | 1,2-Dichlorobenzene | 81 U | 200 | 81 | ug/kg | |
| 122-66-7 | 1,2-Diphenylhydrazine | 41 U | 200 | 41 | ug/kg | |
| 541-73-1 | 1,3-Dichlorobenzene | 81 U | 200 | 81 | ug/kg | |
| 106-46-7 | 1,4-Dichlorobenzene | 81 U | 200 | 81 | ug/kg | |
| 91-94-1 | 3,3'-Dichlorobenzidine | 81 U | 200 | 81 | ug/kg | |
| 53-70-3 | Dibenzo(a,h)anthracene | 41 U | 200 | 41 | ug/kg | |
| 132-64-9 | Dibenzofuran | 41 U | 200 | 41 | ug/kg | |
| 84-74-2 | Di-n-butyl phthalate | 160 U | 410 | 160 | ug/kg | |
| 117-84-0 | Di-n-octyl phthalate | 81 U | 200 | 81 | ug/kg | |
| 84-66-2 | Diethyl phthalate | 160 U | 410 | 160 | ug/kg | |
| 131-11-3 | Dimethyl phthalate | 81 U | 200 | 81 | ug/kg | |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 160 U | 410 | 160 | ug/kg | |
| 206-44-0 | Fluoranthene | 41 U | 200 | 41 | ug/kg | |
| 86-73-7 | Fluorene | 41 U | 200 | 41 | ug/kg | |
| 118-74-1 | Hexachlorobenzene | 41 U | 200 | 41 | ug/kg | |
| 87-68-3 | Hexachlorobutadiene | 81 U | 200 | 81 | ug/kg | |
| 77-47-4 | Hexachlorocyclopentadiene | 81 U | 200 | 81 | ug/kg | |
| 67-72-1 | Hexachloroethane | 81 U | 200 | 81 | ug/kg | |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 41 U | 200 | 41 | ug/kg | |
| 78-59-1 | Isophorone | 41 U | 200 | 41 | ug/kg | |
| 90-12-0 | 1-Methylnaphthalene | 41 U | 200 | 41 | ug/kg | |
| 91-57-6 | 2-Methylnaphthalene | 41 U | 200 | 41 | ug/kg | |
| 91-20-3 | Naphthalene | 41 U | 200 | 41 | ug/kg | |
| 98-95-3 | Nitrobenzene | 41 U | 200 | 41 | ug/kg | |
| 621-64-7 | N-Nitroso-di-n-propylamine [a] | 41 U | 200 | 41 | ug/kg | |
| 86-30-6 | N-Nitrosodiphenylamine | 81 U | 200 | 81 | ug/kg | |
| 85-01-8 | Phenanthrene | 41 U | 200 | 41 | ug/kg | |
| 129-00-0 | Pyrene | 41 U | 200 | 41 | ug/kg | |
| 120-82-1 | 1,2,4-Trichlorobenzene | 41 U | 200 | 41 | ug/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 367-12-4 | 2-Fluorophenol | 92% | | 40-102% |
| 4165-62-2 | Phenol-d5 | 90% | | 41-100% |
| 118-79-6 | 2,4,6-Tribromophenol | 97% | | 42-108% |
| 4165-60-0 | Nitrobenzene-d5 | 84% | | 40-105% |
| 321-60-8 | 2-Fluorobiphenyl | 88% | | 43-107% |
| 1718-51-0 | Terphenyl-d14 | 110% | | 45-119% |

(a) Associated BS recovery outside DOD QSM control limits.

U = Not detected LOD - Limit of Detection
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E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-SW07 | | |
| **Lab Sample ID:** | FA11487-1 | **Date Sampled:** | 01/08/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 01/09/14 |
| **Method:** | MADEP VPH REV 1.1 | **Percent Solids:** | 83.4 |
| **Project:** | WE03, Camp Lejuene, NC | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | UU006220.D | 1 | 01/10/14 | AH | n/a | n/a | GUU301 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume | Methanol Aliquot |
|---|---|---|---|
| Run #1 | 9.78 g | 5.1 ml | 100 ul |
| Run #2 | | | |

**MADEP VPH List**

| CAS No. | Compound | Result | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|
| | C5- C8 Aliphatics (Unadj.) | 1400 U | 4100 | 1400 [a] | ug/kg | |
| | C9- C12 Aliphatics (Unadj.) | 1400 U | 4100 | 1400 [a] | ug/kg | |
| | C9- C10 Aromatics (Unadj.) | 1400 U | 4100 | 1400 [a] | ug/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 460-00-4 | BFB | 205% [b] | | 70-130% |
| 460-00-4 | BFB | 184% [b] | | 70-130% |

(a) Value reported is laboratory DL (MDL).
(b) Outside control limits; however, sample is ND.

U = Not detected LOD - Limit of Detection
LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-SW07 | | |
| **Lab Sample ID:** | FA11487-1 | **Date Sampled:** | 01/08/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 01/09/14 |
| **Method:** | MADEP EPH REV 1.1 SW846 3546 | **Percent Solids:** | 83.4 |
| **Project:** | WE03, Camp Lejuene, NC | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | NN007295.D | 1 | 01/15/14 | NJ | 01/10/14 | OP50045 | GNN317 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 20.0 g | 2.0 ml |
| Run #2 | | |

**MAEPH List**

| CAS No. | Compound | Result | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|
| | C11-C22 Aromatics (Unadj.) | 9000 U | 12000 | 9000 [a] | ug/kg | |
| | C9-C18 Aliphatics | 6000 U | 12000 | 6000 [a] | ug/kg | |
| | C19-C36 Aliphatics | 6000 U | 12000 | 6000 [a] | ug/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 3386-33-2 | 1-Chlorooctadecane | 73% | | 40-140% |
| 580-13-2 | 2-Bromonaphthalene | 72% | | 40-140% |
| 84-15-1 | o-Terphenyl | 61% | | 40-140% |
| 321-60-8 | 2-Fluorobiphenyl | 82% | | 40-140% |

(a) Value reported is laboratory DL (MDL).

U = Not detected LOD - Limit of Detection
LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-SW08 | | |
| **Lab Sample ID:** | FA11487-2 | **Date Sampled:** | 01/08/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 01/09/14 |
| **Method:** | SW846 8260B | **Percent Solids:** | 84.7 |
| **Project:** | WE03, Camp Lejuene, NC | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | Y12541.D | 1 | 01/09/14 | EP | n/a | n/a | VY555 |
| Run #2 | | | | | | | |

| | Initial Weight |
|---|---|
| Run #1 | 7.77 g |
| Run #2 | |

**VOA List for NC, May 2012**

| CAS No. | Compound | Result | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|
| 67-64-1 | Acetone | 19 U | 38 | 19 | ug/kg | |
| 71-43-2 | Benzene | 1.5 U | 3.8 | 1.5 | ug/kg | |
| 108-86-1 | Bromobenzene | 1.5 U | 3.8 | 1.5 | ug/kg | |
| 74-97-5 | Bromochloromethane | 1.9 U | 3.8 | 1.9 | ug/kg | |
| 75-27-4 | Bromodichloromethane | 1.5 U | 3.8 | 1.5 | ug/kg | |
| 75-25-2 | Bromoform | 1.5 U | 3.8 | 1.5 | ug/kg | |
| 104-51-8 | n-Butylbenzene | 1.5 U | 3.8 | 1.5 | ug/kg | |
| 135-98-8 | sec-Butylbenzene | 1.5 U | 3.8 | 1.5 | ug/kg | |
| 98-06-6 | tert-Butylbenzene | 1.5 U | 3.8 | 1.5 | ug/kg | |
| 108-90-7 | Chlorobenzene | 1.5 U | 3.8 | 1.5 | ug/kg | |
| 75-00-3 | Chloroethane | 3.0 U | 3.8 | 3.0 | ug/kg | |
| 67-66-3 | Chloroform | 1.5 U | 3.8 | 1.5 | ug/kg | |
| 95-49-8 | o-Chlorotoluene | 1.5 U | 3.8 | 1.5 | ug/kg | |
| 106-43-4 | p-Chlorotoluene | 1.5 U | 3.8 | 1.5 | ug/kg | |
| 56-23-5 | Carbon tetrachloride | 1.5 U | 3.8 | 1.5 | ug/kg | |
| 75-34-3 | 1,1-Dichloroethane | 1.5 U | 3.8 | 1.5 | ug/kg | |
| 75-35-4 | 1,1-Dichloroethylene | 1.5 U | 3.8 | 1.5 | ug/kg | |
| 563-58-6 | 1,1-Dichloropropene | 1.5 U | 3.8 | 1.5 | ug/kg | |
| 106-93-4 | 1,2-Dibromoethane | 1.9 U | 3.8 | 1.9 | ug/kg | |
| 107-06-2 | 1,2-Dichloroethane | 1.5 U | 3.8 | 1.5 | ug/kg | |
| 78-87-5 | 1,2-Dichloropropane | 1.5 U | 3.8 | 1.5 | ug/kg | |
| 142-28-9 | 1,3-Dichloropropane | 1.5 U | 3.8 | 1.5 | ug/kg | |
| 108-20-3 | Di-Isopropyl ether | 1.5 U | 3.8 | 1.5 | ug/kg | |
| 594-20-7 | 2,2-Dichloropropane | 1.5 U | 3.8 | 1.5 | ug/kg | |
| 124-48-1 | Dibromochloromethane | 1.5 U | 3.8 | 1.5 | ug/kg | |
| 75-71-8 | Dichlorodifluoromethane | 1.5 U | 3.8 | 1.5 | ug/kg | |
| 156-59-2 | cis-1,2-Dichloroethylene | 1.5 U | 3.8 | 1.5 | ug/kg | |
| 10061-01-5 | cis-1,3-Dichloropropene | 1.5 U | 3.8 | 1.5 | ug/kg | |
| 541-73-1 | m-Dichlorobenzene | 1.5 U | 3.8 | 1.5 | ug/kg | |
| 95-50-1 | o-Dichlorobenzene | 1.5 U | 3.8 | 1.5 | ug/kg | |
| 106-46-7 | p-Dichlorobenzene | 1.5 U | 3.8 | 1.5 | ug/kg | |
| 156-60-5 | trans-1,2-Dichloroethylene | 1.5 U | 3.8 | 1.5 | ug/kg | |

U = Not detected LOD - Limit of Detection
LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-SW08 | | |
| **Lab Sample ID:** | FA11487-2 | **Date Sampled:** | 01/08/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 01/09/14 |
| **Method:** | SW846 8260B | **Percent Solids:** | 84.7 |
| **Project:** | WE03, Camp Lejuene, NC | | |

**VOA List for NC, May 2012**

| CAS No. | Compound | Result | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|
| 10061-02-6 | trans-1,3-Dichloropropene | 1.5 U | 3.8 | 1.5 | ug/kg | |
| 64-17-5 | Ethyl alcohol | 150 U | 300 | 150 | ug/kg | |
| 100-41-4 | Ethylbenzene | 1.5 U | 3.8 | 1.5 | ug/kg | |
| 637-92-3 | Ethyl tert-Butyl Ether | 1.5 U | 3.8 | 1.5 | ug/kg | |
| 591-78-6 | 2-Hexanone | 7.6 U | 19 | 7.6 | ug/kg | |
| 98-82-8 | Isopropylbenzene | 1.5 U | 3.8 | 1.5 | ug/kg | |
| 99-87-6 | p-Isopropyltoluene | 1.5 U | 3.8 | 1.5 | ug/kg | |
| 108-10-1 | 4-Methyl-2-pentanone | 7.6 U | 19 | 7.6 | ug/kg | |
| 74-83-9 | Methyl bromide | 3.0 U | 3.8 | 3.0 | ug/kg | |
| 74-87-3 | Methyl chloride | 3.0 U | 3.8 | 3.0 | ug/kg | |
| 75-09-2 | Methylene chloride | 3.8 U | 7.6 | 3.8 | ug/kg | |
| 78-93-3 | Methyl ethyl ketone | 7.6 U | 19 | 7.6 | ug/kg | |
| 1634-04-4 | Methyl Tert Butyl Ether | 1.5 U | 3.8 | 1.5 | ug/kg | |
| 91-20-3 | Naphthalene | 3.0 U | 3.8 | 3.0 | ug/kg | |
| 103-65-1 | n-Propylbenzene | 1.5 U | 3.8 | 1.5 | ug/kg | |
| 100-42-5 | Styrene | 1.5 U | 3.8 | 1.5 | ug/kg | |
| 75-85-4 | Tert-Amyl Alcohol | 19 U | 38 | 19 | ug/kg | |
| 994-05-8 | Tert-Amyl Methyl Ether | 1.5 U | 3.8 | 1.5 | ug/kg | |
| 75-65-0 | Tert-Butyl Alcohol | 19 U | 38 | 19 | ug/kg | |
| 762-75-4 | tert-Butyl Formate | 19 U | 38 | 19 | ug/kg | |
| 630-20-6 | 1,1,1,2-Tetrachloroethane | 1.5 U | 3.8 | 1.5 | ug/kg | |
| 71-55-6 | 1,1,1-Trichloroethane | 1.5 U | 3.8 | 1.5 | ug/kg | |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 1.5 U | 3.8 | 1.5 | ug/kg | |
| 79-00-5 | 1,1,2-Trichloroethane | 1.9 U | 3.8 | 1.9 | ug/kg | |
| 87-61-6 | 1,2,3-Trichlorobenzene | 1.5 U | 3.8 | 1.5 | ug/kg | |
| 96-18-4 | 1,2,3-Trichloropropane | 1.9 U | 3.8 | 1.9 | ug/kg | |
| 120-82-1 | 1,2,4-Trichlorobenzene | 1.5 U | 3.8 | 1.5 | ug/kg | |
| 95-63-6 | 1,2,4-Trimethylbenzene | 1.5 U | 3.8 | 1.5 | ug/kg | |
| 108-67-8 | 1,3,5-Trimethylbenzene | 1.5 U | 3.8 | 1.5 | ug/kg | |
| 127-18-4 | Tetrachloroethylene | 1.5 U | 3.8 | 1.5 | ug/kg | |
| 108-88-3 | Toluene | 1.5 U | 3.8 | 1.5 | ug/kg | |
| 79-01-6 | Trichloroethylene | 1.5 U | 3.8 | 1.5 | ug/kg | |
| 75-69-4 | Trichlorofluoromethane | 3.0 U | 3.8 | 3.0 | ug/kg | |
| 75-01-4 | Vinyl chloride | 1.5 U | 3.8 | 1.5 | ug/kg | |
| 108-05-4 | Vinyl Acetate | 15 U | 19 | 15 | ug/kg | |
| 1330-20-7 | Xylene (total) | 4.6 U | 11 | 4.6 | ug/kg | |
| | m,p-Xylene | 3.0 U | 7.6 | 3.0 | ug/kg | |
| 95-47-6 | o-Xylene | 1.5 U | 3.8 | 1.5 | ug/kg | |

U = Not detected LOD - Limit of Detection
LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-SW08 | | |
| **Lab Sample ID:** | FA11487-2 | **Date Sampled:** | 01/08/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 01/09/14 |
| **Method:** | SW846 8260B | **Percent Solids:** | 84.7 |
| **Project:** | WE03, Camp Lejuene, NC | | |

**VOA List for NC, May 2012**

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 1868-53-7 | Dibromofluoromethane | 102% | | 75-124% |
| 2037-26-5 | Toluene-D8 | 97% | | 75-126% |
| 460-00-4 | 4-Bromofluorobenzene | 109% | | 71-133% |
| 17060-07-0 | 1,2-Dichloroethane-D4 | 111% | | 72-135% |

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J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-SW08 | | |
| **Lab Sample ID:** | FA11487-2 | **Date Sampled:** | 01/08/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 01/09/14 |
| **Method:** | SW846 8270D SW846 3550C | **Percent Solids:** | 84.7 |
| **Project:** | WE03, Camp Lejuene, NC | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | X032659.D | 1 | 01/10/14 | FS | 01/09/14 | OP50033 | SX1541 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 30.1 g | 1.0 ml |
| Run #2 | | |

**ABN List for NC, May 2012**

| CAS No. | Compound | Result | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|
| 65-85-0 | Benzoic Acid | 390 U | 980 | 390 | ug/kg | |
| 95-57-8 | 2-Chlorophenol | 39 U | 200 | 39 | ug/kg | |
| 59-50-7 | 4-Chloro-3-methyl phenol | 39 U | 200 | 39 | ug/kg | |
| 120-83-2 | 2,4-Dichlorophenol | 39 U | 200 | 39 | ug/kg | |
| 105-67-9 | 2,4-Dimethylphenol | 78 U | 200 | 78 | ug/kg | |
| 51-28-5 | 2,4-Dinitrophenol | 780 U | 980 | 780 | ug/kg | |
| 534-52-1 | 4,6-Dinitro-o-cresol | 160 U | 390 | 160 | ug/kg | |
| 95-48-7 | 2-Methylphenol | 39 U | 200 | 39 | ug/kg | |
| | 3&4-Methylphenol | 78 U | 200 | 78 | ug/kg | |
| 88-75-5 | 2-Nitrophenol | 39 U | 200 | 39 | ug/kg | |
| 100-02-7 | 4-Nitrophenol | 390 U | 980 | 390 | ug/kg | |
| 87-86-5 | Pentachlorophenol | 390 U | 980 | 390 | ug/kg | |
| 108-95-2 | Phenol | 39 U | 200 | 39 | ug/kg | |
| 88-06-2 | 2,4,6-Trichlorophenol | 39 U | 200 | 39 | ug/kg | |
| 83-32-9 | Acenaphthene | 39 U | 200 | 39 | ug/kg | |
| 208-96-8 | Acenaphthylene | 39 U | 200 | 39 | ug/kg | |
| 120-12-7 | Anthracene | 39 U | 200 | 39 | ug/kg | |
| 56-55-3 | Benzo(a)anthracene | 39 U | 200 | 39 | ug/kg | |
| 50-32-8 | Benzo(a)pyrene | 39 U | 200 | 39 | ug/kg | |
| 205-99-2 | Benzo(b)fluoranthene | 39 U | 200 | 39 | ug/kg | |
| 191-24-2 | Benzo(g,h,i)perylene | 39 U | 200 | 39 | ug/kg | |
| 207-08-9 | Benzo(k)fluoranthene | 39 U | 200 | 39 | ug/kg | |
| 101-55-3 | 4-Bromophenyl phenyl ether | 39 U | 200 | 39 | ug/kg | |
| 85-68-7 | Butyl benzyl phthalate | 78 U | 200 | 78 | ug/kg | |
| 100-51-6 | Benzyl Alcohol | 78 U | 200 | 78 | ug/kg | |
| 91-58-7 | 2-Chloronaphthalene | 39 U | 200 | 39 | ug/kg | |
| 106-47-8 | 4-Chloroaniline | 39 U | 200 | 39 | ug/kg | |
| 218-01-9 | Chrysene | 39 U | 200 | 39 | ug/kg | |
| 111-91-1 | bis(2-Chloroethoxy)methane | 39 U | 200 | 39 | ug/kg | |
| 111-44-4 | bis(2-Chloroethyl)ether | 39 U | 200 | 39 | ug/kg | |
| 108-60-1 | bis(2-Chloroisopropyl)ether | 39 U | 200 | 39 | ug/kg | |
| 7005-72-3 | 4-Chlorophenyl phenyl ether | 39 U | 200 | 39 | ug/kg | |

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J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-SW08 | | |
| **Lab Sample ID:** | FA11487-2 | **Date Sampled:** | 01/08/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 01/09/14 |
| **Method:** | SW846 8270D SW846 3550C | **Percent Solids:** | 84.7 |
| **Project:** | WE03, Camp Lejuene, NC | | |

**ABN List for NC, May 2012**

| CAS No. | Compound | Result | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|
| 95-50-1 | 1,2-Dichlorobenzene | 78 U | 200 | 78 | ug/kg | |
| 122-66-7 | 1,2-Diphenylhydrazine | 39 U | 200 | 39 | ug/kg | |
| 541-73-1 | 1,3-Dichlorobenzene | 78 U | 200 | 78 | ug/kg | |
| 106-46-7 | 1,4-Dichlorobenzene | 78 U | 200 | 78 | ug/kg | |
| 91-94-1 | 3,3'-Dichlorobenzidine | 78 U | 200 | 78 | ug/kg | |
| 53-70-3 | Dibenzo(a,h)anthracene | 39 U | 200 | 39 | ug/kg | |
| 132-64-9 | Dibenzofuran | 39 U | 200 | 39 | ug/kg | |
| 84-74-2 | Di-n-butyl phthalate | 160 U | 390 | 160 | ug/kg | |
| 117-84-0 | Di-n-octyl phthalate | 78 U | 200 | 78 | ug/kg | |
| 84-66-2 | Diethyl phthalate | 160 U | 390 | 160 | ug/kg | |
| 131-11-3 | Dimethyl phthalate | 78 U | 200 | 78 | ug/kg | |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 160 U | 390 | 160 | ug/kg | |
| 206-44-0 | Fluoranthene | 39 U | 200 | 39 | ug/kg | |
| 86-73-7 | Fluorene | 39 U | 200 | 39 | ug/kg | |
| 118-74-1 | Hexachlorobenzene | 39 U | 200 | 39 | ug/kg | |
| 87-68-3 | Hexachlorobutadiene | 78 U | 200 | 78 | ug/kg | |
| 77-47-4 | Hexachlorocyclopentadiene | 78 U | 200 | 78 | ug/kg | |
| 67-72-1 | Hexachloroethane | 78 U | 200 | 78 | ug/kg | |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 39 U | 200 | 39 | ug/kg | |
| 78-59-1 | Isophorone | 39 U | 200 | 39 | ug/kg | |
| 90-12-0 | 1-Methylnaphthalene | 39 U | 200 | 39 | ug/kg | |
| 91-57-6 | 2-Methylnaphthalene | 39 U | 200 | 39 | ug/kg | |
| 91-20-3 | Naphthalene | 39 U | 200 | 39 | ug/kg | |
| 98-95-3 | Nitrobenzene | 39 U | 200 | 39 | ug/kg | |
| 621-64-7 | N-Nitroso-di-n-propylamine [a] | 39 U | 200 | 39 | ug/kg | |
| 86-30-6 | N-Nitrosodiphenylamine | 78 U | 200 | 78 | ug/kg | |
| 85-01-8 | Phenanthrene | 39 U | 200 | 39 | ug/kg | |
| 129-00-0 | Pyrene | 39 U | 200 | 39 | ug/kg | |
| 120-82-1 | 1,2,4-Trichlorobenzene | 39 U | 200 | 39 | ug/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 367-12-4 | 2-Fluorophenol | 101% | | 40-102% |
| 4165-62-2 | Phenol-d5 | 99% | | 41-100% |
| 118-79-6 | 2,4,6-Tribromophenol | 104% | | 42-108% |
| 4165-60-0 | Nitrobenzene-d5 | 91% | | 40-105% |
| 321-60-8 | 2-Fluorobiphenyl | 94% | | 43-107% |
| 1718-51-0 | Terphenyl-d14 | 120% [b] | | 45-119% |

(a) Associated BS recovery outside DOD QSM control limits.

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LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-SW08 | | |
| **Lab Sample ID:** | FA11487-2 | **Date Sampled:** | 01/08/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 01/09/14 |
| **Method:** | SW846 8270D SW846 3550C | **Percent Solids:** | 84.7 |
| **Project:** | WE03, Camp Lejuene, NC | | |

**ABN List for NC, May 2012**

| CAS No. | Compound | Result | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|

(b) Outside control limits. However, sample was ND.

U = Not detected LOD - Limit of Detection
LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-SW08 | | |
| **Lab Sample ID:** | FA11487-2 | **Date Sampled:** | 01/08/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 01/09/14 |
| **Method:** | MADEP VPH REV 1.1 | **Percent Solids:** | 84.7 |
| **Project:** | WE03, Camp Lejuene, NC | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | UU006221.D | 1 | 01/10/14 | AH | n/a | n/a | GUU301 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume | Methanol Aliquot |
|---|---|---|---|
| Run #1 | 11.0 g | 5.1 ml | 100 ul |
| Run #2 | | | |

**MADEP VPH List**

| CAS No. | Compound | Result | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|
| | C5- C8 Aliphatics (Unadj.) | 1300 U | 3600 | 1300 [a] | ug/kg | |
| | C9- C12 Aliphatics (Unadj.) | 1300 U | 3600 | 1300 [a] | ug/kg | |
| | C9- C10 Aromatics (Unadj.) | 1300 U | 3600 | 1300 [a] | ug/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 460-00-4 | BFB | 181% [b] | | 70-130% |
| 460-00-4 | BFB | 162% [b] | | 70-130% |

(a) Value reported is laboratory DL (MDL).
(b) Outside control limits; however, sample is ND.

U = Not detected LOD - Limit of Detection
LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-SW08 | | |
| **Lab Sample ID:** | FA11487-2 | **Date Sampled:** | 01/08/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 01/09/14 |
| **Method:** | MADEP EPH REV 1.1 SW846 3546 | **Percent Solids:** | 84.7 |
| **Project:** | WE03, Camp Lejuene, NC | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | NN007296.D | 1 | 01/15/14 | NJ | 01/10/14 | OP50045 | GNN317 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 20.0 g | 2.0 ml |
| Run #2 | | |

**MAEPH List**

| CAS No. | Compound | Result | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|
| | C11-C22 Aromatics (Unadj.) | 8900 U | 12000 | 8900 [a] | ug/kg | |
| | C9-C18 Aliphatics | 5900 U | 12000 | 5900 [a] | ug/kg | |
| | C19-C36 Aliphatics | 5900 U | 12000 | 5900 [a] | ug/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 3386-33-2 | 1-Chlorooctadecane | 62% | | 40-140% |
| 580-13-2 | 2-Bromonaphthalene | 68% | | 40-140% |
| 84-15-1 | o-Terphenyl | 59% | | 40-140% |
| 321-60-8 | 2-Fluorobiphenyl | 75% | | 40-140% |

(a) Value reported is laboratory DL (MDL).

U = Not detected LOD - Limit of Detection
LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-SW08A | | |
| **Lab Sample ID:** | FA11487-3 | **Date Sampled:** | 01/08/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 01/09/14 |
| **Method:** | SW846 8260B | **Percent Solids:** | 84.7 |
| **Project:** | WE03, Camp Lejuene, NC | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | Y12542.D | 1 | 01/09/14 | EP | n/a | n/a | VY555 |
| Run #2 | | | | | | | |

| | Initial Weight |
|---|---|
| Run #1 | 9.22 g |
| Run #2 | |

**VOA List for NC, May 2012**

| CAS No. | Compound | Result | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|
| 67-64-1 | Acetone | 16 U | 32 | 16 | ug/kg | |
| 71-43-2 | Benzene | 1.3 U | 3.2 | 1.3 | ug/kg | |
| 108-86-1 | Bromobenzene | 1.3 U | 3.2 | 1.3 | ug/kg | |
| 74-97-5 | Bromochloromethane | 1.6 U | 3.2 | 1.6 | ug/kg | |
| 75-27-4 | Bromodichloromethane | 1.3 U | 3.2 | 1.3 | ug/kg | |
| 75-25-2 | Bromoform | 1.3 U | 3.2 | 1.3 | ug/kg | |
| 104-51-8 | n-Butylbenzene | 1.3 U | 3.2 | 1.3 | ug/kg | |
| 135-98-8 | sec-Butylbenzene | 1.3 U | 3.2 | 1.3 | ug/kg | |
| 98-06-6 | tert-Butylbenzene | 1.3 U | 3.2 | 1.3 | ug/kg | |
| 108-90-7 | Chlorobenzene | 1.3 U | 3.2 | 1.3 | ug/kg | |
| 75-00-3 | Chloroethane | 2.6 U | 3.2 | 2.6 | ug/kg | |
| 67-66-3 | Chloroform | 1.3 U | 3.2 | 1.3 | ug/kg | |
| 95-49-8 | o-Chlorotoluene | 1.3 U | 3.2 | 1.3 | ug/kg | |
| 106-43-4 | p-Chlorotoluene | 1.3 U | 3.2 | 1.3 | ug/kg | |
| 56-23-5 | Carbon tetrachloride | 1.3 U | 3.2 | 1.3 | ug/kg | |
| 75-34-3 | 1,1-Dichloroethane | 1.3 U | 3.2 | 1.3 | ug/kg | |
| 75-35-4 | 1,1-Dichloroethylene | 1.3 U | 3.2 | 1.3 | ug/kg | |
| 563-58-6 | 1,1-Dichloropropene | 1.3 U | 3.2 | 1.3 | ug/kg | |
| 106-93-4 | 1,2-Dibromoethane | 1.6 U | 3.2 | 1.6 | ug/kg | |
| 107-06-2 | 1,2-Dichloroethane | 1.3 U | 3.2 | 1.3 | ug/kg | |
| 78-87-5 | 1,2-Dichloropropane | 1.3 U | 3.2 | 1.3 | ug/kg | |
| 142-28-9 | 1,3-Dichloropropane | 1.3 U | 3.2 | 1.3 | ug/kg | |
| 108-20-3 | Di-Isopropyl ether | 1.3 U | 3.2 | 1.3 | ug/kg | |
| 594-20-7 | 2,2-Dichloropropane | 1.3 U | 3.2 | 1.3 | ug/kg | |
| 124-48-1 | Dibromochloromethane | 1.3 U | 3.2 | 1.3 | ug/kg | |
| 75-71-8 | Dichlorodifluoromethane | 1.3 U | 3.2 | 1.3 | ug/kg | |
| 156-59-2 | cis-1,2-Dichloroethylene | 1.3 U | 3.2 | 1.3 | ug/kg | |
| 10061-01-5 | cis-1,3-Dichloropropene | 1.3 U | 3.2 | 1.3 | ug/kg | |
| 541-73-1 | m-Dichlorobenzene | 1.3 U | 3.2 | 1.3 | ug/kg | |
| 95-50-1 | o-Dichlorobenzene | 1.3 U | 3.2 | 1.3 | ug/kg | |
| 106-46-7 | p-Dichlorobenzene | 1.3 U | 3.2 | 1.3 | ug/kg | |
| 156-60-5 | trans-1,2-Dichloroethylene | 1.3 U | 3.2 | 1.3 | ug/kg | |

U = Not detected LOD - Limit of Detection
LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-SW08A | | |
| **Lab Sample ID:** | FA11487-3 | **Date Sampled:** | 01/08/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 01/09/14 |
| **Method:** | SW846 8260B | **Percent Solids:** | 84.7 |
| **Project:** | WE03, Camp Lejuene, NC | | |

**VOA List for NC, May 2012**

| CAS No. | Compound | Result | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|
| 10061-02-6 | trans-1,3-Dichloropropene | 1.3 U | 3.2 | 1.3 | ug/kg | |
| 64-17-5 | Ethyl alcohol | 130 U | 260 | 130 | ug/kg | |
| 100-41-4 | Ethylbenzene | 1.3 U | 3.2 | 1.3 | ug/kg | |
| 637-92-3 | Ethyl tert-Butyl Ether | 1.3 U | 3.2 | 1.3 | ug/kg | |
| 591-78-6 | 2-Hexanone | 6.4 U | 16 | 6.4 | ug/kg | |
| 98-82-8 | Isopropylbenzene | 1.3 U | 3.2 | 1.3 | ug/kg | |
| 99-87-6 | p-Isopropyltoluene | 1.3 U | 3.2 | 1.3 | ug/kg | |
| 108-10-1 | 4-Methyl-2-pentanone | 6.4 U | 16 | 6.4 | ug/kg | |
| 74-83-9 | Methyl bromide | 2.6 U | 3.2 | 2.6 | ug/kg | |
| 74-87-3 | Methyl chloride | 2.6 U | 3.2 | 2.6 | ug/kg | |
| 75-09-2 | Methylene chloride | 3.2 U | 6.4 | 3.2 | ug/kg | |
| 78-93-3 | Methyl ethyl ketone | 6.4 U | 16 | 6.4 | ug/kg | |
| 1634-04-4 | Methyl Tert Butyl Ether | 1.3 U | 3.2 | 1.3 | ug/kg | |
| 91-20-3 | Naphthalene | 2.6 U | 3.2 | 2.6 | ug/kg | |
| 103-65-1 | n-Propylbenzene | 1.3 U | 3.2 | 1.3 | ug/kg | |
| 100-42-5 | Styrene | 1.3 U | 3.2 | 1.3 | ug/kg | |
| 75-85-4 | Tert-Amyl Alcohol | 16 U | 32 | 16 | ug/kg | |
| 994-05-8 | Tert-Amyl Methyl Ether | 1.3 U | 3.2 | 1.3 | ug/kg | |
| 75-65-0 | Tert-Butyl Alcohol | 16 U | 32 | 16 | ug/kg | |
| 762-75-4 | tert-Butyl Formate | 16 U | 32 | 16 | ug/kg | |
| 630-20-6 | 1,1,1,2-Tetrachloroethane | 1.3 U | 3.2 | 1.3 | ug/kg | |
| 71-55-6 | 1,1,1-Trichloroethane | 1.3 U | 3.2 | 1.3 | ug/kg | |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 1.3 U | 3.2 | 1.3 | ug/kg | |
| 79-00-5 | 1,1,2-Trichloroethane | 1.6 U | 3.2 | 1.6 | ug/kg | |
| 87-61-6 | 1,2,3-Trichlorobenzene | 1.3 U | 3.2 | 1.3 | ug/kg | |
| 96-18-4 | 1,2,3-Trichloropropane | 1.6 U | 3.2 | 1.6 | ug/kg | |
| 120-82-1 | 1,2,4-Trichlorobenzene | 1.3 U | 3.2 | 1.3 | ug/kg | |
| 95-63-6 | 1,2,4-Trimethylbenzene | 1.3 U | 3.2 | 1.3 | ug/kg | |
| 108-67-8 | 1,3,5-Trimethylbenzene | 1.3 U | 3.2 | 1.3 | ug/kg | |
| 127-18-4 | Tetrachloroethylene | 1.3 U | 3.2 | 1.3 | ug/kg | |
| 108-88-3 | Toluene | 1.3 U | 3.2 | 1.3 | ug/kg | |
| 79-01-6 | Trichloroethylene | 1.3 U | 3.2 | 1.3 | ug/kg | |
| 75-69-4 | Trichlorofluoromethane | 2.6 U | 3.2 | 2.6 | ug/kg | |
| 75-01-4 | Vinyl chloride | 1.3 U | 3.2 | 1.3 | ug/kg | |
| 108-05-4 | Vinyl Acetate | 13 U | 16 | 13 | ug/kg | |
| 1330-20-7 | Xylene (total) | 3.8 U | 9.6 | 3.8 | ug/kg | |
| | m,p-Xylene | 2.6 U | 6.4 | 2.6 | ug/kg | |
| 95-47-6 | o-Xylene | 1.3 U | 3.2 | 1.3 | ug/kg | |

U = Not detected LOD - Limit of Detection
LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-SW08A | | |
| **Lab Sample ID:** | FA11487-3 | **Date Sampled:** | 01/08/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 01/09/14 |
| **Method:** | SW846 8260B | **Percent Solids:** | 84.7 |
| **Project:** | WE03, Camp Lejuene, NC | | |

**VOA List for NC, May 2012**

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 1868-53-7 | Dibromofluoromethane | 102% | | 75-124% |
| 2037-26-5 | Toluene-D8 | 89% | | 75-126% |
| 460-00-4 | 4-Bromofluorobenzene | 103% | | 71-133% |
| 17060-07-0 | 1,2-Dichloroethane-D4 | 107% | | 72-135% |

U = Not detected LOD - Limit of Detection
LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-SW08A | | |
| **Lab Sample ID:** | FA11487-3 | **Date Sampled:** | 01/08/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 01/09/14 |
| **Method:** | SW846 8270D SW846 3550C | **Percent Solids:** | 84.7 |
| **Project:** | WE03, Camp Lejuene, NC | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | X032660.D | 1 | 01/10/14 | FS | 01/09/14 | OP50033 | SX1541 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 29.6 g | 1.0 ml |
| Run #2 | | |

**ABN List for NC, May 2012**

| CAS No. | Compound | Result | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|
| 65-85-0 | Benzoic Acid | 400 U | 1000 | 400 | ug/kg | |
| 95-57-8 | 2-Chlorophenol | 40 U | 200 | 40 | ug/kg | |
| 59-50-7 | 4-Chloro-3-methyl phenol | 40 U | 200 | 40 | ug/kg | |
| 120-83-2 | 2,4-Dichlorophenol | 40 U | 200 | 40 | ug/kg | |
| 105-67-9 | 2,4-Dimethylphenol | 80 U | 200 | 80 | ug/kg | |
| 51-28-5 | 2,4-Dinitrophenol | 800 U | 1000 | 800 | ug/kg | |
| 534-52-1 | 4,6-Dinitro-o-cresol | 160 U | 400 | 160 | ug/kg | |
| 95-48-7 | 2-Methylphenol | 40 U | 200 | 40 | ug/kg | |
| | 3&4-Methylphenol | 80 U | 200 | 80 | ug/kg | |
| 88-75-5 | 2-Nitrophenol | 40 U | 200 | 40 | ug/kg | |
| 100-02-7 | 4-Nitrophenol | 400 U | 1000 | 400 | ug/kg | |
| 87-86-5 | Pentachlorophenol | 400 U | 1000 | 400 | ug/kg | |
| 108-95-2 | Phenol | 40 U | 200 | 40 | ug/kg | |
| 88-06-2 | 2,4,6-Trichlorophenol | 40 U | 200 | 40 | ug/kg | |
| 83-32-9 | Acenaphthene | 40 U | 200 | 40 | ug/kg | |
| 208-96-8 | Acenaphthylene | 40 U | 200 | 40 | ug/kg | |
| 120-12-7 | Anthracene | 40 U | 200 | 40 | ug/kg | |
| 56-55-3 | Benzo(a)anthracene | 40 U | 200 | 40 | ug/kg | |
| 50-32-8 | Benzo(a)pyrene | 40 U | 200 | 40 | ug/kg | |
| 205-99-2 | Benzo(b)fluoranthene | 40 U | 200 | 40 | ug/kg | |
| 191-24-2 | Benzo(g,h,i)perylene | 40 U | 200 | 40 | ug/kg | |
| 207-08-9 | Benzo(k)fluoranthene | 40 U | 200 | 40 | ug/kg | |
| 101-55-3 | 4-Bromophenyl phenyl ether | 40 U | 200 | 40 | ug/kg | |
| 85-68-7 | Butyl benzyl phthalate | 80 U | 200 | 80 | ug/kg | |
| 100-51-6 | Benzyl Alcohol | 80 U | 200 | 80 | ug/kg | |
| 91-58-7 | 2-Chloronaphthalene | 40 U | 200 | 40 | ug/kg | |
| 106-47-8 | 4-Chloroaniline | 40 U | 200 | 40 | ug/kg | |
| 218-01-9 | Chrysene | 40 U | 200 | 40 | ug/kg | |
| 111-91-1 | bis(2-Chloroethoxy)methane | 40 U | 200 | 40 | ug/kg | |
| 111-44-4 | bis(2-Chloroethyl)ether | 40 U | 200 | 40 | ug/kg | |
| 108-60-1 | bis(2-Chloroisopropyl)ether | 40 U | 200 | 40 | ug/kg | |
| 7005-72-3 | 4-Chlorophenyl phenyl ether | 40 U | 200 | 40 | ug/kg | |

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E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-SW08A | | |
| **Lab Sample ID:** | FA11487-3 | **Date Sampled:** | 01/08/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 01/09/14 |
| **Method:** | SW846 8270D SW846 3550C | **Percent Solids:** | 84.7 |
| **Project:** | WE03, Camp Lejuene, NC | | |

**ABN List for NC, May 2012**

| CAS No. | Compound | Result | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|
| 95-50-1 | 1,2-Dichlorobenzene | 80 U | 200 | 80 | ug/kg | |
| 122-66-7 | 1,2-Diphenylhydrazine | 40 U | 200 | 40 | ug/kg | |
| 541-73-1 | 1,3-Dichlorobenzene | 80 U | 200 | 80 | ug/kg | |
| 106-46-7 | 1,4-Dichlorobenzene | 80 U | 200 | 80 | ug/kg | |
| 91-94-1 | 3,3'-Dichlorobenzidine | 80 U | 200 | 80 | ug/kg | |
| 53-70-3 | Dibenzo(a,h)anthracene | 40 U | 200 | 40 | ug/kg | |
| 132-64-9 | Dibenzofuran | 40 U | 200 | 40 | ug/kg | |
| 84-74-2 | Di-n-butyl phthalate | 160 U | 400 | 160 | ug/kg | |
| 117-84-0 | Di-n-octyl phthalate | 80 U | 200 | 80 | ug/kg | |
| 84-66-2 | Diethyl phthalate | 160 U | 400 | 160 | ug/kg | |
| 131-11-3 | Dimethyl phthalate | 80 U | 200 | 80 | ug/kg | |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 160 U | 400 | 160 | ug/kg | |
| 206-44-0 | Fluoranthene | 40 U | 200 | 40 | ug/kg | |
| 86-73-7 | Fluorene | 40 U | 200 | 40 | ug/kg | |
| 118-74-1 | Hexachlorobenzene | 40 U | 200 | 40 | ug/kg | |
| 87-68-3 | Hexachlorobutadiene | 80 U | 200 | 80 | ug/kg | |
| 77-47-4 | Hexachlorocyclopentadiene | 80 U | 200 | 80 | ug/kg | |
| 67-72-1 | Hexachloroethane | 80 U | 200 | 80 | ug/kg | |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 40 U | 200 | 40 | ug/kg | |
| 78-59-1 | Isophorone | 40 U | 200 | 40 | ug/kg | |
| 90-12-0 | 1-Methylnaphthalene | 40 U | 200 | 40 | ug/kg | |
| 91-57-6 | 2-Methylnaphthalene | 40 U | 200 | 40 | ug/kg | |
| 91-20-3 | Naphthalene | 40 U | 200 | 40 | ug/kg | |
| 98-95-3 | Nitrobenzene | 40 U | 200 | 40 | ug/kg | |
| 621-64-7 | N-Nitroso-di-n-propylamine [a] | 40 U | 200 | 40 | ug/kg | |
| 86-30-6 | N-Nitrosodiphenylamine | 80 U | 200 | 80 | ug/kg | |
| 85-01-8 | Phenanthrene | 40 U | 200 | 40 | ug/kg | |
| 129-00-0 | Pyrene | 40 U | 200 | 40 | ug/kg | |
| 120-82-1 | 1,2,4-Trichlorobenzene | 40 U | 200 | 40 | ug/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 367-12-4 | 2-Fluorophenol | 89% | | 40-102% |
| 4165-62-2 | Phenol-d5 | 86% | | 41-100% |
| 118-79-6 | 2,4,6-Tribromophenol | 90% | | 42-108% |
| 4165-60-0 | Nitrobenzene-d5 | 81% | | 40-105% |
| 321-60-8 | 2-Fluorobiphenyl | 82% | | 43-107% |
| 1718-51-0 | Terphenyl-d14 | 105% | | 45-119% |

(a) Associated BS recovery outside DOD QSM control limits.

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J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-SW08A | | |
| **Lab Sample ID:** | FA11487-3 | **Date Sampled:** | 01/08/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 01/09/14 |
| **Method:** | MADEP VPH REV 1.1 | **Percent Solids:** | 84.7 |
| **Project:** | WE03, Camp Lejuene, NC | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | UU006222.D | 1 | 01/10/14 | AH | n/a | n/a | GUU301 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume | Methanol Aliquot |
|---|---|---|---|
| Run #1 | 8.35 g | 5.1 ml | 100 ul |
| Run #2 | | | |

**MADEP VPH List**

| CAS No. | Compound | Result | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|
| | C5- C8 Aliphatics (Unadj.) | 1600 U | 4500 | 1600 [a] | ug/kg | |
| | C9- C12 Aliphatics (Unadj.) | 1600 U | 4500 | 1600 [a] | ug/kg | |
| | C9- C10 Aromatics (Unadj.) | 1600 U | 4500 | 1600 [a] | ug/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 460-00-4 | BFB | 199% [b] | | 70-130% |
| 460-00-4 | BFB | 178% [b] | | 70-130% |

(a) Value reported is laboratory DL (MDL).
(b) Outside control limits; however, sample is ND.

U = Not detected LOD - Limit of Detection
LOQ = Limit of Quantitation
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J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-SW08A | | |
| **Lab Sample ID:** | FA11487-3 | **Date Sampled:** | 01/08/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 01/09/14 |
| **Method:** | MADEP EPH REV 1.1 SW846 3546 | **Percent Solids:** | 84.7 |
| **Project:** | WE03, Camp Lejuene, NC | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | NN007297.D | 1 | 01/15/14 | NJ | 01/10/14 | OP50045 | GNN317 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 20.0 g | 2.0 ml |
| Run #2 | | |

**MAEPH List**

| CAS No. | Compound | Result | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|
| | C11-C22 Aromatics (Unadj.) | 8900 U | 12000 | 8900 [a] | ug/kg | |
| | C9-C18 Aliphatics | 5900 U | 12000 | 5900 [a] | ug/kg | |
| | C19-C36 Aliphatics | 5900 U | 12000 | 5900 [a] | ug/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 3386-33-2 | 1-Chlorooctadecane | 66% | | 40-140% |
| 580-13-2 | 2-Bromonaphthalene | 79% | | 40-140% |
| 84-15-1 | o-Terphenyl | 70% | | 40-140% |
| 321-60-8 | 2-Fluorobiphenyl | 87% | | 40-140% |

(a) Value reported is laboratory DL (MDL).

U = Not detected LOD - Limit of Detection
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E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-SW09 | | |
| **Lab Sample ID:** | FA11487-4 | **Date Sampled:** | 01/08/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 01/09/14 |
| **Method:** | SW846 8260B | **Percent Solids:** | 85.0 |
| **Project:** | WE03, Camp Lejuene, NC | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | Y12539.D | 1 | 01/09/14 | EP | n/a | n/a | VY555 |
| Run #2 | | | | | | | |

| | Initial Weight | Methanol Aliquot |
|---|---|---|
| Run #1 | 13.1 g | 100 ul |
| Run #2 | | |

**VOA List for NC, May 2012**

| CAS No. | Compound | Result | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|
| 67-64-1 | Acetone | 780 U | 1600 | 780 | ug/kg | |
| 71-43-2 | Benzene | 62 U | 160 | 62 | ug/kg | |
| 108-86-1 | Bromobenzene | 62 U | 160 | 62 | ug/kg | |
| 74-97-5 | Bromochloromethane | 78 U | 160 | 78 | ug/kg | |
| 75-27-4 | Bromodichloromethane | 62 U | 160 | 62 | ug/kg | |
| 75-25-2 | Bromoform | 62 U | 160 | 62 | ug/kg | |
| 104-51-8 | n-Butylbenzene | 125 | 160 | 62 | ug/kg | J |
| 135-98-8 | sec-Butylbenzene | 62 U | 160 | 62 | ug/kg | |
| 98-06-6 | tert-Butylbenzene | 62 U | 160 | 62 | ug/kg | |
| 108-90-7 | Chlorobenzene | 62 U | 160 | 62 | ug/kg | |
| 75-00-3 | Chloroethane | 120 U | 160 | 120 | ug/kg | |
| 67-66-3 | Chloroform | 62 U | 160 | 62 | ug/kg | |
| 95-49-8 | o-Chlorotoluene | 62 U | 160 | 62 | ug/kg | |
| 106-43-4 | p-Chlorotoluene | 62 U | 160 | 62 | ug/kg | |
| 56-23-5 | Carbon tetrachloride | 62 U | 160 | 62 | ug/kg | |
| 75-34-3 | 1,1-Dichloroethane | 62 U | 160 | 62 | ug/kg | |
| 75-35-4 | 1,1-Dichloroethylene | 62 U | 160 | 62 | ug/kg | |
| 563-58-6 | 1,1-Dichloropropene | 62 U | 160 | 62 | ug/kg | |
| 106-93-4 | 1,2-Dibromoethane | 78 U | 160 | 78 | ug/kg | |
| 107-06-2 | 1,2-Dichloroethane | 62 U | 160 | 62 | ug/kg | |
| 78-87-5 | 1,2-Dichloropropane | 62 U | 160 | 62 | ug/kg | |
| 142-28-9 | 1,3-Dichloropropane | 62 U | 160 | 62 | ug/kg | |
| 108-20-3 | Di-Isopropyl ether | 62 U | 160 | 62 | ug/kg | |
| 594-20-7 | 2,2-Dichloropropane | 62 U | 160 | 62 | ug/kg | |
| 124-48-1 | Dibromochloromethane | 62 U | 160 | 62 | ug/kg | |
| 75-71-8 | Dichlorodifluoromethane | 62 U | 160 | 62 | ug/kg | |
| 156-59-2 | cis-1,2-Dichloroethylene | 62 U | 160 | 62 | ug/kg | |
| 10061-01-5 | cis-1,3-Dichloropropene | 62 U | 160 | 62 | ug/kg | |
| 541-73-1 | m-Dichlorobenzene | 62 U | 160 | 62 | ug/kg | |
| 95-50-1 | o-Dichlorobenzene | 62 U | 160 | 62 | ug/kg | |
| 106-46-7 | p-Dichlorobenzene | 62 U | 160 | 62 | ug/kg | |
| 156-60-5 | trans-1,2-Dichloroethylene | 62 U | 160 | 62 | ug/kg | |

U = Not detected LOD - Limit of Detection
LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-SW09 | | |
| **Lab Sample ID:** | FA11487-4 | **Date Sampled:** | 01/08/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 01/09/14 |
| **Method:** | SW846 8260B | **Percent Solids:** | 85.0 |
| **Project:** | WE03, Camp Lejuene, NC | | |

**VOA List for NC, May 2012**

| CAS No. | Compound | Result | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|
| 10061-02-6 | trans-1,3-Dichloropropene | 62 U | 160 | 62 | ug/kg | |
| 64-17-5 | Ethyl alcohol | 6200 U | 12000 | 6200 | ug/kg | |
| 100-41-4 | Ethylbenzene | 303 | 160 | 62 | ug/kg | |
| 637-92-3 | Ethyl tert-Butyl Ether | 62 U | 160 | 62 | ug/kg | |
| 591-78-6 | 2-Hexanone | 310 U | 780 | 310 | ug/kg | |
| 98-82-8 | Isopropylbenzene | 62 U | 160 | 62 | ug/kg | |
| 99-87-6 | p-Isopropyltoluene | 62 U | 160 | 62 | ug/kg | |
| 108-10-1 | 4-Methyl-2-pentanone | 310 U | 780 | 310 | ug/kg | |
| 74-83-9 | Methyl bromide | 120 U | 160 | 120 | ug/kg | |
| 74-87-3 | Methyl chloride | 120 U | 160 | 120 | ug/kg | |
| 75-09-2 | Methylene chloride | 160 U | 310 | 160 | ug/kg | |
| 78-93-3 | Methyl ethyl ketone | 310 U | 780 | 310 | ug/kg | |
| 1634-04-4 | Methyl Tert Butyl Ether | 62 U | 160 | 62 | ug/kg | |
| 91-20-3 | Naphthalene | 392 | 160 | 120 | ug/kg | |
| 103-65-1 | n-Propylbenzene | 335 | 160 | 62 | ug/kg | |
| 100-42-5 | Styrene | 62 U | 160 | 62 | ug/kg | |
| 75-85-4 | Tert-Amyl Alcohol | 780 U | 1600 | 780 | ug/kg | |
| 994-05-8 | Tert-Amyl Methyl Ether | 62 U | 160 | 62 | ug/kg | |
| 75-65-0 | Tert-Butyl Alcohol | 780 U | 1600 | 780 | ug/kg | |
| 762-75-4 | tert-Butyl Formate | 780 U | 1600 | 780 | ug/kg | |
| 630-20-6 | 1,1,1,2-Tetrachloroethane | 62 U | 160 | 62 | ug/kg | |
| 71-55-6 | 1,1,1-Trichloroethane | 62 U | 160 | 62 | ug/kg | |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 62 U | 160 | 62 | ug/kg | |
| 79-00-5 | 1,1,2-Trichloroethane | 78 U | 160 | 78 | ug/kg | |
| 87-61-6 | 1,2,3-Trichlorobenzene | 62 U | 160 | 62 | ug/kg | |
| 96-18-4 | 1,2,3-Trichloropropane | 78 U | 160 | 78 | ug/kg | |
| 120-82-1 | 1,2,4-Trichlorobenzene | 62 U | 160 | 62 | ug/kg | |
| 95-63-6 | 1,2,4-Trimethylbenzene | 3440 | 160 | 62 | ug/kg | |
| 108-67-8 | 1,3,5-Trimethylbenzene | 890 | 160 | 62 | ug/kg | |
| 127-18-4 | Tetrachloroethylene | 62 U | 160 | 62 | ug/kg | |
| 108-88-3 | Toluene | 62 U | 160 | 62 | ug/kg | |
| 79-01-6 | Trichloroethylene | 62 U | 160 | 62 | ug/kg | |
| 75-69-4 | Trichlorofluoromethane | 120 U | 160 | 120 | ug/kg | |
| 75-01-4 | Vinyl chloride | 62 U | 160 | 62 | ug/kg | |
| 108-05-4 | Vinyl Acetate | 620 U | 780 | 620 | ug/kg | |
| 1330-20-7 | Xylene (total) | 1100 | 470 | 190 | ug/kg | |
| | m,p-Xylene | 1010 | 310 | 120 | ug/kg | |
| 95-47-6 | o-Xylene | 92.5 | 160 | 62 | ug/kg | J |

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E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-SW09 | | |
| **Lab Sample ID:** | FA11487-4 | **Date Sampled:** | 01/08/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 01/09/14 |
| **Method:** | SW846 8260B | **Percent Solids:** | 85.0 |
| **Project:** | WE03, Camp Lejuene, NC | | |

**VOA List for NC, May 2012**

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 1868-53-7 | Dibromofluoromethane | 98% | | 75-124% |
| 2037-26-5 | Toluene-D8 | 99% | | 75-126% |
| 460-00-4 | 4-Bromofluorobenzene | 98% | | 71-133% |
| 17060-07-0 | 1,2-Dichloroethane-D4 | 98% | | 72-135% |

U = Not detected LOD - Limit of Detection
LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-SW09 | | |
| **Lab Sample ID:** | FA11487-4 | **Date Sampled:** | 01/08/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 01/09/14 |
| **Method:** | SW846 8270D SW846 3550C | **Percent Solids:** | 85.0 |
| **Project:** | WE03, Camp Lejuene, NC | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | X032661.D | 1 | 01/10/14 | FS | 01/09/14 | OP50033 | SX1541 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 30.3 g | 1.0 ml |
| Run #2 | | |

**ABN List for NC, May 2012**

| CAS No. | Compound | Result | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|
| 65-85-0 | Benzoic Acid | 390 U | 970 | 390 | ug/kg | |
| 95-57-8 | 2-Chlorophenol | 39 U | 190 | 39 | ug/kg | |
| 59-50-7 | 4-Chloro-3-methyl phenol | 39 U | 190 | 39 | ug/kg | |
| 120-83-2 | 2,4-Dichlorophenol | 39 U | 190 | 39 | ug/kg | |
| 105-67-9 | 2,4-Dimethylphenol | 78 U | 190 | 78 | ug/kg | |
| 51-28-5 | 2,4-Dinitrophenol | 780 U | 970 | 780 | ug/kg | |
| 534-52-1 | 4,6-Dinitro-o-cresol | 160 U | 390 | 160 | ug/kg | |
| 95-48-7 | 2-Methylphenol | 39 U | 190 | 39 | ug/kg | |
| | 3&4-Methylphenol | 78 U | 190 | 78 | ug/kg | |
| 88-75-5 | 2-Nitrophenol | 39 U | 190 | 39 | ug/kg | |
| 100-02-7 | 4-Nitrophenol | 390 U | 970 | 390 | ug/kg | |
| 87-86-5 | Pentachlorophenol | 390 U | 970 | 390 | ug/kg | |
| 108-95-2 | Phenol | 39 U | 190 | 39 | ug/kg | |
| 88-06-2 | 2,4,6-Trichlorophenol | 39 U | 190 | 39 | ug/kg | |
| 83-32-9 | Acenaphthene | 39 U | 190 | 39 | ug/kg | |
| 208-96-8 | Acenaphthylene | 39 U | 190 | 39 | ug/kg | |
| 120-12-7 | Anthracene | 39 U | 190 | 39 | ug/kg | |
| 56-55-3 | Benzo(a)anthracene | 39 U | 190 | 39 | ug/kg | |
| 50-32-8 | Benzo(a)pyrene | 39 U | 190 | 39 | ug/kg | |
| 205-99-2 | Benzo(b)fluoranthene | 39 U | 190 | 39 | ug/kg | |
| 191-24-2 | Benzo(g,h,i)perylene | 39 U | 190 | 39 | ug/kg | |
| 207-08-9 | Benzo(k)fluoranthene | 39 U | 190 | 39 | ug/kg | |
| 101-55-3 | 4-Bromophenyl phenyl ether | 39 U | 190 | 39 | ug/kg | |
| 85-68-7 | Butyl benzyl phthalate | 78 U | 190 | 78 | ug/kg | |
| 100-51-6 | Benzyl Alcohol | 78 U | 190 | 78 | ug/kg | |
| 91-58-7 | 2-Chloronaphthalene | 39 U | 190 | 39 | ug/kg | |
| 106-47-8 | 4-Chloroaniline | 39 U | 190 | 39 | ug/kg | |
| 218-01-9 | Chrysene | 39 U | 190 | 39 | ug/kg | |
| 111-91-1 | bis(2-Chloroethoxy)methane | 39 U | 190 | 39 | ug/kg | |
| 111-44-4 | bis(2-Chloroethyl)ether | 39 U | 190 | 39 | ug/kg | |
| 108-60-1 | bis(2-Chloroisopropyl)ether | 39 U | 190 | 39 | ug/kg | |
| 7005-72-3 | 4-Chlorophenyl phenyl ether | 39 U | 190 | 39 | ug/kg | |

U = Not detected LOD - Limit of Detection
LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-SW09 | | |
| **Lab Sample ID:** | FA11487-4 | **Date Sampled:** | 01/08/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 01/09/14 |
| **Method:** | SW846 8270D SW846 3550C | **Percent Solids:** | 85.0 |
| **Project:** | WE03, Camp Lejuene, NC | | |

**ABN List for NC, May 2012**

| CAS No. | Compound | Result | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|
| 95-50-1 | 1,2-Dichlorobenzene | 78 U | 190 | 78 | ug/kg | |
| 122-66-7 | 1,2-Diphenylhydrazine | 39 U | 190 | 39 | ug/kg | |
| 541-73-1 | 1,3-Dichlorobenzene | 78 U | 190 | 78 | ug/kg | |
| 106-46-7 | 1,4-Dichlorobenzene | 78 U | 190 | 78 | ug/kg | |
| 91-94-1 | 3,3'-Dichlorobenzidine | 78 U | 190 | 78 | ug/kg | |
| 53-70-3 | Dibenzo(a,h)anthracene | 39 U | 190 | 39 | ug/kg | |
| 132-64-9 | Dibenzofuran | 39 U | 190 | 39 | ug/kg | |
| 84-74-2 | Di-n-butyl phthalate | 160 U | 390 | 160 | ug/kg | |
| 117-84-0 | Di-n-octyl phthalate | 78 U | 190 | 78 | ug/kg | |
| 84-66-2 | Diethyl phthalate | 160 U | 390 | 160 | ug/kg | |
| 131-11-3 | Dimethyl phthalate | 78 U | 190 | 78 | ug/kg | |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 160 U | 390 | 160 | ug/kg | |
| 206-44-0 | Fluoranthene | 39 U | 190 | 39 | ug/kg | |
| 86-73-7 | Fluorene | 39 U | 190 | 39 | ug/kg | |
| 118-74-1 | Hexachlorobenzene | 39 U | 190 | 39 | ug/kg | |
| 87-68-3 | Hexachlorobutadiene | 78 U | 190 | 78 | ug/kg | |
| 77-47-4 | Hexachlorocyclopentadiene | 78 U | 190 | 78 | ug/kg | |
| 67-72-1 | Hexachloroethane | 78 U | 190 | 78 | ug/kg | |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 39 U | 190 | 39 | ug/kg | |
| 78-59-1 | Isophorone | 39 U | 190 | 39 | ug/kg | |
| 90-12-0 | 1-Methylnaphthalene | 1310 | 190 | 39 | ug/kg | |
| 91-57-6 | 2-Methylnaphthalene | 2900 | 190 | 39 | ug/kg | |
| 91-20-3 | Naphthalene | 773 | 190 | 39 | ug/kg | |
| 98-95-3 | Nitrobenzene | 39 U | 190 | 39 | ug/kg | |
| 621-64-7 | N-Nitroso-di-n-propylamine [a] | 39 U | 190 | 39 | ug/kg | |
| 86-30-6 | N-Nitrosodiphenylamine | 78 U | 190 | 78 | ug/kg | |
| 85-01-8 | Phenanthrene | 39 U | 190 | 39 | ug/kg | |
| 129-00-0 | Pyrene | 39 U | 190 | 39 | ug/kg | |
| 120-82-1 | 1,2,4-Trichlorobenzene | 39 U | 190 | 39 | ug/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 367-12-4 | 2-Fluorophenol | 95% | | 40-102% |
| 4165-62-2 | Phenol-d5 | 95% | | 41-100% |
| 118-79-6 | 2,4,6-Tribromophenol | 95% | | 42-108% |
| 4165-60-0 | Nitrobenzene-d5 | 85% | | 40-105% |
| 321-60-8 | 2-Fluorobiphenyl | 86% | | 43-107% |
| 1718-51-0 | Terphenyl-d14 | 110% | | 45-119% |

(a) Associated BS recovery outside DOD QSM control limits.

U = Not detected LOD - Limit of Detection
LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-SW09 | | |
| **Lab Sample ID:** | FA11487-4 | **Date Sampled:** | 01/08/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 01/09/14 |
| **Method:** | MADEP VPH REV 1.1 | **Percent Solids:** | 85.0 |
| **Project:** | WE03, Camp Lejuene, NC | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | UU006235.D | 1 | 01/13/14 | AH | n/a | n/a | GUU302 |
| Run #2 | UU006240.D | 1 | 01/13/14 | AH | n/a | n/a | GUU302 |
| Run #3 [a] | UU006223.D | 1 | 01/10/14 | AH | n/a | n/a | GUU301 |
| Run #4 [a] | UU006250.D | 1 | 01/15/14 | AH | n/a | n/a | GUU303 |

| | Initial Weight | Final Volume | Methanol Aliquot |
|---|---|---|---|
| Run #1 | 13.1 g | 5.1 ml | 100 ul |
| Run #2 | 13.1 g | 5.1 ml | 50.0 ul |
| Run #3 | 13.1 g | 5.1 ml | 10.0 ul |
| Run #4 | 13.1 g | 5.1 ml | 50.0 ul |

**MADEP VPH List**

| CAS No. | Compound | Result | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|
| | C5- C8 Aliphatics (Unadj.) | 1100 U | 3200 | 1100 [b] | ug/kg | |
| | C9- C12 Aliphatics (Unadj.) [c] | 4180 | 3200 | 1100 [b] | ug/kg | E |
| | C9- C10 Aromatics (Unadj.) | 16600 [d] | 6300 | 2200 [b] | ug/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Run# 3 | Limits |
|---|---|---|---|---|---|
| 460-00-4 | BFB | 81% | 64% [e] | 175% [e] | 70-130% |
| 460-00-4 | BFB | 70% | 57% [e] | 152% [e] | 70-130% |

(a) Confirmation run.
(b) Value reported is laboratory DL (MDL).
(c) Result is below RL at higher dilution.
(d) Result is from Run# 2
(e) Outside control limits.

U = Not detected LOD - Limit of Detection
LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-SW09 | | |
| **Lab Sample ID:** | FA11487-4 | **Date Sampled:** | 01/08/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 01/09/14 |
| **Method:** | MADEP EPH REV 1.1 SW846 3546 | **Percent Solids:** | 85.0 |
| **Project:** | WE03, Camp Lejuene, NC | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | NN007298.D | 1 | 01/15/14 | NJ | 01/10/14 | OP50045 | GNN317 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 20.3 g | 2.0 ml |
| Run #2 | | |

**MAEPH List**

| CAS No. | Compound | Result | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|
| | C11-C22 Aromatics (Unadj.) | 8700 U | 12000 | 8700 [a] | ug/kg | |
| | C9-C18 Aliphatics | 7220 | 12000 | 5800 [a] | ug/kg | J |
| | C19-C36 Aliphatics | 5840 | 12000 | 5800 [a] | ug/kg | J |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 3386-33-2 | 1-Chlorooctadecane | 62% | | 40-140% |
| 580-13-2 | 2-Bromonaphthalene | 62% | | 40-140% |
| 84-15-1 | o-Terphenyl | 56% | | 40-140% |
| 321-60-8 | 2-Fluorobiphenyl | 68% | | 40-140% |

(a) Value reported is laboratory DL (MDL).

U = Not detected LOD - Limit of Detection
LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-SP01 | | |
| **Lab Sample ID:** | FA11487-5 | **Date Sampled:** | 01/08/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 01/09/14 |
| **Method:** | SW846 8015C | **Percent Solids:** | 84.4 |
| **Project:** | WE03, Camp Lejuene, NC | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | QR080686.D | 1 | 01/10/14 | MM | n/a | n/a | GQR3434 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume | Methanol Aliquot |
|---|---|---|---|
| Run #1 | 11.5 g | 5.0 ml | 100 ul |
| Run #2 | | | |

| CAS No. | Compound | Result | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|
| | TPH-GRO (C6-C10) | 1.8 U | 3.5 | 1.8 | mg/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 460-00-4 | 4-Bromofluorobenzene | 110% | | 56-149% |
| 98-08-8 | aaa-Trifluorotoluene | 109% | | 66-132% |

U = Not detected LOD - Limit of Detection
LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

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# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-SP01 | | |
| **Lab Sample ID:** | FA11487-5 | **Date Sampled:** | 01/08/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 01/09/14 |
| **Method:** | SW846 8082A SW846 3550C | **Percent Solids:** | 84.4 |
| **Project:** | WE03, Camp Lejuene, NC | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | MM09486.D | 1 | 01/14/14 | MV | 01/10/14 | OP50052 | GMM209 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 29.9 g | 10.0 ml |
| Run #2 | | |

**PCB List**

| CAS No. | Compound | Result | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|
| 12674-11-2 | Aroclor 1016 | 9.9 U | 20 | 9.9 | ug/kg | |
| 11104-28-2 | Aroclor 1221 | 16 U | 20 | 16 | ug/kg | |
| 11141-16-5 | Aroclor 1232 | 16 U | 20 | 16 | ug/kg | |
| 53469-21-9 | Aroclor 1242 | 9.9 U | 20 | 9.9 | ug/kg | |
| 12672-29-6 | Aroclor 1248 | 9.9 U | 20 | 9.9 | ug/kg | |
| 11097-69-1 | Aroclor 1254 | 9.9 U | 20 | 9.9 | ug/kg | |
| 11096-82-5 | Aroclor 1260 | 9.9 U | 20 | 9.9 | ug/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 877-09-8 | Tetrachloro-m-xylene | 72% | | 44-126% |
| 2051-24-3 | Decachlorobiphenyl | 75% | | 41-145% |

U = Not detected LOD - Limit of Detection
LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

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# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-SP01 | | |
| **Lab Sample ID:** | FA11487-5 | **Date Sampled:** | 01/08/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 01/09/14 |
| **Method:** | SW846 8015C SW846 3550C | **Percent Solids:** | 84.4 |
| **Project:** | WE03, Camp Lejuene, NC | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | JJ001032.D | 1 | 01/11/14 | SJL | 01/09/14 | OP50034 | GJJ42 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 29.6 g | 1.0 ml |
| Run #2 | | |

| CAS No. | Compound | Result | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|
| | TPH (C10-C28) | 4.0 U | 5.0 | 4.0 | mg/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 84-15-1 | o-Terphenyl | 85% | | 56-122% |

U = Not detected LOD - Limit of Detection
LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-SP01 | | |
| **Lab Sample ID:** | FA11487-5 | **Date Sampled:** | 01/08/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 01/09/14 |
| | | **Percent Solids:** | 84.4 |
| **Project:** | WE03, Camp Lejuene, NC | | |

**General Chemistry**

| Analyte | Result | LOQ | LOD | Units | DF | Analyzed | By | Method |
|---|---|---|---|---|---|---|---|---|
| Corrosivity as pH | 7.4 | | | su | 1 | 01/16/14 14:30 | AA | SW846 CHAP7 |
| Cyanide Reactivity | 1.5 U | 1.5 | 1.5 [a] | mg/kg | 1 | 01/10/14 13:11 | VK | SW846 CHAP7 |
| Ignitability (Flashpoint) [b] | > 200 | | | Deg. F | 1 | 01/11/14 11:00 | KC | SW846 1010 |
| Solids, Percent | 84.4 | | | % | 1 | 01/09/14 14:35 | CH | SM19 2540G |
| Sulfide Reactivity | 59 U | 59 | 59 [a] | mg/kg | 1 | 01/10/14 12:00 | LE | SW846 CHAP7 |

(a) Value reported is laboratory DL (MDL).
(b) Not ignitable.

LOQ = Limit of Quantitation
LOD = Limit of Detection

U = Indicates a result < LOD
J = Indicates a result > = LOD but < LOQ

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# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-SP01 | | |
| **Lab Sample ID:** | FA11487-5L | **Date Sampled:** | 01/08/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 01/09/14 |
| **Method:** | SW846 8260B SW846 1311 | **Percent Solids:** | 84.4 |
| **Project:** | WE03, Camp Lejuene, NC | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | N0073608.D | 10 | 01/15/14 | RB | 01/14/14 | OP50074 | VN3204 |
| Run #2 | | | | | | | |

| | Purge Volume |
|---|---|
| Run #1 | 5.0 ml |
| Run #2 | |

**VOA TCLP List** **TCLP Leachate method SW846 1311**

| CAS No. | Compound | Result | HW# | MCL | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|---|---|
| 71-43-2 | Benzene | 0.0050 U | D018 | 0.50 | 0.010 | 0.0050 | mg/l | |
| 108-90-7 | Chlorobenzene | 0.0050 U | D021 | 100 | 0.010 | 0.0050 | mg/l | |
| 67-66-3 | Chloroform | 0.0050 U | D022 | 6.0 | 0.010 | 0.0050 | mg/l | |
| 56-23-5 | Carbon tetrachloride | 0.0050 U | D019 | 0.50 | 0.010 | 0.0050 | mg/l | |
| 75-35-4 | 1,1-Dichloroethylene | 0.0050 U | D029 | 0.70 | 0.010 | 0.0050 | mg/l | |
| 107-06-2 | 1,2-Dichloroethane | 0.0050 U | D028 | 0.50 | 0.010 | 0.0050 | mg/l | |
| 106-46-7 | p-Dichlorobenzene | 0.0050 U | D027 | 7.5 | 0.010 | 0.0050 | mg/l | |
| 78-93-3 | Methyl ethyl ketone | 0.040 U | D035 | 200 | 0.050 | 0.040 | mg/l | |
| 127-18-4 | Tetrachloroethylene | 0.0050 U | D039 | 0.70 | 0.010 | 0.0050 | mg/l | |
| 79-01-6 | Trichloroethylene | 0.0050 U | D040 | 0.50 | 0.010 | 0.0050 | mg/l | |
| 75-01-4 | Vinyl chloride | 0.0050 U | D043 | 0.20 | 0.010 | 0.0050 | mg/l | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 1868-53-7 | Dibromofluoromethane | 98% | | 83-118% |
| 17060-07-0 | 1,2-Dichloroethane-D4 | 98% | | 79-125% |
| 2037-26-5 | Toluene-D8 | 98% | | 85-112% |
| 460-00-4 | 4-Bromofluorobenzene | 99% | | 83-118% |

U = Not detected LOD - Limit of Detection
MCL = Maximum Contamination Level (40 CFR 261 6/96)
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

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# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-SP01 | | |
| **Lab Sample ID:** | FA11487-5L | **Date Sampled:** | 01/08/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 01/09/14 |
| **Method:** | SW846 8270D SW846 3510C | **Percent Solids:** | 84.4 |
| **Project:** | WE03, Camp Lejuene, NC | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | X032730.D | 1 | 01/16/14 | FS | 01/15/14 | OP50097 | SX1545 |
| Run #2 | | | | | | | |

| | Initial Volume | Final Volume |
|---|---|---|
| Run #1 | 100 ml | 1.0 ml |
| Run #2 | | |

**ABN TCLP List** **TCLP Leachate method SW846 1311**

| CAS No. | Compound | Result | HW# | MCL | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|---|---|
| 95-48-7 | 2-Methylphenol | 0.010 U | D023 | 200 | 0.050 | 0.010 | mg/l | |
| | 3&4-Methylphenol | 0.020 U | D024 | 200 | 0.050 | 0.020 | mg/l | |
| 87-86-5 | Pentachlorophenol | 0.10 U | D037 | 100 | 0.25 | 0.10 | mg/l | |
| 95-95-4 | 2,4,5-Trichlorophenol | 0.020 U | D041 | 400 | 0.050 | 0.020 | mg/l | |
| 88-06-2 | 2,4,6-Trichlorophenol | 0.020 U | D042 | 2.0 | 0.050 | 0.020 | mg/l | |
| 106-46-7 | 1,4-Dichlorobenzene | 0.020 U | D027 | 7.5 | 0.050 | 0.020 | mg/l | |
| 121-14-2 | 2,4-Dinitrotoluene | 0.010 U | D030 | 0.13 | 0.050 | 0.010 | mg/l | |
| 118-74-1 | Hexachlorobenzene | 0.010 U | D032 | 0.13 | 0.050 | 0.010 | mg/l | |
| 87-68-3 | Hexachlorobutadiene | 0.010 U | D033 | 0.50 | 0.050 | 0.010 | mg/l | |
| 67-72-1 | Hexachloroethane | 0.020 U | D034 | 3.0 | 0.050 | 0.020 | mg/l | |
| 98-95-3 | Nitrobenzene | 0.010 U | D036 | 2.0 | 0.050 | 0.010 | mg/l | |
| 110-86-1 | Pyridine | 0.040 U | D038 | 5.0 | 0.10 | 0.040 | mg/l | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 367-12-4 | 2-Fluorophenol | 29% | | 14-67% |
| 4165-62-2 | Phenol-d5 | 17% | | 10-50% |
| 118-79-6 | 2,4,6-Tribromophenol | 75% | | 33-118% |
| 4165-60-0 | Nitrobenzene-d5 | 62% | | 42-108% |
| 321-60-8 | 2-Fluorobiphenyl | 64% | | 40-106% |
| 1718-51-0 | Terphenyl-d14 | 94% | | 39-121% |

U = Not detected LOD - Limit of Detection J = Indicates an estimated value
MCL = Maximum Contamination Level (40 CFR 261 6/96) B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-SP01 | | |
| **Lab Sample ID:** | FA11487-5L | **Date Sampled:** | 01/08/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 01/09/14 |
| **Method:** | SW846 8151A SW846 3510C | **Percent Solids:** | 84.4 |
| **Project:** | WE03, Camp Lejuene, NC | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | CC043037.D | 1 | 01/17/14 | NJ | 01/15/14 | OP50098 | GCC623 |
| Run #2 | | | | | | | |

| | Initial Volume | Final Volume |
|---|---|---|
| Run #1 | 10.0 ml | 10.0 ml |
| Run #2 | | |

**Herbicide TCLP Leachate** **TCLP Leachate method SW846 1311**

| CAS No. | Compound | Result | HW# | MCL | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|---|---|
| 94-75-7 | 2,4-D | 0.050 U | D016 | 10 | 0.10 | 0.050 | mg/l | |
| 93-72-1 | 2,4,5-TP (Silvex) | 0.0050 U | D017 | 1.0 | 0.010 | 0.0050 | mg/l | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 19719-28-9 | 2,4-DCAA | 103% | | 33-145% |

U = Not detected LOD - Limit of Detection
MCL = Maximum Contamination Level (40 CFR 261 6/96)
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-SP01 | | |
| **Lab Sample ID:** | FA11487-5L | **Date Sampled:** | 01/08/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 01/09/14 |
| **Method:** | SW846 8081B SW846 3510C | **Percent Solids:** | 84.4 |
| **Project:** | WE03, Camp Lejuene, NC | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | KK60962.D | 1 | 01/17/14 | EM | 01/15/14 | OP50095 | GKK2046 |
| Run #2 | | | | | | | |

| | Initial Volume | Final Volume |
|---|---|---|
| Run #1 | 100 ml | 10.0 ml |
| Run #2 | | |

**Pesticide TCLP Leachate** **TCLP Leachate method SW846 1311**

| CAS No. | Compound | Result | HW# | MCL | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|---|---|
| 58-89-9 | gamma-BHC (Lindane) | 0.00010 U | D013 | 0.40 | 0.00050 | 0.00010 | mg/l | |
| 12789-03-6 | Chlordane | 0.0025 U | D020 | 0.030 | 0.0050 | 0.0025 | mg/l | |
| 72-20-8 | Endrin | 0.00020 U | D012 | 0.020 | 0.0010 | 0.00020 | mg/l | |
| 76-44-8 | Heptachlor | 0.00010 U | D031 | 0.0080 | 0.00050 | 0.00010 | mg/l | |
| 1024-57-3 | Heptachlor epoxide | 0.00010 U | D031 | 0.0080 | 0.00050 | 0.00010 | mg/l | |
| 72-43-5 | Methoxychlor | 0.00020 U | D014 | 10 | 0.0010 | 0.00020 | mg/l | |
| 8001-35-2 | Toxaphene | 0.013 U | D015 | 0.50 | 0.025 | 0.013 | mg/l | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 877-09-8 | Tetrachloro-m-xylene | 119% | | 42-127% |
| 2051-24-3 | Decachlorobiphenyl | 106% | | 27-127% |

U = Not detected LOD - Limit of Detection
MCL = Maximum Contamination Level (40 CFR 261 6/96)
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-UST-SP01 | | |
| **Lab Sample ID:** | FA11487-5L | **Date Sampled:** | 01/08/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 01/09/14 |
| | | **Percent Solids:** | 84.4 |
| **Project:** | WE03, Camp Lejuene, NC | | |

**Metals Analysis, TCLP Leachate SW846 1311**

| Analyte | Result | HW# | MCL | LOQ | LOD | Units | DF | Prep | Analyzed | By | Method |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 0.050 U | D004 | 5.0 | 0.10 | 0.050 | mg/l | 1 | 01/16/14 | 01/16/14 | LM | SW846 6010C [2] |
| Barium | 0.12 J | D005 | 100 | 2.0 | 0.050 | mg/l | 1 | 01/16/14 | 01/16/14 | LM | SW846 6010C [2] |
| Cadmium | 0.010 U | D006 | 1.0 | 0.050 | 0.010 | mg/l | 1 | 01/16/14 | 01/16/14 | LM | SW846 6010C [2] |
| Chromium | 0.050 U | D007 | 5.0 | 0.10 | 0.050 | mg/l | 1 | 01/16/14 | 01/16/14 | LM | SW846 6010C [2] |
| Lead | 0.020 U | D008 | 5.0 | 0.050 | 0.020 | mg/l | 1 | 01/16/14 | 01/16/14 | LM | SW846 6010C [2] |
| Mercury | 0.0010 U | D009 | 0.20 | 0.0050 | 0.0010 | mg/l | 1 | 01/16/14 | 01/16/14 | JL | SW846 7470A [1] |
| Selenium | 0.050 U | D010 | 1.0 | 0.10 | 0.050 | mg/l | 1 | 01/16/14 | 01/16/14 | LM | SW846 6010C [2] |
| Silver | 0.020 U | D011 | 5.0 | 0.10 | 0.020 | mg/l | 1 | 01/16/14 | 01/16/14 | LM | SW846 6010C [2] |

(1) Instrument QC Batch: MA11330
(2) Instrument QC Batch: MA11333
(3) Prep QC Batch: MP26677
(4) Prep QC Batch: MP26678

LOQ = Limit of Quantitation LOD = Limit of Detection U = Indicates a result < LOD
MCL = Maximum Contamination Level (40 CFR 261 6/96) J = Indicates a result > = LOD but < LOQ

Southeast ACCUTEST LABORATORIES



# Misc. Forms

## Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

# Accutest Laboratories Southeast
# Chain of Custody

ACCUTEST LABORATORIES

4405 Vineland Road, Suite C-15 Orlando, Fl 32811
TEL. 407-425-6700 • FAX: 407-425-0707
www.accutest.com

Accutest JOB # FA11487 PAGE 1 OF 1

Accutest Quote # | SKIFF#

**Client / Reporting Information**

Company Name: Tetra Tech
Address: 17885 Von Karman Suite 500
City: Irving State: CA Zip: 92614
Project Contact: Sabrina Sudako E-mail:
Phone#: 949-859-5022
Sampler(s) Name(s) (Printed):

**Project Information**

Project Name: UST Demo Camp Lejeune
Street:
City: Jacksonville State: NC
Project #: 4659 WE03
Fax #:
Client Purchase Order #: 10 36 773-20

**Analytical Information** / **Matrix Codes**

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL - Sludge; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe

| Accutest Sample # | Field ID / Point of Collection | Date | Time | Sampled By | Matrix | Total # of Bottles | Other | None | HCl | MeOH | HNO3 | H2SO4 | NaOH+ZnAc | DI Water | NaOH | 8260B w/ADE + MTBE | 8270B | MADEP VPH | MADEP EPH | 8260B | TPH-GRO | SVOC | Herbicides Pesticides | Metals + Hg | PCBs | TPH-DRO + RORA | LAB USE ONLY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1932-UST-SW07 | 1/8 | 0920 | JTG | SO | 7 | | 2 | | | | | | 2 | 3 | X | X | X | X | | | | | | | | |
| 2 | 1932-UST-SW08 | | 0940 | | | 7 | | 2 | | | | | | 2 | 3 | X | X | X | X | | | | | | | | |
| 3 | 1932-UST-SW08A | | 0940 | | | 7 | | 2 | | | | | | 2 | 3 | X | X | X | X | | | | | | | | |
| 4 | 1932-UST-SW09 | | 1000 | | | 21 | | 6 | | | | | | 6 | 9 | X | X | X | X | | | | | | | | |
| 5 | 1932-UST-SP01 | 1/8 | 1100 | JTG | SO | 6 | | 4 | | | | | | | 2 | | | | | X | X | X | X | X | X | X | MS/MSD |

**TURNAROUND TIME (Business Days)**

Approved By: / Rush Code

- [ ] 10 Days Standard
- [ ] 7 Day RUSH
- [x] 5 Day RUSH — 5 DAY TAT
- [ ] 3 Day EMERGENCY
- [ ] 2 Day EMERGENCY
- [ ] 1 Day EMERGENCY
- [ ] OTHER

Emergency or Rush T/A Data Available VIA Email or Lablink

**Data Deliverable Information**

- [ ] COMMERCIAL "A" (RESULTS ONLY)
- [x] COMMERCIAL "B" (RESULTS PLUS QC)
- [ ] REDT1 (EPA LEVEL 3)
- [ ] FULT1 (EPA LEVEL 4)
- [x] EDD'S

**Comments / Remarks**

FedEx # 8049 2600 6840

Sample Custody must be documented below each time samples change possession, including courier delivery.

| Relinquished by Sampler: | Date Time: | Received By: | Relinquished by: | Date Time: | Received By: |
|---|---|---|---|---|---|
| 1 | 1/8 1300 | 2 FC | 3 FC 01-09-14 | 945 | 4 |
| Relinquished by: | Date Time: | Received By: | Relinquished by: | Date Time: | Received By: |
| 5 | | 6 | 7 | | 8 |

**Lab Use Only:** Custody Seal in Place: Y N Temp Blank Provided: Y N Preserved where Applicable: Y N Total # of Coolers: Cooler Temperature (s) Celsius: 2.4

**FA11487: Chain of Custody**
**Page 1 of 3**

# ACCUTEST LABORATORIES SAMPLE RECEIPT CONFIRMATION

ACCUTEST'S JOB NUMBER: FA11487 CLIENT: TetraTech PROJECT: UST Demo

DATE/TIME RECEIVED: 01-09-14 945 (MM/DD/YY 24:00) NIMBER OF COOLERS RECEIVED: 1

METHOD OF DELIVERY: (FEDEX) UPS ACCUTEST COURIER GREYHOUND DELIVERY OTHER

AIRBILL NUMBERS: 8047 2600 5101

## COOLER INFORMATION

- [ ] CUSTODY SEAL NOT PRESENT OR NOT INTACT
- [ ] CHAIN OF CUSTODY NOT RECEIVED (COC)
- [ ] ANALYSIS REQUESTED IS UNCLEAR OR MISSING
- [ ] SAMPLE DATES OR TIMES UNCLEAR OR MISSING
- [ ] TEMPERATURE CRITERIA NOT MET
- [ ] WET ICE PRESENT

## TRIP BLANK INFORMATION

- [x] TRIP BLANK PROVIDED
- [ ] TRIP BLANK NOT PROVIDED
- [x] TRIP BLANK NOT ON COC
- [x] TRIP BLANK INTACT
- [ ] TRIP BLANK NOT INTACT
- [ ] RECEIVED WATER TRIP BLANK
- [x] RECEIVED SOIL TRIP BLANK

## MISC. INFORMATION

NUMBER OF ENCORES ? 25-GRAM _____ 5-GRAM _____

NUMBER OF 5035 FIELD KITS ? 67

NUMBER OF LAB FILTERED METALS ? _____

## TEMPERATURE INFORMATION

- [ ] IR THERM ID 1 CORR. FACTOR -0.4
- [ ] OBSERVED TEMPS: 2.8
- [ ] CORRECTED TEMPS: 2.4

## SAMPLE INFORMATION

- [ ] SAMPLE LABELS PRESENT ON ALL BOTTLES
- [ ] INCORRECT NUMBER OF CONTAINERS USED
- [ ] SAMPLE RECEIVED IMPROPERLY PRESERVED
- [ ] INSUFFICIENT VOLUME FOR ANALYSIS
- [ ] DATES/TIMES ON COC DO NOT MATCH SAMPLE LABEL
- [ ] ID'S ON COC DO NOT MATCH LABEL
- [ ] VOC VIALS HAVE HEADSPACE (MACRO BUBBLES)
- [ ] BOTTLES RECEIVED BUT ANALYSIS NOT REQUESTED
- [ ] NO BOTTLES RECEIVED FOR ANALYSIS REQUESTED
- [ ] UNCLEAR FILTERING OR COMPOSITING INSTRUCTIONS
- [ ] SAMPLE CONTAINER(S) RECEIVED BROKEN
- [ ] % SOLIDS JAR NOT RECEIVED
- [ ] 5035 FIELD KIT FROZEN WITHIN 48 HOUR'S
- [ ] RESIDUAL CHLORINE PRESENT

(APPICABLE TO EPA 600 SERIES OR NORTH CAROLINA ORGANICS)

SUMMARY OF COMMENTS: _____

TECHNICIAN SIGNATURE/DATE RWille 01-09-14 REVIEWER SIGNATURE/DATE [illegible] 01/09/14

NF 12/10 receipt confirmation 122910.xls

5.1 5

**FA11487: Chain of Custody**

**Page 2 of 3**

FedEx Express Package US Airbill — FedEx Tracking Number 8047 2600 5101

1 From
Date 01/28/2014
Sender's Name John Galler — Phone 757 461 4046
Company Texas Tech — Govt
Address Twin Oaks 1, Suite 309 — Dept./Floor/Suite/Room
City Norfolk — State VA — ZIP 23502

2 Your Internal Billing Reference

3 To
Recipient's Name SUPPLY RECV — Phone 407 425-6700
Company ACCUTEST LABORATORIES SE, INC
Address 4405 VINELAND RD STE C15 — Dept./Floor/Suite/Room
We cannot deliver to P.O. boxes or P.O. ZIP codes.
HOLD Weekday FedEx location address REQUIRED. NOT available for FedEx First Overnight.
HOLD Saturday FedEx location address REQUIRED. Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.
Address
Use this line for the HOLD location address or for continuation of your shipping address.
City ORLANDO — State FL — ZIP 32811-5803

0112015194

Recipient's Copy

4 Express Package Service
NOTE: Service order has changed. Please select carefully.
Packages up to 150 lbs. For packages over 150 lbs., see the FedEx Express Freight US Airbill.

Next Business Day
- [ ] FedEx First Overnight — Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [x] FedEx Priority Overnight — Next business morning.* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [ ] FedEx Standard Overnight — Next business afternoon.* Saturday Delivery NOT available.

2 or 3 Business Days
- [ ] FedEx 2Day A.M. — Second business morning.* Saturday Delivery NOT available.
- [ ] FedEx 2Day — Second business afternoon.* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [ ] FedEx Express Saver — Third business day.* Saturday Delivery NOT available.

5 Packaging
- [ ] FedEx Envelope*
- [ ] FedEx Pak*
- [ ] FedEx Box
- [ ] FedEx Tube
- [x] Other

6 Special Handling and Delivery Signature Options
- [ ] SATURDAY Delivery — NOT available for FedEx Standard Overnight, FedEx 2Day A.M., or FedEx Express Saver
- [x] No Signature Required — Package may be left without obtaining a signature for delivery.
- [ ] Direct Signature — Someone at recipient's address may sign for delivery. Fee applies.
- [ ] Indirect Signature — If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential delivery only. Fee applies.

Does this shipment contain dangerous goods?
One box must be checked.
- [x] No
- [ ] Yes — As per attached Shipper's Declaration.
- [ ] Yes — Shipper's Declaration not required.
- [ ] Dry Ice — Dry Ice, 9, UN 1845 ____ x ____ kg
- [ ] Cargo Aircraft Only

Dangerous goods (including dry ice) cannot be shipped in FedEx packaging or placed in a FedEx Express Drop Box.

7 Payment Bill to:
Enter FedEx Acct. No. or Credit Card No. below.
Obtain recip. Acct. No. [ ]
- [x] Sender — Acct. No. in Section 1 will be billed.
- [ ] Recipient
- [ ] Third Party
- [ ] Credit Card
- [ ] Cash/Check

Total Packages 1 — Total Weight 50 lbs. — Credit Card Auth.

Your liability is limited to US$100 unless you declare a higher value. See the current FedEx Service Guide for details.

611

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**FA11487: Chain of Custody**
**Page 3 of 3**

Southeast ACCUTEST LABORATORIES



# GC/MS Volatiles

## QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

# Method Blank Summary



**Job Number:** FA11487
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| VY555-MB | Y12538.D | 1 | 01/09/14 | EP | n/a | n/a | VY555 |

**The QC reported here applies to the following samples:** **Method:** SW846 8260B

FA11487-1, FA11487-2, FA11487-3, FA11487-4

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 67-64-1 | Acetone | ND | 50 | 15 | ug/kg | |
| 71-43-2 | Benzene | ND | 5.0 | 1.0 | ug/kg | |
| 108-86-1 | Bromobenzene | ND | 5.0 | 1.1 | ug/kg | |
| 74-97-5 | Bromochloromethane | ND | 5.0 | 1.9 | ug/kg | |
| 75-27-4 | Bromodichloromethane | ND | 5.0 | 1.0 | ug/kg | |
| 75-25-2 | Bromoform | ND | 5.0 | 1.1 | ug/kg | |
| 104-51-8 | n-Butylbenzene | ND | 5.0 | 1.0 | ug/kg | |
| 135-98-8 | sec-Butylbenzene | ND | 5.0 | 1.0 | ug/kg | |
| 98-06-6 | tert-Butylbenzene | ND | 5.0 | 1.0 | ug/kg | |
| 108-90-7 | Chlorobenzene | ND | 5.0 | 1.0 | ug/kg | |
| 75-00-3 | Chloroethane | ND | 5.0 | 2.3 | ug/kg | |
| 67-66-3 | Chloroform | ND | 5.0 | 1.1 | ug/kg | |
| 95-49-8 | o-Chlorotoluene | ND | 5.0 | 1.0 | ug/kg | |
| 106-43-4 | p-Chlorotoluene | ND | 5.0 | 1.0 | ug/kg | |
| 56-23-5 | Carbon tetrachloride | ND | 5.0 | 1.4 | ug/kg | |
| 75-34-3 | 1,1-Dichloroethane | ND | 5.0 | 1.0 | ug/kg | |
| 75-35-4 | 1,1-Dichloroethylene | ND | 5.0 | 1.0 | ug/kg | |
| 563-58-6 | 1,1-Dichloropropene | ND | 5.0 | 1.1 | ug/kg | |
| 106-93-4 | 1,2-Dibromoethane | ND | 5.0 | 1.8 | ug/kg | |
| 107-06-2 | 1,2-Dichloroethane | ND | 5.0 | 1.0 | ug/kg | |
| 78-87-5 | 1,2-Dichloropropane | ND | 5.0 | 1.0 | ug/kg | |
| 142-28-9 | 1,3-Dichloropropane | ND | 5.0 | 1.0 | ug/kg | |
| 108-20-3 | Di-Isopropyl ether | ND | 5.0 | 1.0 | ug/kg | |
| 594-20-7 | 2,2-Dichloropropane | ND | 5.0 | 1.4 | ug/kg | |
| 124-48-1 | Dibromochloromethane | ND | 5.0 | 1.0 | ug/kg | |
| 75-71-8 | Dichlorodifluoromethane | ND | 5.0 | 1.3 | ug/kg | |
| 156-59-2 | cis-1,2-Dichloroethylene | ND | 5.0 | 1.0 | ug/kg | |
| 10061-01-5 | cis-1,3-Dichloropropene | ND | 5.0 | 1.0 | ug/kg | |
| 541-73-1 | m-Dichlorobenzene | ND | 5.0 | 1.0 | ug/kg | |
| 95-50-1 | o-Dichlorobenzene | ND | 5.0 | 1.0 | ug/kg | |
| 106-46-7 | p-Dichlorobenzene | ND | 5.0 | 1.1 | ug/kg | |
| 156-60-5 | trans-1,2-Dichloroethylene | ND | 5.0 | 1.3 | ug/kg | |
| 10061-02-6 | trans-1,3-Dichloropropene | ND | 5.0 | 1.0 | ug/kg | |
| 64-17-5 | Ethyl alcohol | ND | 400 | 67 | ug/kg | |
| 100-41-4 | Ethylbenzene | ND | 5.0 | 1.0 | ug/kg | |
| 637-92-3 | Ethyl tert-Butyl Ether | ND | 5.0 | 1.0 | ug/kg | |

# Method Blank Summary



**Job Number:** FA11487
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| VY555-MB | Y12538.D | 1 | 01/09/14 | EP | n/a | n/a | VY555 |

**The QC reported here applies to the following samples:** **Method:** SW846 8260B

FA11487-1, FA11487-2, FA11487-3, FA11487-4

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 591-78-6 | 2-Hexanone | ND | 25 | 4.9 | ug/kg | |
| 98-82-8 | Isopropylbenzene | ND | 5.0 | 1.0 | ug/kg | |
| 99-87-6 | p-Isopropyltoluene | ND | 5.0 | 1.0 | ug/kg | |
| 108-10-1 | 4-Methyl-2-pentanone | ND | 25 | 5.0 | ug/kg | |
| 74-83-9 | Methyl bromide | ND | 5.0 | 1.9 | ug/kg | |
| 74-87-3 | Methyl chloride | ND | 5.0 | 2.0 | ug/kg | |
| 75-09-2 | Methylene chloride | ND | 10 | 4.0 | ug/kg | |
| 78-93-3 | Methyl ethyl ketone | ND | 25 | 7.5 | ug/kg | |
| 1634-04-4 | Methyl Tert Butyl Ether | ND | 5.0 | 1.0 | ug/kg | |
| 91-20-3 | Naphthalene | ND | 5.0 | 2.0 | ug/kg | |
| 103-65-1 | n-Propylbenzene | ND | 5.0 | 1.0 | ug/kg | |
| 100-42-5 | Styrene | ND | 5.0 | 1.0 | ug/kg | |
| 75-85-4 | Tert-Amyl Alcohol | ND | 50 | 18 | ug/kg | |
| 994-05-8 | Tert-Amyl Methyl Ether | ND | 5.0 | 1.0 | ug/kg | |
| 75-65-0 | Tert-Butyl Alcohol | ND | 50 | 18 | ug/kg | |
| 762-75-4 | tert-Butyl Formate | ND | 50 | 10 | ug/kg | |
| 630-20-6 | 1,1,1,2-Tetrachloroethane | ND | 5.0 | 1.1 | ug/kg | |
| 71-55-6 | 1,1,1-Trichloroethane | ND | 5.0 | 1.0 | ug/kg | |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | ND | 5.0 | 1.4 | ug/kg | |
| 79-00-5 | 1,1,2-Trichloroethane | ND | 5.0 | 1.6 | ug/kg | |
| 87-61-6 | 1,2,3-Trichlorobenzene | ND | 5.0 | 1.2 | ug/kg | |
| 96-18-4 | 1,2,3-Trichloropropane | ND | 5.0 | 1.9 | ug/kg | |
| 120-82-1 | 1,2,4-Trichlorobenzene | ND | 5.0 | 1.2 | ug/kg | |
| 95-63-6 | 1,2,4-Trimethylbenzene | ND | 5.0 | 1.0 | ug/kg | |
| 108-67-8 | 1,3,5-Trimethylbenzene | ND | 5.0 | 1.0 | ug/kg | |
| 127-18-4 | Tetrachloroethylene | ND | 5.0 | 1.3 | ug/kg | |
| 108-88-3 | Toluene | ND | 5.0 | 1.0 | ug/kg | |
| 79-01-6 | Trichloroethylene | ND | 5.0 | 1.0 | ug/kg | |
| 75-69-4 | Trichlorofluoromethane | ND | 5.0 | 1.0 | ug/kg | |
| 75-01-4 | Vinyl chloride | ND | 5.0 | 1.0 | ug/kg | |
| 108-05-4 | Vinyl Acetate | ND | 25 | 8.0 | ug/kg | |
| 1330-20-7 | Xylene (total) | ND | 15 | 2.7 | ug/kg | |
| | m,p-Xylene | ND | 10 | 1.6 | ug/kg | |
| 95-47-6 | o-Xylene | ND | 5.0 | 1.1 | ug/kg | |

# Method Blank Summary



**Job Number:** FA11487
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| VY555-MB | Y12538.D | 1 | 01/09/14 | EP | n/a | n/a | VY555 |

**The QC reported here applies to the following samples:** **Method:** SW846 8260B

FA11487-1, FA11487-2, FA11487-3, FA11487-4

| CAS No. | Surrogate Recoveries | | Limits |
|---|---|---|---|
| 1868-53-7 | Dibromofluoromethane | 102% | 75-124% |
| 2037-26-5 | Toluene-D8 | 99% | 75-126% |
| 460-00-4 | 4-Bromofluorobenzene | 98% | 71-133% |
| 17060-07-0 | 1,2-Dichloroethane-D4 | 94% | 72-135% |

# Leachate Blank Summary



**Job Number:** FA11487
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP50074-LB | N0073605.D | 10 | 01/15/14 | RB | 01/14/14 | OP50074 | VN3204 |

**The QC reported here applies to the following samples:** **Method:** SW846 8260B

FA11487-5L

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 71-43-2 | Benzene | ND | 10 | 2.4 | ug/l | |
| 108-90-7 | Chlorobenzene | ND | 10 | 2.4 | ug/l | |
| 67-66-3 | Chloroform | ND | 10 | 3.1 | ug/l | |
| 56-23-5 | Carbon tetrachloride | ND | 10 | 4.0 | ug/l | |
| 75-35-4 | 1,1-Dichloroethylene | ND | 10 | 2.5 | ug/l | |
| 107-06-2 | 1,2-Dichloroethane | ND | 10 | 2.4 | ug/l | |
| 106-46-7 | p-Dichlorobenzene | ND | 10 | 2.0 | ug/l | |
| 78-93-3 | Methyl ethyl ketone | ND | 50 | 15 | ug/l | |
| 127-18-4 | Tetrachloroethylene | ND | 10 | 2.6 | ug/l | |
| 79-01-6 | Trichloroethylene | ND | 10 | 3.0 | ug/l | |
| 75-01-4 | Vinyl chloride | ND | 10 | 3.3 | ug/l | |

| CAS No. | Surrogate Recoveries | | Limits |
|---|---|---|---|
| 1868-53-7 | Dibromofluoromethane | 97% | 83-118% |
| 17060-07-0 | 1,2-Dichloroethane-D4 | 98% | 79-125% |
| 2037-26-5 | Toluene-D8 | 99% | 85-112% |
| 460-00-4 | 4-Bromofluorobenzene | 98% | 83-118% |

# Blank Spike Summary



**Job Number:** FA11487
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| VY555-BS | Y12537.D | 1 | 01/09/14 | EP | n/a | n/a | VY555 |

**The QC reported here applies to the following samples:** **Method:** SW846 8260B

FA11487-1, FA11487-2, FA11487-3, FA11487-4

| CAS No. | Compound | Spike ug/kg | BSP ug/kg | BSP % | Limits |
|---|---|---|---|---|---|
| 67-64-1 | Acetone | 250 | 208 | 83 | 61-152 |
| 71-43-2 | Benzene | 50 | 48.6 | 97 | 76-126 |
| 108-86-1 | Bromobenzene | 50 | 48.9 | 98 | 76-122 |
| 74-97-5 | Bromochloromethane | 50 | 47.7 | 95 | 77-120 |
| 75-27-4 | Bromodichloromethane | 50 | 44.2 | 88 | 74-130 |
| 75-25-2 | Bromoform | 50 | 46.5 | 93 | 76-127 |
| 104-51-8 | n-Butylbenzene | 50 | 43.1 | 86 | 71-128 |
| 135-98-8 | sec-Butylbenzene | 50 | 53.5 | 107 | 79-135 |
| 98-06-6 | tert-Butylbenzene | 50 | 49.4 | 99 | 77-133 |
| 108-90-7 | Chlorobenzene | 50 | 50.4 | 101 | 81-129 |
| 75-00-3 | Chloroethane | 50 | 48.9 | 98 | 68-133 |
| 67-66-3 | Chloroform | 50 | 45.7 | 91 | 72-123 |
| 95-49-8 | o-Chlorotoluene | 50 | 48.9 | 98 | 77-129 |
| 106-43-4 | p-Chlorotoluene | 50 | 54.8 | 110 | 80-134 |
| 56-23-5 | Carbon tetrachloride | 50 | 45.2 | 90 | 78-133 |
| 75-34-3 | 1,1-Dichloroethane | 50 | 48.9 | 98 | 73-125 |
| 75-35-4 | 1,1-Dichloroethylene | 50 | 43.6 | 87 | 81-136 |
| 563-58-6 | 1,1-Dichloropropene | 50 | 50.3 | 101 | 75-130 |
| 106-93-4 | 1,2-Dibromoethane | 50 | 49.9 | 100 | 77-126 |
| 107-06-2 | 1,2-Dichloroethane | 50 | 49.9 | 100 | 74-128 |
| 78-87-5 | 1,2-Dichloropropane | 50 | 43.5 | 87 | 74-125 |
| 142-28-9 | 1,3-Dichloropropane | 50 | 48.2 | 96 | 76-122 |
| 108-20-3 | Di-Isopropyl ether | 50 | 50.6 | 101 | 75-122 |
| 594-20-7 | 2,2-Dichloropropane | 50 | 50.4 | 101 | 77-133 |
| 124-48-1 | Dibromochloromethane | 50 | 47.4 | 95 | 76-127 |
| 75-71-8 | Dichlorodifluoromethane | 50 | 39.6 | 79 | 68-168 |
| 156-59-2 | cis-1,2-Dichloroethylene | 50 | 46.5 | 93 | 74-126 |
| 10061-01-5 | cis-1,3-Dichloropropene | 50 | 48.8 | 98 | 80-123 |
| 541-73-1 | m-Dichlorobenzene | 50 | 54.2 | 108 | 81-129 |
| 95-50-1 | o-Dichlorobenzene | 50 | 50.8 | 102 | 80-129 |
| 106-46-7 | p-Dichlorobenzene | 50 | 48.9 | 98 | 76-130 |
| 156-60-5 | trans-1,2-Dichloroethylene | 50 | 41.0 | 82 | 70-127 |
| 10061-02-6 | trans-1,3-Dichloropropene | 50 | 45.5 | 91 | 75-131 |
| 64-17-5 | Ethyl alcohol | 1000 | 851 | 85 | 53-154 |
| 100-41-4 | Ethylbenzene | 50 | 47.3 | 95 | 77-123 |
| 637-92-3 | Ethyl tert-Butyl Ether | 50 | 48.3 | 97 | 75-117 |

* = Outside of Control Limits.

# Blank Spike Summary



**Job Number:** FA11487
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| VY555-BS | Y12537.D | 1 | 01/09/14 | EP | n/a | n/a | VY555 |

**The QC reported here applies to the following samples:** **Method:** SW846 8260B

FA11487-1, FA11487-2, FA11487-3, FA11487-4

| CAS No. | Compound | Spike ug/kg | BSP ug/kg | BSP % | Limits |
|---|---|---|---|---|---|
| 591-78-6 | 2-Hexanone | 250 | 205 | 82 | 72-133 |
| 98-82-8 | Isopropylbenzene | 50 | 51.1 | 102 | 80-136 |
| 99-87-6 | p-Isopropyltoluene | 50 | 53.6 | 107 | 77-131 |
| 108-10-1 | 4-Methyl-2-pentanone | 250 | 182 | 73* | 76-132 |
| 74-83-9 | Methyl bromide | 50 | 47.2 | 94 | 65-139 |
| 74-87-3 | Methyl chloride | 50 | 42.7 | 85 | 71-144 |
| 75-09-2 | Methylene chloride | 50 | 41.1 | 82 | 74-137 |
| 78-93-3 | Methyl ethyl ketone | 250 | 223 | 89 | 75-137 |
| 1634-04-4 | Methyl Tert Butyl Ether | 50 | 43.5 | 87 | 77-120 |
| 91-20-3 | Naphthalene | 50 | 50.9 | 102 | 79-129 |
| 103-65-1 | n-Propylbenzene | 50 | 52.5 | 105 | 80-135 |
| 100-42-5 | Styrene | 50 | 45.6 | 91 | 78-125 |
| 75-85-4 | Tert-Amyl Alcohol | 500 | 637 | 127 | 69-130 |
| 994-05-8 | Tert-Amyl Methyl Ether | 50 | 50.1 | 100 | 69-130 |
| 75-65-0 | Tert-Butyl Alcohol | 500 | 631 | 126 | 58-136 |
| 762-75-4 | tert-Butyl Formate | 500 | ND | 0* | 65-135 |
| 630-20-6 | 1,1,1,2-Tetrachloroethane | 50 | 48.5 | 97 | 78-126 |
| 71-55-6 | 1,1,1-Trichloroethane | 50 | 48.8 | 98 | 70-129 |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 50 | 48.5 | 97 | 71-126 |
| 79-00-5 | 1,1,2-Trichloroethane | 50 | 44.8 | 90 | 74-124 |
| 87-61-6 | 1,2,3-Trichlorobenzene | 50 | 50.2 | 100 | 77-128 |
| 96-18-4 | 1,2,3-Trichloropropane | 50 | 48.8 | 98 | 74-127 |
| 120-82-1 | 1,2,4-Trichlorobenzene | 50 | 52.5 | 105 | 78-130 |
| 95-63-6 | 1,2,4-Trimethylbenzene | 50 | 49.7 | 99 | 74-123 |
| 108-67-8 | 1,3,5-Trimethylbenzene | 50 | 48.0 | 96 | 73-122 |
| 127-18-4 | Tetrachloroethylene | 50 | 41.3 | 83 | 79-130 |
| 108-88-3 | Toluene | 50 | 45.4 | 91 | 76-124 |
| 79-01-6 | Trichloroethylene | 50 | 46.6 | 93 | 75-128 |
| 75-69-4 | Trichlorofluoromethane | 50 | 43.6 | 87 | 73-145 |
| 75-01-4 | Vinyl chloride | 50 | 40.6 | 81 | 76-141 |
| 108-05-4 | Vinyl Acetate | 250 | 285 | 114 | 48-164 |
| 1330-20-7 | Xylene (total) | 150 | 141 | 94 | 80-129 |
| | m,p-Xylene | 100 | 95.3 | 95 | 80-128 |
| 95-47-6 | o-Xylene | 50 | 46.1 | 92 | 80-132 |

* = Outside of Control Limits.

# Blank Spike Summary



**Job Number:** FA11487
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| VY555-BS | Y12537.D | 1 | 01/09/14 | EP | n/a | n/a | VY555 |

**The QC reported here applies to the following samples:** **Method:** SW846 8260B

FA11487-1, FA11487-2, FA11487-3, FA11487-4

| CAS No. | Surrogate Recoveries | BSP | Limits |
|---|---|---|---|
| 1868-53-7 | Dibromofluoromethane | 98% | 75-124% |
| 2037-26-5 | Toluene-D8 | 96% | 75-126% |
| 460-00-4 | 4-Bromofluorobenzene | 102% | 71-133% |
| 17060-07-0 | 1,2-Dichloroethane-D4 | 98% | 72-135% |

* = Outside of Control Limits.

# Blank Spike Summary



**Job Number:** FA11487
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| VY555-BS | Y12546.D | 1 | 01/09/14 | EP | n/a | n/a | VY555 |

**The QC reported here applies to the following samples:** **Method:** SW846 8260B

FA11487-1, FA11487-2, FA11487-3, FA11487-4

| CAS No. | Compound | Spike ug/kg | BSP ug/kg | BSP % | Limits |
|---|---|---|---|---|---|
| 762-75-4 | tert-Butyl Formate | 500 | 454 | 91 | 65-135 |

| CAS No. | Surrogate Recoveries | BSP | Limits |
|---|---|---|---|
| 1868-53-7 | Dibromofluoromethane | 105% | 75-124% |
| 2037-26-5 | Toluene-D8 | 94% | 75-126% |
| 460-00-4 | 4-Bromofluorobenzene | 97% | 71-133% |
| 17060-07-0 | 1,2-Dichloroethane-D4 | 91% | 72-135% |

* = Outside of Control Limits.

# Blank Spike Summary



**Job Number:** FA11487
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| VN3204-BS | N0073604.D | 10 | 01/15/14 | RB | n/a | n/a | VN3204 |

**The QC reported here applies to the following samples:** **Method:** SW846 8260B

FA11487-5L

| CAS No. | Compound | Spike ug/l | BSP ug/l | BSP % | Limits |
|---|---|---|---|---|---|
| 71-43-2 | Benzene | 250 | 244 | 98 | 81-122 |
| 108-90-7 | Chlorobenzene | 250 | 271 | 108 | 82-124 |
| 67-66-3 | Chloroform | 250 | 240 | 96 | 80-124 |
| 56-23-5 | Carbon tetrachloride | 250 | 244 | 98 | 76-136 |
| 75-35-4 | 1,1-Dichloroethylene | 250 | 289 | 116 | 78-137 |
| 107-06-2 | 1,2-Dichloroethane | 250 | 239 | 96 | 75-125 |
| 106-46-7 | p-Dichlorobenzene | 250 | 247 | 99 | 78-120 |
| 78-93-3 | Methyl ethyl ketone | 1250 | 1060 | 85 | 56-143 |
| 127-18-4 | Tetrachloroethylene | 250 | 270 | 108 | 76-135 |
| 79-01-6 | Trichloroethylene | 250 | 247 | 99 | 81-126 |
| 75-01-4 | Vinyl chloride | 250 | 278 | 111 | 69-159 |

| CAS No. | Surrogate Recoveries | BSP | Limits |
|---|---|---|---|
| 1868-53-7 | Dibromofluoromethane | 99% | 83-118% |
| 17060-07-0 | 1,2-Dichloroethane-D4 | 101% | 79-125% |
| 2037-26-5 | Toluene-D8 | 101% | 85-112% |
| 460-00-4 | 4-Bromofluorobenzene | 99% | 83-118% |

* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary



**Job Number:** FA11487
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| FA11487-4MS | Y12547.D | 1 | 01/09/14 | EP | n/a | n/a | VY555 |
| FA11487-4MSD | Y12548.D | 1 | 01/09/14 | EP | n/a | n/a | VY555 |
| FA11487-4 | Y12539.D | 1 | 01/09/14 | EP | n/a | n/a | VY555 |

**The QC reported here applies to the following samples:** **Method:** SW846 8260B

FA11487-1, FA11487-2, FA11487-3, FA11487-4

| CAS No. | Compound | FA11487-4 ug/kg | Q | Spike ug/kg | MS ug/kg | MS % | MSD ug/kg | MSD % | RPD | Limits Rec/RPD |
|---|---|---|---|---|---|---|---|---|---|---|
| 67-64-1 | Acetone | 1600 U | | 7810 | 6900 | 88 | 7840 | 100 | 13 | 61-152/27 |
| 71-43-2 | Benzene | 160 U | | 1560 | 1240 | 79 | 1570 | 101 | 23 | 76-126/26 |
| 108-86-1 | Bromobenzene | 160 U | | 1560 | 1380 | 88 | 1310 | 84 | 5 | 76-122/32 |
| 74-97-5 | Bromochloromethane | 160 U | | 1560 | 1600 | 102 | 1790 | 115 | 11 | 77-120/24 |
| 75-27-4 | Bromodichloromethane | 160 U | | 1560 | 1510 | 97 | 1630 | 104 | 8 | 74-130/25 |
| 75-25-2 | Bromoform | 160 U | | 1560 | 1410 | 90 | 1550 | 99 | 9 | 76-127/26 |
| 104-51-8 | n-Butylbenzene | 125 | J | 1560 | 1550 | 91 | 1590 | 94 | 3 | 71-128/35 |
| 135-98-8 | sec-Butylbenzene | 44.0 | | 1560 | 1350 | 84 | 1510 | 94 | 11 | 79-135/34 |
| 98-06-6 | tert-Butylbenzene | 160 U | | 1560 | 1360 | 87 | 1460 | 94 | 7 | 77-133/34 |
| 108-90-7 | Chlorobenzene | 160 U | | 1560 | 1500 | 96 | 1540 | 99 | 3 | 81-129/29 |
| 75-00-3 | Chloroethane | 160 U | | 1560 | 1380 | 88 | 1630 | 104 | 17 | 68-133/29 |
| 67-66-3 | Chloroform | 160 U | | 1560 | 1440 | 92 | 1660 | 106 | 14 | 72-123/26 |
| 95-49-8 | o-Chlorotoluene | 160 U | | 1560 | 1520 | 97 | 1530 | 98 | 1 | 77-129/33 |
| 106-43-4 | p-Chlorotoluene | 160 U | | 1560 | 1450 | 93 | 1500 | 96 | 3 | 80-134/33 |
| 56-23-5 | Carbon tetrachloride | 160 U | | 1560 | 1310 | 84 | 1310 | 84 | 0 | 78-133/29 |
| 75-34-3 | 1,1-Dichloroethane | 160 U | | 1560 | 1460 | 94 | 1680 | 108 | 14 | 73-125/27 |
| 75-35-4 | 1,1-Dichloroethylene | 160 U | | 1560 | 1210 | 78* | 1380 | 88 | 13 | 81-136/28 |
| 563-58-6 | 1,1-Dichloropropene | 160 U | | 1560 | 1420 | 91 | 1340 | 86 | 6 | 75-130/28 |
| 106-93-4 | 1,2-Dibromoethane | 160 U | | 1560 | 1350 | 86 | 1550 | 99 | 14 | 77-126/26 |
| 107-06-2 | 1,2-Dichloroethane | 160 U | | 1560 | 1510 | 97 | 1770 | 113 | 16 | 74-128/23 |
| 78-87-5 | 1,2-Dichloropropane | 160 U | | 1560 | 1510 | 97 | 1590 | 102 | 5 | 74-125/25 |
| 142-28-9 | 1,3-Dichloropropane | 160 U | | 1560 | 1420 | 91 | 1540 | 99 | 8 | 76-122/26 |
| 108-20-3 | Di-Isopropyl ether | 160 U | | 1560 | 1640 | 105 | 1860 | 119 | 13 | 75-122/25 |
| 594-20-7 | 2,2-Dichloropropane | 160 U | | 1560 | 1450 | 93 | 1580 | 101 | 9 | 77-133/28 |
| 124-48-1 | Dibromochloromethane | 160 U | | 1560 | 1410 | 90 | 1520 | 97 | 8 | 76-127/27 |
| 75-71-8 | Dichlorodifluoromethane | 160 U | | 1560 | 945 | 61* | 1100 | 70 | 15 | 68-168/29 |
| 156-59-2 | cis-1,2-Dichloroethylene | 160 U | | 1560 | 1510 | 97 | 1680 | 108 | 11 | 74-126/26 |
| 10061-01-5 | cis-1,3-Dichloropropene | 160 U | | 1560 | 1370 | 88 | 1700 | 109 | 21 | 80-123/26 |
| 541-73-1 | m-Dichlorobenzene | 160 U | | 1560 | 1500 | 96 | 1580 | 101 | 5 | 81-129/33 |
| 95-50-1 | o-Dichlorobenzene | 160 U | | 1560 | 1500 | 96 | 1590 | 102 | 6 | 80-129/32 |
| 106-46-7 | p-Dichlorobenzene | 160 U | | 1560 | 1420 | 91 | 1460 | 94 | 3 | 76-130/32 |
| 156-60-5 | trans-1,2-Dichloroethylene | 160 U | | 1560 | 1200 | 77 | 1420 | 91 | 17 | 70-127/27 |
| 10061-02-6 | trans-1,3-Dichloropropene | 160 U | | 1560 | 1550 | 99 | 1680 | 108 | 8 | 75-131/28 |
| 64-17-5 | Ethyl alcohol | 12000 U | | 31200 | 25500 | 82 | 19600 | 63 | 26 | 53-154/42 |
| 100-41-4 | Ethylbenzene | 303 | | 1560 | 1780 | 95 | 1860 | 100 | 4 | 77-123/31 |
| 637-92-3 | Ethyl tert-Butyl Ether | 160 U | | 1560 | 1640 | 105 | 1930 | 124* | 16 | 75-117/24 |

* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary



**Job Number:** FA11487
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| FA11487-4MS | Y12547.D | 1 | 01/09/14 | EP | n/a | n/a | VY555 |
| FA11487-4MSD | Y12548.D | 1 | 01/09/14 | EP | n/a | n/a | VY555 |
| FA11487-4 | Y12539.D | 1 | 01/09/14 | EP | n/a | n/a | VY555 |

**The QC reported here applies to the following samples:** **Method:** SW846 8260B

FA11487-1, FA11487-2, FA11487-3, FA11487-4

| CAS No. | Compound | FA11487-4 ug/kg | Q | Spike ug/kg | MS ug/kg | MS % | MSD ug/kg | MSD % | RPD | Limits Rec/RPD |
|---|---|---|---|---|---|---|---|---|---|---|
| 591-78-6 | 2-Hexanone | 780 U | | 7810 | 6420 | 82 | 6930 | 89 | 8 | 72-133/26 |
| 98-82-8 | Isopropylbenzene | 59.9 | | 1560 | 1570 | 97 | 1640 | 101 | 4 | 80-136/32 |
| 99-87-6 | p-Isopropyltoluene | 42.8 | | 1560 | 1410 | 88 | 1450 | 90 | 3 | 77-131/34 |
| 108-10-1 | 4-Methyl-2-pentanone | 780 U | | 7810 | 6350 | 81 | 7180 | 92 | 12 | 76-132/26 |
| 74-83-9 | Methyl bromide | 160 U | | 1560 | 1440 | 92 | 1620 | 104 | 12 | 65-139/31 |
| 74-87-3 | Methyl chloride | 160 U | | 1560 | 1200 | 77 | 1380 | 88 | 14 | 71-144/27 |
| 75-09-2 | Methylene chloride | 310 U | | 1560 | 1730 | 111 | 2200 | 141* | 24 | 74-137/28 |
| 78-93-3 | Methyl ethyl ketone | 780 U | | 7810 | 7300 | 94 | 7830 | 100 | 7 | 75-137/25 |
| 1634-04-4 | Methyl Tert Butyl Ether | 160 U | | 1560 | 1460 | 94 | 1760 | 113 | 19 | 77-120/24 |
| 91-20-3 | Naphthalene | 392 | | 1560 | 1800 | 90 | 2000 | 103 | 11 | 79-129/33 |
| 103-65-1 | n-Propylbenzene | 335 | | 1560 | 1840 | 96 | 1810 | 94 | 2 | 80-135/33 |
| 100-42-5 | Styrene | 160 U | | 1560 | 1420 | 91 | 1490 | 95 | 5 | 78-125/30 |
| 75-85-4 | Tert-Amyl Alcohol | 1600 U | | 15600 | 15300 | 98 | 16600 | 106 | 8 | 69-130/32 |
| 994-05-8 | Tert-Amyl Methyl Ether | 160 U | | 1560 | 1480 | 95 | 1960 | 126 | 28* | 69-130/23 |
| 75-65-0 | Tert-Butyl Alcohol | 1600 U | | 15600 | 14800 | 95 | 14700 | 94 | 1 | 74-126/32 |
| 762-75-4 | tert-Butyl Formate | 1600 U | | 15600 | ND | 0* | ND | 0* | nc | 65-135/30 |
| 630-20-6 | 1,1,1,2-Tetrachloroethane | 160 U | | 1560 | 1440 | 92 | 1490 | 95 | 3 | 78-126/27 |
| 71-55-6 | 1,1,1-Trichloroethane | 160 U | | 1560 | 1440 | 92 | 1510 | 97 | 5 | 70-129/27 |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 160 U | | 1560 | 1370 | 88 | 1400 | 90 | 2 | 71-126/30 |
| 79-00-5 | 1,1,2-Trichloroethane | 160 U | | 1560 | 1420 | 91 | 1560 | 100 | 9 | 74-124/28 |
| 87-61-6 | 1,2,3-Trichlorobenzene | 160 U | | 1560 | 1390 | 89 | 1420 | 91 | 2 | 77-128/35 |
| 96-18-4 | 1,2,3-Trichloropropane | 160 U | | 1560 | 1370 | 88 | 1500 | 96 | 9 | 74-127/27 |
| 120-82-1 | 1,2,4-Trichlorobenzene | 160 U | | 1560 | 1370 | 88 | 1420 | 91 | 4 | 78-130/34 |
| 95-63-6 | 1,2,4-Trimethylbenzene | 3440 | | 1560 | 5900 | 158* [a] | 6600 | 202* [a] | 11 | 74-123/34 |
| 108-67-8 | 1,3,5-Trimethylbenzene | 890 | | 1560 | 2510 | 104 | 2600 | 110 | 4 | 73-122/33 |
| 127-18-4 | Tetrachloroethylene | 160 U | | 1560 | 1220 | 78* | 1350 | 86 | 10 | 79-130/31 |
| 108-88-3 | Toluene | 160 U | | 1560 | 1240 | 79 | 1310 | 84 | 5 | 76-124/30 |
| 79-01-6 | Trichloroethylene | 160 U | | 1560 | 1340 | 86 | 1340 | 86 | 0 | 75-128/27 |
| 75-69-4 | Trichlorofluoromethane | 160 U | | 1560 | 1220 | 78 | 1390 | 89 | 13 | 73-145/31 |
| 75-01-4 | Vinyl chloride | 160 U | | 1560 | 1070 | 69* | 1180 | 76 | 10 | 76-141/27 |
| 108-05-4 | Vinyl Acetate | 780 U | | 7810 | 7230 | 93 | 5470 | 70 | 28 | 48-164/37 |
| 1330-20-7 | Xylene (total) | 1100 | | 4680 | 5770 | 100 | 6130 | 107 | 6 | 80-129/30 |
| | m,p-Xylene | 1010 | | 3120 | 4240 | 103 | 4460 | 110 | 5 | 80-128/30 |
| 95-47-6 | o-Xylene | 92.5 | J | 1560 | 1530 | 92 | 1670 | 101 | 9 | 80-132/30 |

* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary



**Job Number:** FA11487
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| FA11487-4MS | Y12547.D | 1 | 01/09/14 | EP | n/a | n/a | VY555 |
| FA11487-4MSD | Y12548.D | 1 | 01/09/14 | EP | n/a | n/a | VY555 |
| FA11487-4 | Y12539.D | 1 | 01/09/14 | EP | n/a | n/a | VY555 |

**The QC reported here applies to the following samples:** **Method:** SW846 8260B

FA11487-1, FA11487-2, FA11487-3, FA11487-4

| CAS No. | Surrogate Recoveries | MS | MSD | FA11487-4 | Limits |
|---|---|---|---|---|---|
| 1868-53-7 | Dibromofluoromethane | 106% | 106% | 98% | 75-124% |
| 2037-26-5 | Toluene-D8 | 90% | 91% | 99% | 75-126% |
| 460-00-4 | 4-Bromofluorobenzene | 93% | 87% | 98% | 71-133% |
| 17060-07-0 | 1,2-Dichloroethane-D4 | 92% | 106% | 98% | 72-135% |

(a) Outside control limits due to high level in sample relative to spike amount.

* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary



**Job Number:** FA11487
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| FA11566-2LMS | N0073613.D | 10 | 01/15/14 | RB | n/a | n/a | VN3204 |
| FA11566-2LMSD | N0073614.D | 10 | 01/15/14 | RB | n/a | n/a | VN3204 |
| FA11566-2L | N0073612.D | 10 | 01/15/14 | RB | 01/14/14 | OP50074 | VN3204 |

**The QC reported here applies to the following samples:** **Method:** SW846 8260B

FA11487-5L

| CAS No. | Compound | FA11566-2L ug/l | Q | Spike ug/l | MS ug/l | MS % | MSD ug/l | MSD % | RPD | Limits Rec/RPD |
|---|---|---|---|---|---|---|---|---|---|---|
| 71-43-2 | Benzene | 10 U | | 250 | 238 | 95 | 223 | 89 | 7 | 81-122/14 |
| 108-90-7 | Chlorobenzene | 10 U | | 250 | 261 | 104 | 245 | 98 | 6 | 82-124/14 |
| 67-66-3 | Chloroform | 10 U | | 250 | 236 | 94 | 228 | 91 | 3 | 80-124/15 |
| 56-23-5 | Carbon tetrachloride | 10 U | | 250 | 233 | 93 | 227 | 91 | 3 | 76-136/23 |
| 75-35-4 | 1,1-Dichloroethylene | 10 U | | 250 | 238 | 95 | 217 | 87 | 9 | 78-137/18 |
| 107-06-2 | 1,2-Dichloroethane | 10 U | | 250 | 239 | 96 | 228 | 91 | 5 | 75-125/14 |
| 106-46-7 | p-Dichlorobenzene | 10 U | | 250 | 237 | 95 | 226 | 90 | 5 | 78-120/15 |
| 78-93-3 | Methyl ethyl ketone | 50 U | | 1250 | 1040 | 83 | 1020 | 82 | 2 | 56-143/18 |
| 127-18-4 | Tetrachloroethylene | 10 U | | 250 | 254 | 102 | 236 | 94 | 7 | 76-135/16 |
| 79-01-6 | Trichloroethylene | 10 U | | 250 | 246 | 98 | 224 | 90 | 9 | 81-126/15 |
| 75-01-4 | Vinyl chloride | 10 U | | 250 | 286 | 114 | 252 | 101 | 13 | 69-159/18 |

| CAS No. | Surrogate Recoveries | MS | MSD | FA11566-2L | Limits |
|---|---|---|---|---|---|
| 1868-53-7 | Dibromofluoromethane | 100% | 100% | 99% | 83-118% |
| 17060-07-0 | 1,2-Dichloroethane-D4 | 102% | 98% | 99% | 79-125% |
| 2037-26-5 | Toluene-D8 | 100% | 100% | 98% | 85-112% |
| 460-00-4 | 4-Bromofluorobenzene | 100% | 101% | 100% | 83-118% |

* = Outside of Control Limits.

# Duplicate Summary



**Job Number:** FA11487
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| FA11517-1DUP | N0073610.D | 10 | 01/15/14 | RB | n/a | n/a | VN3204 |
| FA11517-1 | N0073609.D | 10 | 01/15/14 | RB | 01/14/14 | OP50074 | VN3204 |

**The QC reported here applies to the following samples:** **Method:** SW846 8260B

FA11487-5L

| CAS No. | Compound | FA11517-1 ug/l | Q | DUP ug/l | Q | RPD | Limits |
|---|---|---|---|---|---|---|---|
| 71-43-2 | Benzene | ND | | ND | | nc | 14 |
| 108-90-7 | Chlorobenzene | ND | | ND | | nc | 14 |
| 67-66-3 | Chloroform | ND | | ND | | nc | 15 |
| 56-23-5 | Carbon tetrachloride | ND | | ND | | nc | 23 |
| 75-35-4 | 1,1-Dichloroethylene | ND | | ND | | nc | 18 |
| 107-06-2 | 1,2-Dichloroethane | ND | | ND | | nc | 14 |
| 106-46-7 | p-Dichlorobenzene | ND | | ND | | nc | 15 |
| 78-93-3 | Methyl ethyl ketone | ND | | ND | | nc | 18 |
| 127-18-4 | Tetrachloroethylene | ND | | ND | | nc | 16 |
| 79-01-6 | Trichloroethylene | ND | | ND | | nc | 15 |
| 75-01-4 | Vinyl chloride | ND | | ND | | nc | 18 |

| CAS No. | Surrogate Recoveries | DUP | FA11517-1 | Limits |
|---|---|---|---|---|
| 1868-53-7 | Dibromofluoromethane | 95% | 95% | 83-118% |
| 17060-07-0 | 1,2-Dichloroethane-D4 | 99% | 97% | 79-125% |
| 2037-26-5 | Toluene-D8 | 98% | 98% | 85-112% |
| 460-00-4 | 4-Bromofluorobenzene | 99% | 97% | 83-118% |

* = Outside of Control Limits.

Southeast ACCUTEST LABORATORIES



# GC/MS Semi-volatiles

## QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

# Method Blank Summary



**Job Number:** FA11487
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP50033-MB | X032650.D | 1 | 01/10/14 | FS | 01/09/14 | OP50033 | SX1541 |

**The QC reported here applies to the following samples:** **Method:** SW846 8270D

FA11487-1, FA11487-2, FA11487-3, FA11487-4

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 65-85-0 | Benzoic Acid | ND | 830 | 170 | ug/kg | |
| 95-57-8 | 2-Chlorophenol | ND | 170 | 17 | ug/kg | |
| 59-50-7 | 4-Chloro-3-methyl phenol | ND | 170 | 17 | ug/kg | |
| 120-83-2 | 2,4-Dichlorophenol | ND | 170 | 17 | ug/kg | |
| 105-67-9 | 2,4-Dimethylphenol | ND | 170 | 18 | ug/kg | |
| 51-28-5 | 2,4-Dinitrophenol | ND | 830 | 170 | ug/kg | |
| 534-52-1 | 4,6-Dinitro-o-cresol | ND | 330 | 67 | ug/kg | |
| 95-48-7 | 2-Methylphenol | ND | 170 | 17 | ug/kg | |
| | 3&4-Methylphenol | ND | 170 | 33 | ug/kg | |
| 88-75-5 | 2-Nitrophenol | ND | 170 | 17 | ug/kg | |
| 100-02-7 | 4-Nitrophenol | ND | 830 | 130 | ug/kg | |
| 87-86-5 | Pentachlorophenol | ND | 830 | 130 | ug/kg | |
| 108-95-2 | Phenol | ND | 170 | 17 | ug/kg | |
| 88-06-2 | 2,4,6-Trichlorophenol | ND | 170 | 17 | ug/kg | |
| 83-32-9 | Acenaphthene | ND | 170 | 21 | ug/kg | |
| 208-96-8 | Acenaphthylene | ND | 170 | 17 | ug/kg | |
| 120-12-7 | Anthracene | ND | 170 | 17 | ug/kg | |
| 56-55-3 | Benzo(a)anthracene | ND | 170 | 17 | ug/kg | |
| 50-32-8 | Benzo(a)pyrene | ND | 170 | 17 | ug/kg | |
| 205-99-2 | Benzo(b)fluoranthene | ND | 170 | 17 | ug/kg | |
| 191-24-2 | Benzo(g,h,i)perylene | ND | 170 | 17 | ug/kg | |
| 207-08-9 | Benzo(k)fluoranthene | ND | 170 | 18 | ug/kg | |
| 101-55-3 | 4-Bromophenyl phenyl ether | ND | 170 | 17 | ug/kg | |
| 85-68-7 | Butyl benzyl phthalate | ND | 170 | 33 | ug/kg | |
| 100-51-6 | Benzyl Alcohol | ND | 170 | 17 | ug/kg | |
| 91-58-7 | 2-Chloronaphthalene | ND | 170 | 20 | ug/kg | |
| 106-47-8 | 4-Chloroaniline | ND | 170 | 17 | ug/kg | |
| 218-01-9 | Chrysene | ND | 170 | 17 | ug/kg | |
| 111-91-1 | bis(2-Chloroethoxy)methane | ND | 170 | 17 | ug/kg | |
| 111-44-4 | bis(2-Chloroethyl)ether | ND | 170 | 17 | ug/kg | |
| 108-60-1 | bis(2-Chloroisopropyl)ether | ND | 170 | 17 | ug/kg | |
| 7005-72-3 | 4-Chlorophenyl phenyl ether | ND | 170 | 25 | ug/kg | |
| 95-50-1 | 1,2-Dichlorobenzene | ND | 170 | 17 | ug/kg | |
| 122-66-7 | 1,2-Diphenylhydrazine | ND | 170 | 19 | ug/kg | |
| 541-73-1 | 1,3-Dichlorobenzene | ND | 170 | 17 | ug/kg | |
| 106-46-7 | 1,4-Dichlorobenzene | ND | 170 | 17 | ug/kg | |

# Method Blank Summary



**Job Number:** FA11487
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP50033-MB | X032650.D | 1 | 01/10/14 | FS | 01/09/14 | OP50033 | SX1541 |

**The QC reported here applies to the following samples:** **Method:** SW846 8270D

FA11487-1, FA11487-2, FA11487-3, FA11487-4

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 91-94-1 | 3,3'-Dichlorobenzidine | ND | 170 | 17 | ug/kg | |
| 53-70-3 | Dibenzo(a,h)anthracene | ND | 170 | 17 | ug/kg | |
| 132-64-9 | Dibenzofuran | ND | 170 | 17 | ug/kg | |
| 84-74-2 | Di-n-butyl phthalate | ND | 330 | 33 | ug/kg | |
| 117-84-0 | Di-n-octyl phthalate | ND | 170 | 33 | ug/kg | |
| 84-66-2 | Diethyl phthalate | ND | 330 | 33 | ug/kg | |
| 131-11-3 | Dimethyl phthalate | ND | 170 | 33 | ug/kg | |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | ND | 330 | 33 | ug/kg | |
| 206-44-0 | Fluoranthene | ND | 170 | 17 | ug/kg | |
| 86-73-7 | Fluorene | ND | 170 | 17 | ug/kg | |
| 118-74-1 | Hexachlorobenzene | ND | 170 | 17 | ug/kg | |
| 87-68-3 | Hexachlorobutadiene | ND | 170 | 17 | ug/kg | |
| 77-47-4 | Hexachlorocyclopentadiene | ND | 170 | 17 | ug/kg | |
| 67-72-1 | Hexachloroethane | ND | 170 | 17 | ug/kg | |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | ND | 170 | 17 | ug/kg | |
| 78-59-1 | Isophorone | ND | 170 | 17 | ug/kg | |
| 90-12-0 | 1-Methylnaphthalene | ND | 170 | 17 | ug/kg | |
| 91-57-6 | 2-Methylnaphthalene | ND | 170 | 17 | ug/kg | |
| 91-20-3 | Naphthalene | ND | 170 | 17 | ug/kg | |
| 98-95-3 | Nitrobenzene | ND | 170 | 17 | ug/kg | |
| 621-64-7 | N-Nitroso-di-n-propylamine | ND | 170 | 17 | ug/kg | |
| 86-30-6 | N-Nitrosodiphenylamine | ND | 170 | 17 | ug/kg | |
| 85-01-8 | Phenanthrene | ND | 170 | 17 | ug/kg | |
| 129-00-0 | Pyrene | ND | 170 | 17 | ug/kg | |
| 120-82-1 | 1,2,4-Trichlorobenzene | ND | 170 | 17 | ug/kg | |

| CAS No. | Surrogate Recoveries | | Limits |
|---|---|---|---|
| 367-12-4 | 2-Fluorophenol | 92% | 40-102% |
| 4165-62-2 | Phenol-d5 | 90% | 41-100% |
| 118-79-6 | 2,4,6-Tribromophenol | 87% | 42-108% |
| 4165-60-0 | Nitrobenzene-d5 | 85% | 40-105% |
| 321-60-8 | 2-Fluorobiphenyl | 85% | 43-107% |
| 1718-51-0 | Terphenyl-d14 | 103% | 45-119% |

# Leachate Blank Summary



**Job Number:** FA11487
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP50097-LB | X032729.D | 1 | 01/16/14 | FS | 01/15/14 | OP50097 | SX1545 |

**The QC reported here applies to the following samples:** **Method:** SW846 8270D

FA11487-5L

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 95-48-7 | 2-Methylphenol | ND | 50 | 5.0 | ug/l | |
| | 3&4-Methylphenol | ND | 50 | 12 | ug/l | |
| 87-86-5 | Pentachlorophenol | ND | 250 | 50 | ug/l | |
| 95-95-4 | 2,4,5-Trichlorophenol | ND | 50 | 9.7 | ug/l | |
| 88-06-2 | 2,4,6-Trichlorophenol | ND | 50 | 5.5 | ug/l | |
| 106-46-7 | 1,4-Dichlorobenzene | ND | 50 | 5.0 | ug/l | |
| 121-14-2 | 2,4-Dinitrotoluene | ND | 50 | 5.7 | ug/l | |
| 118-74-1 | Hexachlorobenzene | ND | 50 | 6.6 | ug/l | |
| 87-68-3 | Hexachlorobutadiene | ND | 50 | 5.0 | ug/l | |
| 67-72-1 | Hexachloroethane | ND | 50 | 5.0 | ug/l | |
| 98-95-3 | Nitrobenzene | ND | 50 | 5.0 | ug/l | |
| 110-86-1 | Pyridine | ND | 100 | 20 | ug/l | |

| CAS No. | Surrogate Recoveries | | Limits |
|---|---|---|---|
| 367-12-4 | 2-Fluorophenol | 51% | 14-67% |
| 4165-62-2 | Phenol-d5 | 35% | 10-50% |
| 118-79-6 | 2,4,6-Tribromophenol | 81% | 33-118% |
| 4165-60-0 | Nitrobenzene-d5 | 78% | 42-108% |
| 321-60-8 | 2-Fluorobiphenyl | 77% | 40-106% |
| 1718-51-0 | Terphenyl-d14 | 94% | 39-121% |

# Blank Spike Summary



**Job Number:** FA11487
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP50033-BS | X032649.D | 1 | 01/10/14 | FS | 01/09/14 | OP50033 | SX1541 |

**The QC reported here applies to the following samples:** **Method:** SW846 8270D

FA11487-1, FA11487-2, FA11487-3, FA11487-4

| CAS No. | Compound | Spike ug/kg | BSP ug/kg | BSP % | Limits |
|---|---|---|---|---|---|
| 65-85-0 | Benzoic Acid | 3330 | 2950 | 89 | 36-118 |
| 95-57-8 | 2-Chlorophenol | 1670 | 1360 | 82 | 48-104 |
| 59-50-7 | 4-Chloro-3-methyl phenol | 1670 | 1390 | 83 | 52-108 |
| 120-83-2 | 2,4-Dichlorophenol | 1670 | 1350 | 81 | 51-105 |
| 105-67-9 | 2,4-Dimethylphenol | 1670 | 1240 | 74 | 43-96 |
| 51-28-5 | 2,4-Dinitrophenol | 3330 | 2740 | 82 | 40-119 |
| 534-52-1 | 4,6-Dinitro-o-cresol | 3330 | 2950 | 89 | 64-121 |
| 95-48-7 | 2-Methylphenol | 1670 | 1440 | 86 | 46-107 |
| | 3&4-Methylphenol | 3330 | 3000 | 90 | 44-111 |
| 88-75-5 | 2-Nitrophenol | 1670 | 1470 | 88 | 49-104 |
| 100-02-7 | 4-Nitrophenol | 3330 | 2710 | 81 | 56-116 |
| 87-86-5 | Pentachlorophenol | 3330 | 3290 | 99 | 61-114 |
| 108-95-2 | Phenol | 1670 | 1470 | 88 | 45-110 |
| 88-06-2 | 2,4,6-Trichlorophenol | 1670 | 1460 | 88 | 56-109 |
| 83-32-9 | Acenaphthene | 1670 | 1440 | 86 | 56-109 |
| 208-96-8 | Acenaphthylene | 1670 | 1450 | 87 | 56-106 |
| 120-12-7 | Anthracene | 1670 | 1420 | 85 | 61-110 |
| 56-55-3 | Benzo(a)anthracene | 1670 | 1440 | 86 | 66-111 |
| 50-32-8 | Benzo(a)pyrene | 1670 | 1390 | 83 | 59-104 |
| 205-99-2 | Benzo(b)fluoranthene | 1670 | 1440 | 86 | 67-113 |
| 191-24-2 | Benzo(g,h,i)perylene | 1670 | 1400 | 84 | 67-113 |
| 207-08-9 | Benzo(k)fluoranthene | 1670 | 1460 | 88 | 67-114 |
| 101-55-3 | 4-Bromophenyl phenyl ether | 1670 | 1290 | 77 | 62-110 |
| 85-68-7 | Butyl benzyl phthalate | 1670 | 1500 | 90 | 65-113 |
| 100-51-6 | Benzyl Alcohol | 1670 | 1490 | 89 | 53-108 |
| 91-58-7 | 2-Chloronaphthalene | 1670 | 1380 | 83 | 53-106 |
| 106-47-8 | 4-Chloroaniline | 1670 | 551 | 33 | 30-115 |
| 218-01-9 | Chrysene | 1670 | 1460 | 88 | 65-112 |
| 111-91-1 | bis(2-Chloroethoxy)methane | 1670 | 1490 | 89 | 48-105 |
| 111-44-4 | bis(2-Chloroethyl)ether | 1670 | 1420 | 85 | 46-103 |
| 108-60-1 | bis(2-Chloroisopropyl)ether | 1670 | 1700 | 102 | 40-110 |
| 7005-72-3 | 4-Chlorophenyl phenyl ether | 1670 | 1330 | 80 | 58-106 |
| 95-50-1 | 1,2-Dichlorobenzene | 1670 | 1230 | 74 | 44-102 |
| 122-66-7 | 1,2-Diphenylhydrazine | 1670 | 1460 | 88 | 58-112 |
| 541-73-1 | 1,3-Dichlorobenzene | 1670 | 1240 | 74 | 42-100 |
| 106-46-7 | 1,4-Dichlorobenzene | 1670 | 1290 | 77 | 40-106 |

* = Outside of Control Limits.

# Blank Spike Summary

**Job Number:** FA11487
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP50033-BS | X032649.D | 1 | 01/10/14 | FS | 01/09/14 | OP50033 | SX1541 |

**The QC reported here applies to the following samples:** **Method:** SW846 8270D

FA11487-1, FA11487-2, FA11487-3, FA11487-4

| CAS No. | Compound | Spike ug/kg | BSP ug/kg | BSP % | Limits |
|---|---|---|---|---|---|
| 53-70-3 | Dibenzo(a,h)anthracene | 1670 | 1420 | 85 | 68-115 |
| 132-64-9 | Dibenzofuran | 1670 | 1410 | 85 | 57-108 |
| 84-74-2 | Di-n-butyl phthalate | 1670 | 1400 | 84 | 63-108 |
| 117-84-0 | Di-n-octyl phthalate | 1670 | 1620 | 97 | 64-119 |
| 84-66-2 | Diethyl phthalate | 1670 | 1290 | 77 | 61-109 |
| 131-11-3 | Dimethyl phthalate | 1670 | 1340 | 80 | 59-108 |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 1670 | 1530 | 92 | 64-115 |
| 206-44-0 | Fluoranthene | 1670 | 1420 | 85 | 60-108 |
| 86-73-7 | Fluorene | 1670 | 1420 | 85 | 58-109 |
| 118-74-1 | Hexachlorobenzene | 1670 | 1420 | 85 | 59-111 |
| 87-68-3 | Hexachlorobutadiene | 1670 | 1390 | 83 | 41-108 |
| 77-47-4 | Hexachlorocyclopentadiene | 1670 | 1200 | 72 | 49-110 |
| 67-72-1 | Hexachloroethane | 1670 | 1270 | 76 | 40-105 |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 1670 | 1400 | 84 | 66-116 |
| 78-59-1 | Isophorone | 1670 | 1380 | 83 | 42-89 |
| 90-12-0 | 1-Methylnaphthalene | 1670 | 1330 | 80 | 49-106 |
| 91-57-6 | 2-Methylnaphthalene | 1670 | 1380 | 83 | 47-106 |
| 91-20-3 | Naphthalene | 1670 | 1460 | 88 | 44-104 |
| 98-95-3 | Nitrobenzene | 1670 | 1350 | 81 | 43-108 |
| 621-64-7 | N-Nitroso-di-n-propylamine | 1670 | 505 | 30* [a] | 48-108 |
| 86-30-6 | N-Nitrosodiphenylamine | 1670 | 1430 | 86 | 62-110 |
| 85-01-8 | Phenanthrene | 1670 | 1470 | 88 | 63-111 |
| 129-00-0 | Pyrene | 1670 | 1460 | 88 | 65-115 |
| 120-82-1 | 1,2,4-Trichlorobenzene | 1670 | 1260 | 76 | 45-100 |

| CAS No. | Surrogate Recoveries | BSP | Limits |
|---|---|---|---|
| 367-12-4 | 2-Fluorophenol | 90% | 40-102% |
| 4165-62-2 | Phenol-d5 | 87% | 41-100% |
| 118-79-6 | 2,4,6-Tribromophenol | 88% | 42-108% |
| 4165-60-0 | Nitrobenzene-d5 | 84% | 40-105% |
| 321-60-8 | 2-Fluorobiphenyl | 86% | 43-107% |
| 1718-51-0 | Terphenyl-d14 | 99% | 45-119% |

(a) Sporadic marginal failure.

* = Outside of Control Limits.

# Blank Spike Summary



**Job Number:** FA11487
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP50097-LBS | X032728.D | 1 | 01/16/14 | FS | 01/15/14 | OP50097 | SX1545 |

**The QC reported here applies to the following samples:** **Method:** SW846 8270D

FA11487-5L

| CAS No. | Compound | Spike ug/l | BSP ug/l | BSP % | Limits |
|---|---|---|---|---|---|
| 95-48-7 | 2-Methylphenol | 500 | 274 | 55 | 43-90 |
| | 3&4-Methylphenol | 1000 | 536 | 54 | 36-88 |
| 87-86-5 | Pentachlorophenol | 1000 | 970 | 97 | 61-115 |
| 95-95-4 | 2,4,5-Trichlorophenol | 500 | 401 | 80 | 62-109 |
| 88-06-2 | 2,4,6-Trichlorophenol | 500 | 405 | 81 | 59-107 |
| 106-46-7 | 1,4-Dichlorobenzene | 500 | 350 | 70 | 45-98 |
| 121-14-2 | 2,4-Dinitrotoluene | 500 | 406 | 81 | 61-110 |
| 118-74-1 | Hexachlorobenzene | 500 | 412 | 82 | 63-108 |
| 87-68-3 | Hexachlorobutadiene | 500 | 368 | 74 | 42-102 |
| 67-72-1 | Hexachloroethane | 500 | 343 | 69 | 42-100 |
| 98-95-3 | Nitrobenzene | 500 | 355 | 71 | 50-104 |
| 110-86-1 | Pyridine | 500 | 216 | 43 | 23-74 |

| CAS No. | Surrogate Recoveries | BSP | Limits |
|---|---|---|---|
| 367-12-4 | 2-Fluorophenol | 38% | 14-67% |
| 4165-62-2 | Phenol-d5 | 23% | 10-50% |
| 118-79-6 | 2,4,6-Tribromophenol | 84% | 33-118% |
| 4165-60-0 | Nitrobenzene-d5 | 75% | 42-108% |
| 321-60-8 | 2-Fluorobiphenyl | 79% | 40-106% |
| 1718-51-0 | Terphenyl-d14 | 97% | 39-121% |

* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary



**Job Number:** FA11487
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP50033-MS | X032662.D | 1 | 01/10/14 | FS | 01/09/14 | OP50033 | SX1541 |
| OP50033-MSD | X032663.D | 1 | 01/10/14 | FS | 01/09/14 | OP50033 | SX1541 |
| FA11487-4 | X032661.D | 1 | 01/10/14 | FS | 01/09/14 | OP50033 | SX1541 |

**The QC reported here applies to the following samples:** **Method:** SW846 8270D

FA11487-1, FA11487-2, FA11487-3, FA11487-4

| CAS No. | Compound | FA11487-4 ug/kg | Q | Spike ug/kg | MS ug/kg | MS % | MSD ug/kg | MSD % | RPD | Limits Rec/RPD |
|---|---|---|---|---|---|---|---|---|---|---|
| 65-85-0 | Benzoic Acid | 970 U | | 3900 | 3220 | 83 | 3510 | 91 | 9 | 36-118/41 |
| 95-57-8 | 2-Chlorophenol | 190 U | | 1950 | 1500 | 77 | 1510 | 78 | 1 | 48-104/26 |
| 59-50-7 | 4-Chloro-3-methyl phenol | 190 U | | 1950 | 1600 | 82 | 1600 | 83 | 0 | 52-108/21 |
| 120-83-2 | 2,4-Dichlorophenol | 190 U | | 1950 | 1510 | 78 | 1510 | 78 | 0 | 51-105/27 |
| 105-67-9 | 2,4-Dimethylphenol | 190 U | | 1950 | 1560 | 80 | 1590 | 82 | 2 | 43-96/23 |
| 51-28-5 | 2,4-Dinitrophenol | 970 U | | 3900 | 2210 | 57 | 2330 | 60 | 5 | 40-119/32 |
| 534-52-1 | 4,6-Dinitro-o-cresol | 390 U | | 3900 | 2780 | 71 | 2870 | 74 | 3 | 64-121/29 |
| 95-48-7 | 2-Methylphenol | 190 U | | 1950 | 1630 | 84 | 1670 | 86 | 2 | 46-107/24 |
| | 3&4-Methylphenol | 190 U | | 3900 | 3420 | 88 | 3480 | 90 | 2 | 44-111/24 |
| 88-75-5 | 2-Nitrophenol | 190 U | | 1950 | 1600 | 82 | 1610 | 83 | 1 | 49-104/27 |
| 100-02-7 | 4-Nitrophenol | 970 U | | 3900 | 3090 | 79 | 3180 | 82 | 3 | 56-116/23 |
| 87-86-5 | Pentachlorophenol | 970 U | | 3900 | 3740 | 96 | 3860 | 100 | 3 | 61-114/23 |
| 108-95-2 | Phenol | 190 U | | 1950 | 1610 | 83 | 1650 | 85 | 2 | 45-110/24 |
| 88-06-2 | 2,4,6-Trichlorophenol | 190 U | | 1950 | 1650 | 85 | 1680 | 87 | 2 | 56-109/25 |
| 83-32-9 | Acenaphthene | 190 U | | 1950 | 1630 | 84 | 1650 | 85 | 1 | 56-109/23 |
| 208-96-8 | Acenaphthylene | 190 U | | 1950 | 1660 | 85 | 1670 | 86 | 1 | 56-106/23 |
| 120-12-7 | Anthracene | 190 U | | 1950 | 1660 | 85 | 1700 | 88 | 2 | 61-110/21 |
| 56-55-3 | Benzo(a)anthracene | 190 U | | 1950 | 1670 | 86 | 1730 | 89 | 4 | 66-111/23 |
| 50-32-8 | Benzo(a)pyrene | 190 U | | 1950 | 1620 | 83 | 1670 | 86 | 3 | 59-104/23 |
| 205-99-2 | Benzo(b)fluoranthene | 190 U | | 1950 | 1710 | 88 | 1750 | 90 | 2 | 67-113/24 |
| 191-24-2 | Benzo(g,h,i)perylene | 190 U | | 1950 | 1630 | 84 | 1680 | 87 | 3 | 67-113/21 |
| 207-08-9 | Benzo(k)fluoranthene | 190 U | | 1950 | 1690 | 87 | 1760 | 91 | 4 | 67-114/22 |
| 101-55-3 | 4-Bromophenyl phenyl ether | 190 U | | 1950 | 1450 | 74 | 1500 | 78 | 3 | 62-110/21 |
| 85-68-7 | Butyl benzyl phthalate | 190 U | | 1950 | 1770 | 91 | 1850 | 96 | 4 | 65-113/20 |
| 100-51-6 | Benzyl Alcohol | 190 U | | 1950 | 1770 | 91 | 1750 | 90 | 1 | 53-108/24 |
| 91-58-7 | 2-Chloronaphthalene | 190 U | | 1950 | 1530 | 79 | 1530 | 79 | 0 | 53-106/23 |
| 106-47-8 | 4-Chloroaniline | 190 U | | 1950 | 611 | 31 | 649 | 34 | 6 | 30-115/30 |
| 218-01-9 | Chrysene | 190 U | | 1950 | 1680 | 86 | 1750 | 90 | 4 | 65-112/25 |
| 111-91-1 | bis(2-Chloroethoxy)methane | 190 U | | 1950 | 1760 | 90 | 1770 | 91 | 1 | 48-105/24 |
| 111-44-4 | bis(2-Chloroethyl)ether | 190 U | | 1950 | 1500 | 77 | 1520 | 79 | 1 | 46-103/27 |
| 108-60-1 | bis(2-Chloroisopropyl)ether | 190 U | | 1950 | 1880 | 97 | 1960 | 101 | 4 | 40-110/25 |
| 7005-72-3 | 4-Chlorophenyl phenyl ether | 190 U | | 1950 | 1540 | 79 | 1560 | 81 | 1 | 58-106/21 |
| 95-50-1 | 1,2-Dichlorobenzene | 190 U | | 1950 | 1250 | 64 | 1260 | 65 | 1 | 44-102/28 |
| 122-66-7 | 1,2-Diphenylhydrazine | 190 U | | 1950 | 1650 | 85 | 1690 | 87 | 2 | 58-112/22 |
| 541-73-1 | 1,3-Dichlorobenzene | 190 U | | 1950 | 1210 | 62 | 1210 | 63 | 0 | 42-100/30 |
| 106-46-7 | 1,4-Dichlorobenzene | 190 U | | 1950 | 1270 | 65 | 1290 | 67 | 2 | 40-106/29 |

* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary



**Job Number:** FA11487
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP50033-MS | X032662.D | 1 | 01/10/14 | FS | 01/09/14 | OP50033 | SX1541 |
| OP50033-MSD | X032663.D | 1 | 01/10/14 | FS | 01/09/14 | OP50033 | SX1541 |
| FA11487-4 | X032661.D | 1 | 01/10/14 | FS | 01/09/14 | OP50033 | SX1541 |

**The QC reported here applies to the following samples:** **Method:** SW846 8270D

FA11487-1, FA11487-2, FA11487-3, FA11487-4

| CAS No. | Compound | FA11487-4 ug/kg | Q | Spike ug/kg | MS ug/kg | MS % | MSD ug/kg | MSD % | RPD | Limits Rec/RPD |
|---|---|---|---|---|---|---|---|---|---|---|
| 53-70-3 | Dibenzo(a,h)anthracene | 190 U | | 1950 | 1640 | 84 | 1710 | 88 | 4 | 68-115/23 |
| 132-64-9 | Dibenzofuran | 190 U | | 1950 | 1680 | 86 | 1670 | 86 | 1 | 57-108/22 |
| 84-74-2 | Di-n-butyl phthalate | 390 U | | 1950 | 1640 | 84 | 1680 | 87 | 2 | 63-108/19 |
| 117-84-0 | Di-n-octyl phthalate | 190 U | | 1950 | 1950 | 100 | 2030 | 105 | 4 | 64-119/21 |
| 84-66-2 | Diethyl phthalate | 390 U | | 1950 | 1520 | 78 | 1560 | 81 | 3 | 61-109/20 |
| 131-11-3 | Dimethyl phthalate | 190 U | | 1950 | 1550 | 80 | 1570 | 81 | 1 | 59-108/20 |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 390 U | | 1950 | 1790 | 92 | 1870 | 97 | 4 | 64-115/23 |
| 206-44-0 | Fluoranthene | 190 U | | 1950 | 1640 | 84 | 1670 | 86 | 2 | 60-108/25 |
| 86-73-7 | Fluorene | 190 U | | 1950 | 1640 | 84 | 1670 | 86 | 2 | 58-109/21 |
| 118-74-1 | Hexachlorobenzene | 190 U | | 1950 | 1630 | 84 | 1660 | 86 | 2 | 59-111/21 |
| 87-68-3 | Hexachlorobutadiene | 190 U | | 1950 | 1460 | 75 | 1470 | 76 | 1 | 41-108/27 |
| 77-47-4 | Hexachlorocyclopentadiene | 190 U | | 1950 | 1040 | 53 | 1110 | 57 | 7 | 49-110/31 |
| 67-72-1 | Hexachloroethane | 190 U | | 1950 | 2490 | 128* | 2670 | 138* | 7 | 40-105/32 |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 190 U | | 1950 | 1620 | 83 | 1660 | 86 | 2 | 66-116/22 |
| 78-59-1 | Isophorone | 190 U | | 1950 | 1490 | 76 | 1510 | 78 | 1 | 42-89/22 |
| 90-12-0 | 1-Methylnaphthalene | 1310 | | 1950 | 2350 | 53 | 2430 | 58 | 3 | 49-106/26 |
| 91-57-6 | 2-Methylnaphthalene | 2900 | | 1950 | 3540 | 33* | 3680 | 40* | 4 | 47-106/27 |
| 91-20-3 | Naphthalene | 773 | | 1950 | 2090 | 68 | 2150 | 71 | 3 | 44-104/27 |
| 98-95-3 | Nitrobenzene | 190 U | | 1950 | 1480 | 76 | 1520 | 79 | 3 | 43-108/25 |
| 621-64-7 | N-Nitroso-di-n-propylamine | 190 U | | 1950 | 1030 | 53 | 981 | 51 | 5 | 48-108/27 |
| 86-30-6 | N-Nitrosodiphenylamine | 190 U | | 1950 | 1670 | 86 | 1700 | 88 | 2 | 62-110/21 |
| 85-01-8 | Phenanthrene | 190 U | | 1950 | 1680 | 86 | 1720 | 89 | 2 | 63-111/22 |
| 129-00-0 | Pyrene | 190 U | | 1950 | 1700 | 87 | 1770 | 91 | 4 | 65-115/25 |
| 120-82-1 | 1,2,4-Trichlorobenzene | 190 U | | 1950 | 1330 | 68 | 1350 | 70 | 1 | 45-100/26 |

| CAS No. | Surrogate Recoveries | MS | MSD | FA11487-4 | Limits |
|---|---|---|---|---|---|
| 367-12-4 | 2-Fluorophenol | 85% | 90% | 95% | 40-102% |
| 4165-62-2 | Phenol-d5 | 85% | 89% | 95% | 41-100% |
| 118-79-6 | 2,4,6-Tribromophenol | 89% | 93% | 95% | 42-108% |
| 4165-60-0 | Nitrobenzene-d5 | 80% | 83% | 85% | 40-105% |
| 321-60-8 | 2-Fluorobiphenyl | 83% | 85% | 86% | 43-107% |
| 1718-51-0 | Terphenyl-d14 | 100% | 105% | 110% | 45-119% |

* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary



**Job Number:** FA11487
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP50097-MS | X032733.D | 1 | 01/16/14 | FS | 01/15/14 | OP50097 | SX1545 |
| OP50097-MSD | X032734.D | 1 | 01/16/14 | FS | 01/15/14 | OP50097 | SX1545 |
| FA11566-3L | X032732.D | 1 | 01/16/14 | FS | 01/15/14 | OP50097 | SX1545 |

**The QC reported here applies to the following samples:** **Method:** SW846 8270D

FA11487-5L

| CAS No. | Compound | FA11566-3L ug/l | Q | Spike ug/l | MS ug/l | MS % | MSD ug/l | MSD % | RPD | Limits Rec/RPD |
|---|---|---|---|---|---|---|---|---|---|---|
| 95-48-7 | 2-Methylphenol | 50 U | | 500 | 239 | 48 | 222 | 44 | 7 | 43-90/28 |
| | 3&4-Methylphenol | 50 U | | 1000 | 468 | 47 | 437 | 44 | 7 | 36-88/28 |
| 87-86-5 | Pentachlorophenol | 250 U | | 1000 | 918 | 92 | 816 | 82 | 12 | 61-115/26 |
| 95-95-4 | 2,4,5-Trichlorophenol | 50 U | | 500 | 374 | 75 | 327 | 65 | 13 | 62-109/22 |
| 88-06-2 | 2,4,6-Trichlorophenol | 50 U | | 500 | 377 | 75 | 328 | 66 | 14 | 59-107/23 |
| 106-46-7 | 1,4-Dichlorobenzene | 50 U | | 500 | 293 | 59 | 257 | 51 | 13 | 45-98/25 |
| 121-14-2 | 2,4-Dinitrotoluene | 50 U | | 500 | 373 | 75 | 345 | 69 | 8 | 61-110/21 |
| 118-74-1 | Hexachlorobenzene | 50 U | | 500 | 394 | 79 | 342 | 68 | 14 | 63-108/22 |
| 87-68-3 | Hexachlorobutadiene | 50 U | | 500 | 318 | 64 | 272 | 54 | 16 | 42-102/28 |
| 67-72-1 | Hexachloroethane | 50 U | | 500 | 281 | 56 | 245 | 49 | 14 | 42-100/29 |
| 98-95-3 | Nitrobenzene | 50 U | | 500 | 318 | 64 | 274 | 55 | 15 | 50-104/28 |
| 110-86-1 | Pyridine | 100 U | | 500 | 156 | 31 | 151 | 30 | 3 | 23-74/34 |

| CAS No. | Surrogate Recoveries | MS | MSD | FA11566-3L | Limits |
|---|---|---|---|---|---|
| 367-12-4 | 2-Fluorophenol | 31% | 29% | 34% | 14-67% |
| 4165-62-2 | Phenol-d5 | 19% | 18% | 21% | 10-50% |
| 118-79-6 | 2,4,6-Tribromophenol | 81% | 69% | 78% | 33-118% |
| 4165-60-0 | Nitrobenzene-d5 | 67% | 59% | 71% | 42-108% |
| 321-60-8 | 2-Fluorobiphenyl | 72% | 63% | 71% | 40-106% |
| 1718-51-0 | Terphenyl-d14 | 94% | 82% | 99% | 39-121% |

* = Outside of Control Limits.

# Duplicate Summary



**Job Number:** FA11487
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP50097-DUP | X032731.D | 1 | 01/16/14 | FS | 01/15/14 | OP50097 | SX1545 |
| FA11487-5L | X032730.D | 1 | 01/16/14 | FS | 01/15/14 | OP50097 | SX1545 |

**The QC reported here applies to the following samples:** **Method:** SW846 8270D

FA11487-5L

| CAS No. | Compound | FA11487-5L ug/l | Q | DUP ug/l | Q | RPD | Limits |
|---|---|---|---|---|---|---|---|
| 95-48-7 | 2-Methylphenol | 50 U | | ND | | nc | 28 |
| | 3&4-Methylphenol | 50 U | | ND | | nc | 28 |
| 87-86-5 | Pentachlorophenol | 250 U | | ND | | nc | 26 |
| 95-95-4 | 2,4,5-Trichlorophenol | 50 U | | ND | | nc | 22 |
| 88-06-2 | 2,4,6-Trichlorophenol | 50 U | | ND | | nc | 23 |
| 106-46-7 | 1,4-Dichlorobenzene | 50 U | | ND | | nc | 25 |
| 121-14-2 | 2,4-Dinitrotoluene | 50 U | | ND | | nc | 21 |
| 118-74-1 | Hexachlorobenzene | 50 U | | ND | | nc | 22 |
| 87-68-3 | Hexachlorobutadiene | 50 U | | ND | | nc | 28 |
| 67-72-1 | Hexachloroethane | 50 U | | ND | | nc | 29 |
| 98-95-3 | Nitrobenzene | 50 U | | ND | | nc | 28 |
| 110-86-1 | Pyridine | 100 U | | ND | | nc | 34 |

| CAS No. | Surrogate Recoveries | DUP | FA11487-5L | Limits |
|---|---|---|---|---|
| 367-12-4 | 2-Fluorophenol | 35% | 29% | 14-67% |
| 4165-62-2 | Phenol-d5 | 22% | 17% | 10-50% |
| 118-79-6 | 2,4,6-Tribromophenol | 75% | 75% | 33-118% |
| 4165-60-0 | Nitrobenzene-d5 | 67% | 62% | 42-108% |
| 321-60-8 | 2-Fluorobiphenyl | 69% | 64% | 40-106% |
| 1718-51-0 | Terphenyl-d14 | 94% | 94% | 39-121% |

* = Outside of Control Limits.

Southeast ACCUTEST LABORATORIES

## GC Volatiles

# QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

# Method Blank Summary



**Job Number:** FA11487
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| GUU301-MB | UU006216.D | 1 | 01/10/14 | AH | n/a | n/a | GUU301 |

**The QC reported here applies to the following samples:** **Method:** MADEP VPH REV 1.1

FA11487-1, FA11487-2, FA11487-3

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| | C5- C8 Aliphatics (Unadj.) | ND | 5100 | 1800 | ug/kg | |
| | C9- C12 Aliphatics (Unadj.) | ND | 5100 | 1800 | ug/kg | |
| | C9- C10 Aromatics (Unadj.) | ND | 5100 | 1800 | ug/kg | |

| CAS No. | Surrogate Recoveries | | Limits |
|---|---|---|---|
| 460-00-4 | BFB | 90% | 70-130% |
| 460-00-4 | BFB | 80% | 70-130% |

# Method Blank Summary



**Job Number:** FA11487
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| GUU302-MB | UU006234.D | 1 | 01/13/14 | AH | n/a | n/a | GUU302 |

**The QC reported here applies to the following samples:** **Method:** MADEP VPH REV 1.1

FA11487-4

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| | C5- C8 Aliphatics (Unadj.) | ND | 5100 | 1800 | ug/kg | |
| | C9- C12 Aliphatics (Unadj.) | ND | 5100 | 1800 | ug/kg | |
| | C9- C10 Aromatics (Unadj.) | ND | 5100 | 1800 | ug/kg | |

| CAS No. | Surrogate Recoveries | | Limits |
|---|---|---|---|
| 460-00-4 | BFB | 90% | 70-130% |
| 460-00-4 | BFB | 80% | 70-130% |

# Method Blank Summary



**Job Number:** FA11487
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| GQR3434-MB | QR080685.D | 1 | 01/10/14 | MM | n/a | n/a | GQR3434 |

**The QC reported here applies to the following samples:** **Method:** SW846 8015C

FA11487-5

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| | TPH-GRO (C6-C10) | ND | 5.0 | 2.5 | mg/kg | |

| CAS No. | Surrogate Recoveries | | Limits |
|---|---|---|---|
| 460-00-4 | 4-Bromofluorobenzene | 92% | 56-149% |
| 98-08-8 | aaa-Trifluorotoluene | 94% | 66-132% |

# Blank Spike Summary



**Job Number:** FA11487
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| GQR3434-BS | QR080684.D | 1 | 01/10/14 | MM | n/a | n/a | GQR3434 |

**The QC reported here applies to the following samples:** **Method:** SW846 8015C

FA11487-5

| CAS No. | Compound | Spike mg/kg | BSP mg/kg | BSP % | Limits |
|---|---|---|---|---|---|
| | TPH-GRO (C6-C10) | 20 | 19.6 | 98 | 74-128 |

| CAS No. | Surrogate Recoveries | BSP | Limits |
|---|---|---|---|
| 460-00-4 | 4-Bromofluorobenzene | 93% | 56-149% |
| 98-08-8 | aaa-Trifluorotoluene | 98% | 66-132% |

8.2.1

8

* = Outside of Control Limits.

# Blank Spike/Blank Spike Duplicate Summary



**Job Number:** FA11487
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| GUU301-BS | UU006214.D | 1 | 01/10/14 | AH | n/a | n/a | GUU301 |
| GUU301-BSD | UU006215.D | 1 | 01/10/14 | AH | n/a | n/a | GUU301 |

**The QC reported here applies to the following samples:** **Method:** MADEP VPH REV 1.1

FA11487-1, FA11487-2, FA11487-3

| CAS No. | Compound | Spike ug/kg | BSP ug/kg | BSP % | BSD ug/kg | BSD % | RPD | Limits Rec/RPD |
|---|---|---|---|---|---|---|---|---|
| | C5- C8 Aliphatics (Unadj.) | 12500 | 14000 | 112 | 13900 | 111 | 1 | 70-130/25 |
| | C9- C12 Aliphatics (Unadj.) | 8320 | 8570 | 103 | 8280 | 99 | 3 | 70-130/25 |
| | C9- C10 Aromatics (Unadj.) | 4160 | 3860 | 93 | 4390 | 105 | 13 | 70-130/25 |

| CAS No. | Surrogate Recoveries | BSP | BSD | Limits |
|---|---|---|---|---|
| 460-00-4 | BFB | 94% | 97% | 70-130% |
| 460-00-4 | BFB | 84% | 87% | 70-130% |

8.3.1

8

* = Outside of Control Limits.

# Blank Spike/Blank Spike Duplicate Summary



**Job Number:** FA11487
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| GUU302-BS | UU006232.D | 1 | 01/13/14 | AH | n/a | n/a | GUU302 |
| GUU302-BSD | UU006233.D | 1 | 01/13/14 | AH | n/a | n/a | GUU302 |

**The QC reported here applies to the following samples:** **Method:** MADEP VPH REV 1.1

FA11487-4

| CAS No. | Compound | Spike ug/kg | BSP ug/kg | BSP % | BSD ug/kg | BSD % | RPD | Limits Rec/RPD |
|---|---|---|---|---|---|---|---|---|
| | C5- C8 Aliphatics (Unadj.) | 12500 | 13000 | 104 | 13600 | 109 | 5 | 70-130/25 |
| | C9- C12 Aliphatics (Unadj.) | 8320 | 8300 | 100 | 7780 | 93 | 6 | 70-130/25 |
| | C9- C10 Aromatics (Unadj.) | 4160 | 4150 | 100 | 4100 | 99 | 1 | 70-130/25 |

| CAS No. | Surrogate Recoveries | BSP | BSD | Limits |
|---|---|---|---|---|
| 460-00-4 | BFB | 93% | 89% | 70-130% |
| 460-00-4 | BFB | 82% | 80% | 70-130% |

8.3.2

8

* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary



**Job Number:** FA11487
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| FA11487-4MS | UU006226.D | 1 | 01/10/14 | AH | n/a | n/a | GUU301 |
| FA11487-4MSD | UU006227.D | 1 | 01/10/14 | AH | n/a | n/a | GUU301 |
| FA11487-4 [a] | UU006223.D | 1 | 01/10/14 | AH | n/a | n/a | GUU301 |

**The QC reported here applies to the following samples:** **Method:** MADEP VPH REV 1.1

FA11487-1, FA11487-2, FA11487-3

| CAS No. | Compound | FA11487-4 ug/kg | Q | Spike ug/kg | MS ug/kg | MS % | MSD ug/kg | MSD % | RPD | Limits Rec/RPD |
|---|---|---|---|---|---|---|---|---|---|---|
| | C5- C8 Aliphatics (Unadj.) | 32000 | U | 155000 | 64000 | 41* | 69000 | 44* | 8 | 70-130/50 |
| | C9- C12 Aliphatics (Unadj.) | 32000 | U | 129000 | 43300 | 34* | 39600 | 31* | 9 | 70-130/50 |
| | C9- C10 Aromatics (Unadj.) | 31900 | J | 77500 | 52100 | 26* | 62900 | 40* | 19 | 70-130/50 |

| CAS No. | Surrogate Recoveries | MS | MSD | FA11487-4 | Limits |
|---|---|---|---|---|---|
| 460-00-4 | BFB | 197%* | 188%* | 175%* [b] | 70-130% |
| 460-00-4 | BFB | 176%* | 169%* | 152%* [b] | 70-130% |

(a) Confirmation run.
(b) Outside control limits.

* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary



**Job Number:** FA11487
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| FA11487-5MS | QR080703.D | 1 | 01/10/14 | MM | n/a | n/a | GQR3434 |
| FA11487-5MSD | QR080704.D | 1 | 01/10/14 | MM | n/a | n/a | GQR3434 |
| FA11487-5 | QR080686.D | 1 | 01/10/14 | MM | n/a | n/a | GQR3434 |

**The QC reported here applies to the following samples:** **Method:** SW846 8015C

FA11487-5

| CAS No. | Compound | FA11487-5 mg/kg | Q | Spike mg/kg | MS mg/kg | MS % | MSD mg/kg | MSD % | RPD | Limits Rec/RPD |
|---|---|---|---|---|---|---|---|---|---|---|
| | TPH-GRO (C6-C10) | 3.5 | U | 14 | 13.8 | 99 | 13.9 | 99 | 1 | 74-128/17 |

| CAS No. | Surrogate Recoveries | MS | MSD | FA11487-5 | Limits |
|---|---|---|---|---|---|
| 460-00-4 | 4-Bromofluorobenzene | 76% | 73% | 110% | 56-149% |
| 98-08-8 | aaa-Trifluorotoluene | 87% | 87% | 109% | 66-132% |

8.4.2

8

* = Outside of Control Limits.

# Duplicate Summary



**Job Number:** FA11487
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| FA11487-4DUP | UU006241.D | 1 | 01/13/14 | AH | n/a | n/a | GUU302 |
| FA11487-4 | UU006235.D | 1 | 01/13/14 | AH | n/a | n/a | GUU302 |
| FA11487-4 | UU006240.D | 1 | 01/13/14 | AH | n/a | n/a | GUU302 |

**The QC reported here applies to the following samples:** **Method:** MADEP VPH REV 1.1

FA11487-4

| CAS No. | Compound | FA11487-4 ug/kg | Q | DUP ug/kg | Q | RPD | Limits |
|---|---|---|---|---|---|---|---|
| | C5- C8 Aliphatics (Unadj.) | 3200 U | | ND | | nc | 50 |
| | C9- C12 Aliphatics (Unadj.) | 4180 | E | 3310 | J | 12 | 50 |
| | C9- C10 Aromatics (Unadj.) | 16600 [a] | | 15900 | | 4 | 50 |

| CAS No. | Surrogate Recoveries | DUP | FA11487-4 | FA11487-4 | Limits |
|---|---|---|---|---|---|
| 460-00-4 | BFB | 63%* [b] | 81% | 64%* [b] | 70-130% |
| 460-00-4 | BFB | 55%* [b] | 70% | 57%* [b] | 70-130% |

(a) Result is from Run #2.
(b) Outside control limits.

* = Outside of Control Limits.

Southeast ACCUTEST LABORATORIES

## GC Semi-volatiles

# QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

# Method Blank Summary



**Job Number:** FA11487
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP50045-MB | NN007293.D | 1 | 01/15/14 | NJ | 01/10/14 | OP50045 | GNN317 |

**The QC reported here applies to the following samples:** **Method:** MADEP EPH REV 1.1

FA11487-1, FA11487-2, FA11487-3, FA11487-4

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| | C11-C22 Aromatics (Unadj.) | ND | 10000 | 7500 | ug/kg | |
| | C9-C18 Aliphatics | ND | 10000 | 5000 | ug/kg | |
| | C19-C36 Aliphatics | ND | 10000 | 5000 | ug/kg | |

| CAS No. | Surrogate Recoveries | | Limits |
|---|---|---|---|
| 3386-33-2 | 1-Chlorooctadecane | 74% | 40-140% |
| 580-13-2 | 2-Bromonaphthalene | 61% | 40-140% |
| 84-15-1 | o-Terphenyl | 67% | 40-140% |
| 321-60-8 | 2-Fluorobiphenyl | 70% | 40-140% |

# Method Blank Summary



**Job Number:** FA11487
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP50052-MB | ST123430.D | 1 | 01/13/14 | MV | 01/10/14 | OP50052 | GST2935 |

**The QC reported here applies to the following samples:** **Method:** SW846 8082A

FA11487-5

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 12674-11-2 | Aroclor 1016 | ND | 17 | 6.7 | ug/kg | |
| 11104-28-2 | Aroclor 1221 | ND | 17 | 8.3 | ug/kg | |
| 11141-16-5 | Aroclor 1232 | ND | 17 | 8.3 | ug/kg | |
| 53469-21-9 | Aroclor 1242 | ND | 17 | 6.7 | ug/kg | |
| 12672-29-6 | Aroclor 1248 | ND | 17 | 6.7 | ug/kg | |
| 11097-69-1 | Aroclor 1254 | ND | 17 | 6.7 | ug/kg | |
| 11096-82-5 | Aroclor 1260 | ND | 17 | 6.7 | ug/kg | |

| CAS No. | Surrogate Recoveries | | Limits |
|---|---|---|---|
| 877-09-8 | Tetrachloro-m-xylene | 77% | 44-126% |
| 2051-24-3 | Decachlorobiphenyl | 79% | 41-145% |

# Method Blank Summary



**Job Number:** FA11487
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP50052-MB | MM09485.D | 1 | 01/14/14 | MV | 01/10/14 | OP50052 | GMM209 |

**The QC reported here applies to the following samples:** **Method:** SW846 8082A

FA11487-5

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 12674-11-2 | Aroclor 1016 | ND | 17 | 6.7 | ug/kg | |
| 11104-28-2 | Aroclor 1221 | ND | 17 | 8.3 | ug/kg | |
| 11141-16-5 | Aroclor 1232 | ND | 17 | 8.3 | ug/kg | |
| 53469-21-9 | Aroclor 1242 | ND | 17 | 6.7 | ug/kg | |
| 12672-29-6 | Aroclor 1248 | ND | 17 | 6.7 | ug/kg | |
| 11097-69-1 | Aroclor 1254 | ND | 17 | 6.7 | ug/kg | |
| 11096-82-5 | Aroclor 1260 | ND | 17 | 6.7 | ug/kg | |

| CAS No. | Surrogate Recoveries | | Limits |
|---|---|---|---|
| 877-09-8 | Tetrachloro-m-xylene | 71% | 44-126% |
| 2051-24-3 | Decachlorobiphenyl | 77% | 41-145% |

# Method Blank Summary



**Job Number:** FA11487
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP50034-MB | JJ001014.D | 1 | 01/10/14 | SJL | 01/09/14 | OP50034 | GJJ42 |

**The QC reported here applies to the following samples:** **Method:** SW846 8015C

FA11487-5

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| | TPH (C10-C28) | ND | 4.2 | 2.5 | mg/kg | |

| CAS No. | Surrogate Recoveries | | Limits |
|---|---|---|---|
| 84-15-1 | o-Terphenyl | 80% | 56-122% |

# Leachate Blank Summary



**Job Number:** FA11487
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP50098-LB | CC043036.D | 1 | 01/17/14 | NJ | 01/15/14 | OP50098 | GCC623 |

**The QC reported here applies to the following samples:** **Method:** SW846 8151A

FA11487-5L

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 94-75-7 | 2,4-D | ND | 100 | 18 | ug/l | |
| 93-72-1 | 2,4,5-TP (Silvex) | ND | 10 | 3.0 | ug/l | |

| CAS No. | Surrogate Recoveries | | Limits |
|---|---|---|---|
| 19719-28-9 | 2,4-DCAA | 111% | 33-145% |

# Leachate Blank Summary



**Job Number:** FA11487
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP50095-LB | KK60961.D | 1 | 01/17/14 | EM | 01/15/14 | OP50095 | GKK2046 |

**The QC reported here applies to the following samples:** **Method:** SW846 8081B

FA11487-5L

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 58-89-9 | gamma-BHC (Lindane) | ND | 0.50 | 0.050 | ug/l | |
| 12789-03-6 | Chlordane | ND | 5.0 | 2.0 | ug/l | |
| 72-20-8 | Endrin | ND | 1.0 | 0.10 | ug/l | |
| 76-44-8 | Heptachlor | ND | 0.50 | 0.050 | ug/l | |
| 1024-57-3 | Heptachlor epoxide | ND | 0.50 | 0.050 | ug/l | |
| 72-43-5 | Methoxychlor | ND | 1.0 | 0.10 | ug/l | |
| 8001-35-2 | Toxaphene | ND | 25 | 10 | ug/l | |

| CAS No. | Surrogate Recoveries | | Limits |
|---|---|---|---|
| 877-09-8 | Tetrachloro-m-xylene | 124% | 42-127% |
| 2051-24-3 | Decachlorobiphenyl | 101% | 27-127% |

# Blank Spike Summary



**Job Number:** FA11487
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP50098-LBS | CC043035.D | 1 | 01/17/14 | NJ | 01/15/14 | OP50098 | GCC623 |

**The QC reported here applies to the following samples:** **Method:** SW846 8151A

FA11487-5L

| CAS No. | Compound | Spike ug/l | BSP ug/l | BSP % | Limits |
|---|---|---|---|---|---|
| 94-75-7 | 2,4-D | 500 | 581 | 116 | 69-138 |
| 93-72-1 | 2,4,5-TP (Silvex) | 50 | 53.0 | 106 | 76-142 |

| CAS No. | Surrogate Recoveries | BSP | Limits |
|---|---|---|---|
| 19719-28-9 | 2,4-DCAA | 114% | 33-145% |

9.3.1

9

* = Outside of Control Limits.

# Blank Spike Summary



**Job Number:** FA11487
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP50095-LBS | KK60960.D | 1 | 01/17/14 | EM | 01/15/14 | OP50095 | GKK2046 |

**The QC reported here applies to the following samples:** **Method:** SW846 8081B

FA11487-5L

| CAS No. | Compound | Spike ug/l | BSP ug/l | BSP % | Limits |
|---|---|---|---|---|---|
| 58-89-9 | gamma-BHC (Lindane) | 5 | 5.4 | 108 | 68-132 |
| 72-20-8 | Endrin | 5 | 5.3 | 106 | 71-147 |
| 76-44-8 | Heptachlor | 5 | 5.1 | 102 | 63-130 |
| 1024-57-3 | Heptachlor epoxide | 5 | 5.3 | 106 | 67-129 |
| 72-43-5 | Methoxychlor | 5 | 4.9 | 98 | 60-136 |

| CAS No. | Surrogate Recoveries | BSP | Limits |
|---|---|---|---|
| 877-09-8 | Tetrachloro-m-xylene | 115% | 42-127% |
| 2051-24-3 | Decachlorobiphenyl | 99% | 27-127% |

* = Outside of Control Limits.

# Blank Spike Summary



**Job Number:** FA11487
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP50052-BS | ST123429.D | 1 | 01/13/14 | MV | 01/10/14 | OP50052 | GST2935 |

**The QC reported here applies to the following samples:** **Method:** SW846 8082A

FA11487-5

| CAS No. | Compound | Spike ug/kg | BSP ug/kg | BSP % | Limits |
|---|---|---|---|---|---|
| 12674-11-2 | Aroclor 1016 | 133 | 98.9 | 74 | 58-126 |
| 11096-82-5 | Aroclor 1260 | 133 | 106 | 80 | 59-133 |

| CAS No. | Surrogate Recoveries | BSP | Limits |
|---|---|---|---|
| 877-09-8 | Tetrachloro-m-xylene | 69% | 44-126% |
| 2051-24-3 | Decachlorobiphenyl | 73% | 41-145% |

* = Outside of Control Limits.

# Blank Spike Summary



**Job Number:** FA11487
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP50052-BS | MM09484.D | 1 | 01/14/14 | MV | 01/10/14 | OP50052 | GMM209 |

**The QC reported here applies to the following samples:** **Method:** SW846 8082A

FA11487-5

| CAS No. | Compound | Spike ug/kg | BSP ug/kg | BSP % | Limits |
|---|---|---|---|---|---|
| 12674-11-2 | Aroclor 1016 | 133 | 98.2 | 74 | 58-126 |
| 11096-82-5 | Aroclor 1260 | 133 | 107 | 80 | 59-133 |

| CAS No. | Surrogate Recoveries | BSP | Limits |
|---|---|---|---|
| 877-09-8 | Tetrachloro-m-xylene | 69% | 44-126% |
| 2051-24-3 | Decachlorobiphenyl | 72% | 41-145% |

* = Outside of Control Limits.

# Blank Spike Summary



**Job Number:** FA11487
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP50034-BS | JJ001013.D | 1 | 01/10/14 | SJL | 01/09/14 | OP50034 | GJJ42 |

**The QC reported here applies to the following samples:** **Method:** SW846 8015C

FA11487-5

| CAS No. | Compound | Spike mg/kg | BSP mg/kg | BSP % | Limits |
|---|---|---|---|---|---|
| | TPH (C10-C28) | 33.3 | 27.5 | 83 | 62-116 |

| CAS No. | Surrogate Recoveries | BSP | Limits |
|---|---|---|---|
| 84-15-1 | o-Terphenyl | 80% | 56-122% |

9.3.5

9

* = Outside of Control Limits.

# Blank Spike/Blank Spike Duplicate Summary



**Job Number:** FA11487
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP50045-BS | NN007291.D | 1 | 01/15/14 | NJ | 01/10/14 | OP50045 | GNN317 |
| OP50045-BSD | NN007292.D | 1 | 01/15/14 | NJ | 01/10/14 | OP50045 | GNN317 |

**The QC reported here applies to the following samples:** **Method:** MADEP EPH REV 1.1

FA11487-1, FA11487-2, FA11487-3, FA11487-4

| CAS No. | Compound | Spike ug/kg | BSP ug/kg | BSP % | BSD ug/kg | BSD % | RPD | Limits Rec/RPD |
|---|---|---|---|---|---|---|---|---|
| | C11-C22 Aromatics (Unadj.) | 85000 | 69000 | 81 | 65200 | 77 | 6 | 40-140/30 |
| | C9-C18 Aliphatics | 30000 | 19000 | 63 | 15600 | 52 | 20 | 40-140/30 |
| | C19-C36 Aliphatics | 40000 | 39000 | 98 | 32500 | 81 | 18 | 40-140/30 |

| CAS No. | Surrogate Recoveries | BSP | BSD | Limits |
|---|---|---|---|---|
| 3386-33-2 | 1-Chlorooctadecane | 99% | 80% | 40-140% |
| 580-13-2 | 2-Bromonaphthalene | 66% | 64% | 40-140% |
| 84-15-1 | o-Terphenyl | 74% | 69% | 40-140% |
| 321-60-8 | 2-Fluorobiphenyl | 71% | 71% | 40-140% |

| Sample | Compound | Col #1 | Col #2 | Breakthrough | Limit |
|---|---|---|---|---|---|
| OP50045-BS | 2-Methylnaphthalene | 2580 | ND | 0.0% | 5.0 |
| OP50045-BS | Naphthalene | 2370 | ND | 0.0% | 5.0 |
| OP50045-BSD | 2-Methylnaphthalene | 2510 | ND | 0.0% | 5.0 |
| OP50045-BSD | Naphthalene | 2330 | ND | 0.0% | 5.0 |

* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary



**Job Number:** FA11487
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP50098-MS | CC043038.D | 1 | 01/17/14 | NJ | 01/15/14 | OP50098 | GCC623 |
| OP50098-MSD | CC043039.D | 1 | 01/17/14 | NJ | 01/15/14 | OP50098 | GCC623 |
| FA11487-5L | CC043037.D | 1 | 01/17/14 | NJ | 01/15/14 | OP50098 | GCC623 |

**The QC reported here applies to the following samples:** **Method:** SW846 8151A

FA11487-5L

| CAS No. | Compound | FA11487-5L ug/l | Q | Spike ug/l | MS ug/l | MS % | MSD ug/l | MSD % | RPD | Limits Rec/RPD |
|---|---|---|---|---|---|---|---|---|---|---|
| 94-75-7 | 2,4-D | 100 | U | 500 | 652 | 130 | 615 | 123 | 6 | 69-138/21 |
| 93-72-1 | 2,4,5-TP (Silvex) | 10 | U | 50 | 61.0 | 122 | 59.8 | 120 | 2 | 76-142/27 |

| CAS No. | Surrogate Recoveries | MS | MSD | FA11487-5L | Limits |
|---|---|---|---|---|---|
| 19719-28-9 | 2,4-DCAA | 119% | 117% | 103% | 33-145% |

9.5.1

9

* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary



**Job Number:** FA11487
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP50095-MS | KK60963.D | 1 | 01/17/14 | EM | 01/15/14 | OP50095 | GKK2046 |
| OP50095-MSD | KK60964.D | 1 | 01/17/14 | EM | 01/15/14 | OP50095 | GKK2046 |
| FA11487-5L | KK60962.D | 1 | 01/17/14 | EM | 01/15/14 | OP50095 | GKK2046 |

**The QC reported here applies to the following samples:** **Method:** SW846 8081B

FA11487-5L

| CAS No. | Compound | FA11487-5L ug/l | Q | Spike ug/l | MS ug/l | MS % | MSD ug/l | MSD % | RPD | Limits Rec/RPD |
|---|---|---|---|---|---|---|---|---|---|---|
| 58-89-9 | gamma-BHC (Lindane) | 0.50 U | | 5 | 5.8 | 116 | 6.1 | 122 | 5 | 68-132/22 |
| 72-20-8 | Endrin | 1.0 U | | 5 | 5.8 | 116 | 5.8 | 116 | 0 | 71-147/23 |
| 76-44-8 | Heptachlor | 0.50 U | | 5 | 5.7 | 114 | 5.7 | 114 | 0 | 63-130/23 |
| 1024-57-3 | Heptachlor epoxide | 0.50 U | | 5 | 6.0 | 120 | 5.9 | 118 | 2 | 67-129/23 |
| 72-43-5 | Methoxychlor | 1.0 U | | 5 | 5.6 | 112 | 5.7 | 114 | 2 | 60-136/25 |

| CAS No. | Surrogate Recoveries | MS | MSD | FA11487-5L | Limits |
|---|---|---|---|---|---|
| 877-09-8 | Tetrachloro-m-xylene | 124% | 122% | 119% | 42-127% |
| 2051-24-3 | Decachlorobiphenyl | 112% | 108% | 106% | 27-127% |

* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary



**Job Number:** FA11487
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP50052-MS | MM09487.D | 1 | 01/14/14 | MV | 01/10/14 | OP50052 | GMM209 |
| OP50052-MSD | MM09488.D | 1 | 01/14/14 | MV | 01/10/14 | OP50052 | GMM209 |
| FA11487-5 | MM09486.D | 1 | 01/14/14 | MV | 01/10/14 | OP50052 | GMM209 |

**The QC reported here applies to the following samples:** **Method:** SW846 8082A

FA11487-5

| CAS No. | Compound | FA11487-5 ug/kg | Q | Spike ug/kg | MS ug/kg | MS % | MSD ug/kg | MSD % | RPD | Limits Rec/RPD |
|---|---|---|---|---|---|---|---|---|---|---|
| 12674-11-2 | Aroclor 1016 | 20 | U | 155 | 123 | 79 | 141 | 91 | 14 | 58-126/25 |
| 11096-82-5 | Aroclor 1260 | 20 | U | 155 | 143 | 92 | 154 | 99 | 7 | 59-133/31 |

| CAS No. | Surrogate Recoveries | MS | MSD | FA11487-5 | Limits |
|---|---|---|---|---|---|
| 877-09-8 | Tetrachloro-m-xylene | 83% | 90% | 72% | 44-126% |
| 2051-24-3 | Decachlorobiphenyl | 78% | 83% | 75% | 41-145% |

9.5.3

9

* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary



**Job Number:** FA11487
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP50034-MS | JJ001020.D | 1 | 01/10/14 | SJL | 01/09/14 | OP50034 | GJJ42 |
| OP50034-MSD | JJ001021.D | 1 | 01/10/14 | SJL | 01/09/14 | OP50034 | GJJ42 |
| FA11486-5 | JJ001019.D | 1 | 01/10/14 | SJL | 01/09/14 | OP50034 | GJJ42 |

**The QC reported here applies to the following samples:** **Method:** SW846 8015C

FA11487-5

| CAS No. | Compound | FA11486-5 mg/kg | Q | Spike mg/kg | MS mg/kg | MS % | MSD mg/kg | MSD % | RPD | Limits Rec/RPD |
|---|---|---|---|---|---|---|---|---|---|---|
| | TPH (C10-C28) | 4.6 | U | 36.2 | 32.4 | 90 | 28.3 | 78 | 14 | 62-116/35 |

| CAS No. | Surrogate Recoveries | MS | MSD | FA11486-5 | Limits |
|---|---|---|---|---|---|
| 84-15-1 | o-Terphenyl | 85% | 73% | 68% | 56-122% |

* = Outside of Control Limits.

# Duplicate Summary



**Job Number:** FA11487
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP50045-DUP | NN007299.D | 1 | 01/15/14 | NJ | 01/10/14 | OP50045 | GNN317 |
| FA11487-4 | NN007298.D | 1 | 01/15/14 | NJ | 01/10/14 | OP50045 | GNN317 |

**The QC reported here applies to the following samples:** **Method:** MADEP EPH REV 1.1

FA11487-1, FA11487-2, FA11487-3, FA11487-4

| CAS No. | Compound | FA11487-4 ug/kg | Q | DUP ug/kg | Q | RPD | Limits |
|---|---|---|---|---|---|---|---|
| | C11-C22 Aromatics (Unadj.) | 12000 | U | ND | | nc | 30 [a] |
| | C9-C18 Aliphatics | 7220 | J | 10200 | J | 34* | 30 [a] |
| | C19-C36 Aliphatics | 5840 | J | 5960 | J | 2 | 30 [a] |

| CAS No. | Surrogate Recoveries | DUP | FA11487-4 | Limits |
|---|---|---|---|---|
| 3386-33-2 | 1-Chlorooctadecane | 88% | 62% | 40-140% |
| 580-13-2 | 2-Bromonaphthalene | 60% | 62% | 40-140% |
| 84-15-1 | o-Terphenyl | 62% | 56% | 40-140% |
| 321-60-8 | 2-Fluorobiphenyl | 68% | 68% | 40-140% |

(a) Advisory control limits.

* = Outside of Control Limits.

# Duplicate Summary



**Job Number:** FA11487
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP50095-DUP | KK60976.D | 1 | 01/18/14 | EM | 01/15/14 | OP50095 | GKK2046 |
| FA11566-1L | KK60965.D | 1 | 01/17/14 | EM | 01/15/14 | OP50095 | GKK2046 |

**The QC reported here applies to the following samples:** **Method:** SW846 8081B

FA11487-5L

| CAS No. | Compound | FA11566-1L ug/l | Q | DUP ug/l | Q | RPD | Limits |
|---|---|---|---|---|---|---|---|
| 58-89-9 | gamma-BHC (Lindane) | 0.50 U | | ND | | nc | 22 |
| 12789-03-6 | Chlordane | 5.0 U | | ND | | nc | 20 |
| 72-20-8 | Endrin | 1.0 U | | ND | | nc | 23 |
| 76-44-8 | Heptachlor | 0.50 U | | ND | | nc | 23 |
| 1024-57-3 | Heptachlor epoxide | 0.50 U | | ND | | nc | 23 |
| 72-43-5 | Methoxychlor | 1.0 U | | ND | | nc | 25 |
| 8001-35-2 | Toxaphene | 25 U | | ND | | nc | 20 |

| CAS No. | Surrogate Recoveries | DUP | FA11566-1L | Limits |
|---|---|---|---|---|
| 877-09-8 | Tetrachloro-m-xylene | 123% | 107% | 42-127% |
| 2051-24-3 | Decachlorobiphenyl | 126% | 104% | 27-127% |

* = Outside of Control Limits.

Southeast ACCUTEST LABORATORIES

# Metals Analysis

## QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: FA11487
Account: TETRCAI - Tetra Tech EC, Inc
Project: WE03, Camp Lejuene, NC

QC Batch ID: MP26677 Methods: SW846 7470A
Matrix Type: LEACHATE Units: mg/l

| Prep Date: | | | | 01/16/14 | | 01/16/14 | |
|---|---|---|---|---|---|---|---|
| Metal | RL | IDL | MDL | MB raw | final | MB raw | final |
| Mercury | 0.00050 | .00003 | .00005 | 0.000034 | <0.00050 | 0.00024 | <0.0050 |

Associated samples MP26677: FA11487-5L

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: FA11487
Account: TETRCAI - Tetra Tech EC, Inc
Project: WE03, Camp Lejuene, NC

QC Batch ID: MP26677
Matrix Type: LEACHATE

Methods: SW846 7470A
Units: mg/l

Prep Date: 01/16/14

| Metal | FA11566-1L Original | MS | Spikelot HGFLWS1 | % Rec | QC Limits |
|---|---|---|---|---|---|
| Mercury | 0.0 | 0.033 | 0.030 | 110.0 | 80-120 |

Associated samples MP26677: FA11487-5L

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: FA11487
Account: TETRCAI - Tetra Tech EC, Inc
Project: WE03, Camp Lejuene, NC

QC Batch ID: MP26677
Matrix Type: LEACHATE

Methods: SW846 7470A
Units: mg/l

| Prep Date: | | | | | 01/16/14 | | | | | 01/16/14 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Metal | FA11566-1L Original | MSD | Spikelot HGFLWS1 | % Rec | MSD RPD | QC Limit | FA11487-5L Original | DUP | RPD | QC Limits |
| Mercury | 0.0 | 0.032 | 0.030 | 106.7 | 3.1 | 20 | 0.0 | 0.0 | NC | 0-20 |

Associated samples MP26677: FA11487-5L

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: FA11487
Account: TETRCAI - Tetra Tech EC, Inc
Project: WE03, Camp Lejuene, NC

QC Batch ID: MP26677
Matrix Type: LEACHATE

Methods: SW846 7470A
Units: mg/l

Prep Date: 01/16/14 01/16/14

| Metal | BSP Result | Spikelot HGFLWS1 | % Rec | QC Limits | BSP Result | Spikelot HGFLWS1 | % Rec | QC Limits |
|---|---|---|---|---|---|---|---|---|
| Mercury | 0.0032 | 0.0030 | 106.7 | 80-120 | 0.032 | 0.030 | 106.7 | 80-120 |

Associated samples MP26677: FA11487-5L

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: FA11487
Account: TETRCAI - Tetra Tech EC, Inc
Project: WE03, Camp Lejuene, NC

QC Batch ID: MP26677
Matrix Type: LEACHATE

Methods: SW846 7470A
Units: ug/l

Prep Date: 01/16/14

| Metal | FA11566-1L Original | SDL 1:5 | %DIF | QC Limits |
|---|---|---|---|---|
| Mercury | 0.00 | 0.00 | NC | 0-10 |

Associated samples MP26677: FA11487-5L

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: FA11487
Account: TETRCAI - Tetra Tech EC, Inc
Project: WE03, Camp Lejuene, NC

QC Batch ID: MP26678
Matrix Type: LEACHATE

Methods: SW846 6010C
Units: mg/l

| Prep Date: | | | | | 01/16/14 | | 01/16/14 |
|---|---|---|---|---|---|---|---|
| Metal | RL | IDL | MDL | MB raw | final | MB raw | final |
| Aluminum | 0.20 | .015 | .015 | | | | |
| Antimony | 0.0060 | .002 | .0023 | | | | |
| Arsenic | 0.010 | .002 | .0024 | -0.00040 | <0.010 | -0.0030 | <0.10 |
| Barium | 0.20 | .001 | .005 | -0.00010 | <0.20 | 0.0060 | <2.0 |
| Beryllium | 0.0040 | .0005 | .0005 | | | | |
| Cadmium | 0.0050 | .0005 | .0005 | 0.0 | <0.0050 | 0.0 | <0.050 |
| Calcium | 1.0 | .05 | .05 | | | | |
| Chromium | 0.010 | .001 | .002 | 0.0 | <0.010 | -0.0020 | <0.10 |
| Cobalt | 0.050 | .0005 | .0005 | | | | |
| Copper | 0.025 | .001 | .001 | | | | |
| Iron | 0.30 | .017 | .017 | | | | |
| Lead | 0.0050 | .0011 | .0011 | 0.00050 | <0.0050 | 0.010 | <0.050 |
| Magnesium | 5.0 | .05 | .056 | | | | |
| Manganese | 0.015 | .0005 | .001 | | | | |
| Molybdenum | 0.050 | .0005 | .0005 | | | | |
| Nickel | 0.040 | .0005 | .0005 | | | | |
| Potassium | 10 | .2 | .2 | | | | |
| Selenium | 0.010 | .0023 | .0023 | -0.00090 | <0.010 | -0.0070 | <0.10 |
| Silver | 0.010 | .00065 | .00077 | 0.00030 | <0.010 | -0.0010 | <0.10 |
| Sodium | 10 | .5 | .5 | | | | |
| Strontium | 0.010 | .0004 | .0004 | | | | |
| Thallium | 0.010 | .0015 | .002 | | | | |
| Tin | 0.050 | .0007 | .001 | | | | |
| Titanium | 0.010 | .0009 | .001 | | | | |
| Vanadium | 0.050 | .0005 | .0005 | | | | |
| Zinc | 0.020 | .003 | .01 | | | | |

Associated samples MP26678: FA11487-5L

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: FA11487
Account: TETRCAI - Tetra Tech EC, Inc
Project: WE03, Camp Lejuene, NC

QC Batch ID: MP26678
Matrix Type: LEACHATE

Methods: SW846 6010C
Units: mg/l

Prep Date: 01/16/14

| Metal | FA11566-1L Original | MS | Spikelot MPFLICP2 | % Rec | QC Limits |
|---|---|---|---|---|---|
| Aluminum | | | | | |
| Antimony | | | | | |
| Arsenic | 0.0 | 19.4 | 20.0 | 97.0 | 80-120 |
| Barium | 0.73 | 21.1 | 20.0 | 101.9 | 80-120 |
| Beryllium | | | | | |
| Cadmium | 0.0 | 0.50 | 0.50 | 100.0 | 80-120 |
| Calcium | | | | | |
| Chromium | 0.0 | 2.1 | 2.0 | 105.0 | 80-120 |
| Cobalt | | | | | |
| Copper | | | | | |
| Iron | | | | | |
| Lead | 0.0 | 5.0 | 5.0 | 100.0 | 80-120 |
| Magnesium | | | | | |
| Manganese | | | | | |
| Molybdenum | | | | | |
| Nickel | | | | | |
| Potassium | | | | | |
| Selenium | 0.0 | 19.3 | 20.0 | 96.5 | 80-120 |
| Silver | 0.0 | 0.48 | 0.50 | 96.0 | 80-120 |
| Sodium | | | | | |
| Strontium | | | | | |
| Thallium | | | | | |
| Tin | | | | | |
| Titanium | | | | | |
| Vanadium | | | | | |
| Zinc | | | | | |

Associated samples MP26678: FA11487-5L

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: FA11487
Account: TETRCAI - Tetra Tech EC, Inc
Project: WE03, Camp Lejuene, NC

QC Batch ID: MP26678
Matrix Type: LEACHATE

Methods: SW846 6010C
Units: mg/l

| Prep Date: | | | | | 01/16/14 | | | | 01/16/14 | |
|---|---|---|---|---|---|---|---|---|---|---|
| Metal | FA11566-1L Original | MSD | Spikelot MPFLICP2 | % Rec | MSD RPD | QC Limit | FA11487-5L Original | DUP | RPD | QC Limits |
| Aluminum | | | | | | | | | | |
| Antimony | | | | | | | | | | |
| Arsenic | 0.0 | 19.9 | 20.0 | 99.5 | 2.5 | 20 | 0.0 | 0.0 | NC | 0-20 |
| Barium | 0.73 | 21.7 | 20.0 | 104.9 | 2.8 | 20 | 0.12 | 0.12 | 0.0 | 0-20 |
| Beryllium | | | | | | | | | | |
| Cadmium | 0.0 | 0.51 | 0.50 | 102.0 | 2.0 | 20 | 0.0 | 0.0 | NC | 0-20 |
| Calcium | | | | | | | | | | |
| Chromium | 0.0 | 2.1 | 2.0 | 105.0 | 0.0 | 20 | 0.0 | 0.0 | NC | 0-20 |
| Cobalt | | | | | | | | | | |
| Copper | | | | | | | | | | |
| Iron | | | | | | | | | | |
| Lead | 0.0 | 5.2 | 5.0 | 104.0 | 3.9 | 20 | 0.012 | 0.012 | 0.0 | 0-20 |
| Magnesium | | | | | | | | | | |
| Manganese | | | | | | | | | | |
| Molybdenum | | | | | | | | | | |
| Nickel | | | | | | | | | | |
| Potassium | | | | | | | | | | |
| Selenium | 0.0 | 19.8 | 20.0 | 99.0 | 2.6 | 20 | 0.0 | 0.0 | NC | 0-20 |
| Silver | 0.0 | 0.50 | 0.50 | 100.0 | 4.1 | 20 | 0.0 | 0.0 | NC | 0-20 |
| Sodium | | | | | | | | | | |
| Strontium | | | | | | | | | | |
| Thallium | | | | | | | | | | |
| Tin | | | | | | | | | | |
| Titanium | | | | | | | | | | |
| Vanadium | | | | | | | | | | |
| Zinc | | | | | | | | | | |

Associated samples MP26678: FA11487-5L

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: FA11487
Account: TETRCAI - Tetra Tech EC, Inc
Project: WE03, Camp Lejuene, NC

QC Batch ID: MP26678
Matrix Type: LEACHATE

Methods: SW846 6010C
Units: mg/l

| Prep Date: | | | 01/16/14 | | | | 01/16/14 | |
|---|---|---|---|---|---|---|---|---|
| Metal | BSP Result | Spikelot MPFLICP2 | % Rec | QC Limits | BSP Result | Spikelot MPFLICP2 | % Rec | QC Limits |
| Aluminum | | | | | | | | |
| Antimony | | | | | | | | |
| Arsenic | 1.9 | 2.0 | 95.0 | 80-120 | 19.5 | 20.0 | 97.5 | 80-120 |
| Barium | 2.1 | 2.0 | 105.0 | 80-120 | 20.5 | 20.0 | 102.5 | 80-120 |
| Beryllium | | | | | | | | |
| Cadmium | 0.050 | 0.050 | 100.0 | 80-120 | 0.50 | 0.50 | 100.0 | 80-120 |
| Calcium | | | | | | | | |
| Chromium | 0.21 | 0.20 | 105.0 | 80-120 | 2.1 | 2.0 | 105.0 | 80-120 |
| Cobalt | | | | | | | | |
| Copper | | | | | | | | |
| Iron | | | | | | | | |
| Lead | 0.50 | 0.50 | 100.0 | 80-120 | 5.0 | 5.0 | 100.0 | 80-120 |
| Magnesium | | | | | | | | |
| Manganese | | | | | | | | |
| Molybdenum | | | | | | | | |
| Nickel | | | | | | | | |
| Potassium | | | | | | | | |
| Selenium | 1.9 | 2.0 | 95.0 | 80-120 | 19.4 | 20.0 | 97.0 | 80-120 |
| Silver | 0.048 | 0.050 | 96.0 | 80-120 | 0.48 | 0.50 | 96.0 | 80-120 |
| Sodium | | | | | | | | |
| Strontium | | | | | | | | |
| Thallium | | | | | | | | |
| Tin | | | | | | | | |
| Titanium | | | | | | | | |
| Vanadium | | | | | | | | |
| Zinc | | | | | | | | |

Associated samples MP26678: FA11487-5L

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: FA11487
Account: TETRCAI - Tetra Tech EC, Inc
Project: WE03, Camp Lejuene, NC

QC Batch ID: MP26678
Matrix Type: LEACHATE

Methods: SW846 6010C
Units: ug/l

Prep Date: 01/16/14

| Metal | FA11566-1L Original | SDL 1:5 | %DIF | QC Limits |
|---|---|---|---|---|
| Aluminum | | | | |
| Antimony | | | | |
| Arsenic | 0.00 | 0.00 | NC | 0-10 |
| Barium | 72.5 | 73.3 | 1.1 | 0-10 |
| Beryllium | | | | |
| Cadmium | 0.00 | 0.00 | NC | 0-10 |
| Calcium | | | | |
| Chromium | 0.00 | 0.00 | NC | 0-10 |
| Cobalt | | | | |
| Copper | | | | |
| Iron | | | | |
| Lead | 0.00 | 6.50 | NC | 0-10 |
| Magnesium | | | | |
| Manganese | | | | |
| Molybdenum | | | | |
| Nickel | | | | |
| Potassium | | | | |
| Selenium | 0.00 | 0.00 | NC | 0-10 |
| Silver | 0.00 | 0.00 | NC | 0-10 |
| Sodium | | | | |
| Strontium | | | | |
| Thallium | | | | |
| Tin | | | | |
| Titanium | | | | |
| Vanadium | | | | |
| Zinc | | | | |

Associated samples MP26678: FA11487-5L

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

Southeast ACCUTEST LABORATORIES

General Chemistry

# QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: FA11487
Account: TETRCAI - Tetra Tech EC, Inc
Project: WE03, Camp Lejuene, NC

| Analyte | Batch ID | RL | MB Result | Units | Spike Amount | BSP Result | BSP %Recov | QC Limits |
|---|---|---|---|---|---|---|---|---|
| Cyanide Reactivity | GP23249/GN59658 | 1.5 | 0.0 | mg/kg | 50 | 0.0 | 0.0 | 0-100% |
| Sulfide Reactivity | GP23250/GN59653 | 50 | 0.0 | mg/kg | 537 | 180 | 33.5 | 0-100% |

Associated Samples:
Batch GP23249: FA11487-5
Batch GP23250: FA11487-5
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: FA11487
Account: TETRCAI - Tetra Tech EC, Inc
Project: WE03, Camp Lejuene, NC

| Analyte | Batch ID | QC Sample | Units | Original Result | DUP Result | RPD | QC Limits |
|---|---|---|---|---|---|---|---|
| Corrosivity as pH | GN59751 | FA11487-5 | su | 7.4 | 7.4 | 0.1 | 0-% |
| Cyanide Reactivity | GP23249/GN59658 | FA11487-5 | mg/kg | 1.5 U | 0.0 | 0.0 | 0-30% |
| Ignitability (Flashpoint) | GN59675 | FA11445-1 | Deg. F | >200 | >200(a) | 0.0 | 0-38% |
| Solids, Percent | GN59638 | FA11487-4 | % | 85 | 85.4 | 0.5 | 0-5% |
| Sulfide Reactivity | GP23250/GN59653 | FA11487-5 | mg/kg | 59 U | 0.0 | 200.0(b) | 0-30% |

Associated Samples:
Batch GN59638: FA11487-1, FA11487-2, FA11487-3, FA11487-4, FA11487-5
Batch GN59675: FA11487-5
Batch GN59751: FA11487-5
Batch GP23249: FA11487-5
Batch GP23250: FA11487-5
(*) Outside of QC limits
(a) Not ignitable.
(b) RPD acceptable due to low duplicate and sample concentrations.

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# APPENDIX I

# RHEA SAMPLE INVESTIGATION REPORT

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RHĒA
ENGINEERS & CONSULTANTS, INC.

March 11, 2014
Project No. 454.03
**Via Email**

Mr. Jose Luis Parra, Jr. EIT
NAVFAC Mid-Atlantic USMC NC IPT
6506 Hampton Boulevard
Norfolk, Virginia 23508-1278
jose.l.parra@navy.mil

**Re: Building 1932, Site Investigation Report**
**Marine Corps Installations East – Marine Corps Base**
**Camp Lejeune, North Carolina**
**Contract No. N40085-09-D-3214**

Dear Mr. Parra:

Rhēa Engineers and Consultants, Inc. (Rhēa) was tasked by Naval Facilities Engineering Command (NAVFAC) Mid-Atlantic under Contract No. N40085-09-D-3214 to conduct a site investigation to delineate the horizontal and vertical extent of suspected soil contamination in the vicinity of Building 1932 at the Paradise Point Golf Course aboard Marine Corps Installations East, Marine Corps Base, Camp Lejeune.

This document serves as the Site Investigation Report (SIR) for field activities performed on February 5 and 6, 2014, and includes a Site Layout map depicting the location of the excavation area, hand-auger borings, and the approximate contaminant plume boundary (Figure 1). Hand-auger boring logs are included in Attachment 1. Photoionization detector (PID) results are included in Table 1. Laboratory analytical results are summarized in Table 2 and the lab reports are located in Attachment 2.

## PROJECT DESCRIPTION

Tetra Tech was tasked with removing an underground storage tank (UST) and dispenser in the vicinity of Building 1932. During excavation, an initial round of eight soil samples were collected from the side walls of the excavation as PID screening indicated the presence of petroleum

hydrocarbons. These samples were analyzed for volatile organic compounds (VOCs), and total petroleum hydrocarbons (TPH) gasoline and diesel range organics (GRO/DRO). Laboratory analysis determined two of these samples on the western side of the excavation and one sample on the eastern side of the excavation contained TPH-DRO concentrations above the NCDENR Action Levels.

The western and eastern side walls were over excavated and additional soil samples were collected and analyzed for VOCs, semi volatile organic compounds (SVOCs), and Massachusetts Department of Environmental Protection (MADEP) extractable petroleum hydrocarbons (EPH) and volatile petroleum hydrocarbons (VPH). The over excavated soil samples on the western side of the excavation contained no contaminant concentration exceedances. One sample on the eastern side of the excavation, SW09, contained concentrations of naphthalene and 1-methnaphthanlene in excess of the soil-to-groundwater MSCCs. With the western portion of the soil contaminant plume delineated, Rhēa was tasked with evaluating the remaining area and delineating remaining boundaries of the suspected soil contamination.

## SCOPE OF WORK

Rhēa's scope of work for this project included using a grid pattern of hand-auger borings with associated soil screening using a PID and collecting soil samples to delineate the horizontal and vertical extent of the suspected soil contamination.

## SOIL SAMPLING AND SCREENING SUMMARY

On February 5 and 6, 2014, 14 hand-auger borings were advanced to a depth of six feet below ground surface (bgs) in the area surrounding the suspected source of contamination. Soil samples were collected in two foot intervals and classified according to the Unified Soil Classification System (USCS). The soils in the area of the former Building 1932 UST mainly consisted of grey or orange sand and clay. Samples were placed in resealable bags and screened using a PID. PID readings ranged from 0 to 88.8 ppm. PID results are documented on each hand-auger boring log (Attachment 1) and summarized on Table 1.

Soil samples from 11 borings were submitted to Prism Laboratories Inc. (Prism). Seven samples were initially analyzed for VOCs and TPH DRO/GRO. One exceedance of regulatory levels was detected; the concentration of TPH-DRO detected in HA-3 (16 mg/kg) was above the NCDENR Action Level (10 mg/kg). The soil sample from HA-13 was then pulled of hold and analyzed for VOCs and TPH DRO/GRO. The analyte concentrations of soil sample HA-13 and all other samples were less than soil-to-groundwater MSCCs or below the laboratory reporting limits. The analytical results are included in Attachment B and summarized on Table 2.

## CONCLUSIONS AND RECOMMENDATIONS

Rhēa advanced 14 hand-auger borings, field screened and classified each boring, and submitted 11 soil samples for laboratory analysis. Based on field observations, PID readings, and laboratory analysis, Rhēa determined the soil contamination from the former Building 1932 UST is limited to the area shown on Figure 1.

Rhēa looks forward to providing continued environmental support services to the MCIEAST-MCB CAMLEJ and NAVFAC. If there are any questions please do not hesitate to contact me at 910-350-3156 or tim.price@rhea.us.

Respectfully Submitted,
***Rhēa Engineers & Consultants, Inc.***

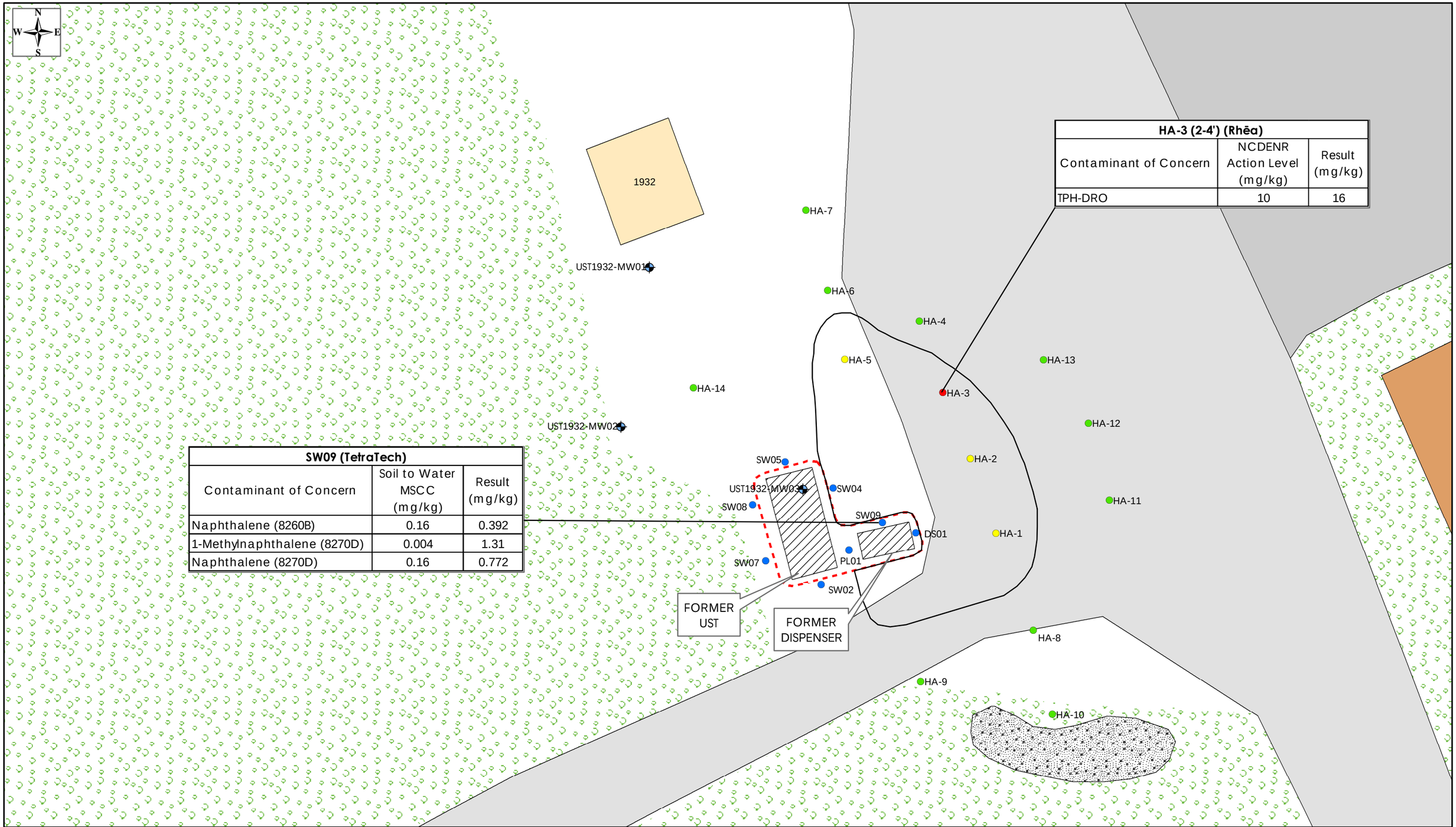
Timothy Price, PE
Project Manager

JE/TP

NORTH CAROLINA PROFESSIONAL SEAL 034386 3-11-14 ENGINEER TIMOTHY T. PRICE

Figure 1 – Site Layout
Table 1 – Photoionization Detector Results
Table 2 – Analytical Data Summary
Attachment 1 – Hand Auger Boring Logs
Attachment 2 – Laboratory Analytical Data

# FIGURES




| HA-3 (2-4') (Rhēa) | | |
|---|---|---|
| Contaminant of Concern | NCDENR Action Level (mg/kg) | Result (mg/kg) |
| TPH-DRO | 10 | 16 |

| SW09 (TetraTech) | | |
|---|---|---|
| Contaminant of Concern | Soil to Water MSCC (mg/kg) | Result (mg/kg) |
| Naphthalene (8260B) | 0.16 | 0.392 |
| 1-Methylnaphthalene (8270D) | 0.004 | 1.31 |
| Naphthalene (8270D) | 0.16 | 0.772 |

## Legend

- Rhea Soil Boring Location (Clean)
- Rhea Soil Boring Location (Exceedance)
- Rhea Soil Boring Location (PID Hit)
- TetraTech Soil Sample Location
- Monitoring Well
- Gravel Stockpile
- Excavated Area
- Former UST and Dispenser
- Slab Area
- Road Area
- Parking Area
- Existing Structure
- Tree Line
- Approximate Contamination Plume Boundary

0 5 10 20 Feet

RHEA ENGINEERS & CONSULTANTS, INC.

3214/454/R8

FIGURE No. 1

**Site Layout Map**
**Building 1932**
**MCIEAST-MCB CAMLEJ, NC**

| Drawn By | Checked By | Date | Project | Sheet No. |
|---|---|---|---|---|
| ZDW | JEE | 3/5/14 | 454 | 1 |

# TABLES

**TABLE 1**
**Photoionization Detector Results**
**Building 1932 Site Investigation**
**MCIEAST-MCB CAMLEJ, North Carolina**

| Hand Auger Boring ID | Depth (ft bgs) | PID Result (ppm) | Sample Sent to Lab |
|---|---|---|---|
| HA-01 | 0 to 2 | 0.0 | |
| | 2 to 4 | 54.0 | |
| | 4 to 6 | 56.5 | |
| HA-02 | 0 to 2 | 18.0 | |
| | 2 to 4 | 88.8 | |
| | 4 to 6 | 30.2 | |
| HA-03 | 0 to 2 | 0.3 | |
| | 2 to 4 | 6.2 | Yes |
| | 4 to 6 | 3.5 | |
| HA-04 | 0 to 2 | 0.0 | |
| | 2 to 4 | 0.0 | |
| | 4 to 6 | 0.0 | Yes |
| HA-05 | 0 to 2 | 12.0 | |
| | 2 to 4 | 48.0 | |
| | 4 to 6 | 14.0 | |
| HA-06 | 0 to 2 | 0.0 | |
| | 2 to 4 | 2.1 | Yes |
| | 4 to 6 | 1.2 | |
| HA-07 | 0 to 2 | 0.0 | |
| | 2 to 4 | 0.0 | |
| | 4 to 6 | 0.0 | Yes |

| Hand Auger Boring ID | Depth (ft bgs) | PID Result (ppm) | Sample Sent to Lab |
|---|---|---|---|
| HA-08 | 0 to 2 | 1.2 | |
| | 2 to 4 | 3.4 | |
| | 4 to 6 | 3.8 | Yes |
| HA-09 | 0 to 2 | 0.0 | |
| | 2 to 4 | 1.2 | |
| | 4 to 6 | 1.4 | Yes |
| HA-10 | 0 to 2 | 0.3 | |
| | 2 to 4 | 0.2 | |
| | 4 to 6 | 0.3 | Yes |
| HA-11 | 0 to 2 | 0.0 | |
| | 2 to 4 | 0.8 | |
| | 4 to 6 | 3.4 | Yes |
| HA-12 | 0 to 2 | 0.0 | |
| | 2 to 4 | 0.3 | |
| | 4 to 6 | 3.0 | Yes |
| HA-13 | 0 to 2 | 0.0 | |
| | 2 to 4 | 0.0 | |
| | 4 to 6 | 0.0 | Yes |
| HA-14 | 0 to 2 | 0.0 | |
| | 2 to 4 | 0.3 | |
| | 4 to 6 | 1.3 | Yes |

Legend:
All results in parts per million (ppm)
ft bgs = feet below ground surface
Data entered by: JE
Data checked by: TP

**TABLE 2**
**Soil Analytical Results**
**Building 1932 Site Investigation**
**MCIEAST-MCB CAMLEJ, North Carolina**

| Analytical Method | | 8015C | 5030B/8015C | 8260B/5030B | |
|---|---|---|---|---|---|
| Sample ID | Contaminant of Concern / Date Collected | TPH - DRO | TPH - GRO | Acetone | All Other Analytes |
| **NCDENR Action Levels (mg/kg)** | | 10 | 10 | - | - |
| **NCDENR Soil-to-Water MSCC (mg/kg)** | | - | - | 2.81 | Varies |
| **NCDENR - Residential MSCC (mg/kg)** | | - | - | 630,000 | Varies |
| **NCDENR - Industrial/Commercial MSCC (mg/kg)** | | - | - | 61,000 | Varies |
| HA-3 (2-4) | 2/5/2014 | **16** | 6.3 | BRL | BRL |
| HA-6 (2-4) | 2/5/2014 | BRL | BRL | 0.028 | BRL |
| HA-8 (4-6) | 2/6/2014 | BRL | BRL | 0.150 | BRL |
| HA-9 (4-6) | 2/6/2014 | BRL | BRL | 0.130 | BRL |
| HA-11 (4-6) | 2/6/2014 | BRL | BRL | 0.096 | BRL |
| HA-12 (4-6) | 2/6/2014 | BRL | BRL | BRL | BRL |
| HA-13 (4-6) | 2/6/2014 | BRL | BRL | BRL | BRL |
| HA-14 (4-6) | 2/6/2014 | BRL | BRL | BRL | BRL |

Legend:
All results in milligrams per kilogram (mg/kg)
**Bold** and Red = Regulatory level exceedance
BRL = Below Reporting Limit
NCDENR Action Level = North Carolina Department of Environment and Natural Resources Action Level
NCDENR Soil-to-Water MSCC = North Carolina Department of Environment and Natural Resources Soil-to-Water Maximum Soil Contaminant Concentration
NCDENR Residental MSCC = North Carolina Department of Environment and Natural Resources Residental Maximum Soil Contaminant Concentration
NCDENR Indusctrial/Commercial MSCC = North Carolina Department of Environment and Natural Resources Industrial/Commercial Maximum Soil Contaminant Concentration
Data entered by: JE
Data checked by: TP

# ATTACHMENT 1

# Hand Auger Boring Logs

RHEA ENGINEERS & CONSULTANTS, INC.

**BORING NUMBER:** HA-01

**Termination Depth: 6'** **Monitoring Well Installed?** No

| | |
|---|---|
| Project Name: Building 1932 Site Investigation | Drilling Company: Not Applicable |
| Project Number: 45403 | Driller (s): Not Applicable |
| Start/Finish Date: 2/5/14 | Drilling Method: Hand augers |
| Weather: Cloudy, intermittent rain | Logged by: Tim Price |

| Depth (ft) | Sample Information: Sample Number | Soil Classification | Recovery (in.) | SPT | Soil Log | PID | Soil Description | Comments |
|---|---|---|---|---|---|---|---|---|
| 0 | NA | NA | NA | NA | NA | NA | Ground Surface | |
| 1<br>2 | NA | GW<br>SM | 24 | NA | | 0.0 ppm | 0 to 6-in, light grey, well-graded gravel, fine to coarse GRAVEL (GW), dry, no odor<br>6-in to 2-ft, light brown to orange-brown, silty fine-to-medium grained SAND (SM), with little clay, dry, no odors | |
| 3<br>4 | NA | SM | 24 | NA | | 54 ppm | 2-ft to 4-ft, light grey, silty fine-to-medium grained SAND (SM), moderate petroleum odor, dry, becoming moist at 4-ft | |
| 5<br>6 | NA | CL | 24 | NA | | 56.5 ppm | 4-ft to 6-ft, grey sandy CLAY (CL), moist, petroleum odor | |
| 7<br>8 | | | | | | | | |
| 9<br>10 | | | | | | | | |
| 11<br>12 | | | | | | | | |
| 13<br>14 | | | | | | | Tiger Ion Pro PID field calibration log:<br>0 ppm = 0 ppm; 100 ppm isobutylene = 100.6 ppm | |

RHEA ENGINEERS & CONSULTANTS, INC.

**BORING NUMBER:** HA-02

**Termination Depth: 6'** **Monitoring Well Installed?** No

| | |
|---|---|
| Project Name: Building 1932 Site Investigation | Drilling Company: Not Applicable |
| Project Number: 45403 | Driller (s): Not Applicable |
| Start/Finish Date: 2/5/14 | Drilling Method: Hand augers |
| Weather: Cloudy, intermittent rain | Logged by: Tim Price |

| Depth (ft) | Sample Information: Sample Number | Soil Classification | Recovery (in.) | SPT | Soil Log | PID | Soil Description | Comments |
|---|---|---|---|---|---|---|---|---|
| 0 | NA | NA | NA | NA | NA | NA | Ground Surface | |
| 1<br>2 | NA | GW<br>SM | 24 | NA | | 18.0 ppm | 0 to 6-in, light grey, well-graded gravel, fine to coarse GRAVEL (GW), dry, no odor<br>6-in to 2-ft, light brown to orange-brown, silty fine-to-medium grained SAND (SM), moderate petroleum odor, dry | |
| 3<br>4 | NA | SM | 24 | NA | | 88.8 ppm | 2-ft to 4-ft, light grey, silty fine-to-medium grained SAND (SM), moderate petroleum odor, dry, becoming moist at 4-ft | |
| 5<br>6 | NA | CL | 24 | NA | | 30.2 ppm | 4-ft to 6-ft, grey sandy CLAY (CL), moist, moderate petroleum odor | |
| 7<br>8 | | | | | | | | |
| 9<br>10 | | | | | | | | |
| 11<br>12 | | | | | | | | |
| 13<br>14 | | | | | | | | |

RHEA ENGINEERS & CONSULTANTS, INC.

**BORING NUMBER:** HA-03

**Termination Depth: 5'** **Monitoring Well Installed?** No

| | |
|---|---|
| Project Name: Building 1932 Site Investigation | Drilling Company: Not Applicable |
| Project Number: 45403 | Driller (s): Not Applicable |
| Start/Finish Date: 2/5/14 | Drilling Method: Hand augers |
| Weather: Cloudy, intermittent rain | Logged by: Tim Price |

| Depth (ft) | Sample Information: Sample Number | Soil Classification | Recovery (in.) | SPT | Soil Log | PID | Soil Description | Comments |
|---|---|---|---|---|---|---|---|---|
| 0 | NA | NA | NA | NA | NA | NA | Ground Surface | |
| 1<br>2 | NA | GW<br>SM | 24 | NA | | 0.3 ppm | 0 to 6-in, light grey, well-graded gravel, fine to coarse GRAVEL (GW), dry, no odor<br>6-in to 2-ft, light brown to orange-brown, silty fine-to-medium grained SAND (SM), moderate petroleum odor, dry | |
| 3<br>4 | HA-3 (2-4) | SM | 24 | NA | | 6.2 ppm | 2-ft to 4-ft, dark grey, silty fine-to-medium grained SAND (SM), moderate petroleum odor, dry, becoming moist at 4-ft | Sample taken. |
| 5<br>6 | NA | CL | 12 | NA | | 3.5 ppm | 4-ft to 5-ft, grey sandy CLAY (CL), moist, moderate petroleum odor | Refusal at 5-ft |
| 7<br>8 | | | | | | | | |
| 9<br>10 | | | | | | | | |
| 11<br>12 | | | | | | | | |
| 13<br>14 | | | | | | | Tiger Ion Pro PID field calibration log:<br>0 ppm = 0 ppm; 100 ppm isobutylene = 100.6 ppm | |

RHEA ENGINEERS & CONSULTANTS, INC.

**BORING NUMBER:** HA-04

**Termination Depth: 6'** **Monitoring Well Installed?** No

| | |
|---|---|
| Project Name: Building 1932 Site Investigation | Drilling Company: Not Applicable |
| Project Number: 45403 | Driller (s): Not Applicable |
| Start/Finish Date: 2/5/14 | Drilling Method: Hand augers |
| Weather: Cloudy, intermittent rain | Logged by: Tim Price |

| Depth (ft) | Sample Information | | | | | | Soil Description | Comments |
|---|---|---|---|---|---|---|---|---|
| | Sample Number | Soil Classification | Recovery (in.) | SPT | Soil Log | PID | | |
| 0 | NA | NA | NA | NA | NA | NA | Ground Surface | |
| 1<br>2 | NA | GW<br>SM | 24 | NA | | 0.0 ppm | 0 to 6-in, light grey, well-graded gravel, fine to coarse GRAVEL (GW), dry, no odors<br>6-in to 2-ft, light brown to orange-brown, silty fine-to-medium grained SAND (SM), dry, no odors | |
| 3<br>4 | NA | SM | 24 | NA | | 0.0 ppm | 2-ft to 4-ft, orange, silty fine-to-medium grained SAND (SM), no odors, dry, becoming moist at 4-ft | |
| 5<br>6 | HA-4 (4-6) | CL | 24 | NA | | 0.0 ppm | 4-ft to 6-ft, orange sandy CLAY (CL), moist, no odors | Sample taken. |
| 7<br>8 | | | | | | | | |
| 9<br>10 | | | | | | | | |
| 11<br>12 | | | | | | | | |
| 13<br>14 | | | | | | | | |

RHEA ENGINEERS & CONSULTANTS, INC.

**BORING NUMBER:** HA-05

**Termination Depth: 6'** **Monitoring Well Installed?** No

| | |
|---|---|
| Project Name: Building 1932 Site Investigation | Drilling Company: Not Applicable |
| Project Number: 45403 | Driller (s): Not Applicable |
| Start/Finish Date: 2/5/14 | Drilling Method: Hand augers |
| Weather: Cloudy, intermittent rain | Logged by: Tim Price |

| Depth (ft) | Sample Information: Sample Number | Soil Classification | Recovery (in.) | SPT | Soil Log | PID | Soil Description | Comments |
|---|---|---|---|---|---|---|---|---|
| 0 | NA | NA | NA | NA | NA | NA | Ground Surface | |
| 1<br>2 | NA | GW<br>SM | 24 | NA | | 12.0 ppm | 0 to 6-in, light grey, well-graded gravel, fine to coarse GRAVEL (GW), dry, no odor<br>6-in to 2-ft, light brown to orange-brown, silty fine-to-medium grained SAND (SM), moderate petroleum odor, dry | |
| 3<br>4 | NA | SM | 24 | NA | | 48.0 ppm | 2-ft to 4-ft, light grey, silty fine-to-medium grained SAND (SM), moderate petroleum odor, dry, becoming moist at 4-ft | |
| 5<br>6 | NA | CL | 24 | NA | | 14.0 ppm | 4-ft to 6-ft, grey sandy CLAY (CL), moist, moderate petroleum odor | |
| 7<br>8 | | | | | | | | |
| 9<br>10 | | | | | | | | |
| 11<br>12 | | | | | | | | |
| 13<br>14 | | | | | | | Tiger Ion Pro PID field calibration log:<br>0 ppm = 0 ppm; 100 ppm isobutylene = 100.6 ppm | |

RHEA ENGINEERS & CONSULTANTS, INC.

**BORING NUMBER:** HA-06

**Termination Depth: 6'** **Monitoring Well Installed?** No

| | |
|---|---|
| Project Name: Building 1932 Site Investigation | Drilling Company: Not Applicable |
| Project Number: 45403 | Driller (s): Not Applicable |
| Start/Finish Date: 2/5/14 | Drilling Method: Hand augers |
| Weather: Cloudy, intermittent rain | Logged by: Tim Price |

| Depth (ft) | Sample Information: Sample Number | Soil Classification | Recovery (in.) | SPT | Soil Log | PID | Soil Description | Comments |
|---|---|---|---|---|---|---|---|---|
| 0 | NA | NA | NA | NA | NA | NA | Ground Surface | |
| 1<br>2 | NA | GW<br>SM | 24 | NA | | 0.0 ppm | 0 to 6-in, light grey, well-graded gravel, fine to coarse GRAVEL (GW), dry, no odor<br>6-in to 2-ft, dark grey, silty fine-to-medium grained SAND (SM), no odor, dry | |
| 3<br>4 | HA-06 (2-4) | SM | 24 | NA | | 2.1 ppm | 2-ft to 4-ft, dark grey, silty fine-to-medium grained SAND (SM), moderate petroleum odor, dry, becoming moist at 4-ft | Sample taken. |
| 5<br>6 | NA | CL | 24 | NA | | 1.2 ppm | 4-ft to 6-ft, grey sandy CLAY (CL), moist, moderate petroleum odor | |
| 7<br>8 | | | | | | | | |
| 9<br>10 | | | | | | | | |
| 11<br>12 | | | | | | | | |
| 13<br>14 | | | | | | | | |

RHEA ENGINEERS & CONSULTANTS, INC.

**BORING NUMBER:** HA-07

**Termination Depth:**

**Monitoring Well Installed?** No

| | |
|---|---|
| Project Name: Building 1932 Site Investigation | Drilling Company: Not Applicable |
| Project Number: 45403 | Driller (s): Not Applicable |
| Start/Finish Date: 2/5/14 | Drilling Method: Hand augers |
| Weather: Cloudy, intermittent rain | Logged by: Tim Price |

| Depth (ft) | Sample Information: Sample Number | Soil Classification | Recovery (in.) | SPT | Soil Log | PID | Soil Description | Comments |
|---|---|---|---|---|---|---|---|---|
| 0 | NA | NA | NA | NA | NA | NA | Ground Surface | |
| 1<br>2 | NA | SM<br>SM | 24 | NA | | 0 ppm | 0 to 3-in, dark brown, organic rich, silty fine-to-medium grained SAND (SM) dry, no odor<br>3-in to 2-ft, light brown silty fine-to-medium grained SAND (SM) dry, no odor | |
| 3<br>4 | NA | SM | 24 | NA | | 0 ppm | 2-ft to 4-ft, orange silty fine-to-medium grained SAND (SM), dry, no odor | |
| 5<br>6 | HA-07 (4-6) | SM | 24 | NA | | 0 ppm | 4-ft to 6-ft, same orange silty fine-to-medium grained SAND (SM) with trace clay, dry, no odor | Sample taken. |
| 7<br>8 | | | | | | | | |
| 9<br>10 | | | | | | | | |
| 11<br>12 | | | | | | | | |
| 13<br>14 | | | | | | | | |

RHEA ENGINEERS & CONSULTANTS, INC.

**BORING NUMBER:** HA-08

**Termination Depth: 6'** **Monitoring Well Installed?** No

| | |
|---|---|
| Project Name: Building 1932 Site Investigation | Drilling Company: Not Applicable |
| Project Number: 45403 | Driller (s): Not Applicable |
| Start/Finish Date: 2/6/14 | Drilling Method: Hand augers |
| Weather: Clear | Logged by: Tim Price |

| Depth (ft) | Sample Information: Sample Number | Soil Classification | Recovery (in.) | SPT | Soil Log | PID | Soil Description | Comments |
|---|---|---|---|---|---|---|---|---|
| 0 | NA | NA | NA | NA | NA | NA | Ground Surface | |
| 1<br>2 | NA | GW<br>SM | 24 | NA | | 1.2 ppm | 0 to 6-in, light grey, well-graded gravel, fine to coarse GRAVEL (GW), dry, no odor<br>6-in to 2-ft, grey, silty fine-to-medium grained SAND (SM), moderate petroleum odor, dry | |
| 3<br>4 | NA | SM | 24 | NA | | 3.4 ppm | 2-ft to 4-ft, grey to dark grey, silty fine-to-medium grained SAND (SM), moderate petroleum odor, dry, becoming moist at 4-ft | |
| 5<br>6 | HA-08 (4-6) | CL | 24 | NA | | 3.8 ppm | 4-ft to 6-ft, grey sandy CLAY (CL), moist, moderate petroleum odor | Sample taken. |
| 7<br>8 | | | | | | | | |
| 9<br>10 | | | | | | | | |
| 11<br>12 | | | | | | | | |
| 13<br>14 | | | | | | | Tiger Ion Pro PID field calibration log:<br>0 ppm = 0 ppm; 100 ppm isobutylene = 100.6 ppm | |

RHEA ENGINEERS & CONSULTANTS, INC.

**BORING NUMBER:** HA-09

**Termination Depth:**

**Monitoring Well Installed?** No

| | |
|---|---|
| Project Name: Building 1932 Site Investigation | Drilling Company: Not Applicable |
| Project Number: 45403 | Driller (s): Not Applicable |
| Start/Finish Date: 2/6/14 | Drilling Method: Hand augers |
| Weather: Clear | Logged by: Tim Price |

| Depth (ft) | Sample Information: Sample Number | Soil Classification | Recovery (in.) | SPT | Soil Log | PID | Soil Description | Comments |
|---|---|---|---|---|---|---|---|---|
| 0 | NA | NA | NA | NA | NA | NA | Ground Surface | |
| 1<br>2 | NA | SM<br>SM | 24 | NA | | 0 ppm | 0 to 3-in, dark brown, organic rich, silty fine-to-medium grained SAND (SM) dry, no odor<br>3-in to 2-ft, light brown silty fine-to-medium grained SAND (SM) dry, no odor | |
| 3<br>4 | NA | SM | 24 | NA | | 1.2 ppm | 2-ft to 4-ft, orange silty fine-to-medium grained SAND (SM), dry, moderate petroleum odor | |
| 5<br>6 | HA-09 (4-6) | CL | 24 | NA | | 1.4 ppm | 4-ft to 6-ft, grey sandy CLAY (CL), moist, moderate petroleum odor | Sample taken. |
| 7<br>8 | | | | | | | | |
| 9<br>10 | | | | | | | | |
| 11<br>12 | | | | | | | | |
| 13<br>14 | | | | | | | | |

RHEA ENGINEERS & CONSULTANTS, INC.

**BORING NUMBER:** HA-10

**Termination Depth: 6'** **Monitoring Well Installed?** No

| | |
|---|---|
| Project Name: Building 1932 Site Investigation | Drilling Company: Not Applicable |
| Project Number: 45403 | Driller (s): Not Applicable |
| Start/Finish Date: 2/6/14 | Drilling Method: Hand augers |
| Weather: Clear | Logged by: Tim Price |

| Depth (ft) | Sample Information: Sample Number | Soil Classification | Recovery (in.) | SPT | Soil Log | PID | Soil Description | Comments |
|---|---|---|---|---|---|---|---|---|
| 0 | NA | NA | NA | NA | NA | NA | Ground Surface | |
| 1<br>2 | NA | GW<br>SM | 24 | NA | | 0.3 ppm | 0 to 6-in, light grey, well-graded gravel, fine to coarse GRAVEL (GW), dry, no odor<br>6-in to 2-ft, grey, silty fine-to-medium grained SAND (SM), no odor, dry | |
| 3<br>4 | NA | SM | 24 | NA | | 0.2 ppm | 2-ft to 4-ft, grey to dark grey, silty fine-to-medium grained SAND (SM), slight petroleum odor, dry, becoming moist at 4-ft | |
| 5<br>6 | HA-10 (4-6) | CL | 24 | NA | | 0.3 ppm | 4-ft to 6-ft, grey sandy CLAY (CL), moist, slight petroleum odor | Sample taken. |
| 7<br>8 | | | | | | | | |
| 9<br>10 | | | | | | | | |
| 11<br>12 | | | | | | | | |
| 13<br>14 | | | | | | | Tiger Ion Pro PID field calibration log:<br>0 ppm = 0 ppm; 100 ppm isobutylene = 100.6 ppm | |

RHEA ENGINEERS & CONSULTANTS, INC.

**BORING NUMBER:** HA-11

**Termination Depth: 6'** **Monitoring Well Installed?** No

| | |
|---|---|
| Project Name: Building 1932 Site Investigation | Drilling Company: Not Applicable |
| Project Number: 45403 | Driller (s): Not Applicable |
| Start/Finish Date: 2/6/14 | Drilling Method: Hand augers |
| Weather: Clear | Logged by: Tim Price |

| Depth (ft) | Sample Information: Sample Number | Soil Classification | Recovery (in.) | SPT | Soil Log | PID | Soil Description | Comments |
|---|---|---|---|---|---|---|---|---|
| 0 | NA | NA | NA | NA | NA | NA | Ground Surface | |
| 1<br>2 | NA | GW<br>SM | 24 | NA | | 0.0 ppm | 0 to 6-in, light grey, well-graded gravel, fine to coarse GRAVEL (GW), dry, no odor<br>6-in to 2-ft, grey, silty fine-to-medium grained SAND (SM), no odor, dry | |
| 3<br>4 | NA | SM | 24 | NA | | 0.8 ppm | 2-ft to 4-ft, orange, silty fine-to-medium grained SAND (SM) with trace clay, slight petroleum odor, dry, becoming moist at 4-ft | |
| 5<br>6 | HA-11 (4-6) | CL | 24 | NA | | 3.4 ppm | 4-ft to 6-ft, grey sandy CLAY (CL), moist, slight petroleum odor | Sample taken. |
| 7<br>8 | | | | | | | | |
| 9<br>10 | | | | | | | | |
| 11<br>12 | | | | | | | | |
| 13<br>14 | | | | | | | | |

RHEA ENGINEERS & CONSULTANTS, INC.

**BORING NUMBER:** HA-12

**Termination Depth: 6'** **Monitoring Well Installed?** No

| | |
|---|---|
| Project Name: Building 1932 Site Investigation | Drilling Company: Not Applicable |
| Project Number: 45403 | Driller (s): Not Applicable |
| Start/Finish Date: 2/6/14 | Drilling Method: Hand augers |
| Weather: Clear | Logged by: Tim Price |

| Depth (ft) | Sample Information: Sample Number | Soil Classification | Recovery (in.) | SPT | Soil Log | PID | Soil Description | Comments |
|---|---|---|---|---|---|---|---|---|
| 0 | NA | NA | NA | NA | NA | NA | Ground Surface | |
| 1<br>2 | NA | GW<br>SM | 24 | NA | | 0.0 ppm | 0 to 6-in, light grey, well-graded gravel, fine to coarse GRAVEL (GW), dry, no odor<br>6-in to 2-ft, grey, silty fine-to-medium grained SAND (SM), no odor, dry | |
| 3<br>4 | NA | SM | 24 | NA | | 0.3 ppm | 2-ft to 4-ft, grey to dark grey, silty fine-to-medium grained SAND (SM) with trace clay, slight petroleum odor, dry, becoming moist at 4-ft | |
| 5<br>6 | HA-12 (4-6) | CL | 24 | NA | | 3.0 ppm | 4-ft to 6-ft, orange sandy CLAY (CL), moist, slight petroleum odor | Sample taken. |
| 7<br>8 | | | | | | | | |
| 9<br>10 | | | | | | | | |
| 11<br>12 | | | | | | | | |
| 13<br>14 | | | | | | | Tiger Ion Pro PID field calibration log:<br>0 ppm = 0 ppm; 100 ppm isobutylene = 100.6 ppm | |

RHEA ENGINEERS & CONSULTANTS, INC.

**BORING NUMBER:** HA-13

**Termination Depth: 6'** **Monitoring Well Installed?** No

| | |
|---|---|
| Project Name: Building 1932 Site Investigation | Drilling Company: Not Applicable |
| Project Number: 45403 | Driller (s): Not Applicable |
| Start/Finish Date: 2/6/14 | Drilling Method: Hand augers |
| Weather: Clear | Logged by: Tim Price |

| Depth (ft) | Sample Information: Sample Number | Soil Classification | Recovery (in.) | SPT | Soil Log | PID | Soil Description | Comments |
|---|---|---|---|---|---|---|---|---|
| 0 | NA | NA | NA | NA | NA | NA | Ground Surface | |
| 1<br>2 | NA | GW<br>SM | 24 | NA | | 0.0 ppm | 0 to 6-in, light grey, well-graded gravel, fine to coarse GRAVEL (GW), dry, no odors<br>6-in to 2-ft, light brown to orange-brown, silty fine-to-medium grained SAND (SM), dry, no odors | |
| 3<br>4 | NA | SM | 24 | NA | | 0.0 ppm | 2-ft to 4-ft, orange, silty fine-to-medium grained SAND (SM), no odors, dry, becoming moist at 4-ft | |
| 5<br>6 | HA-13 (4-6) | SM | 24 | NA | | 0.0 ppm | 2-ft to 4-ft, orange, silty fine-to-medium grained SAND (SM) trace clay, no odors | Sample taken. |
| 7<br>8 | | | | | | | | |
| 9<br>10 | | | | | | | | |
| 11<br>12 | | | | | | | | |
| 13<br>14 | | | | | | | | |

RHEA ENGINEERS & CONSULTANTS, INC.

**BORING NUMBER:** HA-14

**Termination Depth:**

**Monitoring Well Installed?** No

| | |
|---|---|
| Project Name: Building 1932 Site Investigation | Drilling Company: Not Applicable |
| Project Number: 45403 | Driller (s): Not Applicable |
| Start/Finish Date: 2/6/14 | Drilling Method: Hand augers |
| Weather: Clear | Logged by: Tim Price |

| Depth (ft) | Sample Information: Sample Number | Soil Classification | Recovery (in.) | SPT | Soil Log | PID | Soil Description | Comments |
|---|---|---|---|---|---|---|---|---|
| 0 | NA | NA | NA | NA | NA | NA | Ground Surface | |
| 1<br>2 | NA | SM<br>SM | 24 | NA | | 0 ppm | 0 to 3-in, grey, organic rich, silty fine-to-medium grained SAND (SM) dry, no odor<br>3-in to 2-ft, orange silty fine-to-medium grained SAND (SM) dry, no odor | |
| 3<br>4 | NA | SM | 24 | NA | | 0.3 ppm | 2-ft to 4-ft, grey silty fine-to-medium grained SAND (SM), dry, slight odor | |
| 5<br>6 | HA-14 (4-6) | SM | 24 | NA | | 1.3 ppm | 4-ft to 6-ft, same grey silty fine-to-medium grained SAND (SM) with trace clay, dry, slight odor | Sample taken. |
| 7<br>8 | | | | | | | | |
| 9<br>10 | | | | | | | | |
| 11<br>12 | | | | | | | | |
| 13<br>14 | | | | | | | | |

# ATTACHMENT 2

# Laboratory Analytical Data

NC Certification No. 402
SC Certification No. 99012
NC Drinking Water Cert No. 37735
VA Certification No. 460211
DoD ELAP: L-A-B Accredited Certificate No. L2307
ISO/IEC 17025: L-A-B Accredited Certificate No. L2307

# Case Narrative

02/27/2014

Rhea Engineers and Consultants, Inc.
Tim Price
314 North Green Meadows Drive, Unit 100
Wilmington, NC 28405

Project: Building 1932

Lab Submittal Date: 02/08/2014
Prism Work Order: 4020149

This data package contains the analytical results for the project identified above and includes a Case Narrative, Sample Results and Chain of Custody. Unless otherwise noted, all samples were received in acceptable condition and processed according to the referenced methods.

Data qualifiers are flagged individually on each sample. A key reference for the data qualifiers appears at the end of this case narrative.

Please call if you have any questions relating to this analytical report.

Respectfully,

**PRISM LABORATORIES, INC.**

Angela D. Overcash
VP Laboratory Services

Reviewed By Robbi A. Jones For Angela D. Overcash
President/Project Manager

**Data Qualifiers Key Reference:**

| | |
|---|---|
| A | CCV result was below established QC limits, Acceptable recovery was obtained in the LCS. No further action taken. |
| Aa | Sample was analyzed outside method recommended hold time per client request. |
| D | RPD value outside of the control limits. |
| L1 | LCS recovery outside of the QC limits. LCSD recovery within the limits. No further action taken. |
| L2 | LCSD recovery outside of the QC limits. LCS recovery within the limits. No further action taken. |
| MI | Matrix spike outside of the control limits. Matrix interference suspected. |
| BRL | Below Reporting Limit |
| MDL | Method Detection Limit |
| RPD | Relative Percent Difference |
| * | Results reported to the reporting limit. All other results are reported to the MDL with values between MDL and reporting limit indicated with a J. |

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449 Springbrook Road - P.O. Box 240543 - Charlotte, NC 28224-0543
Phone: 704/529-6364 - Toll Free Number: 1-800/529-6364 - Fax: 704/525-0409

# Sample Receipt Summary

02/27/2014

Prism Work Order: 4020149

| Client Sample ID | Lab Sample ID | Matrix | Date Sampled | Date Received |
|---|---|---|---|---|
| HA-9 (4-6) | 4020149-01 | Solid | 02/06/14 | 02/08/14 |
| HA-8 (4-6) | 4020149-02 | Solid | 02/06/14 | 02/08/14 |
| HA-11 (4-6) | 4020149-03 | Solid | 02/06/14 | 02/08/14 |
| HA-12 (4-6) | 4020149-04 | Solid | 02/06/14 | 02/08/14 |
| HA-3 (2-4) | 4020149-05 | Solid | 02/05/14 | 02/08/14 |
| HA-6 (2-4) | 4020149-06 | Solid | 02/05/14 | 02/08/14 |
| HA-14 (4-6) | 4020149-07 | Solid | 02/06/14 | 02/08/14 |
| HA-10 (4-6) | 4020149-08 | Solid | 02/06/14 | 02/08/14 |
| HA-13 (4-6) | 4020149-09 | Solid | 02/06/14 | 02/08/14 |
| HA-4 (4-6) | 4020149-10 | Solid | 02/05/14 | 02/08/14 |
| HA-7 (4-6) | 4020149-11 | Solid | 02/05/14 | 02/08/14 |

Samples were received in good condition at 1.3 degrees C unless otherwise noted.

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449 Springbrook Road - P.O. Box 240543 - Charlotte, NC 28224-0543
Phone: 704/529-6364 - Toll Free Number: 1-800/529-6364 - Fax: 704/525-0409

# Summary of Detections

02/27/2014

Prism Work Order: 4020149

| Prism ID | Client ID | Parameter | Method | Result | Units |
|---|---|---|---|---|---|
| 4020149-01 | HA-9 (4-6) | Acetone | *8260B/5030B | 130 | ug/kg dry |
| 4020149-02 | HA-8 (4-6) | Acetone | *8260B/5030B | 150 | ug/kg dry |
| 4020149-03 | HA-11 (4-6) | Acetone | *8260B/5030B | 96 | ug/kg dry |
| 4020149-05 | HA-3 (2-4) | Diesel Range Organics | *8015C | 16 | mg/kg dry |
| 4020149-05 | HA-3 (2-4) | Gasoline Range Organics | *5030B/8015C | 6.3 | mg/kg dry |
| 4020149-06 | HA-6 (2-4) | Acetone | *8260B/5030B | 28 | ug/kg dry |

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**449 Springbrook Road - P.O. Box 240543 - Charlotte, NC 28224-0543**
**Phone: 704/529-6364 - Toll Free Number: 1-800/529-6364 - Fax: 704/525-0409**

Rhea Engineers and Consultants, Inc.
Attn: Tim Price
314 North Green Meadows Drive, Unit 100
Wilmington, NC 28405

Project: Building 1932

Sample Matrix: Solid

Client Sample ID: HA-9 (4-6)
Prism Sample ID: 4020149-01
Prism Work Order: 4020149
Time Collected: 02/06/14 10:00
Time Submitted: 02/08/14 09:40

| Parameter | Result | Units | Report Limit | MDL | Dilution Factor | Method | Analysis Date/Time | Analyst | Batch ID |
|---|---|---|---|---|---|---|---|---|---|
| **Diesel Range Organics by GC/FID** | | | | | | | | | |
| Diesel Range Organics | BRL | mg/kg dry | 8.3 | 1.7 | 1 | *8015C | 2/16/14 11:29 | JMV | P4B0234 |
| | | | Surrogate | | | Recovery | | Control Limits | |
| | | | o-Terphenyl | | | *87 %* | | *49-124* | |
| **Gasoline Range Organics by GC/FID** | | | | | | | | | |
| Gasoline Range Organics | BRL | mg/kg dry | 5.9 | 0.50 | 50 | *5030B/8015C | 2/14/14 19:17 | ANG | P4B0222 |
| | | | Surrogate | | | Recovery | | Control Limits | |
| | | | a,a,a-Trifluorotoluene | | | *115 %* | | *42-148* | |
| **General Chemistry Parameters** | | | | | | | | | |
| **% Solids** | **84.3** | **% by Weight** | **0.100** | **0.100** | **1** | ***SM2540 G** | **2/11/14 17:30** | **JAB** | **P4B0199** |
| **Volatile Organic Compounds by GC/MS** | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | BRL | ug/kg dry | 5.4 | 0.33 | 1 | *8260B/5030B | 2/19/14 16:10 | MSC | P4B0305 |
| 1,1,1-Trichloroethane | BRL | ug/kg dry | 5.4 | 0.18 | 1 | *8260B/5030B | 2/19/14 16:10 | MSC | P4B0305 |
| 1,1,2,2-Tetrachloroethane | BRL | ug/kg dry | 5.4 | 0.89 | 1 | *8260B/5030B | 2/19/14 16:10 | MSC | P4B0305 |
| 1,1,2-Trichloroethane | BRL | ug/kg dry | 5.4 | 0.46 | 1 | *8260B/5030B | 2/19/14 16:10 | MSC | P4B0305 |
| 1,1-Dichloroethane | BRL | ug/kg dry | 5.4 | 0.46 | 1 | *8260B/5030B | 2/19/14 16:10 | MSC | P4B0305 |
| 1,1-Dichloroethylene | BRL | ug/kg dry | 5.4 | 0.33 | 1 | *8260B/5030B | 2/19/14 16:10 | MSC | P4B0305 |
| 1,1-Dichloropropylene | BRL | ug/kg dry | 5.4 | 0.57 | 1 | *8260B/5030B | 2/19/14 16:10 | MSC | P4B0305 |
| 1,2,3-Trichlorobenzene | BRL | ug/kg dry | 11 | 0.40 | 1 | *8260B/5030B | 2/19/14 16:10 | MSC | P4B0305 |
| 1,2,3-Trichloropropane | BRL | ug/kg dry | 5.4 | 0.81 | 1 | *8260B/5030B | 2/19/14 16:10 | MSC | P4B0305 |
| 1,2,4-Trichlorobenzene | BRL | ug/kg dry | 11 | 0.32 | 1 | *8260B/5030B | 2/19/14 16:10 | MSC | P4B0305 |
| 1,2,4-Trimethylbenzene | BRL | ug/kg dry | 11 | 1.1 | 1 | *8260B/5030B | 2/19/14 16:10 | MSC | P4B0305 |
| 1,2-Dibromo-3-chloropropane | BRL | ug/kg dry | 5.4 | 1.7 | 1 | *8260B/5030B | 2/19/14 16:10 | MSC | P4B0305 |
| 1,2-Dibromoethane | BRL | ug/kg dry | 5.4 | 0.62 | 1 | *8260B/5030B | 2/19/14 16:10 | MSC | P4B0305 |
| 1,2-Dichlorobenzene | BRL | ug/kg dry | 11 | 0.24 | 1 | *8260B/5030B | 2/19/14 16:10 | MSC | P4B0305 |
| 1,2-Dichloroethane | BRL | ug/kg dry | 5.4 | 0.87 | 1 | *8260B/5030B | 2/19/14 16:10 | MSC | P4B0305 |
| 1,2-Dichloropropane | BRL | ug/kg dry | 5.4 | 0.34 | 1 | *8260B/5030B | 2/19/14 16:10 | MSC | P4B0305 |
| 1,3,5-Trimethylbenzene | BRL | ug/kg dry | 11 | 0.26 | 1 | *8260B/5030B | 2/19/14 16:10 | MSC | P4B0305 |
| 1,3-Dichlorobenzene | BRL | ug/kg dry | 11 | 0.074 | 1 | *8260B/5030B | 2/19/14 16:10 | MSC | P4B0305 |
| 1,3-Dichloropropane | BRL | ug/kg dry | 5.4 | 0.58 | 1 | *8260B/5030B | 2/19/14 16:10 | MSC | P4B0305 |
| 1,4-Dichlorobenzene | BRL | ug/kg dry | 11 | 0.39 | 1 | *8260B/5030B | 2/19/14 16:10 | MSC | P4B0305 |
| 2,2-Dichloropropane | BRL | ug/kg dry | 5.4 | 0.34 | 1 | *8260B/5030B | 2/19/14 16:10 | MSC | P4B0305 |
| 2-Chlorotoluene | BRL | ug/kg dry | 11 | 0.33 | 1 | *8260B/5030B | 2/19/14 16:10 | MSC | P4B0305 |
| 4-Chlorotoluene | BRL | ug/kg dry | 11 | 0.25 | 1 | *8260B/5030B | 2/19/14 16:10 | MSC | P4B0305 |
| 4-Isopropyltoluene | BRL | ug/kg dry | 16 | 0.34 | 1 | *8260B/5030B | 2/19/14 16:10 | MSC | P4B0305 |
| **Acetone** | **130** | **ug/kg dry** | **22** | **2.9** | **1** | ***8260B/5030B** | **2/19/14 16:10** | **MSC** | **P4B0305** |
| Acrolein | BRL | ug/kg dry | 110 | 3.3 | 1 | *8260B/5030B | 2/19/14 16:10 | MSC | P4B0305 |
| Acrylonitrile | BRL | ug/kg dry | 110 | 2.7 | 1 | *8260B/5030B | 2/19/14 16:10 | MSC | P4B0305 |
| Benzene | BRL | ug/kg dry | 3.2 | 0.33 | 1 | *8260B/5030B | 2/19/14 16:10 | MSC | P4B0305 |
| Bromobenzene | BRL | ug/kg dry | 5.4 | 0.23 | 1 | *8260B/5030B | 2/19/14 16:10 | MSC | P4B0305 |
| Bromochloromethane | BRL | ug/kg dry | 5.4 | 0.79 | 1 | *8260B/5030B | 2/19/14 16:10 | MSC | P4B0305 |

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Rhea Engineers and Consultants, Inc.
Attn: Tim Price
314 North Green Meadows Drive, Unit 100
Wilmington, NC 28405

Project: Building 1932

Sample Matrix: Solid

Client Sample ID: HA-9 (4-6)
Prism Sample ID: 4020149-01
Prism Work Order: 4020149
Time Collected: 02/06/14 10:00
Time Submitted: 02/08/14 09:40

| Parameter | Result | Units | Report Limit | MDL | Dilution Factor | Method | Analysis Date/Time | Analyst | Batch ID |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | BRL | ug/kg dry | 5.4 | 0.25 | 1 | *8260B/5030B | 2/19/14 16:10 | MSC | P4B0305 |
| Bromoform | BRL | ug/kg dry | 5.4 | 0.95 | 1 | *8260B/5030B | 2/19/14 16:10 | MSC | P4B0305 |
| Bromomethane | BRL | ug/kg dry | 11 | 1.5 | 1 | *8260B/5030B | 2/19/14 16:10 | MSC | P4B0305 |
| Carbon disulfide | BRL | ug/kg dry | 11 | 0.45 | 1 | *8260B/5030B | 2/19/14 16:10 | MSC | P4B0305 |
| Carbon Tetrachloride | BRL | ug/kg dry | 5.4 | 0.29 | 1 | *8260B/5030B | 2/19/14 16:10 | MSC | P4B0305 |
| Chlorobenzene | BRL | ug/kg dry | 5.4 | 0.25 | 1 | *8260B/5030B | 2/19/14 16:10 | MSC | P4B0305 |
| Chloroethane | BRL | ug/kg dry | 11 | 4.1 | 1 | *8260B/5030B | 2/19/14 16:10 | MSC | P4B0305 |
| Chloroform | BRL | ug/kg dry | 5.4 | 0.23 | 1 | *8260B/5030B | 2/19/14 16:10 | MSC | P4B0305 |
| Chloromethane | BRL | ug/kg dry | 11 | 2.7 | 1 | *8260B/5030B | 2/19/14 16:10 | MSC | P4B0305 |
| cis-1,2-Dichloroethylene | BRL | ug/kg dry | 5.4 | 0.44 | 1 | *8260B/5030B | 2/19/14 16:10 | MSC | P4B0305 |
| cis-1,3-Dichloropropylene | BRL | ug/kg dry | 5.4 | 0.27 | 1 | *8260B/5030B | 2/19/14 16:10 | MSC | P4B0305 |
| Dibromochloromethane | BRL | ug/kg dry | 5.4 | 0.37 | 1 | *8260B/5030B | 2/19/14 16:10 | MSC | P4B0305 |
| Dibromomethane | BRL | ug/kg dry | 5.4 | 0.36 | 1 | *8260B/5030B | 2/19/14 16:10 | MSC | P4B0305 |
| Dichlorodifluoromethane | BRL | ug/kg dry | 11 | 0.58 | 1 | *8260B/5030B | 2/19/14 16:10 | MSC | P4B0305 |
| Ethylbenzene | BRL | ug/kg dry | 5.4 | 0.35 | 1 | *8260B/5030B | 2/19/14 16:10 | MSC | P4B0305 |
| Hexachlorobutadiene | BRL | ug/kg dry | 16 | 0.69 | 1 | *8260B/5030B | 2/19/14 16:10 | MSC | P4B0305 |
| Isopropyl Ether | BRL | ug/kg dry | 5.4 | 0.23 | 1 | *8260B/5030B | 2/19/14 16:10 | MSC | P4B0305 |
| Isopropylbenzene (Cumene) | BRL | ug/kg dry | 11 | 0.27 | 1 | *8260B/5030B | 2/19/14 16:10 | MSC | P4B0305 |
| m,p-Xylenes | BRL | ug/kg dry | 11 | 0.69 | 1 | *8260B/5030B | 2/19/14 16:10 | MSC | P4B0305 |
| Methyl Butyl Ketone (2-Hexanone) | BRL | ug/kg dry | 54 | 1.1 | 1 | *8260B/5030B | 2/19/14 16:10 | MSC | P4B0305 |
| Methyl Ethyl Ketone (2-Butanone) | BRL | ug/kg dry | 22 | 1.9 | 1 | *8260B/5030B | 2/19/14 16:10 | MSC | P4B0305 |
| Methyl Isobutyl Ketone | BRL | ug/kg dry | 11 | 1.4 | 1 | *8260B/5030B | 2/19/14 16:10 | MSC | P4B0305 |
| Methylene Chloride | BRL | ug/kg dry | 11 | 0.39 | 1 | *8260B/5030B | 2/19/14 16:10 | MSC | P4B0305 |
| Methyl-tert-Butyl Ether | BRL | ug/kg dry | 5.4 | 0.41 | 1 | *8260B/5030B | 2/19/14 16:10 | MSC | P4B0305 |
| Naphthalene | BRL | ug/kg dry | 5.4 | 0.40 | 1 | *8260B/5030B | 2/19/14 16:10 | MSC | P4B0305 |
| n-Butylbenzene | BRL | ug/kg dry | 16 | 0.24 | 1 | *8260B/5030B | 2/19/14 16:10 | MSC | P4B0305 |
| n-Propylbenzene | BRL | ug/kg dry | 11 | 0.31 | 1 | *8260B/5030B | 2/19/14 16:10 | MSC | P4B0305 |
| o-Xylene | BRL | ug/kg dry | 5.4 | 0.34 | 1 | *8260B/5030B | 2/19/14 16:10 | MSC | P4B0305 |
| sec-Butylbenzene | BRL | ug/kg dry | 16 | 0.22 | 1 | *8260B/5030B | 2/19/14 16:10 | MSC | P4B0305 |
| Styrene | BRL | ug/kg dry | 5.4 | 0.24 | 1 | *8260B/5030B | 2/19/14 16:10 | MSC | P4B0305 |
| tert-Butylbenzene | BRL | ug/kg dry | 22 | 0.28 | 1 | *8260B/5030B | 2/19/14 16:10 | MSC | P4B0305 |
| Tetrachloroethylene | BRL | ug/kg dry | 11 | 0.37 | 1 | *8260B/5030B | 2/19/14 16:10 | MSC | P4B0305 |
| Toluene | BRL | ug/kg dry | 5.4 | 0.32 | 1 | *8260B/5030B | 2/19/14 16:10 | MSC | P4B0305 |
| trans-1,2-Dichloroethylene | BRL | ug/kg dry | 5.4 | 0.62 | 1 | *8260B/5030B | 2/19/14 16:10 | MSC | P4B0305 |
| trans-1,3-Dichloropropylene | BRL | ug/kg dry | 5.4 | 0.26 | 1 | *8260B/5030B | 2/19/14 16:10 | MSC | P4B0305 |
| Trichloroethylene | BRL | ug/kg dry | 5.4 | 0.50 | 1 | *8260B/5030B | 2/19/14 16:10 | MSC | P4B0305 |
| Trichlorofluoromethane | BRL | ug/kg dry | 5.4 | 0.44 | 1 | *8260B/5030B | 2/19/14 16:10 | MSC | P4B0305 |
| Vinyl acetate | BRL | ug/kg dry | 11 | 1.5 | 1 | *8260B/5030B | 2/19/14 16:10 | MSC | P4B0305 |
| Vinyl chloride | BRL | ug/kg dry | 11 | 0.70 | 1 | *8260B/5030B | 2/19/14 16:10 | MSC | P4B0305 |

| Surrogate | Recovery | Control Limits |
|---|---|---|
| 4-Bromofluorobenzene | *84 %* | *70-130* |
| Dibromofluoromethane | *115 %* | *84-123* |
| Toluene-d8 | *109 %* | *76-129* |

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Rhea Engineers and Consultants, Inc.
Attn: Tim Price
314 North Green Meadows Drive, Unit 100
Wilmington, NC 28405

Project: Building 1932

Sample Matrix: Solid

Client Sample ID: HA-8 (4-6)
Prism Sample ID: 4020149-02
Prism Work Order: 4020149
Time Collected: 02/06/14 09:00
Time Submitted: 02/08/14 09:40

| Parameter | Result | Units | Report Limit | MDL | Dilution Factor | Method | Analysis Date/Time | Analyst | Batch ID |
|---|---|---|---|---|---|---|---|---|---|
| **Diesel Range Organics by GC/FID** | | | | | | | | | |
| Diesel Range Organics | BRL | mg/kg dry | 8.4 | 1.7 | 1 | *8015C | 2/16/14 12:05 | JMV | P4B0234 |
| | | | Surrogate | | | Recovery | | Control Limits | |
| | | | o-Terphenyl | | | *84 %* | | *49-124* | |
| **Gasoline Range Organics by GC/FID** | | | | | | | | | |
| Gasoline Range Organics | BRL | mg/kg dry | 5.1 | 0.43 | 50 | *5030B/8015C | 2/14/14 19:48 | ANG | P4B0222 |
| | | | Surrogate | | | Recovery | | Control Limits | |
| | | | a,a,a-Trifluorotoluene | | | *103 %* | | *42-148* | |
| **General Chemistry Parameters** | | | | | | | | | |
| **% Solids** | **82.9** | **% by Weight** | **0.100** | **0.100** | **1** | ***SM2540 G** | **2/11/14 17:30** | **JAB** | **P4B0199** |
| **Volatile Organic Compounds by GC/MS** | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | BRL | ug/kg dry | 5.5 | 0.33 | 1 | *8260B/5030B | 2/19/14 16:34 | MSC | P4B0305 |
| 1,1,1-Trichloroethane | BRL | ug/kg dry | 5.5 | 0.18 | 1 | *8260B/5030B | 2/19/14 16:34 | MSC | P4B0305 |
| 1,1,2,2-Tetrachloroethane | BRL | ug/kg dry | 5.5 | 0.92 | 1 | *8260B/5030B | 2/19/14 16:34 | MSC | P4B0305 |
| 1,1,2-Trichloroethane | BRL | ug/kg dry | 5.5 | 0.47 | 1 | *8260B/5030B | 2/19/14 16:34 | MSC | P4B0305 |
| 1,1-Dichloroethane | BRL | ug/kg dry | 5.5 | 0.47 | 1 | *8260B/5030B | 2/19/14 16:34 | MSC | P4B0305 |
| 1,1-Dichloroethylene | BRL | ug/kg dry | 5.5 | 0.34 | 1 | *8260B/5030B | 2/19/14 16:34 | MSC | P4B0305 |
| 1,1-Dichloropropylene | BRL | ug/kg dry | 5.5 | 0.58 | 1 | *8260B/5030B | 2/19/14 16:34 | MSC | P4B0305 |
| 1,2,3-Trichlorobenzene | BRL | ug/kg dry | 11 | 0.41 | 1 | *8260B/5030B | 2/19/14 16:34 | MSC | P4B0305 |
| 1,2,3-Trichloropropane | BRL | ug/kg dry | 5.5 | 0.84 | 1 | *8260B/5030B | 2/19/14 16:34 | MSC | P4B0305 |
| 1,2,4-Trichlorobenzene | BRL | ug/kg dry | 11 | 0.33 | 1 | *8260B/5030B | 2/19/14 16:34 | MSC | P4B0305 |
| 1,2,4-Trimethylbenzene | BRL | ug/kg dry | 11 | 1.1 | 1 | *8260B/5030B | 2/19/14 16:34 | MSC | P4B0305 |
| 1,2-Dibromo-3-chloropropane | BRL | ug/kg dry | 5.5 | 1.7 | 1 | *8260B/5030B | 2/19/14 16:34 | MSC | P4B0305 |
| 1,2-Dibromoethane | BRL | ug/kg dry | 5.5 | 0.64 | 1 | *8260B/5030B | 2/19/14 16:34 | MSC | P4B0305 |
| 1,2-Dichlorobenzene | BRL | ug/kg dry | 11 | 0.25 | 1 | *8260B/5030B | 2/19/14 16:34 | MSC | P4B0305 |
| 1,2-Dichloroethane | BRL | ug/kg dry | 5.5 | 0.89 | 1 | *8260B/5030B | 2/19/14 16:34 | MSC | P4B0305 |
| 1,2-Dichloropropane | BRL | ug/kg dry | 5.5 | 0.35 | 1 | *8260B/5030B | 2/19/14 16:34 | MSC | P4B0305 |
| 1,3,5-Trimethylbenzene | BRL | ug/kg dry | 11 | 0.26 | 1 | *8260B/5030B | 2/19/14 16:34 | MSC | P4B0305 |
| 1,3-Dichlorobenzene | BRL | ug/kg dry | 11 | 0.077 | 1 | *8260B/5030B | 2/19/14 16:34 | MSC | P4B0305 |
| 1,3-Dichloropropane | BRL | ug/kg dry | 5.5 | 0.60 | 1 | *8260B/5030B | 2/19/14 16:34 | MSC | P4B0305 |
| 1,4-Dichlorobenzene | BRL | ug/kg dry | 11 | 0.41 | 1 | *8260B/5030B | 2/19/14 16:34 | MSC | P4B0305 |
| 2,2-Dichloropropane | BRL | ug/kg dry | 5.5 | 0.35 | 1 | *8260B/5030B | 2/19/14 16:34 | MSC | P4B0305 |
| 2-Chlorotoluene | BRL | ug/kg dry | 11 | 0.34 | 1 | *8260B/5030B | 2/19/14 16:34 | MSC | P4B0305 |
| 4-Chlorotoluene | BRL | ug/kg dry | 11 | 0.26 | 1 | *8260B/5030B | 2/19/14 16:34 | MSC | P4B0305 |
| 4-Isopropyltoluene | BRL | ug/kg dry | 17 | 0.35 | 1 | *8260B/5030B | 2/19/14 16:34 | MSC | P4B0305 |
| **Acetone** | **150** | **ug/kg dry** | **22** | **2.9** | **1** | ***8260B/5030B** | **2/19/14 16:34** | **MSC** | **P4B0305** |
| Acrolein | BRL | ug/kg dry | 110 | 3.4 | 1 | *8260B/5030B | 2/19/14 16:34 | MSC | P4B0305 |
| Acrylonitrile | BRL | ug/kg dry | 110 | 2.7 | 1 | *8260B/5030B | 2/19/14 16:34 | MSC | P4B0305 |
| Benzene | BRL | ug/kg dry | 3.3 | 0.34 | 1 | *8260B/5030B | 2/19/14 16:34 | MSC | P4B0305 |
| Bromobenzene | BRL | ug/kg dry | 5.5 | 0.24 | 1 | *8260B/5030B | 2/19/14 16:34 | MSC | P4B0305 |
| Bromochloromethane | BRL | ug/kg dry | 5.5 | 0.81 | 1 | *8260B/5030B | 2/19/14 16:34 | MSC | P4B0305 |

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# Laboratory Report

02/27/2014

Rhea Engineers and Consultants, Inc.
Attn: Tim Price
314 North Green Meadows Drive, Unit 100
Wilmington, NC 28405

Project: Building 1932

Sample Matrix: Solid

Client Sample ID: HA-8 (4-6)
Prism Sample ID: 4020149-02
Prism Work Order: 4020149
Time Collected: 02/06/14 09:00
Time Submitted: 02/08/14 09:40

| Parameter | Result | Units | Report Limit | MDL | Dilution Factor | Method | Analysis Date/Time | Analyst | Batch ID |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | BRL | ug/kg dry | 5.5 | 0.26 | 1 | *8260B/5030B | 2/19/14 16:34 | MSC | P4B0305 |
| Bromoform | BRL | ug/kg dry | 5.5 | 0.98 | 1 | *8260B/5030B | 2/19/14 16:34 | MSC | P4B0305 |
| Bromomethane | BRL | ug/kg dry | 11 | 1.6 | 1 | *8260B/5030B | 2/19/14 16:34 | MSC | P4B0305 |
| Carbon disulfide | BRL | ug/kg dry | 11 | 0.46 | 1 | *8260B/5030B | 2/19/14 16:34 | MSC | P4B0305 |
| Carbon Tetrachloride | BRL | ug/kg dry | 5.5 | 0.30 | 1 | *8260B/5030B | 2/19/14 16:34 | MSC | P4B0305 |
| Chlorobenzene | BRL | ug/kg dry | 5.5 | 0.26 | 1 | *8260B/5030B | 2/19/14 16:34 | MSC | P4B0305 |
| Chloroethane | BRL | ug/kg dry | 11 | 4.2 | 1 | *8260B/5030B | 2/19/14 16:34 | MSC | P4B0305 |
| Chloroform | BRL | ug/kg dry | 5.5 | 0.23 | 1 | *8260B/5030B | 2/19/14 16:34 | MSC | P4B0305 |
| Chloromethane | BRL | ug/kg dry | 11 | 2.8 | 1 | *8260B/5030B | 2/19/14 16:34 | MSC | P4B0305 |
| cis-1,2-Dichloroethylene | BRL | ug/kg dry | 5.5 | 0.45 | 1 | *8260B/5030B | 2/19/14 16:34 | MSC | P4B0305 |
| cis-1,3-Dichloropropylene | BRL | ug/kg dry | 5.5 | 0.27 | 1 | *8260B/5030B | 2/19/14 16:34 | MSC | P4B0305 |
| Dibromochloromethane | BRL | ug/kg dry | 5.5 | 0.38 | 1 | *8260B/5030B | 2/19/14 16:34 | MSC | P4B0305 |
| Dibromomethane | BRL | ug/kg dry | 5.5 | 0.37 | 1 | *8260B/5030B | 2/19/14 16:34 | MSC | P4B0305 |
| Dichlorodifluoromethane | BRL | ug/kg dry | 11 | 0.59 | 1 | *8260B/5030B | 2/19/14 16:34 | MSC | P4B0305 |
| Ethylbenzene | BRL | ug/kg dry | 5.5 | 0.36 | 1 | *8260B/5030B | 2/19/14 16:34 | MSC | P4B0305 |
| Hexachlorobutadiene | BRL | ug/kg dry | 17 | 0.71 | 1 | *8260B/5030B | 2/19/14 16:34 | MSC | P4B0305 |
| Isopropyl Ether | BRL | ug/kg dry | 5.5 | 0.24 | 1 | *8260B/5030B | 2/19/14 16:34 | MSC | P4B0305 |
| Isopropylbenzene (Cumene) | BRL | ug/kg dry | 11 | 0.28 | 1 | *8260B/5030B | 2/19/14 16:34 | MSC | P4B0305 |
| m,p-Xylenes | BRL | ug/kg dry | 11 | 0.71 | 1 | *8260B/5030B | 2/19/14 16:34 | MSC | P4B0305 |
| Methyl Butyl Ketone (2-Hexanone) | BRL | ug/kg dry | 55 | 1.1 | 1 | *8260B/5030B | 2/19/14 16:34 | MSC | P4B0305 |
| Methyl Ethyl Ketone (2-Butanone) | BRL | ug/kg dry | 22 | 2.0 | 1 | *8260B/5030B | 2/19/14 16:34 | MSC | P4B0305 |
| Methyl Isobutyl Ketone | BRL | ug/kg dry | 11 | 1.5 | 1 | *8260B/5030B | 2/19/14 16:34 | MSC | P4B0305 |
| Methylene Chloride | BRL | ug/kg dry | 11 | 0.40 | 1 | *8260B/5030B | 2/19/14 16:34 | MSC | P4B0305 |
| Methyl-tert-Butyl Ether | BRL | ug/kg dry | 5.5 | 0.43 | 1 | *8260B/5030B | 2/19/14 16:34 | MSC | P4B0305 |
| Naphthalene | BRL | ug/kg dry | 5.5 | 0.41 | 1 | *8260B/5030B | 2/19/14 16:34 | MSC | P4B0305 |
| n-Butylbenzene | BRL | ug/kg dry | 17 | 0.25 | 1 | *8260B/5030B | 2/19/14 16:34 | MSC | P4B0305 |
| n-Propylbenzene | BRL | ug/kg dry | 11 | 0.32 | 1 | *8260B/5030B | 2/19/14 16:34 | MSC | P4B0305 |
| o-Xylene | BRL | ug/kg dry | 5.5 | 0.35 | 1 | *8260B/5030B | 2/19/14 16:34 | MSC | P4B0305 |
| sec-Butylbenzene | BRL | ug/kg dry | 17 | 0.22 | 1 | *8260B/5030B | 2/19/14 16:34 | MSC | P4B0305 |
| Styrene | BRL | ug/kg dry | 5.5 | 0.24 | 1 | *8260B/5030B | 2/19/14 16:34 | MSC | P4B0305 |
| tert-Butylbenzene | BRL | ug/kg dry | 22 | 0.29 | 1 | *8260B/5030B | 2/19/14 16:34 | MSC | P4B0305 |
| Tetrachloroethylene | BRL | ug/kg dry | 11 | 0.38 | 1 | *8260B/5030B | 2/19/14 16:34 | MSC | P4B0305 |
| Toluene | BRL | ug/kg dry | 5.5 | 0.33 | 1 | *8260B/5030B | 2/19/14 16:34 | MSC | P4B0305 |
| trans-1,2-Dichloroethylene | BRL | ug/kg dry | 5.5 | 0.64 | 1 | *8260B/5030B | 2/19/14 16:34 | MSC | P4B0305 |
| trans-1,3-Dichloropropylene | BRL | ug/kg dry | 5.5 | 0.27 | 1 | *8260B/5030B | 2/19/14 16:34 | MSC | P4B0305 |
| Trichloroethylene | BRL | ug/kg dry | 5.5 | 0.51 | 1 | *8260B/5030B | 2/19/14 16:34 | MSC | P4B0305 |
| Trichlorofluoromethane | BRL | ug/kg dry | 5.5 | 0.45 | 1 | *8260B/5030B | 2/19/14 16:34 | MSC | P4B0305 |
| Vinyl acetate | BRL | ug/kg dry | 11 | 1.6 | 1 | *8260B/5030B | 2/19/14 16:34 | MSC | P4B0305 |
| Vinyl chloride | BRL | ug/kg dry | 11 | 0.72 | 1 | *8260B/5030B | 2/19/14 16:34 | MSC | P4B0305 |

| Surrogate | Recovery | Control Limits |
|---|---|---|
| 4-Bromofluorobenzene | *80 %* | *70-130* |
| Dibromofluoromethane | *107 %* | *84-123* |
| Toluene-d8 | *107 %* | *76-129* |

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**449 Springbrook Road - P.O. Box 240543 - Charlotte, NC 28224-0543**
**Phone: 704/529-6364 - Toll Free Number: 1-800/529-6364 - Fax: 704/525-0409**

Rhea Engineers and Consultants, Inc.
Attn: Tim Price
314 North Green Meadows Drive, Unit 100
Wilmington, NC 28405

Project: Building 1932

Sample Matrix: Solid

Client Sample ID: HA-11 (4-6)
Prism Sample ID: 4020149-03
Prism Work Order: 4020149
Time Collected: 02/06/14 11:00
Time Submitted: 02/08/14 09:40

| Parameter | Result | Units | Report Limit | MDL | Dilution Factor | Method | Analysis Date/Time | Analyst | Batch ID |
|---|---|---|---|---|---|---|---|---|---|
| **Diesel Range Organics by GC/FID** | | | | | | | | | |
| Diesel Range Organics | BRL | mg/kg dry | 8.2 | 1.7 | 1 | *8015C | 2/16/14 12:41 | JMV | P4B0234 |
| | | | Surrogate | | | Recovery | | Control Limits | |
| | | | o-Terphenyl | | | *77 %* | | *49-124* | |
| **Gasoline Range Organics by GC/FID** | | | | | | | | | |
| Gasoline Range Organics | BRL | mg/kg dry | 5.6 | 0.47 | 50 | *5030B/8015C | 2/14/14 20:20 | ANG | P4B0222 |
| | | | Surrogate | | | Recovery | | Control Limits | |
| | | | a,a,a-Trifluorotoluene | | | *121 %* | | *42-148* | |
| **General Chemistry Parameters** | | | | | | | | | |
| **% Solids** | **85.0** | **% by Weight** | **0.100** | **0.100** | **1** | ***SM2540 G** | **2/12/14 12:15** | **JAB** | **P4B0204** |
| **Volatile Organic Compounds by GC/MS** | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | BRL | ug/kg dry | 5.3 | 0.32 | 1 | *8260B/5030B | 2/19/14 16:58 | MSC | P4B0305 |
| 1,1,1-Trichloroethane | BRL | ug/kg dry | 5.3 | 0.18 | 1 | *8260B/5030B | 2/19/14 16:58 | MSC | P4B0305 |
| 1,1,2,2-Tetrachloroethane | BRL | ug/kg dry | 5.3 | 0.88 | 1 | *8260B/5030B | 2/19/14 16:58 | MSC | P4B0305 |
| 1,1,2-Trichloroethane | BRL | ug/kg dry | 5.3 | 0.45 | 1 | *8260B/5030B | 2/19/14 16:58 | MSC | P4B0305 |
| 1,1-Dichloroethane | BRL | ug/kg dry | 5.3 | 0.45 | 1 | *8260B/5030B | 2/19/14 16:58 | MSC | P4B0305 |
| 1,1-Dichloroethylene | BRL | ug/kg dry | 5.3 | 0.32 | 1 | *8260B/5030B | 2/19/14 16:58 | MSC | P4B0305 |
| 1,1-Dichloropropylene | BRL | ug/kg dry | 5.3 | 0.56 | 1 | *8260B/5030B | 2/19/14 16:58 | MSC | P4B0305 |
| 1,2,3-Trichlorobenzene | BRL | ug/kg dry | 11 | 0.40 | 1 | *8260B/5030B | 2/19/14 16:58 | MSC | P4B0305 |
| 1,2,3-Trichloropropane | BRL | ug/kg dry | 5.3 | 0.81 | 1 | *8260B/5030B | 2/19/14 16:58 | MSC | P4B0305 |
| 1,2,4-Trichlorobenzene | BRL | ug/kg dry | 11 | 0.31 | 1 | *8260B/5030B | 2/19/14 16:58 | MSC | P4B0305 |
| 1,2,4-Trimethylbenzene | BRL | ug/kg dry | 11 | 1.0 | 1 | *8260B/5030B | 2/19/14 16:58 | MSC | P4B0305 |
| 1,2-Dibromo-3-chloropropane | BRL | ug/kg dry | 5.3 | 1.7 | 1 | *8260B/5030B | 2/19/14 16:58 | MSC | P4B0305 |
| 1,2-Dibromoethane | BRL | ug/kg dry | 5.3 | 0.61 | 1 | *8260B/5030B | 2/19/14 16:58 | MSC | P4B0305 |
| 1,2-Dichlorobenzene | BRL | ug/kg dry | 11 | 0.24 | 1 | *8260B/5030B | 2/19/14 16:58 | MSC | P4B0305 |
| 1,2-Dichloroethane | BRL | ug/kg dry | 5.3 | 0.86 | 1 | *8260B/5030B | 2/19/14 16:58 | MSC | P4B0305 |
| 1,2-Dichloropropane | BRL | ug/kg dry | 5.3 | 0.34 | 1 | *8260B/5030B | 2/19/14 16:58 | MSC | P4B0305 |
| 1,3,5-Trimethylbenzene | BRL | ug/kg dry | 11 | 0.26 | 1 | *8260B/5030B | 2/19/14 16:58 | MSC | P4B0305 |
| 1,3-Dichlorobenzene | BRL | ug/kg dry | 11 | 0.074 | 1 | *8260B/5030B | 2/19/14 16:58 | MSC | P4B0305 |
| 1,3-Dichloropropane | BRL | ug/kg dry | 5.3 | 0.58 | 1 | *8260B/5030B | 2/19/14 16:58 | MSC | P4B0305 |
| 1,4-Dichlorobenzene | BRL | ug/kg dry | 11 | 0.39 | 1 | *8260B/5030B | 2/19/14 16:58 | MSC | P4B0305 |
| 2,2-Dichloropropane | BRL | ug/kg dry | 5.3 | 0.34 | 1 | *8260B/5030B | 2/19/14 16:58 | MSC | P4B0305 |
| 2-Chlorotoluene | BRL | ug/kg dry | 11 | 0.33 | 1 | *8260B/5030B | 2/19/14 16:58 | MSC | P4B0305 |
| 4-Chlorotoluene | BRL | ug/kg dry | 11 | 0.25 | 1 | *8260B/5030B | 2/19/14 16:58 | MSC | P4B0305 |
| 4-Isopropyltoluene | BRL | ug/kg dry | 16 | 0.34 | 1 | *8260B/5030B | 2/19/14 16:58 | MSC | P4B0305 |
| **Acetone** | **96** | **ug/kg dry** | **21** | **2.8** | **1** | ***8260B/5030B** | **2/19/14 16:58** | **MSC** | **P4B0305** |
| Acrolein | BRL | ug/kg dry | 110 | 3.2 | 1 | *8260B/5030B | 2/19/14 16:58 | MSC | P4B0305 |
| Acrylonitrile | BRL | ug/kg dry | 110 | 2.6 | 1 | *8260B/5030B | 2/19/14 16:58 | MSC | P4B0305 |
| Benzene | BRL | ug/kg dry | 3.2 | 0.32 | 1 | *8260B/5030B | 2/19/14 16:58 | MSC | P4B0305 |
| Bromobenzene | BRL | ug/kg dry | 5.3 | 0.23 | 1 | *8260B/5030B | 2/19/14 16:58 | MSC | P4B0305 |
| Bromochloromethane | BRL | ug/kg dry | 5.3 | 0.78 | 1 | *8260B/5030B | 2/19/14 16:58 | MSC | P4B0305 |

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Rhea Engineers and Consultants, Inc.
Attn: Tim Price
314 North Green Meadows Drive, Unit 100
Wilmington, NC 28405

Project: Building 1932

Sample Matrix: Solid

Client Sample ID: HA-11 (4-6)
Prism Sample ID: 4020149-03
Prism Work Order: 4020149
Time Collected: 02/06/14 11:00
Time Submitted: 02/08/14 09:40

| Parameter | Result | Units | Report Limit | MDL | Dilution Factor | Method | Analysis Date/Time | Analyst | Batch ID |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | BRL | ug/kg dry | 5.3 | 0.25 | 1 | *8260B/5030B | 2/19/14 16:58 | MSC | P4B0305 |
| Bromoform | BRL | ug/kg dry | 5.3 | 0.94 | 1 | *8260B/5030B | 2/19/14 16:58 | MSC | P4B0305 |
| Bromomethane | BRL | ug/kg dry | 11 | 1.5 | 1 | *8260B/5030B | 2/19/14 16:58 | MSC | P4B0305 |
| Carbon disulfide | BRL | ug/kg dry | 11 | 0.44 | 1 | *8260B/5030B | 2/19/14 16:58 | MSC | P4B0305 |
| Carbon Tetrachloride | BRL | ug/kg dry | 5.3 | 0.29 | 1 | *8260B/5030B | 2/19/14 16:58 | MSC | P4B0305 |
| Chlorobenzene | BRL | ug/kg dry | 5.3 | 0.25 | 1 | *8260B/5030B | 2/19/14 16:58 | MSC | P4B0305 |
| Chloroethane | BRL | ug/kg dry | 11 | 4.1 | 1 | *8260B/5030B | 2/19/14 16:58 | MSC | P4B0305 |
| Chloroform | BRL | ug/kg dry | 5.3 | 0.22 | 1 | *8260B/5030B | 2/19/14 16:58 | MSC | P4B0305 |
| Chloromethane | BRL | ug/kg dry | 11 | 2.7 | 1 | *8260B/5030B | 2/19/14 16:58 | MSC | P4B0305 |
| cis-1,2-Dichloroethylene | BRL | ug/kg dry | 5.3 | 0.43 | 1 | *8260B/5030B | 2/19/14 16:58 | MSC | P4B0305 |
| cis-1,3-Dichloropropylene | BRL | ug/kg dry | 5.3 | 0.26 | 1 | *8260B/5030B | 2/19/14 16:58 | MSC | P4B0305 |
| Dibromochloromethane | BRL | ug/kg dry | 5.3 | 0.36 | 1 | *8260B/5030B | 2/19/14 16:58 | MSC | P4B0305 |
| Dibromomethane | BRL | ug/kg dry | 5.3 | 0.36 | 1 | *8260B/5030B | 2/19/14 16:58 | MSC | P4B0305 |
| Dichlorodifluoromethane | BRL | ug/kg dry | 11 | 0.57 | 1 | *8260B/5030B | 2/19/14 16:58 | MSC | P4B0305 |
| Ethylbenzene | BRL | ug/kg dry | 5.3 | 0.34 | 1 | *8260B/5030B | 2/19/14 16:58 | MSC | P4B0305 |
| Hexachlorobutadiene | BRL | ug/kg dry | 16 | 0.69 | 1 | *8260B/5030B | 2/19/14 16:58 | MSC | P4B0305 |
| Isopropyl Ether | BRL | ug/kg dry | 5.3 | 0.23 | 1 | *8260B/5030B | 2/19/14 16:58 | MSC | P4B0305 |
| Isopropylbenzene (Cumene) | BRL | ug/kg dry | 11 | 0.27 | 1 | *8260B/5030B | 2/19/14 16:58 | MSC | P4B0305 |
| m,p-Xylenes | BRL | ug/kg dry | 11 | 0.69 | 1 | *8260B/5030B | 2/19/14 16:58 | MSC | P4B0305 |
| Methyl Butyl Ketone (2-Hexanone) | BRL | ug/kg dry | 53 | 1.1 | 1 | *8260B/5030B | 2/19/14 16:58 | MSC | P4B0305 |
| Methyl Ethyl Ketone (2-Butanone) | BRL | ug/kg dry | 21 | 1.9 | 1 | *8260B/5030B | 2/19/14 16:58 | MSC | P4B0305 |
| Methyl Isobutyl Ketone | BRL | ug/kg dry | 11 | 1.4 | 1 | *8260B/5030B | 2/19/14 16:58 | MSC | P4B0305 |
| Methylene Chloride | BRL | ug/kg dry | 11 | 0.39 | 1 | *8260B/5030B | 2/19/14 16:58 | MSC | P4B0305 |
| Methyl-tert-Butyl Ether | BRL | ug/kg dry | 5.3 | 0.41 | 1 | *8260B/5030B | 2/19/14 16:58 | MSC | P4B0305 |
| Naphthalene | BRL | ug/kg dry | 5.3 | 0.39 | 1 | *8260B/5030B | 2/19/14 16:58 | MSC | P4B0305 |
| n-Butylbenzene | BRL | ug/kg dry | 16 | 0.24 | 1 | *8260B/5030B | 2/19/14 16:58 | MSC | P4B0305 |
| n-Propylbenzene | BRL | ug/kg dry | 11 | 0.30 | 1 | *8260B/5030B | 2/19/14 16:58 | MSC | P4B0305 |
| o-Xylene | BRL | ug/kg dry | 5.3 | 0.34 | 1 | *8260B/5030B | 2/19/14 16:58 | MSC | P4B0305 |
| sec-Butylbenzene | BRL | ug/kg dry | 16 | 0.22 | 1 | *8260B/5030B | 2/19/14 16:58 | MSC | P4B0305 |
| Styrene | BRL | ug/kg dry | 5.3 | 0.23 | 1 | *8260B/5030B | 2/19/14 16:58 | MSC | P4B0305 |
| tert-Butylbenzene | BRL | ug/kg dry | 21 | 0.28 | 1 | *8260B/5030B | 2/19/14 16:58 | MSC | P4B0305 |
| Tetrachloroethylene | BRL | ug/kg dry | 11 | 0.37 | 1 | *8260B/5030B | 2/19/14 16:58 | MSC | P4B0305 |
| Toluene | BRL | ug/kg dry | 5.3 | 0.32 | 1 | *8260B/5030B | 2/19/14 16:58 | MSC | P4B0305 |
| trans-1,2-Dichloroethylene | BRL | ug/kg dry | 5.3 | 0.62 | 1 | *8260B/5030B | 2/19/14 16:58 | MSC | P4B0305 |
| trans-1,3-Dichloropropylene | BRL | ug/kg dry | 5.3 | 0.26 | 1 | *8260B/5030B | 2/19/14 16:58 | MSC | P4B0305 |
| Trichloroethylene | BRL | ug/kg dry | 5.3 | 0.49 | 1 | *8260B/5030B | 2/19/14 16:58 | MSC | P4B0305 |
| Trichlorofluoromethane | BRL | ug/kg dry | 5.3 | 0.43 | 1 | *8260B/5030B | 2/19/14 16:58 | MSC | P4B0305 |
| Vinyl acetate | BRL | ug/kg dry | 11 | 1.5 | 1 | *8260B/5030B | 2/19/14 16:58 | MSC | P4B0305 |
| Vinyl chloride | BRL | ug/kg dry | 11 | 0.69 | 1 | *8260B/5030B | 2/19/14 16:58 | MSC | P4B0305 |

| Surrogate | Recovery | Control Limits |
|---|---|---|
| 4-Bromofluorobenzene | *89 %* | *70-130* |
| Dibromofluoromethane | *117 %* | *84-123* |
| Toluene-d8 | *116 %* | *76-129* |

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Rhea Engineers and Consultants, Inc.
Attn: Tim Price
314 North Green Meadows Drive, Unit 100
Wilmington, NC 28405

Project: Building 1932

Sample Matrix: Solid

Client Sample ID: HA-12 (4-6)
Prism Sample ID: 4020149-04
Prism Work Order: 4020149
Time Collected: 02/06/14 12:00
Time Submitted: 02/08/14 09:40

| Parameter | Result | Units | Report Limit | MDL | Dilution Factor | Method | Analysis Date/Time | Analyst | Batch ID |
|---|---|---|---|---|---|---|---|---|---|
| **Diesel Range Organics by GC/FID** | | | | | | | | | |
| Diesel Range Organics | BRL | mg/kg dry | 8.0 | 1.7 | 1 | *8015C | 2/17/14 9:34 | JMV | P4B0234 |
| | | | Surrogate | | | Recovery | | Control Limits | |
| | | | o-Terphenyl | | | *72 %* | | *49-124* | |
| **Gasoline Range Organics by GC/FID** | | | | | | | | | |
| Gasoline Range Organics | BRL | mg/kg dry | 5.2 | 0.44 | 50 | *5030B/8015C | 2/14/14 20:52 | ANG | P4B0222 |
| | | | Surrogate | | | Recovery | | Control Limits | |
| | | | a,a,a-Trifluorotoluene | | | *145 %* | | *42-148* | |
| **General Chemistry Parameters** | | | | | | | | | |
| **% Solids** | **87.8** | **% by Weight** | **0.100** | **0.100** | **1** | ***SM2540 G** | **2/12/14 12:15** | **JAB** | **P4B0204** |
| **Volatile Organic Compounds by GC/MS** | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | BRL | ug/kg dry | 5.5 | 0.33 | 1 | *8260B/5030B | 2/19/14 17:21 | MSC | P4B0305 |
| 1,1,1-Trichloroethane | BRL | ug/kg dry | 5.5 | 0.18 | 1 | *8260B/5030B | 2/19/14 17:21 | MSC | P4B0305 |
| 1,1,2,2-Tetrachloroethane | BRL | ug/kg dry | 5.5 | 0.92 | 1 | *8260B/5030B | 2/19/14 17:21 | MSC | P4B0305 |
| 1,1,2-Trichloroethane | BRL | ug/kg dry | 5.5 | 0.47 | 1 | *8260B/5030B | 2/19/14 17:21 | MSC | P4B0305 |
| 1,1-Dichloroethane | BRL | ug/kg dry | 5.5 | 0.47 | 1 | *8260B/5030B | 2/19/14 17:21 | MSC | P4B0305 |
| 1,1-Dichloroethylene | BRL | ug/kg dry | 5.5 | 0.34 | 1 | *8260B/5030B | 2/19/14 17:21 | MSC | P4B0305 |
| 1,1-Dichloropropylene | BRL | ug/kg dry | 5.5 | 0.58 | 1 | *8260B/5030B | 2/19/14 17:21 | MSC | P4B0305 |
| 1,2,3-Trichlorobenzene | BRL | ug/kg dry | 11 | 0.41 | 1 | *8260B/5030B | 2/19/14 17:21 | MSC | P4B0305 |
| 1,2,3-Trichloropropane | BRL | ug/kg dry | 5.5 | 0.84 | 1 | *8260B/5030B | 2/19/14 17:21 | MSC | P4B0305 |
| 1,2,4-Trichlorobenzene | BRL | ug/kg dry | 11 | 0.33 | 1 | *8260B/5030B | 2/19/14 17:21 | MSC | P4B0305 |
| 1,2,4-Trimethylbenzene | BRL | ug/kg dry | 11 | 1.1 | 1 | *8260B/5030B | 2/19/14 17:21 | MSC | P4B0305 |
| 1,2-Dibromo-3-chloropropane | BRL | ug/kg dry | 5.5 | 1.7 | 1 | *8260B/5030B | 2/19/14 17:21 | MSC | P4B0305 |
| 1,2-Dibromoethane | BRL | ug/kg dry | 5.5 | 0.64 | 1 | *8260B/5030B | 2/19/14 17:21 | MSC | P4B0305 |
| 1,2-Dichlorobenzene | BRL | ug/kg dry | 11 | 0.25 | 1 | *8260B/5030B | 2/19/14 17:21 | MSC | P4B0305 |
| 1,2-Dichloroethane | BRL | ug/kg dry | 5.5 | 0.89 | 1 | *8260B/5030B | 2/19/14 17:21 | MSC | P4B0305 |
| 1,2-Dichloropropane | BRL | ug/kg dry | 5.5 | 0.35 | 1 | *8260B/5030B | 2/19/14 17:21 | MSC | P4B0305 |
| 1,3,5-Trimethylbenzene | BRL | ug/kg dry | 11 | 0.26 | 1 | *8260B/5030B | 2/19/14 17:21 | MSC | P4B0305 |
| 1,3-Dichlorobenzene | BRL | ug/kg dry | 11 | 0.076 | 1 | *8260B/5030B | 2/19/14 17:21 | MSC | P4B0305 |
| 1,3-Dichloropropane | BRL | ug/kg dry | 5.5 | 0.60 | 1 | *8260B/5030B | 2/19/14 17:21 | MSC | P4B0305 |
| 1,4-Dichlorobenzene | BRL | ug/kg dry | 11 | 0.41 | 1 | *8260B/5030B | 2/19/14 17:21 | MSC | P4B0305 |
| 2,2-Dichloropropane | BRL | ug/kg dry | 5.5 | 0.35 | 1 | *8260B/5030B | 2/19/14 17:21 | MSC | P4B0305 |
| 2-Chlorotoluene | BRL | ug/kg dry | 11 | 0.34 | 1 | *8260B/5030B | 2/19/14 17:21 | MSC | P4B0305 |
| 4-Chlorotoluene | BRL | ug/kg dry | 11 | 0.26 | 1 | *8260B/5030B | 2/19/14 17:21 | MSC | P4B0305 |
| 4-Isopropyltoluene | BRL | ug/kg dry | 17 | 0.35 | 1 | *8260B/5030B | 2/19/14 17:21 | MSC | P4B0305 |
| Acetone | BRL | ug/kg dry | 22 | 2.9 | 1 | *8260B/5030B | 2/19/14 17:21 | MSC | P4B0305 |
| Acrolein | BRL | ug/kg dry | 110 | 3.4 | 1 | *8260B/5030B | 2/19/14 17:21 | MSC | P4B0305 |
| Acrylonitrile | BRL | ug/kg dry | 110 | 2.7 | 1 | *8260B/5030B | 2/19/14 17:21 | MSC | P4B0305 |
| Benzene | BRL | ug/kg dry | 3.3 | 0.34 | 1 | *8260B/5030B | 2/19/14 17:21 | MSC | P4B0305 |
| Bromobenzene | BRL | ug/kg dry | 5.5 | 0.24 | 1 | *8260B/5030B | 2/19/14 17:21 | MSC | P4B0305 |
| Bromochloromethane | BRL | ug/kg dry | 5.5 | 0.81 | 1 | *8260B/5030B | 2/19/14 17:21 | MSC | P4B0305 |

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Rhea Engineers and Consultants, Inc.
Attn: Tim Price
314 North Green Meadows Drive, Unit 100
Wilmington, NC 28405

Project: Building 1932

Sample Matrix: Solid

Client Sample ID: HA-12 (4-6)
Prism Sample ID: 4020149-04
Prism Work Order: 4020149
Time Collected: 02/06/14 12:00
Time Submitted: 02/08/14 09:40

| Parameter | Result | Units | Report Limit | MDL | Dilution Factor | Method | Analysis Date/Time | Analyst | Batch ID |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | BRL | ug/kg dry | 5.5 | 0.25 | 1 | *8260B/5030B | 2/19/14 17:21 | MSC | P4B0305 |
| Bromoform | BRL | ug/kg dry | 5.5 | 0.98 | 1 | *8260B/5030B | 2/19/14 17:21 | MSC | P4B0305 |
| Bromomethane | BRL | ug/kg dry | 11 | 1.6 | 1 | *8260B/5030B | 2/19/14 17:21 | MSC | P4B0305 |
| Carbon disulfide | BRL | ug/kg dry | 11 | 0.46 | 1 | *8260B/5030B | 2/19/14 17:21 | MSC | P4B0305 |
| Carbon Tetrachloride | BRL | ug/kg dry | 5.5 | 0.30 | 1 | *8260B/5030B | 2/19/14 17:21 | MSC | P4B0305 |
| Chlorobenzene | BRL | ug/kg dry | 5.5 | 0.26 | 1 | *8260B/5030B | 2/19/14 17:21 | MSC | P4B0305 |
| Chloroethane | BRL | ug/kg dry | 11 | 4.2 | 1 | *8260B/5030B | 2/19/14 17:21 | MSC | P4B0305 |
| Chloroform | BRL | ug/kg dry | 5.5 | 0.23 | 1 | *8260B/5030B | 2/19/14 17:21 | MSC | P4B0305 |
| Chloromethane | BRL | ug/kg dry | 11 | 2.8 | 1 | *8260B/5030B | 2/19/14 17:21 | MSC | P4B0305 |
| cis-1,2-Dichloroethylene | BRL | ug/kg dry | 5.5 | 0.45 | 1 | *8260B/5030B | 2/19/14 17:21 | MSC | P4B0305 |
| cis-1,3-Dichloropropylene | BRL | ug/kg dry | 5.5 | 0.27 | 1 | *8260B/5030B | 2/19/14 17:21 | MSC | P4B0305 |
| Dibromochloromethane | BRL | ug/kg dry | 5.5 | 0.38 | 1 | *8260B/5030B | 2/19/14 17:21 | MSC | P4B0305 |
| Dibromomethane | BRL | ug/kg dry | 5.5 | 0.37 | 1 | *8260B/5030B | 2/19/14 17:21 | MSC | P4B0305 |
| Dichlorodifluoromethane | BRL | ug/kg dry | 11 | 0.59 | 1 | *8260B/5030B | 2/19/14 17:21 | MSC | P4B0305 |
| Ethylbenzene | BRL | ug/kg dry | 5.5 | 0.36 | 1 | *8260B/5030B | 2/19/14 17:21 | MSC | P4B0305 |
| Hexachlorobutadiene | BRL | ug/kg dry | 17 | 0.71 | 1 | *8260B/5030B | 2/19/14 17:21 | MSC | P4B0305 |
| Isopropyl Ether | BRL | ug/kg dry | 5.5 | 0.24 | 1 | *8260B/5030B | 2/19/14 17:21 | MSC | P4B0305 |
| Isopropylbenzene (Cumene) | BRL | ug/kg dry | 11 | 0.28 | 1 | *8260B/5030B | 2/19/14 17:21 | MSC | P4B0305 |
| m,p-Xylenes | BRL | ug/kg dry | 11 | 0.71 | 1 | *8260B/5030B | 2/19/14 17:21 | MSC | P4B0305 |
| Methyl Butyl Ketone (2-Hexanone) | BRL | ug/kg dry | 55 | 1.1 | 1 | *8260B/5030B | 2/19/14 17:21 | MSC | P4B0305 |
| Methyl Ethyl Ketone (2-Butanone) | BRL | ug/kg dry | 22 | 2.0 | 1 | *8260B/5030B | 2/19/14 17:21 | MSC | P4B0305 |
| Methyl Isobutyl Ketone | BRL | ug/kg dry | 11 | 1.5 | 1 | *8260B/5030B | 2/19/14 17:21 | MSC | P4B0305 |
| Methylene Chloride | BRL | ug/kg dry | 11 | 0.40 | 1 | *8260B/5030B | 2/19/14 17:21 | MSC | P4B0305 |
| Methyl-tert-Butyl Ether | BRL | ug/kg dry | 5.5 | 0.43 | 1 | *8260B/5030B | 2/19/14 17:21 | MSC | P4B0305 |
| Naphthalene | BRL | ug/kg dry | 5.5 | 0.41 | 1 | *8260B/5030B | 2/19/14 17:21 | MSC | P4B0305 |
| n-Butylbenzene | BRL | ug/kg dry | 17 | 0.24 | 1 | *8260B/5030B | 2/19/14 17:21 | MSC | P4B0305 |
| n-Propylbenzene | BRL | ug/kg dry | 11 | 0.32 | 1 | *8260B/5030B | 2/19/14 17:21 | MSC | P4B0305 |
| o-Xylene | BRL | ug/kg dry | 5.5 | 0.35 | 1 | *8260B/5030B | 2/19/14 17:21 | MSC | P4B0305 |
| sec-Butylbenzene | BRL | ug/kg dry | 17 | 0.22 | 1 | *8260B/5030B | 2/19/14 17:21 | MSC | P4B0305 |
| Styrene | BRL | ug/kg dry | 5.5 | 0.24 | 1 | *8260B/5030B | 2/19/14 17:21 | MSC | P4B0305 |
| tert-Butylbenzene | BRL | ug/kg dry | 22 | 0.29 | 1 | *8260B/5030B | 2/19/14 17:21 | MSC | P4B0305 |
| Tetrachloroethylene | BRL | ug/kg dry | 11 | 0.38 | 1 | *8260B/5030B | 2/19/14 17:21 | MSC | P4B0305 |
| Toluene | BRL | ug/kg dry | 5.5 | 0.33 | 1 | *8260B/5030B | 2/19/14 17:21 | MSC | P4B0305 |
| trans-1,2-Dichloroethylene | BRL | ug/kg dry | 5.5 | 0.64 | 1 | *8260B/5030B | 2/19/14 17:21 | MSC | P4B0305 |
| trans-1,3-Dichloropropylene | BRL | ug/kg dry | 5.5 | 0.27 | 1 | *8260B/5030B | 2/19/14 17:21 | MSC | P4B0305 |
| Trichloroethylene | BRL | ug/kg dry | 5.5 | 0.51 | 1 | *8260B/5030B | 2/19/14 17:21 | MSC | P4B0305 |
| Trichlorofluoromethane | BRL | ug/kg dry | 5.5 | 0.45 | 1 | *8260B/5030B | 2/19/14 17:21 | MSC | P4B0305 |
| Vinyl acetate | BRL | ug/kg dry | 11 | 1.6 | 1 | *8260B/5030B | 2/19/14 17:21 | MSC | P4B0305 |
| Vinyl chloride | BRL | ug/kg dry | 11 | 0.72 | 1 | *8260B/5030B | 2/19/14 17:21 | MSC | P4B0305 |

| Surrogate | Recovery | Control Limits |
|---|---|---|
| 4-Bromofluorobenzene | *81 %* | *70-130* |
| Dibromofluoromethane | *112 %* | *84-123* |
| Toluene-d8 | *110 %* | *76-129* |

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Rhea Engineers and Consultants, Inc.
Attn: Tim Price
314 North Green Meadows Drive, Unit 100
Wilmington, NC 28405

Project: Building 1932

Sample Matrix: Solid

Client Sample ID: HA-3 (2-4)
Prism Sample ID: 4020149-05
Prism Work Order: 4020149
Time Collected: 02/05/14 10:00
Time Submitted: 02/08/14 09:40

| Parameter | Result | Units | Report Limit | MDL | Dilution Factor | Method | Analysis Date/Time | Analyst | Batch ID |
|---|---|---|---|---|---|---|---|---|---|
| **Diesel Range Organics by GC/FID** | | | | | | | | | |
| **Diesel Range Organics** | **16** | **mg/kg dry** | **8.3** | **1.7** | **1** | ***8015C** | **2/18/14 10:22** | **JMV** | **P4B0257** |
| | | | Surrogate | | | Recovery | | Control Limits | |
| | | | o-Terphenyl | | | *86 %* | | *49-124* | |
| **Gasoline Range Organics by GC/FID** | | | | | | | | | |
| **Gasoline Range Organics** | **6.3** | **mg/kg dry** | **5.7** | **0.48** | **50** | ***5030B/8015C** | **2/14/14 21:24** | **ANG** | **P4B0222** |
| | | | Surrogate | | | Recovery | | Control Limits | |
| | | | a,a,a-Trifluorotoluene | | | *126 %* | | *42-148* | |
| **General Chemistry Parameters** | | | | | | | | | |
| **% Solids** | **84.6** | **% by Weight** | **0.100** | **0.100** | **1** | ***SM2540 G** | **2/11/14 14:50** | **JAB** | **P4B0186** |
| **Volatile Organic Compounds by GC/MS** | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | BRL | ug/kg dry | 5.0 | 0.30 | 1 | *8260B/5030B | 2/19/14 15:22 | MSC | P4B0305 |
| 1,1,1-Trichloroethane | BRL | ug/kg dry | 5.0 | 0.16 | 1 | *8260B/5030B | 2/19/14 15:22 | MSC | P4B0305 |
| 1,1,2,2-Tetrachloroethane | BRL | ug/kg dry | 5.0 | 0.83 | 1 | *8260B/5030B | 2/19/14 15:22 | MSC | P4B0305 |
| 1,1,2-Trichloroethane | BRL | ug/kg dry | 5.0 | 0.42 | 1 | *8260B/5030B | 2/19/14 15:22 | MSC | P4B0305 |
| 1,1-Dichloroethane | BRL | ug/kg dry | 5.0 | 0.42 | 1 | *8260B/5030B | 2/19/14 15:22 | MSC | P4B0305 |
| 1,1-Dichloroethylene | BRL | ug/kg dry | 5.0 | 0.30 | 1 | *8260B/5030B | 2/19/14 15:22 | MSC | P4B0305 |
| 1,1-Dichloropropylene | BRL | ug/kg dry | 5.0 | 0.53 | 1 | *8260B/5030B | 2/19/14 15:22 | MSC | P4B0305 |
| 1,2,3-Trichlorobenzene | BRL | ug/kg dry | 10 | 0.37 | 1 | *8260B/5030B | 2/19/14 15:22 | MSC | P4B0305 |
| 1,2,3-Trichloropropane | BRL | ug/kg dry | 5.0 | 0.76 | 1 | *8260B/5030B | 2/19/14 15:22 | MSC | P4B0305 |
| 1,2,4-Trichlorobenzene | BRL | ug/kg dry | 10 | 0.29 | 1 | *8260B/5030B | 2/19/14 15:22 | MSC | P4B0305 |
| 1,2,4-Trimethylbenzene | BRL | ug/kg dry | 10 | 0.98 | 1 | *8260B/5030B | 2/19/14 15:22 | MSC | P4B0305 |
| 1,2-Dibromo-3-chloropropane | BRL | ug/kg dry | 5.0 | 1.6 | 1 | *8260B/5030B | 2/19/14 15:22 | MSC | P4B0305 |
| 1,2-Dibromoethane | BRL | ug/kg dry | 5.0 | 0.58 | 1 | *8260B/5030B | 2/19/14 15:22 | MSC | P4B0305 |
| 1,2-Dichlorobenzene | BRL | ug/kg dry | 10 | 0.23 | 1 | *8260B/5030B | 2/19/14 15:22 | MSC | P4B0305 |
| 1,2-Dichloroethane | BRL | ug/kg dry | 5.0 | 0.81 | 1 | *8260B/5030B | 2/19/14 15:22 | MSC | P4B0305 |
| 1,2-Dichloropropane | BRL | ug/kg dry | 5.0 | 0.32 | 1 | *8260B/5030B | 2/19/14 15:22 | MSC | P4B0305 |
| 1,3,5-Trimethylbenzene | BRL | ug/kg dry | 10 | 0.24 | 1 | *8260B/5030B | 2/19/14 15:22 | MSC | P4B0305 |
| 1,3-Dichlorobenzene | BRL | ug/kg dry | 10 | 0.069 | 1 | *8260B/5030B | 2/19/14 15:22 | MSC | P4B0305 |
| 1,3-Dichloropropane | BRL | ug/kg dry | 5.0 | 0.54 | 1 | *8260B/5030B | 2/19/14 15:22 | MSC | P4B0305 |
| 1,4-Dichlorobenzene | BRL | ug/kg dry | 10 | 0.37 | 1 | *8260B/5030B | 2/19/14 15:22 | MSC | P4B0305 |
| 2,2-Dichloropropane | BRL | ug/kg dry | 5.0 | 0.32 | 1 | *8260B/5030B | 2/19/14 15:22 | MSC | P4B0305 |
| 2-Chlorotoluene | BRL | ug/kg dry | 10 | 0.31 | 1 | *8260B/5030B | 2/19/14 15:22 | MSC | P4B0305 |
| 4-Chlorotoluene | BRL | ug/kg dry | 10 | 0.24 | 1 | *8260B/5030B | 2/19/14 15:22 | MSC | P4B0305 |
| 4-Isopropyltoluene | BRL | ug/kg dry | 15 | 0.32 | 1 | *8260B/5030B | 2/19/14 15:22 | MSC | P4B0305 |
| Acetone | BRL | ug/kg dry | 20 | 2.7 | 1 | *8260B/5030B | 2/19/14 15:22 | MSC | P4B0305 |
| Acrolein | BRL | ug/kg dry | 100 | 3.0 | 1 | *8260B/5030B | 2/19/14 15:22 | MSC | P4B0305 |
| Acrylonitrile | BRL | ug/kg dry | 100 | 2.5 | 1 | *8260B/5030B | 2/19/14 15:22 | MSC | P4B0305 |
| Benzene | BRL | ug/kg dry | 3.0 | 0.30 | 1 | *8260B/5030B | 2/19/14 15:22 | MSC | P4B0305 |
| Bromobenzene | BRL | ug/kg dry | 5.0 | 0.21 | 1 | *8260B/5030B | 2/19/14 15:22 | MSC | P4B0305 |
| Bromochloromethane | BRL | ug/kg dry | 5.0 | 0.73 | 1 | *8260B/5030B | 2/19/14 15:22 | MSC | P4B0305 |

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Rhea Engineers and Consultants, Inc.
Attn: Tim Price
314 North Green Meadows Drive, Unit 100
Wilmington, NC 28405

Project: Building 1932

Sample Matrix: Solid

Client Sample ID: HA-3 (2-4)
Prism Sample ID: 4020149-05
Prism Work Order: 4020149
Time Collected: 02/05/14 10:00
Time Submitted: 02/08/14 09:40

| Parameter | Result | Units | Report Limit | MDL | Dilution Factor | Method | Analysis Date/Time | Analyst | Batch ID |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | BRL | ug/kg dry | 5.0 | 0.23 | 1 | *8260B/5030B | 2/19/14 15:22 | MSC | P4B0305 |
| Bromoform | BRL | ug/kg dry | 5.0 | 0.89 | 1 | *8260B/5030B | 2/19/14 15:22 | MSC | P4B0305 |
| Bromomethane | BRL | ug/kg dry | 10 | 1.4 | 1 | *8260B/5030B | 2/19/14 15:22 | MSC | P4B0305 |
| Carbon disulfide | BRL | ug/kg dry | 10 | 0.42 | 1 | *8260B/5030B | 2/19/14 15:22 | MSC | P4B0305 |
| Carbon Tetrachloride | BRL | ug/kg dry | 5.0 | 0.27 | 1 | *8260B/5030B | 2/19/14 15:22 | MSC | P4B0305 |
| Chlorobenzene | BRL | ug/kg dry | 5.0 | 0.23 | 1 | *8260B/5030B | 2/19/14 15:22 | MSC | P4B0305 |
| Chloroethane | BRL | ug/kg dry | 10 | 3.8 | 1 | *8260B/5030B | 2/19/14 15:22 | MSC | P4B0305 |
| Chloroform | BRL | ug/kg dry | 5.0 | 0.21 | 1 | *8260B/5030B | 2/19/14 15:22 | MSC | P4B0305 |
| Chloromethane | BRL | ug/kg dry | 10 | 2.5 | 1 | *8260B/5030B | 2/19/14 15:22 | MSC | P4B0305 |
| cis-1,2-Dichloroethylene | BRL | ug/kg dry | 5.0 | 0.40 | 1 | *8260B/5030B | 2/19/14 15:22 | MSC | P4B0305 |
| cis-1,3-Dichloropropylene | BRL | ug/kg dry | 5.0 | 0.25 | 1 | *8260B/5030B | 2/19/14 15:22 | MSC | P4B0305 |
| Dibromochloromethane | BRL | ug/kg dry | 5.0 | 0.34 | 1 | *8260B/5030B | 2/19/14 15:22 | MSC | P4B0305 |
| Dibromomethane | BRL | ug/kg dry | 5.0 | 0.34 | 1 | *8260B/5030B | 2/19/14 15:22 | MSC | P4B0305 |
| Dichlorodifluoromethane | BRL | ug/kg dry | 10 | 0.54 | 1 | *8260B/5030B | 2/19/14 15:22 | MSC | P4B0305 |
| Ethylbenzene | BRL | ug/kg dry | 5.0 | 0.32 | 1 | *8260B/5030B | 2/19/14 15:22 | MSC | P4B0305 |
| Hexachlorobutadiene | BRL | ug/kg dry | 15 | 0.64 | 1 | *8260B/5030B | 2/19/14 15:22 | MSC | P4B0305 |
| Isopropyl Ether | BRL | ug/kg dry | 5.0 | 0.21 | 1 | *8260B/5030B | 2/19/14 15:22 | MSC | P4B0305 |
| Isopropylbenzene (Cumene) | BRL | ug/kg dry | 10 | 0.25 | 1 | *8260B/5030B | 2/19/14 15:22 | MSC | P4B0305 |
| m,p-Xylenes | BRL | ug/kg dry | 10 | 0.64 | 1 | *8260B/5030B | 2/19/14 15:22 | MSC | P4B0305 |
| Methyl Butyl Ketone (2-Hexanone) | BRL | ug/kg dry | 50 | 1.0 | 1 | *8260B/5030B | 2/19/14 15:22 | MSC | P4B0305 |
| Methyl Ethyl Ketone (2-Butanone) | BRL | ug/kg dry | 20 | 1.8 | 1 | *8260B/5030B | 2/19/14 15:22 | MSC | P4B0305 |
| Methyl Isobutyl Ketone | BRL | ug/kg dry | 10 | 1.3 | 1 | *8260B/5030B | 2/19/14 15:22 | MSC | P4B0305 |
| Methylene Chloride | BRL | ug/kg dry | 10 | 0.36 | 1 | *8260B/5030B | 2/19/14 15:22 | MSC | P4B0305 |
| Methyl-tert-Butyl Ether | BRL | ug/kg dry | 5.0 | 0.38 | 1 | *8260B/5030B | 2/19/14 15:22 | MSC | P4B0305 |
| Naphthalene | BRL | ug/kg dry | 5.0 | 0.37 | 1 | *8260B/5030B | 2/19/14 15:22 | MSC | P4B0305 |
| n-Butylbenzene | BRL | ug/kg dry | 15 | 0.22 | 1 | *8260B/5030B | 2/19/14 15:22 | MSC | P4B0305 |
| n-Propylbenzene | BRL | ug/kg dry | 10 | 0.29 | 1 | *8260B/5030B | 2/19/14 15:22 | MSC | P4B0305 |
| o-Xylene | BRL | ug/kg dry | 5.0 | 0.32 | 1 | *8260B/5030B | 2/19/14 15:22 | MSC | P4B0305 |
| sec-Butylbenzene | BRL | ug/kg dry | 15 | 0.20 | 1 | *8260B/5030B | 2/19/14 15:22 | MSC | P4B0305 |
| Styrene | BRL | ug/kg dry | 5.0 | 0.22 | 1 | *8260B/5030B | 2/19/14 15:22 | MSC | P4B0305 |
| tert-Butylbenzene | BRL | ug/kg dry | 20 | 0.26 | 1 | *8260B/5030B | 2/19/14 15:22 | MSC | P4B0305 |
| Tetrachloroethylene | BRL | ug/kg dry | 10 | 0.35 | 1 | *8260B/5030B | 2/19/14 15:22 | MSC | P4B0305 |
| Toluene | BRL | ug/kg dry | 5.0 | 0.30 | 1 | *8260B/5030B | 2/19/14 15:22 | MSC | P4B0305 |
| trans-1,2-Dichloroethylene | BRL | ug/kg dry | 5.0 | 0.58 | 1 | *8260B/5030B | 2/19/14 15:22 | MSC | P4B0305 |
| trans-1,3-Dichloropropylene | BRL | ug/kg dry | 5.0 | 0.24 | 1 | *8260B/5030B | 2/19/14 15:22 | MSC | P4B0305 |
| Trichloroethylene | BRL | ug/kg dry | 5.0 | 0.46 | 1 | *8260B/5030B | 2/19/14 15:22 | MSC | P4B0305 |
| Trichlorofluoromethane | BRL | ug/kg dry | 5.0 | 0.41 | 1 | *8260B/5030B | 2/19/14 15:22 | MSC | P4B0305 |
| Vinyl acetate | BRL | ug/kg dry | 10 | 1.4 | 1 | *8260B/5030B | 2/19/14 15:22 | MSC | P4B0305 |
| Vinyl chloride | BRL | ug/kg dry | 10 | 0.65 | 1 | *8260B/5030B | 2/19/14 15:22 | MSC | P4B0305 |

| Surrogate | Recovery | Control Limits |
|---|---|---|
| 4-Bromofluorobenzene | *92 %* | *70-130* |
| Dibromofluoromethane | *108 %* | *84-123* |
| Toluene-d8 | *110 %* | *76-129* |

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Rhea Engineers and Consultants, Inc.
Attn: Tim Price
314 North Green Meadows Drive, Unit 100
Wilmington, NC 28405

Project: Building 1932

Sample Matrix: Solid

Client Sample ID: HA-6 (2-4)
Prism Sample ID: 4020149-06
Prism Work Order: 4020149
Time Collected: 02/05/14 12:00
Time Submitted: 02/08/14 09:40

| Parameter | Result | Units | Report Limit | MDL | Dilution Factor | Method | Analysis Date/Time | Analyst | Batch ID |
|---|---|---|---|---|---|---|---|---|---|
| **Diesel Range Organics by GC/FID** | | | | | | | | | |
| Diesel Range Organics | BRL | mg/kg dry | 7.7 | 1.6 | 1 | *8015C | 2/17/14 20:08 | JMV | P4B0257 |
| | | | Surrogate | | | Recovery | | Control Limits | |
| | | | o-Terphenyl | | | *89 %* | | *49-124* | |
| **Gasoline Range Organics by GC/FID** | | | | | | | | | |
| Gasoline Range Organics | BRL | mg/kg dry | 5.4 | 0.46 | 50 | *5030B/8015C | 2/14/14 21:55 | ANG | P4B0222 |
| | | | Surrogate | | | Recovery | | Control Limits | |
| | | | a,a,a-Trifluorotoluene | | | *106 %* | | *42-148* | |
| **General Chemistry Parameters** | | | | | | | | | |
| **% Solids** | **90.6** | **% by Weight** | **0.100** | **0.100** | **1** | ***SM2540 G** | **2/11/14 14:50** | **JAB** | **P4B0186** |
| **Volatile Organic Compounds by GC/MS** | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | BRL | ug/kg dry | 5.0 | 0.30 | 1 | *8260B/5030B | 2/19/14 15:46 | MSC | P4B0305 |
| 1,1,1-Trichloroethane | BRL | ug/kg dry | 5.0 | 0.16 | 1 | *8260B/5030B | 2/19/14 15:46 | MSC | P4B0305 |
| 1,1,2,2-Tetrachloroethane | BRL | ug/kg dry | 5.0 | 0.83 | 1 | *8260B/5030B | 2/19/14 15:46 | MSC | P4B0305 |
| 1,1,2-Trichloroethane | BRL | ug/kg dry | 5.0 | 0.42 | 1 | *8260B/5030B | 2/19/14 15:46 | MSC | P4B0305 |
| 1,1-Dichloroethane | BRL | ug/kg dry | 5.0 | 0.42 | 1 | *8260B/5030B | 2/19/14 15:46 | MSC | P4B0305 |
| 1,1-Dichloroethylene | BRL | ug/kg dry | 5.0 | 0.31 | 1 | *8260B/5030B | 2/19/14 15:46 | MSC | P4B0305 |
| 1,1-Dichloropropylene | BRL | ug/kg dry | 5.0 | 0.53 | 1 | *8260B/5030B | 2/19/14 15:46 | MSC | P4B0305 |
| 1,2,3-Trichlorobenzene | BRL | ug/kg dry | 10 | 0.37 | 1 | *8260B/5030B | 2/19/14 15:46 | MSC | P4B0305 |
| 1,2,3-Trichloropropane | BRL | ug/kg dry | 5.0 | 0.76 | 1 | *8260B/5030B | 2/19/14 15:46 | MSC | P4B0305 |
| 1,2,4-Trichlorobenzene | BRL | ug/kg dry | 10 | 0.30 | 1 | *8260B/5030B | 2/19/14 15:46 | MSC | P4B0305 |
| 1,2,4-Trimethylbenzene | BRL | ug/kg dry | 10 | 0.99 | 1 | *8260B/5030B | 2/19/14 15:46 | MSC | P4B0305 |
| 1,2-Dibromo-3-chloropropane | BRL | ug/kg dry | 5.0 | 1.6 | 1 | *8260B/5030B | 2/19/14 15:46 | MSC | P4B0305 |
| 1,2-Dibromoethane | BRL | ug/kg dry | 5.0 | 0.58 | 1 | *8260B/5030B | 2/19/14 15:46 | MSC | P4B0305 |
| 1,2-Dichlorobenzene | BRL | ug/kg dry | 10 | 0.23 | 1 | *8260B/5030B | 2/19/14 15:46 | MSC | P4B0305 |
| 1,2-Dichloroethane | BRL | ug/kg dry | 5.0 | 0.81 | 1 | *8260B/5030B | 2/19/14 15:46 | MSC | P4B0305 |
| 1,2-Dichloropropane | BRL | ug/kg dry | 5.0 | 0.32 | 1 | *8260B/5030B | 2/19/14 15:46 | MSC | P4B0305 |
| 1,3,5-Trimethylbenzene | BRL | ug/kg dry | 10 | 0.24 | 1 | *8260B/5030B | 2/19/14 15:46 | MSC | P4B0305 |
| 1,3-Dichlorobenzene | BRL | ug/kg dry | 10 | 0.069 | 1 | *8260B/5030B | 2/19/14 15:46 | MSC | P4B0305 |
| 1,3-Dichloropropane | BRL | ug/kg dry | 5.0 | 0.54 | 1 | *8260B/5030B | 2/19/14 15:46 | MSC | P4B0305 |
| 1,4-Dichlorobenzene | BRL | ug/kg dry | 10 | 0.37 | 1 | *8260B/5030B | 2/19/14 15:46 | MSC | P4B0305 |
| 2,2-Dichloropropane | BRL | ug/kg dry | 5.0 | 0.32 | 1 | *8260B/5030B | 2/19/14 15:46 | MSC | P4B0305 |
| 2-Chlorotoluene | BRL | ug/kg dry | 10 | 0.31 | 1 | *8260B/5030B | 2/19/14 15:46 | MSC | P4B0305 |
| 4-Chlorotoluene | BRL | ug/kg dry | 10 | 0.24 | 1 | *8260B/5030B | 2/19/14 15:46 | MSC | P4B0305 |
| 4-Isopropyltoluene | BRL | ug/kg dry | 15 | 0.32 | 1 | *8260B/5030B | 2/19/14 15:46 | MSC | P4B0305 |
| **Acetone** | **28** | **ug/kg dry** | **20** | **2.7** | **1** | ***8260B/5030B** | **2/19/14 15:46** | **MSC** | **P4B0305** |
| Acrolein | BRL | ug/kg dry | 100 | 3.0 | 1 | *8260B/5030B | 2/19/14 15:46 | MSC | P4B0305 |
| Acrylonitrile | BRL | ug/kg dry | 100 | 2.5 | 1 | *8260B/5030B | 2/19/14 15:46 | MSC | P4B0305 |
| Benzene | BRL | ug/kg dry | 3.0 | 0.30 | 1 | *8260B/5030B | 2/19/14 15:46 | MSC | P4B0305 |
| Bromobenzene | BRL | ug/kg dry | 5.0 | 0.21 | 1 | *8260B/5030B | 2/19/14 15:46 | MSC | P4B0305 |
| Bromochloromethane | BRL | ug/kg dry | 5.0 | 0.73 | 1 | *8260B/5030B | 2/19/14 15:46 | MSC | P4B0305 |

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Rhea Engineers and Consultants, Inc.
Attn: Tim Price
314 North Green Meadows Drive, Unit 100
Wilmington, NC 28405

Project: Building 1932

Sample Matrix: Solid

Client Sample ID: HA-6 (2-4)
Prism Sample ID: 4020149-06
Prism Work Order: 4020149
Time Collected: 02/05/14 12:00
Time Submitted: 02/08/14 09:40

| Parameter | Result | Units | Report Limit | MDL | Dilution Factor | Method | Analysis Date/Time | Analyst | Batch ID |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | BRL | ug/kg dry | 5.0 | 0.23 | 1 | *8260B/5030B | 2/19/14 15:46 | MSC | P4B0305 |
| Bromoform | BRL | ug/kg dry | 5.0 | 0.89 | 1 | *8260B/5030B | 2/19/14 15:46 | MSC | P4B0305 |
| Bromomethane | BRL | ug/kg dry | 10 | 1.4 | 1 | *8260B/5030B | 2/19/14 15:46 | MSC | P4B0305 |
| Carbon disulfide | BRL | ug/kg dry | 10 | 0.42 | 1 | *8260B/5030B | 2/19/14 15:46 | MSC | P4B0305 |
| Carbon Tetrachloride | BRL | ug/kg dry | 5.0 | 0.27 | 1 | *8260B/5030B | 2/19/14 15:46 | MSC | P4B0305 |
| Chlorobenzene | BRL | ug/kg dry | 5.0 | 0.23 | 1 | *8260B/5030B | 2/19/14 15:46 | MSC | P4B0305 |
| Chloroethane | BRL | ug/kg dry | 10 | 3.8 | 1 | *8260B/5030B | 2/19/14 15:46 | MSC | P4B0305 |
| Chloroform | BRL | ug/kg dry | 5.0 | 0.21 | 1 | *8260B/5030B | 2/19/14 15:46 | MSC | P4B0305 |
| Chloromethane | BRL | ug/kg dry | 10 | 2.5 | 1 | *8260B/5030B | 2/19/14 15:46 | MSC | P4B0305 |
| cis-1,2-Dichloroethylene | BRL | ug/kg dry | 5.0 | 0.41 | 1 | *8260B/5030B | 2/19/14 15:46 | MSC | P4B0305 |
| cis-1,3-Dichloropropylene | BRL | ug/kg dry | 5.0 | 0.25 | 1 | *8260B/5030B | 2/19/14 15:46 | MSC | P4B0305 |
| Dibromochloromethane | BRL | ug/kg dry | 5.0 | 0.34 | 1 | *8260B/5030B | 2/19/14 15:46 | MSC | P4B0305 |
| Dibromomethane | BRL | ug/kg dry | 5.0 | 0.34 | 1 | *8260B/5030B | 2/19/14 15:46 | MSC | P4B0305 |
| Dichlorodifluoromethane | BRL | ug/kg dry | 10 | 0.54 | 1 | *8260B/5030B | 2/19/14 15:46 | MSC | P4B0305 |
| Ethylbenzene | BRL | ug/kg dry | 5.0 | 0.32 | 1 | *8260B/5030B | 2/19/14 15:46 | MSC | P4B0305 |
| Hexachlorobutadiene | BRL | ug/kg dry | 15 | 0.65 | 1 | *8260B/5030B | 2/19/14 15:46 | MSC | P4B0305 |
| Isopropyl Ether | BRL | ug/kg dry | 5.0 | 0.21 | 1 | *8260B/5030B | 2/19/14 15:46 | MSC | P4B0305 |
| Isopropylbenzene (Cumene) | BRL | ug/kg dry | 10 | 0.25 | 1 | *8260B/5030B | 2/19/14 15:46 | MSC | P4B0305 |
| m,p-Xylenes | BRL | ug/kg dry | 10 | 0.65 | 1 | *8260B/5030B | 2/19/14 15:46 | MSC | P4B0305 |
| Methyl Butyl Ketone (2-Hexanone) | BRL | ug/kg dry | 50 | 1.0 | 1 | *8260B/5030B | 2/19/14 15:46 | MSC | P4B0305 |
| Methyl Ethyl Ketone (2-Butanone) | BRL | ug/kg dry | 20 | 1.8 | 1 | *8260B/5030B | 2/19/14 15:46 | MSC | P4B0305 |
| Methyl Isobutyl Ketone | BRL | ug/kg dry | 10 | 1.3 | 1 | *8260B/5030B | 2/19/14 15:46 | MSC | P4B0305 |
| Methylene Chloride | BRL | ug/kg dry | 10 | 0.37 | 1 | *8260B/5030B | 2/19/14 15:46 | MSC | P4B0305 |
| Methyl-tert-Butyl Ether | BRL | ug/kg dry | 5.0 | 0.39 | 1 | *8260B/5030B | 2/19/14 15:46 | MSC | P4B0305 |
| Naphthalene | BRL | ug/kg dry | 5.0 | 0.37 | 1 | *8260B/5030B | 2/19/14 15:46 | MSC | P4B0305 |
| n-Butylbenzene | BRL | ug/kg dry | 15 | 0.22 | 1 | *8260B/5030B | 2/19/14 15:46 | MSC | P4B0305 |
| n-Propylbenzene | BRL | ug/kg dry | 10 | 0.29 | 1 | *8260B/5030B | 2/19/14 15:46 | MSC | P4B0305 |
| o-Xylene | BRL | ug/kg dry | 5.0 | 0.32 | 1 | *8260B/5030B | 2/19/14 15:46 | MSC | P4B0305 |
| sec-Butylbenzene | BRL | ug/kg dry | 15 | 0.20 | 1 | *8260B/5030B | 2/19/14 15:46 | MSC | P4B0305 |
| Styrene | BRL | ug/kg dry | 5.0 | 0.22 | 1 | *8260B/5030B | 2/19/14 15:46 | MSC | P4B0305 |
| tert-Butylbenzene | BRL | ug/kg dry | 20 | 0.26 | 1 | *8260B/5030B | 2/19/14 15:46 | MSC | P4B0305 |
| Tetrachloroethylene | BRL | ug/kg dry | 10 | 0.35 | 1 | *8260B/5030B | 2/19/14 15:46 | MSC | P4B0305 |
| Toluene | BRL | ug/kg dry | 5.0 | 0.30 | 1 | *8260B/5030B | 2/19/14 15:46 | MSC | P4B0305 |
| trans-1,2-Dichloroethylene | BRL | ug/kg dry | 5.0 | 0.58 | 1 | *8260B/5030B | 2/19/14 15:46 | MSC | P4B0305 |
| trans-1,3-Dichloropropylene | BRL | ug/kg dry | 5.0 | 0.24 | 1 | *8260B/5030B | 2/19/14 15:46 | MSC | P4B0305 |
| Trichloroethylene | BRL | ug/kg dry | 5.0 | 0.46 | 1 | *8260B/5030B | 2/19/14 15:46 | MSC | P4B0305 |
| Trichlorofluoromethane | BRL | ug/kg dry | 5.0 | 0.41 | 1 | *8260B/5030B | 2/19/14 15:46 | MSC | P4B0305 |
| Vinyl acetate | BRL | ug/kg dry | 10 | 1.4 | 1 | *8260B/5030B | 2/19/14 15:46 | MSC | P4B0305 |
| Vinyl chloride | BRL | ug/kg dry | 10 | 0.65 | 1 | *8260B/5030B | 2/19/14 15:46 | MSC | P4B0305 |

| Surrogate | Recovery | Control Limits |
|---|---|---|
| 4-Bromofluorobenzene | *87 %* | *70-130* |
| Dibromofluoromethane | *110 %* | *84-123* |
| Toluene-d8 | *106 %* | *76-129* |

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Rhea Engineers and Consultants, Inc.
Attn: Tim Price
314 North Green Meadows Drive, Unit 100
Wilmington, NC 28405

Project: Building 1932

Sample Matrix: Solid

Client Sample ID: HA-14 (4-6)
Prism Sample ID: 4020149-07
Prism Work Order: 4020149
Time Collected: 02/06/14 14:00
Time Submitted: 02/08/14 09:40

| Parameter | Result | Units | Report Limit | MDL | Dilution Factor | Method | Analysis Date/Time | Analyst | Batch ID |
|---|---|---|---|---|---|---|---|---|---|
| **Diesel Range Organics by GC/FID** | | | | | | | | | |
| Diesel Range Organics | BRL | mg/kg dry | 8.2 | 1.7 | 1 | *8015C | 2/17/14 20:45 | JMV | P4B0257 |
| | | | Surrogate | | | Recovery | | Control Limits | |
| | | | o-Terphenyl | | | *89 %* | | *49-124* | |
| **Gasoline Range Organics by GC/FID** | | | | | | | | | |
| Gasoline Range Organics | BRL | mg/kg dry | 5.1 | 0.43 | 50 | *5030B/8015C | 2/14/14 22:27 | ANG | P4B0222 |
| | | | Surrogate | | | Recovery | | Control Limits | |
| | | | a,a,a-Trifluorotoluene | | | *117 %* | | *42-148* | |
| **General Chemistry Parameters** | | | | | | | | | |
| **% Solids** | **85.5** | **% by Weight** | **0.100** | **0.100** | **1** | ***SM2540 G** | **2/12/14 12:15** | **JAB** | **P4B0204** |
| **Volatile Organic Compounds by GC/MS** | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | BRL | ug/kg dry | 5.3 | 0.32 | 1 | *8260B/5030B | 2/19/14 17:45 | MSC | P4B0305 |
| 1,1,1-Trichloroethane | BRL | ug/kg dry | 5.3 | 0.17 | 1 | *8260B/5030B | 2/19/14 17:45 | MSC | P4B0305 |
| 1,1,2,2-Tetrachloroethane | BRL | ug/kg dry | 5.3 | 0.87 | 1 | *8260B/5030B | 2/19/14 17:45 | MSC | P4B0305 |
| 1,1,2-Trichloroethane | BRL | ug/kg dry | 5.3 | 0.44 | 1 | *8260B/5030B | 2/19/14 17:45 | MSC | P4B0305 |
| 1,1-Dichloroethane | BRL | ug/kg dry | 5.3 | 0.44 | 1 | *8260B/5030B | 2/19/14 17:45 | MSC | P4B0305 |
| 1,1-Dichloroethylene | BRL | ug/kg dry | 5.3 | 0.32 | 1 | *8260B/5030B | 2/19/14 17:45 | MSC | P4B0305 |
| 1,1-Dichloropropylene | BRL | ug/kg dry | 5.3 | 0.55 | 1 | *8260B/5030B | 2/19/14 17:45 | MSC | P4B0305 |
| 1,2,3-Trichlorobenzene | BRL | ug/kg dry | 11 | 0.39 | 1 | *8260B/5030B | 2/19/14 17:45 | MSC | P4B0305 |
| 1,2,3-Trichloropropane | BRL | ug/kg dry | 5.3 | 0.79 | 1 | *8260B/5030B | 2/19/14 17:45 | MSC | P4B0305 |
| 1,2,4-Trichlorobenzene | BRL | ug/kg dry | 11 | 0.31 | 1 | *8260B/5030B | 2/19/14 17:45 | MSC | P4B0305 |
| 1,2,4-Trimethylbenzene | BRL | ug/kg dry | 11 | 1.0 | 1 | *8260B/5030B | 2/19/14 17:45 | MSC | P4B0305 |
| 1,2-Dibromo-3-chloropropane | BRL | ug/kg dry | 5.3 | 1.6 | 1 | *8260B/5030B | 2/19/14 17:45 | MSC | P4B0305 |
| 1,2-Dibromoethane | BRL | ug/kg dry | 5.3 | 0.60 | 1 | *8260B/5030B | 2/19/14 17:45 | MSC | P4B0305 |
| 1,2-Dichlorobenzene | BRL | ug/kg dry | 11 | 0.24 | 1 | *8260B/5030B | 2/19/14 17:45 | MSC | P4B0305 |
| 1,2-Dichloroethane | BRL | ug/kg dry | 5.3 | 0.85 | 1 | *8260B/5030B | 2/19/14 17:45 | MSC | P4B0305 |
| 1,2-Dichloropropane | BRL | ug/kg dry | 5.3 | 0.33 | 1 | *8260B/5030B | 2/19/14 17:45 | MSC | P4B0305 |
| 1,3,5-Trimethylbenzene | BRL | ug/kg dry | 11 | 0.25 | 1 | *8260B/5030B | 2/19/14 17:45 | MSC | P4B0305 |
| 1,3-Dichlorobenzene | BRL | ug/kg dry | 11 | 0.073 | 1 | *8260B/5030B | 2/19/14 17:45 | MSC | P4B0305 |
| 1,3-Dichloropropane | BRL | ug/kg dry | 5.3 | 0.57 | 1 | *8260B/5030B | 2/19/14 17:45 | MSC | P4B0305 |
| 1,4-Dichlorobenzene | BRL | ug/kg dry | 11 | 0.38 | 1 | *8260B/5030B | 2/19/14 17:45 | MSC | P4B0305 |
| 2,2-Dichloropropane | BRL | ug/kg dry | 5.3 | 0.33 | 1 | *8260B/5030B | 2/19/14 17:45 | MSC | P4B0305 |
| 2-Chlorotoluene | BRL | ug/kg dry | 11 | 0.32 | 1 | *8260B/5030B | 2/19/14 17:45 | MSC | P4B0305 |
| 4-Chlorotoluene | BRL | ug/kg dry | 11 | 0.25 | 1 | *8260B/5030B | 2/19/14 17:45 | MSC | P4B0305 |
| 4-Isopropyltoluene | BRL | ug/kg dry | 16 | 0.33 | 1 | *8260B/5030B | 2/19/14 17:45 | MSC | P4B0305 |
| Acetone | BRL | ug/kg dry | 21 | 2.8 | 1 | *8260B/5030B | 2/19/14 17:45 | MSC | P4B0305 |
| Acrolein | BRL | ug/kg dry | 110 | 3.2 | 1 | *8260B/5030B | 2/19/14 17:45 | MSC | P4B0305 |
| Acrylonitrile | BRL | ug/kg dry | 110 | 2.6 | 1 | *8260B/5030B | 2/19/14 17:45 | MSC | P4B0305 |
| Benzene | BRL | ug/kg dry | 3.2 | 0.32 | 1 | *8260B/5030B | 2/19/14 17:45 | MSC | P4B0305 |
| Bromobenzene | BRL | ug/kg dry | 5.3 | 0.22 | 1 | *8260B/5030B | 2/19/14 17:45 | MSC | P4B0305 |
| Bromochloromethane | BRL | ug/kg dry | 5.3 | 0.77 | 1 | *8260B/5030B | 2/19/14 17:45 | MSC | P4B0305 |

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Rhea Engineers and Consultants, Inc.
Attn: Tim Price
314 North Green Meadows Drive, Unit 100
Wilmington, NC 28405

Project: Building 1932

Sample Matrix: Solid

Client Sample ID: HA-14 (4-6)
Prism Sample ID: 4020149-07
Prism Work Order: 4020149
Time Collected: 02/06/14 14:00
Time Submitted: 02/08/14 09:40

| Parameter | Result | Units | Report Limit | MDL | Dilution Factor | Method | Analysis Date/Time | Analyst | Batch ID |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | BRL | ug/kg dry | 5.3 | 0.24 | 1 | *8260B/5030B | 2/19/14 17:45 | MSC | P4B0305 |
| Bromoform | BRL | ug/kg dry | 5.3 | 0.93 | 1 | *8260B/5030B | 2/19/14 17:45 | MSC | P4B0305 |
| Bromomethane | BRL | ug/kg dry | 11 | 1.5 | 1 | *8260B/5030B | 2/19/14 17:45 | MSC | P4B0305 |
| Carbon disulfide | BRL | ug/kg dry | 11 | 0.44 | 1 | *8260B/5030B | 2/19/14 17:45 | MSC | P4B0305 |
| Carbon Tetrachloride | BRL | ug/kg dry | 5.3 | 0.29 | 1 | *8260B/5030B | 2/19/14 17:45 | MSC | P4B0305 |
| Chlorobenzene | BRL | ug/kg dry | 5.3 | 0.25 | 1 | *8260B/5030B | 2/19/14 17:45 | MSC | P4B0305 |
| Chloroethane | BRL | ug/kg dry | 11 | 4.0 | 1 | *8260B/5030B | 2/19/14 17:45 | MSC | P4B0305 |
| Chloroform | BRL | ug/kg dry | 5.3 | 0.22 | 1 | *8260B/5030B | 2/19/14 17:45 | MSC | P4B0305 |
| Chloromethane | BRL | ug/kg dry | 11 | 2.7 | 1 | *8260B/5030B | 2/19/14 17:45 | MSC | P4B0305 |
| cis-1,2-Dichloroethylene | BRL | ug/kg dry | 5.3 | 0.42 | 1 | *8260B/5030B | 2/19/14 17:45 | MSC | P4B0305 |
| cis-1,3-Dichloropropylene | BRL | ug/kg dry | 5.3 | 0.26 | 1 | *8260B/5030B | 2/19/14 17:45 | MSC | P4B0305 |
| Dibromochloromethane | BRL | ug/kg dry | 5.3 | 0.36 | 1 | *8260B/5030B | 2/19/14 17:45 | MSC | P4B0305 |
| Dibromomethane | BRL | ug/kg dry | 5.3 | 0.36 | 1 | *8260B/5030B | 2/19/14 17:45 | MSC | P4B0305 |
| Dichlorodifluoromethane | BRL | ug/kg dry | 11 | 0.56 | 1 | *8260B/5030B | 2/19/14 17:45 | MSC | P4B0305 |
| Ethylbenzene | BRL | ug/kg dry | 5.3 | 0.34 | 1 | *8260B/5030B | 2/19/14 17:45 | MSC | P4B0305 |
| Hexachlorobutadiene | BRL | ug/kg dry | 16 | 0.68 | 1 | *8260B/5030B | 2/19/14 17:45 | MSC | P4B0305 |
| Isopropyl Ether | BRL | ug/kg dry | 5.3 | 0.23 | 1 | *8260B/5030B | 2/19/14 17:45 | MSC | P4B0305 |
| Isopropylbenzene (Cumene) | BRL | ug/kg dry | 11 | 0.26 | 1 | *8260B/5030B | 2/19/14 17:45 | MSC | P4B0305 |
| m,p-Xylenes | BRL | ug/kg dry | 11 | 0.68 | 1 | *8260B/5030B | 2/19/14 17:45 | MSC | P4B0305 |
| Methyl Butyl Ketone (2-Hexanone) | BRL | ug/kg dry | 53 | 1.1 | 1 | *8260B/5030B | 2/19/14 17:45 | MSC | P4B0305 |
| Methyl Ethyl Ketone (2-Butanone) | BRL | ug/kg dry | 21 | 1.9 | 1 | *8260B/5030B | 2/19/14 17:45 | MSC | P4B0305 |
| Methyl Isobutyl Ketone | BRL | ug/kg dry | 11 | 1.4 | 1 | *8260B/5030B | 2/19/14 17:45 | MSC | P4B0305 |
| Methylene Chloride | BRL | ug/kg dry | 11 | 0.38 | 1 | *8260B/5030B | 2/19/14 17:45 | MSC | P4B0305 |
| Methyl-tert-Butyl Ether | BRL | ug/kg dry | 5.3 | 0.40 | 1 | *8260B/5030B | 2/19/14 17:45 | MSC | P4B0305 |
| Naphthalene | BRL | ug/kg dry | 5.3 | 0.39 | 1 | *8260B/5030B | 2/19/14 17:45 | MSC | P4B0305 |
| n-Butylbenzene | BRL | ug/kg dry | 16 | 0.23 | 1 | *8260B/5030B | 2/19/14 17:45 | MSC | P4B0305 |
| n-Propylbenzene | BRL | ug/kg dry | 11 | 0.30 | 1 | *8260B/5030B | 2/19/14 17:45 | MSC | P4B0305 |
| o-Xylene | BRL | ug/kg dry | 5.3 | 0.33 | 1 | *8260B/5030B | 2/19/14 17:45 | MSC | P4B0305 |
| sec-Butylbenzene | BRL | ug/kg dry | 16 | 0.21 | 1 | *8260B/5030B | 2/19/14 17:45 | MSC | P4B0305 |
| Styrene | BRL | ug/kg dry | 5.3 | 0.23 | 1 | *8260B/5030B | 2/19/14 17:45 | MSC | P4B0305 |
| tert-Butylbenzene | BRL | ug/kg dry | 21 | 0.27 | 1 | *8260B/5030B | 2/19/14 17:45 | MSC | P4B0305 |
| Tetrachloroethylene | BRL | ug/kg dry | 11 | 0.36 | 1 | *8260B/5030B | 2/19/14 17:45 | MSC | P4B0305 |
| Toluene | BRL | ug/kg dry | 5.3 | 0.31 | 1 | *8260B/5030B | 2/19/14 17:45 | MSC | P4B0305 |
| trans-1,2-Dichloroethylene | BRL | ug/kg dry | 5.3 | 0.61 | 1 | *8260B/5030B | 2/19/14 17:45 | MSC | P4B0305 |
| trans-1,3-Dichloropropylene | BRL | ug/kg dry | 5.3 | 0.25 | 1 | *8260B/5030B | 2/19/14 17:45 | MSC | P4B0305 |
| Trichloroethylene | BRL | ug/kg dry | 5.3 | 0.49 | 1 | *8260B/5030B | 2/19/14 17:45 | MSC | P4B0305 |
| Trichlorofluoromethane | BRL | ug/kg dry | 5.3 | 0.43 | 1 | *8260B/5030B | 2/19/14 17:45 | MSC | P4B0305 |
| Vinyl acetate | BRL | ug/kg dry | 11 | 1.5 | 1 | *8260B/5030B | 2/19/14 17:45 | MSC | P4B0305 |
| Vinyl chloride | BRL | ug/kg dry | 11 | 0.68 | 1 | *8260B/5030B | 2/19/14 17:45 | MSC | P4B0305 |

| Surrogate | Recovery | Control Limits |
|---|---|---|
| 4-Bromofluorobenzene | *81 %* | *70-130* |
| Dibromofluoromethane | *108 %* | *84-123* |
| Toluene-d8 | *107 %* | *76-129* |

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# Laboratory Report

02/27/2014

Rhea Engineers and Consultants, Inc.
Attn: Tim Price
314 North Green Meadows Drive, Unit 100
Wilmington, NC 28405

Project: Building 1932

Sample Matrix: Solid

Client Sample ID: HA-10 (4-6)
Prism Sample ID: 4020149-08
Prism Work Order: 4020149
Time Collected: 02/06/14 15:00
Time Submitted: 02/08/14 09:40

| Parameter | Result | Units | Report Limit | MDL | Dilution Factor | Method | Analysis Date/Time | Analyst | Batch ID |
|---|---|---|---|---|---|---|---|---|---|
| **General Chemistry Parameters** | | | | | | | | | |
| **% Solids** | **83.5** | **% by Weight** | **0.100** | **0.100** | **1** | ***SM2540 G** | **2/12/14 12:15** | **JAB** | **P4B0204** |

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**449 Springbrook Road - P.O. Box 240543 - Charlotte, NC 28224-0543**
**Phone: 704/529-6364 - Toll Free Number: 1-800/529-6364 - Fax: 704/525-0409**

Rhea Engineers and Consultants, Inc.
Attn: Tim Price
314 North Green Meadows Drive, Unit 100
Wilmington, NC 28405

Project: Building 1932

Sample Matrix: Solid

Client Sample ID: HA-13 (4-6)
Prism Sample ID: 4020149-09
Prism Work Order: 4020149
Time Collected: 02/06/14 16:00
Time Submitted: 02/08/14 09:40

| Parameter | Result | Units | Report Limit | MDL | Dilution Factor | Method | Analysis Date/Time | Analyst | Batch ID |
|---|---|---|---|---|---|---|---|---|---|
| **Diesel Range Organics by GC/FID** | | | | | | | | | |
| Diesel Range Organics | BRL Aa | mg/kg dry | 7.9 | 1.6 | 1 | *8015C | 2/25/14 0:38 | JMV | P4B0372 |
| | | | Surrogate | | | Recovery | | Control Limits | |
| | | | o-Terphenyl | | | *63 %* | | *49-124* | *Aa* |
| **Gasoline Range Organics by GC/FID** | | | | | | | | | |
| Gasoline Range Organics | BRL Aa | mg/kg dry | 5.9 | 0.50 | 50 | *5030B/8015C | 2/21/14 20:46 | ANG | P4B0374 |
| | | | Surrogate | | | Recovery | | Control Limits | |
| | | | a,a,a-Trifluorotoluene | | | *130 %* | | *42-148* | *Aa* |
| **General Chemistry Parameters** | | | | | | | | | |
| **% Solids** | **88.7** | **% by Weight** | **0.100** | **0.100** | **1** | ***SM2540 G** | **2/12/14 12:15** | **JAB** | **P4B0204** |
| **Volatile Organic Compounds by GC/MS** | | | | | | | | | Aa |
| 1,1,1,2-Tetrachloroethane | BRL | ug/kg dry | 5.2 | 0.32 | 1 | *8260B/5030B | 2/23/14 0:02 | MSC | P4B0378 |
| 1,1,1-Trichloroethane | BRL | ug/kg dry | 5.2 | 0.17 | 1 | *8260B/5030B | 2/23/14 0:02 | MSC | P4B0378 |
| 1,1,2,2-Tetrachloroethane | BRL | ug/kg dry | 5.2 | 0.87 | 1 | *8260B/5030B | 2/23/14 0:02 | MSC | P4B0378 |
| 1,1,2-Trichloroethane | BRL | ug/kg dry | 5.2 | 0.44 | 1 | *8260B/5030B | 2/23/14 0:02 | MSC | P4B0378 |
| 1,1-Dichloroethane | BRL | ug/kg dry | 5.2 | 0.44 | 1 | *8260B/5030B | 2/23/14 0:02 | MSC | P4B0378 |
| 1,1-Dichloroethylene | BRL | ug/kg dry | 5.2 | 0.32 | 1 | *8260B/5030B | 2/23/14 0:02 | MSC | P4B0378 |
| 1,1-Dichloropropylene | BRL | ug/kg dry | 5.2 | 0.55 | 1 | *8260B/5030B | 2/23/14 0:02 | MSC | P4B0378 |
| 1,2,3-Trichlorobenzene | BRL | ug/kg dry | 10 | 0.39 | 1 | *8260B/5030B | 2/23/14 0:02 | MSC | P4B0378 |
| 1,2,3-Trichloropropane | BRL | ug/kg dry | 5.2 | 0.79 | 1 | *8260B/5030B | 2/23/14 0:02 | MSC | P4B0378 |
| 1,2,4-Trichlorobenzene | BRL | ug/kg dry | 10 | 0.31 | 1 | *8260B/5030B | 2/23/14 0:02 | MSC | P4B0378 |
| 1,2,4-Trimethylbenzene | BRL | ug/kg dry | 10 | 1.0 | 1 | *8260B/5030B | 2/23/14 0:02 | MSC | P4B0378 |
| 1,2-Dibromo-3-chloropropane | BRL | ug/kg dry | 5.2 | 1.6 | 1 | *8260B/5030B | 2/23/14 0:02 | MSC | P4B0378 |
| 1,2-Dibromoethane | BRL | ug/kg dry | 5.2 | 0.60 | 1 | *8260B/5030B | 2/23/14 0:02 | MSC | P4B0378 |
| 1,2-Dichlorobenzene | BRL | ug/kg dry | 10 | 0.24 | 1 | *8260B/5030B | 2/23/14 0:02 | MSC | P4B0378 |
| 1,2-Dichloroethane | BRL | ug/kg dry | 5.2 | 0.85 | 1 | *8260B/5030B | 2/23/14 0:02 | MSC | P4B0378 |
| 1,2-Dichloropropane | BRL | ug/kg dry | 5.2 | 0.33 | 1 | *8260B/5030B | 2/23/14 0:02 | MSC | P4B0378 |
| 1,3,5-Trimethylbenzene | BRL | ug/kg dry | 10 | 0.25 | 1 | *8260B/5030B | 2/23/14 0:02 | MSC | P4B0378 |
| 1,3-Dichlorobenzene | BRL | ug/kg dry | 10 | 0.072 | 1 | *8260B/5030B | 2/23/14 0:02 | MSC | P4B0378 |
| 1,3-Dichloropropane | BRL | ug/kg dry | 5.2 | 0.57 | 1 | *8260B/5030B | 2/23/14 0:02 | MSC | P4B0378 |
| 1,4-Dichlorobenzene | BRL | ug/kg dry | 10 | 0.38 | 1 | *8260B/5030B | 2/23/14 0:02 | MSC | P4B0378 |
| 2,2-Dichloropropane | BRL | ug/kg dry | 5.2 | 0.33 | 1 | *8260B/5030B | 2/23/14 0:02 | MSC | P4B0378 |
| 2-Chlorotoluene | BRL | ug/kg dry | 10 | 0.32 | 1 | *8260B/5030B | 2/23/14 0:02 | MSC | P4B0378 |
| 4-Chlorotoluene | BRL | ug/kg dry | 10 | 0.25 | 1 | *8260B/5030B | 2/23/14 0:02 | MSC | P4B0378 |
| 4-Isopropyltoluene | BRL | ug/kg dry | 16 | 0.33 | 1 | *8260B/5030B | 2/23/14 0:02 | MSC | P4B0378 |
| Acetone | BRL | ug/kg dry | 21 | 2.8 | 1 | *8260B/5030B | 2/23/14 0:02 | MSC | P4B0378 |
| Acrolein | BRL | ug/kg dry | 100 | 3.2 | 1 | *8260B/5030B | 2/23/14 0:02 | MSC | P4B0378 |
| Acrylonitrile | BRL | ug/kg dry | 100 | 2.6 | 1 | *8260B/5030B | 2/23/14 0:02 | MSC | P4B0378 |
| Benzene | BRL | ug/kg dry | 3.1 | 0.32 | 1 | *8260B/5030B | 2/23/14 0:02 | MSC | P4B0378 |
| Bromobenzene | BRL | ug/kg dry | 5.2 | 0.22 | 1 | *8260B/5030B | 2/23/14 0:02 | MSC | P4B0378 |
| Bromochloromethane | BRL | ug/kg dry | 5.2 | 0.76 | 1 | *8260B/5030B | 2/23/14 0:02 | MSC | P4B0378 |

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Rhea Engineers and Consultants, Inc.
Attn: Tim Price
314 North Green Meadows Drive, Unit 100
Wilmington, NC 28405

Project: Building 1932

Sample Matrix: Solid

Client Sample ID: HA-13 (4-6)
Prism Sample ID: 4020149-09
Prism Work Order: 4020149
Time Collected: 02/06/14 16:00
Time Submitted: 02/08/14 09:40

| Parameter | Result | Units | Report Limit | MDL | Dilution Factor | Method | Analysis Date/Time | Analyst | Batch ID |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | BRL | ug/kg dry | 5.2 | 0.24 | 1 | *8260B/5030B | 2/23/14 0:02 | MSC | P4B0378 |
| Bromoform | BRL | ug/kg dry | 5.2 | 0.93 | 1 | *8260B/5030B | 2/23/14 0:02 | MSC | P4B0378 |
| Bromomethane | BRL A | ug/kg dry | 10 | 1.5 | 1 | *8260B/5030B | 2/23/14 0:02 | MSC | P4B0378 |
| Carbon disulfide | BRL | ug/kg dry | 10 | 0.44 | 1 | *8260B/5030B | 2/23/14 0:02 | MSC | P4B0378 |
| Carbon Tetrachloride | BRL | ug/kg dry | 5.2 | 0.29 | 1 | *8260B/5030B | 2/23/14 0:02 | MSC | P4B0378 |
| Chlorobenzene | BRL | ug/kg dry | 5.2 | 0.24 | 1 | *8260B/5030B | 2/23/14 0:02 | MSC | P4B0378 |
| Chloroethane | BRL | ug/kg dry | 10 | 4.0 | 1 | *8260B/5030B | 2/23/14 0:02 | MSC | P4B0378 |
| Chloroform | BRL | ug/kg dry | 5.2 | 0.22 | 1 | *8260B/5030B | 2/23/14 0:02 | MSC | P4B0378 |
| Chloromethane | BRL | ug/kg dry | 10 | 2.7 | 1 | *8260B/5030B | 2/23/14 0:02 | MSC | P4B0378 |
| cis-1,2-Dichloroethylene | BRL | ug/kg dry | 5.2 | 0.42 | 1 | *8260B/5030B | 2/23/14 0:02 | MSC | P4B0378 |
| cis-1,3-Dichloropropylene | BRL | ug/kg dry | 5.2 | 0.26 | 1 | *8260B/5030B | 2/23/14 0:02 | MSC | P4B0378 |
| Dibromochloromethane | BRL | ug/kg dry | 5.2 | 0.36 | 1 | *8260B/5030B | 2/23/14 0:02 | MSC | P4B0378 |
| Dibromomethane | BRL | ug/kg dry | 5.2 | 0.35 | 1 | *8260B/5030B | 2/23/14 0:02 | MSC | P4B0378 |
| Dichlorodifluoromethane | BRL | ug/kg dry | 10 | 0.56 | 1 | *8260B/5030B | 2/23/14 0:02 | MSC | P4B0378 |
| Ethylbenzene | BRL | ug/kg dry | 5.2 | 0.34 | 1 | *8260B/5030B | 2/23/14 0:02 | MSC | P4B0378 |
| Hexachlorobutadiene | BRL | ug/kg dry | 16 | 0.68 | 1 | *8260B/5030B | 2/23/14 0:02 | MSC | P4B0378 |
| Isopropyl Ether | BRL | ug/kg dry | 5.2 | 0.22 | 1 | *8260B/5030B | 2/23/14 0:02 | MSC | P4B0378 |
| Isopropylbenzene (Cumene) | BRL | ug/kg dry | 10 | 0.26 | 1 | *8260B/5030B | 2/23/14 0:02 | MSC | P4B0378 |
| m,p-Xylenes | BRL | ug/kg dry | 10 | 0.67 | 1 | *8260B/5030B | 2/23/14 0:02 | MSC | P4B0378 |
| Methyl Butyl Ketone (2-Hexanone) | BRL | ug/kg dry | 52 | 1.1 | 1 | *8260B/5030B | 2/23/14 0:02 | MSC | P4B0378 |
| Methyl Ethyl Ketone (2-Butanone) | BRL | ug/kg dry | 21 | 1.9 | 1 | *8260B/5030B | 2/23/14 0:02 | MSC | P4B0378 |
| Methyl Isobutyl Ketone | BRL | ug/kg dry | 10 | 1.4 | 1 | *8260B/5030B | 2/23/14 0:02 | MSC | P4B0378 |
| Methylene Chloride | BRL | ug/kg dry | 10 | 0.38 | 1 | *8260B/5030B | 2/23/14 0:02 | MSC | P4B0378 |
| Methyl-tert-Butyl Ether | BRL | ug/kg dry | 5.2 | 0.40 | 1 | *8260B/5030B | 2/23/14 0:02 | MSC | P4B0378 |
| Naphthalene | BRL | ug/kg dry | 5.2 | 0.39 | 1 | *8260B/5030B | 2/23/14 0:02 | MSC | P4B0378 |
| n-Butylbenzene | BRL | ug/kg dry | 16 | 0.23 | 1 | *8260B/5030B | 2/23/14 0:02 | MSC | P4B0378 |
| n-Propylbenzene | BRL | ug/kg dry | 10 | 0.30 | 1 | *8260B/5030B | 2/23/14 0:02 | MSC | P4B0378 |
| o-Xylene | BRL | ug/kg dry | 5.2 | 0.33 | 1 | *8260B/5030B | 2/23/14 0:02 | MSC | P4B0378 |
| sec-Butylbenzene | BRL | ug/kg dry | 16 | 0.21 | 1 | *8260B/5030B | 2/23/14 0:02 | MSC | P4B0378 |
| Styrene | BRL | ug/kg dry | 5.2 | 0.23 | 1 | *8260B/5030B | 2/23/14 0:02 | MSC | P4B0378 |
| tert-Butylbenzene | BRL | ug/kg dry | 21 | 0.27 | 1 | *8260B/5030B | 2/23/14 0:02 | MSC | P4B0378 |
| Tetrachloroethylene | BRL | ug/kg dry | 10 | 0.36 | 1 | *8260B/5030B | 2/23/14 0:02 | MSC | P4B0378 |
| Toluene | BRL | ug/kg dry | 5.2 | 0.31 | 1 | *8260B/5030B | 2/23/14 0:02 | MSC | P4B0378 |
| trans-1,2-Dichloroethylene | BRL | ug/kg dry | 5.2 | 0.61 | 1 | *8260B/5030B | 2/23/14 0:02 | MSC | P4B0378 |
| trans-1,3-Dichloropropylene | BRL | ug/kg dry | 5.2 | 0.25 | 1 | *8260B/5030B | 2/23/14 0:02 | MSC | P4B0378 |
| Trichloroethylene | BRL | ug/kg dry | 5.2 | 0.49 | 1 | *8260B/5030B | 2/23/14 0:02 | MSC | P4B0378 |
| Trichlorofluoromethane | BRL | ug/kg dry | 5.2 | 0.43 | 1 | *8260B/5030B | 2/23/14 0:02 | MSC | P4B0378 |
| Vinyl acetate | BRL | ug/kg dry | 10 | 1.5 | 1 | *8260B/5030B | 2/23/14 0:02 | MSC | P4B0378 |
| Vinyl chloride | BRL | ug/kg dry | 10 | 0.68 | 1 | *8260B/5030B | 2/23/14 0:02 | MSC | P4B0378 |

| Surrogate | Recovery | Control Limits |
|---|---|---|
| 4-Bromofluorobenzene | *77 %* | *70-130* |
| Dibromofluoromethane | *103 %* | *84-123* |
| Toluene-d8 | *109 %* | *76-129* |

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Rhea Engineers and Consultants, Inc.
Attn: Tim Price
314 North Green Meadows Drive, Unit 100
Wilmington, NC 28405

Project: Building 1932

Sample Matrix: Solid

Client Sample ID: HA-4 (4-6)
Prism Sample ID: 4020149-10
Prism Work Order: 4020149
Time Collected: 02/05/14 13:00
Time Submitted: 02/08/14 09:40

| Parameter | Result | Units | Report Limit | MDL | Dilution Factor | Method | Analysis Date/Time | Analyst | Batch ID |
|---|---|---|---|---|---|---|---|---|---|
| **General Chemistry Parameters** | | | | | | | | | |
| **% Solids** | **86.1** | **% by Weight** | **0.100** | **0.100** | **1** | ***SM2540 G** | **2/11/14 14:50** | **JAB** | **P4B0186** |

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**Phone: 704/529-6364 - Toll Free Number: 1-800/529-6364 - Fax: 704/525-0409**

Rhea Engineers and Consultants, Inc.
Attn: Tim Price
314 North Green Meadows Drive, Unit 100
Wilmington, NC 28405

Project: Building 1932

Sample Matrix: Solid

Client Sample ID: HA-7 (4-6)
Prism Sample ID: 4020149-11
Prism Work Order: 4020149
Time Collected: 02/05/14 14:00
Time Submitted: 02/08/14 09:40

| Parameter | Result | Units | Report Limit | MDL | Dilution Factor | Method | Analysis Date/Time | Analyst | Batch ID |
|---|---|---|---|---|---|---|---|---|---|
| **General Chemistry Parameters** | | | | | | | | | |
| **% Solids** | **84.1** | **% by Weight** | **0.100** | **0.100** | **1** | ***SM2540 G** | **2/11/14 14:50** | **JAB** | **P4B0186** |

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**Phone: 704/529-6364 - Toll Free Number: 1-800/529-6364 - Fax: 704/525-0409**

Rhea Engineers and Consultants, Inc.
Attn: Tim Price
314 North Green Meadows Drive, Unit 100
Wilmington, NC 28405

Project: Building 1932

Prism Work Order: 4020149
Time Submitted: 2/8/2014 9:40:00AM

**Volatile Organic Compounds by GC/MS - Quality Control**

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch P4B0305 - 5030B Soil** | | | | | | | | | | |
| **Blank (P4B0305-BLK1)** | | | | Prepared & Analyzed: 02/19/14 | | | | | | |
| 1,1,1,2-Tetrachloroethane | BRL | 5.0 | ug/kg wet | | | | | | | |
| 1,1,1-Trichloroethane | BRL | 5.0 | ug/kg wet | | | | | | | |
| 1,1,2,2-Tetrachloroethane | BRL | 5.0 | ug/kg wet | | | | | | | |
| 1,1,2-Trichloroethane | BRL | 5.0 | ug/kg wet | | | | | | | |
| 1,1-Dichloroethane | BRL | 5.0 | ug/kg wet | | | | | | | |
| 1,1-Dichloroethylene | BRL | 5.0 | ug/kg wet | | | | | | | |
| 1,1-Dichloropropylene | BRL | 5.0 | ug/kg wet | | | | | | | |
| 1,2,3-Trichlorobenzene | BRL | 10 | ug/kg wet | | | | | | | |
| 1,2,3-Trichloropropane | BRL | 5.0 | ug/kg wet | | | | | | | |
| 1,2,4-Trichlorobenzene | BRL | 10 | ug/kg wet | | | | | | | |
| 1,2,4-Trimethylbenzene | BRL | 10 | ug/kg wet | | | | | | | |
| 1,2-Dibromo-3-chloropropane | BRL | 5.0 | ug/kg wet | | | | | | | |
| 1,2-Dibromoethane | BRL | 5.0 | ug/kg wet | | | | | | | |
| 1,2-Dichlorobenzene | BRL | 10 | ug/kg wet | | | | | | | |
| 1,2-Dichloroethane | BRL | 5.0 | ug/kg wet | | | | | | | |
| 1,2-Dichloropropane | BRL | 5.0 | ug/kg wet | | | | | | | |
| 1,3,5-Trimethylbenzene | BRL | 10 | ug/kg wet | | | | | | | |
| 1,3-Dichlorobenzene | BRL | 10 | ug/kg wet | | | | | | | |
| 1,3-Dichloropropane | BRL | 5.0 | ug/kg wet | | | | | | | |
| 1,4-Dichlorobenzene | BRL | 10 | ug/kg wet | | | | | | | |
| 2,2-Dichloropropane | BRL | 5.0 | ug/kg wet | | | | | | | |
| 2-Chlorotoluene | BRL | 10 | ug/kg wet | | | | | | | |
| 4-Chlorotoluene | BRL | 10 | ug/kg wet | | | | | | | |
| 4-Isopropyltoluene | BRL | 15 | ug/kg wet | | | | | | | |
| Acetone | BRL | 20 | ug/kg wet | | | | | | | |
| Acrolein | BRL | 100 | ug/kg wet | | | | | | | |
| Acrylonitrile | BRL | 100 | ug/kg wet | | | | | | | |
| Benzene | BRL | 3.0 | ug/kg wet | | | | | | | |
| Bromobenzene | BRL | 5.0 | ug/kg wet | | | | | | | |
| Bromochloromethane | BRL | 5.0 | ug/kg wet | | | | | | | |
| Bromodichloromethane | BRL | 5.0 | ug/kg wet | | | | | | | |
| Bromoform | BRL | 5.0 | ug/kg wet | | | | | | | |
| Bromomethane | BRL | 10 | ug/kg wet | | | | | | | |
| Carbon disulfide | BRL | 10 | ug/kg wet | | | | | | | |
| Carbon Tetrachloride | BRL | 5.0 | ug/kg wet | | | | | | | |
| Chlorobenzene | BRL | 5.0 | ug/kg wet | | | | | | | |
| Chloroethane | BRL | 10 | ug/kg wet | | | | | | | |
| Chloroform | BRL | 5.0 | ug/kg wet | | | | | | | |
| Chloromethane | BRL | 10 | ug/kg wet | | | | | | | |
| cis-1,2-Dichloroethylene | BRL | 5.0 | ug/kg wet | | | | | | | |
| cis-1,3-Dichloropropylene | BRL | 5.0 | ug/kg wet | | | | | | | |
| Dibromochloromethane | BRL | 5.0 | ug/kg wet | | | | | | | |
| Dibromomethane | BRL | 5.0 | ug/kg wet | | | | | | | |
| Dichlorodifluoromethane | BRL | 10 | ug/kg wet | | | | | | | |
| Ethylbenzene | BRL | 5.0 | ug/kg wet | | | | | | | |
| Hexachlorobutadiene | BRL | 15 | ug/kg wet | | | | | | | |

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Rhea Engineers and Consultants, Inc.
Attn: Tim Price
314 North Green Meadows Drive, Unit 100
Wilmington, NC 28405

Project: Building 1932

Prism Work Order: 4020149
Time Submitted: 2/8/2014 9:40:00AM

**Volatile Organic Compounds by GC/MS - Quality Control**

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch P4B0305 - 5030B Soil** | | | | | | | | | | |
| **Blank (P4B0305-BLK1)** | | | | Prepared & Analyzed: 02/19/14 | | | | | | |
| Isopropyl Ether | BRL | 5.0 | ug/kg wet | | | | | | | |
| Isopropylbenzene (Cumene) | BRL | 10 | ug/kg wet | | | | | | | |
| m,p-Xylenes | BRL | 10 | ug/kg wet | | | | | | | |
| Methyl Butyl Ketone (2-Hexanone) | BRL | 50 | ug/kg wet | | | | | | | |
| Methyl Ethyl Ketone (2-Butanone) | BRL | 20 | ug/kg wet | | | | | | | |
| Methyl Isobutyl Ketone | BRL | 10 | ug/kg wet | | | | | | | |
| Methylene Chloride | BRL | 10 | ug/kg wet | | | | | | | |
| Methyl-tert-Butyl Ether | BRL | 5.0 | ug/kg wet | | | | | | | |
| Naphthalene | BRL | 5.0 | ug/kg wet | | | | | | | |
| n-Butylbenzene | BRL | 15 | ug/kg wet | | | | | | | |
| n-Propylbenzene | BRL | 10 | ug/kg wet | | | | | | | |
| o-Xylene | BRL | 5.0 | ug/kg wet | | | | | | | |
| sec-Butylbenzene | BRL | 15 | ug/kg wet | | | | | | | |
| Styrene | BRL | 5.0 | ug/kg wet | | | | | | | |
| tert-Butylbenzene | BRL | 20 | ug/kg wet | | | | | | | |
| Tetrachloroethylene | BRL | 10 | ug/kg wet | | | | | | | |
| Toluene | BRL | 5.0 | ug/kg wet | | | | | | | |
| trans-1,2-Dichloroethylene | BRL | 5.0 | ug/kg wet | | | | | | | |
| trans-1,3-Dichloropropylene | BRL | 5.0 | ug/kg wet | | | | | | | |
| Trichloroethylene | BRL | 5.0 | ug/kg wet | | | | | | | |
| Trichlorofluoromethane | BRL | 5.0 | ug/kg wet | | | | | | | |
| Vinyl acetate | BRL | 10 | ug/kg wet | | | | | | | |
| Vinyl chloride | BRL | 10 | ug/kg wet | | | | | | | |
| *Surrogate: 4-Bromofluorobenzene* | *45.5* | | *ug/kg wet* | *50.00* | | *91* | *70-130* | | | |
| *Surrogate: Dibromofluoromethane* | *51.7* | | *ug/kg wet* | *50.00* | | *103* | *84-123* | | | |
| *Surrogate: Toluene-d8* | *52.2* | | *ug/kg wet* | *50.00* | | *104* | *76-129* | | | |
| **LCS (P4B0305-BS1)** | | | | Prepared & Analyzed: 02/19/14 | | | | | | |
| 1,1-Dichloroethylene | 45.3 | 5.0 | ug/kg wet | 50.00 | | 91 | 67-149 | | | |
| Benzene | 47.6 | 3.0 | ug/kg wet | 50.00 | | 95 | 74-127 | | | |
| Chlorobenzene | 45.4 | 5.0 | ug/kg wet | 50.00 | | 91 | 74-118 | | | |
| Toluene | 47.4 | 5.0 | ug/kg wet | 50.00 | | 95 | 71-129 | | | |
| Trichloroethylene | 45.2 | 5.0 | ug/kg wet | 50.00 | | 90 | 75-133 | | | |
| *Surrogate: 4-Bromofluorobenzene* | *47.1* | | *ug/kg wet* | *50.00* | | *94* | *70-130* | | | |
| *Surrogate: Dibromofluoromethane* | *53.7* | | *ug/kg wet* | *50.00* | | *107* | *84-123* | | | |
| *Surrogate: Toluene-d8* | *51.3* | | *ug/kg wet* | *50.00* | | *103* | *76-129* | | | |

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Rhea Engineers and Consultants, Inc.
Attn: Tim Price
314 North Green Meadows Drive, Unit 100
Wilmington, NC 28405

Project: Building 1932

Prism Work Order: 4020149
Time Submitted: 2/8/2014 9:40:00AM

**Volatile Organic Compounds by GC/MS - Quality Control**

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch P4B0305 - 5030B Soil** | | | | | | | | | | |
| **LCS Dup (P4B0305-BSD1)** | | | | Prepared & Analyzed: 02/19/14 | | | | | | |
| 1,1-Dichloroethylene | 47.9 | 5.0 | ug/kg wet | 50.00 | | 96 | 67-149 | 6 | 20 | |
| Benzene | 46.6 | 3.0 | ug/kg wet | 50.00 | | 93 | 74-127 | 2 | 20 | |
| Chlorobenzene | 44.8 | 5.0 | ug/kg wet | 50.00 | | 90 | 74-118 | 1 | 20 | |
| Toluene | 46.9 | 5.0 | ug/kg wet | 50.00 | | 94 | 71-129 | 1 | 20 | |
| Trichloroethylene | 44.0 | 5.0 | ug/kg wet | 50.00 | | 88 | 75-133 | 3 | 20 | |
| *Surrogate: 4-Bromofluorobenzene* | *45.4* | | *ug/kg wet* | *50.00* | | *91* | *70-130* | | | |
| *Surrogate: Dibromofluoromethane* | *53.0* | | *ug/kg wet* | *50.00* | | *106* | *84-123* | | | |
| *Surrogate: Toluene-d8* | *51.4* | | *ug/kg wet* | *50.00* | | *103* | *76-129* | | | |
| **Matrix Spike (P4B0305-MS1)** | | **Source: 4020149-04** | | Prepared: 02/19/14 | Analyzed: 02/20/14 | | | | | |
| 1,1-Dichloroethylene | 46.0 | 5.2 | ug/kg dry | 52.25 | BRL | 88 | 54-162 | | | |
| Benzene | 46.0 | 3.1 | ug/kg dry | 52.25 | BRL | 88 | 60-135 | | | |
| Chlorobenzene | 41.6 | 5.2 | ug/kg dry | 52.25 | BRL | 80 | 57-125 | | | |
| Toluene | 45.2 | 5.2 | ug/kg dry | 52.25 | BRL | 87 | 57-135 | | | |
| Trichloroethylene | 44.4 | 5.2 | ug/kg dry | 52.25 | BRL | 85 | 38-164 | | | |
| *Surrogate: 4-Bromofluorobenzene* | *38.9* | | *ug/kg dry* | *52.25* | | *74* | *70-130* | | | |
| *Surrogate: Dibromofluoromethane* | *64.5* | | *ug/kg dry* | *52.25* | | *123* | *84-123* | | | |
| *Surrogate: Toluene-d8* | *60.2* | | *ug/kg dry* | *52.25* | | *115* | *76-129* | | | |
| **Matrix Spike Dup (P4B0305-MSD1)** | | **Source: 4020149-04** | | Prepared: 02/19/14 | Analyzed: 02/20/14 | | | | | |
| 1,1-Dichloroethylene | 49.0 | 5.5 | ug/kg dry | 54.55 | BRL | 90 | 54-162 | 6 | 22 | |
| Benzene | 46.2 | 3.3 | ug/kg dry | 54.55 | BRL | 85 | 60-135 | 0.3 | 20 | |
| Chlorobenzene | 42.3 | 5.5 | ug/kg dry | 54.55 | BRL | 78 | 57-125 | 2 | 14 | |
| Toluene | 45.0 | 5.5 | ug/kg dry | 54.55 | BRL | 82 | 57-135 | 0.6 | 22 | |
| Trichloroethylene | 44.4 | 5.5 | ug/kg dry | 54.55 | BRL | 81 | 38-164 | 0.02 | 18 | |
| *Surrogate: 4-Bromofluorobenzene* | *41.2* | | *ug/kg dry* | *54.55* | | *76* | *70-130* | | | |
| *Surrogate: Dibromofluoromethane* | *67.8* | | *ug/kg dry* | *54.55* | | *124* | *84-123* | | | *MI* |
| *Surrogate: Toluene-d8* | *62.8* | | *ug/kg dry* | *54.55* | | *115* | *76-129* | | | |

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Rhea Engineers and Consultants, Inc.
Attn: Tim Price
314 North Green Meadows Drive, Unit 100
Wilmington, NC 28405

Project: Building 1932

Prism Work Order: 4020149
Time Submitted: 2/8/2014 9:40:00AM

**Volatile Organic Compounds by GC/MS - Quality Control**

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch P4B0378 - 5030B Soil** | | | | | | | | | | |
| **Blank (P4B0378-BLK1)** | | | | Prepared & Analyzed: 02/22/14 | | | | | | |
| 1,1,1,2-Tetrachloroethane | BRL | 5.0 | ug/kg wet | | | | | | | |
| 1,1,1-Trichloroethane | BRL | 5.0 | ug/kg wet | | | | | | | |
| 1,1,2,2-Tetrachloroethane | BRL | 5.0 | ug/kg wet | | | | | | | |
| 1,1,2-Trichloroethane | BRL | 5.0 | ug/kg wet | | | | | | | |
| 1,1-Dichloroethane | BRL | 5.0 | ug/kg wet | | | | | | | |
| 1,1-Dichloroethylene | BRL | 5.0 | ug/kg wet | | | | | | | |
| 1,1-Dichloropropylene | BRL | 5.0 | ug/kg wet | | | | | | | |
| 1,2,3-Trichlorobenzene | BRL | 10 | ug/kg wet | | | | | | | |
| 1,2,3-Trichloropropane | BRL | 5.0 | ug/kg wet | | | | | | | |
| 1,2,4-Trichlorobenzene | BRL | 10 | ug/kg wet | | | | | | | |
| 1,2,4-Trimethylbenzene | BRL | 10 | ug/kg wet | | | | | | | |
| 1,2-Dibromo-3-chloropropane | BRL | 5.0 | ug/kg wet | | | | | | | |
| 1,2-Dibromoethane | BRL | 5.0 | ug/kg wet | | | | | | | |
| 1,2-Dichlorobenzene | BRL | 10 | ug/kg wet | | | | | | | |
| 1,2-Dichloroethane | BRL | 5.0 | ug/kg wet | | | | | | | |
| 1,2-Dichloropropane | BRL | 5.0 | ug/kg wet | | | | | | | |
| 1,3,5-Trimethylbenzene | BRL | 10 | ug/kg wet | | | | | | | |
| 1,3-Dichlorobenzene | BRL | 10 | ug/kg wet | | | | | | | |
| 1,3-Dichloropropane | BRL | 5.0 | ug/kg wet | | | | | | | |
| 1,4-Dichlorobenzene | BRL | 10 | ug/kg wet | | | | | | | |
| 2,2-Dichloropropane | BRL | 5.0 | ug/kg wet | | | | | | | |
| 2-Chloroethyl Vinyl Ether | BRL | 10 | ug/kg wet | | | | | | | |
| 2-Chlorotoluene | BRL | 10 | ug/kg wet | | | | | | | |
| 4-Chlorotoluene | BRL | 10 | ug/kg wet | | | | | | | |
| 4-Isopropyltoluene | BRL | 15 | ug/kg wet | | | | | | | |
| Acetone | BRL | 20 | ug/kg wet | | | | | | | |
| Acrolein | BRL | 100 | ug/kg wet | | | | | | | |
| Acrylonitrile | BRL | 100 | ug/kg wet | | | | | | | |
| Benzene | BRL | 3.0 | ug/kg wet | | | | | | | |
| Bromobenzene | BRL | 5.0 | ug/kg wet | | | | | | | |
| Bromochloromethane | BRL | 5.0 | ug/kg wet | | | | | | | |
| Bromodichloromethane | BRL | 5.0 | ug/kg wet | | | | | | | |
| Bromoform | BRL | 5.0 | ug/kg wet | | | | | | | |
| Bromomethane | BRL | 10 | ug/kg wet | | | | | | | |
| Carbon disulfide | BRL | 10 | ug/kg wet | | | | | | | |
| Carbon Tetrachloride | BRL | 5.0 | ug/kg wet | | | | | | | |
| Chlorobenzene | BRL | 5.0 | ug/kg wet | | | | | | | |
| Chloroethane | BRL | 10 | ug/kg wet | | | | | | | |
| Chloroform | BRL | 5.0 | ug/kg wet | | | | | | | |
| Chloromethane | BRL | 10 | ug/kg wet | | | | | | | |
| cis-1,2-Dichloroethylene | BRL | 5.0 | ug/kg wet | | | | | | | |
| cis-1,3-Dichloropropylene | BRL | 5.0 | ug/kg wet | | | | | | | |
| Dibromochloromethane | BRL | 5.0 | ug/kg wet | | | | | | | |
| Dibromomethane | BRL | 5.0 | ug/kg wet | | | | | | | |
| Dichlorodifluoromethane | BRL | 10 | ug/kg wet | | | | | | | |
| Ethylbenzene | BRL | 5.0 | ug/kg wet | | | | | | | |

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Rhea Engineers and Consultants, Inc.
Attn: Tim Price
314 North Green Meadows Drive, Unit 100
Wilmington, NC 28405

Project: Building 1932

Prism Work Order: 4020149
Time Submitted: 2/8/2014 9:40:00AM

**Volatile Organic Compounds by GC/MS - Quality Control**

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch P4B0378 - 5030B Soil** | | | | | | | | | | |
| **Blank (P4B0378-BLK1)** | | | | Prepared & Analyzed: 02/22/14 | | | | | | |
| Hexachlorobutadiene | BRL | 15 | ug/kg wet | | | | | | | |
| Isopropyl Ether | BRL | 5.0 | ug/kg wet | | | | | | | |
| Isopropylbenzene (Cumene) | BRL | 10 | ug/kg wet | | | | | | | |
| m,p-Xylenes | BRL | 10 | ug/kg wet | | | | | | | |
| Methyl Butyl Ketone (2-Hexanone) | BRL | 50 | ug/kg wet | | | | | | | |
| Methyl Ethyl Ketone (2-Butanone) | BRL | 20 | ug/kg wet | | | | | | | |
| Methyl Isobutyl Ketone | BRL | 10 | ug/kg wet | | | | | | | |
| Methylene Chloride | BRL | 10 | ug/kg wet | | | | | | | |
| Methyl-tert-Butyl Ether | BRL | 5.0 | ug/kg wet | | | | | | | |
| Naphthalene | BRL | 5.0 | ug/kg wet | | | | | | | |
| n-Butylbenzene | BRL | 15 | ug/kg wet | | | | | | | |
| n-Propylbenzene | BRL | 10 | ug/kg wet | | | | | | | |
| o-Xylene | BRL | 5.0 | ug/kg wet | | | | | | | |
| sec-Butylbenzene | BRL | 15 | ug/kg wet | | | | | | | |
| Styrene | BRL | 5.0 | ug/kg wet | | | | | | | |
| tert-Butylbenzene | BRL | 20 | ug/kg wet | | | | | | | |
| Tetrachloroethylene | BRL | 10 | ug/kg wet | | | | | | | |
| Toluene | BRL | 5.0 | ug/kg wet | | | | | | | |
| trans-1,2-Dichloroethylene | BRL | 5.0 | ug/kg wet | | | | | | | |
| trans-1,3-Dichloropropylene | BRL | 5.0 | ug/kg wet | | | | | | | |
| Trichloroethylene | BRL | 5.0 | ug/kg wet | | | | | | | |
| Trichlorofluoromethane | BRL | 5.0 | ug/kg wet | | | | | | | |
| Vinyl acetate | BRL | 10 | ug/kg wet | | | | | | | |
| Vinyl chloride | BRL | 10 | ug/kg wet | | | | | | | |
| *Surrogate: 4-Bromofluorobenzene* | *42.3* | | *ug/kg wet* | *50.00* | | *85* | *70-130* | | | |
| *Surrogate: Dibromofluoromethane* | *56.4* | | *ug/kg wet* | *50.00* | | *113* | *84-123* | | | |
| *Surrogate: Toluene-d8* | *58.8* | | *ug/kg wet* | *50.00* | | *118* | *76-129* | | | |

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Rhea Engineers and Consultants, Inc.
Attn: Tim Price
314 North Green Meadows Drive, Unit 100
Wilmington, NC 28405

Project: Building 1932

Prism Work Order: 4020149
Time Submitted: 2/8/2014 9:40:00AM

**Volatile Organic Compounds by GC/MS - Quality Control**

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch P4B0378 - 5030B Soil** | | | | | | | | | | |
| **LCS (P4B0378-BS1)** | | | | Prepared & Analyzed: 02/22/14 | | | | | | |
| 1,1-Dichloroethylene | 59.8 | 5.0 | ug/kg wet | 50.00 | | 120 | 67-149 | | | |
| Benzene | 56.6 | 3.0 | ug/kg wet | 50.00 | | 113 | 74-127 | | | |
| Chlorobenzene | 58.6 | 5.0 | ug/kg wet | 50.00 | | 117 | 74-118 | | | |
| Toluene | 57.5 | 5.0 | ug/kg wet | 50.00 | | 115 | 71-129 | | | |
| Trichloroethylene | 55.7 | 5.0 | ug/kg wet | 50.00 | | 111 | 75-133 | | | |
| *Surrogate: 4-Bromofluorobenzene* | *38.6* | | *ug/kg wet* | *50.00* | | *77* | *70-130* | | | |
| *Surrogate: Dibromofluoromethane* | *53.6* | | *ug/kg wet* | *50.00* | | *107* | *84-123* | | | |
| *Surrogate: Toluene-d8* | *55.2* | | *ug/kg wet* | *50.00* | | *110* | *76-129* | | | |
| **LCS Dup (P4B0378-BSD1)** | | | | Prepared & Analyzed: 02/22/14 | | | | | | |
| 1,1-Dichloroethylene | 56.4 | 5.0 | ug/kg wet | 50.00 | | 113 | 67-149 | 6 | 20 | |
| Benzene | 54.4 | 3.0 | ug/kg wet | 50.00 | | 109 | 74-127 | 4 | 20 | |
| Chlorobenzene | 57.4 | 5.0 | ug/kg wet | 50.00 | | 115 | 74-118 | 2 | 20 | |
| Toluene | 54.7 | 5.0 | ug/kg wet | 50.00 | | 109 | 71-129 | 5 | 20 | |
| Trichloroethylene | 53.5 | 5.0 | ug/kg wet | 50.00 | | 107 | 75-133 | 4 | 20 | |
| *Surrogate: 4-Bromofluorobenzene* | *39.6* | | *ug/kg wet* | *50.00* | | *79* | *70-130* | | | |
| *Surrogate: Dibromofluoromethane* | *55.5* | | *ug/kg wet* | *50.00* | | *111* | *84-123* | | | |
| *Surrogate: Toluene-d8* | *56.8* | | *ug/kg wet* | *50.00* | | *114* | *76-129* | | | |
| **Matrix Spike (P4B0378-MS1)** | | **Source: 4020149-09** | | Prepared: 02/22/14 Analyzed: 02/23/14 | | | | | | |
| 1,1-Dichloroethylene | 40.9 | 5.3 | ug/kg dry | 53.38 | BRL | 77 | 54-162 | | | |
| Benzene | 36.3 | 3.2 | ug/kg dry | 53.38 | BRL | 68 | 60-135 | | | |
| Chlorobenzene | 36.9 | 5.3 | ug/kg dry | 53.38 | BRL | 69 | 57-125 | | | |
| Toluene | 35.9 | 5.3 | ug/kg dry | 53.38 | BRL | 67 | 57-135 | | | |
| Trichloroethylene | 35.8 | 5.3 | ug/kg dry | 53.38 | BRL | 67 | 38-164 | | | |
| *Surrogate: 4-Bromofluorobenzene* | *39.1* | | *ug/kg dry* | *53.38* | | *73* | *70-130* | | | |
| *Surrogate: Dibromofluoromethane* | *51.2* | | *ug/kg dry* | *53.38* | | *96* | *84-123* | | | |
| *Surrogate: Toluene-d8* | *55.5* | | *ug/kg dry* | *53.38* | | *104* | *76-129* | | | |

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Rhea Engineers and Consultants, Inc.
Attn: Tim Price
314 North Green Meadows Drive, Unit 100
Wilmington, NC 28405

Project: Building 1932

Prism Work Order: 4020149
Time Submitted: 2/8/2014 9:40:00AM

**Volatile Organic Compounds by GC/MS - Quality Control**

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch P4B0378 - 5030B Soil** | | | | | | | | | | |
| **Matrix Spike Dup (P4B0378-MSD1)** | | **Source: 4020149-09** | | Prepared: 02/22/14 | Analyzed: 02/23/14 | | | | | |
| 1,1-Dichloroethylene | 46.7 | 5.5 | ug/kg dry | 54.62 | BRL | 85 | 54-162 | 13 | 22 | |
| Benzene | 43.6 | 3.3 | ug/kg dry | 54.62 | BRL | 80 | 60-135 | 18 | 20 | |
| Chlorobenzene | 44.3 | 5.5 | ug/kg dry | 54.62 | BRL | 81 | 57-125 | 18 | 14 | D |
| Toluene | 42.7 | 5.5 | ug/kg dry | 54.62 | BRL | 78 | 57-135 | 17 | 22 | |
| Trichloroethylene | 41.8 | 5.5 | ug/kg dry | 54.62 | BRL | 77 | 38-164 | 15 | 18 | |
| *Surrogate: 4-Bromofluorobenzene* | *43.7* | | *ug/kg dry* | *54.62* | | *80* | *70-130* | | | |
| *Surrogate: Dibromofluoromethane* | *58.6* | | *ug/kg dry* | *54.62* | | *107* | *84-123* | | | |
| *Surrogate: Toluene-d8* | *61.9* | | *ug/kg dry* | *54.62* | | *113* | *76-129* | | | |

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Rhea Engineers and Consultants, Inc.
Attn: Tim Price
314 North Green Meadows Drive, Unit 100
Wilmington, NC 28405

Project: Building 1932

Prism Work Order: 4020149
Time Submitted: 2/8/2014 9:40:00AM

**Gasoline Range Organics by GC/FID - Quality Control**

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch P4B0222 - 5030B Soil** | | | | | | | | | | |
| **Blank (P4B0222-BLK1)** | | | | Prepared & Analyzed: 02/14/14 | | | | | | |
| Gasoline Range Organics | BRL | 5.0 | mg/kg wet | | | | | | | |
| *Surrogate: a,a,a-Trifluorotoluene* | *4.70* | | *mg/kg wet* | *5.000* | | *94* | *42-148* | | | |
| **LCS (P4B0222-BS1)** | | | | Prepared & Analyzed: 02/14/14 | | | | | | |
| Gasoline Range Organics | 55.2 | 5.0 | mg/kg wet | 50.00 | | 110 | 41-138 | | | |
| *Surrogate: a,a,a-Trifluorotoluene* | *5.15* | | *mg/kg wet* | *5.000* | | *103* | *42-148* | | | |
| **LCS Dup (P4B0222-BSD1)** | | | | Prepared & Analyzed: 02/14/14 | | | | | | |
| Gasoline Range Organics | 55.3 | 5.0 | mg/kg wet | 50.00 | | 111 | 41-138 | 0.2 | 20 | |
| *Surrogate: a,a,a-Trifluorotoluene* | *5.20* | | *mg/kg wet* | *5.000* | | *104* | *42-148* | | | |
| **Matrix Spike (P4B0222-MS1)** | | **Source: 4020149-01** | | Prepared & Analyzed: 02/14/14 | | | | | | |
| Gasoline Range Organics | 63.3 | 5.8 | mg/kg dry | 58.38 | 0.710 | 107 | 41-138 | | | |
| *Surrogate: a,a,a-Trifluorotoluene* | *5.37* | | *mg/kg dry* | *5.838* | | *92* | *42-148* | | | |
| **Matrix Spike Dup (P4B0222-MSD1)** | | **Source: 4020149-01** | | Prepared & Analyzed: 02/14/14 | | | | | | |
| Gasoline Range Organics | 64.1 | 5.8 | mg/kg dry | 57.81 | 0.710 | 110 | 41-138 | 1 | 34 | |
| *Surrogate: a,a,a-Trifluorotoluene* | *5.90* | | *mg/kg dry* | *5.781* | | *102* | *42-148* | | | |
| **Batch P4B0374 - 5030B Soil** | | | | | | | | | | |
| **Blank (P4B0374-BLK1)** | | | | Prepared & Analyzed: 02/21/14 | | | | | | |
| Gasoline Range Organics | BRL | 5.0 | mg/kg wet | | | | | | | |
| *Surrogate: a,a,a-Trifluorotoluene* | *5.10* | | *mg/kg wet* | *5.000* | | *102* | *42-148* | | | |
| **LCS (P4B0374-BS1)** | | | | Prepared & Analyzed: 02/21/14 | | | | | | |
| Gasoline Range Organics | 53.2 | 5.0 | mg/kg wet | 50.00 | | 106 | 41-138 | | | |
| *Surrogate: a,a,a-Trifluorotoluene* | *5.40* | | *mg/kg wet* | *5.000* | | *108* | *42-148* | | | |

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Rhea Engineers and Consultants, Inc.
Attn: Tim Price
314 North Green Meadows Drive, Unit 100
Wilmington, NC 28405

Project: Building 1932

Prism Work Order: 4020149
Time Submitted: 2/8/2014 9:40:00AM

**Gasoline Range Organics by GC/FID - Quality Control**

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch P4B0374 - 5030B Soil** | | | | | | | | | | |
| **LCS Dup (P4B0374-BSD1)** | | | | Prepared & Analyzed: 02/21/14 | | | | | | |
| Gasoline Range Organics | 59.4 | 5.0 | mg/kg wet | 50.00 | | 119 | 41-138 | 11 | 20 | |
| *Surrogate: a,a,a-Trifluorotoluene* | *5.55* | | *mg/kg wet* | *5.000* | | *111* | *42-148* | | | |

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**449 Springbrook Road - P.O. Box 240543 - Charlotte, NC 28224-0543**
**Phone: 704/529-6364 - Toll Free Number: 1-800/529-6364 - Fax: 704/525-0409**

Rhea Engineers and Consultants, Inc.
Attn: Tim Price
314 North Green Meadows Drive, Unit 100
Wilmington, NC 28405

Project: Building 1932

Prism Work Order: 4020149
Time Submitted: 2/8/2014 9:40:00AM

**Diesel Range Organics by GC/FID - Quality Control**

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch P4B0234 - 3545A** | | | | | | | | | | |
| **Blank (P4B0234-BLK1)** | | | | Prepared: 02/14/14 | | Analyzed: 02/15/14 | | | | |
| Diesel Range Organics | BRL | 7.0 | mg/kg wet | | | | | | | |
| *Surrogate: o-Terphenyl* | *1.47* | | *mg/kg wet* | *1.600* | | *92* | *49-124* | | | |
| **LCS (P4B0234-BS1)** | | | | Prepared: 02/14/14 | | Analyzed: 02/15/14 | | | | |
| Diesel Range Organics | 82.7 | 7.0 | mg/kg wet | 80.00 | | 103 | 55-109 | | | |
| *Surrogate: o-Terphenyl* | *1.65* | | *mg/kg wet* | *1.600* | | *103* | *49-124* | | | |
| **LCS Dup (P4B0234-BSD1)** | | | | Prepared: 02/14/14 | | Analyzed: 02/15/14 | | | | |
| Diesel Range Organics | 76.3 | 7.0 | mg/kg wet | 80.00 | | 95 | 55-109 | 8 | 20 | |
| *Surrogate: o-Terphenyl* | *1.57* | | *mg/kg wet* | *1.600* | | *98* | *49-124* | | | |
| **Batch P4B0257 - 3545A** | | | | | | | | | | |
| **Blank (P4B0257-BLK1)** | | | | Prepared & Analyzed: 02/17/14 | | | | | | |
| Diesel Range Organics | BRL | 7.0 | mg/kg wet | | | | | | | |
| *Surrogate: o-Terphenyl* | *1.61* | | *mg/kg wet* | *1.600* | | *101* | *49-124* | | | |
| **LCS (P4B0257-BS1)** | | | | Prepared & Analyzed: 02/17/14 | | | | | | |
| Diesel Range Organics | 85.3 | 7.0 | mg/kg wet | 80.00 | | 107 | 55-109 | | | |
| *Surrogate: o-Terphenyl* | *1.69* | | *mg/kg wet* | *1.600* | | *106* | *49-124* | | | |
| **LCS Dup (P4B0257-BSD1)** | | | | Prepared & Analyzed: 02/17/14 | | | | | | |
| Diesel Range Organics | 88.1 | 7.0 | mg/kg wet | 80.00 | | 110 | 55-109 | 3 | 20 | L2 |
| *Surrogate: o-Terphenyl* | *1.74* | | *mg/kg wet* | *1.600* | | *109* | *49-124* | | | |
| **Matrix Spike (P4B0257-MS1)** | | **Source: 4020149-06** | | Prepared & Analyzed: 02/17/14 | | | | | | |
| Diesel Range Organics | 83.1 | 7.7 | mg/kg dry | 88.26 | 2.08 | 92 | 50-117 | | | |
| *Surrogate: o-Terphenyl* | *1.72* | | *mg/kg dry* | *1.765* | | *98* | *49-124* | | | |

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Rhea Engineers and Consultants, Inc.
Attn: Tim Price
314 North Green Meadows Drive, Unit 100
Wilmington, NC 28405

Project: Building 1932

Prism Work Order: 4020149
Time Submitted: 2/8/2014 9:40:00AM

**Diesel Range Organics by GC/FID - Quality Control**

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch P4B0257 - 3545A** | | | | | | | | | | |
| **Matrix Spike Dup (P4B0257-MSD1)** | | **Source: 4020149-06** | | Prepared & Analyzed: 02/17/14 | | | | | | |
| Diesel Range Organics | 85.5 | 7.7 | mg/kg dry | 88.26 | 2.08 | 94 | 50-117 | 3 | 24 | |
| *Surrogate: o-Terphenyl* | *1.66* | | *mg/kg dry* | *1.765* | | *94* | *49-124* | | | |
| **Batch P4B0372 - 3545A** | | | | | | | | | | |
| **Blank (P4B0372-BLK1)** | | | | Prepared: 02/21/14 | Analyzed: 02/24/14 | | | | | |
| Diesel Range Organics | BRL | 7.0 | mg/kg wet | | | | | | | |
| *Surrogate: o-Terphenyl* | *1.09* | | *mg/kg wet* | *1.600* | | *68* | *49-124* | | | |
| **LCS (P4B0372-BS1)** | | | | Prepared: 02/21/14 | Analyzed: 02/24/14 | | | | | |
| Diesel Range Organics | 43.9 | 7.0 | mg/kg wet | 4.000 | | NR | 55-109 | | | L1 |
| *Surrogate: o-Terphenyl* | *1.64* | | *mg/kg wet* | *1.600* | | *102* | *49-124* | | | |
| **LCS Dup (P4B0372-BSD1)** | | | | Prepared: 02/21/14 | Analyzed: 02/24/14 | | | | | |
| Diesel Range Organics | 36.0 | 7.0 | mg/kg wet | 40.00 | | 90 | 55-109 | 20 | 20 | |
| *Surrogate: o-Terphenyl* | *1.25* | | *mg/kg wet* | *1.600* | | *78* | *49-124* | | | |

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Rhea Engineers and Consultants, Inc.
Attn: Tim Price
314 North Green Meadows Drive, Unit 100
Wilmington, NC 28405

Project: Building 1932

Prism Work Order: 4020149
Time Submitted: 2/8/2014 9:40:00AM

**General Chemistry Parameters - Quality Control**

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch P4B0186 - NO PREP** | | | | | | | | | | |
| **Blank (P4B0186-BLK1)** | | | | Prepared & Analyzed: 02/11/14 | | | | | | |
| % Solids | 100 | 0.100 | % by Weight | | | | | | | |
| **Batch P4B0204 - NO PREP** | | | | | | | | | | |
| **Blank (P4B0204-BLK1)** | | | | Prepared & Analyzed: 02/12/14 | | | | | | |
| % Solids | 100 | 0.100 | % by Weight | | | | | | | |

## Sample Extraction Data

**Prep Method: 3545A**

| Lab Number | Batch | Initial | Final | Date/Time |
|---|---|---|---|---|
| 4020149-01 | P4B0234 | 25.04 g | 1 mL | 02/15/14 11:00 |
| 4020149-02 | P4B0234 | 25.01 g | 1 mL | 02/15/14 11:00 |
| 4020149-03 | P4B0234 | 25.08 g | 1 mL | 02/15/14 11:00 |
| 4020149-04 | P4B0234 | 25.01 g | 1 mL | 02/15/14 11:00 |
| 4020149-05 | P4B0257 | 25.07 g | 1 mL | 02/17/14 10:00 |
| 4020149-06 | P4B0257 | 25 g | 1 mL | 02/17/14 10:00 |
| 4020149-07 | P4B0257 | 25.05 g | 1 mL | 02/17/14 10:00 |
| 4020149-09 | P4B0372 | 25 g | 1 mL | 02/21/14 10:00 |

**Prep Method: 5030B Soil**

| Lab Number | Batch | Initial | Final | Date/Time |
|---|---|---|---|---|
| 4020149-01 | P4B0222 | 5.01 g | 5 mL | 02/14/14 14:17 |
| 4020149-02 | P4B0222 | 5.87 g | 5 mL | 02/14/14 14:17 |
| 4020149-03 | P4B0222 | 5.26 g | 5 mL | 02/14/14 14:17 |
| 4020149-04 | P4B0222 | 5.48 g | 5 mL | 02/14/14 14:17 |
| 4020149-05 | P4B0222 | 5.2 g | 5 mL | 02/14/14 14:17 |
| 4020149-06 | P4B0222 | 5.1 g | 5 mL | 02/14/14 14:17 |
| 4020149-07 | P4B0222 | 5.76 g | 5 mL | 02/14/14 14:17 |
| 4020149-09 | P4B0374 | 4.81 g | 5 mL | 02/21/14 16:27 |

**Prep Method: 5030B Soil**

| Lab Number | Batch | Initial | Final | Date/Time |
|---|---|---|---|---|
| 4020149-01 | P4B0305 | 5.5 g | 5 mL | 02/19/14 9:23 |
| 4020149-02 | P4B0305 | 5.44 g | 5 mL | 02/19/14 9:23 |
| 4020149-03 | P4B0305 | 5.51 g | 5 mL | 02/19/14 9:23 |
| 4020149-04 | P4B0305 | 5.14 g | 5 mL | 02/19/14 9:23 |
| 4020149-05 | P4B0305 | 5.91 g | 5 mL | 02/19/14 9:23 |
| 4020149-06 | P4B0305 | 5.5 g | 5 mL | 02/19/14 9:23 |
| 4020149-07 | P4B0305 | 5.56 g | 5 mL | 02/19/14 9:23 |
| 4020149-09 | P4B0378 | 5.37 g | 5 mL | 02/22/14 10:41 |

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449 Springbrook Road • P.O. Box 240543 • Charlotte, NC 28224-0543
Phone: 704/529-6364 • Fax: 704/525-0409

# CHAIN OF CUSTODY RECORD

PAGE 1 OF 2 QUOTE # TO ENSURE PROPER BILLING: 454-03

Project Name: BLDG 1932
Short Hold Analysis: (Yes) (No) UST Project: (Yes) (No)
*Please ATTACH any project specific reporting (QC LEVEL I II III IV) provisions and/or QC Requirements
Invoice To: Anna Marie whitehair
Address: 4975 William Flynn Hwy Gibsonia, PA 15044
Purchase Order No./Billing Reference 454-03

Client Company Name: Rhen Engineers & Consultants
Report To/Contact Name: Jim Price
Reporting Address: 314 W Green Meadows Dr. Wilmington, NC 28405
Phone: 910 350-3156 Fax (Yes) (No): N
Email (Yes) (No) Email Address timarhea.us
EDD Type: PDF X Excel ___ Other ___
Site Location Name: BLDG. 1932
Site Location Physical Address: Camp Lejeune PP Golf Course

Requested Due Date ☐ 1 Day ☐ 2 Days ☐ 3 Days ☐ 4 Days ☐ 5 Days
"Working Days" ☐ 6-9 Days ☒ Standard 10 days ☐ Rush Work Must Be Pre-Approved
Samples received after 15:00 will be processed next business day.
Turnaround time is based on business days, excluding weekends and holidays.
(SEE REVERSE FOR TERMS & CONDITIONS REGARDING SERVICES RENDERED BY PRISM LABORATORIES, INC. TO CLIENT)

## LAB USE ONLY

| | YES | NO | N/A |
|---|---|---|---|
| Samples INTACT upon arrival? 1.3 | ✓ | | |
| Received ON WET ICE? Temp 0.9 | ✓ | | |
| PROPER PRESERVATIVES indicated? | ✓ | | |
| Received WITHIN HOLDING TIMES? | ✓ | | |
| CUSTODY SEALS INTACT? | | | ✓ |
| VOLATILES rec'd W/OUT HEADSPACE? | | | ✓ |
| PROPER CONTAINERS used? | ✓ | | |

## TO BE FILLED IN BY CLIENT/SAMPLING PERSONNEL

Certification: NELAC ___ USACE ___ FL ___ NC ___ SC ___ OTHER ___ N/A ___
Water Chlorinated: YES ___ NO ___
Sample Iced Upon Collection: YES ___ NO ___

| CLIENT SAMPLE DESCRIPTION | DATE COLLECTED | TIME COLLECTED MILITARY HOURS | MATRIX (SOIL, WATER OR SLUDGE) | SAMPLE CONTAINER *TYPE SEE BELOW | NO. | SIZE | PRESERVATIVES | 8260B | DRO/GRO | | | | | REMARKS | PRISM LAB ID NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HA-9 (4-6) | 2/6/14 | 10:00 | Soil | G | | | N/A | X | X | | | | | | 01 |
| HA-8 (4-6) | 2/6/14 | 09:00 | Soil | G | | | N/A | X | X | | | | | | 02 |
| HA-11 (4-6) | 2/6/14 | 11:00 | Soil | G | | | N/A | X | X | | | | | | 03 |
| HA-12 (4-6) | 2/6/14 | 12:00 | Soil | G | | | N/A | X | X | | | | | | 04 |
| HA-3 (~~4-6~~ 2-4) | 2/5/14 | 10:00 | Soil | G | | | N/A | X | X | | | | | | 05 |
| HA-6 (~~4-6~~ 2-4) | 2/5/14 | 12:00 | Soil | G | | | N/A | X | X | | | | | | 06 |
| HA-14 (4-6) | 2/6/14 | 14:00 | Soil | G | | | N/A | X | X | | | | | | 07 |
| HA-10 (4-6) | 2/6/14 | 15:00 | Soil | G | | | N/A | X | X | | | | | HOLD | 08 |
| HA-13 (4-6) | 2/6/14 | 16:00 | Soil | G | | | N/A | X | X | | | | | HOLD | 09 |
| HA-4 (4-6) | 2/5/14 | 13:00 | Soil | G | | | N/A | X | X | | | | | HOLD | 10 |

PRESS DOWN FIRMLY - 3 COPIES

Sampler's Signature ___ Sampled By (Print Name) ___ Affiliation ___

Upon relinquishing, this Chain of Custody is your authorization for Prism to proceed with the analyses as requested above. Any changes must be submitted in writing to the Prism Project Manager. There will be charges for any changes after analyses have been initialized.

| Relinquished By: (Signature) | Received By: (Signature) | Date | Military/Hours |
|---|---|---|---|
| [signature] | | 2/7/14 | 14:00 |
| Relinquished By: (Signature) | Received By: (Signature) | 2/8/14 | 0700 |
| Relinquished By: (Signature) | Received For Prism Laboratories By: | 2-8-14 | 0940 |

Method of Shipment: NOTE: ALL SAMPLE COOLERS SHOULD BE TAPED SHUT WITH CUSTODY SEALS FOR TRANSPORTATION TO THE LABORATORY. SAMPLES ARE NOT ACCEPTED AND VERIFIED AGAINST COC UNTIL RECEIVED AT THE LABORATORY.
☐ Fed Ex ☐ UPS ☐ Hand-delivered ☐ Prism Field Service ☐ Other ___

COC Group No. 4020149

Additional Comments:

## PRISM USE ONLY

Site Arrival Time:
Site Departure Time:
Field Tech Fee:
Mileage:

| NPDES: | UST: | GROUNDWATER: | DRINKING WATER: | SOLID WASTE: | RCRA: | CERCLA | LANDFILL | OTHER: |
|---|---|---|---|---|---|---|---|---|
| ☐ NC ☐ SC | ☐ NC ☐ SC | ☐ NC ☐ SC | ☐ NC ☐ SC | ☐ NC ☐ SC | ☐ NC ☐ SC | ☐ NC ☐ SC | ☐ NC ☐ SC | ☐ NC ☐ SC |
| ☐ ___ | ☐ ___ | ☐ ___ | ☐ ___ | ☐ ___ | ☐ ___ | ☐ ___ | ☐ ___ | ☐ ___ |

*CONTAINER TYPE CODES: A = Amber C = Clear G = Glass P = Plastic; TL = Teflon-Lined Cap VOA = Volatile Organics Analysis (Zero Head Space)

SEE REVERSE FOR TERMS & CONDITIONS

ORIGINAL

DRT-CO

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Phone: 704/529-6364 • Fax: 704/525-0409

# CHAIN OF CUSTODY RECORD

PAGE 2 OF 2 QUOTE # TO ENSURE PROPER BILLING: 454-03

Client Company Name: Rhea Engineers
Report To/Contact Name: Tim Price
Reporting Address: 314 N Green Meadows Dr. Wilmington NC 28405
Phone: 910-350-3156 Fax (Yes) (No): ____
Email (Yes) (No) Email Address tim@rhea.us
EDD Type: PDF X Excel ____ Other ____
Site Location Name: BLDG 1932
Site Location Physical Address: Camp Lejeune PP Golf Course

Project Name: BLDG. 1932
Short Hold Analysis: (Yes) (No) UST Project: (Yes) (No)
*Please ATTACH any project specific reporting (QC LEVEL I II III IV) provisions and/or QC Requirements
Invoice To: ANNA MARIE WHITEHAIR
Address: 4975 WILLIAM ELLIS Hwy Gibsonia, PA 15044
Purchase Order No./Billing Reference ____
Requested Due Date ☐ 1 Day ☐ 2 Days ☐ 3 Days ☐ 4 Days ☐ 5 Days
"Working Days" ☐ 6-9 Days ☒ Standard 10 days ☐ Rush Work Must Be Pre-Approved
Samples received after 15:00 will be processed next business day.
Turnaround time is based on business days, excluding weekends and holidays.
(SEE REVERSE FOR TERMS & CONDITIONS REGARDING SERVICES RENDERED BY PRISM LABORATORIES, INC. TO CLIENT)

**LAB USE ONLY**

| | | YES | NO | N/A |
|---|---|---|---|---|
| Samples INTACT upon arrival? | 1.3 | ✓ | | |
| Received ON WET ICE? Temp | 0.9 | ✓ | | |
| PROPER PRESERVATIVES indicated? | | ✓ | | |
| Received WITHIN HOLDING TIMES? | | ✓ | | |
| CUSTODY SEALS INTACT? | | | | ✓ |
| VOLATILES rec'd W/OUT HEADSPACE? | | | | ✓ |
| PROPER CONTAINERS used? | | ✓ | | |

**TO BE FILLED IN BY CLIENT/SAMPLING PERSONNEL**
Certification: NELAC ____ USACE ____ FL ____ NC ____ SC ____ OTHER ____ N/A ____
Water Chlorinated: YES ____ NO ____
Sample Iced Upon Collection: YES ____ NO ____

| CLIENT SAMPLE DESCRIPTION | DATE COLLECTED | TIME COLLECTED MILITARY HOURS | MATRIX (SOIL, WATER OR SLUDGE) | SAMPLE CONTAINER *TYPE SEE BELOW | NO. | SIZE | PRESERVATIVES | ANALYSES REQUESTED: 8260B | PRO/LEO | | | | | REMARKS | PRISM LAB ID NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HA-7 (4-6) | 2/5/14 | 14:00 | Soil | G | | | N/A | X | X | | | | | HOLD | 11 |

PRESS DOWN FIRMLY - 3 COPIES

Sampler's Signature ____ Sampled By (Print Name) ____ Affiliation ____

Upon relinquishing, this Chain of Custody is your authorization for Prism to proceed with the analyses as requested above. Any changes must be submitted in writing to the Prism Project Manager. There will be charges for any changes after analyses have been initialized.

| Relinquished By: (Signature) | Received By: (Signature) | Date | Military/Hours |
|---|---|---|---|
| Timothy L. Price | | 2/7/14 | 14:00 |
| Relinquished By: (Signature) | Received By: (Signature) | 2/8/14 | 0700 |
| Relinquished By: (Signature) | Received For Prism Laboratories By: | 2-8-14 | 0940 |

Method of Shipment: NOTE: ALL SAMPLE COOLERS SHOULD BE TAPED SHUT WITH CUSTODY SEALS FOR TRANSPORTATION TO THE LABORATORY. SAMPLES ARE NOT ACCEPTED AND VERIFIED AGAINST COC UNTIL RECEIVED AT THE LABORATORY.
☐ Fed Ex ☐ UPS ☐ Hand-delivered ☐ Prism Field Service ☐ Other ____
COC Group No. 4020149

Additional Comments:

**PRISM USE ONLY**
Site Arrival Time:
Site Departure Time:
Field Tech Fee:
Mileage:

| NPDES: | UST: | GROUNDWATER: | DRINKING WATER: | SOLID WASTE: | RCRA: | CERCLA | LANDFILL | OTHER: |
|---|---|---|---|---|---|---|---|---|
| ☐ NC ☐ SC | ☐ NC ☐ SC | ☐ NC ☐ SC | ☐ NC ☐ SC | ☐ NC ☐ SC | ☐ NC ☐ SC | ☐ NC ☐ SC | ☐ NC ☐ SC | ☐ NC ☐ SC |
| ☐ ____ | ☐ ____ | ☐ ____ | ☐ ____ | ☐ ____ | ☐ ____ | ☐ ____ | ☐ ____ | ☐ ____ |

SEE REVERSE FOR TERMS & CONDITIONS

*CONTAINER TYPE CODES: A = Amber C = Clear G = Glass P = Plastic; TL = Teflon-Lined Cap VOA = Volatile Organics Analysis (Zero Head Space)

ORIGINAL

# APPENDIX J

# SOIL WASTE MANIFESTS

This page left intentionally blank

THIS FORM IS SUBJECT TO THE PRIVACY ACT (NAVMC 11000)

WEIGHT CERTIFICATE

TRAFFIC MANAGEMENT OFFICE
MARINE CORPS BASE
CAMP LEJEUNE

11:14 AM 01-24-14
G 78960 lb
T 33060 lb
N 45900 lb

Glenn dale Logistics

CUSTOMER RANK

SSN AGENCY

CARRIER/VEHICLE TYPE

VEHICLE #

VEHICLE ID # 410

DESTINATION/BLDG. #

GBL/DOC # P.O. #

COMMODITY

SHIPPER

WEIGHMASTER Charles S Higgins

MCBCL 4600/2 (REV 2-95)

THIS FORM IS SUBJECT TO THE PRIVACY ACT (NAVMC 11000)

WEIGHT CERTIFICATE

DISTRIBUTION MANAGEMENT OFFICE
MARINE CORPS INSTALLATIONS EAST
MCB CAMP LEJEUNE

CUSTOMER RANK

SSN AGENCY

CARRIER/VEHICLE TYPE 8

VEHICLE #

VEHICLE ID#

DESTINATION/BLDG#

GBL/DOC# P.O.#

COMMODITY

SHIPPER

WEIGHMASTER

11:41 AM 01-24-14
G 63100 lb
T 00 lb
N 63100 lb

11:41 AM 01-24-14
G 63100 lb
T 30500 lb
N 32600 lb

MCBCL 4600/2 (REV 2-95)

1 2 3 4 5 6 7 8 9

South River Trucking
PO Box 372
Autryville, NC 28318

TRUCK NO. 3037 DATE 1-24-14

DRIVER Larry Tanner

JOB NO.

MATERIAL Dirt YARDS

FROM Jacksonville NC TO Autryville NC

TIME IN 8:30 OUT

RECEIVED BY

DOWNTIME FROM TO

10 11 12 13 14 15 16 17 18

**NON-HAZARDOUS WASTE MANIFEST**

1. Generator ID Number: NC6170022580
2. Page 1 of 1
3. Emergency Response Phone:
4. Waste Tracking Number: 14014

5. Generator's Name and Mailing Address
COMMANDING GENERAL, MCIEAST MCB CAMPE J
12 POST LANE, MCB CAMP LEJEUNE NC 28542
Generator's Phone: 910 451 9017
Generator's Site Address (if different than mailing address):

6. Transporter 1 Company Name
SOUTH RIVER TRUCKING, PO BOX 372, AUTRYVILLE NC 28318
U.S. EPA ID Number:

7. Transporter 2 Company Name
U.S. EPA ID Number:

8. Designated Facility Name and Site Address
E S & J ENTERPRISES, INC.
1555 HOLLAND RD. - AUTRYVILLE, NC 28318
Facility's Phone: (910) 567-6138
U.S. EPA ID Number: SR0600035

| | 9. Waste Shipping Name and Description | 10. Containers No. | 10. Containers Type | 11. Total Quantity | 12. Unit Wt./Vol. |
|---|---|---|---|---|---|
| 1. | PETROLEUM CONTAMINATED SOIL | 01 | PT | 76740 TONS 32300 TONS 44440 NET | LBS. |
| 2. | | | | | |
| 3. | | | | | |
| 4. | | | | | |

13. Special Handling Instructions and Additional Information

**14. GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offeror's Printed/Typed Name: LYDENE JONES
Signature: Lydene Jones
Month 02 Day 04 Year 14

15. International Shipments ☐ Import to U.S. ☐ Export from U.S.
Port of entry/exit:
Transporter Signature (for exports only):
Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: LARRY TURNER
Signature: Larry Turner
Month 2 Day 4 Year 14
Transporter 2 Printed/Typed Name:
Signature:
Month Day Year

17. Discrepancy
17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
17b. Alternate Facility (or Generator)
U.S. EPA ID Number:
Facility's Phone:
17c. Signature of Alternate Facility (or Generator)
Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a
Printed/Typed Name:
Signature:
Month Day Year

GENERATOR — INT'L — TRANSPORTER — DESIGNATED FACILITY



DESIGNATED FACILITY'S COPY

THIS FORM IS SUBJECT TO THE PRIVACY ACT (NAVMC 11000)

WEIGHT CERTIFICATE

DISTRIBUTION MANAGEMENT OFFICE
MARINE CORPS INSTALLATIONS EAST
MCB CAMP LEJEUNE

CUSTOMER _____ RANK _____

SSN _____ AGENCY _____

CARRIER/VEHICLE TYPE _____

VEHICLE # _____

VEHICLE ID# _____

DESTINATION/BLDG# _____

GBL/DOC# P.O.# _____

COMMODITY _____

SHIPPER _____

WEIGHMASTER _____

10:19 AM 02-04-14
G 76760 lb
T 00 lb
N 76760 lb

10:19 AM 02-04-14
G 76740 lb
T 32300 lb
N 44440 lb

MCBCL 4600/2 (REV 2-95)

WASTE MANIFEST

NC 61 100 22580 1 14012

5. Generator's Name and Mailing Address
COMMANDING GENERAL, MCIEAST-MCBCAMLEJ
12 POST LANE, MCB CAMP LEJEUNE, NC 28542

Generator's Site Address (if different than mailing address)

Generator's Phone: 910 451 9017

6. Transporter 1 Company Name
GLENNDALE LOGISTICS, AUTRYVILLE NC.

U.S. EPA ID Number

7. Transporter 2 Company Name

U.S. EPA ID Number

8. Designated Facility Name and Site Address
E S & J ENTERPRISES, INC.
1555 HOLLAND RD. - AUTRYVILLE, NC 28318

U.S. EPA ID Number
SR0600035

Facility's Phone: (910) 567-6138

| | 9. Waste Shipping Name and Description | 10. Containers No. | 10. Containers Type | 11. Total Quantity | 12. Unit Wt./Vol. | |
|---|---|---|---|---|---|---|
| | 1. PETROLEUM CONTAMINATED SOIL | | | 45,900 | LBS. | |
| | 2. | | | | | |
| | 3. | | | | | |
| | 4. | | | | | |

13. Special Handling Instructions and Additional Information

14. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offeror's Printed/Typed Name: EUGENE JONES | Signature: Eugene Jones | Month 01 | Day 24 | Year 14

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Greg Marlborough | Signature | Month | Day 24 | Year 14

Transporter 2 Printed/Typed Name | Signature | Month | Day | Year

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator) | U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator) | Month | Day | Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name | Signature | Month | Day | Year

GENERATOR — INT'L — TRANSPORTER — DESIGNATED FACILITY

169-BLS-C 5 11979 (Rev. 9/09)

DESIGNATED FACILITY'S COPY

**NON-HAZARDOUS WASTE MANIFEST**

1. Generator ID Number

2. Page 1 of

3. Emergency Response Phone

4. Waste Tracking Number 14013

5. Generator's Name and Mailing Address
COMMANDING GENERAL, MCI EAST MCB CAMP LEJ
12 POST LANE, MCB CAMP LEJEUNE, NC 28542
Generator's Phone: 910 451 9017

Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name
SOUTH RIVER TRUCKING, PO BOX 372, AUTRYVILLE NC 28318

U.S. EPA ID Number

7. Transporter 2 Company Name

U.S. EPA ID Number

8. Designated Facility Name and Site Address
E S & J ENTERPRISES, INC.
1556 HOLLAND RD. - AUTRYVILLE, NC 28318
Facility's Phone: (910) 567-6138

U.S. EPA ID Number
SR0600035

| | 9. Waste Shipping Name and Description | 10. Containers No. | 10. Containers Type | 11. Total Quantity | 12. Unit Wt./Vol. |
|---|---|---|---|---|---|
| 1. | PETROLEUM CONTAMINATED SOIL | 01 | PT | 32,600 | LBS. |
| 2. | | | | | |
| 3. | | | | | |
| 4. | | | | | |

13. Special Handling Instructions and Additional Information

14. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offeror's Printed/Typed Name: EUGENE JONES
Signature:
Month Day Year: 4 24 14

15. International Shipments ☐ Import to U.S. ☐ Export from U.S.
Port of entry/exit:
Transporter Signature (for exports only):
Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: LARRY TANNER
Signature:
Month Day Year: 1 24 14

Transporter 2 Printed/Typed Name
Signature
Month Day Year

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:

17c. Signature of Alternate Facility (or Generator)
Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name
Signature
Month Day Year

GENERATOR — INT'L — TRANSPORTER — DESIGNATED FACILITY

# APPENDIX K

# GROUNDWATER SAMPLING RECORDS

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Tetra Tech

# GROUNDWATER SAMPLE LOG SHEET



Project Site Name: MCB Camp Lejeune UST 1932
Project No.: 112IG6199

[] Domestic Well Data
[X] Monitoring Well Data
[] Other Well Type:
[] QA Sample Type:

Sample ID No.: 1932-MW-4
Sample Location: 1932-MW-4
Sampled By: J. Birkett
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

**SAMPLING DATA:**

| Date: 2-13-14 | Color (Visual) | pH (S.U.) | S.C. (mS/cm) | Temp. ($^0$C) | Turbidity (NTU) | DO (mg/l) | Salinity (%) | ORP (mV) |
|---|---|---|---|---|---|---|---|---|
| Time: 1152 | | | | | | | | |
| Method: Low Flow - Peristaltic | clear | 5.00 | 0.442 | 14.93 | 1.22 | 0.00 | 0.2 | 175 |

**PURGE DATA:**

| Date: 2-13-14 | Volume | pH | S.C. | Temp. | Turbidity | DO | Salinity | Other |
|---|---|---|---|---|---|---|---|---|
| Method: Low Flow - Peristaltic | | | | | | | | |
| Monitor Reading (ppm): -- | | | | | | | | |
| Well Casing Diameter & Material | | | | | | | | |
| Type: 2" PVC | | | | | | | | |
| Total Well Depth (TD): — | | See low flow purge sheet for detail | | | | | | |
| Static Water Level (WL): 9.07 | | | | | | | | |
| One Casing Volume(gal/L): | | | | | | | | |
| Start Purge (hrs): 1050 | | | | | | | | |
| End Purge (hrs): 1152 | | | | | | | | |
| Total Purge Time (min): 62 | | | | | | | | |
| Total Vol. Purged (gal/L): 3½ gal | | | | | | | | |

**SAMPLE COLLECTION INFORMATION:**

| Analysis | Preservative | Container Requirements | Collected |
|---|---|---|---|
| VOC ~~(8260B)~~ (6200 B) | HCL | 3 40-mL glass vials | yes |
| EDB (EPA 504) | Na2S2O3 | 3 40-mL glass vials | yes |
| TRPH MAVPH | HCL | 3 40-mL glass vials | yes |
| TRPH MAEPH | H2SO4 | 2 1-L Amber Bottle | yes |
| Metals (no Hg) (SM 3030C) | HNO3 | 1 250-mL poly bottle | yes |
| SVOCs (EPA 625) | none | 2 1-L Amber Bottle | yes |
| IRC | — | 2 1-L Amber bottles | yes |
| PCBs | — | 2 1-L Amber bottles | yes |
| Total Metals | $HNO_3$ | 1 250mL poly bottle | yes |
| | | | |
| | | | |
| | | | |

**OBSERVATIONS / NOTES:**

1152
Sample Nomenclature 1932-AQIDW-20140213
Petroleum odor

**Circle if Applicable:**

| MS/MSD | Duplicate ID No.: |
|---|---|
| — | — |

**Signature(s):**

# LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: Camp Lejeune UST 1932
PROJECT NUMBER: 112IG06199

WELL ID.: 1932-MW-4
DATE: 2-13-14

| Time (Hrs.) | Water Level (Ft. below TOC) | Flow (mL/Min.) | pH (S.U.) | S. Cond. (mS/cm) | Turb. (NTU) | DO (mg/L) | Temp. (Celcius) | ORP mV | Salinity % or ppt | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| 1050 | 9.07 | | | | | | | | | |
| 1055 | 9.21 | 300 | 5.65 | 0.502 | — | 0.00 | 14.13 | 136 | 0.2 | clear |
| 1100 | 9.30 | 300 | 5.11 | 0.463 | 4.26 | 0.00 | 14.62 | 155 | 0.2 | clear |
| 1105 | 9.30 | 300 | 5.06 | 0.459 | 3.57 | 0.00 | 14.71 | 160 | 0.2 | clear |
| 1110 | 9.30 | 300 | 5.03 | 0.450 | 2.31 | 0.00 | 14.81 | 165 | 0.2 | clear 1 gal |
| 1115 | 9.30 | 300 | 5.05 | 0.450 | 2.21 | 0.00 | 14.82 | 168 | 0.2 | " " |
| 1120 | 9.30 | 300 | 5.04 | 0.451 | 2.03 | 0.00 | 14.76 | 169 | 0.2 | " " |
| 1125 | 9.30 | 300 | 5.03 | 0.453 | 1.64 | 0.00 | 14.71 | 171 | 0.2 | " " |
| 1130 | 9.30 | 300 | 5.03 | 0.455 | 1.21 | 0.00 | 14.69 | 172 | 0.2 | clear 2 1/2 gal |
| 1135 | 9.30 | 300 | 5.02 | 0.449 | 1.53 | 0.00 | 14.74 | 173 | 0.2 | clear |
| 1140 | 9.30 | 300 | 5.01 | 0.444 | 1.41 | 0.00 | 14.85 | 173 | 0.2 | clear |
| 1145 | 9.30 | 300 | 5.00 | 0.442 | 1.21 | 0.00 | 14.87 | 174 | 0.2 | clear |
| 1150 | 9.30 | 300 | 5.00 | 0.442 | 1.22 | 0.00 | 14.93 | 175 | 0.2 | clear 3 1/2 gal |
| 1152 | Collect | sample | | | | | | | | |

SIGNATURE(S):

PAGE 1 OF 1

# APPENDIX L

# GROUNDWATER ANALYTICAL REPORT

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# Accutest Laboratories Southeast
# Chain of Custody

ACCUTEST LABORATORIES

4405 Vineland Road, Suite C-15 Orlando, Fl 32811
TEL. 407-425-6700 • FAX: 407-425-0707
www.accutest.com

Accutest JOB # FA12483

PAGE 1 OF 1

Accutest Quote #

SKIFF#

**Client / Reporting Information**

Company Name: Tetra Tech
Address: 17885 Von Karman Av Suite 500
City: Irvine State: CA Zip: 92614
Project Contact: Sabina Sidoko E-mail:
Phone#: 949-839-5022
Sampler(s) Name(s) (Printed): Jacob Birkett

**Project Information**

Project Name: UST 1932 MCB Camp Lejeune UST 1932
Street:
City: Jacksonville State: NC
Project #: 4659WE03
Fax #:
Client Purchase Order #: 1036773-20

**Analytical Information**

| Accutest Sample # | Field ID / Point of Collection | Date | Time | Sampled By | Matrix | Total # of Bottles | Other | None | HCl | HNO3 | H2SO4 | NaOH/ZnAc | DI Water | MeOH | SM6200B w/ethanol TPE/BATRE | MADEP VPH | MADEP EPH | Lead (SM 3030C) | EPA 625 base/neutral/acids + EDB + 10 largest non-target peaks | IRC | PCBs | TAL Total Metals | EDB EPA 504 | | | Matrix Codes / LAB USE ONLY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1932-MW-4 | 2-13-14 | 1152 | JB | GW | 19 | | 8 | 6 | | 2 | 2 | | | 3 | 3 | 2 | 1 | 2 | 02 | 04 | 10 | 3 | | | |
| 2 | 1932-TB01 | 2-13-14 | 1100 | Lab | QC | 2 | | | 2 | | | | | | | | | | | | | | | | | |
| | 1932-AGIDW-20140213 | 2-13-14 | 1152 | JB | GW | 5 | | 4 | | | 1 | | | | | | | | | 2 | 2 | 1 | | | 2 | |
| | | | | | | | | | | | | | | | | | | | | | | 2-13-14 | | | | |

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL - Sludge; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe

**TURNAROUND TIME (Business Days)**

Approved By: / Rush Code

- [ ] 10 Days Standard
- [ ] 7 Day RUSH
- [x] 5 Day RUSH
- [ ] 3 Day EMERGENCY
- [ ] 2 Day EMERGENCY
- [ ] 1 Day EMERGENCY
- [ ] OTHER

Emergency or Rush T/A Data Available VIA Email or Lablink

**Data Deliverable Information**

- [ ] COMMERCIAL "A" (RESULTS ONLY)
- [x] COMMERCIAL "B" (RESULTS PLUS QC)
- [ ] REDT1 (EPA LEVEL 3)
- [ ] FULT1 (EPA LEVEL 4)
- [x] EDD'S

**Comments / Remarks**

FedEx Airbill #8047-3475-2722

Report IDW parameters seperately

Sample Custody must be documented below each time samples change possession, including courier delivery.

| Relinquished by Sampler: | Date Time: | Received By: | Relinquished by: | Date Time: | Received By: |
|---|---|---|---|---|---|
| 1 Jacob Birkett | 2-13-14 1530 | 2 FedEx | 3 FC 02-14-14 | 1015 | 4 |
| Relinquished by: 5 | Date Time: | Received By: 6 | Relinquished by: 7 | Date Time: | Received By: 8 |

**Lab Use Only:** Custody Seal in Place: Y N Temp Blank Provided: Y N Preserved where Applicable: Y N Total # of Coolers: Cooler Temperature (s) Celsius: 2.0

Southeast ACCUTEST LABORATORIES

02/24/14

# Technical Report for

Tetra Tech EC, Inc

WE03, Camp Lejuene, NC

4659WE03

Accutest Job Number: FA12483

Sampling Date: 02/13/14

Report to:

Tetra Tech EC, Inc
17885 Von Karman Ave Suite 500
Irvine, CA 92614
lisa.bienkowski@tetratech.com; sabina.sudoko@tetratech.com

ATTN: Lisa Bienkowski

Total number of pages in report: **65**

NELAP ACCREDITED TNI LABORATORY

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Harry Behzadi, Ph.D.
Laboratory Director

Client Service contact: Andrea Colby 407-425-6700

Certifications: FL (E83510), LA (03051), KS (E-10327), IA (366), IL (200063), NC (573), NJ (FL002), SC (96038001) DoD ELAP (L-A-B L2229), CA (04226CA), TX (T104704404), PA (68-03573), VA (460177), AK, AR, GA, KY, MA, NV, OK, UT, WA

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Test results relate only to samples analyzed.



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# Table of Contents

-1-

**Section 1: Sample Summary** ..... 3
**Section 2: Case Narrative/Conformance Summary** ..... 4
**Section 3: Summary of Hits** ..... 6
**Section 4: Sample Results** ..... 7
**4.1:** FA12483-1: 1932-MW-4 ..... 8
**4.2:** FA12483-2: 1932-TB01 ..... 18
**Section 5: Misc. Forms** ..... 21
**5.1:** Certification Exceptions (DOD) ..... 22
**5.2:** Chain of Custody ..... 26
**Section 6: GC/MS Volatiles - QC Data Summaries** ..... 29
**6.1:** Method Blank Summary ..... 30
**6.2:** Blank Spike Summary ..... 33
**6.3:** Matrix Spike/Matrix Spike Duplicate Summary ..... 36
**Section 7: GC/MS Semi-volatiles - QC Data Summaries** ..... 39
**7.1:** Method Blank Summary ..... 40
**7.2:** Blank Spike Summary ..... 43
**7.3:** Matrix Spike/Matrix Spike Duplicate Summary ..... 45
**Section 8: GC Volatiles - QC Data Summaries** ..... 48
**8.1:** Method Blank Summary ..... 49
**8.2:** Blank Spike Summary ..... 51
**8.3:** Blank Spike/Blank Spike Duplicate Summary ..... 52
**8.4:** Matrix Spike/Matrix Spike Duplicate Summary ..... 53
**8.5:** Duplicate Summary ..... 54
**Section 9: GC Semi-volatiles - QC Data Summaries** ..... 55
**9.1:** Method Blank Summary ..... 56
**9.2:** Blank Spike/Blank Spike Duplicate Summary ..... 57
**9.3:** Duplicate Summary ..... 58
**Section 10: Metals Analysis - QC Data Summaries** ..... 59
**10.1:** Prep QC MP26820: Pb ..... 60

Accutest Laboratories

# Sample Summary

Tetra Tech EC, Inc

**Job No:** FA12483

WE03, Camp Lejuene, NC
Project No: 4659WE03

| Sample Number | Collected Date | Time | By | Received | Matrix Code | Type | Client Sample ID |
|---|---|---|---|---|---|---|---|
| FA12483-1 | 02/13/14 | 11:52 | JB | 02/14/14 | AQ | Ground Water | 1932-MW-4 |
| FA12483-2 | 02/13/14 | 11:00 | JB | 02/14/14 | AQ | Trip Blank Water | 1932-TB01 |

# SAMPLE DELIVERY GROUP CASE NARRATIVE

**Client:** Tetra Tech EC, Inc **Job No:** FA12483

**Site:** WE03, Camp Lejuene, NC **Report Date** 2/24/2014 8:45:57 PM

1 Sample and 1 Trip Blank were collected on 02/13/2014 and were received at Accutest SE on 02/14/2014 properly preserved, at 2 Deg. C and intact. These Samples received an Accutest job number of FA12483. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

## Volatiles by GCMS By Method SM 6200B

**Matrix:** AQ **Batch ID:** VA1428

All samples were analyzed within the recommended method holding time.

All method blanks for this batch meet method specific criteria.

Sample(s) FA12393-4MS, FA12393-4MSD were used as the QC samples indicated.

Matrix Spike Recovery(s) for Acetone, Bromoform, Methyl ethyl ketone, Tert-Butyl Formate are outside control limits. Probable cause is due to matrix interference. For method performance in a clean matrix, refer to Blank Spike.

Matrix Spike Duplicate Recovery(s) for Bromoform, Methyl ethyl ketone, Tert-Butyl Alcohol, Tert-Butyl Formate are outside control limits. Probable cause is due to matrix interference. For method performance in a clean matrix, refer to Blank Spike.

## Extractables by GCMS By Method EPA 625

**Matrix:** AQ **Batch ID:** OP50554

All samples were extracted within the recommended method holding time.

All samples were analyzed within the recommended method holding time.

All method blanks for this batch meet method specific criteria.

Sample(s) FA12584-1MS, FA12584-1MSD were used as the QC samples indicated.

Matrix Spike / Matrix Spike Duplicate Recovery(s) for 4,6-Dinitro-o-cresol, 4-Nitrophenol, Benzoic Acid, Di-n-octyl phthalate are outside control limits. Probable cause is due to matrix interference. For method performance in a clean matrix, refer to Blank Spike.

OP50554-MS: Dilution required due to matrix interference.

OP50554-MSD: Dilution required due to matrix interference.

## Volatiles by GC By Method EPA 504.1

**Matrix:** AQ **Batch ID:** OP50494

All samples were extracted within the recommended method holding time.

All samples were analyzed within the recommended method holding time.

All method blanks for this batch meet method specific criteria.

Sample(s) FA12480-1MS, FA12480-1MSD were used as the QC samples indicated.

## Volatiles by GC By Method MADEP VPH REV 1.1

**Matrix:** AQ **Batch ID:** GUV3349

All samples were analyzed within the recommended method holding time.

All method blanks for this batch meet method specific criteria.

Sample(s) FA12483-1DUP was used as the QC samples indicated.

## Extractables by GC By Method MADEP EPH REV 1.1

**Matrix:** AQ **Batch ID:** OP50527

All samples were extracted within the recommended method holding time.

All samples were analyzed within the recommended method holding time.

All method blanks for this batch meet method specific criteria.

Sample(s) FA12480-1DUP was used as the QC samples indicated.

## Metals By Method SW846 6010C

**Matrix:** AQ **Batch ID:** MP26820

All samples were digested within the recommended method holding time.

All samples were analyzed within the recommended method holding time.

All method blanks for this batch meet method specific criteria.

Sample(s) FA12483-1MS, FA12483-1MSD, FA12483-1PS, FA12483-1SDL, FA12483-1DUP were used as the QC samples for metals.

RPD(s) for Duplicate for Lead are outside control limits for sample MP26820-D1. RPD acceptable due to low duplicate and sample concentrations.

RPD(s) for Serial Dilution for Lead are outside control limits for sample MP26820-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

Accutest Laboratories Southeast (ALSE) certifies that this report meets the project requirements for analytical data produced for the samples as received at ALSE and as stated on the COC. ALSE certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the ALSE Quality Manual except as noted above. This report is to be used in its entirety. ALSE is not responsible for any assumptions of data quality if partial data packages are used

Narrative prepared by:

_____ Date: February 24, 2014

Lovelie Metzgar, QA Officer (signature on file)

# Summary of Hits



**Job Number:** FA12483
**Account:** Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC
**Collected:** 02/13/14

3

| Lab Sample ID<br>Analyte | Client Sample ID | Result/<br>Qual | LOQ | LOD | Units | Method |
|---|---|---|---|---|---|---|
| **FA12483-1** | **1932-MW-4** | | | | | |
| n-Butylbenzene | | 2.9 J | 5.0 | 2.0 | ug/l | SM 6200B |
| Ethylbenzene | | 29.5 | 5.0 | 2.0 | ug/l | SM 6200B |
| Isopropylbenzene | | 8.9 | 5.0 | 2.0 | ug/l | SM 6200B |
| Naphthalene | | 43.9 | 5.0 | 2.0 | ug/l | SM 6200B |
| n-Propylbenzene | | 32.9 | 5.0 | 2.0 | ug/l | SM 6200B |
| 1,2,4-Trimethylbenzene | | 283 | 5.0 | 2.0 | ug/l | SM 6200B |
| 1,3,5-Trimethylbenzene | | 74.3 | 5.0 | 2.0 | ug/l | SM 6200B |
| Xylene (total) | | 105 | 15 | 6.0 | ug/l | SM 6200B |
| m,p-Xylene | | 97.2 | 10 | 4.0 | ug/l | SM 6200B |
| o-Xylene | | 7.9 | 5.0 | 2.0 | ug/l | SM 6200B |
| 1-Methylnaphthalene | | 10.2 | 4.8 | 0.96 | ug/l | EPA 625 |
| 2-Methylnaphthalene | | 21.6 | 4.8 | 0.96 | ug/l | EPA 625 |
| Naphthalene | | 35.7 | 4.8 | 0.96 | ug/l | EPA 625 |
| Total TIC, Semi-Volatile | | 841 J | | [a] | ug/l | |
| C5- C8 Aliphatics (Unadj.) | | 425 | 100 | 35 [a] | ug/l | MADEP VPH REV 1.1 |
| C9- C12 Aliphatics (Unadj.) | | 288 J | 500 | 180 [a] | ug/l | MADEP VPH REV 1.1 |
| C9- C10 Aromatics (Unadj.) | | 1030 | 500 | 180 [a] | ug/l | MADEP VPH REV 1.1 |
| C11-C22 Aromatics (Unadj.) | | 159 J | 200 | 150 [a] | ug/l | MADEP EPH REV 1.1 |
| C9-C18 Aliphatics | | 138 J | 200 | 100 [a] | ug/l | MADEP EPH REV 1.1 |
| Lead | | 4.0 J | 5.0 | 2.0 | ug/l | SW846 6010C |
| **FA12483-2** | **1932-TB01** | | | | | |
| Acetone | | 2.4 J | 10 | 2.0 | ug/l | SM 6200B |
| Toluene | | 0.30 J | 0.50 | 0.20 | ug/l | SM 6200B |

(a) Value reported is laboratory DL (MDL).

Southeast ACCUTEST LABORATORIES



## Sample Results

Report of Analysis

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-MW-4 | | |
| **Lab Sample ID:** | FA12483-1 | **Date Sampled:** | 02/13/14 |
| **Matrix:** | AQ - Ground Water | **Date Received:** | 02/14/14 |
| **Method:** | SM 6200B | **Percent Solids:** | n/a |
| **Project:** | WE03, Camp Lejuene, NC | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | A0185677.D | 10 | 02/17/14 | TD | n/a | n/a | VA1428 |
| Run #2 | | | | | | | |

| | Purge Volume |
|---|---|
| Run #1 | 10.0 ml |
| Run #2 | |

**VOA List for NC, May 2012**

| CAS No. | Compound | Result | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|
| 67-64-1 | Acetone | 20 U | 100 | 20 | ug/l | |
| 71-43-2 | Benzene | 2.0 U | 5.0 | 2.0 | ug/l | |
| 108-86-1 | Bromobenzene | 2.0 U | 5.0 | 2.0 | ug/l | |
| 74-97-5 | Bromochloromethane | 2.0 U | 5.0 | 2.0 | ug/l | |
| 75-27-4 | Bromodichloromethane | 2.0 U | 5.0 | 2.0 | ug/l | |
| 75-25-2 | Bromoform | 2.0 U | 5.0 | 2.0 | ug/l | |
| 104-51-8 | n-Butylbenzene | 2.9 | 5.0 | 2.0 | ug/l | J |
| 135-98-8 | sec-Butylbenzene | 2.0 U | 5.0 | 2.0 | ug/l | |
| 98-06-6 | tert-Butylbenzene | 2.0 U | 5.0 | 2.0 | ug/l | |
| 108-90-7 | Chlorobenzene | 2.0 U | 5.0 | 2.0 | ug/l | |
| 75-00-3 | Chloroethane | 2.0 U | 5.0 | 2.0 | ug/l | |
| 67-66-3 | Chloroform | 2.0 U | 5.0 | 2.0 | ug/l | |
| 95-49-8 | o-Chlorotoluene | 2.0 U | 5.0 | 2.0 | ug/l | |
| 106-43-4 | p-Chlorotoluene | 2.0 U | 5.0 | 2.0 | ug/l | |
| 56-23-5 | Carbon tetrachloride | 2.0 U | 5.0 | 2.0 | ug/l | |
| 75-34-3 | 1,1-Dichloroethane | 2.0 U | 5.0 | 2.0 | ug/l | |
| 75-35-4 | 1,1-Dichloroethylene | 2.0 U | 5.0 | 2.0 | ug/l | |
| 563-58-6 | 1,1-Dichloropropene | 2.0 U | 5.0 | 2.0 | ug/l | |
| 106-93-4 | 1,2-Dibromoethane | 2.0 U | 5.0 | 2.0 | ug/l | |
| 107-06-2 | 1,2-Dichloroethane | 2.0 U | 5.0 | 2.0 | ug/l | |
| 78-87-5 | 1,2-Dichloropropane | 2.0 U | 5.0 | 2.0 | ug/l | |
| 142-28-9 | 1,3-Dichloropropane | 2.0 U | 5.0 | 2.0 | ug/l | |
| 108-20-3 | Di-Isopropyl ether | 2.0 U | 5.0 | 2.0 | ug/l | |
| 594-20-7 | 2,2-Dichloropropane | 2.0 U | 5.0 | 2.0 | ug/l | |
| 124-48-1 | Dibromochloromethane | 2.0 U | 5.0 | 2.0 | ug/l | |
| 75-71-8 | Dichlorodifluoromethane | 2.0 U | 5.0 | 2.0 | ug/l | |
| 156-59-2 | cis-1,2-Dichloroethylene | 2.0 U | 5.0 | 2.0 | ug/l | |
| 10061-01-5 | cis-1,3-Dichloropropene | 2.0 U | 5.0 | 2.0 | ug/l | |
| 541-73-1 | m-Dichlorobenzene | 2.0 U | 5.0 | 2.0 | ug/l | |
| 95-50-1 | o-Dichlorobenzene | 2.0 U | 5.0 | 2.0 | ug/l | |
| 106-46-7 | p-Dichlorobenzene | 2.0 U | 5.0 | 2.0 | ug/l | |
| 156-60-5 | trans-1,2-Dichloroethylene | 2.0 U | 5.0 | 2.0 | ug/l | |

U = Not detected LOD - Limit of Detection
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E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-MW-4 | | |
| **Lab Sample ID:** | FA12483-1 | **Date Sampled:** | 02/13/14 |
| **Matrix:** | AQ - Ground Water | **Date Received:** | 02/14/14 |
| **Method:** | SM 6200B | **Percent Solids:** | n/a |
| **Project:** | WE03, Camp Lejuene, NC | | |

**VOA List for NC, May 2012**

| CAS No. | Compound | Result | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|
| 10061-02-6 | trans-1,3-Dichloropropene | 2.0 U | 5.0 | 2.0 | ug/l | |
| 100-41-4 | Ethylbenzene | 29.5 | 5.0 | 2.0 | ug/l | |
| 64-17-5 | Ethyl Alcohol | 500 U | 1000 | 500 | ug/l | |
| 637-92-3 | Ethyl Tert Butyl Ether | 2.0 U | 5.0 | 2.0 | ug/l | |
| 591-78-6 | 2-Hexanone | 10 U | 50 | 10 | ug/l | |
| 98-82-8 | Isopropylbenzene | 8.9 | 5.0 | 2.0 | ug/l | |
| 99-87-6 | p-Isopropyltoluene | 2.0 U | 5.0 | 2.0 | ug/l | |
| 108-10-1 | 4-Methyl-2-pentanone | 10 U | 25 | 10 | ug/l | |
| 74-83-9 | Methyl bromide | 2.0 U | 5.0 | 2.0 | ug/l | |
| 74-87-3 | Methyl chloride | 2.0 U | 5.0 | 2.0 | ug/l | |
| 75-09-2 | Methylene chloride | 10 U | 20 | 10 | ug/l | |
| 78-93-3 | Methyl ethyl ketone | 10 U | 25 | 10 | ug/l | |
| 1634-04-4 | Methyl Tert Butyl Ether | 2.0 U | 5.0 | 2.0 | ug/l | |
| 91-20-3 | Naphthalene | 43.9 | 5.0 | 2.0 | ug/l | |
| 103-65-1 | n-Propylbenzene | 32.9 | 5.0 | 2.0 | ug/l | |
| 100-42-5 | Styrene | 2.0 U | 5.0 | 2.0 | ug/l | |
| 75-85-4 | Tert-Amyl Alcohol | 50 U | 100 | 50 | ug/l | |
| 994-05-8 | Tert-Amyl Methyl Ether | 5.0 U | 10 | 5.0 | ug/l | |
| 75-65-0 | Tert-Butyl Alcohol | 50 U | 100 | 50 | ug/l | |
| 762-75-4 | Tert-Butyl Formate | 50 U | 100 | 50 | ug/l | |
| 630-20-6 | 1,1,1,2-Tetrachloroethane | 2.0 U | 5.0 | 2.0 | ug/l | |
| 71-55-6 | 1,1,1-Trichloroethane | 2.0 U | 5.0 | 2.0 | ug/l | |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 2.0 U | 5.0 | 2.0 | ug/l | |
| 79-00-5 | 1,1,2-Trichloroethane | 2.0 U | 5.0 | 2.0 | ug/l | |
| 87-61-6 | 1,2,3-Trichlorobenzene | 2.0 U | 5.0 | 2.0 | ug/l | |
| 96-18-4 | 1,2,3-Trichloropropane | 2.0 U | 5.0 | 2.0 | ug/l | |
| 120-82-1 | 1,2,4-Trichlorobenzene | 2.0 U | 5.0 | 2.0 | ug/l | |
| 95-63-6 | 1,2,4-Trimethylbenzene | 283 | 5.0 | 2.0 | ug/l | |
| 108-67-8 | 1,3,5-Trimethylbenzene | 74.3 | 5.0 | 2.0 | ug/l | |
| 127-18-4 | Tetrachloroethylene | 2.0 U | 5.0 | 2.0 | ug/l | |
| 108-88-3 | Toluene | 2.0 U | 5.0 | 2.0 | ug/l | |
| 79-01-6 | Trichloroethylene | 2.0 U | 5.0 | 2.0 | ug/l | |
| 75-69-4 | Trichlorofluoromethane | 2.0 U | 5.0 | 2.0 | ug/l | |
| 75-01-4 | Vinyl chloride | 2.0 U | 5.0 | 2.0 | ug/l | |
| 108-05-4 | Vinyl Acetate | 10 U | 50 | 10 | ug/l | |
| 1330-20-7 | Xylene (total) | 105 | 15 | 6.0 | ug/l | |
| | m,p-Xylene | 97.2 | 10 | 4.0 | ug/l | |
| 95-47-6 | o-Xylene | 7.9 | 5.0 | 2.0 | ug/l | |

U = Not detected LOD - Limit of Detection
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E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-MW-4 | | |
| **Lab Sample ID:** | FA12483-1 | **Date Sampled:** | 02/13/14 |
| **Matrix:** | AQ - Ground Water | **Date Received:** | 02/14/14 |
| **Method:** | SM 6200B | **Percent Solids:** | n/a |
| **Project:** | WE03, Camp Lejuene, NC | | |

**VOA List for NC, May 2012**

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 1868-53-7 | Dibromofluoromethane | 97% | | 70-130% |
| 17060-07-0 | 1,2-Dichloroethane-D4 | 97% | | 70-130% |
| 2037-26-5 | Toluene-D8 | 99% | | 70-130% |
| 460-00-4 | 4-Bromofluorobenzene | 100% | | 70-130% |

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N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-MW-4 | | |
| **Lab Sample ID:** | FA12483-1 | **Date Sampled:** | 02/13/14 |
| **Matrix:** | AQ - Ground Water | **Date Received:** | 02/14/14 |
| **Method:** | EPA 625 EPA 625 | **Percent Solids:** | n/a |
| **Project:** | WE03, Camp Lejuene, NC | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | T011670.D | 1 | 02/21/14 | FS | 02/20/14 | OP50554 | ST554 |
| Run #2 | | | | | | | |

| | Initial Volume | Final Volume |
|---|---|---|
| Run #1 | 1040 ml | 1.0 ml |
| Run #2 | | |

**ABN List for NC, May 2012**

| CAS No. | Compound | Result | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|
| 65-85-0 | Benzoic Acid | 24 U | 48 | 24 | ug/l | |
| 95-57-8 | 2-Chlorophenol | 0.96 U | 4.8 | 0.96 | ug/l | |
| 59-50-7 | 4-Chloro-3-methyl phenol | 0.96 U | 4.8 | 0.96 | ug/l | |
| 120-83-2 | 2,4-Dichlorophenol | 0.96 U | 4.8 | 0.96 | ug/l | |
| 105-67-9 | 2,4-Dimethylphenol | 1.9 U | 4.8 | 1.9 | ug/l | |
| 51-28-5 | 2,4-Dinitrophenol | 19 U | 24 | 19 | ug/l | |
| 534-52-1 | 4,6-Dinitro-o-cresol | 3.8 U | 9.6 | 3.8 | ug/l | |
| 95-48-7 | 2-Methylphenol | 0.96 U | 4.8 | 0.96 | ug/l | |
| | 3&4-Methylphenol | 1.9 U | 4.8 | 1.9 | ug/l | |
| 88-75-5 | 2-Nitrophenol | 0.96 U | 4.8 | 0.96 | ug/l | |
| 100-02-7 | 4-Nitrophenol | 9.6 U | 24 | 9.6 | ug/l | |
| 87-86-5 | Pentachlorophenol | 9.6 U | 24 | 9.6 | ug/l | |
| 108-95-2 | Phenol | 1.9 U | 4.8 | 1.9 | ug/l | |
| 88-06-2 | 2,4,6-Trichlorophenol | 1.9 U | 4.8 | 1.9 | ug/l | |
| 83-32-9 | Acenaphthene | 0.96 U | 4.8 | 0.96 | ug/l | |
| 208-96-8 | Acenaphthylene | 0.96 U | 4.8 | 0.96 | ug/l | |
| 120-12-7 | Anthracene | 0.96 U | 4.8 | 0.96 | ug/l | |
| 56-55-3 | Benzo(a)anthracene | 0.96 U | 4.8 | 0.96 | ug/l | |
| 50-32-8 | Benzo(a)pyrene | 0.96 U | 4.8 | 0.96 | ug/l | |
| 205-99-2 | Benzo(b)fluoranthene | 0.96 U | 4.8 | 0.96 | ug/l | |
| 191-24-2 | Benzo(g,h,i)perylene | 0.96 U | 4.8 | 0.96 | ug/l | |
| 207-08-9 | Benzo(k)fluoranthene | 0.96 U | 4.8 | 0.96 | ug/l | |
| 101-55-3 | 4-Bromophenyl phenyl ether | 0.96 U | 4.8 | 0.96 | ug/l | |
| 85-68-7 | Butyl benzyl phthalate | 1.9 U | 4.8 | 1.9 | ug/l | |
| 100-51-6 | Benzyl Alcohol | 1.9 U | 4.8 | 1.9 | ug/l | |
| 91-58-7 | 2-Chloronaphthalene | 0.96 U | 4.8 | 0.96 | ug/l | |
| 106-47-8 | 4-Chloroaniline | 0.96 U | 4.8 | 0.96 | ug/l | |
| 218-01-9 | Chrysene | 0.96 U | 4.8 | 0.96 | ug/l | |
| 111-91-1 | bis(2-Chloroethoxy)methane | 0.96 U | 4.8 | 0.96 | ug/l | |
| 111-44-4 | bis(2-Chloroethyl)ether | 0.96 U | 4.8 | 0.96 | ug/l | |
| 108-60-1 | bis(2-Chloroisopropyl)ether | 0.96 U | 4.8 | 0.96 | ug/l | |
| 7005-72-3 | 4-Chlorophenyl phenyl ether | 0.96 U | 4.8 | 0.96 | ug/l | |

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J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-MW-4 | | |
| **Lab Sample ID:** | FA12483-1 | **Date Sampled:** | 02/13/14 |
| **Matrix:** | AQ - Ground Water | **Date Received:** | 02/14/14 |
| **Method:** | EPA 625 EPA 625 | **Percent Solids:** | n/a |
| **Project:** | WE03, Camp Lejuene, NC | | |

**ABN List for NC, May 2012**

| CAS No. | Compound | Result | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|
| 95-50-1 | 1,2-Dichlorobenzene | 1.9 U | 4.8 | 1.9 | ug/l | |
| 122-66-7 | 1,2-Diphenylhydrazine | 0.96 U | 4.8 | 0.96 | ug/l | |
| 541-73-1 | 1,3-Dichlorobenzene | 1.9 U | 4.8 | 1.9 | ug/l | |
| 106-46-7 | 1,4-Dichlorobenzene | 1.9 U | 4.8 | 1.9 | ug/l | |
| 91-94-1 | 3,3'-Dichlorobenzidine | 1.9 U | 4.8 | 1.9 | ug/l | |
| 53-70-3 | Dibenzo(a,h)anthracene | 0.96 U | 4.8 | 0.96 | ug/l | |
| 132-64-9 | Dibenzofuran | 0.96 U | 4.8 | 0.96 | ug/l | |
| 84-74-2 | Di-n-butyl phthalate | 1.9 U | 4.8 | 1.9 | ug/l | |
| 117-84-0 | Di-n-octyl phthalate | 1.9 U | 4.8 | 1.9 | ug/l | |
| 84-66-2 | Diethyl phthalate | 1.9 U | 4.8 | 1.9 | ug/l | |
| 131-11-3 | Dimethyl phthalate | 0.96 U | 4.8 | 0.96 | ug/l | |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 1.9 U | 4.8 | 1.9 | ug/l | |
| 206-44-0 | Fluoranthene | 0.96 U | 4.8 | 0.96 | ug/l | |
| 86-73-7 | Fluorene | 0.96 U | 4.8 | 0.96 | ug/l | |
| 118-74-1 | Hexachlorobenzene | 0.96 U | 4.8 | 0.96 | ug/l | |
| 87-68-3 | Hexachlorobutadiene | 0.96 U | 4.8 | 0.96 | ug/l | |
| 77-47-4 | Hexachlorocyclopentadiene | 1.9 U | 4.8 | 1.9 | ug/l | |
| 67-72-1 | Hexachloroethane | 1.9 U | 4.8 | 1.9 | ug/l | |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 0.96 U | 4.8 | 0.96 | ug/l | |
| 78-59-1 | Isophorone | 0.96 U | 4.8 | 0.96 | ug/l | |
| 90-12-0 | 1-Methylnaphthalene | 10.2 | 4.8 | 0.96 | ug/l | |
| 91-57-6 | 2-Methylnaphthalene | 21.6 | 4.8 | 0.96 | ug/l | |
| 91-20-3 | Naphthalene | 35.7 | 4.8 | 0.96 | ug/l | |
| 98-95-3 | Nitrobenzene | 0.96 U | 4.8 | 0.96 | ug/l | |
| 621-64-7 | N-Nitroso-di-n-propylamine | 0.96 U | 4.8 | 0.96 | ug/l | |
| 86-30-6 | N-Nitrosodiphenylamine | 1.9 U | 4.8 | 1.9 | ug/l | |
| 85-01-8 | Phenanthrene | 0.96 U | 4.8 | 0.96 | ug/l | |
| 129-00-0 | Pyrene | 0.96 U | 4.8 | 0.96 | ug/l | |
| 120-82-1 | 1,2,4-Trichlorobenzene | 0.96 U | 4.8 | 0.96 | ug/l | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 367-12-4 | 2-Fluorophenol | 39% | | 14-67% |
| 4165-62-2 | Phenol-d5 | 23% | | 10-50% |
| 118-79-6 | 2,4,6-Tribromophenol | 86% | | 33-118% |
| 4165-60-0 | Nitrobenzene-d5 | 78% | | 42-108% |
| 321-60-8 | 2-Fluorobiphenyl | 79% | | 40-106% |
| 1718-51-0 | Terphenyl-d14 | 96% | | 39-121% |

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N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-MW-4 | | |
| **Lab Sample ID:** | FA12483-1 | **Date Sampled:** | 02/13/14 |
| **Matrix:** | AQ - Ground Water | **Date Received:** | 02/14/14 |
| **Method:** | EPA 625 EPA 625 | **Percent Solids:** | n/a |
| **Project:** | WE03, Camp Lejuene, NC | | |

**ABN List for NC, May 2012**

| CAS No. | Tentatively Identified Compounds | R.T. | Est. Conc. | Units | Q |
|---|---|---|---|---|---|
| 103-65-1 | Benzene, propyl- | 4.93 | 30 | ug/l | JN |
| 611-14-3 | Benzene, 1-ethyl-2-methyl- | 4.98 | 200 | ug/l | JN |
| 108-67-8 | Benzene, 1,3,5-trimethyl- | 5.11 | 65 | ug/l | JN |
| 526-73-8 | Benzene, 1,2,3-trimethyl- | 5.21 | 290 | ug/l | JN |
| 95-63-6 | Benzene, 1,2,4-trimethyl- | 5.41 | 77 | ug/l | JN |
| | alkane | 5.51 | 40 | ug/l | J |
| 1074-43-7 | Benzene, 1-methyl-3-propyl- | 5.57 | 30 | ug/l | JN |
| 934-74-7 | Benzene, 1-ethyl-3,5-dimethyl- | 5.61 | 37 | ug/l | JN |
| 934-80-5 | Benzene, 4-ethyl-1,2-dimethyl- | 5.75 | 38 | ug/l | JN |
| 768-49-0 | Benzene, (2-methyl-1-propenyl)- | 6.28 | 34 | ug/l | JN |
| | Total TIC, Semi-Volatile | | 841 | ug/l | J |

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B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-MW-4 | | |
| **Lab Sample ID:** | FA12483-1 | **Date Sampled:** | 02/13/14 |
| **Matrix:** | AQ - Ground Water | **Date Received:** | 02/14/14 |
| **Method:** | EPA 504.1 EPA 504.1 | **Percent Solids:** | n/a |
| **Project:** | WE03, Camp Lejuene, NC | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | DD74187.D | 1 | 02/17/14 | NG | 02/17/14 | OP50494 | GDD2224 |
| Run #2 | | | | | | | |

| | Initial Volume | Final Volume |
|---|---|---|
| Run #1 | 36.2 ml | 2.0 ml |
| Run #2 | | |

| CAS No. | Compound | Result | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|
| 106-93-4 | 1,2-Dibromoethane | 0.0097 U | 0.019 | 0.0097 | ug/l | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 460-00-4 | 4-Bromofluorobenzene | 107% | | 63-137% |

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B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-MW-4 | | |
| **Lab Sample ID:** | FA12483-1 | **Date Sampled:** | 02/13/14 |
| **Matrix:** | AQ - Ground Water | **Date Received:** | 02/14/14 |
| **Method:** | MADEP VPH REV 1.1 | **Percent Solids:** | n/a |
| **Project:** | WE03, Camp Lejuene, NC | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | UV062878.D | 1 | 02/19/14 | MM | n/a | n/a | GUV3349 |
| Run #2 | UV062880.D | 5 | 02/19/14 | MM | n/a | n/a | GUV3349 |

| | Purge Volume |
|---|---|
| Run #1 | 5.0 ml |
| Run #2 | 5.0 ml |

**MADEP VPH List**

| CAS No. | Compound | Result | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|
| | C5- C8 Aliphatics (Unadj.) | 425 | 100 | 35 [a] | ug/l | |
| | C9- C12 Aliphatics (Unadj.) | 288 [b] | 500 | 180 [a] | ug/l | J |
| | C9- C10 Aromatics (Unadj.) | 1030 [b] | 500 | 180 [a] | ug/l | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 460-00-4 | BFB | 119% | 113% | 70-130% |
| 460-00-4 | BFB | 119% | 113% | 70-130% |

(a) Value reported is laboratory DL (MDL).
(b) Result is from Run# 2

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B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-MW-4 | | |
| **Lab Sample ID:** | FA12483-1 | **Date Sampled:** | 02/13/14 |
| **Matrix:** | AQ - Ground Water | **Date Received:** | 02/14/14 |
| **Method:** | MADEP EPH REV 1.1 SW846 3510C | **Percent Solids:** | n/a |
| **Project:** | WE03, Camp Lejuene, NC | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | NN007744.D | 1 | 02/21/14 | NAF | 02/19/14 | OP50527 | GNN338 |
| Run #2 | | | | | | | |

| | Initial Volume | Final Volume |
|---|---|---|
| Run #1 | 1000 ml | 2.0 ml |
| Run #2 | | |

**MAEPH List**

| CAS No. | Compound | Result | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|
| | C11-C22 Aromatics (Unadj.) | 159 | 200 | 150 [a] | ug/l | J |
| | C9-C18 Aliphatics | 138 | 200 | 100 [a] | ug/l | J |
| | C19-C36 Aliphatics | 100 U | 200 | 100 [a] | ug/l | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 3386-33-2 | 1-Chlorooctadecane | 63% | | 40-140% |
| 580-13-2 | 2-Bromonaphthalene | 98% | | 40-140% |
| 84-15-1 | o-Terphenyl | 72% | | 40-140% |
| 321-60-8 | 2-Fluorobiphenyl | 89% | | 40-140% |

(a) Value reported is laboratory DL (MDL).

U = Not detected LOD - Limit of Detection
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E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-MW-4 | | |
| **Lab Sample ID:** | FA12483-1 | **Date Sampled:** | 02/13/14 |
| **Matrix:** | AQ - Ground Water | **Date Received:** | 02/14/14 |
| | | **Percent Solids:** | n/a |
| **Project:** | WE03, Camp Lejuene, NC | | |

**Total Metals Analysis**

| Analyte | Result | LOQ | LOD | Units | DF | Prep | Analyzed | By | Method | Prep Method |
|---|---|---|---|---|---|---|---|---|---|---|
| Lead | 4.0 J | 5.0 | 2.0 | ug/l | 1 | 02/14/14 | 02/14/14 | LM | SW846 6010C [1] | SM 3030C [2] |

(1) Instrument QC Batch: MA11397
(2) Prep QC Batch: MP26820

LOQ = Limit of Quantitation
LOD = Limit of Detection

U = Indicates a result < LOD
J = Indicates a result > = LOD but < LOQ

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-TB01 | | |
| **Lab Sample ID:** | FA12483-2 | **Date Sampled:** | 02/13/14 |
| **Matrix:** | AQ - Trip Blank Water | **Date Received:** | 02/14/14 |
| **Method:** | SM 6200B | **Percent Solids:** | n/a |
| **Project:** | WE03, Camp Lejuene, NC | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | A0185665.D | 1 | 02/17/14 | TD | n/a | n/a | VA1428 |
| Run #2 | | | | | | | |

| | Purge Volume |
|---|---|
| Run #1 | 10.0 ml |
| Run #2 | |

**VOA List for NC, May 2012**

| CAS No. | Compound | Result | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|
| 67-64-1 | Acetone | 2.4 | 10 | 2.0 | ug/l | J |
| 71-43-2 | Benzene | 0.20 U | 0.50 | 0.20 | ug/l | |
| 108-86-1 | Bromobenzene | 0.20 U | 0.50 | 0.20 | ug/l | |
| 74-97-5 | Bromochloromethane | 0.20 U | 0.50 | 0.20 | ug/l | |
| 75-27-4 | Bromodichloromethane | 0.20 U | 0.50 | 0.20 | ug/l | |
| 75-25-2 | Bromoform | 0.20 U | 0.50 | 0.20 | ug/l | |
| 104-51-8 | n-Butylbenzene | 0.20 U | 0.50 | 0.20 | ug/l | |
| 135-98-8 | sec-Butylbenzene | 0.20 U | 0.50 | 0.20 | ug/l | |
| 98-06-6 | tert-Butylbenzene | 0.20 U | 0.50 | 0.20 | ug/l | |
| 108-90-7 | Chlorobenzene | 0.20 U | 0.50 | 0.20 | ug/l | |
| 75-00-3 | Chloroethane | 0.20 U | 0.50 | 0.20 | ug/l | |
| 67-66-3 | Chloroform | 0.20 U | 0.50 | 0.20 | ug/l | |
| 95-49-8 | o-Chlorotoluene | 0.20 U | 0.50 | 0.20 | ug/l | |
| 106-43-4 | p-Chlorotoluene | 0.20 U | 0.50 | 0.20 | ug/l | |
| 56-23-5 | Carbon tetrachloride | 0.20 U | 0.50 | 0.20 | ug/l | |
| 75-34-3 | 1,1-Dichloroethane | 0.20 U | 0.50 | 0.20 | ug/l | |
| 75-35-4 | 1,1-Dichloroethylene | 0.20 U | 0.50 | 0.20 | ug/l | |
| 563-58-6 | 1,1-Dichloropropene | 0.20 U | 0.50 | 0.20 | ug/l | |
| 106-93-4 | 1,2-Dibromoethane | 0.20 U | 0.50 | 0.20 | ug/l | |
| 107-06-2 | 1,2-Dichloroethane | 0.20 U | 0.50 | 0.20 | ug/l | |
| 78-87-5 | 1,2-Dichloropropane | 0.20 U | 0.50 | 0.20 | ug/l | |
| 142-28-9 | 1,3-Dichloropropane | 0.20 U | 0.50 | 0.20 | ug/l | |
| 108-20-3 | Di-Isopropyl ether | 0.20 U | 0.50 | 0.20 | ug/l | |
| 594-20-7 | 2,2-Dichloropropane | 0.20 U | 0.50 | 0.20 | ug/l | |
| 124-48-1 | Dibromochloromethane | 0.20 U | 0.50 | 0.20 | ug/l | |
| 75-71-8 | Dichlorodifluoromethane | 0.20 U | 0.50 | 0.20 | ug/l | |
| 156-59-2 | cis-1,2-Dichloroethylene | 0.20 U | 0.50 | 0.20 | ug/l | |
| 10061-01-5 | cis-1,3-Dichloropropene | 0.20 U | 0.50 | 0.20 | ug/l | |
| 541-73-1 | m-Dichlorobenzene | 0.20 U | 0.50 | 0.20 | ug/l | |
| 95-50-1 | o-Dichlorobenzene | 0.20 U | 0.50 | 0.20 | ug/l | |
| 106-46-7 | p-Dichlorobenzene | 0.20 U | 0.50 | 0.20 | ug/l | |
| 156-60-5 | trans-1,2-Dichloroethylene | 0.20 U | 0.50 | 0.20 | ug/l | |

U = Not detected LOD - Limit of Detection
LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-TB01 | | |
| **Lab Sample ID:** | FA12483-2 | **Date Sampled:** | 02/13/14 |
| **Matrix:** | AQ - Trip Blank Water | **Date Received:** | 02/14/14 |
| **Method:** | SM 6200B | **Percent Solids:** | n/a |
| **Project:** | WE03, Camp Lejuene, NC | | |

**VOA List for NC, May 2012**

| CAS No. | Compound | Result | LOQ | LOD | Units | Q |
|---|---|---|---|---|---|---|
| 10061-02-6 | trans-1,3-Dichloropropene | 0.20 U | 0.50 | 0.20 | ug/l | |
| 100-41-4 | Ethylbenzene | 0.20 U | 0.50 | 0.20 | ug/l | |
| 64-17-5 | Ethyl Alcohol | 50 U | 100 | 50 | ug/l | |
| 637-92-3 | Ethyl Tert Butyl Ether | 0.20 U | 0.50 | 0.20 | ug/l | |
| 591-78-6 | 2-Hexanone | 1.0 U | 5.0 | 1.0 | ug/l | |
| 98-82-8 | Isopropylbenzene | 0.20 U | 0.50 | 0.20 | ug/l | |
| 99-87-6 | p-Isopropyltoluene | 0.20 U | 0.50 | 0.20 | ug/l | |
| 108-10-1 | 4-Methyl-2-pentanone | 1.0 U | 2.5 | 1.0 | ug/l | |
| 74-83-9 | Methyl bromide | 0.20 U | 0.50 | 0.20 | ug/l | |
| 74-87-3 | Methyl chloride | 0.20 U | 0.50 | 0.20 | ug/l | |
| 75-09-2 | Methylene chloride | 1.0 U | 2.0 | 1.0 | ug/l | |
| 78-93-3 | Methyl ethyl ketone | 1.0 U | 2.5 | 1.0 | ug/l | |
| 1634-04-4 | Methyl Tert Butyl Ether | 0.20 U | 0.50 | 0.20 | ug/l | |
| 91-20-3 | Naphthalene | 0.20 U | 0.50 | 0.20 | ug/l | |
| 103-65-1 | n-Propylbenzene | 0.20 U | 0.50 | 0.20 | ug/l | |
| 100-42-5 | Styrene | 0.20 U | 0.50 | 0.20 | ug/l | |
| 75-85-4 | Tert-Amyl Alcohol | 5.0 U | 10 | 5.0 | ug/l | |
| 994-05-8 | Tert-Amyl Methyl Ether | 0.50 U | 1.0 | 0.50 | ug/l | |
| 75-65-0 | Tert-Butyl Alcohol | 5.0 U | 10 | 5.0 | ug/l | |
| 762-75-4 | Tert-Butyl Formate | 5.0 U | 10 | 5.0 | ug/l | |
| 630-20-6 | 1,1,1,2-Tetrachloroethane | 0.20 U | 0.50 | 0.20 | ug/l | |
| 71-55-6 | 1,1,1-Trichloroethane | 0.20 U | 0.50 | 0.20 | ug/l | |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 0.20 U | 0.50 | 0.20 | ug/l | |
| 79-00-5 | 1,1,2-Trichloroethane | 0.20 U | 0.50 | 0.20 | ug/l | |
| 87-61-6 | 1,2,3-Trichlorobenzene | 0.20 U | 0.50 | 0.20 | ug/l | |
| 96-18-4 | 1,2,3-Trichloropropane | 0.20 U | 0.50 | 0.20 | ug/l | |
| 120-82-1 | 1,2,4-Trichlorobenzene | 0.20 U | 0.50 | 0.20 | ug/l | |
| 95-63-6 | 1,2,4-Trimethylbenzene | 0.20 U | 0.50 | 0.20 | ug/l | |
| 108-67-8 | 1,3,5-Trimethylbenzene | 0.20 U | 0.50 | 0.20 | ug/l | |
| 127-18-4 | Tetrachloroethylene | 0.20 U | 0.50 | 0.20 | ug/l | |
| 108-88-3 | Toluene | 0.30 | 0.50 | 0.20 | ug/l | J |
| 79-01-6 | Trichloroethylene | 0.20 U | 0.50 | 0.20 | ug/l | |
| 75-69-4 | Trichlorofluoromethane | 0.20 U | 0.50 | 0.20 | ug/l | |
| 75-01-4 | Vinyl chloride | 0.20 U | 0.50 | 0.20 | ug/l | |
| 108-05-4 | Vinyl Acetate | 1.0 U | 5.0 | 1.0 | ug/l | |
| 1330-20-7 | Xylene (total) | 0.60 U | 1.5 | 0.60 | ug/l | |
| | m,p-Xylene | 0.40 U | 1.0 | 0.40 | ug/l | |
| 95-47-6 | o-Xylene | 0.20 U | 0.50 | 0.20 | ug/l | |

U = Not detected LOD - Limit of Detection
LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | 1932-TB01 | | |
| **Lab Sample ID:** | FA12483-2 | **Date Sampled:** | 02/13/14 |
| **Matrix:** | AQ - Trip Blank Water | **Date Received:** | 02/14/14 |
| **Method:** | SM 6200B | **Percent Solids:** | n/a |
| **Project:** | WE03, Camp Lejuene, NC | | |

**VOA List for NC, May 2012**

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 1868-53-7 | Dibromofluoromethane | 97% | | 70-130% |
| 17060-07-0 | 1,2-Dichloroethane-D4 | 98% | | 70-130% |
| 2037-26-5 | Toluene-D8 | 99% | | 70-130% |
| 460-00-4 | 4-Bromofluorobenzene | 101% | | 70-130% |

U = Not detected LOD - Limit of Detection
LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Southeast ACCUTEST LABORATORIES



# Misc. Forms

## Custody Documents and Other Forms

Includes the following where applicable:

- Certification Exceptions (DOD)
- Chain of Custody

# Parameter Certification Exceptions



**Job Number:** FA12483
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

The following parameters included in this report are exceptions to DOD certification.
The certification status of each is indicated below.

| Parameter | CAS# | Method | Mat | Certification Status |
|---|---|---|---|---|
| Acetone | 67-64-1 | SM 6200B | AQ | Accutest is not certified for this parameter. |
| Benzene | 71-43-2 | SM 6200B | AQ | Accutest is not certified for this parameter. |
| Bromobenzene | 108-86-1 | SM 6200B | AQ | Accutest is not certified for this parameter. |
| Bromochloromethane | 74-97-5 | SM 6200B | AQ | Accutest is not certified for this parameter. |
| Bromodichloromethane | 75-27-4 | SM 6200B | AQ | Accutest is not certified for this parameter. |
| Bromoform | 75-25-2 | SM 6200B | AQ | Accutest is not certified for this parameter. |
| n-Butylbenzene | 104-51-8 | SM 6200B | AQ | Accutest is not certified for this parameter. |
| sec-Butylbenzene | 135-98-8 | SM 6200B | AQ | Accutest is not certified for this parameter. |
| tert-Butylbenzene | 98-06-6 | SM 6200B | AQ | Accutest is not certified for this parameter. |
| Carbon tetrachloride | 56-23-5 | SM 6200B | AQ | Accutest is not certified for this parameter. |
| Chlorobenzene | 108-90-7 | SM 6200B | AQ | Accutest is not certified for this parameter. |
| Chloroethane | 75-00-3 | SM 6200B | AQ | Accutest is not certified for this parameter. |
| Chloroform | 67-66-3 | SM 6200B | AQ | Accutest is not certified for this parameter. |
| o-Chlorotoluene | 95-49-8 | SM 6200B | AQ | Accutest is not certified for this parameter. |
| p-Chlorotoluene | 106-43-4 | SM 6200B | AQ | Accutest is not certified for this parameter. |
| 1,1-Dichloroethane | 75-34-3 | SM 6200B | AQ | Accutest is not certified for this parameter. |
| 1,1-Dichloroethylene | 75-35-4 | SM 6200B | AQ | Accutest is not certified for this parameter. |
| 1,1-Dichloropropene | 563-58-6 | SM 6200B | AQ | Accutest is not certified for this parameter. |
| 1,2-Dibromoethane | 106-93-4 | SM 6200B | AQ | Accutest is not certified for this parameter. |
| 1,2-Dichloroethane | 107-06-2 | SM 6200B | AQ | Accutest is not certified for this parameter. |
| 1,2-Dichloropropane | 78-87-5 | SM 6200B | AQ | Accutest is not certified for this parameter. |
| 1,3-Dichloropropane | 142-28-9 | SM 6200B | AQ | Accutest is not certified for this parameter. |
| 2,2-Dichloropropane | 594-20-7 | SM 6200B | AQ | Accutest is not certified for this parameter. |
| Di-Isopropyl ether | 108-20-3 | SM 6200B | AQ | Accutest is not certified for this parameter. |
| Dibromochloromethane | 124-48-1 | SM 6200B | AQ | Accutest is not certified for this parameter. |
| Dichlorodifluoromethane | 75-71-8 | SM 6200B | AQ | Accutest is not certified for this parameter. |
| cis-1,2-Dichloroethylene | 156-59-2 | SM 6200B | AQ | Accutest is not certified for this parameter. |
| cis-1,3-Dichloropropene | 10061-01-5 | SM 6200B | AQ | Accutest is not certified for this parameter. |
| m-Dichlorobenzene | 541-73-1 | SM 6200B | AQ | Accutest is not certified for this parameter. |
| o-Dichlorobenzene | 95-50-1 | SM 6200B | AQ | Accutest is not certified for this parameter. |
| p-Dichlorobenzene | 106-46-7 | SM 6200B | AQ | Accutest is not certified for this parameter. |
| trans-1,2-Dichloroethylene | 156-60-5 | SM 6200B | AQ | Accutest is not certified for this parameter. |
| trans-1,3-Dichloropropene | 10061-02-6 | SM 6200B | AQ | Accutest is not certified for this parameter. |
| Ethyl Alcohol | 64-17-5 | SM 6200B | AQ | Accutest is not certified for this parameter. |
| Ethyl Tert Butyl Ether | 637-92-3 | SM 6200B | AQ | Accutest is not certified for this parameter. |
| Ethylbenzene | 100-41-4 | SM 6200B | AQ | Accutest is not certified for this parameter. |
| 2-Hexanone | 591-78-6 | SM 6200B | AQ | Accutest is not certified for this parameter. |
| Isopropylbenzene | 98-82-8 | SM 6200B | AQ | Accutest is not certified for this parameter. |
| p-Isopropyltoluene | 99-87-6 | SM 6200B | AQ | Accutest is not certified for this parameter. |
| 4-Methyl-2-pentanone | 108-10-1 | SM 6200B | AQ | Accutest is not certified for this parameter. |
| Methyl Tert Butyl Ether | 1634-04-4 | SM 6200B | AQ | Accutest is not certified for this parameter. |
| Methyl bromide | 74-83-9 | SM 6200B | AQ | Accutest is not certified for this parameter. |

# Parameter Certification Exceptions

**Job Number:** FA12483
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

The following parameters included in this report are exceptions to DOD certification.
The certification status of each is indicated below.

| Parameter | CAS# | Method | Mat | Certification Status |
|---|---|---|---|---|
| Methyl chloride | 74-87-3 | SM 6200B | AQ | Accutest is not certified for this parameter. |
| Methyl ethyl ketone | 78-93-3 | SM 6200B | AQ | Accutest is not certified for this parameter. |
| Methylene chloride | 75-09-2 | SM 6200B | AQ | Accutest is not certified for this parameter. |
| Naphthalene | 91-20-3 | SM 6200B | AQ | Accutest is not certified for this parameter. |
| n-Propylbenzene | 103-65-1 | SM 6200B | AQ | Accutest is not certified for this parameter. |
| Styrene | 100-42-5 | SM 6200B | AQ | Accutest is not certified for this parameter. |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | SM 6200B | AQ | Accutest is not certified for this parameter. |
| 1,1,1-Trichloroethane | 71-55-6 | SM 6200B | AQ | Accutest is not certified for this parameter. |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | SM 6200B | AQ | Accutest is not certified for this parameter. |
| 1,1,2-Trichloroethane | 79-00-5 | SM 6200B | AQ | Accutest is not certified for this parameter. |
| 1,2,3-Trichlorobenzene | 87-61-6 | SM 6200B | AQ | Accutest is not certified for this parameter. |
| 1,2,3-Trichloropropane | 96-18-4 | SM 6200B | AQ | Accutest is not certified for this parameter. |
| 1,2,4-Trichlorobenzene | 120-82-1 | SM 6200B | AQ | Accutest is not certified for this parameter. |
| 1,2,4-Trimethylbenzene | 95-63-6 | SM 6200B | AQ | Accutest is not certified for this parameter. |
| 1,3,5-Trimethylbenzene | 108-67-8 | SM 6200B | AQ | Accutest is not certified for this parameter. |
| Tert-Amyl Alcohol | 75-85-4 | SM 6200B | AQ | Accutest is not certified for this parameter. |
| Tert-Amyl Methyl Ether | 994-05-8 | SM 6200B | AQ | Accutest is not certified for this parameter. |
| Tert-Butyl Alcohol | 75-65-0 | SM 6200B | AQ | Accutest is not certified for this parameter. |
| Tert-Butyl Formate | 762-75-4 | SM 6200B | AQ | Accutest is not certified for this parameter. |
| Tetrachloroethylene | 127-18-4 | SM 6200B | AQ | Accutest is not certified for this parameter. |
| Toluene | 108-88-3 | SM 6200B | AQ | Accutest is not certified for this parameter. |
| Trichloroethylene | 79-01-6 | SM 6200B | AQ | Accutest is not certified for this parameter. |
| Trichlorofluoromethane | 75-69-4 | SM 6200B | AQ | Accutest is not certified for this parameter. |
| Vinyl Acetate | 108-05-4 | SM 6200B | AQ | Accutest is not certified for this parameter. |
| Vinyl chloride | 75-01-4 | SM 6200B | AQ | Accutest is not certified for this parameter. |
| Xylene (total) | 1330-20-7 | SM 6200B | AQ | Accutest is not certified for this parameter. |
| m,p-Xylene | | SM 6200B | AQ | Accutest is not certified for this parameter. |
| o-Xylene | 95-47-6 | SM 6200B | AQ | Accutest is not certified for this parameter. |
| Acenaphthene | 83-32-9 | EPA 625 | AQ | Accutest is not certified for this parameter. |
| Acenaphthylene | 208-96-8 | EPA 625 | AQ | Accutest is not certified for this parameter. |
| Anthracene | 120-12-7 | EPA 625 | AQ | Accutest is not certified for this parameter. |
| 4-Bromophenyl phenyl ether | 101-55-3 | EPA 625 | AQ | Accutest is not certified for this parameter. |
| Benzo(a)anthracene | 56-55-3 | EPA 625 | AQ | Accutest is not certified for this parameter. |
| Benzo(a)pyrene | 50-32-8 | EPA 625 | AQ | Accutest is not certified for this parameter. |
| Benzo(b)fluoranthene | 205-99-2 | EPA 625 | AQ | Accutest is not certified for this parameter. |
| Benzo(g,h,i)perylene | 191-24-2 | EPA 625 | AQ | Accutest is not certified for this parameter. |
| Benzo(k)fluoranthene | 207-08-9 | EPA 625 | AQ | Accutest is not certified for this parameter. |
| Benzoic Acid | 65-85-0 | EPA 625 | AQ | Accutest is not certified for this parameter. |
| Benzyl Alcohol | 100-51-6 | EPA 625 | AQ | Accutest is not certified for this parameter. |
| Butyl benzyl phthalate | 85-68-7 | EPA 625 | AQ | Accutest is not certified for this parameter. |
| 2-Chloronaphthalene | 91-58-7 | EPA 625 | AQ | Accutest is not certified for this parameter. |
| 2-Chlorophenol | 95-57-8 | EPA 625 | AQ | Accutest is not certified for this parameter. |

# Parameter Certification Exceptions



**Job Number:** FA12483
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

The following parameters included in this report are exceptions to DOD certification.
The certification status of each is indicated below.

| Parameter | CAS# | Method | Mat | Certification Status |
|---|---|---|---|---|
| 4-Chloro-3-methyl phenol | 59-50-7 | EPA 625 | AQ | Accutest is not certified for this parameter. |
| 4-Chloroaniline | 106-47-8 | EPA 625 | AQ | Accutest is not certified for this parameter. |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | EPA 625 | AQ | Accutest is not certified for this parameter. |
| Chrysene | 218-01-9 | EPA 625 | AQ | Accutest is not certified for this parameter. |
| bis(2-Chloroethoxy)methane | 111-91-1 | EPA 625 | AQ | Accutest is not certified for this parameter. |
| bis(2-Chloroethyl)ether | 111-44-4 | EPA 625 | AQ | Accutest is not certified for this parameter. |
| bis(2-Chloroisopropyl)ether | 108-60-1 | EPA 625 | AQ | Accutest is not certified for this parameter. |
| 1,2-Dichlorobenzene | 95-50-1 | EPA 625 | AQ | Accutest is not certified for this parameter. |
| 1,2-Diphenylhydrazine | 122-66-7 | EPA 625 | AQ | Accutest is not certified for this parameter. |
| 1,3-Dichlorobenzene | 541-73-1 | EPA 625 | AQ | Accutest is not certified for this parameter. |
| 1,4-Dichlorobenzene | 106-46-7 | EPA 625 | AQ | Accutest is not certified for this parameter. |
| 2,4-Dichlorophenol | 120-83-2 | EPA 625 | AQ | Accutest is not certified for this parameter. |
| 2,4-Dimethylphenol | 105-67-9 | EPA 625 | AQ | Accutest is not certified for this parameter. |
| 2,4-Dinitrophenol | 51-28-5 | EPA 625 | AQ | Accutest is not certified for this parameter. |
| 3,3'-Dichlorobenzidine | 91-94-1 | EPA 625 | AQ | Accutest is not certified for this parameter. |
| 4,6-Dinitro-o-cresol | 534-52-1 | EPA 625 | AQ | Accutest is not certified for this parameter. |
| Di-n-butyl phthalate | 84-74-2 | EPA 625 | AQ | Accutest is not certified for this parameter. |
| Di-n-octyl phthalate | 117-84-0 | EPA 625 | AQ | Accutest is not certified for this parameter. |
| Dibenzo(a,h)anthracene | 53-70-3 | EPA 625 | AQ | Accutest is not certified for this parameter. |
| Dibenzofuran | 132-64-9 | EPA 625 | AQ | Accutest is not certified for this parameter. |
| Diethyl phthalate | 84-66-2 | EPA 625 | AQ | Accutest is not certified for this parameter. |
| Dimethyl phthalate | 131-11-3 | EPA 625 | AQ | Accutest is not certified for this parameter. |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | EPA 625 | AQ | Accutest is not certified for this parameter. |
| Fluoranthene | 206-44-0 | EPA 625 | AQ | Accutest is not certified for this parameter. |
| Fluorene | 86-73-7 | EPA 625 | AQ | Accutest is not certified for this parameter. |
| Hexachlorobenzene | 118-74-1 | EPA 625 | AQ | Accutest is not certified for this parameter. |
| Hexachlorobutadiene | 87-68-3 | EPA 625 | AQ | Accutest is not certified for this parameter. |
| Hexachlorocyclopentadiene | 77-47-4 | EPA 625 | AQ | Accutest is not certified for this parameter. |
| Hexachloroethane | 67-72-1 | EPA 625 | AQ | Accutest is not certified for this parameter. |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | EPA 625 | AQ | Accutest is not certified for this parameter. |
| Isophorone | 78-59-1 | EPA 625 | AQ | Accutest is not certified for this parameter. |
| 1-Methylnaphthalene | 90-12-0 | EPA 625 | AQ | Accutest is not certified for this parameter. |
| 2-Methylnaphthalene | 91-57-6 | EPA 625 | AQ | Accutest is not certified for this parameter. |
| 2-Methylphenol | 95-48-7 | EPA 625 | AQ | Accutest is not certified for this parameter. |
| 3&4-Methylphenol | | EPA 625 | AQ | Accutest is not certified for this parameter. |
| 2-Nitrophenol | 88-75-5 | EPA 625 | AQ | Accutest is not certified for this parameter. |
| 4-Nitrophenol | 100-02-7 | EPA 625 | AQ | Accutest is not certified for this parameter. |
| N-Nitroso-di-n-propylamine | 621-64-7 | EPA 625 | AQ | Accutest is not certified for this parameter. |
| N-Nitrosodiphenylamine | 86-30-6 | EPA 625 | AQ | Accutest is not certified for this parameter. |
| Naphthalene | 91-20-3 | EPA 625 | AQ | Accutest is not certified for this parameter. |
| Nitrobenzene | 98-95-3 | EPA 625 | AQ | Accutest is not certified for this parameter. |
| Pentachlorophenol | 87-86-5 | EPA 625 | AQ | Accutest is not certified for this parameter. |

# Parameter Certification Exceptions

**Job Number:** FA12483
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

The following parameters included in this report are exceptions to DOD certification.
The certification status of each is indicated below.

| Parameter | CAS# | Method | Mat | Certification Status |
|---|---|---|---|---|
| Phenanthrene | 85-01-8 | **EPA 625** | AQ | Accutest is not certified for this parameter. |
| Phenol | 108-95-2 | **EPA 625** | AQ | Accutest is not certified for this parameter. |
| Pyrene | 129-00-0 | **EPA 625** | AQ | Accutest is not certified for this parameter. |
| 1,2,4-Trichlorobenzene | 120-82-1 | **EPA 625** | AQ | Accutest is not certified for this parameter. |
| 2,4,6-Trichlorophenol | 88-06-2 | **EPA 625** | AQ | Accutest is not certified for this parameter. |
| 1,2-Dibromoethane | 106-93-4 | **EPA 504.1** | AQ | Accutest is not certified for this parameter. |

# Accutest Laboratories Southeast
## Chain of Custody

ACCUTEST LABORATORIES

4405 Vineland Road, Suite C-15 Orlando, Fl 32811
TEL. 407-425-6700 • FAX: 407-425-0707
www.accutest.com

Accutest JOB # FA12483

PAGE 1 OF 1

Accutest Quote #

SKIFF#

**Client / Reporting Information**

Company Name: Tetra Tech
Address: 15375 Von Karman Av Suite 500
City: Irvine State: CA Zip: 92614
Project Contact: Sabina Sidoko E-mail:
Phone#: 949-839-5022
Sampler(s) Name(s) (Printed): Jacob Birkett

**Project Information**

Project Name: UST 1932 MCB Camp Lejeune UST 1932
Street:
City: Jacksonville State: NC
Project #: 4659WE03
Fax #:
Client Purchase Order #: 1636773-20

**Analytical Information**

| Accutest Sample # | Field ID / Point of Collection | Date | Time | Sampled By | Matrix | Total # of Bottles | Other | None | HCl | HNO3 | H2SO4 | NaOH | NaOH-ZnAc | Na Water | HCl | SM6200B w/dilution TPE TBE | MADEP VPH | MADEP EPH | Lead (SW 3050C) | EPA 625 base/neutral fraction 1,4-Dioxane | IDW Disposal Analysis TRC | PCBs | TAL Total Metals | EPA 504 EDB | | | | Lab Use Only |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1932-MW-4 | 2-13-14 | 1152 | JB | GW | 19 | | | 6 | | | | 2 | | | | 3 | 2 | 1 | 2 | 02 | 54 | 90 | 3 | | | | |
| 2 | 1932-TB01 | 2-13-14 | 1100 | Lab | QC | 2 | | | 2 | | | | | | | 2 | | | | | | | | | | | | |
| | 1932-AGIDW-20140213 | 2-13-14 | 1152 | JB | GW | 5 | | | 4 | | | | 1 | | | | | | | | 2 | 2 | 1 | | | | | |

**Matrix Codes**

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL - Sludge
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe

**TURNAROUND TIME (Business Days)**

Approved By: / Rush Code

- [ ] 10 Days Standard
- [ ] 7 Day RUSH
- [x] 5 Day RUSH
- [ ] 3 Day EMERGENCY
- [ ] 2 Day EMERGENCY
- [ ] 1 Day EMERGENCY
- [ ] OTHER

Emergency or Rush T/A Data Available VIA Email or Lablink

**Data Deliverable Information**

- [ ] COMMERCIAL "A" (RESULTS ONLY)
- [x] COMMERCIAL "B" (RESULTS PLUS QC)
- [ ] REDT1 (EPA LEVEL 3)
- [ ] FULT1 (EPA LEVEL 4)
- [x] EDD'S

**Comments / Remarks**

FedEx Airbill #8047-3475-2722
Report IDW parameters seperately

Sample Custody must be documented below each time samples change possession, including courier delivery.

| Relinquished by Sampler: | Date Time: | Received By: | Relinquished by: | Date Time: | Received By: |
|---|---|---|---|---|---|
| 1 Jacob Birkett | 2-13-14 1530 | 2 FedEx | 3 FC 02-14-14 | 10:15 | 4 |
| Relinquished by: 5 | Date Time: | Received By: 6 | Relinquished by: 7 | Date Time: | Received By: 8 |

**Lab Use Only:** Custody Seal in Place: Y N Temp Blank Provided: Y N Preserved where Applicable: Y N Total # of Coolers: Cooler Temperature (s) Celsius: 2.0

**FA12483: Chain of Custody**
**Page 1 of 3**

# ACCUTEST LABORATORIES SAMPLE RECEIPT CONFIRMATION

ACCUTEST'S JOB NUMBER: FA12483 CLIENT: Tetra Tech PROJECT: USTS MCB UST 1932

DATE/TIME RECEIVED: 02-14-14 1015 {MM/DD/YY 24:00} NUMBER OF COOLERS RECEIVED: 1

METHOD OF DELIVERY: FEDEX UPS ACCUTEST COURIER GREYHOUND DELIVERY OTHER

AIRBILL NUMBERS: 8047 3475 2722

## COOLER INFORMATION

- [ ] CUSTODY SEAL NOT PRESENT OR NOT INTACT
- [ ] CHAIN OF CUSTODY NOT RECEIVED (COC)
- [ ] ANALYSIS REQUESTED IS UNCLEAR OR MISSING
- [ ] SAMPLE DATES OR TIMES UNCLEAR OR MISSING
- [ ] TEMPERATURE CRITERIA NOT MET
- [ ] WET ICE PRESENT

## TRIP BLANK INFORMATION

- [x] TRIP BLANK PROVIDED
- [ ] TRIP BLANK NOT PROVIDED
- [ ] TRIP BLANK NOT ON COC
- [x] TRIP BLANK INTACT
- [ ] TRIP BLANK NOT INTACT
- [x] RECEIVED WATER TRIP BLANK
- [ ] RECEIVED SOIL TRIP BLANK

## MISC. INFORMATION

NUMBER OF ENCORES ? 25-GRAM _____ 5-GRAM _____

NUMBER OF 5035 FIELD KITS ? _____

NUMBER OF LAB FILTERED METALS ? _____

## TEMPERATURE INFORMATION

- [ ] IR THERM ID 1 CORR. FACTOR -0.4
- [ ] OBSERVED TEMPS: 2.4
- [ ] CORRECTED TEMPS: 2.0

## SAMPLE INFORMATION

- [ ] SAMPLE LABELS PRESENT ON ALL BOTTLES
- [ ] INCORRECT NUMBER OF CONTAINERS USED
- [ ] SAMPLE RECEIVED IMPROPERLY PRESERVED
- [ ] INSUFFICIENT VOLUME FOR ANALYSIS
- [ ] DATES/TIMES ON COC DO NOT MATCH SAMPLE LABEL
- [ ] ID'S ON COC DO NOT MATCH LABEL
- [ ] VOC VIALS HAVE HEADSPACE (MACRO BUBBLES)
- [ ] BOTTLES RECEIVED BUT ANALYSIS NOT REQUESTED
- [ ] NO BOTTLES RECEIVED FOR ANALYSIS REQUESTED
- [ ] UNCLEAR FILTERING OR COMPOSITING INSTRUCTIONS
- [ ] SAMPLE CONTAINER(S) RECEIVED BROKEN
- [ ] % SOLIDS JAR NOT RECEIVED
- [ ] 5035 FIELD KIT FROZEN WITHIN 48 HOUR'S
- [ ] RESIDUAL CHLORINE PRESENT

{APPICABLE TO EPA 600 SERIES OR NORTH CAROLINA ORGANICS}

SUMMARY OF COMMENTS:

TECHNICIAN SIGNATURE/DATE RW 021414 REVIEWER SIGNATURE/DATE 2-14-14

NF 12/10

receipt confirmation 122910.xls

5.2 5

**FA12483: Chain of Custody**
**Page 2 of 3**

ORIGIN ID:ORFA

SHIP DATE: 13FEB14
ACTWGT: 70.9 LB
CAD: 7P091424
DIMS: 22x12x14 IN

BILL RECIPIENT

UNITED STATES US

TO SUPPLY RCVG
ACCUTEST LABORATORIES SE INC
4405 VINELAND RD
STE C15
ORLANDO FL 32811
(407) 425-6700

REF:
INV:
PO:
DEPT:

FedEx Express

2 of 2
MPS# 0681 7979 1651 5311
Mstr# 8047 3475 2722

FRI - 14 FEB 10:30A
PRIORITY OVERNIGHT

0215

XH TIXA

20

32811
FL-US MCO

**FA12483: Chain of Custody**
**Page 3 of 3**

Southeast ACCUTEST LABORATORIES



# GC/MS Volatiles

## QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

# Method Blank Summary



**Job Number:** FA12483
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| VA1428-MB | A0185664.D | 1 | 02/17/14 | TD | n/a | n/a | VA1428 |

**The QC reported here applies to the following samples:** **Method:** SM 6200B

FA12483-1, FA12483-2

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 67-64-1 | Acetone | ND | 10 | 1.0 | ug/l | |
| 71-43-2 | Benzene | ND | 0.50 | 0.10 | ug/l | |
| 108-86-1 | Bromobenzene | ND | 0.50 | 0.10 | ug/l | |
| 74-97-5 | Bromochloromethane | ND | 0.50 | 0.10 | ug/l | |
| 75-27-4 | Bromodichloromethane | ND | 0.50 | 0.10 | ug/l | |
| 75-25-2 | Bromoform | ND | 0.50 | 0.10 | ug/l | |
| 104-51-8 | n-Butylbenzene | ND | 0.50 | 0.10 | ug/l | |
| 135-98-8 | sec-Butylbenzene | ND | 0.50 | 0.10 | ug/l | |
| 98-06-6 | tert-Butylbenzene | ND | 0.50 | 0.10 | ug/l | |
| 108-90-7 | Chlorobenzene | ND | 0.50 | 0.10 | ug/l | |
| 75-00-3 | Chloroethane | ND | 0.50 | 0.12 | ug/l | |
| 67-66-3 | Chloroform | ND | 0.50 | 0.10 | ug/l | |
| 95-49-8 | o-Chlorotoluene | ND | 0.50 | 0.10 | ug/l | |
| 106-43-4 | p-Chlorotoluene | ND | 0.50 | 0.10 | ug/l | |
| 56-23-5 | Carbon tetrachloride | ND | 0.50 | 0.10 | ug/l | |
| 75-34-3 | 1,1-Dichloroethane | ND | 0.50 | 0.10 | ug/l | |
| 75-35-4 | 1,1-Dichloroethylene | ND | 0.50 | 0.10 | ug/l | |
| 563-58-6 | 1,1-Dichloropropene | ND | 0.50 | 0.10 | ug/l | |
| 106-93-4 | 1,2-Dibromoethane | ND | 0.50 | 0.10 | ug/l | |
| 107-06-2 | 1,2-Dichloroethane | ND | 0.50 | 0.10 | ug/l | |
| 78-87-5 | 1,2-Dichloropropane | ND | 0.50 | 0.10 | ug/l | |
| 142-28-9 | 1,3-Dichloropropane | ND | 0.50 | 0.10 | ug/l | |
| 108-20-3 | Di-Isopropyl ether | ND | 0.50 | 0.10 | ug/l | |
| 594-20-7 | 2,2-Dichloropropane | ND | 0.50 | 0.10 | ug/l | |
| 124-48-1 | Dibromochloromethane | ND | 0.50 | 0.10 | ug/l | |
| 75-71-8 | Dichlorodifluoromethane | ND | 0.50 | 0.10 | ug/l | |
| 156-59-2 | cis-1,2-Dichloroethylene | ND | 0.50 | 0.10 | ug/l | |
| 10061-01-5 | cis-1,3-Dichloropropene | ND | 0.50 | 0.10 | ug/l | |
| 541-73-1 | m-Dichlorobenzene | ND | 0.50 | 0.10 | ug/l | |
| 95-50-1 | o-Dichlorobenzene | ND | 0.50 | 0.10 | ug/l | |
| 106-46-7 | p-Dichlorobenzene | ND | 0.50 | 0.10 | ug/l | |
| 156-60-5 | trans-1,2-Dichloroethylene | ND | 0.50 | 0.10 | ug/l | |
| 10061-02-6 | trans-1,3-Dichloropropene | ND | 0.50 | 0.10 | ug/l | |
| 100-41-4 | Ethylbenzene | ND | 0.50 | 0.10 | ug/l | |
| 64-17-5 | Ethyl Alcohol | ND | 100 | 26 | ug/l | |
| 637-92-3 | Ethyl Tert Butyl Ether | ND | 0.50 | 0.10 | ug/l | |

# Method Blank Summary



**Job Number:** FA12483
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| VA1428-MB | A0185664.D | 1 | 02/17/14 | TD | n/a | n/a | VA1428 |

**The QC reported here applies to the following samples:** **Method:** SM 6200B

FA12483-1, FA12483-2

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 591-78-6 | 2-Hexanone | ND | 5.0 | 0.50 | ug/l | |
| 98-82-8 | Isopropylbenzene | ND | 0.50 | 0.10 | ug/l | |
| 99-87-6 | p-Isopropyltoluene | ND | 0.50 | 0.10 | ug/l | |
| 108-10-1 | 4-Methyl-2-pentanone | ND | 2.5 | 0.50 | ug/l | |
| 74-83-9 | Methyl bromide | ND | 0.50 | 0.10 | ug/l | |
| 74-87-3 | Methyl chloride | ND | 0.50 | 0.10 | ug/l | |
| 75-09-2 | Methylene chloride | ND | 2.0 | 1.0 | ug/l | |
| 78-93-3 | Methyl ethyl ketone | ND | 2.5 | 0.68 | ug/l | |
| 1634-04-4 | Methyl Tert Butyl Ether | ND | 0.50 | 0.10 | ug/l | |
| 91-20-3 | Naphthalene | ND | 0.50 | 0.10 | ug/l | |
| 103-65-1 | n-Propylbenzene | ND | 0.50 | 0.10 | ug/l | |
| 100-42-5 | Styrene | ND | 0.50 | 0.10 | ug/l | |
| 75-85-4 | Tert-Amyl Alcohol | ND | 10 | 3.3 | ug/l | |
| 994-05-8 | Tert-Amyl Methyl Ether | ND | 1.0 | 0.17 | ug/l | |
| 75-65-0 | Tert-Butyl Alcohol | ND | 10 | 2.0 | ug/l | |
| 762-75-4 | Tert-Butyl Formate | ND | 10 | 2.0 | ug/l | |
| 630-20-6 | 1,1,1,2-Tetrachloroethane | ND | 0.50 | 0.10 | ug/l | |
| 71-55-6 | 1,1,1-Trichloroethane | ND | 0.50 | 0.10 | ug/l | |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | ND | 0.50 | 0.10 | ug/l | |
| 79-00-5 | 1,1,2-Trichloroethane | ND | 0.50 | 0.11 | ug/l | |
| 87-61-6 | 1,2,3-Trichlorobenzene | ND | 0.50 | 0.10 | ug/l | |
| 96-18-4 | 1,2,3-Trichloropropane | ND | 0.50 | 0.12 | ug/l | |
| 120-82-1 | 1,2,4-Trichlorobenzene | ND | 0.50 | 0.10 | ug/l | |
| 95-63-6 | 1,2,4-Trimethylbenzene | ND | 0.50 | 0.10 | ug/l | |
| 108-67-8 | 1,3,5-Trimethylbenzene | ND | 0.50 | 0.10 | ug/l | |
| 127-18-4 | Tetrachloroethylene | ND | 0.50 | 0.10 | ug/l | |
| 108-88-3 | Toluene | ND | 0.50 | 0.10 | ug/l | |
| 79-01-6 | Trichloroethylene | ND | 0.50 | 0.10 | ug/l | |
| 75-69-4 | Trichlorofluoromethane | ND | 0.50 | 0.10 | ug/l | |
| 75-01-4 | Vinyl chloride | ND | 0.50 | 0.10 | ug/l | |
| 108-05-4 | Vinyl Acetate | ND | 5.0 | 0.18 | ug/l | |
| 1330-20-7 | Xylene (total) | ND | 1.5 | 0.20 | ug/l | |
| | m,p-Xylene | ND | 1.0 | 0.10 | ug/l | |
| 95-47-6 | o-Xylene | ND | 0.50 | 0.10 | ug/l | |

# Method Blank Summary



**Job Number:** FA12483
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| VA1428-MB | A0185664.D | 1 | 02/17/14 | TD | n/a | n/a | VA1428 |

**The QC reported here applies to the following samples:** **Method:** SM 6200B

FA12483-1, FA12483-2

| CAS No. | Surrogate Recoveries | | Limits |
|---|---|---|---|
| 1868-53-7 | Dibromofluoromethane | 97% | 70-130% |
| 17060-07-0 | 1,2-Dichloroethane-D4 | 97% | 70-130% |
| 2037-26-5 | Toluene-D8 | 99% | 70-130% |
| 460-00-4 | 4-Bromofluorobenzene | 100% | 70-130% |

# Blank Spike Summary



**Job Number:** FA12483
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| VA1428-BS | A0185662.D | 1 | 02/17/14 | TD | n/a | n/a | VA1428 |

**The QC reported here applies to the following samples:** **Method:** SM 6200B

FA12483-1, FA12483-2

| CAS No. | Compound | Spike ug/l | BSP ug/l | BSP % | Limits |
|---|---|---|---|---|---|
| 67-64-1 | Acetone | 50 | 50.1 | 100 | 70-130 |
| 71-43-2 | Benzene | 10 | 10.3 | 103 | 70-130 |
| 108-86-1 | Bromobenzene | 10 | 10.5 | 105 | 70-130 |
| 74-97-5 | Bromochloromethane | 10 | 10.3 | 103 | 70-130 |
| 75-27-4 | Bromodichloromethane | 10 | 9.8 | 98 | 70-130 |
| 75-25-2 | Bromoform | 10 | 9.0 | 90 | 70-130 |
| 104-51-8 | n-Butylbenzene | 10 | 10.4 | 104 | 70-130 |
| 135-98-8 | sec-Butylbenzene | 10 | 10.3 | 103 | 70-130 |
| 98-06-6 | tert-Butylbenzene | 10 | 10.2 | 102 | 70-130 |
| 108-90-7 | Chlorobenzene | 10 | 10.5 | 105 | 70-130 |
| 75-00-3 | Chloroethane | 10 | 11.2 | 112 | 60-140 |
| 67-66-3 | Chloroform | 10 | 10.4 | 104 | 70-130 |
| 95-49-8 | o-Chlorotoluene | 10 | 10.6 | 106 | 70-130 |
| 106-43-4 | p-Chlorotoluene | 10 | 10.3 | 103 | 70-130 |
| 56-23-5 | Carbon tetrachloride | 10 | 10.1 | 101 | 70-130 |
| 75-34-3 | 1,1-Dichloroethane | 10 | 10.3 | 103 | 70-130 |
| 75-35-4 | 1,1-Dichloroethylene | 10 | 10.2 | 102 | 70-130 |
| 563-58-6 | 1,1-Dichloropropene | 10 | 10.1 | 101 | 70-130 |
| 106-93-4 | 1,2-Dibromoethane | 10 | 10.1 | 101 | 70-130 |
| 107-06-2 | 1,2-Dichloroethane | 10 | 10.2 | 102 | 70-130 |
| 78-87-5 | 1,2-Dichloropropane | 10 | 10.1 | 101 | 70-130 |
| 142-28-9 | 1,3-Dichloropropane | 10 | 10.2 | 102 | 70-130 |
| 108-20-3 | Di-Isopropyl ether | 10 | 10.3 | 103 | 70-130 |
| 594-20-7 | 2,2-Dichloropropane | 10 | 10.2 | 102 | 70-130 |
| 124-48-1 | Dibromochloromethane | 10 | 9.3 | 93 | 70-130 |
| 75-71-8 | Dichlorodifluoromethane | 10 | 9.8 | 98 | 60-140 |
| 156-59-2 | cis-1,2-Dichloroethylene | 10 | 10.4 | 104 | 70-130 |
| 10061-01-5 | cis-1,3-Dichloropropene | 10 | 9.8 | 98 | 70-130 |
| 541-73-1 | m-Dichlorobenzene | 10 | 10.2 | 102 | 70-130 |
| 95-50-1 | o-Dichlorobenzene | 10 | 10.2 | 102 | 70-130 |
| 106-46-7 | p-Dichlorobenzene | 10 | 10.2 | 102 | 70-130 |
| 156-60-5 | trans-1,2-Dichloroethylene | 10 | 10.3 | 103 | 70-130 |
| 10061-02-6 | trans-1,3-Dichloropropene | 10 | 9.9 | 99 | 70-130 |
| 100-41-4 | Ethylbenzene | 10 | 10.5 | 105 | 70-130 |
| 64-17-5 | Ethyl Alcohol | 500 | 474 | 95 | 70-130 |
| 637-92-3 | Ethyl Tert Butyl Ether | 10 | 10.6 | 106 | 70-130 |

* = Outside of Control Limits.

# Blank Spike Summary



**Job Number:** FA12483
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| VA1428-BS | A0185662.D | 1 | 02/17/14 | TD | n/a | n/a | VA1428 |

**The QC reported here applies to the following samples:** **Method:** SM 6200B

FA12483-1, FA12483-2

| CAS No. | Compound | Spike ug/l | BSP ug/l | BSP % | Limits |
|---|---|---|---|---|---|
| 591-78-6 | 2-Hexanone | 50 | 52.2 | 104 | 70-130 |
| 98-82-8 | Isopropylbenzene | 10 | 10.4 | 104 | 70-130 |
| 99-87-6 | p-Isopropyltoluene | 10 | 10.3 | 103 | 70-130 |
| 108-10-1 | 4-Methyl-2-pentanone | 50 | 55.5 | 111 | 70-130 |
| 74-83-9 | Methyl bromide | 10 | 11.8 | 118 | 60-140 |
| 74-87-3 | Methyl chloride | 10 | 10.1 | 101 | 60-140 |
| 75-09-2 | Methylene chloride | 10 | 11.3 | 113 | 70-130 |
| 78-93-3 | Methyl ethyl ketone | 50 | 51.6 | 103 | 70-130 |
| 1634-04-4 | Methyl Tert Butyl Ether | 10 | 10.3 | 103 | 70-130 |
| 91-20-3 | Naphthalene | 10 | 10.3 | 103 | 70-130 |
| 103-65-1 | n-Propylbenzene | 10 | 10.5 | 105 | 70-130 |
| 100-42-5 | Styrene | 10 | 10.2 | 102 | 70-130 |
| 75-85-4 | Tert-Amyl Alcohol | 100 | 104 | 104 | 70-130 |
| 994-05-8 | Tert-Amyl Methyl Ether | 10 | 10.3 | 103 | 70-130 |
| 75-65-0 | Tert-Butyl Alcohol | 100 | 122 | 122 | 70-130 |
| 762-75-4 | Tert-Butyl Formate | 100 | 80.9 | 81 | 70-130 |
| 630-20-6 | 1,1,1,2-Tetrachloroethane | 10 | 9.9 | 99 | 70-130 |
| 71-55-6 | 1,1,1-Trichloroethane | 10 | 10.4 | 104 | 70-130 |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 10 | 10.2 | 102 | 70-130 |
| 79-00-5 | 1,1,2-Trichloroethane | 10 | 10.3 | 103 | 70-130 |
| 87-61-6 | 1,2,3-Trichlorobenzene | 10 | 10.2 | 102 | 70-130 |
| 96-18-4 | 1,2,3-Trichloropropane | 10 | 10.4 | 104 | 70-130 |
| 120-82-1 | 1,2,4-Trichlorobenzene | 10 | 10.1 | 101 | 70-130 |
| 95-63-6 | 1,2,4-Trimethylbenzene | 10 | 10.2 | 102 | 70-130 |
| 108-67-8 | 1,3,5-Trimethylbenzene | 10 | 10.4 | 104 | 70-130 |
| 127-18-4 | Tetrachloroethylene | 10 | 10.2 | 102 | 70-130 |
| 108-88-3 | Toluene | 10 | 10.2 | 102 | 70-130 |
| 79-01-6 | Trichloroethylene | 10 | 10.2 | 102 | 70-130 |
| 75-69-4 | Trichlorofluoromethane | 10 | 9.8 | 98 | 60-140 |
| 75-01-4 | Vinyl chloride | 10 | 9.9 | 99 | 60-140 |
| 108-05-4 | Vinyl Acetate | 50 | 61.6 | 123 | 70-130 |
| 1330-20-7 | Xylene (total) | 30 | 31.6 | 105 | 70-130 |
| | m,p-Xylene | 20 | 21.4 | 107 | 70-130 |
| 95-47-6 | o-Xylene | 10 | 10.3 | 103 | 70-130 |

* = Outside of Control Limits.

# Blank Spike Summary



**Job Number:** FA12483
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| VA1428-BS | A0185662.D | 1 | 02/17/14 | TD | n/a | n/a | VA1428 |

**The QC reported here applies to the following samples:** **Method:** SM 6200B

FA12483-1, FA12483-2

| CAS No. | Surrogate Recoveries | BSP | Limits |
|---|---|---|---|
| 1868-53-7 | Dibromofluoromethane | 99% | 70-130% |
| 17060-07-0 | 1,2-Dichloroethane-D4 | 100% | 70-130% |
| 2037-26-5 | Toluene-D8 | 100% | 70-130% |
| 460-00-4 | 4-Bromofluorobenzene | 99% | 70-130% |

* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary



**Job Number:** FA12483
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| FA12393-4MS | A0185670.D | 1 | 02/17/14 | TD | n/a | n/a | VA1428 |
| FA12393-4MSD | A0185671.D | 1 | 02/17/14 | TD | n/a | n/a | VA1428 |
| FA12393-4 | A0185679.D | 1 | 02/17/14 | TD | n/a | n/a | VA1428 |

**The QC reported here applies to the following samples:** **Method:** SM 6200B

FA12483-1, FA12483-2

| CAS No. | Compound | FA12393-4 ug/l | Q | Spike ug/l | MS ug/l | MS % | MSD ug/l | MSD % | RPD | Limits Rec/RPD |
|---|---|---|---|---|---|---|---|---|---|---|
| 67-64-1 | Acetone | ND | | 50 | 34.7 | 69* | 36.6 | 73 | 5 | 70-130/20 |
| 71-43-2 | Benzene | ND | | 10 | 9.2 | 92 | 9.6 | 96 | 4 | 70-130/20 |
| 108-86-1 | Bromobenzene | ND | | 10 | 8.9 | 89 | 9.5 | 95 | 7 | 70-130/20 |
| 74-97-5 | Bromochloromethane | ND | | 10 | 8.4 | 84 | 8.6 | 86 | 2 | 70-130/20 |
| 75-27-4 | Bromodichloromethane | ND | | 10 | 8.6 | 86 | 8.6 | 86 | 0 | 70-130/20 |
| 75-25-2 | Bromoform | ND | | 10 | 6.6 | 66* | 6.8 | 68* | 3 | 70-130/20 |
| 104-51-8 | n-Butylbenzene | ND | | 10 | 8.6 | 86 | 9.2 | 92 | 7 | 70-130/20 |
| 135-98-8 | sec-Butylbenzene | ND | | 10 | 9.5 | 95 | 10.4 | 104 | 9 | 70-130/20 |
| 98-06-6 | tert-Butylbenzene | ND | | 10 | 9.3 | 93 | 10.1 | 101 | 8 | 70-130/20 |
| 108-90-7 | Chlorobenzene | ND | | 10 | 9.7 | 97 | 10.4 | 104 | 7 | 70-130/20 |
| 75-00-3 | Chloroethane | ND | | 10 | 10.1 | 101 | 11.1 | 111 | 9 | 60-140/20 |
| 67-66-3 | Chloroform | 0.22 | J | 10 | 9.6 | 94 | 9.8 | 96 | 2 | 70-130/20 |
| 95-49-8 | o-Chlorotoluene | ND | | 10 | 9.6 | 96 | 10.4 | 104 | 8 | 70-130/20 |
| 106-43-4 | p-Chlorotoluene | ND | | 10 | 9.7 | 97 | 10.4 | 104 | 7 | 70-130/20 |
| 56-23-5 | Carbon tetrachloride | ND | | 10 | 8.6 | 86 | 8.9 | 89 | 3 | 70-130/20 |
| 75-34-3 | 1,1-Dichloroethane | ND | | 10 | 9.4 | 94 | 9.7 | 97 | 3 | 70-130/20 |
| 75-35-4 | 1,1-Dichloroethylene | ND | | 10 | 9.7 | 97 | 10.1 | 101 | 4 | 70-130/20 |
| 563-58-6 | 1,1-Dichloropropene | ND | | 10 | 9.5 | 95 | 9.9 | 99 | 4 | 70-130/20 |
| 106-93-4 | 1,2-Dibromoethane | ND | | 10 | 8.8 | 88 | 9.2 | 92 | 4 | 70-130/20 |
| 107-06-2 | 1,2-Dichloroethane | ND | | 10 | 9.4 | 94 | 9.8 | 98 | 4 | 70-130/20 |
| 78-87-5 | 1,2-Dichloropropane | ND | | 10 | 9.3 | 93 | 9.5 | 95 | 2 | 70-130/20 |
| 142-28-9 | 1,3-Dichloropropane | ND | | 10 | 9.0 | 90 | 9.5 | 95 | 5 | 70-130/20 |
| 108-20-3 | Di-Isopropyl ether | ND | | 10 | 8.6 | 86 | 8.9 | 89 | 3 | 70-130/20 |
| 594-20-7 | 2,2-Dichloropropane | ND | | 10 | 9.1 | 91 | 9.5 | 95 | 4 | 70-130/20 |
| 124-48-1 | Dibromochloromethane | ND | | 10 | 7.5 | 75 | 7.7 | 77 | 3 | 70-130/20 |
| 75-71-8 | Dichlorodifluoromethane | ND | | 10 | 10.4 | 104 | 10.9 | 109 | 5 | 60-140/20 |
| 156-59-2 | cis-1,2-Dichloroethylene | ND | | 10 | 9.1 | 91 | 9.4 | 94 | 3 | 70-130/20 |
| 10061-01-5 | cis-1,3-Dichloropropene | ND | | 10 | 8.2 | 82 | 8.2 | 82 | 0 | 70-130/20 |
| 541-73-1 | m-Dichlorobenzene | ND | | 10 | 9.6 | 96 | 10.2 | 102 | 6 | 70-130/20 |
| 95-50-1 | o-Dichlorobenzene | ND | | 10 | 9.6 | 96 | 10.1 | 101 | 5 | 70-130/20 |
| 106-46-7 | p-Dichlorobenzene | ND | | 10 | 8.9 | 89 | 9.4 | 94 | 5 | 70-130/20 |
| 156-60-5 | trans-1,2-Dichloroethylene | ND | | 10 | 9.4 | 94 | 9.6 | 96 | 2 | 70-130/20 |
| 10061-02-6 | trans-1,3-Dichloropropene | ND | | 10 | 8.9 | 89 | 9.1 | 91 | 2 | 70-130/20 |
| 100-41-4 | Ethylbenzene | ND | | 10 | 9.0 | 90 | 9.7 | 97 | 7 | 70-130/20 |
| 64-17-5 | Ethyl Alcohol | ND | | 500 | 464 | 93 | 446 | 89 | 4 | 70-130/20 |
| 637-92-3 | Ethyl Tert Butyl Ether | ND | | 10 | 8.6 | 86 | 8.9 | 89 | 3 | 70-130/20 |

* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary



**Job Number:** FA12483
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| FA12393-4MS | A0185670.D | 1 | 02/17/14 | TD | n/a | n/a | VA1428 |
| FA12393-4MSD | A0185671.D | 1 | 02/17/14 | TD | n/a | n/a | VA1428 |
| FA12393-4 | A0185679.D | 1 | 02/17/14 | TD | n/a | n/a | VA1428 |

**The QC reported here applies to the following samples:** **Method:** SM 6200B

FA12483-1, FA12483-2

| CAS No. | Compound | FA12393-4 ug/l | Q | Spike ug/l | MS ug/l | MS % | MSD ug/l | MSD % | RPD | Limits Rec/RPD |
|---|---|---|---|---|---|---|---|---|---|---|
| 591-78-6 | 2-Hexanone | ND | | 50 | 40.3 | 81 | 43.3 | 87 | 7 | 70-130/20 |
| 98-82-8 | Isopropylbenzene | ND | | 10 | 9.5 | 95 | 10.2 | 102 | 7 | 70-130/20 |
| 99-87-6 | p-Isopropyltoluene | ND | | 10 | 9.2 | 92 | 10 | 100 | 8 | 70-130/20 |
| 108-10-1 | 4-Methyl-2-pentanone | ND | | 50 | 45.3 | 91 | 48.7 | 97 | 7 | 70-130/20 |
| 74-83-9 | Methyl bromide | ND | | 10 | 11.9 | 119 | 12.2 | 122 | 2 | 60-140/20 |
| 74-87-3 | Methyl chloride | ND | | 10 | 11.0 | 110 | 11.4 | 114 | 4 | 60-140/20 |
| 75-09-2 | Methylene chloride | ND | | 10 | 9.8 | 98 | 10.1 | 101 | 3 | 70-130/20 |
| 78-93-3 | Methyl ethyl ketone | ND | | 50 | 30.2 | 60* | 32.1 | 64* | 6 | 70-130/20 |
| 1634-04-4 | Methyl Tert Butyl Ether | ND | | 10 | 8.3 | 83 | 8.6 | 86 | 4 | 70-130/20 |
| 91-20-3 | Naphthalene | ND | | 10 | 8.4 | 84 | 9.0 | 90 | 7 | 70-130/20 |
| 103-65-1 | n-Propylbenzene | ND | | 10 | 9.7 | 97 | 10.5 | 105 | 8 | 70-130/20 |
| 100-42-5 | Styrene | ND | | 10 | 8.3 | 83 | 8.5 | 85 | 2 | 70-130/20 |
| 75-85-4 | Tert-Amyl Alcohol | ND | | 100 | 75.7 | 76 | 81.9 | 82 | 8 | 70-130/20 |
| 994-05-8 | Tert-Amyl Methyl Ether | ND | | 10 | 7.5 | 75 | 8.1 | 81 | 8 | 70-130/20 |
| 75-65-0 | Tert-Butyl Alcohol | 7.4 | J | 100 | 125 | 118 | 139 | 132* | 11 | 70-130/20 |
| 762-75-4 | Tert-Butyl Formate | ND | | 100 | 50.5 | 51* | 45.2 | 45* | 11 | 70-130/20 |
| 630-20-6 | 1,1,1,2-Tetrachloroethane | ND | | 10 | 8.5 | 85 | 8.9 | 89 | 5 | 70-130/20 |
| 71-55-6 | 1,1,1-Trichloroethane | ND | | 10 | 9.1 | 91 | 9.6 | 96 | 5 | 70-130/20 |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | ND | | 10 | 8.9 | 89 | 9.6 | 96 | 8 | 70-130/20 |
| 79-00-5 | 1,1,2-Trichloroethane | ND | | 10 | 9.0 | 90 | 9.3 | 93 | 3 | 70-130/20 |
| 87-61-6 | 1,2,3-Trichlorobenzene | ND | | 10 | 8.8 | 88 | 9.2 | 92 | 4 | 70-130/20 |
| 96-18-4 | 1,2,3-Trichloropropane | ND | | 10 | 8.9 | 89 | 9.6 | 96 | 8 | 70-130/20 |
| 120-82-1 | 1,2,4-Trichlorobenzene | ND | | 10 | 8.6 | 86 | 9.1 | 91 | 6 | 70-130/20 |
| 95-63-6 | 1,2,4-Trimethylbenzene | ND | | 10 | 8.5 | 85 | 9.1 | 91 | 7 | 70-130/20 |
| 108-67-8 | 1,3,5-Trimethylbenzene | ND | | 10 | 8.5 | 85 | 9.2 | 92 | 8 | 70-130/20 |
| 127-18-4 | Tetrachloroethylene | 0.19 | J | 10 | 9.0 | 88 | 9.5 | 93 | 5 | 70-130/20 |
| 108-88-3 | Toluene | ND | | 10 | 8.7 | 87 | 9.4 | 94 | 8 | 70-130/20 |
| 79-01-6 | Trichloroethylene | ND | | 10 | 8.9 | 89 | 9.3 | 93 | 4 | 70-130/20 |
| 75-69-4 | Trichlorofluoromethane | ND | | 10 | 9.9 | 99 | 10.1 | 101 | 2 | 60-140/20 |
| 75-01-4 | Vinyl chloride | ND | | 10 | 10.0 | 100 | 10.6 | 106 | 6 | 60-140/20 |
| 108-05-4 | Vinyl Acetate | ND | | 50 | 38.6 | 77 | 39.7 | 79 | 3 | 70-130/20 |
| 1330-20-7 | Xylene (total) | ND | | 30 | 28.4 | 95 | 30.2 | 101 | 6 | 70-130/20 |
| | m,p-Xylene | ND | | 20 | 19.1 | 96 | 20.2 | 101 | 6 | 70-130/20 |
| 95-47-6 | o-Xylene | ND | | 10 | 9.4 | 94 | 10 | 100 | 6 | 70-130/20 |

* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary



**Job Number:** FA12483
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| FA12393-4MS | A0185670.D | 1 | 02/17/14 | TD | n/a | n/a | VA1428 |
| FA12393-4MSD | A0185671.D | 1 | 02/17/14 | TD | n/a | n/a | VA1428 |
| FA12393-4 | A0185679.D | 1 | 02/17/14 | TD | n/a | n/a | VA1428 |

**The QC reported here applies to the following samples:** **Method:** SM 6200B

FA12483-1, FA12483-2

| CAS No. | Surrogate Recoveries | MS | MSD | FA12393-4 | Limits |
|---|---|---|---|---|---|
| 1868-53-7 | Dibromofluoromethane | 103% | 101% | 98% | 70-130% |
| 17060-07-0 | 1,2-Dichloroethane-D4 | 106% | 104% | 97% | 70-130% |
| 2037-26-5 | Toluene-D8 | 97% | 99% | 99% | 70-130% |
| 460-00-4 | 4-Bromofluorobenzene | 98% | 99% | 100% | 70-130% |

* = Outside of Control Limits.

Southeast ACCUTEST LABORATORIES



# GC/MS Semi-volatiles

## QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

# Method Blank Summary



**Job Number:** FA12483
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP50554-MB | T011668.D | 1 | 02/21/14 | FS | 02/20/14 | OP50554 | ST554 |

**The QC reported here applies to the following samples:** **Method:** EPA 625

FA12483-1



| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 65-85-0 | Benzoic Acid | ND | 50 | 10 | ug/l | |
| 95-57-8 | 2-Chlorophenol | ND | 5.0 | 0.52 | ug/l | |
| 59-50-7 | 4-Chloro-3-methyl phenol | ND | 5.0 | 0.50 | ug/l | |
| 120-83-2 | 2,4-Dichlorophenol | ND | 5.0 | 0.58 | ug/l | |
| 105-67-9 | 2,4-Dimethylphenol | ND | 5.0 | 0.50 | ug/l | |
| 51-28-5 | 2,4-Dinitrophenol | ND | 25 | 5.4 | ug/l | |
| 534-52-1 | 4,6-Dinitro-o-cresol | ND | 10 | 2.0 | ug/l | |
| 95-48-7 | 2-Methylphenol | ND | 5.0 | 0.50 | ug/l | |
| | 3&4-Methylphenol | ND | 5.0 | 1.2 | ug/l | |
| 88-75-5 | 2-Nitrophenol | ND | 5.0 | 0.60 | ug/l | |
| 100-02-7 | 4-Nitrophenol | ND | 25 | 5.0 | ug/l | |
| 87-86-5 | Pentachlorophenol | ND | 25 | 5.0 | ug/l | |
| 108-95-2 | Phenol | ND | 5.0 | 0.50 | ug/l | |
| 88-06-2 | 2,4,6-Trichlorophenol | ND | 5.0 | 0.55 | ug/l | |
| 83-32-9 | Acenaphthene | ND | 5.0 | 0.50 | ug/l | |
| 208-96-8 | Acenaphthylene | ND | 5.0 | 0.50 | ug/l | |
| 120-12-7 | Anthracene | ND | 5.0 | 0.62 | ug/l | |
| 56-55-3 | Benzo(a)anthracene | ND | 5.0 | 0.64 | ug/l | |
| 50-32-8 | Benzo(a)pyrene | ND | 5.0 | 0.65 | ug/l | |
| 205-99-2 | Benzo(b)fluoranthene | ND | 5.0 | 0.72 | ug/l | |
| 191-24-2 | Benzo(g,h,i)perylene | ND | 5.0 | 0.81 | ug/l | |
| 207-08-9 | Benzo(k)fluoranthene | ND | 5.0 | 0.51 | ug/l | |
| 101-55-3 | 4-Bromophenyl phenyl ether | ND | 5.0 | 0.67 | ug/l | |
| 85-68-7 | Butyl benzyl phthalate | ND | 5.0 | 0.81 | ug/l | |
| 100-51-6 | Benzyl Alcohol | ND | 5.0 | 1.0 | ug/l | |
| 91-58-7 | 2-Chloronaphthalene | ND | 5.0 | 0.56 | ug/l | |
| 106-47-8 | 4-Chloroaniline | ND | 5.0 | 0.50 | ug/l | |
| 218-01-9 | Chrysene | ND | 5.0 | 0.72 | ug/l | |
| 111-91-1 | bis(2-Chloroethoxy)methane | ND | 5.0 | 0.55 | ug/l | |
| 111-44-4 | bis(2-Chloroethyl)ether | ND | 5.0 | 0.69 | ug/l | |
| 108-60-1 | bis(2-Chloroisopropyl)ether | ND | 5.0 | 0.58 | ug/l | |
| 7005-72-3 | 4-Chlorophenyl phenyl ether | ND | 5.0 | 0.54 | ug/l | |
| 95-50-1 | 1,2-Dichlorobenzene | ND | 5.0 | 0.50 | ug/l | |
| 122-66-7 | 1,2-Diphenylhydrazine | ND | 5.0 | 0.68 | ug/l | |
| 541-73-1 | 1,3-Dichlorobenzene | ND | 5.0 | 0.50 | ug/l | |
| 106-46-7 | 1,4-Dichlorobenzene | ND | 5.0 | 0.50 | ug/l | |

# Method Blank Summary



**Job Number:** FA12483
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP50554-MB | T011668.D | 1 | 02/21/14 | FS | 02/20/14 | OP50554 | ST554 |

**The QC reported here applies to the following samples:** **Method:** EPA 625

FA12483-1



| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 91-94-1 | 3,3'-Dichlorobenzidine | ND | 5.0 | 0.90 | ug/l | |
| 53-70-3 | Dibenzo(a,h)anthracene | ND | 5.0 | 0.81 | ug/l | |
| 132-64-9 | Dibenzofuran | ND | 5.0 | 0.53 | ug/l | |
| 84-74-2 | Di-n-butyl phthalate | ND | 5.0 | 1.0 | ug/l | |
| 117-84-0 | Di-n-octyl phthalate | ND | 5.0 | 1.0 | ug/l | |
| 84-66-2 | Diethyl phthalate | ND | 5.0 | 1.0 | ug/l | |
| 131-11-3 | Dimethyl phthalate | ND | 5.0 | 0.63 | ug/l | |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | ND | 5.0 | 1.6 | ug/l | |
| 206-44-0 | Fluoranthene | ND | 5.0 | 0.70 | ug/l | |
| 86-73-7 | Fluorene | ND | 5.0 | 0.50 | ug/l | |
| 118-74-1 | Hexachlorobenzene | ND | 5.0 | 0.66 | ug/l | |
| 87-68-3 | Hexachlorobutadiene | ND | 5.0 | 0.50 | ug/l | |
| 77-47-4 | Hexachlorocyclopentadiene | ND | 5.0 | 1.0 | ug/l | |
| 67-72-1 | Hexachloroethane | ND | 5.0 | 0.50 | ug/l | |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | ND | 5.0 | 0.63 | ug/l | |
| 78-59-1 | Isophorone | ND | 5.0 | 0.50 | ug/l | |
| 90-12-0 | 1-Methylnaphthalene | ND | 5.0 | 0.50 | ug/l | |
| 91-57-6 | 2-Methylnaphthalene | ND | 5.0 | 0.53 | ug/l | |
| 91-20-3 | Naphthalene | ND | 5.0 | 0.50 | ug/l | |
| 98-95-3 | Nitrobenzene | ND | 5.0 | 0.50 | ug/l | |
| 621-64-7 | N-Nitroso-di-n-propylamine | ND | 5.0 | 0.50 | ug/l | |
| 86-30-6 | N-Nitrosodiphenylamine | ND | 5.0 | 0.53 | ug/l | |
| 85-01-8 | Phenanthrene | ND | 5.0 | 0.60 | ug/l | |
| 129-00-0 | Pyrene | ND | 5.0 | 0.82 | ug/l | |
| 120-82-1 | 1,2,4-Trichlorobenzene | ND | 5.0 | 0.50 | ug/l | |

| CAS No. | Surrogate Recoveries | | Limits |
|---|---|---|---|
| 367-12-4 | 2-Fluorophenol | 43% | 14-67% |
| 4165-62-2 | Phenol-d5 | 25% | 10-50% |
| 118-79-6 | 2,4,6-Tribromophenol | 86% | 33-118% |
| 4165-60-0 | Nitrobenzene-d5 | 87% | 42-108% |
| 321-60-8 | 2-Fluorobiphenyl | 85% | 40-106% |
| 1718-51-0 | Terphenyl-d14 | 102% | 39-121% |

# Method Blank Summary



**Job Number:** FA12483
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP50554-MB | T011668.D | 1 | 02/21/14 | FS | 02/20/14 | OP50554 | ST554 |

**The QC reported here applies to the following samples:** **Method:**

FA12483-1

| CAS No. | Tentatively Identified Compounds | R.T. | Est. Conc. | Units | Q |
|---|---|---|---|---|---|
| | Total TIC, Semi-Volatile [a] | | 0 | ug/l | |

(a) No TICs detected.

# Blank Spike Summary



**Job Number:** FA12483
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP50554-BS | T011667.D | 1 | 02/21/14 | FS | 02/20/14 | OP50554 | ST554 |

**The QC reported here applies to the following samples:** **Method:** EPA 625

FA12483-1

| CAS No. | Compound | Spike ug/l | BSP ug/l | BSP % | Limits |
|---|---|---|---|---|---|
| 65-85-0 | Benzoic Acid | 100 | 15.0 | 15 | 10-69 |
| 95-57-8 | 2-Chlorophenol | 50 | 34.1 | 68 | 52-98 |
| 59-50-7 | 4-Chloro-3-methyl phenol | 50 | 34.2 | 68 | 54-103 |
| 120-83-2 | 2,4-Dichlorophenol | 50 | 34.9 | 70 | 53-103 |
| 105-67-9 | 2,4-Dimethylphenol | 50 | 31.8 | 64 | 43-90 |
| 51-28-5 | 2,4-Dinitrophenol | 100 | 67.9 | 68 | 44-112 |
| 534-52-1 | 4,6-Dinitro-o-cresol | 100 | 76.7 | 77 | 66-121 |
| 95-48-7 | 2-Methylphenol | 50 | 31.1 | 62 | 43-90 |
| | 3&4-Methylphenol | 100 | 59.6 | 60 | 36-88 |
| 88-75-5 | 2-Nitrophenol | 50 | 36.0 | 72 | 53-102 |
| 100-02-7 | 4-Nitrophenol | 100 | 26.3 | 26 | 18-62 |
| 87-86-5 | Pentachlorophenol | 100 | 82.3 | 82 | 61-115 |
| 108-95-2 | Phenol | 50 | 13.5 | 27 | 19-56 |
| 88-06-2 | 2,4,6-Trichlorophenol | 50 | 38.9 | 78 | 59-107 |
| 83-32-9 | Acenaphthene | 50 | 39.7 | 79 | 61-107 |
| 208-96-8 | Acenaphthylene | 50 | 40.7 | 81 | 60-104 |
| 120-12-7 | Anthracene | 50 | 40.4 | 81 | 65-108 |
| 56-55-3 | Benzo(a)anthracene | 50 | 40.0 | 80 | 66-111 |
| 50-32-8 | Benzo(a)pyrene | 50 | 39.2 | 78 | 62-107 |
| 205-99-2 | Benzo(b)fluoranthene | 50 | 40.4 | 81 | 65-114 |
| 191-24-2 | Benzo(g,h,i)perylene | 50 | 40.4 | 81 | 66-116 |
| 207-08-9 | Benzo(k)fluoranthene | 50 | 40.4 | 81 | 65-114 |
| 101-55-3 | 4-Bromophenyl phenyl ether | 50 | 33.1 | 66 | 65-109 |
| 85-68-7 | Butyl benzyl phthalate | 50 | 39.3 | 79 | 65-112 |
| 100-51-6 | Benzyl Alcohol | 50 | 31.9 | 64 | 46-94 |
| 91-58-7 | 2-Chloronaphthalene | 50 | 38.6 | 77 | 57-103 |
| 106-47-8 | 4-Chloroaniline | 50 | 35.6 | 71 | 49-105 |
| 218-01-9 | Chrysene | 50 | 42.2 | 84 | 66-111 |
| 111-91-1 | bis(2-Chloroethoxy)methane | 50 | 34.8 | 70 | 51-102 |
| 111-44-4 | bis(2-Chloroethyl)ether | 50 | 36.6 | 73 | 53-100 |
| 108-60-1 | bis(2-Chloroisopropyl)ether | 50 | 37.5 | 75 | 45-106 |
| 7005-72-3 | 4-Chlorophenyl phenyl ether | 50 | 37.7 | 75 | 62-105 |
| 95-50-1 | 1,2-Dichlorobenzene | 50 | 34.3 | 69 | 48-97 |
| 122-66-7 | 1,2-Diphenylhydrazine | 50 | 38.5 | 77 | 61-110 |
| 541-73-1 | 1,3-Dichlorobenzene | 50 | 34.2 | 68 | 45-95 |
| 106-46-7 | 1,4-Dichlorobenzene | 50 | 36.2 | 72 | 45-98 |

* = Outside of Control Limits.

# Blank Spike Summary



**Job Number:** FA12483
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP50554-BS | T011667.D | 1 | 02/21/14 | FS | 02/20/14 | OP50554 | ST554 |

**The QC reported here applies to the following samples:** **Method:** EPA 625

FA12483-1

| CAS No. | Compound | Spike ug/l | BSP ug/l | BSP % | Limits |
|---|---|---|---|---|---|
| 91-94-1 | 3,3'-Dichlorobenzidine | 50 | 41.3 | 83 | 46-117 |
| 53-70-3 | Dibenzo(a,h)anthracene | 50 | 40.3 | 81 | 66-119 |
| 132-64-9 | Dibenzofuran | 50 | 39.6 | 79 | 61-106 |
| 84-74-2 | Di-n-butyl phthalate | 50 | 39.9 | 80 | 65-107 |
| 117-84-0 | Di-n-octyl phthalate | 50 | 34.2 | 68 | 62-118 |
| 84-66-2 | Diethyl phthalate | 50 | 39.0 | 78 | 64-108 |
| 131-11-3 | Dimethyl phthalate | 50 | 38.4 | 77 | 63-106 |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 50 | 35.4 | 71 | 61-117 |
| 206-44-0 | Fluoranthene | 50 | 41.8 | 84 | 63-106 |
| 86-73-7 | Fluorene | 50 | 41.5 | 83 | 62-108 |
| 118-74-1 | Hexachlorobenzene | 50 | 39.3 | 79 | 63-108 |
| 87-68-3 | Hexachlorobutadiene | 50 | 35.3 | 71 | 42-102 |
| 77-47-4 | Hexachlorocyclopentadiene | 50 | 30.0 | 60 | 39-102 |
| 67-72-1 | Hexachloroethane | 50 | 35.9 | 72 | 42-100 |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 50 | 35.2 | 70 | 64-119 |
| 78-59-1 | Isophorone | 50 | 34.2 | 68 | 43-87 |
| 90-12-0 | 1-Methylnaphthalene | 50 | 34.2 | 68 | 53-102 |
| 91-57-6 | 2-Methylnaphthalene | 50 | 35.0 | 70 | 51-102 |
| 91-20-3 | Naphthalene | 50 | 35.7 | 71 | 47-100 |
| 98-95-3 | Nitrobenzene | 50 | 34.1 | 68 | 50-104 |
| 621-64-7 | N-Nitroso-di-n-propylamine | 50 | 37.3 | 75 | 52-104 |
| 86-30-6 | N-Nitrosodiphenylamine | 50 | 38.8 | 78 | 64-108 |
| 85-01-8 | Phenanthrene | 50 | 40.9 | 82 | 66-110 |
| 129-00-0 | Pyrene | 50 | 37.5 | 75 | 64-113 |
| 120-82-1 | 1,2,4-Trichlorobenzene | 50 | 32.6 | 65 | 45-97 |

| CAS No. | Surrogate Recoveries | BSP | Limits |
|---|---|---|---|
| 367-12-4 | 2-Fluorophenol | 43% | 14-67% |
| 4165-62-2 | Phenol-d5 | 28% | 10-50% |
| 118-79-6 | 2,4,6-Tribromophenol | 81% | 33-118% |
| 4165-60-0 | Nitrobenzene-d5 | 73% | 42-108% |
| 321-60-8 | 2-Fluorobiphenyl | 78% | 40-106% |
| 1718-51-0 | Terphenyl-d14 | 87% | 39-121% |

* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary



**Job Number:** FA12483
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP50554-MS [a] | T011682.D | 10 | 02/24/14 | FS | 02/20/14 | OP50554 | ST555 |
| OP50554-MSD [a] | T011683.D | 10 | 02/24/14 | FS | 02/20/14 | OP50554 | ST555 |
| FA12584-1 [a] | T011681.D | 10 | 02/24/14 | FS | 02/20/14 | OP50554 | ST555 |

**The QC reported here applies to the following samples:** **Method:** EPA 625

FA12483-1

| CAS No. | Compound | FA12584-1 ug/l | Q | Spike ug/l | MS ug/l | MS % | MSD ug/l | MSD % | RPD | Limits Rec/RPD |
|---|---|---|---|---|---|---|---|---|---|---|
| 65-85-0 | Benzoic Acid | ND | | 189 | ND | 0* | ND | 0* | nc | 10-69/39 |
| 95-57-8 | 2-Chlorophenol | ND | | 94.3 | 65.3 | 69 | 61.6 | 65 | 6 | 52-98/25 |
| 59-50-7 | 4-Chloro-3-methyl phenol | ND | | 94.3 | 76.0 | 81 | 70.9 | 75 | 7 | 54-103/23 |
| 120-83-2 | 2,4-Dichlorophenol | ND | | 94.3 | 73.0 | 77 | 72.1 | 76 | 1 | 53-103/26 |
| 105-67-9 | 2,4-Dimethylphenol | ND | | 94.3 | 74.0 | 78 | 73.4 | 78 | 1 | 43-90/27 |
| 51-28-5 | 2,4-Dinitrophenol | ND | | 189 | 133 | 70 | 132 | 70 | 1 | 44-112/25 |
| 534-52-1 | 4,6-Dinitro-o-cresol | ND | | 189 | 123 | 65* | 121 | 64* | 2 | 66-121/23 |
| 95-48-7 | 2-Methylphenol | ND | | 94.3 | 63.4 | 67 | 65.6 | 70 | 3 | 43-90/28 |
| | 3&4-Methylphenol | ND | | 189 | 127 | 67 | 128 | 68 | 1 | 36-88/28 |
| 88-75-5 | 2-Nitrophenol | ND | | 94.3 | 69.4 | 74 | 72.7 | 77 | 5 | 53-102/29 |
| 100-02-7 | 4-Nitrophenol | ND | | 189 | 139 | 74* | 144 | 76* | 4 | 18-62/33 |
| 87-86-5 | Pentachlorophenol | ND | | 189 | 155 | 82 | 143 | 76 | 8 | 61-115/26 |
| 108-95-2 | Phenol | ND | | 94.3 | 33.7 | 36 | 36.8 | 39 | 9 | 19-56/35 |
| 88-06-2 | 2,4,6-Trichlorophenol | ND | | 94.3 | 76.9 | 82 | 74.8 | 79 | 3 | 59-107/23 |
| 83-32-9 | Acenaphthene | ND | | 94.3 | 82.4 | 87 | 81.3 | 86 | 1 | 61-107/22 |
| 208-96-8 | Acenaphthylene | ND | | 94.3 | 82.6 | 88 | 78.2 | 83 | 5 | 60-104/22 |
| 120-12-7 | Anthracene | ND | | 94.3 | 81.8 | 87 | 78.1 | 83 | 5 | 65-108/20 |
| 56-55-3 | Benzo(a)anthracene | ND | | 94.3 | 76.9 | 82 | 72.6 | 77 | 6 | 66-111/22 |
| 50-32-8 | Benzo(a)pyrene | ND | | 94.3 | 70.9 | 75 | 69.5 | 74 | 2 | 62-107/23 |
| 205-99-2 | Benzo(b)fluoranthene | ND | | 94.3 | 72.2 | 77 | 70.1 | 74 | 3 | 65-114/23 |
| 191-24-2 | Benzo(g,h,i)perylene | ND | | 94.3 | 77.3 | 82 | 74.2 | 79 | 4 | 66-116/23 |
| 207-08-9 | Benzo(k)fluoranthene | ND | | 94.3 | 71.6 | 76 | 68.1 | 72 | 5 | 65-114/24 |
| 101-55-3 | 4-Bromophenyl phenyl ether | ND | | 94.3 | 64.2 | 68 | 64.1 | 68 | 0 | 65-109/23 |
| 85-68-7 | Butyl benzyl phthalate | ND | | 94.3 | 75.3 | 80 | 72.4 | 77 | 4 | 65-112/24 |
| 100-51-6 | Benzyl Alcohol | ND | | 94.3 | 68.6 | 73 | 68.3 | 72 | 0 | 46-94/27 |
| 91-58-7 | 2-Chloronaphthalene | ND | | 94.3 | 76.5 | 81 | 73.3 | 78 | 4 | 57-103/23 |
| 106-47-8 | 4-Chloroaniline | ND | | 94.3 | 69.4 | 74 | 69.6 | 74 | 0 | 49-105/27 |
| 218-01-9 | Chrysene | ND | | 94.3 | 77.0 | 82 | 76.9 | 82 | 0 | 66-111/22 |
| 111-91-1 | bis(2-Chloroethoxy)methane | ND | | 94.3 | 75.9 | 80 | 73.6 | 78 | 3 | 51-102/28 |
| 111-44-4 | bis(2-Chloroethyl)ether | ND | | 94.3 | 71.6 | 76 | 70.1 | 74 | 2 | 53-100/27 |
| 108-60-1 | bis(2-Chloroisopropyl)ether | ND | | 94.3 | 71.3 | 76 | 69.7 | 74 | 2 | 45-106/26 |
| 7005-72-3 | 4-Chlorophenyl phenyl ether | ND | | 94.3 | 76.7 | 81 | 76.3 | 81 | 1 | 62-105/20 |
| 95-50-1 | 1,2-Dichlorobenzene | ND | | 94.3 | 66.8 | 71 | 65.0 | 69 | 3 | 48-97/24 |
| 122-66-7 | 1,2-Diphenylhydrazine | ND | | 94.3 | 72.8 | 77 | 71.9 | 76 | 1 | 61-110/24 |
| 541-73-1 | 1,3-Dichlorobenzene | ND | | 94.3 | 67.4 | 71 | 66.2 | 70 | 2 | 45-95/25 |
| 106-46-7 | 1,4-Dichlorobenzene | ND | | 94.3 | 72.2 | 77 | 70.4 | 75 | 3 | 45-98/25 |

* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary



**Job Number:** FA12483
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP50554-MS [a] | T011682.D | 10 | 02/24/14 | FS | 02/20/14 | OP50554 | ST555 |
| OP50554-MSD [a] | T011683.D | 10 | 02/24/14 | FS | 02/20/14 | OP50554 | ST555 |
| FA12584-1 [a] | T011681.D | 10 | 02/24/14 | FS | 02/20/14 | OP50554 | ST555 |

**The QC reported here applies to the following samples:** **Method:** EPA 625

FA12483-1

| CAS No. | Compound | FA12584-1 ug/l | Q | Spike ug/l | MS ug/l | MS % | MSD ug/l | MSD % | RPD | Limits Rec/RPD |
|---|---|---|---|---|---|---|---|---|---|---|
| 91-94-1 | 3,3'-Dichlorobenzidine | ND | | 94.3 | 51.6 | 55 | 51.6 | 55 | 0 | 46-117/29 |
| 53-70-3 | Dibenzo(a,h)anthracene | ND | | 94.3 | 75.0 | 80 | 67.8 | 72 | 10 | 66-119/24 |
| 132-64-9 | Dibenzofuran | ND | | 94.3 | 84.7 | 90 | 81.4 | 86 | 4 | 61-106/21 |
| 84-74-2 | Di-n-butyl phthalate | ND | | 94.3 | 77.5 | 82 | 76.0 | 81 | 2 | 65-107/21 |
| 117-84-0 | Di-n-octyl phthalate | ND | | 94.3 | 55.2 | 59* | 53.2 | 56* | 4 | 62-118/24 |
| 84-66-2 | Diethyl phthalate | ND | | 94.3 | 77.3 | 82 | 76.1 | 81 | 2 | 64-108/21 |
| 131-11-3 | Dimethyl phthalate | ND | | 94.3 | 71.7 | 76 | 70.5 | 75 | 2 | 63-106/22 |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | ND | | 94.3 | 81.7 | 87 | 74.6 | 79 | 9 | 61-117/23 |
| 206-44-0 | Fluoranthene | ND | | 94.3 | 81.6 | 86 | 80.0 | 85 | 2 | 63-106/21 |
| 86-73-7 | Fluorene | 20.7 | J | 94.3 | 95.8 | 80 | 95.0 | 79 | 1 | 62-108/20 |
| 118-74-1 | Hexachlorobenzene | ND | | 94.3 | 75.2 | 80 | 70.4 | 75 | 7 | 63-108/22 |
| 87-68-3 | Hexachlorobutadiene | ND | | 94.3 | 75.9 | 80 | 72.7 | 77 | 4 | 42-102/28 |
| 77-47-4 | Hexachlorocyclopentadiene | ND | | 94.3 | 50.7 | 54 | 49.7 | 53 | 2 | 39-102/29 |
| 67-72-1 | Hexachloroethane | ND | | 94.3 | 67.7 | 72 | 68.0 | 72 | 0 | 42-100/29 |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | ND | | 94.3 | 64.9 | 69 | 63.1 | 67 | 3 | 64-119/24 |
| 78-59-1 | Isophorone | ND | | 94.3 | 74.1 | 79 | 67.7 | 72 | 9 | 43-87/25 |
| 90-12-0 | 1-Methylnaphthalene | 21.1 | J | 94.3 | 92.1 | 75 | 86.9 | 70 | 6 | 53-102/27 |
| 91-57-6 | 2-Methylnaphthalene | 5.5 | J | 94.3 | 79.4 | 78 | 77.8 | 77 | 2 | 51-102/26 |
| 91-20-3 | Naphthalene | ND | | 94.3 | 83.3 | 88 | 81.6 | 86 | 2 | 47-100/29 |
| 98-95-3 | Nitrobenzene | ND | | 94.3 | 72.2 | 77 | 69.2 | 73 | 4 | 50-104/28 |
| 621-64-7 | N-Nitroso-di-n-propylamine | ND | | 94.3 | 73.2 | 78 | 69.8 | 74 | 5 | 52-104/25 |
| 86-30-6 | N-Nitrosodiphenylamine | 9.7 | J | 94.3 | 80.2 | 75 | 79.1 | 74 | 1 | 64-108/23 |
| 85-01-8 | Phenanthrene | 11.4 | J | 94.3 | 88.5 | 82 | 84.9 | 78 | 4 | 66-110/21 |
| 129-00-0 | Pyrene | ND | | 94.3 | 74.2 | 79 | 69.2 | 73 | 7 | 64-113/23 |
| 120-82-1 | 1,2,4-Trichlorobenzene | ND | | 94.3 | 72.6 | 77 | 69.5 | 74 | 4 | 45-97/28 |

| CAS No. | Surrogate Recoveries | MS | MSD | FA12584-1 | Limits |
|---|---|---|---|---|---|
| 367-12-4 | 2-Fluorophenol | 55% | 53% | 38% | 14-67% |
| 4165-62-2 | Phenol-d5 | 40% | 39% | 26% | 10-50% |
| 118-79-6 | 2,4,6-Tribromophenol | 84% | 78% | 86% | 33-118% |
| 4165-60-0 | Nitrobenzene-d5 | 80% | 75% | 83% | 42-108% |
| 321-60-8 | 2-Fluorobiphenyl | 82% | 79% | 86% | 40-106% |
| 1718-51-0 | Terphenyl-d14 | 89% | 81% | 88% | 39-121% |

* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary



**Job Number:** FA12483
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP50554-MS [a] | T011682.D | 10 | 02/24/14 | FS | 02/20/14 | OP50554 | ST555 |
| OP50554-MSD [a] | T011683.D | 10 | 02/24/14 | FS | 02/20/14 | OP50554 | ST555 |
| FA12584-1 [a] | T011681.D | 10 | 02/24/14 | FS | 02/20/14 | OP50554 | ST555 |

**The QC reported here applies to the following samples:** **Method:** EPA 625

FA12483-1

(a) Dilution required due to matrix interference.



* = Outside of Control Limits.

Southeast ACCUTEST LABORATORIES

# GC Volatiles

## QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

# Method Blank Summary



**Job Number:** FA12483
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| GUV3349-MB | UV062877.D | 1 | 02/19/14 | MM | n/a | n/a | GUV3349 |

**The QC reported here applies to the following samples:** **Method:** MADEP VPH REV 1.1

FA12483-1

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| | C5- C8 Aliphatics (Unadj.) | ND | 100 | 35 | ug/l | |
| | C9- C12 Aliphatics (Unadj.) | ND | 100 | 35 | ug/l | |
| | C9- C10 Aromatics (Unadj.) | ND | 100 | 35 | ug/l | |

| CAS No. | Surrogate Recoveries | | Limits |
|---|---|---|---|
| 460-00-4 | BFB | 111% | 70-130% |
| 460-00-4 | BFB | 111% | 70-130% |

# Method Blank Summary



**Job Number:** FA12483
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP50494-MB | DD74182.D | 1 | 02/17/14 | NG | 02/17/14 | OP50494 | GDD2224 |

**The QC reported here applies to the following samples:** **Method:** EPA 504.1

FA12483-1

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 106-93-4 | 1,2-Dibromoethane | ND | 0.020 | 0.010 | ug/l | |

| CAS No. | Surrogate Recoveries | | Limits |
|---|---|---|---|
| 460-00-4 | 4-Bromofluorobenzene | 90% | 63-137% |

# Blank Spike Summary



**Job Number:** FA12483
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP50494-BS | DD74181.D | 1 | 02/17/14 | NG | 02/17/14 | OP50494 | GDD2224 |

**The QC reported here applies to the following samples:** **Method:** EPA 504.1

FA12483-1

| CAS No. | Compound | Spike ug/l | BSP ug/l | BSP % | Limits |
|---|---|---|---|---|---|
| 106-93-4 | 1,2-Dibromoethane | 0.25 | 0.22 | 88 | 70-130 |

| CAS No. | Surrogate Recoveries | BSP | Limits |
|---|---|---|---|
| 460-00-4 | 4-Bromofluorobenzene | 92% | 63-137% |

* = Outside of Control Limits.

# Blank Spike/Blank Spike Duplicate Summary



**Job Number:** FA12483
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| GUV3349-BS | UV062875.D | 1 | 02/19/14 | MM | n/a | n/a | GUV3349 |
| GUV3349-BSD | UV062876.D | 1 | 02/19/14 | MM | n/a | n/a | GUV3349 |

**The QC reported here applies to the following samples:** **Method:** MADEP VPH REV 1.1

FA12483-1

| CAS No. | Compound | Spike ug/l | BSP ug/l | BSP % | BSD ug/l | BSD % | RPD | Limits Rec/RPD |
|---|---|---|---|---|---|---|---|---|
| | C5- C8 Aliphatics (Unadj.) | 240 | 280 | 117 | 284 | 118 | 1 | 70-130/25 |
| | C9- C12 Aliphatics (Unadj.) | 160 | 164 | 103 | 165 | 103 | 1 | 70-130/25 |
| | C9- C10 Aromatics (Unadj.) | 80 | 84.8 | 106 | 82.4 | 103 | 3 | 70-130/25 |

| CAS No. | Surrogate Recoveries | BSP | BSD | Limits |
|---|---|---|---|---|
| 460-00-4 | BFB | 118% | 118% | 70-130% |
| 460-00-4 | BFB | 115% | 117% | 70-130% |

* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary



**Job Number:** FA12483
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP50494-MS | DD74185.D | 1 | 02/17/14 | NG | 02/17/14 | OP50494 | GDD2224 |
| OP50494-MSD | DD74186.D | 1 | 02/17/14 | NG | 02/17/14 | OP50494 | GDD2224 |
| FA12480-1 | DD74184.D | 1 | 02/17/14 | NG | 02/17/14 | OP50494 | GDD2224 |

**The QC reported here applies to the following samples:** **Method:** EPA 504.1

FA12483-1

| CAS No. | Compound | FA12480-1 ug/l | Q | Spike ug/l | MS ug/l | MS % | MSD ug/l | MSD % | RPD | Limits Rec/RPD |
|---|---|---|---|---|---|---|---|---|---|---|
| 106-93-4 | 1,2-Dibromoethane | 0.019 | U | 0.243 | 0.21 | 86 | 0.21 | 88 | 0 | 70-130/25 |

| CAS No. | Surrogate Recoveries | MS | MSD | FA12480-1 | Limits |
|---|---|---|---|---|---|
| 460-00-4 | 4-Bromofluorobenzene | 87% | 88% | 87% | 63-137% |

8.4.1

8

* = Outside of Control Limits.

# Duplicate Summary



**Job Number:** FA12483
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| FA12483-1DUP | UV062881.D | 5 | 02/19/14 | MM | n/a | n/a | GUV3349 |
| FA12483-1 | UV062878.D | 1 | 02/19/14 | MM | n/a | n/a | GUV3349 |
| FA12483-1 | UV062880.D | 5 | 02/19/14 | MM | n/a | n/a | GUV3349 |

**The QC reported here applies to the following samples:** **Method:** MADEP VPH REV 1.1

FA12483-1

| CAS No. | Compound | FA12483-1 ug/l | Q | DUP ug/l | Q | RPD | Limits |
|---|---|---|---|---|---|---|---|
| | C5- C8 Aliphatics (Unadj.) | 425 | | 353 | J | 19 | 50 |
| | C9- C12 Aliphatics (Unadj.) | 288 [a] | J | 284 | J | 1 | 50 |
| | C9- C10 Aromatics (Unadj.) | 1030 [a] | | 914 | | 12 | 50 |

| CAS No. | Surrogate Recoveries | DUP | FA12483-1 | FA12483-1 | Limits |
|---|---|---|---|---|---|
| 460-00-4 | BFB | 116% | 119% | 113% | 70-130% |
| 460-00-4 | BFB | 117% | 119% | 113% | 70-130% |

(a) Result is from Run #2.

* = Outside of Control Limits.

Southeast ACCUTEST LABORATORIES

# GC Semi-volatiles

## QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

# Method Blank Summary



**Job Number:** FA12483
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP50527-MB | NN007736.D | 1 | 02/21/14 | NAF | 02/19/14 | OP50527 | GNN338 |

**The QC reported here applies to the following samples:** **Method:** MADEP EPH REV 1.1

FA12483-1

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| | C11-C22 Aromatics (Unadj.) | ND | 200 | 150 | ug/l | |
| | C9-C18 Aliphatics | ND | 200 | 100 | ug/l | |
| | C19-C36 Aliphatics | ND | 200 | 100 | ug/l | |

| CAS No. | Surrogate Recoveries | | Limits |
|---|---|---|---|
| 3386-33-2 | 1-Chlorooctadecane | 69% | 40-140% |
| 580-13-2 | 2-Bromonaphthalene | 91% | 40-140% |
| 84-15-1 | o-Terphenyl | 75% | 40-140% |
| 321-60-8 | 2-Fluorobiphenyl | 88% | 40-140% |

# Blank Spike/Blank Spike Duplicate Summary



**Job Number:** FA12483
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP50527-BS | NN007734.D | 1 | 02/21/14 | NAF | 02/19/14 | OP50527 | GNN338 |
| OP50527-BSD | NN007735.D | 1 | 02/21/14 | NAF | 02/19/14 | OP50527 | GNN338 |

**The QC reported here applies to the following samples:** **Method:** MADEP EPH REV 1.1

FA12483-1

| CAS No. | Compound | Spike ug/l | BSP ug/l | BSP % | BSD ug/l | BSD % | RPD | Limits Rec/RPD |
|---|---|---|---|---|---|---|---|---|
| | C11-C22 Aromatics (Unadj.) | 1700 | 1210 | 71 | 1250 | 74 | 3 | 40-140/30 |
| | C9-C18 Aliphatics | 600 | 287 | 48 | 296 | 49 | 3 | 40-140/30 |
| | C19-C36 Aliphatics | 800 | 627 | 78 | 661 | 83 | 5 | 40-140/30 |

| CAS No. | Surrogate Recoveries | BSP | BSD | Limits |
|---|---|---|---|---|
| 3386-33-2 | 1-Chlorooctadecane | 76% | 80% | 40-140% |
| 580-13-2 | 2-Bromonaphthalene | 82% | 84% | 40-140% |
| 84-15-1 | o-Terphenyl | 69% | 69% | 40-140% |
| 321-60-8 | 2-Fluorobiphenyl | 75% | 79% | 40-140% |

| Sample | Compound | Col #1 | Col #2 | Breakthrough | Limit |
|---|---|---|---|---|---|
| OP50527-BS | 2-Methylnaphthalene | 41.6 | ND | 0.0% | 5.0 |
| OP50527-BS | Naphthalene | 35.8 | ND | 0.0% | 5.0 |
| OP50527-BSD | 2-Methylnaphthalene | 43.0 | ND | 0.0% | 5.0 |
| OP50527-BSD | Naphthalene | 37.8 | ND | 0.0% | 5.0 |

* = Outside of Control Limits.

# Duplicate Summary



**Job Number:** FA12483
**Account:** TETRCAI Tetra Tech EC, Inc
**Project:** WE03, Camp Lejuene, NC

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP50527-DUP | NN007743.D | 1 | 02/21/14 | NAF | 02/19/14 | OP50527 | GNN338 |
| FA12480-1 | NN007742.D | 1 | 02/21/14 | NAF | 02/19/14 | OP50527 | GNN338 |

**The QC reported here applies to the following samples:** **Method:** MADEP EPH REV 1.1

FA12483-1

| CAS No. | Compound | FA12480-1 ug/l | Q | DUP ug/l | Q | RPD | Limits |
|---|---|---|---|---|---|---|---|
| | C11-C22 Aromatics (Unadj.) | 367 | | 394 | | 7 | 30 [a] |
| | C9-C18 Aliphatics | 190 U | | ND | | nc | 30 [a] |
| | C19-C36 Aliphatics | 190 U | | ND | | nc | 30 [a] |

| CAS No. | Surrogate Recoveries | DUP | FA12480-1 | Limits |
|---|---|---|---|---|
| 3386-33-2 | 1-Chlorooctadecane | 56% | 50% | 40-140% |
| 580-13-2 | 2-Bromonaphthalene | 112% | 92% | 40-140% |
| 84-15-1 | o-Terphenyl | 69% | 65% | 40-140% |
| 321-60-8 | 2-Fluorobiphenyl | 96% | 85% | 40-140% |

(a) Advisory control limits.

9.3.1

9

* = Outside of Control Limits.

Southeast ACCUTEST LABORATORIES

# Metals Analysis

## QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: FA12483
Account: TETRCAI - Tetra Tech EC, Inc
Project: WE03, Camp Lejuene, NC

QC Batch ID: MP26820
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 02/14/14

| Metal | RL | IDL | MDL | MB raw | final |
|---|---|---|---|---|---|
| Aluminum | 200 | 15 | 15 | | |
| Antimony | 6.0 | 2 | 2.3 | | |
| Arsenic | 10 | 2 | 2.4 | | |
| Barium | 200 | 1 | 1 | | |
| Beryllium | 4.0 | .5 | .5 | | |
| Cadmium | 5.0 | .5 | .5 | | |
| Calcium | 1000 | 50 | 50 | | |
| Chromium | 10 | 1 | 2 | | |
| Cobalt | 50 | .5 | .5 | | |
| Copper | 25 | 1 | 1 | | |
| Iron | 300 | 17 | 17 | | |
| Lead | 5.0 | 1.1 | 1.1 | 0.10 | <5.0 |
| Magnesium | 5000 | 50 | 56 | | |
| Manganese | 15 | .5 | 1 | | |
| Molybdenum | 50 | .5 | .5 | | |
| Nickel | 40 | .5 | .5 | | |
| Potassium | 10000 | 200 | 200 | | |
| Selenium | 10 | 2.3 | 2.3 | | |
| Silver | 10 | .65 | .77 | | |
| Sodium | 10000 | 500 | 500 | | |
| Strontium | 10 | .4 | .4 | | |
| Thallium | 10 | 1.5 | 2 | | |
| Tin | 50 | .7 | 1 | | |
| Titanium | 10 | .9 | 1 | | |
| Vanadium | 50 | .5 | .5 | | |
| Zinc | 20 | 3 | 3 | | |

Associated samples MP26820: FA12483-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: FA12483
Account: TETRCAI - Tetra Tech EC, Inc
Project: WE03, Camp Lejuene, NC

QC Batch ID: MP26820
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

| Prep Date: | | | 02/14/14 | | | | | 02/14/14 | |
|---|---|---|---|---|---|---|---|---|---|
| Metal | FA12483-1 Original | DUP | RPD | QC Limits | FA12483-1 Original | MS | Spikelot MPFLICP2 | % Rec | QC Limits |
| Aluminum | | | | | | | | | |
| Antimony | | | | | | | | | |
| Arsenic | | | | | | | | | |
| Barium | | | | | | | | | |
| Beryllium | | | | | | | | | |
| Cadmium | | | | | | | | | |
| Calcium | | | | | | | | | |
| Chromium | | | | | | | | | |
| Cobalt | | | | | | | | | |
| Copper | | | | | | | | | |
| Iron | | | | | | | | | |
| Lead | 4.0 | 3.0 | 28.6 (a) | 0-20 | 4.0 | 474 | 500 | 94.0 | 80-120 |
| Magnesium | | | | | | | | | |
| Manganese | | | | | | | | | |
| Molybdenum | | | | | | | | | |
| Nickel | | | | | | | | | |
| Potassium | | | | | | | | | |
| Selenium | | | | | | | | | |
| Silver | | | | | | | | | |
| Sodium | | | | | | | | | |
| Strontium | | | | | | | | | |
| Thallium | | | | | | | | | |
| Tin | | | | | | | | | |
| Titanium | | | | | | | | | |
| Vanadium | | | | | | | | | |
| Zinc | | | | | | | | | |

Associated samples MP26820: FA12483-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) RPD acceptable due to low duplicate and sample concentrations.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: FA12483
Account: TETRCAI - Tetra Tech EC, Inc
Project: WE03, Camp Lejuene, NC

QC Batch ID: MP26820
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 02/14/14

| Metal | FA12483-1 Original | MSD | Spikelot MPFLICP2 | % Rec | MSD RPD | QC Limit |
|---|---|---|---|---|---|---|
| Aluminum | | | | | | |
| Antimony | | | | | | |
| Arsenic | | | | | | |
| Barium | | | | | | |
| Beryllium | | | | | | |
| Cadmium | | | | | | |
| Calcium | | | | | | |
| Chromium | | | | | | |
| Cobalt | | | | | | |
| Copper | | | | | | |
| Iron | | | | | | |
| Lead | 4.0 | 460 | 500 | 91.2 | 3.0 | 20 |
| Magnesium | | | | | | |
| Manganese | | | | | | |
| Molybdenum | | | | | | |
| Nickel | | | | | | |
| Potassium | | | | | | |
| Selenium | | | | | | |
| Silver | | | | | | |
| Sodium | | | | | | |
| Strontium | | | | | | |
| Thallium | | | | | | |
| Tin | | | | | | |
| Titanium | | | | | | |
| Vanadium | | | | | | |
| Zinc | | | | | | |

Associated samples MP26820: FA12483-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: FA12483
Account: TETRCAI - Tetra Tech EC, Inc
Project: WE03, Camp Lejuene, NC

QC Batch ID: MP26820
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 02/14/14

| Metal | BSP Result | Spikelot MPFLICP2 | % Rec | QC Limits |
|---|---|---|---|---|
| Aluminum | | | | |
| Antimony | | | | |
| Arsenic | | | | |
| Barium | | | | |
| Beryllium | | | | |
| Cadmium | | | | |
| Calcium | | | | |
| Chromium | | | | |
| Cobalt | | | | |
| Copper | | | | |
| Iron | | | | |
| Lead | 448 | 500 | 89.6 | 80-120 |
| Magnesium | | | | |
| Manganese | | | | |
| Molybdenum | | | | |
| Nickel | | | | |
| Potassium | | | | |
| Selenium | | | | |
| Silver | | | | |
| Sodium | | | | |
| Strontium | | | | |
| Thallium | | | | |
| Tin | | | | |
| Titanium | | | | |
| Vanadium | | | | |
| Zinc | | | | |

Associated samples MP26820: FA12483-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: FA12483
Account: TETRCAI - Tetra Tech EC, Inc
Project: WE03, Camp Lejuene, NC

QC Batch ID: MP26820
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 02/14/14

| Metal | FA12483-1 Original | SDL 1:5 | %DIF | QC Limits |
|---|---|---|---|---|
| Aluminum | | | | |
| Antimony | | | | |
| Arsenic | | | | |
| Barium | | | | |
| Beryllium | | | | |
| Cadmium | | | | |
| Calcium | | | | |
| Chromium | | | | |
| Cobalt | | | | |
| Copper | | | | |
| Iron | | | | |
| Lead | 4.00 | 5.70 | 42.5 (a) | 0-10 |
| Magnesium | | | | |
| Manganese | | | | |
| Molybdenum | | | | |
| Nickel | | | | |
| Potassium | | | | |
| Selenium | | | | |
| Silver | | | | |
| Sodium | | | | |
| Strontium | | | | |
| Thallium | | | | |
| Tin | | | | |
| Titanium | | | | |
| Vanadium | | | | |
| Zinc | | | | |

Associated samples MP26820: FA12483-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

POST DIGESTATE SPIKE SUMMARY

Login Number: FA12483
Account: TETRCAI - Tetra Tech EC, Inc
Project: WE03, Camp Lejuene, NC

QC Batch ID: MP26820
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 02/14/14

| Metal | Sample ml | Final ml | FA12483-1 Raw | Corr.** | PS ug/l | Spike ml | Spike ug/ml | Spike ug/l | % Rec | QC Limits |
|---|---|---|---|---|---|---|---|---|---|---|
| Aluminum | | | | | | | | | | |
| Antimony | | | | | | | | | | |
| Arsenic | | | | | | | | | | |
| Barium | | | | | | | | | | |
| Beryllium | | | | | | | | | | |
| Cadmium | | | | | | | | | | |
| Calcium | | | | | | | | | | |
| Chromium | | | | | | | | | | |
| Cobalt | | | | | | | | | | |
| Copper | | | | | | | | | | |
| Iron | | | | | | | | | | |
| Lead | 9.8 | 10 | 4 | 3.92 | 52.2 | 0.2 | 2.5 | 50 | 96.6 | 80-120 |
| Magnesium | | | | | | | | | | |
| Manganese | | | | | | | | | | |
| Molybdenum | | | | | | | | | | |
| Nickel | | | | | | | | | | |
| Potassium | | | | | | | | | | |
| Selenium | | | | | | | | | | |
| Silver | | | | | | | | | | |
| Sodium | | | | | | | | | | |
| Strontium | | | | | | | | | | |
| Thallium | | | | | | | | | | |
| Tin | | | | | | | | | | |
| Titanium | | | | | | | | | | |
| Vanadium | | | | | | | | | | |
| Zinc | | | | | | | | | | |

Associated samples MP26820: FA12483-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(**) Corr. sample result = Raw * (sample volume / final volume)
(anr) Analyte not requested

# APPENDIX M

# RISK CLASSIFICATION AND LAND USE FORM

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**Limited Site Assessment Risk Classification and Land Use Form**

Part I – Groundwater/Surface Water/Vapor Impacts

**High Risk**

1. Has the release contaminated any water supply well including any well used for non-drinking purposes? YES/**NO**
2. Is a water supply well used for drinking water located within 1,000 feet of the source area of the release? YES/**NO**
3. Is a water supply well not used for drinking water (e.g., irrigation, washing cars, industrial cooling water, filling swimming pools) located within 250 feet of the source area of the release? YES/**NO**
4. Does groundwater within 500 feet of the source area of the release have the potential for future use (there is no other source of water supply other than the groundwater)? YES/**NO**
5. Do vapors from the release pose a threat of explosion because of accumulation of the vapors in a confined space or pose any other serious threat to public health, public safety or the environment? YES/**NO**
   If yes, describe.
   _____
6. Are there any other factors that would cause the release to pose an imminent danger to public health, public safety, or the environment? YES/**NO**
   If yes, describe.
   _____

**Intermediate Risk**

7. Is a surface water body located within 500 feet of the source area of the release? YES/**NO**

   *Only some intermittent drainage ditches/channels on the golf course are within 500 feet, with a couple golf course ponds just outside of 500 feet.*

   If **YES**, does the maximum groundwater contaminant concentration exceed the surface water quality standards and criteria found in 15A NCAC 2B .0200 by a factor of 10? YES/**NO**

8. Is the source area of the release located within an approved or planned wellhead protection area as defined in 42 USC 300h-7(e)? YES/**NO**
   If yes, describe.
   _____
9. Is the release located in the Coastal Plain physiographic region as designated on a map entitled "Geology of North Carolina" published by the Department in 1985? **YES**/NO

If **YES**, is the source area of the release located in an area in which there is recharge to an unconfined or semi-confined deeper aquifer that is being used or may be used as a source of drinking water? If YES, describe. **YES**/NO

*The potential source area is located just above the unconfined surficial aquifer. However, the surficial aquifer is not used for the potable water supply at MCB Camp Lejeune. The deeper Castle Hayne aquifer is the water source for potable water treatment facilities.*

10. Do the levels of groundwater contamination for any contaminant exceed the gross contamination levels (See Table 2.) established by the Department? YES/**NO**

Part II - Land Use

**Property Containing Source Area of Release**

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

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

   *No residences in site area. An active golf course maintenance facility is in immediate area surrounded by the golf course itself.*

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

   *Golf course could be considered a recreation area for base personnel and guests at MCB Camp Lejeune. However, other than occasional golfers and maintenance crews, the immediate site area should not be considered a true place of public assembly.*

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? Describe. **YES**/NO

   *As mentioned above, an active golf course maintenance shop is in close proximity to the site and new ASTs will provide fuel storage to support future course maintenance activities the area.*

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

   *Although it could be possible for a child to visit the property, it can be assumed this would not be a typical or regular place for a child to visit.*

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

*The site is located on MCB Camp Lejeune which restricts access to base personnel and their families. However, there are no other restrictions to access the site area.*

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

   Describe. *Only gravel, grass, and wooded areas near the site except for maintenance shop 60 feet to the northeast of the UST.*

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

6. What is the zoning status of the property?

   *MCB Camp Lejeune is no subject to county zoning requirements.*

7. Is the use of the property likely to change in the next 20 years? Explain. YES/**NO**

   *The current use of the MCB Camp Lejeune area is not likely to change in the near future.*

**Property Surrounding Source Area of Release**

The questions below pertain to the area within 1,500 feet of the source area of the release (excludes property containing source area of the release):

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

   *> 1,500 feet*

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?

   *Besides the golf course area itself (recreation area?), > 1,500 feet.*

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

   *MCB Camp Lejeune is no subject to county zoning requirements.*

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

   *As mentioned above, the site it associated with a golf course maintenance shop and completely surrounded by the golf course.*

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