**SUMMARY REPORT**
**67 ASTER STREET (FORMERLY 593 ASTER STREET)**
**LAUREL BAY MILITARY HOUSING AREA**
**MARINE CORPS AIR STATION BEAUFORT**
**BEAUFORT, SC**

**Revision: 0**
**Prepared for:**

**Department of the Navy**
**Naval Facilities Engineering Command, Mid-Atlantic**
**9324 Virginia Avenue**
**Norfolk, Virginia 23511-3095**

**and**


**Naval Facilities Engineering Command Atlantic**
**9324 Virginia Avenue**
**Norfolk, Virginia 23511-3095**

**JUNE 2021**

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**Norfolk, Virginia 23511-3095**

**Prepared by:**

**CDM - AECOM Multimedia Joint Venture**
**10560 Arrowhead Drive, Suite 500**
**Fairfax, Virginia 22030**

**Contract Number: N62470-14-D-9016**
**CTO WE52**
**JUNE 2021**

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## Tables



## Appendices

## List of Acronyms

| | |
|---|---|
| bgs | below ground surface |
| BTEX | benzene, toluene, ethylbenzene, and xylenes |
| CTO | Contract Task Order |
| COPC | constituents of potential concern |
| ft | feet |
| IDIQ | Indefinite Delivery, Indefinite Quantity |
| IGWA | Initial Groundwater Assessment |
| JV | Joint Venture |
| LBMH | Laurel Bay Military Housing |
| MCAS | Marine Corps Air Station |
| NAVFAC Mid-Lant | Naval Facilities Engineering Command Mid-Atlantic |
| NFA | No Further Action |
| PAH | polynuclear aromatic hydrocarbon |
| QAPP | Quality Assurance Program Plan |
| RBSL | risk-based screening level |
| SCDHEC | South Carolina Department of Health and Environmental Control |
| Site | LBMH area at MCAS Beaufort, South Carolina |
| UST | underground storage tank |
| VISL | vapor intrusion screening level |

## 1.0 INTRODUCTION

The CDM - AECOM Multimedia Joint Venture (JV) was contracted by the Naval Facilities Engineering Command, Mid-Atlantic (NAVFAC Mid-Lant) to provide reporting services for the heating oil underground storage tanks (USTs) located in Laurel Bay Military Housing (LBMH) area at the Marine Corps Air Station (MCAS) Beaufort, South Carolina (Site). This work has been awarded under Contract Task Order (CTO) WE52 of the Indefinite Delivery, Indefinite Quantity (IDIQ) Multimedia Environmental Compliance Contract (Contract No. N62470-14-D-9016).

As of January 2014, the LBMH addresses were re-numbered to comply with the E-911 emergency response addressing system; however, in order to remain consistent with historical sampling and reporting for LBMH area, the residences will continue to be referenced with their original address numbers in sample nomenclature and reporting documents.

This report summarizes the results the environmental investigation activities associated with the storage of home heating oil and the potential release of petroleum constituents at the referenced property. Based on the results of the investigation, a No Further Action (NFA) determination has been made by the South Carolina Department of Health and Environmental Control (SCDHEC) for 67 Aster Street (Formerly 593 Aster Street). This NFA determination indicates that there are no unacceptable risks to human health or the environment for the petroleum constituents associated with the home heating oil USTs. The following information is included in this report:

- Background information;
- Sampling activities and results; and
- A determination of the property status.

### 1.1 Background Information

The LBMH area is located approximately 3.5 miles west of MCAS Beaufort. The area is approximately 970 acres in size and serves as an enlisted and officer family housing area. The area is configured with single family and duplex residential structures, and includes recreation, open space, and community facilities. The community includes approximately 1,300 housing units, including legacy Capehart style homes and newer duplex style homes. The housing area

is bordered on the west by salt marshes and the Broad River, and to the north, east and south by uplands. Forested areas lie along the northern and northeastern borders.

Capehart style homes within the LBMH area were formerly heated using heating oil stored in USTs at each residence. There were 1,100 Capehart style housing units in the LBMH area. The newer duplex homes within the LBMH area never utilized heating oil tanks. Heating oil has not been used at Laurel Bay since the mid-1980s. As was the accepted practice at the time, USTs were drained, filled with dirt, capped, and left in place when they were removed from service. Residential USTs are not regulated in the State of South Carolina (i.e., there are no federal or state laws governing installation, management, or removal).

In 2007, MCAS Beaufort began a voluntary program to remove the unregulated, residential USTs and conduct sampling activities to determine if, and to what extent, petroleum constituents may have impacted the surrounding environment. MCAS Beaufort coordinated with SCDHEC to develop removal procedures that were consistent with procedural requirements for regulated USTs. All tank removal activities and follow-on actions are conducted in coordination with SCDHEC. To date, all known USTs have been removed from all residential properties within the LBMH area.

## 1.2 UST Removal and Assessment Process

During the UST removal process, a soil sample was collected from beneath the UST excavations (approximately 4 to 6 feet [ft] below ground surface [bgs]) and analyzed for a predetermined list of constituents of potential concern (COPCs) associated with the petroleum compounds found in home heating oil. These COPCs, derived from the *Quality Assurance Program Plan (QAPP) for the Underground Storage Tank Management Division, Revision 3.1* (SCDHEC, 2016) and the *Underground Storage Tank Assessment Instructions for Permanent Closure and Change-In-Service,* (SCDHEC, 2018), are as follows:

- benzene, toluene, ethylbenzene, and xylenes (BTEX),
- naphthalene, and
- five select polynuclear aromatic hydrocarbon (PAHs): benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene and dibenz(a,h)anthracene.

Soil sample results were submitted by MCAS Beaufort to SCDHEC utilizing SCDHEC's UST Assessment Report form. In accordance with SCDHEC's *QAPP for the UST Management*

*Division* (SCDHEC, 2016), the soil screening levels consists of SCDHEC risk-based screening levels (RBSLs). It should be noted that the RBSLs for select PAHs were revised in Revision 2.0 of the QAPP (SCDHEC, 2013) and were revised again in Revision 3.0 (SCDHEC, 2015). The screening levels used for evaluation at each site were those levels that were in effect at the time of reporting and review by SCDHEC.

The results of the soil sampling at each former UST location were used to determine if a potential for groundwater contamination exists (i.e., soil results greater than RBSLs) and subsequently to select properties for follow-up initial groundwater assessment (IGWA) sampling. The results of the IGWA sampling (if necessary) are used to determine the presence or absence of the aforementioned COPCs in groundwater and identify whether former UST locations will require additional delineation of COPCs in groundwater. In order to delineate the extent of impact to groundwater, permanent wells are installed and a sampling program is established for those former UST locations where IGWA sampling has indicated the presence of COPCs in excess of the SCDHEC RBSLs for groundwater. Groundwater analytical results are also compared to the site specific groundwater vapor intrusion screening levels (VISLs) to evaluate the potential for vapor intrusion and the necessity for an investigation associated with this media. A multi-media investigation selection process tree, applicable to the LBMH UST investigations, is presented as Appendix A.

## 2.0 SAMPLING ACTIVITIES AND RESULTS

The following section presents the sampling activities and associated results for 67 Aster Street (Formerly 593 Aster Street). Details regarding the soil investigation at this site are provided in the *SCDHEC UST Assessment Report – 593 Aster Street* (MCAS Beaufort, 2013). The UST Assessment Report is provided in Appendix B. Details regarding the IGWA sampling activities at this site are provided in the *Initial Groundwater Investigation Report – February and March 2017* (Resolution Consultants, 2017). The laboratory report that includes the pertinent IGWA analytical results for this site is presented in Appendix C.

### 2.1 UST Removal and Soil Sampling

On November 29, 2012, a single 280 gallon heating oil UST was removed from underneath the front concrete porch at 67 Aster Street (Formerly 593 Aster Street). The former UST location is indicated on Figures 2 and 3 of the UST Assessment Report (Appendix B). The UST was removed, cleaned, and shipped offsite for recycling. There was no visual evidence (i.e.,

staining or sheen) of petroleum impact at the time of the UST removal. According to the UST Assessment Report (Appendix B), the depth to the base of the UST was 6'1" bgs and a single soil sample was collected from that depth. The sample was collected from the fill port side of the former UST to represent a worst case scenario.

Following UST removal, a soil sample was collected from the base of the excavation and shipped to an offsite laboratory for analysis of the petroleum COPCs. Sampling was performed in accordance with applicable South Carolina regulation R.61-92, Part 280 (SCDHEC, 2017) and assessment guidelines.

## 2.2 Soil Analytical Results

A summary of the laboratory analytical results and SCDHEC RBSLs is presented in Table 1. A copy of the laboratory analytical data report is included in the UST Assessment Report presented in Appendix B. The laboratory analytical data report includes the soil results for the additional PAHs that were analyzed, but do not have associated RBSLs.

The soil sample results were submitted by MCAS Beaufort to SCDHEC utilizing SCDHEC's UST Assessment Report form (Appendix B). The results of the soil sampling at the former UST location were used by MCAS Beaufort, in consultation with SCDHEC, to determine a path forward (i.e., additional sampling or NFA) for the property. The soil results collected from 67 Aster Street (Formerly 593 Aster Street) were greater than the SCDHEC RBSLs, which indicated further investigation was required. In a letter dated August 24, 2016, SCDHEC requested an IGWA for 67 Aster Street (Formerly 593 Aster Street) to determine if the groundwater was impacted by petroleum COPCs. SCDHEC's request letter is provided in Appendix D.

## 2.3 Groundwater Sampling

On February 28, 2017, a temporary monitoring well was installed at 67 Aster Street (Formerly 593 Aster Street), in accordance with the South Carolina Well Standards and Regulations (R.61-71.H-I, updated June 24, 2016). In order to provide data that can be used to determine whether COPCs are migrating to underlying groundwater, the monitoring well was placed in the same general location as the former heating oil UST. The former UST location is indicated on Figures 2 and 3 of the UST Assessment Report (Appendix B). Further details are provided in the *Initial Groundwater Investigation Report – February and March 2017* (Resolution Consultants, 2017).

The sampling strategy for this phase of the investigation required a one-time sampling event of the temporarily installed monitoring well. Following well installation and development, groundwater samples were collected using low-flow methods and shipped to an offsite laboratory for analysis of the petroleum COPCs. Upon completion of groundwater sampling, the temporary well was abandoned in accordance with the South Carolina Well Standards and Regulations R.61-71 (SCDHEC, 2016). Field forms are provided in the *Initial Groundwater Investigation Report – February and March 2017* (Resolution Consultants, 2017).

### 2.4 Groundwater Analytical Results

A summary of the laboratory analytical results and SCDHEC RBSLs is presented in Table 2. A copy of the laboratory analytical data report is included in Appendix C.

The groundwater results collected from 67 Aster Street (Formerly 593 Aster Street) were less than the SCDHEC RBSLs and the site specific groundwater VISLs (Table 2), which indicated that the groundwater was not impacted by COPCs associated with the former UST at concentrations that present a potential risk to human health and the environment.

## 3.0 PROPERTY STATUS

Based on the analytical results for groundwater, SCDHEC made the determination that NFA was required for 67 Aster Street (Formerly 593 Aster Street). This NFA determination was obtained in a letter dated July 27, 2017. SCDHEC's NFA letter is provided in Appendix D.

## 4.0 REFERENCES

Marine Corps Air Station Beaufort, 2013. *South Carolina Department of Health and Environmental Control (SCDHEC) Underground Storage Tank Assessment Report – 593 Aster Street, Laurel Bay Military Housing Area*, April 2013.

Resolution Consultants, 2017. *Initial Groundwater Investigation Report – February and March 2017 for Laurel Bay Military Housing Area, Multiple Properties, Laurel Bay Military Housing Area, Marine Corps Air Station Beaufort, Beaufort, South Carolina*, June 2017.

South Carolina Department of Health and Environmental Control Bureau of Land and Waste Management, 2013. *Quality Assurance Program Plan for the Underground Storage Tank Management* Division*, Revision 2.0*, April 2013.

South Carolina Department of Health and Environmental Control Bureau of Land and Waste Management, 2015. *Quality Assurance Program Plan for the Underground Storage Tank Management* Division*, Revision 3.0*, May 2015.

South Carolina Department of Health and Environmental Control Bureau of Land and Waste Management, 2016. *Quality Assurance Program Plan for the Underground Storage Tank Management* Division*, Revision 3.1*, February 2016.

South Carolina Department of Health and Environmental Control Bureau of Land and Waste Management, 2017. *R.61-92, Part 280, Underground Storage Tank Control Regulations*, March 2017.

South Carolina Department of Health and Environmental Control Bureau of Land and Waste Management, 2018. *Underground Storage Tank Assessment Instructions for Permanent Closure and Change-In-Service*, March 2018.

South Carolina Department of Health and Environmental Control Bureau of Water, 2016. *R.61-71, Well Standards*, June 2016.

# Tables

**Table 1**
**Laboratory Analytical Results - Soil**
**67 Aster Street (Formerly 593 Aster Street)**
**Laurel Bay Military Housing Area**
**Marine Corps Air Station Beaufort**
**Beaufort, South Carolina**

| Constituent | SCDHEC RBSLs [1] | Results Sample Collected 11/29/12 |
|---|---|---|
| **Volatile Organic Compounds Analyzed by EPA Method 8260B (mg/kg)** | | |
| Benzene | 0.003 | ND |
| Ethylbenzene | 1.15 | ND |
| Naphthalene | 0.036 | **0.0383** |
| Toluene | 0.627 | ND |
| Xylenes, Total | 13.01 | **0.00120** |
| **Semivolatile Organic Compounds Analyzed by EPA Method 8270D (mg/kg)** | | |
| Benzo(a)anthracene | 0.66 | **0.0349** |
| Benzo(b)fluoranthene | 0.66 | **0.0676** |
| Benzo(k)fluoranthene | 0.66 | **0.0243** |
| Chrysene | 0.66 | **0.0392** |
| Dibenz(a,h)anthracene | 0.66 | ND |

**Notes:**

[1] South Carolina Risk-Based Screening Levels from the Quality Assurance Program Plan for the Underground Storage Tank Management Division, Revision 3.0 and 3.1 (SCDHEC, May 2015 and SCDHEC, February 2016) and the Underground Storage Tank Assessment Guidelines (SCDHEC, February 2006).

Bold font indicates the analyte was detected.

Bold font and shading indicates the concentration exceeds the SCDHEC RBSL.

EPA - United States Environmental Protection Agency

mg/kg - milligrams per kilogram

ND - not detected at the reporting limit (or method detection limit if shown on the laboratory report). The soil laboratory report is provided in Appendix B.

RBSL - Risk-Based Screening Level

SCDHEC - South Carolina Department Of Health and Environmental Control

**Table 2**
**Laboratory Analytical Results - Groundwater**
**67 Aster Street (Formerly 593 Aster Street)**
**Laurel Bay Military Housing Area**
**Marine Corps Air Station Beaufort**
**Beaufort, South Carolina**

| Constituent | SCDHEC RBSLs [1] | Site-Specific Groundwater VISLs (µg/L)[2] | Results Sample Collected 03/01/17 |
|---|---|---|---|
| **Volatile Organic Compounds Analyzed by EPA Method 8260B (µg/L)** | | | |
| Benzene | 5 | 16.24 | ND |
| Ethylbenzene | 700 | 45.95 | ND |
| Naphthalene | 25 | 29.33 | ND |
| Toluene | 1000 | 105,445 | ND |
| Xylenes, Total | 10,000 | 2,133 | ND |
| **Semivolatile Organic Compounds Analyzed by EPA Method 8270D (µg/L)** | | | |
| Benzo(a)anthracene | 10 | NA | ND |
| Benzo(b)fluoranthene | 10 | NA | ND |
| Benzo(k)fluoranthene | 10 | NA | ND |
| Chrysene | 10 | NA | ND |
| Dibenz(a,h)anthracene | 10 | NA | ND |

**Notes:**

[1] South Carolina Risk-Based Screening Levels from the Quality Assurance Program Plan for the Underground Storage Tank Management Division, Revision 3.1 (SCDHEC, February 2016).

[2] Site-specific groundwater VISLs were calculated using the EPA JE Model Spreadsheets (Version 3.1, February 2004) and conservative modeling inputs representative of a small single-story house with an 8 foot ceiling. Site-specific groundwater VISLs were developed based on a target risk level of $1x10^{-6}$, a target hazard quotient of 1 (per target organ), and a default residential exposure scenario, assuming exposure for 24 hours/day, 350 days/year, for 26 years. Modeling was performed for a range of depths to groundwater for application as appropriate in different areas of the Laurel Bay Military Housing Area. The most conservative levels are presented for comparison. Refer to Appendix H of the Uniform Federal Policy Sampling Analysis and Sampling Plan for Vapor Media, Revision 4 (Resolution Consultants, April 2017) for additional information.

Bold font indicates the analyte was detected.

Bold font and shading indicates the concentration exceeds the SCDHEC RBSL and/or the Site-Specific Groundwater VISL.

EPA - United States Environmental Protection Agency

JE - Johnson & Ettinger

NA - Not Applicable

ND - not detected at the reporting limit (or method detection limit if shown on the laboratory report). The groundwater laboratory report is provided in Appendix C.

RBSL - Risk-Based Screening Level

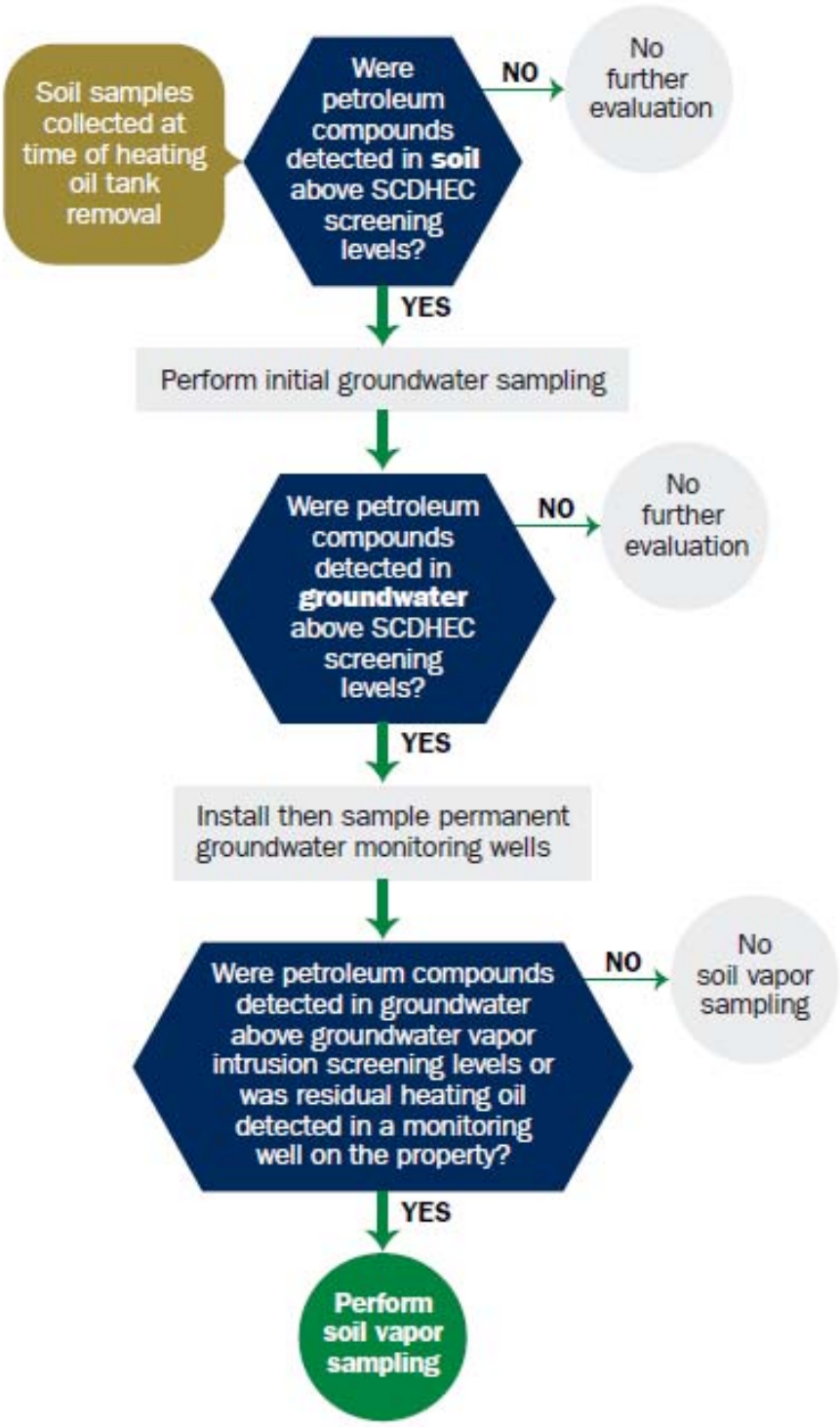
SCDHEC - South Carolina Department Of Health and Environmental Control

µg/L - micrograms per liter

VISL - Vapor Intrusion Screening Level

**Appendix A**
**Multi-Media Selection Process for LBMH**

CDM - AECOM
Multimedia Joint Venture




## Appendix A - Multi-Media Selection Process for LBMH

**Appendix B**
**UST Assessment Report**

CDM - AECOM
Multimedia Joint Venture

Attachment 1

South Carolina Department of Health and Environmental Control (SCDHEC)

# Underground Storage Tank (UST) Assessment Report

| Date Received |
|---|
| State Use Only |

**Submit Completed Form To:**
**UST Program**
**SCDHEC**
**2600 Bull Street**
**Columbia, South Carolina 29201**
**Telephone (803) 896-7957**

## I. OWNERSHIP OF UST (S)

MCAS Beaufort, Commanding Officer Attn: NREAO (Craig Ehde)
Owner Name (Corporation, Individual, Public Agency, Other)

P.O. Box 55001
Mailing Address

| Beaufort, | South Carolina | 29904-5001 |
|---|---|---|
| City | State | Zip Code |

| 843 | 228-7317 | Craig Ehde |
|---|---|---|
| Area Code | Telephone Number | Contact Person |

## II. SITE IDENTIFICATION AND LOCATION

Permit I.D. #

Laurel Bay Military Housing Area, Marine Corps Air Station, Beaufort, SC
Facility Name or Company Site Identifier

593 Aster Street, Laurel Bay Military Housing Area
Street Address or State Road (as applicable)

| Beaufort, | Beaufort |
|---|---|
| City | County |

Attachment 2

## III. INSURANCE INFORMATION

### Insurance Statement

The petroleum release reported to DHEC on _____ at Permit ID Number _____ may qualify to receive state monies to pay for appropriate site rehabilitation activities. Before participation is allowed in the State Clean-up fund, written confirmation of the existence or non-existence of an environmental insurance policy is required. **This section must be completed.**

Is there now, or has there ever been an insurance policy or other financial mechanism that covers this UST release? **YES**____ **NO**_____ (check one)

If you answered **YES** to the above question, please complete the following information:

My policy provider is:_____
The policy deductible is: _____
The policy limit is: _____

If you have this type of insurance, please include a copy of the policy with this report.

## IV. REQUEST FOR SUPERB FUNDING

I **DO** / DO **NOT** wish to participate in the SUPERB Program. (Circle one.)

## V. CERTIFICATION (To be signed by the UST owner)

**I certify 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 responsible for obtaining this information, I believe that the submitted information is true, accurate, and complete.**

_____
Name (Type or print.)

_____
Signature

### To be completed by Notary Public:

Sworn before me this _____ day of_____, 20____

_____
(Name)

Notary Public for the state of_____.
*Please affix State seal if you are commissioned outside South Carolina*

## VI. UST INFORMATION

| | | | |
|---|---|---|---|
| A. | Product...(ex. Gas, Kerosene)..... | 593Aster | |
| B. | Capacity..(ex. 1k, 2k)..... | Heating oil | |
| C. | Age..... | 280 gal | |
| D. | Construction Material..(ex. Steel, FRP)..... | Late 1950s | |
| E. | Month/Year of Last Use..... | Steel | |
| F. | Depth (ft.) To Base of Tank..... | Mid 80s | |
| G. | Spill Prevention Equipment Y/N..... | 6'1" | |
| H. | Overfill Prevention Equipment Y/N..... | No | |
| I. | Method of Closure Removed/Filled..... | No | |
| J. | Date Tanks Removed/Filled..... | Removed | |
| K. | Visible Corrosion or Pitting Y/N..... | 11/29/2012 | |
| L. | Visible Holes Y/N..... | Yes | |
| | | Yes | |

M. Method of disposal for any USTs removed from the ground (attach disposal manifests)
UST 593Aster was removed from the ground and disposed at a Subtitle "D" landfill. See Attachment "A".

N. Method of disposal for any liquid petroleum, sludges, or wastewaters removed from the USTs (attach disposal manifests)
UST 593Aster had been previously filled with sand by others.

O. If any corrosion, pitting, or holes were observed, describe the location and extent for each UST
Corrosion, pitting and holes were present throughout the tank.

## VII. PIPING INFORMATION

| | | | |
|---|---|---|---|
| A. | Construction Material..(ex. Steel, FRP)..... | 593Aster | |
| B. | Distance from UST to Dispenser..... | Steel & Copper | |
| C. | Number of Dispensers..... | N/A | |
| D. | Type of System Pressure or Suction..... | N/A | |
| E. | Was Piping Removed from the Ground? Y/N | Suction | |
| F. | Visible Corrosion or Pitting Y/N..... | No | |
| G. | Visible Holes Y/N..... | Yes | |
| H. | Age..... | No | |
| | | Late 1950s | |

I. If any corrosion, pitting, or holes were observed, describe the location and extent for each piping run.

Corrosion and pitting were found on the steel vent piping, but the copper supply and return piping were sound.

## VIII. BRIEF SITE DESCRIPTION AND HISTORY

The USTs at the residences are constructed of single wall steel and formerly contained fuel oil for heating. These USTs were installed in the late 1950s and last used in the mid 1980s.

# IX. SITE CONDITIONS

| | Yes | No | Unk |
|---|---|---|---|
| A. Were any petroleum-stained or contaminated soils found in the UST excavation, soil borings, trenches, or monitoring wells?<br><br>If yes, indicate depth and location on the site map. | | X | |
| B. Were any petroleum odors detected in the excavation, soil borings, trenches, or monitoring wells?<br><br>If yes, indicate location on site map and describe the odor (strong, mild, etc.) | | X | |
| C. Was water present in the UST excavation, soil borings, or trenches?<br><br>If yes, how far below land surface (indicate location and depth)? | | X | |
| D. Did contaminated soils remain stockpiled on site after closure?<br><br>If yes, indicate the stockpile location on the site map.<br><br>Name of DHEC representative authorizing soil removal: | | X | |
| E. Was a petroleum sheen or free product detected on any excavation or boring waters?<br><br>If yes, indicate location and thickness. | | X | |

# X. SAMPLE INFORMATION

A. SCDHEC Lab Certification Number 84009

B.

| Sample # | Location | Sample Type (Soil/Water) | Soil Type (Sand/Clay) | Depth* | Date/Time of Collection | Collected by | OVA # |
|---|---|---|---|---|---|---|---|
| 593Aster | Excav at fill end | Soil | Sandy | 6'1" | 11/29/12 1515 hrs | P. Shaw | |
| | | | | | | | |
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| 11 | | | | | | | |
| 12 | | | | | | | |
| 13 | | | | | | | |
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| 17 | | | | | | | |
| 18 | | | | | | | |
| 19 | | | | | | | |
| 20 | | | | | | | |

* = Depth Below the Surrounding Land Surface

## XI. SAMPLING METHODOLOGY

Provide a detailed description of the methods used to collect and store the samples. Also include the preservative used for each sample. Please use the space provided below.

Sampling was performed in accordance with SC DHEC R.61-92 Part 280 and SC DHEC Assessment Guidelines. Sample containers were prepared by the testing laboratory. The grab method was utilized to fill the sample containers leaving as little head space as possible and immediately capped. Soil samples were extracted from area below tank. The samples were marked, logged, and immediately placed in a sample cooler packed with ice to maintain an approximate temperature of 4 degrees Centigrade. Tools were thoroughly cleaned and decontaminated with the seven step decon process after each use. The samples remained in custody of SBG-EEG, Inc. until they were transferred to Test America Incorporated for analysis as documented in the Chain of Custody Record.

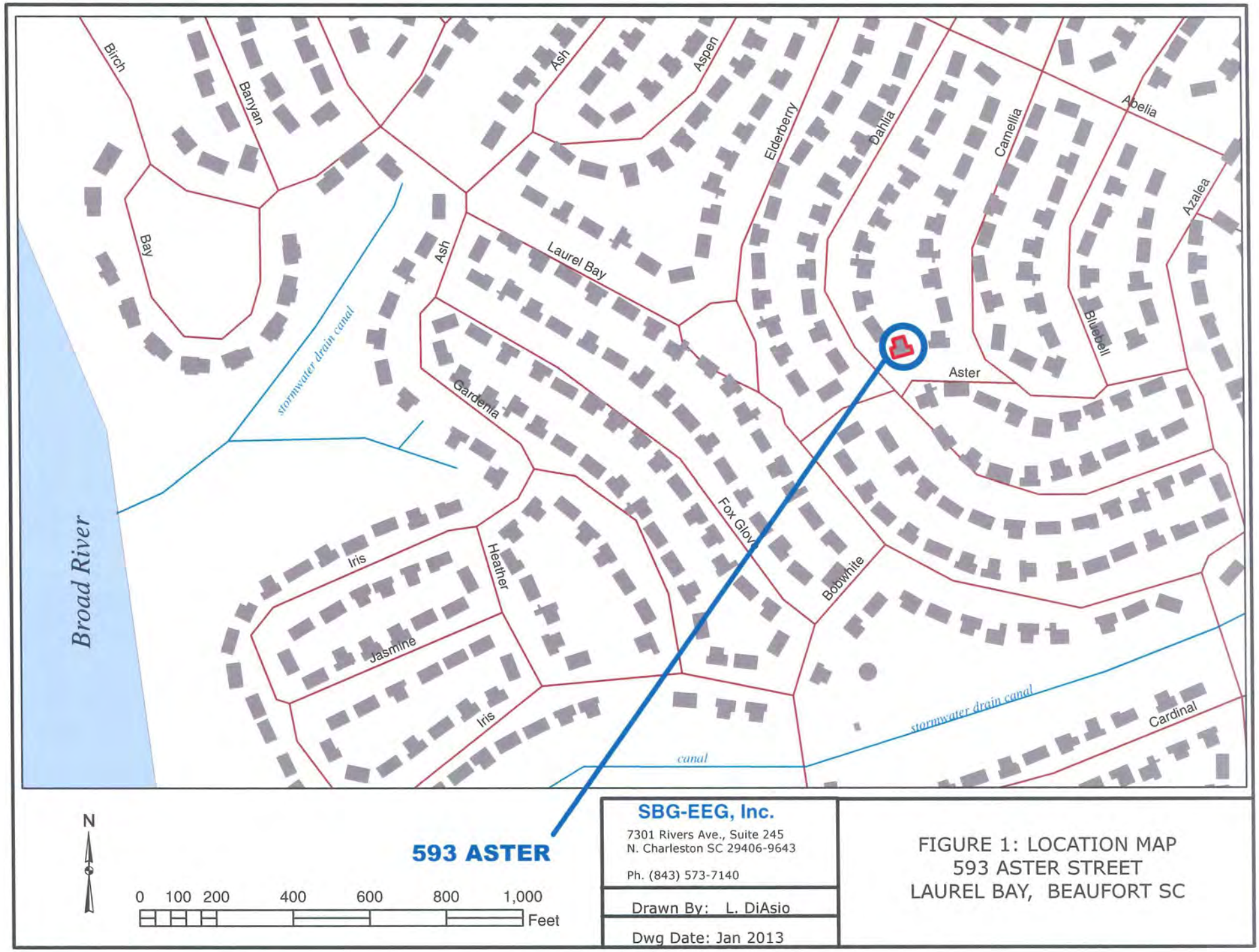
# XII. RECEPTORS

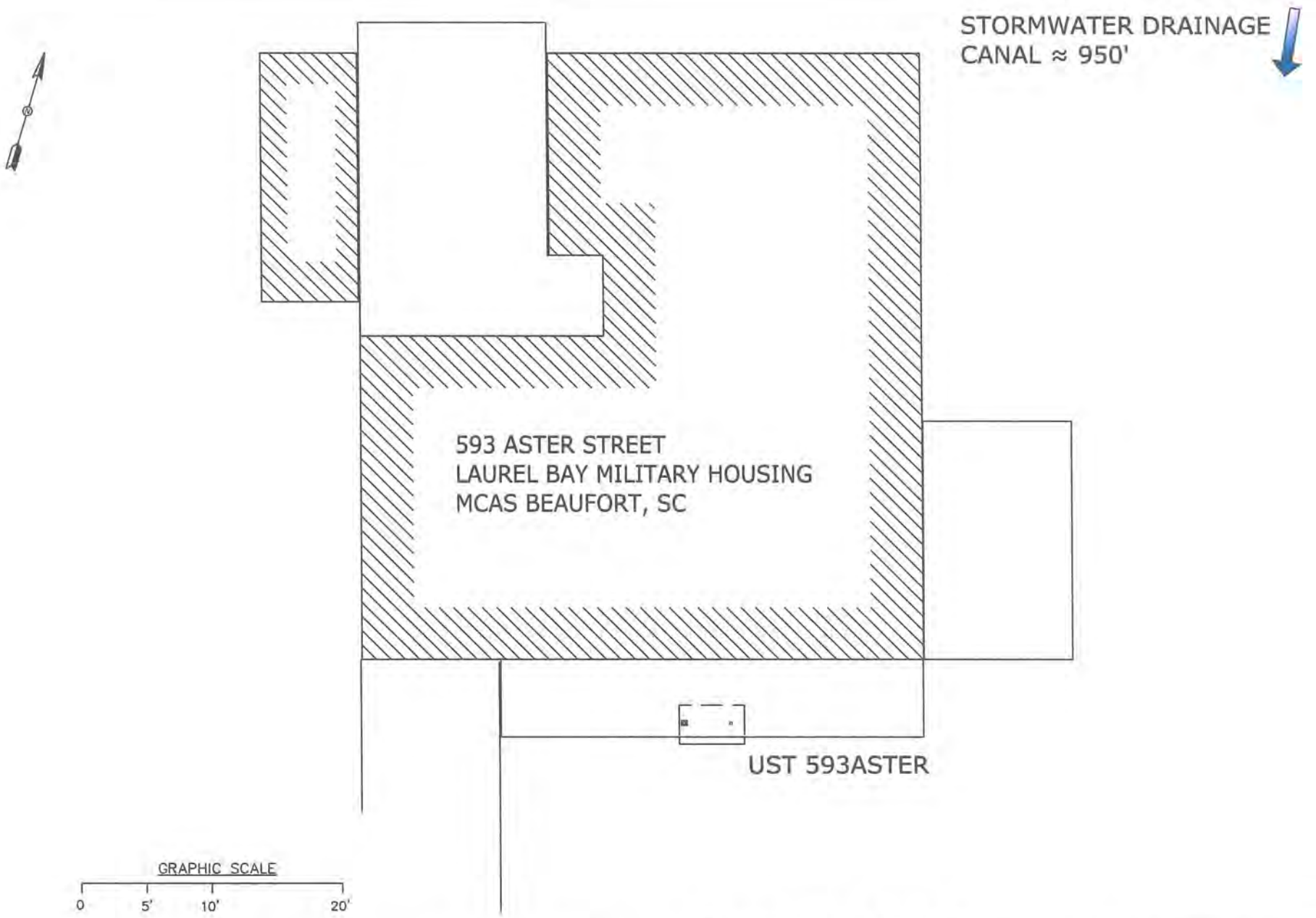
| | Yes | No |
|---|---|---|
| A. Are there any lakes, ponds, streams, or wetlands located within 1000 feet of the UST system?<br>*Stormwater drainage canal<br>If yes, indicate type of receptor, distance, and direction on site map. | *X | |
| B. Are there any public, private, or irrigation water supply wells within 1000 feet of the UST system?<br>If yes, indicate type of well, distance, and direction on site map. | | X |
| C. Are there any underground structures (e.g., basements) Located within 100 feet of the UST system?<br>If yes, indicate type of structure, distance, and direction on site map. | | X |
| D. Are there any underground utilities (e.g., telephone, electricity, gas, water, sewer, storm drain) located within 100 feet of the UST system that could potentially come in contact with the contamination? *Sewer, water, electricity, cable & fiber optic<br>If yes, indicate the type of utility, distance, and direction on the site map. | *X | |
| E. Has contaminated soil been identified at a depth less than 3 feet below land surface in an area that is not capped by asphalt or concrete?<br>If yes, indicate the area of contaminated soil on the site map. | | X |

## XIII. SITE MAP

**You must supply a scaled site map. It should include all buildings, road names, utilities, tank and dispenser island locations, labeled sample locations, extent of excavation, and any other pertinent information.**

(Attach Site Map Here)


Birch
Banyan
Bay
Ash
Aspen
Elderberry
Dahlia
Camellia
Abelia
Azalea
Bluebell
Aster
Laurel Bay
Ash
stormwater drain canal
Gardenia
Fox Glov
Bobwhite
Broad River
Iris
Heather
Jasmine
Iris
stormwater drain canal
Cardinal
canal
593 ASTER
N
0 100 200 400 600 800 1,000
Feet
SBG-EEG, Inc.
7301 Rivers Ave., Suite 245
N. Charleston SC 29406-9643
Ph. (843) 573-7140
Drawn By: L. DiAsio
Dwg Date: Jan 2013
FIGURE 1: LOCATION MAP
593 ASTER STREET
LAUREL BAY, BEAUFORT SC

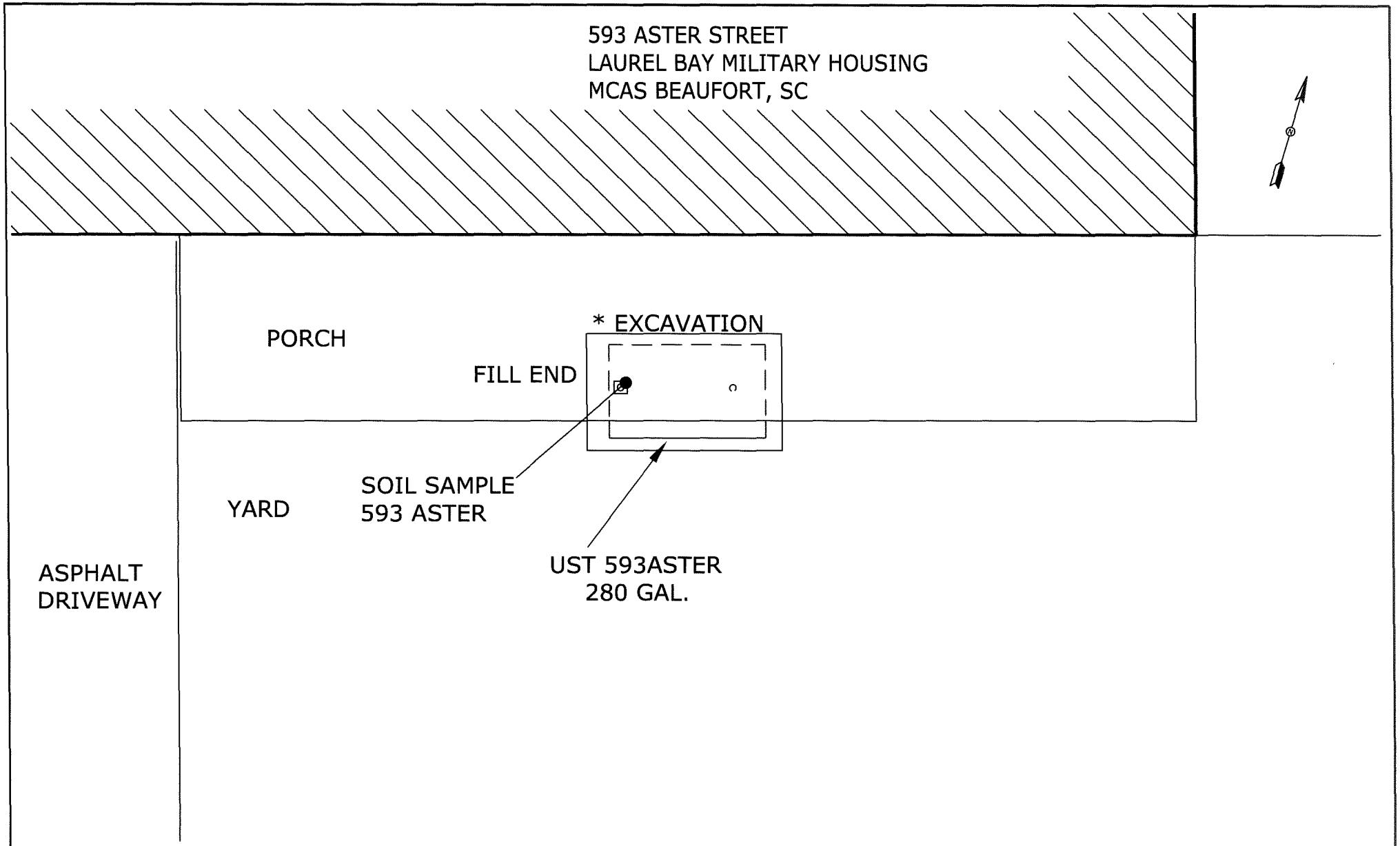



TANK DEPTH BELOW GRADE
593ASTER = 37"

SBG-EEG
7301 RIVERS AVE., SUITE 245
N. CHARLESTON SC 29406-9643
(843) 573-7140

FIGURE 2 SITE MAP
593 ASTER STREET, LAUREL BAY
MCAS BEAUFORT SC

SCALE: GRAPHIC | DWG DATE JAN 2013




* A PORTION OF THE PORCH WAS REMOVED TO FACILITATE TANK EXTRACTION.

**SBG-EEG**
7301 RIVERS AVE., SUITE 245
N. CHARLESTON SC 29406-9643
(843) 573-7140

FIGURE 3 UST SAMPLE LOCATIONS
593 ASTER STREET, LAUREL BAY
MCAS BEAUFORT SC

SCALE: GRAPHIC | DWG DATE JAN 2013

Picture 1: Location of UST 593Aster.

Picture 2: UST 593Aster excavation.

## XIV. SUMMARY OF ANALYSIS RESULTS

Enter the soil analytical data for each soil boring for all COC in the table below and on the following page.

| CoC UST | 593Aster | | | | | |
|---|---|---|---|---|---|---|
| Benzene | ND | | | | | |
| Toluene | ND | | | | | |
| Ethylbenzene | ND | | | | | |
| Xylenes | 0.00120 mg/kg | | | | | |
| Naphthalene | 0.0383 mg/kg | | | | | |
| Benzo (a) anthracene | 0.0349 mg/kg | | | | | |
| Benzo (b) fluoranthene | 0.0676 mg/kg | | | | | |
| Benzo (k) fluoranthene | 0.0243 mg/kg | | | | | |
| Chrysene | 0.0392 mg/kg | | | | | |
| Dibenz (a, h) anthracene | ND | | | | | |
| TPH (EPA 3550) | | | | | | |

| CoC | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Benzene | | | | | | | | |
| Toluene | | | | | | | | |
| Ethylbenzene | | | | | | | | |
| Xylenes | | | | | | | | |
| Naphthalene | | | | | | | | |
| Benzo (a) anthracene | | | | | | | | |
| Benzo (b) fluoranthene | | | | | | | | |
| Benzo (k) fluoranthene | | | | | | | | |
| Chrysene | | | | | | | | |
| Dibenz (a, h) anthracene | | | | | | | | |
| TPH (EPA 3550) | | | | | | | | |

## SUMMARY OF ANALYSIS RESULTS (cont'd)

Enter the ground water analytical data for each sample for all CoC in the table below. If free product is present, indicate the measured thickness to the nearest 0.01 feet.

| CoC | RBSL (µg/l) | W-1 | W-2 | W -3 | W -4 |
|---|---|---|---|---|---|
| Free Product Thickness | None | | | | |
| Benzene | 5 | | | | |
| Toluene | 1,000 | | | | |
| Ethylbenzene | 700 | | | | |
| Xylenes | 10,000 | | | | |
| Total BTEX | N/A | | | | |
| MTBE | 40 | | | | |
| Naphthalene | 25 | | | | |
| Benzo (a) anthracene | 10 | | | | |
| Benzo (b) flouranthene | 10 | | | | |
| Benzo (k) flouranthene | 10 | | | | |
| Chrysene | 10 | | | | |
| Dibenz (a, h) anthracene | 10 | | | | |
| EDB | .05 | | | | |
| 1,2-DCA | 5 | | | | |
| Lead | Site specific | | | | |

## XV. ANALYTICAL RESULTS

**You must submit the laboratory report and chain-of-custody form for the samples. These samples must be analyzed by a South Carolina certified laboratory.**

(Attach Certified Analytical Results and Chain-of-Custody Here)
(Please see Form #4)

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

# ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Tel: (615)726-0177

TestAmerica Job ID: 490-13294-1
TestAmerica Sample Delivery Group: 1063
Client Project/Site: Laurel Bay Housing Project

For:
Environmental Enterprise Group
10179 Highway 78
Ladson, South Carolina 29456

Attn: Mr. Tom McElwee

*Authorized for release by:*
*12/11/2012 2:34:55 PM*

Ken Hayes
Project Manager I
ken.hayes@testamericainc.com



*The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.*

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

# Table of Contents

# Sample Summary

Client: Environmental Enterprise Group
Project/Site: Laurel Bay Housing Project

TestAmerica Job ID: 490-13294-1
SDG: 1063

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received |
|---|---|---|---|---|
| 490-13294-1 | 1368 Cardinal | Solid | 11/26/12 16:15 | 12/04/12 08:15 |
| 490-13294-2 | 1455 Cardinal | Solid | 11/27/12 15:25 | 12/04/12 08:15 |
| 490-13294-3 | 1436 Dove | Solid | 11/28/12 15:15 | 12/04/12 08:15 |
| 490-13294-4 | 593 Aster | Solid | 11/29/12 15:15 | 12/04/12 08:15 |

## Job ID: 490-13294-1

Laboratory: TestAmerica Nashville

Narrative

**Job Narrative**
**490-13294-1**

**Comments**
No additional comments.

**Receipt**
The samples were received on 12/4/2012 8:15 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.6° C.

**GC/MS VOA**
Method(s) 8260B: Surrogate recovery for the following sample(s) was outside control limits: 1368 Cardinal (490-13294-1), 1436 Dove (490-13294-3). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method(s) 8260B: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with batch 41731.

Method(s) 8260B: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with batch 41863.

No other analytical or quality issues were noted.

**GC/MS Semi VOA**
No analytical or quality issues were noted.

**Organic Prep**
No analytical or quality issues were noted.

**VOA Prep**
No analytical or quality issues were noted.

## Qualifiers

### GC/MS VOA

| Qualifier | Qualifier Description |
|---|---|
| X | Surrogate is outside control limits |
| J | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |

### GC/MS Semi VOA

| Qualifier | Qualifier Description |
|---|---|
| J | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |

## Glossary

| Abbreviation | These commonly used abbreviations may or may not be present in this report. |
|---|---|
| ☼ | Listed under the "D" column to designate that the result is reported on a dry weight basis |
| %R | Percent Recovery |
| CNF | Contains no Free Liquid |
| DER | Duplicate error ratio (normalized absolute difference) |
| DL, RA, RE, IN | Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC | Decision level concentration |
| EDL | Estimated Detection Limit |
| EPA | United States Environmental Protection Agency |
| MDA | Minimum detectable activity |
| MDC | Minimum detectable concentration |
| MDL | Method Detection Limit |
| ML | Minimum Level (Dioxin) |
| ND | Not detected at the reporting limit (or MDL or EDL if shown) |
| PQL | Practical Quantitation Limit |
| QC | Quality Control |
| RER | Relative error ratio |
| RL | Reporting Limit or Requested Limit (Radiochemistry) |
| RPD | Relative Percent Difference, a measure of the relative difference between two points |
| TEF | Toxicity Equivalent Factor (Dioxin) |
| TEQ | Toxicity Equivalent Quotient (Dioxin) |

Client: Environmental Enterprise Group
Project/Site: Laurel Bay Housing Project

TestAmerica Job ID: 490-13294-1
SDG: 1063

**Client Sample ID: 1368 Cardinal**
Date Collected: 11/26/12 16:15
Date Received: 12/04/12 08:15

**Lab Sample ID: 490-13294-1**
Matrix: Solid
Percent Solids: 81.1

### Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | | 0.00201 | 0.000672 | mg/Kg | | 12/05/12 10:40 | 12/07/12 02:54 | 1 |
| Ethylbenzene | 1.34 | | 0.138 | 0.0468 | mg/Kg | | 12/05/12 10:14 | 12/07/12 10:22 | 1 |
| Naphthalene | 12.2 | | 0.344 | 0.117 | mg/Kg | | 12/05/12 10:14 | 12/07/12 10:22 | 1 |
| Toluene | 0.00380 | | 0.00201 | 0.000742 | mg/Kg | | 12/05/12 10:40 | 12/07/12 02:54 | 1 |
| Xylenes, Total | 2.55 | | 0.344 | 0.0468 | mg/Kg | | 12/05/12 10:14 | 12/07/12 10:22 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *92* | | *70 - 130* | *12/05/12 10:40* | *12/07/12 02:54* | *1* |
| *1,2-Dichloroethane-d4 (Surr)* | *83* | | *70 - 130* | *12/05/12 10:14* | *12/07/12 10:22* | *1* |
| *4-Bromofluorobenzene (Surr)* | *218* | *X* | *70 - 130* | *12/05/12 10:40* | *12/07/12 02:54* | *1* |
| *4-Bromofluorobenzene (Surr)* | *115* | | *70 - 130* | *12/05/12 10:14* | *12/07/12 10:22* | *1* |
| *Dibromofluoromethane (Surr)* | *104* | | *70 - 130* | *12/05/12 10:40* | *12/07/12 02:54* | *1* |
| *Dibromofluoromethane (Surr)* | *90* | | *70 - 130* | *12/05/12 10:14* | *12/07/12 10:22* | *1* |
| *Toluene-d8 (Surr)* | *123* | | *70 - 130* | *12/05/12 10:40* | *12/07/12 02:54* | *1* |
| *Toluene-d8 (Surr)* | *105* | | *70 - 130* | *12/05/12 10:14* | *12/07/12 10:22* | *1* |

### Method: 8270D - Semivolatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Acenaphthene | 1.12 | | 0.0811 | 0.0121 | mg/Kg | | 12/06/12 05:49 | 12/06/12 18:51 | 1 |
| Acenaphthylene | ND | | 0.0811 | 0.0109 | mg/Kg | | 12/06/12 05:49 | 12/06/12 18:51 | 1 |
| Anthracene | 0.254 | | 0.0811 | 0.0109 | mg/Kg | | 12/06/12 05:49 | 12/06/12 18:51 | 1 |
| Benzo[a]anthracene | 0.370 | | 0.0811 | 0.0181 | mg/Kg | | 12/06/12 05:49 | 12/06/12 18:51 | 1 |
| Benzo[a]pyrene | 0.156 | | 0.0811 | 0.0145 | mg/Kg | | 12/06/12 05:49 | 12/06/12 18:51 | 1 |
| Benzo[b]fluoranthene | 0.267 | | 0.0811 | 0.0145 | mg/Kg | | 12/06/12 05:49 | 12/06/12 18:51 | 1 |
| Benzo[g,h,i]perylene | 0.0427 | J | 0.0811 | 0.0109 | mg/Kg | | 12/06/12 05:49 | 12/06/12 18:51 | 1 |
| Benzo[k]fluoranthene | 0.106 | | 0.0811 | 0.0169 | mg/Kg | | 12/06/12 05:49 | 12/06/12 18:51 | 1 |
| 1-Methylnaphthalene | 15.7 | | 0.405 | 0.0847 | mg/Kg | | 12/06/12 05:49 | 12/07/12 14:12 | 5 |
| Pyrene | 1.06 | | 0.0811 | 0.0145 | mg/Kg | | 12/06/12 05:49 | 12/06/12 18:51 | 1 |
| Phenanthrene | 5.27 | | 0.405 | 0.0544 | mg/Kg | | 12/06/12 05:49 | 12/07/12 14:12 | 5 |
| Chrysene | 0.388 | | 0.0811 | 0.0109 | mg/Kg | | 12/06/12 05:49 | 12/06/12 18:51 | 1 |
| Dibenz(a,h)anthracene | ND | | 0.0811 | 0.00847 | mg/Kg | | 12/06/12 05:49 | 12/06/12 18:51 | 1 |
| Fluoranthene | 1.19 | | 0.0811 | 0.0109 | mg/Kg | | 12/06/12 05:49 | 12/06/12 18:51 | 1 |
| Fluorene | 2.10 | | 0.0811 | 0.0145 | mg/Kg | | 12/06/12 05:49 | 12/06/12 18:51 | 1 |
| Indeno[1,2,3-cd]pyrene | 0.0441 | J | 0.0811 | 0.0121 | mg/Kg | | 12/06/12 05:49 | 12/06/12 18:51 | 1 |
| Naphthalene | 5.48 | | 0.405 | 0.0544 | mg/Kg | | 12/06/12 05:49 | 12/07/12 14:12 | 5 |
| 2-Methylnaphthalene | 26.6 | | 0.811 | 0.194 | mg/Kg | | 12/06/12 05:49 | 12/08/12 19:29 | 10 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *2-Fluorobiphenyl (Surr)* | *68* | | *29 - 120* | *12/06/12 05:49* | *12/06/12 18:51* | *1* |
| *Terphenyl-d14 (Surr)* | *89* | | *13 - 120* | *12/06/12 05:49* | *12/06/12 18:51* | *1* |
| *Nitrobenzene-d5 (Surr)* | *93* | | *27 - 120* | *12/06/12 05:49* | *12/06/12 18:51* | *1* |

### General Chemistry

| Analyte | Result | Qualifier | RL | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Percent Solids | 81 | | 0.10 | 0.10 | % | | | 12/05/12 08:22 | 1 |

Client: Environmental Enterprise Group
Project/Site: Laurel Bay Housing Project

TestAmerica Job ID: 490-13294-1
SDG: 1063

**Client Sample ID: 1455 Cardinal**
Date Collected: 11/27/12 15:25
Date Received: 12/04/12 08:15

**Lab Sample ID: 490-13294-2**
Matrix: Solid
Percent Solids: 78.9

### Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | | 0.00236 | 0.000789 | mg/Kg | | 12/05/12 10:40 | 12/07/12 03:24 | 1 |
| Ethylbenzene | ND | | 0.00236 | 0.000789 | mg/Kg | | 12/05/12 10:40 | 12/07/12 03:24 | 1 |
| Naphthalene | 0.0610 | | 0.00589 | 0.00200 | mg/Kg | | 12/05/12 10:40 | 12/07/12 03:24 | 1 |
| Toluene | ND | | 0.00236 | 0.000872 | mg/Kg | | 12/05/12 10:40 | 12/07/12 03:24 | 1 |
| Xylenes, Total | 0.000802 | J | 0.00589 | 0.000789 | mg/Kg | | 12/05/12 10:40 | 12/07/12 03:24 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *86* | | *70 - 130* | *12/05/12 10:40* | *12/07/12 03:24* | *1* |
| *4-Bromofluorobenzene (Surr)* | *109* | | *70 - 130* | *12/05/12 10:40* | *12/07/12 03:24* | *1* |
| *Dibromofluoromethane (Surr)* | *95* | | *70 - 130* | *12/05/12 10:40* | *12/07/12 03:24* | *1* |
| *Toluene-d8 (Surr)* | *99* | | *70 - 130* | *12/05/12 10:40* | *12/07/12 03:24* | *1* |

### Method: 8270D - Semivolatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Acenaphthene | ND | | 0.0849 | 0.0127 | mg/Kg | | 12/06/12 05:49 | 12/06/12 19:12 | 1 |
| Acenaphthylene | ND | | 0.0849 | 0.0114 | mg/Kg | | 12/06/12 05:49 | 12/06/12 19:12 | 1 |
| Anthracene | ND | | 0.0849 | 0.0114 | mg/Kg | | 12/06/12 05:49 | 12/06/12 19:12 | 1 |
| Benzo[a]anthracene | ND | | 0.0849 | 0.0190 | mg/Kg | | 12/06/12 05:49 | 12/06/12 19:12 | 1 |
| Benzo[a]pyrene | 0.354 | | 0.0849 | 0.0152 | mg/Kg | | 12/06/12 05:49 | 12/06/12 19:12 | 1 |
| Benzo[b]fluoranthene | ND | | 0.0849 | 0.0152 | mg/Kg | | 12/06/12 05:49 | 12/06/12 19:12 | 1 |
| Benzo[g,h,i]perylene | 0.112 | | 0.0849 | 0.0114 | mg/Kg | | 12/06/12 05:49 | 12/06/12 19:12 | 1 |
| Benzo[k]fluoranthene | ND | | 0.0849 | 0.0177 | mg/Kg | | 12/06/12 05:49 | 12/06/12 19:12 | 1 |
| 1-Methylnaphthalene | ND | | 0.0849 | 0.0177 | mg/Kg | | 12/06/12 05:49 | 12/06/12 19:12 | 1 |
| Pyrene | ND | | 0.0849 | 0.0152 | mg/Kg | | 12/06/12 05:49 | 12/06/12 19:12 | 1 |
| Phenanthrene | ND | | 0.0849 | 0.0114 | mg/Kg | | 12/06/12 05:49 | 12/06/12 19:12 | 1 |
| Chrysene | ND | | 0.0849 | 0.0114 | mg/Kg | | 12/06/12 05:49 | 12/06/12 19:12 | 1 |
| Dibenz(a,h)anthracene | ND | | 0.0849 | 0.00887 | mg/Kg | | 12/06/12 05:49 | 12/06/12 19:12 | 1 |
| Fluoranthene | ND | | 0.0849 | 0.0114 | mg/Kg | | 12/06/12 05:49 | 12/06/12 19:12 | 1 |
| Fluorene | ND | | 0.0849 | 0.0152 | mg/Kg | | 12/06/12 05:49 | 12/06/12 19:12 | 1 |
| Indeno[1,2,3-cd]pyrene | 0.0880 | | 0.0849 | 0.0127 | mg/Kg | | 12/06/12 05:49 | 12/06/12 19:12 | 1 |
| Naphthalene | ND | | 0.0849 | 0.0114 | mg/Kg | | 12/06/12 05:49 | 12/06/12 19:12 | 1 |
| 2-Methylnaphthalene | ND | | 0.0849 | 0.0203 | mg/Kg | | 12/06/12 05:49 | 12/06/12 19:12 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *2-Fluorobiphenyl (Surr)* | *58* | | *29 - 120* | *12/06/12 05:49* | *12/06/12 19:12* | *1* |
| *Terphenyl-d14 (Surr)* | *64* | | *13 - 120* | *12/06/12 05:49* | *12/06/12 19:12* | *1* |
| *Nitrobenzene-d5 (Surr)* | *55* | | *27 - 120* | *12/06/12 05:49* | *12/06/12 19:12* | *1* |

### General Chemistry

| Analyte | Result | Qualifier | RL | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Percent Solids | 79 | | 0.10 | 0.10 | % | | | 12/05/12 08:22 | 1 |

Client: Environmental Enterprise Group
Project/Site: Laurel Bay Housing Project

TestAmerica Job ID: 490-13294-1
SDG: 1063

**Client Sample ID: 1436 Dove**
Date Collected: 11/28/12 15:15
Date Received: 12/04/12 08:15

**Lab Sample ID: 490-13294-3**
Matrix: Solid
Percent Solids: 82.6

### Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.00316 | | 0.00207 | 0.000692 | mg/Kg | | 12/05/12 10:40 | 12/07/12 03:54 | 1 |
| Ethylbenzene | 0.796 | | 0.130 | 0.0443 | mg/Kg | | 12/05/12 10:14 | 12/07/12 10:52 | 1 |
| Naphthalene | 5.09 | | 0.326 | 0.111 | mg/Kg | | 12/05/12 10:14 | 12/07/12 10:52 | 1 |
| Toluene | 0.00690 | | 0.00207 | 0.000764 | mg/Kg | | 12/05/12 10:40 | 12/07/12 03:54 | 1 |
| Xylenes, Total | 2.09 | | 0.326 | 0.0443 | mg/Kg | | 12/05/12 10:14 | 12/07/12 10:52 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *93* | | *70 - 130* | *12/05/12 10:40* | *12/07/12 03:54* | *1* |
| *1,2-Dichloroethane-d4 (Surr)* | *79* | | *70 - 130* | *12/05/12 10:14* | *12/07/12 10:52* | *1* |
| *4-Bromofluorobenzene (Surr)* | *299* | *X* | *70 - 130* | *12/05/12 10:40* | *12/07/12 03:54* | *1* |
| *4-Bromofluorobenzene (Surr)* | *106* | | *70 - 130* | *12/05/12 10:14* | *12/07/12 10:52* | *1* |
| *Dibromofluoromethane (Surr)* | *106* | | *70 - 130* | *12/05/12 10:40* | *12/07/12 03:54* | *1* |
| *Dibromofluoromethane (Surr)* | *86* | | *70 - 130* | *12/05/12 10:14* | *12/07/12 10:52* | *1* |
| *Toluene-d8 (Surr)* | *163* | *X* | *70 - 130* | *12/05/12 10:40* | *12/07/12 03:54* | *1* |
| *Toluene-d8 (Surr)* | *101* | | *70 - 130* | *12/05/12 10:14* | *12/07/12 10:52* | *1* |

### Method: 8270D - Semivolatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Acenaphthene | 1.22 | | 0.0801 | 0.0119 | mg/Kg | | 12/06/12 05:49 | 12/06/12 19:33 | 1 |
| Acenaphthylene | ND | | 0.0801 | 0.0108 | mg/Kg | | 12/06/12 05:49 | 12/06/12 19:33 | 1 |
| Anthracene | 0.628 | | 0.0801 | 0.0108 | mg/Kg | | 12/06/12 05:49 | 12/06/12 19:33 | 1 |
| Benzo[a]anthracene | 1.90 | | 0.0801 | 0.0179 | mg/Kg | | 12/06/12 05:49 | 12/06/12 19:33 | 1 |
| Benzo[a]pyrene | 0.838 | | 0.0801 | 0.0143 | mg/Kg | | 12/06/12 05:49 | 12/06/12 19:33 | 1 |
| Benzo[b]fluoranthene | 1.32 | | 0.0801 | 0.0143 | mg/Kg | | 12/06/12 05:49 | 12/06/12 19:33 | 1 |
| Benzo[g,h,i]perylene | 0.217 | | 0.0801 | 0.0108 | mg/Kg | | 12/06/12 05:49 | 12/06/12 19:33 | 1 |
| Benzo[k]fluoranthene | 0.677 | | 0.0801 | 0.0167 | mg/Kg | | 12/06/12 05:49 | 12/06/12 19:33 | 1 |
| 1-Methylnaphthalene | 18.1 | | 0.801 | 0.167 | mg/Kg | | 12/06/12 05:49 | 12/07/12 14:33 | 10 |
| Pyrene | 6.44 | | 0.801 | 0.143 | mg/Kg | | 12/06/12 05:49 | 12/07/12 14:33 | 10 |
| Phenanthrene | 9.30 | | 0.801 | 0.108 | mg/Kg | | 12/06/12 05:49 | 12/07/12 14:33 | 10 |
| Chrysene | 1.98 | | 0.0801 | 0.0108 | mg/Kg | | 12/06/12 05:49 | 12/06/12 19:33 | 1 |
| Dibenz(a,h)anthracene | 0.0922 | | 0.0801 | 0.00836 | mg/Kg | | 12/06/12 05:49 | 12/06/12 19:33 | 1 |
| Fluoranthene | 7.15 | | 0.801 | 0.108 | mg/Kg | | 12/06/12 05:49 | 12/07/12 14:33 | 10 |
| Fluorene | 2.18 | | 0.0801 | 0.0143 | mg/Kg | | 12/06/12 05:49 | 12/06/12 19:33 | 1 |
| Indeno[1,2,3-cd]pyrene | 0.222 | | 0.0801 | 0.0119 | mg/Kg | | 12/06/12 05:49 | 12/06/12 19:33 | 1 |
| Naphthalene | 3.69 | | 0.0801 | 0.0108 | mg/Kg | | 12/06/12 05:49 | 12/06/12 19:33 | 1 |
| 2-Methylnaphthalene | 27.9 | | 0.801 | 0.191 | mg/Kg | | 12/06/12 05:49 | 12/07/12 14:33 | 10 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *2-Fluorobiphenyl (Surr)* | *55* | | *29 - 120* | *12/06/12 05:49* | *12/06/12 19:33* | *1* |
| *Terphenyl-d14 (Surr)* | *76* | | *13 - 120* | *12/06/12 05:49* | *12/06/12 19:33* | *1* |
| *Nitrobenzene-d5 (Surr)* | *101* | | *27 - 120* | *12/06/12 05:49* | *12/06/12 19:33* | *1* |

### General Chemistry

| Analyte | Result | Qualifier | RL | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Percent Solids | 83 | | 0.10 | 0.10 | % | | | 12/05/12 08:22 | 1 |

Client: Environmental Enterprise Group
Project/Site: Laurel Bay Housing Project

TestAmerica Job ID: 490-13294-1
SDG: 1063

**Client Sample ID: 593 Aster**
Date Collected: 11/29/12 15:15
Date Received: 12/04/12 08:15

**Lab Sample ID: 490-13294-4**
Matrix: Solid
Percent Solids: 95.9

### Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | | 0.00229 | 0.000768 | mg/Kg | | 12/05/12 10:40 | 12/07/12 04:24 | 1 |
| Ethylbenzene | ND | | 0.00229 | 0.000768 | mg/Kg | | 12/05/12 10:40 | 12/07/12 04:24 | 1 |
| Naphthalene | 0.0383 | | 0.00573 | 0.00195 | mg/Kg | | 12/05/12 10:40 | 12/07/12 04:24 | 1 |
| Toluene | ND | | 0.00229 | 0.000848 | mg/Kg | | 12/05/12 10:40 | 12/07/12 04:24 | 1 |
| Xylenes, Total | 0.00120 | J | 0.00573 | 0.000768 | mg/Kg | | 12/05/12 10:40 | 12/07/12 04:24 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *88* | | *70 - 130* | *12/05/12 10:40* | *12/07/12 04:24* | *1* |
| *4-Bromofluorobenzene (Surr)* | *106* | | *70 - 130* | *12/05/12 10:40* | *12/07/12 04:24* | *1* |
| *Dibromofluoromethane (Surr)* | *93* | | *70 - 130* | *12/05/12 10:40* | *12/07/12 04:24* | *1* |
| *Toluene-d8 (Surr)* | *93* | | *70 - 130* | *12/05/12 10:40* | *12/07/12 04:24* | *1* |

### Method: 8270D - Semivolatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Acenaphthene | ND | | 0.0686 | 0.0102 | mg/Kg | | 12/06/12 05:49 | 12/06/12 19:54 | 1 |
| Acenaphthylene | ND | | 0.0686 | 0.00922 | mg/Kg | | 12/06/12 05:49 | 12/06/12 19:54 | 1 |
| Anthracene | ND | | 0.0686 | 0.00922 | mg/Kg | | 12/06/12 05:49 | 12/06/12 19:54 | 1 |
| Benzo[a]anthracene | 0.0349 | J | 0.0686 | 0.0154 | mg/Kg | | 12/06/12 05:49 | 12/06/12 19:54 | 1 |
| Benzo[a]pyrene | 0.0482 | J | 0.0686 | 0.0123 | mg/Kg | | 12/06/12 05:49 | 12/06/12 19:54 | 1 |
| Benzo[b]fluoranthene | 0.0676 | J | 0.0686 | 0.0123 | mg/Kg | | 12/06/12 05:49 | 12/06/12 19:54 | 1 |
| Benzo[g,h,i]perylene | ND | | 0.0686 | 0.00922 | mg/Kg | | 12/06/12 05:49 | 12/06/12 19:54 | 1 |
| Benzo[k]fluoranthene | 0.0243 | J | 0.0686 | 0.0143 | mg/Kg | | 12/06/12 05:49 | 12/06/12 19:54 | 1 |
| 1-Methylnaphthalene | ND | | 0.0686 | 0.0143 | mg/Kg | | 12/06/12 05:49 | 12/06/12 19:54 | 1 |
| Pyrene | 0.0924 | | 0.0686 | 0.0123 | mg/Kg | | 12/06/12 05:49 | 12/06/12 19:54 | 1 |
| Phenanthrene | ND | | 0.0686 | 0.00922 | mg/Kg | | 12/06/12 05:49 | 12/06/12 19:54 | 1 |
| Chrysene | 0.0392 | J | 0.0686 | 0.00922 | mg/Kg | | 12/06/12 05:49 | 12/06/12 19:54 | 1 |
| Dibenz(a,h)anthracene | ND | | 0.0686 | 0.00717 | mg/Kg | | 12/06/12 05:49 | 12/06/12 19:54 | 1 |
| Fluoranthene | 0.0605 | J | 0.0686 | 0.00922 | mg/Kg | | 12/06/12 05:49 | 12/06/12 19:54 | 1 |
| Fluorene | ND | | 0.0686 | 0.0123 | mg/Kg | | 12/06/12 05:49 | 12/06/12 19:54 | 1 |
| Indeno[1,2,3-cd]pyrene | ND | | 0.0686 | 0.0102 | mg/Kg | | 12/06/12 05:49 | 12/06/12 19:54 | 1 |
| Naphthalene | ND | | 0.0686 | 0.00922 | mg/Kg | | 12/06/12 05:49 | 12/06/12 19:54 | 1 |
| 2-Methylnaphthalene | ND | | 0.0686 | 0.0164 | mg/Kg | | 12/06/12 05:49 | 12/06/12 19:54 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *2-Fluorobiphenyl (Surr)* | *73* | | *29 - 120* | *12/06/12 05:49* | *12/06/12 19:54* | *1* |
| *Terphenyl-d14 (Surr)* | *85* | | *13 - 120* | *12/06/12 05:49* | *12/06/12 19:54* | *1* |
| *Nitrobenzene-d5 (Surr)* | *64* | | *27 - 120* | *12/06/12 05:49* | *12/06/12 19:54* | *1* |

### General Chemistry

| Analyte | Result | Qualifier | RL | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Percent Solids | 96 | | 0.10 | 0.10 | % | | | 12/05/12 08:22 | 1 |

Client: Environmental Enterprise Group
Project/Site: Laurel Bay Housing Project

TestAmerica Job ID: 490-13294-1
SDG: 1063

## Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 490-41731/6
Matrix: Solid
Analysis Batch: 41731

Client Sample ID: Method Blank
Prep Type: Total/NA

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | | 0.00200 | 0.000670 | mg/Kg | | | 12/06/12 20:53 | 1 |
| Ethylbenzene | ND | | 0.00200 | 0.000670 | mg/Kg | | | 12/06/12 20:53 | 1 |
| Naphthalene | ND | | 0.00500 | 0.00170 | mg/Kg | | | 12/06/12 20:53 | 1 |
| Toluene | ND | | 0.00200 | 0.000740 | mg/Kg | | | 12/06/12 20:53 | 1 |
| Xylenes, Total | ND | | 0.00500 | 0.000670 | mg/Kg | | | 12/06/12 20:53 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *79* | | *70 - 130* | | *12/06/12 20:53* | *1* |
| *4-Bromofluorobenzene (Surr)* | *117* | | *70 - 130* | | *12/06/12 20:53* | *1* |
| *Dibromofluoromethane (Surr)* | *94* | | *70 - 130* | | *12/06/12 20:53* | *1* |
| *Toluene-d8 (Surr)* | *102* | | *70 - 130* | | *12/06/12 20:53* | *1* |

Lab Sample ID: LCS 490-41731/3
Matrix: Solid
Analysis Batch: 41731

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Benzene | 0.0500 | 0.05026 | | mg/Kg | | 101 | 75 - 127 |
| Ethylbenzene | 0.0500 | 0.05187 | | mg/Kg | | 104 | 80 - 134 |
| Naphthalene | 0.0500 | 0.05584 | | mg/Kg | | 112 | 69 - 150 |
| Toluene | 0.0500 | 0.05333 | | mg/Kg | | 107 | 80 - 132 |
| Xylenes, Total | 0.150 | 0.1538 | | mg/Kg | | 103 | 80 - 137 |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *91* | | *70 - 130* |
| *4-Bromofluorobenzene (Surr)* | *108* | | *70 - 130* |
| *Dibromofluoromethane (Surr)* | *101* | | *70 - 130* |
| *Toluene-d8 (Surr)* | *101* | | *70 - 130* |

Lab Sample ID: LCSD 490-41731/4
Matrix: Solid
Analysis Batch: 41731

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.0500 | 0.05097 | | mg/Kg | | 102 | 75 - 127 | 1 | 50 |
| Ethylbenzene | 0.0500 | 0.05311 | | mg/Kg | | 106 | 80 - 134 | 2 | 50 |
| Naphthalene | 0.0500 | 0.05424 | | mg/Kg | | 108 | 69 - 150 | 3 | 50 |
| Toluene | 0.0500 | 0.05357 | | mg/Kg | | 107 | 80 - 132 | 0 | 50 |
| Xylenes, Total | 0.150 | 0.1577 | | mg/Kg | | 105 | 80 - 137 | 3 | 50 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *90* | | *70 - 130* |
| *4-Bromofluorobenzene (Surr)* | *109* | | *70 - 130* |
| *Dibromofluoromethane (Surr)* | *103* | | *70 - 130* |
| *Toluene-d8 (Surr)* | *97* | | *70 - 130* |

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 490-41863/6
Matrix: Solid
Analysis Batch: 41863

Client Sample ID: Method Blank
Prep Type: Total/NA

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | | 0.00200 | 0.000680 | mg/Kg | | | 12/07/12 09:21 | 1 |
| Ethylbenzene | ND | | 0.00200 | 0.000680 | mg/Kg | | | 12/07/12 09:21 | 1 |
| Naphthalene | 0.001992 | J | 0.00500 | 0.00170 | mg/Kg | | | 12/07/12 09:21 | 1 |
| Toluene | ND | | 0.00200 | 0.000740 | mg/Kg | | | 12/07/12 09:21 | 1 |
| Xylenes, Total | ND | | 0.00500 | 0.000680 | mg/Kg | | | 12/07/12 09:21 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *78* | | *70 - 130* | | *12/07/12 09:21* | *1* |
| *4-Bromofluorobenzene (Surr)* | *110* | | *70 - 130* | | *12/07/12 09:21* | *1* |
| *Dibromofluoromethane (Surr)* | *95* | | *70 - 130* | | *12/07/12 09:21* | *1* |
| *Toluene-d8 (Surr)* | *103* | | *70 - 130* | | *12/07/12 09:21* | *1* |

Lab Sample ID: MB 490-41863/7
Matrix: Solid
Analysis Batch: 41863

Client Sample ID: Method Blank
Prep Type: Total/NA

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | | 0.100 | 0.0340 | mg/Kg | | | 12/07/12 09:51 | 1 |
| Ethylbenzene | ND | | 0.100 | 0.0340 | mg/Kg | | | 12/07/12 09:51 | 1 |
| Naphthalene | ND | | 0.250 | 0.0850 | mg/Kg | | | 12/07/12 09:51 | 1 |
| Toluene | ND | | 0.100 | 0.0370 | mg/Kg | | | 12/07/12 09:51 | 1 |
| Xylenes, Total | ND | | 0.250 | 0.0340 | mg/Kg | | | 12/07/12 09:51 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *78* | | *70 - 130* | | *12/07/12 09:51* | *1* |
| *4-Bromofluorobenzene (Surr)* | *109* | | *70 - 130* | | *12/07/12 09:51* | *1* |
| *Dibromofluoromethane (Surr)* | *90* | | *70 - 130* | | *12/07/12 09:51* | *1* |
| *Toluene-d8 (Surr)* | *100* | | *70 - 130* | | *12/07/12 09:51* | *1* |

Lab Sample ID: LCS 490-41863/3
Matrix: Solid
Analysis Batch: 41863

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Benzene | 0.0500 | 0.04833 | | mg/Kg | | 97 | 75 - 127 |
| Ethylbenzene | 0.0500 | 0.05023 | | mg/Kg | | 100 | 80 - 134 |
| Naphthalene | 0.0500 | 0.06181 | | mg/Kg | | 124 | 69 - 150 |
| Toluene | 0.0500 | 0.05121 | | mg/Kg | | 102 | 80 - 132 |
| Xylenes, Total | 0.150 | 0.1510 | | mg/Kg | | 101 | 80 - 137 |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *85* | | *70 - 130* |
| *4-Bromofluorobenzene (Surr)* | *107* | | *70 - 130* |
| *Dibromofluoromethane (Surr)* | *99* | | *70 - 130* |
| *Toluene-d8 (Surr)* | *98* | | *70 - 130* |

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 490-41863/4
Matrix: Solid
Analysis Batch: 41863

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.0500 | 0.04667 | | mg/Kg | | 93 | 75 - 127 | 3 | 50 |
| Ethylbenzene | 0.0500 | 0.04921 | | mg/Kg | | 98 | 80 - 134 | 2 | 50 |
| Naphthalene | 0.0500 | 0.05741 | | mg/Kg | | 115 | 69 - 150 | 7 | 50 |
| Toluene | 0.0500 | 0.05091 | | mg/Kg | | 102 | 80 - 132 | 1 | 50 |
| Xylenes, Total | 0.150 | 0.1477 | | mg/Kg | | 98 | 80 - 137 | 2 | 50 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *85* | | *70 - 130* |
| *4-Bromofluorobenzene (Surr)* | *109* | | *70 - 130* |
| *Dibromofluoromethane (Surr)* | *97* | | *70 - 130* |
| *Toluene-d8 (Surr)* | *101* | | *70 - 130* |

## Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 490-41535/1-A
Matrix: Solid
Analysis Batch: 41642

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 41535

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Acenaphthene | ND | | 0.0670 | 0.0100 | mg/Kg | | 12/06/12 05:49 | 12/06/12 16:01 | 1 |
| Acenaphthylene | ND | | 0.0670 | 0.00900 | mg/Kg | | 12/06/12 05:49 | 12/06/12 16:01 | 1 |
| Anthracene | ND | | 0.0670 | 0.00900 | mg/Kg | | 12/06/12 05:49 | 12/06/12 16:01 | 1 |
| Benzo[a]anthracene | ND | | 0.0670 | 0.0150 | mg/Kg | | 12/06/12 05:49 | 12/06/12 16:01 | 1 |
| Benzo[a]pyrene | ND | | 0.0670 | 0.0120 | mg/Kg | | 12/06/12 05:49 | 12/06/12 16:01 | 1 |
| Benzo[b]fluoranthene | ND | | 0.0670 | 0.0120 | mg/Kg | | 12/06/12 05:49 | 12/06/12 16:01 | 1 |
| Benzo[g,h,i]perylene | ND | | 0.0670 | 0.00900 | mg/Kg | | 12/06/12 05:49 | 12/06/12 16:01 | 1 |
| Benzo[k]fluoranthene | ND | | 0.0670 | 0.0140 | mg/Kg | | 12/06/12 05:49 | 12/06/12 16:01 | 1 |
| 1-Methylnaphthalene | ND | | 0.0670 | 0.0140 | mg/Kg | | 12/06/12 05:49 | 12/06/12 16:01 | 1 |
| Pyrene | ND | | 0.0670 | 0.0120 | mg/Kg | | 12/06/12 05:49 | 12/06/12 16:01 | 1 |
| Phenanthrene | ND | | 0.0670 | 0.00900 | mg/Kg | | 12/06/12 05:49 | 12/06/12 16:01 | 1 |
| Chrysene | ND | | 0.0670 | 0.00900 | mg/Kg | | 12/06/12 05:49 | 12/06/12 16:01 | 1 |
| Dibenz(a,h)anthracene | ND | | 0.0670 | 0.00700 | mg/Kg | | 12/06/12 05:49 | 12/06/12 16:01 | 1 |
| Fluoranthene | ND | | 0.0670 | 0.00900 | mg/Kg | | 12/06/12 05:49 | 12/06/12 16:01 | 1 |
| Fluorene | ND | | 0.0670 | 0.0120 | mg/Kg | | 12/06/12 05:49 | 12/06/12 16:01 | 1 |
| Indeno[1,2,3-cd]pyrene | ND | | 0.0670 | 0.0100 | mg/Kg | | 12/06/12 05:49 | 12/06/12 16:01 | 1 |
| Naphthalene | ND | | 0.0670 | 0.00900 | mg/Kg | | 12/06/12 05:49 | 12/06/12 16:01 | 1 |
| 2-Methylnaphthalene | ND | | 0.0670 | 0.0160 | mg/Kg | | 12/06/12 05:49 | 12/06/12 16:01 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *2-Fluorobiphenyl (Surr)* | *68* | | *29 - 120* | *12/06/12 05:49* | *12/06/12 16:01* | *1* |
| *Terphenyl-d14 (Surr)* | *86* | | *13 - 120* | *12/06/12 05:49* | *12/06/12 16:01* | *1* |
| *Nitrobenzene-d5 (Surr)* | *64* | | *27 - 120* | *12/06/12 05:49* | *12/06/12 16:01* | *1* |

## Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 490-41535/2-A
Matrix: Solid
Analysis Batch: 41642

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 41535

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Acenaphthylene | 1.67 | 1.362 | | mg/Kg | | 82 | 38 - 120 |
| Anthracene | 1.67 | 1.311 | | mg/Kg | | 79 | 46 - 124 |
| Benzo[a]anthracene | 1.67 | 1.313 | | mg/Kg | | 79 | 45 - 120 |
| Benzo[a]pyrene | 1.67 | 1.271 | | mg/Kg | | 76 | 45 - 120 |
| Benzo[b]fluoranthene | 1.67 | 1.233 | | mg/Kg | | 74 | 42 - 120 |
| Benzo[g,h,i]perylene | 1.67 | 1.279 | | mg/Kg | | 77 | 38 - 120 |
| Benzo[k]fluoranthene | 1.67 | 1.368 | | mg/Kg | | 82 | 42 - 120 |
| 1-Methylnaphthalene | 1.67 | 1.339 | | mg/Kg | | 80 | 32 - 120 |
| Pyrene | 1.67 | 1.361 | | mg/Kg | | 82 | 43 - 120 |
| Phenanthrene | 1.67 | 1.361 | | mg/Kg | | 82 | 45 - 120 |
| Chrysene | 1.67 | 1.282 | | mg/Kg | | 77 | 43 - 120 |
| Dibenz(a,h)anthracene | 1.67 | 1.302 | | mg/Kg | | 78 | 32 - 128 |
| Fluoranthene | 1.67 | 1.304 | | mg/Kg | | 78 | 46 - 120 |
| Fluorene | 1.67 | 1.304 | | mg/Kg | | 78 | 42 - 120 |
| Indeno[1,2,3-cd]pyrene | 1.67 | 1.291 | | mg/Kg | | 77 | 41 - 121 |
| Naphthalene | 1.67 | 1.338 | | mg/Kg | | 80 | 32 - 120 |
| 2-Methylnaphthalene | 1.67 | 1.357 | | mg/Kg | | 81 | 28 - 120 |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *2-Fluorobiphenyl (Surr)* | *65* | | *29 - 120* |
| *Terphenyl-d14 (Surr)* | *82* | | *13 - 120* |
| *Nitrobenzene-d5 (Surr)* | *59* | | *27 - 120* |

Lab Sample ID: 490-13293-D-1-B MS
Matrix: Solid
Analysis Batch: 41642

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 41535

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| Acenaphthylene | ND | | 1.97 | 1.662 | | mg/Kg | | 84 | 25 - 120 |
| Anthracene | ND | | 1.97 | 1.683 | | mg/Kg | | 85 | 28 - 125 |
| Benzo[a]anthracene | ND | | 1.97 | 1.671 | | mg/Kg | | 85 | 23 - 120 |
| Benzo[a]pyrene | ND | | 1.97 | 1.714 | | mg/Kg | | 87 | 15 - 128 |
| Benzo[b]fluoranthene | ND | | 1.97 | 1.656 | | mg/Kg | | 84 | 12 - 133 |
| Benzo[g,h,i]perylene | ND | | 1.97 | 1.709 | | mg/Kg | | 87 | 22 - 120 |
| Benzo[k]fluoranthene | ND | | 1.97 | 1.812 | | mg/Kg | | 92 | 28 - 120 |
| 1-Methylnaphthalene | ND | | 1.97 | 1.544 | | mg/Kg | | 78 | 10 - 120 |
| Pyrene | ND | | 1.97 | 1.754 | | mg/Kg | | 89 | 20 - 123 |
| Phenanthrene | ND | | 1.97 | 1.737 | | mg/Kg | | 88 | 21 - 122 |
| Chrysene | ND | | 1.97 | 1.633 | | mg/Kg | | 83 | 20 - 120 |
| Dibenz(a,h)anthracene | ND | | 1.97 | 1.756 | | mg/Kg | | 89 | 12 - 128 |
| Fluoranthene | ND | | 1.97 | 1.603 | | mg/Kg | | 81 | 10 - 143 |
| Fluorene | ND | | 1.97 | 1.581 | | mg/Kg | | 80 | 20 - 120 |
| Indeno[1,2,3-cd]pyrene | ND | | 1.97 | 1.737 | | mg/Kg | | 88 | 22 - 121 |
| Naphthalene | ND | | 1.97 | 1.552 | | mg/Kg | | 79 | 10 - 120 |
| 2-Methylnaphthalene | ND | | 1.97 | 1.563 | | mg/Kg | | 79 | 13 - 120 |

## Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 490-13293-D-1-B MS
Matrix: Solid
Analysis Batch: 41642

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 41535

| Surrogate | MS %Recovery | MS Qualifier | Limits |
|---|---|---|---|
| 2-Fluorobiphenyl (Surr) | 65 | | 29 - 120 |
| Terphenyl-d14 (Surr) | 89 | | 13 - 120 |
| Nitrobenzene-d5 (Surr) | 57 | | 27 - 120 |

Lab Sample ID: 490-13293-D-1-C MSD
Matrix: Solid
Analysis Batch: 41642

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 41535

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Acenaphthylene | ND | | 1.97 | 1.668 | | mg/Kg | | 85 | 25 - 120 | 0 | 50 |
| Anthracene | ND | | 1.97 | 1.659 | | mg/Kg | | 84 | 28 - 125 | 1 | 49 |
| Benzo[a]anthracene | ND | | 1.97 | 1.664 | | mg/Kg | | 84 | 23 - 120 | 0 | 50 |
| Benzo[a]pyrene | ND | | 1.97 | 1.685 | | mg/Kg | | 85 | 15 - 128 | 2 | 50 |
| Benzo[b]fluoranthene | ND | | 1.97 | 1.548 | | mg/Kg | | 79 | 12 - 133 | 7 | 50 |
| Benzo[g,h,i]perylene | ND | | 1.97 | 1.680 | | mg/Kg | | 85 | 22 - 120 | 2 | 50 |
| Benzo[k]fluoranthene | ND | | 1.97 | 1.731 | | mg/Kg | | 88 | 28 - 120 | 5 | 45 |
| 1-Methylnaphthalene | ND | | 1.97 | 1.573 | | mg/Kg | | 80 | 10 - 120 | 2 | 50 |
| Pyrene | ND | | 1.97 | 1.706 | | mg/Kg | | 87 | 20 - 123 | 3 | 50 |
| Phenanthrene | ND | | 1.97 | 1.719 | | mg/Kg | | 87 | 21 - 122 | 1 | 50 |
| Chrysene | ND | | 1.97 | 1.667 | | mg/Kg | | 85 | 20 - 120 | 2 | 49 |
| Dibenz(a,h)anthracene | ND | | 1.97 | 1.692 | | mg/Kg | | 86 | 12 - 128 | 4 | 50 |
| Fluoranthene | ND | | 1.97 | 1.607 | | mg/Kg | | 82 | 10 - 143 | 0 | 50 |
| Fluorene | ND | | 1.97 | 1.596 | | mg/Kg | | 81 | 20 - 120 | 1 | 50 |
| Indeno[1,2,3-cd]pyrene | ND | | 1.97 | 1.700 | | mg/Kg | | 86 | 22 - 121 | 2 | 50 |
| Naphthalene | ND | | 1.97 | 1.562 | | mg/Kg | | 79 | 10 - 120 | 1 | 50 |
| 2-Methylnaphthalene | ND | | 1.97 | 1.590 | | mg/Kg | | 81 | 13 - 120 | 2 | 50 |

| Surrogate | MSD %Recovery | MSD Qualifier | Limits |
|---|---|---|---|
| 2-Fluorobiphenyl (Surr) | 72 | | 29 - 120 |
| Terphenyl-d14 (Surr) | 91 | | 13 - 120 |
| Nitrobenzene-d5 (Surr) | 62 | | 27 - 120 |

## Method: Moisture - Percent Moisture

Lab Sample ID: 490-13293-D-1 DU
Matrix: Solid
Analysis Batch: 41176

Client Sample ID: Duplicate
Prep Type: Total/NA

| Analyte | Sample Result | Sample Qualifier | DU Result | DU Qualifier | Unit | D | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|
| Percent Solids | 84 | | 84 | | % | | 0.1 | 20 |

## GC/MS VOA

### Prep Batch: 41250

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 490-13294-1 | 1368 Cardinal | Total/NA | Solid | 5035 | |
| 490-13294-3 | 1436 Dove | Total/NA | Solid | 5035 | |

### Prep Batch: 41275

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 490-13294-1 | 1368 Cardinal | Total/NA | Solid | 5035 | |
| 490-13294-2 | 1455 Cardinal | Total/NA | Solid | 5035 | |
| 490-13294-3 | 1436 Dove | Total/NA | Solid | 5035 | |
| 490-13294-4 | 593 Aster | Total/NA | Solid | 5035 | |

### Analysis Batch: 41731

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 490-13294-1 | 1368 Cardinal | Total/NA | Solid | 8260B | 41275 |
| 490-13294-2 | 1455 Cardinal | Total/NA | Solid | 8260B | 41275 |
| 490-13294-3 | 1436 Dove | Total/NA | Solid | 8260B | 41275 |
| 490-13294-4 | 593 Aster | Total/NA | Solid | 8260B | 41275 |
| LCS 490-41731/3 | Lab Control Sample | Total/NA | Solid | 8260B | |
| LCSD 490-41731/4 | Lab Control Sample Dup | Total/NA | Solid | 8260B | |
| MB 490-41731/6 | Method Blank | Total/NA | Solid | 8260B | |

### Analysis Batch: 41863

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 490-13294-1 | 1368 Cardinal | Total/NA | Solid | 8260B | 41250 |
| 490-13294-3 | 1436 Dove | Total/NA | Solid | 8260B | 41250 |
| LCS 490-41863/3 | Lab Control Sample | Total/NA | Solid | 8260B | |
| LCSD 490-41863/4 | Lab Control Sample Dup | Total/NA | Solid | 8260B | |
| MB 490-41863/6 | Method Blank | Total/NA | Solid | 8260B | |
| MB 490-41863/7 | Method Blank | Total/NA | Solid | 8260B | |

## GC/MS Semi VOA

### Prep Batch: 41535

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 490-13293-D-1-B MS | Matrix Spike | Total/NA | Solid | 3550C | |
| 490-13293-D-1-C MSD | Matrix Spike Duplicate | Total/NA | Solid | 3550C | |
| 490-13294-1 | 1368 Cardinal | Total/NA | Solid | 3550C | |
| 490-13294-2 | 1455 Cardinal | Total/NA | Solid | 3550C | |
| 490-13294-3 | 1436 Dove | Total/NA | Solid | 3550C | |
| 490-13294-4 | 593 Aster | Total/NA | Solid | 3550C | |
| LCS 490-41535/2-A | Lab Control Sample | Total/NA | Solid | 3550C | |
| MB 490-41535/1-A | Method Blank | Total/NA | Solid | 3550C | |

### Analysis Batch: 41642

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 490-13293-D-1-B MS | Matrix Spike | Total/NA | Solid | 8270D | 41535 |
| 490-13293-D-1-C MSD | Matrix Spike Duplicate | Total/NA | Solid | 8270D | 41535 |
| 490-13294-1 | 1368 Cardinal | Total/NA | Solid | 8270D | 41535 |
| 490-13294-2 | 1455 Cardinal | Total/NA | Solid | 8270D | 41535 |
| 490-13294-3 | 1436 Dove | Total/NA | Solid | 8270D | 41535 |
| 490-13294-4 | 593 Aster | Total/NA | Solid | 8270D | 41535 |

## GC/MS Semi VOA (Continued)

### Analysis Batch: 41642 (Continued)

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| LCS 490-41535/2-A | Lab Control Sample | Total/NA | Solid | 8270D | 41535 |
| MB 490-41535/1-A | Method Blank | Total/NA | Solid | 8270D | 41535 |

### Analysis Batch: 41991

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 490-13294-1 | 1368 Cardinal | Total/NA | Solid | 8270D | 41535 |
| 490-13294-3 | 1436 Dove | Total/NA | Solid | 8270D | 41535 |

### Analysis Batch: 42310

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 490-13294-1 | 1368 Cardinal | Total/NA | Solid | 8270D | 41535 |

## General Chemistry

### Analysis Batch: 41176

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 490-13293-D-1 DU | Duplicate | Total/NA | Solid | Moisture | |
| 490-13294-1 | 1368 Cardinal | Total/NA | Solid | Moisture | |
| 490-13294-2 | 1455 Cardinal | Total/NA | Solid | Moisture | |
| 490-13294-3 | 1436 Dove | Total/NA | Solid | Moisture | |
| 490-13294-4 | 593 Aster | Total/NA | Solid | Moisture | |
| 490-13296-A-1 MS | Matrix Spike | Total/NA | Solid | Moisture | |
| 490-13296-A-1 MSD | Matrix Spike Duplicate | Total/NA | Solid | Moisture | |

## Client Sample ID: 1368 Cardinal

Date Collected: 11/26/12 16:15
Date Received: 12/04/12 08:15

## Lab Sample ID: 490-13294-1

Matrix: Solid
Percent Solids: 81.1

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 41275 | 12/05/12 10:40 | ML | TAL NSH |
| Total/NA | Analysis | 8260B | | 1 | 41731 | 12/07/12 02:54 | AF | TAL NSH |
| Total/NA | Prep | 5035 | | | 41250 | 12/05/12 10:14 | ML | TAL NSH |
| Total/NA | Analysis | 8260B | | 1 | 41863 | 12/07/12 10:22 | AF | TAL NSH |
| Total/NA | Prep | 3550C | | | 41535 | 12/06/12 05:49 | AK | TAL NSH |
| Total/NA | Analysis | 8270D | | 1 | 41642 | 12/06/12 18:51 | WS | TAL NSH |
| Total/NA | Analysis | 8270D | | 5 | 41991 | 12/07/12 14:12 | WS | TAL NSH |
| Total/NA | Analysis | 8270D | | 10 | 42310 | 12/08/12 19:29 | WS | TAL NSH |
| Total/NA | Analysis | Moisture | | 1 | 41176 | 12/05/12 08:22 | RS | TAL NSH |

## Client Sample ID: 1455 Cardinal

Date Collected: 11/27/12 15:25
Date Received: 12/04/12 08:15

## Lab Sample ID: 490-13294-2

Matrix: Solid
Percent Solids: 78.9

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 41275 | 12/05/12 10:40 | ML | TAL NSH |
| Total/NA | Analysis | 8260B | | 1 | 41731 | 12/07/12 03:24 | AF | TAL NSH |
| Total/NA | Prep | 3550C | | | 41535 | 12/06/12 05:49 | AK | TAL NSH |
| Total/NA | Analysis | 8270D | | 1 | 41642 | 12/06/12 19:12 | WS | TAL NSH |
| Total/NA | Analysis | Moisture | | 1 | 41176 | 12/05/12 08:22 | RS | TAL NSH |

## Client Sample ID: 1436 Dove

Date Collected: 11/28/12 15:15
Date Received: 12/04/12 08:15

## Lab Sample ID: 490-13294-3

Matrix: Solid
Percent Solids: 82.6

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 41275 | 12/05/12 10:40 | ML | TAL NSH |
| Total/NA | Analysis | 8260B | | 1 | 41731 | 12/07/12 03:54 | AF | TAL NSH |
| Total/NA | Prep | 5035 | | | 41250 | 12/05/12 10:14 | ML | TAL NSH |
| Total/NA | Analysis | 8260B | | 1 | 41863 | 12/07/12 10:52 | AF | TAL NSH |
| Total/NA | Prep | 3550C | | | 41535 | 12/06/12 05:49 | AK | TAL NSH |
| Total/NA | Analysis | 8270D | | 1 | 41642 | 12/06/12 19:33 | WS | TAL NSH |
| Total/NA | Analysis | 8270D | | 10 | 41991 | 12/07/12 14:33 | WS | TAL NSH |
| Total/NA | Analysis | Moisture | | 1 | 41176 | 12/05/12 08:22 | RS | TAL NSH |

## Client Sample ID: 593 Aster

Date Collected: 11/29/12 15:15
Date Received: 12/04/12 08:15

## Lab Sample ID: 490-13294-4

Matrix: Solid
Percent Solids: 95.9

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 41275 | 12/05/12 10:40 | ML | TAL NSH |
| Total/NA | Analysis | 8260B | | 1 | 41731 | 12/07/12 04:24 | AF | TAL NSH |

Client: Environmental Enterprise Group
Project/Site: Laurel Bay Housing Project

TestAmerica Job ID: 490-13294-1
SDG: 1063

## Client Sample ID: 593 Aster

Date Collected: 11/29/12 15:15
Date Received: 12/04/12 08:15

## Lab Sample ID: 490-13294-4

Matrix: Solid
Percent Solids: 95.9

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 3550C | | | 41535 | 12/06/12 05:49 | AK | TAL NSH |
| Total/NA | Analysis | 8270D | | 1 | 41642 | 12/06/12 19:54 | WS | TAL NSH |
| Total/NA | Analysis | Moisture | | 1 | 41176 | 12/05/12 08:22 | RS | TAL NSH |

**Laboratory References:**

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

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# Method Summary

Client: Environmental Enterprise Group
Project/Site: Laurel Bay Housing Project

TestAmerica Job ID: 490-13294-1
SDG: 1063

| Method | Method Description | Protocol | Laboratory |
|---|---|---|---|
| 8260B | Volatile Organic Compounds (GC/MS) | SW846 | TAL NSH |
| 8270D | Semivolatile Organic Compounds (GC/MS) | SW846 | TAL NSH |
| Moisture | Percent Moisture | EPA | TAL NSH |

**Protocol References:**

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

**Laboratory References:**

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

# Certification Summary

Client: Environmental Enterprise Group
Project/Site: Laurel Bay Housing Project

TestAmerica Job ID: 490-13294-1
SDG: 1063

## Laboratory: TestAmerica Nashville

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

| Authority | Program | EPA Region | Certification ID | Expiration Date |
|---|---|---|---|---|
| | ACIL | | 393 | 10-30-13 |
| A2LA | ISO/IEC 17025 | | 0453.07 | 12-31-13 |
| Alabama | State Program | 4 | 41150 | 05-31-13 |
| Alaska (UST) | State Program | 10 | UST-087 | 07-24-13 |
| Arizona | State Program | 9 | AZ0473 | 05-05-13 |
| Arkansas DEQ | State Program | 6 | 88-0737 | 04-25-13 |
| California | NELAC | 9 | 1168CA | 10-31-13 |
| Canadian Assoc Lab Accred (CALA) | Canada | | 3744 | 03-08-14 |
| Colorado | State Program | 8 | N/A | 02-28-13 |
| Connecticut | State Program | 1 | PH-0220 | 12-31-13 |
| Florida | NELAC | 4 | E87358 | 06-30-13 |
| Illinois | NELAC | 5 | 200010 | 12-09-12 |
| Iowa | State Program | 7 | 131 | 05-01-14 |
| Kansas | NELAC | 7 | E-10229 | 10-31-13 |
| Kentucky | State Program | 4 | 90038 | 12-31-12 |
| Kentucky (UST) | State Program | 4 | 19 | 09-15-13 |
| Louisiana | NELAC | 6 | LA120025 | 12-31-12 |
| Louisiana | NELAC | 6 | 30613 | 06-30-13 |
| Maryland | State Program | 3 | 316 | 03-31-13 |
| Massachusetts | State Program | 1 | M-TN032 | 06-30-13 |
| Minnesota | NELAC | 5 | 047-999-345 | 12-31-12 |
| Mississippi | State Program | 4 | N/A | 06-30-13 |
| Montana (UST) | State Program | 8 | NA | 01-01-15 |
| Nevada | State Program | 9 | TN00032 | 07-31-13 |
| New Hampshire | NELAC | 1 | 2963 | 10-09-13 |
| New Jersey | NELAC | 2 | TN965 | 06-30-13 |
| New York | NELAC | 2 | 11342 | 04-01-13 |
| North Carolina DENR | State Program | 4 | 387 | 12-31-12 |
| North Dakota | State Program | 8 | R-146 | 06-30-13 |
| Ohio VAP | State Program | 5 | CL0033 | 01-19-14 |
| Oklahoma | State Program | 6 | 9412 | 08-31-13 |
| Oregon | NELAC | 10 | TN200001 | 04-30-13 |
| Pennsylvania | NELAC | 3 | 68-00585 | 06-30-13 |
| Rhode Island | State Program | 1 | LAO00268 | 12-30-12 |
| South Carolina | State Program | 4 | 84009 (001) | 02-28-13 |
| South Carolina | State Program | 4 | 84009 (002) | 02-23-14 |
| Tennessee | State Program | 4 | 2008 | 02-23-14 |
| Texas | NELAC | 6 | T104704077-09-TX | 08-31-13 |
| USDA | Federal | | S-48469 | 11-02-13 |
| Utah | NELAC | 8 | TAN | 06-30-13 |
| Virginia | NELAC | 3 | 460152 | 06-14-13 |
| Washington | State Program | 10 | C789 | 07-19-13 |
| West Virginia DEP | State Program | 3 | 219 | 02-28-13 |
| Wisconsin | State Program | 5 | 998020430 | 08-31-13 |
| Wyoming (UST) | A2LA | 8 | 453.07 | 12-31-13 |

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Charleston

Nashville, TN

# COOLER RECEIPT FORM

490-13294 Chain of Custody

Cooler Received/Opened On 12/4/2012 @ 0815

1. Tracking # 6080 (last 4 digits, FedEx)

Courier: FedEx IR Gun ID 17610176

2. Temperature of rep. sample or temp blank when opened: 1.6 *Degrees Celsius*

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO NA

4. Were custody seals on outside of cooler? YES...NO...NA

If yes, how many and where: 1 Front + Back

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (intial) JH

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES...NO...NA

b. Was there any observable headspace present in any VOA vial? YES...NO...NA - Soils

14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence # NA

I certify that I unloaded the cooler and answered questions 7-14 (intial) JF

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA

b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (intial) JF

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (intial) JF

I certify that I attached a label with the unique LIMS number to each container (intial) JF

21. Were there Non-Conformance issues at login? YES...NO Was a NCM generated? YES...NO...#

12

BIS = Broken in shipment

1 of 2

12/11/2012

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Nashville Division
2960 Foster Creighton
Nashville, TN 37204

Phone: 615-726-0177
Toll Free: 800-765-0980
Fax: 615-726-3404

To assist us in using the proper analytical methods, is this work being conducted for regulatory purposes?

Compliance Monitoring? Yes ____ No ____

Enforcement Action? Yes ____ No ____

Client Name/Account #: EEG - SBG # 2449

Address: 10179 Highway 78

City/State/Zip: Ladson, SC 29456

Site State: SC

Project Manager: Tom McElwee email: mcelwee@eeginc.net

PO#: 1063

Telephone Number: 843.412.2097 Fax No.: 843-879-0401

TA Quote #:

Sampler Name: (Print) Chris Tuestall

Project ID: Laurel Bay Housing Project

Sampler Signature: Chris Tuestall

Project #:

| Sample ID / Description | Date Sampled | Time Sampled | No. of Containers Shipped | Grab | Composite | Field Filtered | Preservative: Ice | HNO3 (Red Label) | HCl (Blue Label) | NaOH (Orange Label) | H2SO4 Plastic (Yellow Label) | H2SO4 Glass (Yellow Label) | None (Black Label) | Other (Specify) | Matrix: Groundwater | Wastewater | Drinking Water | Sludge | Soil | Other (Specify): | Analyze For: BTEX + Napth - 8260B | PAH - 8270D | RUSH TAT (Pre-Schedule) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1368 Cardinal | 11/26/12 | 1615 | 5 | X | | | | | 2 | | | | 2 | 1 | | | | | X | | X | X | |
| 1455 Cardinal | 11/27/12 | 1525 | 5 | X | | | | | 2 | | | | 2 | 1 | | | | | X | | X | X | |
| 1436 Dove | 11/28/12 | 1515 | 5 | X | | | | | 2 | | | | 2 | 1 | | | | | X | | X | X | |
| 593 Aston | 11/29/12 | 1515 | 5 | X | | | | | 2 | | | | 2 | 1 | | | | | X | | X | X | |

Loc: 490
13294

Special Instructions:

Method of Shipment: FEDEX

Laboratory Comments:
Temperature Upon Receipt:
VOCs Free of Headspace? Y

| Relinquished by: | Date | Time | Received by: | Date | Time |
|---|---|---|---|---|---|
| Chris Tuestall | 12/3/12 | 0900 | Fedex | | |
| Relinquished by: | Date | Time | Received by TestAmerica: | Date | Time |
| | | | 1.6 TAN | 12-4-12 | 08:15 |

# Login Sample Receipt Checklist

Client: Environmental Enterprise Group

Job Number: 490-13294-1
SDG Number: 1063

**Login Number: 13294**
**List Number: 1**
**Creator: Ford, Easton**

**List Source: TestAmerica Nashville**

| Question | Answer | Comment |
|---|---|---|
| Radioactivity wasn't checked or is </= background as measured by a survey meter. | True | |
| The cooler's custody seal, if present, is intact. | True | |
| Sample custody seals, if present, are intact. | True | |
| The cooler or samples do not appear to have been compromised or tampered with. | True | |
| Samples were received on ice. | True | |
| Cooler Temperature is acceptable. | True | |
| Cooler Temperature is recorded. | True | |
| COC is present. | True | |
| COC is filled out in ink and legible. | True | |
| COC is filled out with all pertinent information. | True | |
| Is the Field Sampler's name present on COC? | True | |
| There are no discrepancies between the containers received and the COC. | True | |
| Samples are received within Holding Time. | True | |
| Sample containers have legible labels. | True | |
| Containers are not broken or leaking. | True | |
| Sample collection date/times are provided. | True | |
| Appropriate sample containers are used. | True | |
| Sample bottles are completely filled. | True | |
| Sample Preservation Verified. | N/A | |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs | True | |
| Containers requiring zero headspace have no headspace or bubble is <6mm (1/4"). | N/A | |
| Multiphasic samples are not present. | True | |
| Samples do not require splitting or compositing. | True | |
| Residual Chlorine Checked. | N/A | |

ATTACHMENT A

WASTE MANAGEMENT

# N ON-HAZARDOUS MANIFEST

| NON-HAZARDOUS MANIFEST | Generator's US EPA ID No. | Manifest Doc No. | 2. Page 1 of 1 | |
|---|---|---|---|---|

| 3. Generator's Mailing Address: | Generator's Site Address (If different than mailing): | A. Manifest Number | |
|---|---|---|---|
| MCAS, BEAUFORT<br>LAUREL BAY HOUSING<br>BEAUFORT, SC 29907 | | WMNA | 00316844 |
| 4. Generator's Phone 843-228-6461 | | B. State Generator's ID | |

| 5. Transporter 1 Company Name | 6. US EPA ID Number | C. State Transporter's ID | |
|---|---|---|---|
| EEG, INC. | | D. Transporter's Phone | 843-879-0411 |
| 7. Transporter 2 Company Name | 8. US EPA ID Number | E. State Transporter's ID | |
| | | F. Transporter's Phone | |

| 9. Designated Facility Name and Site Address | 10. US EPA ID Number | G. State Facility ID | |
|---|---|---|---|
| HICKORY HILL LANDFILL<br>2621 LOW COUNTRY ROAD<br>RIDGELAND, SC 29936 | | H. State Facility Phone | 843-987-4643 |

GENERATOR

| 11. Description of Waste Materials | 12. Containers No. | 12. Containers Type | 13. Total Quantity | 14. Unit Wt./Vol. | I. Misc. Comments |
|---|---|---|---|---|---|
| a. HEATING OIL TANKS FILLED WITH SAND<br>WM Profile # 102655SC | | | 20 y | | |
| b.<br>WM Profile # | | | | | |
| c.<br>WM Profile # | | | | | |
| d.<br>WM Profile # | | | | | |

| J. Additional Descriptions for Materials Listed Above | K. Disposal Location | | | |
|---|---|---|---|---|
| | Cell | | Level | |
| | Grid | | | |

15. Special Handling Instructions and Additional Information
UST's from: 2) 1460 Cardinal 4) 1316 Albatross
1) 1443 Cardinal 3) 1436 Dove ✓ 5) 593 Aster ✓ 6) 693 Camellia ✓

Purchase Order # EMERGENCY CONTACT / PHONE NO.:

16. GENERATOR'S CERTIFICATE:
I hereby certify that the above-described materials are not hazardous wastes as defined by CFR Part 261 or any applicable state law, have been fully and accurately described, classified and packaged and are in proper condition for transportation according to applicable regulations.

| Printed Name | Signature "On behalf of" | Month | Day | Year |
|---|---|---|---|---|
| | | 12 | 5 | 12 |

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

| Printed Name | Signature | Month | Day | Year |
|---|---|---|---|---|
| James Baldwin | James Baldwin | 12 | 5 | 12 |

18. Transporter 2 Acknowledgement of Receipt of Materials

| Printed Name | Signature | Month | Day | Year |
|---|---|---|---|---|
| | | | | |

FACILITY

19. Certificate of Final Treatment/Disposal
I certify, on behalf of the above listed treatment facility, that to the best of my knowledge, the above-described waste was managed in compliance with all applicable laws, regulations, permits and licenses on the dates listed above.

20. Facility Owner or Operator: Certification of receipt of non-hazardous materials covered by this manifest.

| Printed Name | Signature | Month | Day | Year |
|---|---|---|---|---|
| Tom Cofield | Tom Cofield | 12 | 5 | 12 |

White- TREATMENT, STORAGE, DISPOSAL FACILITY COPY
Pink- FACILITY USE ONLY
Blue- GENERATOR #2 COPY
Gold- TRANSPORTER #1 COPY
Yellow- GENERATOR #1 COPY

**Appendix C**
**Laboratory Analytical Report - Groundwater**

CDM - AECOM
Multimedia Joint Venture

# Volatile Organic Compounds by GC/MS

Client: **AECOM - Resolution Consultants**
Laboratory ID: **SC03027-004**
Description: **BEALB593TW01WG20170301**
Matrix: **Aqueous**
Date Sampled: **03/01/2017 1030**
Date Received: **03/03/2017**

| Run | Prep Method | Analytical Method | Dilution | Analysis Date | Analyst | Prep Date | Batch |
|---|---|---|---|---|---|---|---|
| 1 | 5030B | 8260B | 1 | 03/07/2017 1021 | PMV | | 36403 |

| Parameter | CAS Number | Analytical Method | Result | Q | LOQ | LOD | DL | Units | Run |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | 8260B | 0.80 | U | 1.0 | 0.80 | 0.40 | ug/L | 1 |
| Ethylbenzene | 100-41-4 | 8260B | 0.80 | U | 1.0 | 0.80 | 0.40 | ug/L | 1 |
| Naphthalene | 91-20-3 | 8260B | 0.80 | U | 1.0 | 0.80 | 0.40 | ug/L | 1 |
| Toluene | 108-88-3 | 8260B | 0.80 | U | 1.0 | 0.80 | 0.40 | ug/L | 1 |
| Xylenes (total) | 1330-20-7 | 8260B | 0.80 | U | 1.0 | 0.80 | 0.40 | ug/L | 1 |

| Surrogate | Q | Run 1 % Recovery | Acceptance Limits |
|---|---|---|---|
| Bromofluorobenzene | | 106 | 85-114 |
| Dibromofluoromethane | | 109 | 80-119 |
| 1,2-Dichloroethane-d4 | | 102 | 81-118 |
| Toluene-d8 | | 99 | 89-112 |

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
Q = Surrogate failure
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
L = LCS/LCSD failure
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
S = MS/MSD failure

Shealy Environmental Services, Inc.
106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.shealylab.com

# Semivolatile Organic Compounds by GC/MS

Client: **AECOM - Resolution Consultants**
Laboratory ID: **SC03027-004**
Description: **BEALB593TW01WG20170301**
Matrix: **Aqueous**
Date Sampled: **03/01/2017 1030**
Date Received: **03/03/2017**

| Run | Prep Method | Analytical Method | Dilution | Analysis Date | Analyst | Prep Date | Batch |
|---|---|---|---|---|---|---|---|
| 1 | 3520C | 8270D | 1 | 03/10/2017 2219 | RBH | 03/05/2017 1656 | 36264 |

| Parameter | CAS Number | Analytical Method | Result | Q | LOQ | LOD | DL | Units | Run |
|---|---|---|---|---|---|---|---|---|---|
| Benzo(a)anthracene | 56-55-3 | 8270D | 0.10 | U | 0.20 | 0.10 | 0.040 | ug/L | 1 |
| Benzo(b)fluoranthene | 205-99-2 | 8270D | 0.10 | U | 0.20 | 0.10 | 0.040 | ug/L | 1 |
| Benzo(k)fluoranthene | 207-08-9 | 8270D | 0.10 | U | 0.20 | 0.10 | 0.040 | ug/L | 1 |
| Chrysene | 218-01-9 | 8270D | 0.10 | U | 0.20 | 0.10 | 0.040 | ug/L | 1 |
| Dibenzo(a,h)anthracene | 53-70-3 | 8270D | 0.10 | U | 0.20 | 0.10 | 0.040 | ug/L | 1 |

| Surrogate | Q | Run 1 % Recovery | Acceptance Limits |
|---|---|---|---|
| Nitrobenzene-d5 | | 66 | 44-120 |
| 2-Fluorobiphenyl | | 63 | 44-119 |
| Terphenyl-d14 | | 85 | 50-134 |

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
Q = Surrogate failure
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
L = LCS/LCSD failure
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
S = MS/MSD failure

Shealy Environmental Services, Inc.
106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.shealylab.com

**Appendix D**
**Regulatory Correspondence**

CDM - AECOM
Multimedia Joint Venture

dhec
Healthy People Healthy Communities

August 24, 2016

Commanding Officer
Attention: NREAO Mr. William A. Drawdy
United State Marine Corps Air Station
Post Office Box 55001
Beaufort, SC 29904-5001

RE: IGWA
Laurel Bay Underground Tank Assessment Reports

Dear Mr. Drawdy:

The South Carolina Department of Health and Environmental Control (the Department) received the Underground Storage Tanks (USTs) Assessment Reports for the addresses listed in the attachment. The regulatory authority for the investigation and cleanup of releases from these tank systems is the South Carolina Pollution Control Act (S.C. Code Ann. §48-1-10 et seq., as amended).

The Department has reviewed the referenced reports. The submitted analytical results indicate that petroleum constituents are above established Risk-Based Screening Levels and additional investigation is warranted. Specifically, the Department requests that a groundwater sampling proposal be generated to determine if there has been an impact to groundwater at these sites.

Please note that the Department's decision is based on information provided by the Marine Corps Air Station (MCAS) to date. Any information found to be contradictory to this decision may require additional action. Furthermore, the Department retains the right to request further investigation if deemed necessary.

If you have any questions, please contact me at petruslb@dhec.sc.gov or 803-898-0294.

Sincerely,

Laurel Petrus, Environmental Engineer Associate
RCRA Federal Facilities Section

Cc: Russell Berry, EQC Region 8 (via email)
Shawn Dolan, Resolution Consultants (via email)
Bryan Beck, NAVFAC MIDATLANTIC (via email)
Craig Ehde (via email)

Attachment to: Petrus to Drawdy, August 24, 2016
Subject: IGWA, Laurel Bay Underground Tank Assessment Reports

Draft Final Initial Groundwater Investigation Report for (41 addresses)

| Monitoring Well Investigation Recommendation | |
|---|---|
| 122 Banyan | 905 Barracuda |
| 159 Cypress Tank 2 | 921 Barracuda |
| 221 Cypress | 935 Albacore |
| 283 Birch Tank 2 | 946 Albacore |
| 328 Ash Tank 2 | 1037 Iris |
| 346 Ash | 1039 Iris |
| 359 Aspen | 1110 Iris |
| 370 Aspen | 1134 Iris |
| 377 Aspen | 1143 Iris |
| 409 Elderberry | 1202 Cardinal |
| 486 Laurel Bay | 1212 Cardinal |
| 515 Laurel Bay | 1222 Cardinal |
| 542 Laurel Bay | 1224 Cardinal |
| 593 Aster | 1226 Dove |
| 630 Dahlia | 1236 Dove |
| 693 Camellia | 1245 Dove |
| 723 Blue Bell | 1247 Dove |
| 774 Althea | 1274 Albatross |
| 860 Dolphin | 1319 Albatross |
| 873 Cobia | 1337 Albatross |
| 883 Cobia | |
| | |

dhec
Healthy People. Healthy Communities.

July 27, 2017

Commanding Officer
Attention: NREAO Mr. William A. Drawdy
United State Marine Corps Air Station
Post Office Box 55001
Beaufort, SC 29904-5001

RE: Draft Final Initial Groundwater Investigation Report, February and March 2017

Dear Mr. Drawdy:

The South Carolina Department of Health and Environmental Control (DHEC) received groundwater data from temporary monitoring well installations in the Draft Final Groundwater Investigation Report, Laurel Bay Military Housing Area for the fifty two (52) addresses shown in the attachment. The regulatory authority for the investigation and cleanup of releases from these tank systems is the South Carolina Pollution Control Act (S.C. Code Ann. §48-1-10 et seq., as amended).

Per DHEC's request, groundwater samples were collected from the attached referenced addresses. DHEC reviewed the groundwater data and previous investigations and it agrees with the conclusions and recommendations included in the document. To further assess the impact to groundwater, permanent groundwater monitoring wells should be installed at the three (3) stated addresses. For the remaining forty nine (49) addresses, there is no indication of contamination on the property and therefore no further investigation is required at this time.

Please note that DHEC's decision is based on information provided by the Marine Corps Air Station (MCAS) to date. Any information found to be contradictory to this decision may require additional action. Furthermore, DHEC retains the right to request further investigation if deemed necessary.

If you have any questions, please contact me at petruslb@dhec.sc.gov or 803-898-0294.

Sincerely,

Laurel Petrus, Environmental Engineer Associate
Bureau of Land and Waste Management

Cc: Russell Berry, EQC Region 8
Shawn Dolan, Resolution Consultants
Bryan Beck, NAVFAC MIDLANT

Attachment to: Petrus to Drawdy Dated July 27, 2017

Draft Final Initial Groundwater Investigation Report for (52 addresses)

Permanent Well Installation recommedation (3 Addresses):

- 254 Beech Street (110 ug/L)
- 268 Beech Street (28 ug/L)
- 774 Althea Street (35 ug/L)

No Further Action recommendation (49 addresses):

- 113 Birch Drive
- 121 Banyan Drive
- 122 Banyan Drive
- 159 Cypress Street
- 221 Cypress Street
- 274 Birch Drive
- 279 Birch Drive
- 283 Birch Drive
- 328 Ash Street
- 346 Ash Street
- 359 Aspen Street
- 370 Aspen Street
- 377 Aspen Street
- 409 Elderberry Drive
- 465 Dogwood Drive
- 480 Laurel Bay Boulevard
- 486 Laurel Bay Boulevard
- 515 Laurel Bay Boulevard
- 542 Laurel Bay Boulevard
- 593 Aster Street
- 630 Dahlia Drive
- 641 Dahlia Drive
- 693 Camelia Drive
- 723 Bluebell Lane
- 860 Dolphin Street
- 873 Cobia Drive
- 883 Cobia Drive
- 905 Barracuda Drive
- 921 Barracuda Drive
- 935 Albacore Street
- 946 Albacore Street
- 1037 Iris Lane
- 1039 Iris Lane
- 1110 Iris Lane
- 1134 Iris Lane
- 1143 Iris Lane
- 1177 Bobwhite Drive
- 1202 Cardinal Lane
- 1212 Cardinal Lane
- 1222 Cardinal Lane
- 1224 Cardinal Lane
- 1226 Dove Lane
- 1236 Dove Lane
- 1245 Dove Lane
- 1247 Dove Lane
- 1274 Albatross Drive
- 1319 Albatross Drive
- 1337 Albatross Drive
- 1346 Cardinal Lane