SUMMARY REPORT
370 WEST CARDINAL LANE (FORMERLY 1353 WEST CARDINAL LANE)
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

SUMMARY REPORT
370 WEST CARDINAL LANE (FORMERLY 1353 WEST CARDINAL LANE)
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

Prepared by:

CDM - AECOM
Multimedia Joint Venture

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

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

Table of Contents

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 370 West Cardinal Lane (Formerly 1353 West Cardinal Lane). 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 370 West Cardinal Lane (Formerly 1353 West Cardinal Lane). Details regarding the soil investigation at this site are provided in the *SCDHEC UST Assessment Report – 1353 Cardinal Lane* (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 – May and June 2015* (Resolution Consultants, 2015). 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 July 2, 2012, a single 280 gallon heating oil UST was removed from underneath the rear concrete patio at 370 West Cardinal Lane (Formerly 1353 West Cardinal Lane). 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 6'0" 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 370 West Cardinal Lane (Formerly 1353 West Cardinal Lane) were greater than the SCDHEC RBSLs, which indicated further investigation was required. In a letter dated May 15, 2014, SCDHEC requested an IGWA for 370 West Cardinal Lane (Formerly 1353 West Cardinal Lane) to determine if the groundwater was impacted by petroleum COPCs. SCDHEC's request letter is provided in Appendix D.

2.3 Groundwater Sampling

On June 24, 2015, a temporary monitoring well was installed at 370 West Cardinal Lane (Formerly 1353 West Cardinal Lane), 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 – May and June 2015* (Resolution Consultants, 2015).

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 – May and June 2015* (Resolution Consultants, 2015).

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 370 West Cardinal Lane (Formerly 1353 West Cardinal Lane) 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 370 West Cardinal Lane (Formerly 1353 West Cardinal Lane). This NFA determination was obtained in a letter dated February 22, 2016. 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 – 1353 Cardinal Lane, Laurel Bay Military Housing Area*, February 2013.

Resolution Consultants, 2015. *Initial Groundwater Investigation Report – May and June 2015 for Laurel Bay Military Housing Area, Multiple Properties, Laurel Bay Military Housing Area, Marine Corps Air Station Beaufort, Beaufort, South Carolina*, October 2015.

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
370 West Cardinal Lane (Formerly 1353 West Cardinal Lane)
Laurel Bay Military Housing Area
Marine Corps Air Station Beaufort
Beaufort, South Carolina

Constituent	SCDHEC RBSLs [(1)]	Results Sample Collected 07/02/12
Volatile Organic Compounds Analyzed by EPA Method 8260B (mg/kg)		
Benzene	0.003	ND
Ethylbenzene	1.15	**1.5**
Naphthalene	0.036	**35**
Toluene	0.627	ND
Xylenes, Total	13.01	**7.1**
Semivolatile Organic Compounds Analyzed by EPA Method 8270D (mg/kg)		
Benzo(a)anthracene	0.66	ND
Benzo(b)fluoranthene	0.66	ND
Benzo(k)fluoranthene	0.66	ND
Chrysene	0.66	ND
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 2.0 (SCDHEC, April 2013).

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
370 West Cardinal Lane (Formerly 1353 West Cardinal Lane)
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 06/24/15
Volatile Organic Compounds Analyzed by EPA Method 8260B (µg/L)			
Benzene	5	16.24	**0.38**
Ethylbenzene	700	45.95	**2.5**
Naphthalene	25	29.33	**11**
Toluene	1000	105,445	ND
Xylenes, Total	10,000	2,133	**6.6**
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

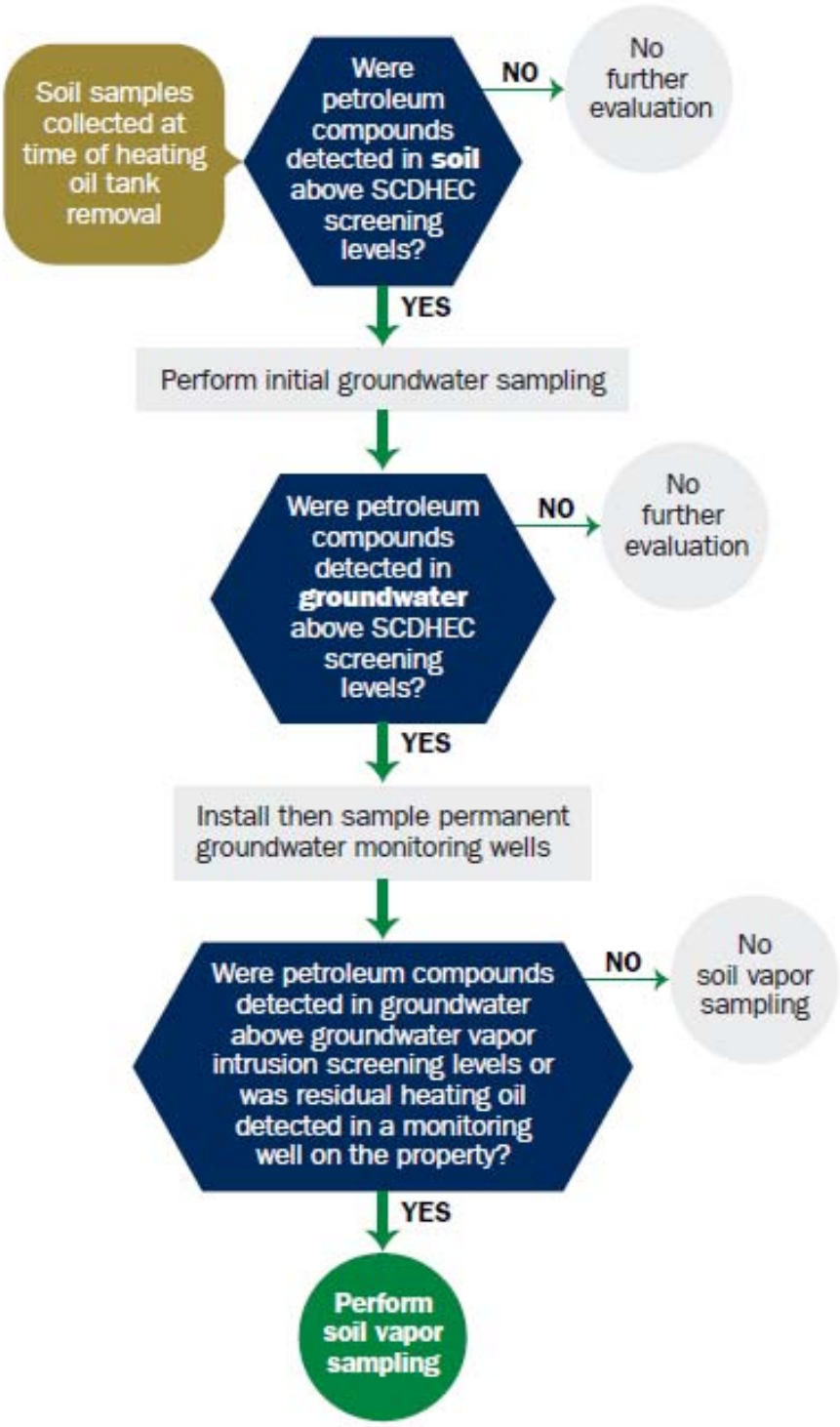
SCDHEC - South Carolina Department Of Health and Environmental Control

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

1353 Cardinal Lane, 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).....	1353 Cardinal	
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'	
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.....	7/2/2012	
L.	Visible Holes Y/N.....	Yes	
		Yes	

M. Method of disposal for any USTs removed from the ground (attach disposal manifests)

UST 1353Cardinal 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 1353Cardinal was 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 found throughout the tank.

VII. PIPING INFORMATION

1353 Cardinal		
Steel & Copper		
N/A		
N/A		
Suction		
No		
Yes		
No		
Late 1950s		

A. Construction Material..(ex. Steel, FRP).....

B. Distance from UST to Dispenser.....

C. Number of Dispensers.....

D. Type of System Pressure or Suction.....

E. Was Piping Removed from the Ground? Y/N

F. Visible Corrosion or Pitting Y/N.....

G. Visible Holes Y/N.....

H. Age.....

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 surface of the steel vent pipe. Copper supply and return lines 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? 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? 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? If yes, how far below land surface (indicate location and depth)?		X	
D. Did contaminated soils remain stockpiled on site after closure? If yes, indicate the stockpile location on the site map. Name of DHEC representative authorizing soil removal:		X	
E. Was a petroleum sheen or free product detected on any excavation or boring waters? 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 #
1353 Cardinal	Excav at fill end	Soil	Sandy	6'	7/2/12 1615 hrs	P. Shaw	
8							
9							
10							
11							
12							
13							
14							
15							
16							
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.

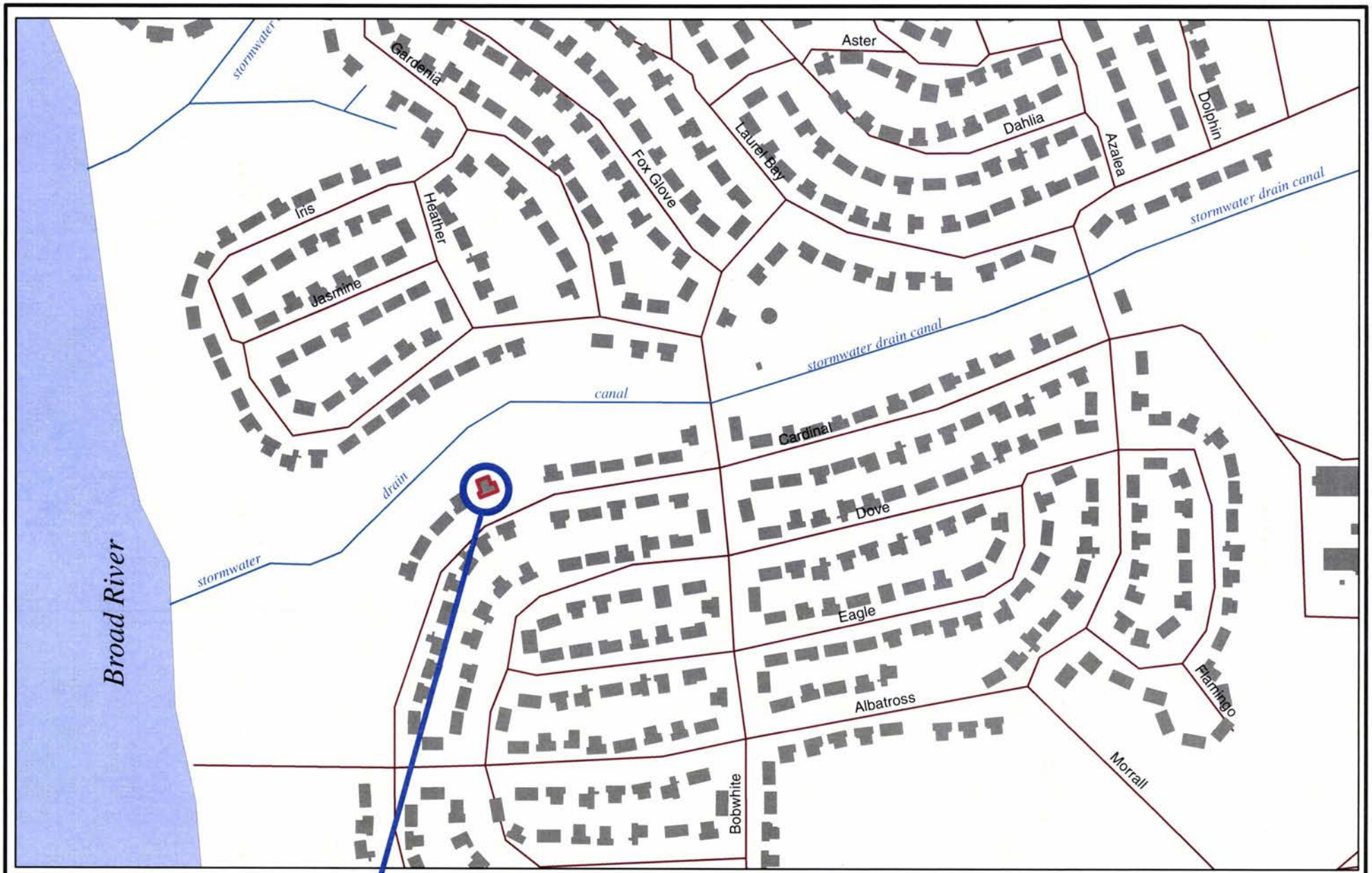
XII. RECEPTORS

		Yes	No
A.	Are there any lakes, ponds, streams, or wetlands located within 1000 feet of the UST system? *Broad River & canal 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? 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? 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 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? 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)

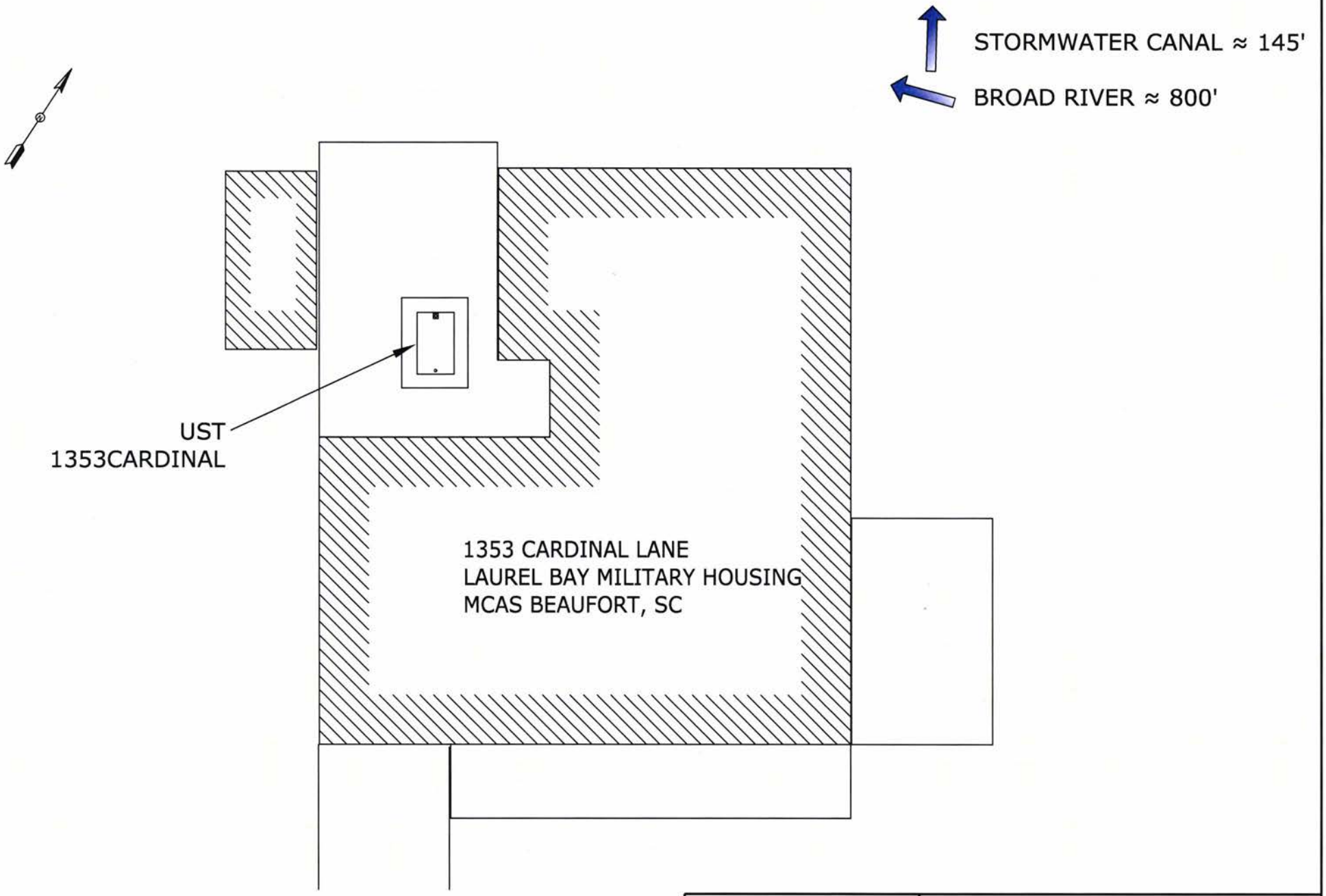


SBG-EEG, Inc.
7301 Rivers Ave., Suite 245
N. Charleston SC 29406-9643
Ph. (843) 573-7140

Drawn By: L. DiAsio

Dwg Date: JULY 2012

FIGURE 1: LOCATION MAP
1353 CARDINAL LANE
LAUREL BAY, BEAUFORT SC



GRAPHIC SCALE

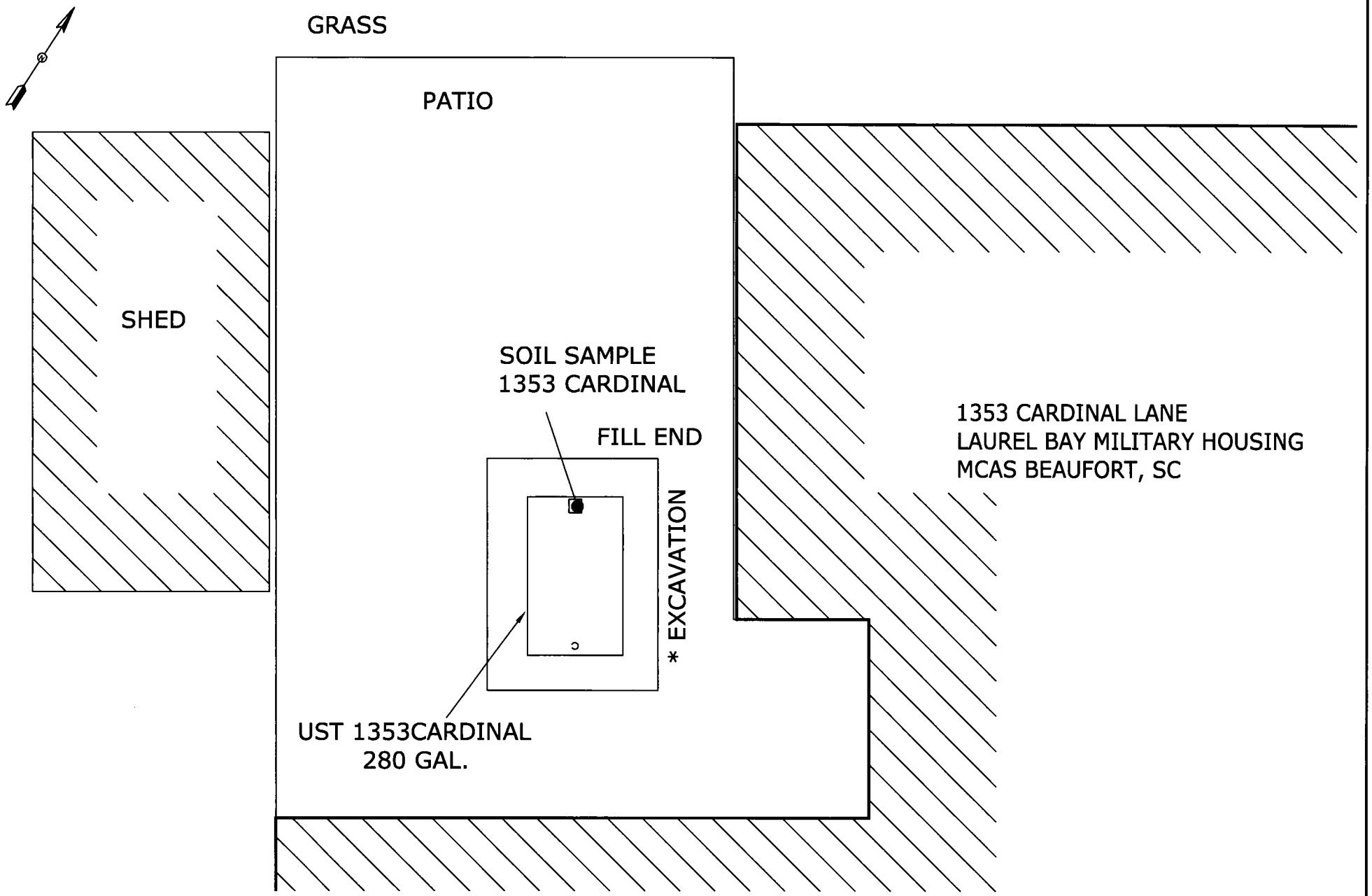
0 5' 10' 20'

TANK DEPTH BELOW GRADE
1353CARDINAL = 36"

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

FIGURE 2 SITE MAP
1353 CARDINAL LANE, LAUREL BAY
MCAS BEAUFORT SC

SCALE: GRAPHIC | DWG DATE JULY 2012



* A PORTION OF THE PATIO 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
1353 CARDINAL LANE, LAUREL BAY
MCAS BEAUFORT SC

SCALE: GRAPHIC | DWG DATE JULY 2012

Picture 1: Location of UST 1353Cardinal.

Picture 2: UST 1353Cardinal 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	1353Cardinal					
Benzene	ND					
Toluene	ND					
Ethylbenzene	1.5 mg/kg					
Xylenes	7.1 mg/kg					
Naphthalene	35.0 mg/kg					
Benzo (a) anthracene	ND					
Benzo (b) fluoranthene	ND					
Benzo (k) fluoranthene	ND					
Chrysene	ND					
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 Pensacola
3355 McLemore Drive
Pensacola, FL 32514
Tel: (850)474-1001

TestAmerica Job ID: 400-66850-1

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:
7/19/2012 5:54:33 PM

Cheyenne Whitmire
Project Manager II
cheyenne.whitmire@testamericainc.com

Table of Contents

Case Narrative

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

TestAmerica Job ID: 400-66850-1

Job ID: 400-66850-1

Laboratory: TestAmerica Pensacola

Narrative

Job Narrative
400-66850-1

GC/MS Semi VOA

Method(s) 8270D: The following sample was diluted due to the abundance of non-target analytes: 1353 CARDINAL (400-66850-1). Elevated reporting limits (RLs) are provided.

Method(s) 8270D: Surrogate recovery for the following sample was outside control limits: 1353 CARDINAL (400-66850-1). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method Summary

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

TestAmerica Job ID: 400-66850-1

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

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 PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

Sample Summary

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

TestAmerica Job ID: 400-66850-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-66850-1	1353 CARDINAL	Solid	07/02/12 16:15	07/06/12 10:14
400-66850-2	1022 FOXGLOVE	Solid	07/03/12 12:45	07/06/12 10:14

Client Sample Results

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

TestAmerica Job ID: 400-66850-1

Client Sample ID: 1353 CARDINAL
Date Collected: 07/02/12 16:15
Date Received: 07/06/12 10:14

Lab Sample ID: 400-66850-1
Matrix: Solid
Percent Solids: 92.6

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.6	0.16	mg/Kg	☼	07/09/12 15:57	07/12/12 17:49	100
Ethylbenzene	**1.5**	**J**	1.6	0.20	mg/Kg	☼	07/09/12 15:57	07/12/12 17:49	100
Toluene	ND		1.6	0.23	mg/Kg	☼	07/09/12 15:57	07/12/12 17:49	100
Xylenes, Total	**7.1**		3.2	0.61	mg/Kg	☼	07/09/12 15:57	07/12/12 17:49	100
Naphthalene	**35**		1.6	0.32	mg/Kg	☼	07/09/12 15:57	07/12/12 17:49	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*88*		*72 - 122*	*07/09/12 15:57*	*07/12/12 17:49*	*100*
Dibromofluoromethane	*92*		*79 - 118*	*07/09/12 15:57*	*07/12/12 17:49*	*100*
Toluene-d8 (Surr)	*93*		*80 - 120*	*07/09/12 15:57*	*07/12/12 17:49*	*100*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		7.1	0.71	mg/Kg	☼	07/11/12 11:31	07/17/12 13:27	20
Acenaphthylene	ND		7.1	0.71	mg/Kg	☼	07/11/12 11:31	07/17/12 13:27	20
Anthracene	ND		7.1	0.71	mg/Kg	☼	07/11/12 11:31	07/17/12 13:27	20
Benzo[a]anthracene	ND		7.1	0.71	mg/Kg	☼	07/11/12 11:31	07/17/12 13:27	20
Benzo[a]pyrene	ND		7.1	0.71	mg/Kg	☼	07/11/12 11:31	07/17/12 13:27	20
Benzo[b]fluoranthene	ND		7.1	0.71	mg/Kg	☼	07/11/12 11:31	07/17/12 13:27	20
Benzo[g,h,i]perylene	ND		7.1	0.71	mg/Kg	☼	07/11/12 11:31	07/17/12 13:27	20
Benzo[k]fluoranthene	ND		7.1	0.71	mg/Kg	☼	07/11/12 11:31	07/17/12 13:27	20
Chrysene	ND		7.1	0.71	mg/Kg	☼	07/11/12 11:31	07/17/12 13:27	20
Dibenz(a,h)anthracene	ND		7.1	0.71	mg/Kg	☼	07/11/12 11:31	07/17/12 13:27	20
Fluoranthene	ND		7.1	0.71	mg/Kg	☼	07/11/12 11:31	07/17/12 13:27	20
Fluorene	ND		7.1	0.71	mg/Kg	☼	07/11/12 11:31	07/17/12 13:27	20
Indeno[1,2,3-cd]pyrene	ND		7.1	0.71	mg/Kg	☼	07/11/12 11:31	07/17/12 13:27	20
Naphthalene	**15**		7.1	0.71	mg/Kg	☼	07/11/12 11:31	07/17/12 13:27	20
Phenanthrene	ND		7.1	0.71	mg/Kg	☼	07/11/12 11:31	07/17/12 13:27	20
Pyrene	**1.6**	**J**	7.1	0.71	mg/Kg	☼	07/11/12 11:31	07/17/12 13:27	20
1-Methylnaphthalene	**54**		7.1	0.71	mg/Kg	☼	07/11/12 11:31	07/17/12 13:27	20
2-Methylnaphthalene	**70**		7.1	0.71	mg/Kg	☼	07/11/12 11:31	07/17/12 13:27	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*-147*	*X*	*44 - 108*	*07/11/12 11:31*	*07/17/12 13:27*	*20*
Nitrobenzene-d5 (Surr)	*96*		*27 - 114*	*07/11/12 11:31*	*07/17/12 13:27*	*20*
Terphenyl-d14 (Surr)	*60*		*36 - 134*	*07/11/12 11:31*	*07/17/12 13:27*	*20*

Client Sample ID: 1022 FOXGLOVE
Date Collected: 07/03/12 12:45
Date Received: 07/06/12 10:14

Lab Sample ID: 400-66850-2
Matrix: Solid
Percent Solids: 93.1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.29	0.028	mg/Kg	☼	07/09/12 15:57	07/12/12 18:09	50
Ethylbenzene	ND		0.29	0.035	mg/Kg	☼	07/09/12 15:57	07/12/12 18:09	50
Toluene	ND		0.29	0.041	mg/Kg	☼	07/09/12 15:57	07/12/12 18:09	50
Xylenes, Total	ND		0.58	0.11	mg/Kg	☼	07/09/12 15:57	07/12/12 18:09	50
Naphthalene	0.18	J	0.29	0.058	mg/Kg	☼	07/09/12 15:57	07/12/12 18:09	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*84*		*72 - 122*	*07/09/12 15:57*	*07/12/12 18:09*	*50*
Dibromofluoromethane	*90*		*79 - 118*	*07/09/12 15:57*	*07/12/12 18:09*	*50*
Toluene-d8 (Surr)	*94*		*80 - 120*	*07/09/12 15:57*	*07/12/12 18:09*	*50*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		0.35	0.035	mg/Kg	☼	07/11/12 11:31	07/16/12 17:59	1
Acenaphthylene	ND		0.35	0.035	mg/Kg	☼	07/11/12 11:31	07/16/12 17:59	1
Anthracene	ND		0.35	0.035	mg/Kg	☼	07/11/12 11:31	07/16/12 17:59	1
Benzo[a]anthracene	ND		0.35	0.035	mg/Kg	☼	07/11/12 11:31	07/16/12 17:59	1
Benzo[a]pyrene	ND		0.35	0.035	mg/Kg	☼	07/11/12 11:31	07/16/12 17:59	1
Benzo[b]fluoranthene	ND		0.35	0.035	mg/Kg	☼	07/11/12 11:31	07/16/12 17:59	1
Benzo[g,h,i]perylene	ND		0.35	0.035	mg/Kg	☼	07/11/12 11:31	07/16/12 17:59	1
Benzo[k]fluoranthene	ND		0.35	0.035	mg/Kg	☼	07/11/12 11:31	07/16/12 17:59	1
Chrysene	ND		0.35	0.035	mg/Kg	☼	07/11/12 11:31	07/16/12 17:59	1
Dibenz(a,h)anthracene	ND		0.35	0.035	mg/Kg	☼	07/11/12 11:31	07/16/12 17:59	1
Fluoranthene	ND		0.35	0.035	mg/Kg	☼	07/11/12 11:31	07/16/12 17:59	1
Fluorene	ND		0.35	0.035	mg/Kg	☼	07/11/12 11:31	07/16/12 17:59	1
Indeno[1,2,3-cd]pyrene	ND		0.35	0.035	mg/Kg	☼	07/11/12 11:31	07/16/12 17:59	1
Naphthalene	ND		0.35	0.035	mg/Kg	☼	07/11/12 11:31	07/16/12 17:59	1
Phenanthrene	ND		0.35	0.035	mg/Kg	☼	07/11/12 11:31	07/16/12 17:59	1
Pyrene	ND		0.35	0.035	mg/Kg	☼	07/11/12 11:31	07/16/12 17:59	1
1-Methylnaphthalene	ND		0.35	0.035	mg/Kg	☼	07/11/12 11:31	07/16/12 17:59	1
2-Methylnaphthalene	ND		0.35	0.035	mg/Kg	☼	07/11/12 11:31	07/16/12 17:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*68*		*44 - 108*	*07/11/12 11:31*	*07/16/12 17:59*	*1*
Nitrobenzene-d5 (Surr)	*57*		*27 - 114*	*07/11/12 11:31*	*07/16/12 17:59*	*1*
Terphenyl-d14 (Surr)	*77*		*36 - 134*	*07/11/12 11:31*	*07/16/12 17:59*	*1*

Definitions/Glossary

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

TestAmerica Job ID: 400-66850-1

Qualifiers

GC/MS 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.

GC/MS Semi 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.

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
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
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
RL	Reporting Limit
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Lab Chronicle

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

TestAmerica Job ID: 400-66850-1

Client Sample ID: 1353 CARDINAL

Lab Sample ID: 400-66850-1

Date Collected: 07/02/12 16:15
Matrix: Solid
Date Received: 07/06/12 10:14
Percent Solids: 92.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			158404	07/09/12 15:57	MG	TAL PEN
Total/NA	Analysis	8260B		100	158403	07/12/12 17:49	MG	TAL PEN
Total/NA	Prep	3550C			158295	07/11/12 11:31	RT	TAL PEN
Total/NA	Analysis	8270D		20	158553	07/17/12 13:27	JP	TAL PEN
Total/NA	Analysis	Moisture		1	158094	07/06/12 17:00	LEC	TAL PEN

Client Sample ID: 1022 FOXGLOVE

Lab Sample ID: 400-66850-2

Date Collected: 07/03/12 12:45
Matrix: Solid
Date Received: 07/06/12 10:14
Percent Solids: 93.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			158404	07/09/12 15:57	MG	TAL PEN
Total/NA	Analysis	8260B		50	158403	07/12/12 18:09	MG	TAL PEN
Total/NA	Prep	3550C			158295	07/11/12 11:31	RT	TAL PEN
Total/NA	Analysis	8270D		1	158528	07/16/12 17:59	JP	TAL PEN
Total/NA	Analysis	Moisture		1	158094	07/06/12 17:00	LEC	TAL PEN

Laboratory References:

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

QC Association Summary

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

TestAmerica Job ID: 400-66850-1

GC/MS VOA

Analysis Batch: 158403

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-66850-1	1353 CARDINAL	Total/NA	Solid	8260B	158404
400-66850-2	1022 FOXGLOVE	Total/NA	Solid	8260B	158404
LCS 400-158404/2-A	Lab Control Sample	Total/NA	Solid	8260B	158404
LCSD 400-158404/22-A	Lab Control Sample Dup	Total/NA	Solid	8260B	158404
MB 400-158404/1-A	Method Blank	Total/NA	Solid	8260B	158404

Prep Batch: 158404

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-66850-1	1353 CARDINAL	Total/NA	Solid	5035	
400-66850-2	1022 FOXGLOVE	Total/NA	Solid	5035	
LCS 400-158404/2-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 400-158404/22-A	Lab Control Sample Dup	Total/NA	Solid	5035	
MB 400-158404/1-A	Method Blank	Total/NA	Solid	5035	

GC/MS Semi VOA

Prep Batch: 158295

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-66850-1	1353 CARDINAL	Total/NA	Solid	3550C	
400-66850-2	1022 FOXGLOVE	Total/NA	Solid	3550C	
400-66850-2 MS	1022 FOXGLOVE	Total/NA	Solid	3550C	
400-66850-2 MSD	1022 FOXGLOVE	Total/NA	Solid	3550C	
LCS 400-158295/5-A	Lab Control Sample	Total/NA	Solid	3550C	
MB 400-158295/6-A	Method Blank	Total/NA	Solid	3550C	

Analysis Batch: 158528

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-66850-2	1022 FOXGLOVE	Total/NA	Solid	8270D	158295
400-66850-2 MS	1022 FOXGLOVE	Total/NA	Solid	8270D	158295
400-66850-2 MSD	1022 FOXGLOVE	Total/NA	Solid	8270D	158295
LCS 400-158295/5-A	Lab Control Sample	Total/NA	Solid	8270D	158295
MB 400-158295/6-A	Method Blank	Total/NA	Solid	8270D	158295

Analysis Batch: 158553

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-66850-1	1353 CARDINAL	Total/NA	Solid	8270D	158295

General Chemistry

Analysis Batch: 158094

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-66850-1	1353 CARDINAL	Total/NA	Solid	Moisture	
400-66850-2	1022 FOXGLOVE	Total/NA	Solid	Moisture	

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

Lab Sample ID: MB 400-158404/1-A
Matrix: Solid
Analysis Batch: 158403

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 158404

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.0050	0.00049	mg/Kg		07/12/12 08:00	07/12/12 17:05	1
Ethylbenzene	ND		0.0050	0.00061	mg/Kg		07/12/12 08:00	07/12/12 17:05	1
Toluene	ND		0.0050	0.00070	mg/Kg		07/12/12 08:00	07/12/12 17:05	1
Xylenes, Total	ND		0.010	0.0019	mg/Kg		07/12/12 08:00	07/12/12 17:05	1
Naphthalene	ND		0.0050	0.0010	mg/Kg		07/12/12 08:00	07/12/12 17:05	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*85*		*72 - 122*	*07/12/12 08:00*	*07/12/12 17:05*	*1*
Dibromofluoromethane	*91*		*79 - 118*	*07/12/12 08:00*	*07/12/12 17:05*	*1*
Toluene-d8 (Surr)	*93*		*80 - 120*	*07/12/12 08:00*	*07/12/12 17:05*	*1*

Lab Sample ID: LCS 400-158404/2-A
Matrix: Solid
Analysis Batch: 158403

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 158404

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	0.0500	0.0503		mg/Kg		101	74 - 119
Ethylbenzene	0.0500	0.0506		mg/Kg		101	78 - 116
Toluene	0.0500	0.0526		mg/Kg		105	76 - 116
Xylenes, Total	0.150	0.154		mg/Kg		102	77 - 118
Naphthalene	0.0500	0.0414		mg/Kg		83	64 - 126

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*88*		*72 - 122*
Dibromofluoromethane	*96*		*79 - 118*
Toluene-d8 (Surr)	*92*		*80 - 120*

Lab Sample ID: LCSD 400-158404/22-A
Matrix: Solid
Analysis Batch: 158403

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 158404

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	0.0500	0.0507		mg/Kg		101	74 - 119	1	10
Ethylbenzene	0.0500	0.0494		mg/Kg		99	78 - 116	2	12
Toluene	0.0500	0.0519		mg/Kg		104	76 - 116	1	11
Xylenes, Total	0.150	0.152		mg/Kg		101	77 - 118	1	12
Naphthalene	0.0500	0.0406		mg/Kg		81	64 - 126	2	16

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene	*89*		*72 - 122*
Dibromofluoromethane	*95*		*79 - 118*
Toluene-d8 (Surr)	*94*		*80 - 120*

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

Lab Sample ID: MB 400-158295/6-A
Matrix: Solid
Analysis Batch: 158528

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 158295

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		0.33	0.033	mg/Kg		07/11/12 11:31	07/16/12 12:30	1
Acenaphthylene	ND		0.33	0.033	mg/Kg		07/11/12 11:31	07/16/12 12:30	1
Anthracene	ND		0.33	0.033	mg/Kg		07/11/12 11:31	07/16/12 12:30	1
Benzo[a]anthracene	ND		0.33	0.033	mg/Kg		07/11/12 11:31	07/16/12 12:30	1
Benzo[a]pyrene	ND		0.33	0.033	mg/Kg		07/11/12 11:31	07/16/12 12:30	1
Benzo[b]fluoranthene	ND		0.33	0.033	mg/Kg		07/11/12 11:31	07/16/12 12:30	1
Benzo[g,h,i]perylene	ND		0.33	0.033	mg/Kg		07/11/12 11:31	07/16/12 12:30	1
Benzo[k]fluoranthene	ND		0.33	0.033	mg/Kg		07/11/12 11:31	07/16/12 12:30	1
Chrysene	ND		0.33	0.033	mg/Kg		07/11/12 11:31	07/16/12 12:30	1
Dibenz(a,h)anthracene	ND		0.33	0.033	mg/Kg		07/11/12 11:31	07/16/12 12:30	1
Fluoranthene	ND		0.33	0.033	mg/Kg		07/11/12 11:31	07/16/12 12:30	1
Fluorene	ND		0.33	0.033	mg/Kg		07/11/12 11:31	07/16/12 12:30	1
Indeno[1,2,3-cd]pyrene	ND		0.33	0.033	mg/Kg		07/11/12 11:31	07/16/12 12:30	1
Naphthalene	ND		0.33	0.033	mg/Kg		07/11/12 11:31	07/16/12 12:30	1
Phenanthrene	ND		0.33	0.033	mg/Kg		07/11/12 11:31	07/16/12 12:30	1
Pyrene	ND		0.33	0.033	mg/Kg		07/11/12 11:31	07/16/12 12:30	1
1-Methylnaphthalene	ND		0.33	0.033	mg/Kg		07/11/12 11:31	07/16/12 12:30	1
2-Methylnaphthalene	ND		0.33	0.033	mg/Kg		07/11/12 11:31	07/16/12 12:30	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*78*		*44 - 108*	*07/11/12 11:31*	*07/16/12 12:30*	*1*
Nitrobenzene-d5 (Surr)	*68*		*27 - 114*	*07/11/12 11:31*	*07/16/12 12:30*	*1*
Terphenyl-d14 (Surr)	*79*		*36 - 134*	*07/11/12 11:31*	*07/16/12 12:30*	*1*

Lab Sample ID: LCS 400-158295/5-A
Matrix: Solid
Analysis Batch: 158528

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 158295

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	1.67	1.42		mg/Kg		85	53 - 108
Acenaphthylene	1.67	1.46		mg/Kg		88	57 - 111
Anthracene	1.67	1.49		mg/Kg		90	56 - 110
Benzo[a]anthracene	1.67	1.51		mg/Kg		90	52 - 105
Benzo[a]pyrene	1.67	1.22		mg/Kg		73	52 - 97
Benzo[b]fluoranthene	1.67	1.16		mg/Kg		70	49 - 95
Benzo[g,h,i]perylene	1.67	1.37		mg/Kg		82	47 - 122
Benzo[k]fluoranthene	1.67	1.38		mg/Kg		83	57 - 113
Chrysene	1.67	1.44		mg/Kg		86	56 - 102
Dibenz(a,h)anthracene	1.67	1.37		mg/Kg		82	46 - 114
Fluoranthene	1.67	1.63		mg/Kg		98	56 - 120
Fluorene	1.67	1.33		mg/Kg		80	51 - 116
Indeno[1,2,3-cd]pyrene	1.67	1.41		mg/Kg		84	48 - 119
Naphthalene	1.67	1.37		mg/Kg		82	52 - 99
Phenanthrene	1.67	1.51		mg/Kg		91	56 - 113
Pyrene	1.67	1.29		mg/Kg		78	56 - 100
1-Methylnaphthalene	1.67	1.47		mg/Kg		88	58 - 104
2-Methylnaphthalene	1.67	1.39		mg/Kg		83	53 - 99

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

Lab Sample ID: LCS 400-158295/5-A
Matrix: Solid
Analysis Batch: 158528

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 158295

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Fluorobiphenyl	78		44 - 108
Nitrobenzene-d5 (Surr)	67		27 - 114
Terphenyl-d14 (Surr)	80		36 - 134

Lab Sample ID: 400-66850-2 MS
Matrix: Solid
Analysis Batch: 158528

Client Sample ID: 1022 FOXGLOVE
Prep Type: Total/NA
Prep Batch: 158295

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	ND		1.79	1.37		mg/Kg	☼	77	10 - 150
Acenaphthylene	ND		1.79	1.40		mg/Kg	☼	78	10 - 150
Anthracene	ND		1.79	1.45		mg/Kg	☼	81	10 - 150
Benzo[a]anthracene	ND		1.79	1.47		mg/Kg	☼	82	10 - 150
Benzo[a]pyrene	ND		1.79	1.18		mg/Kg	☼	66	10 - 150
Benzo[b]fluoranthene	ND		1.79	1.13		mg/Kg	☼	63	10 - 150
Benzo[g,h,i]perylene	ND		1.79	1.24		mg/Kg	☼	70	10 - 150
Benzo[k]fluoranthene	ND		1.79	1.39		mg/Kg	☼	78	10 - 150
Chrysene	ND		1.79	1.41		mg/Kg	☼	79	10 - 150
Dibenz(a,h)anthracene	ND		1.79	1.22		mg/Kg	☼	68	32 - 111
Fluoranthene	ND		1.79	1.59		mg/Kg	☼	89	10 - 150
Fluorene	ND		1.79	1.33		mg/Kg	☼	74	10 - 150
Indeno[1,2,3-cd]pyrene	ND		1.79	1.27		mg/Kg	☼	71	10 - 150
Naphthalene	ND		1.79	1.27		mg/Kg	☼	71	10 - 150
Phenanthrene	ND		1.79	1.48		mg/Kg	☼	83	10 - 150
Pyrene	ND		1.79	1.29		mg/Kg	☼	72	10 - 150
1-Methylnaphthalene	ND		1.79	1.38		mg/Kg	☼	77	10 - 150
2-Methylnaphthalene	ND		1.79	1.31		mg/Kg	☼	73	10 - 150

Surrogate	MS %Recovery	MS Qualifier	Limits
2-Fluorobiphenyl	68		44 - 108
Nitrobenzene-d5 (Surr)	58		27 - 114
Terphenyl-d14 (Surr)	74		36 - 134

Lab Sample ID: 400-66850-2 MSD
Matrix: Solid
Analysis Batch: 158528

Client Sample ID: 1022 FOXGLOVE
Prep Type: Total/NA
Prep Batch: 158295

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acenaphthene	ND		1.78	1.34		mg/Kg	☼	76	10 - 150	2	36
Acenaphthylene	ND		1.78	1.38		mg/Kg	☼	77	10 - 150	2	29
Anthracene	ND		1.78	1.40		mg/Kg	☼	79	10 - 150	4	30
Benzo[a]anthracene	ND		1.78	1.41		mg/Kg	☼	79	10 - 150	4	33
Benzo[a]pyrene	ND		1.78	1.12		mg/Kg	☼	63	10 - 150	5	30
Benzo[b]fluoranthene	ND		1.78	1.07		mg/Kg	☼	60	10 - 150	5	31
Benzo[g,h,i]perylene	ND		1.78	1.19		mg/Kg	☼	67	10 - 150	5	30
Benzo[k]fluoranthene	ND		1.78	1.36		mg/Kg	☼	76	10 - 150	3	29
Chrysene	ND		1.78	1.34		mg/Kg	☼	76	10 - 150	5	33
Dibenz(a,h)anthracene	ND		1.78	1.17		mg/Kg	☼	66	32 - 111	4	30
Fluoranthene	ND		1.78	1.56		mg/Kg	☼	88	10 - 150	2	42

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

Lab Sample ID: 400-66850-2 MSD
Matrix: Solid
Analysis Batch: 158528

Client Sample ID: 1022 FOXGLOVE
Prep Type: Total/NA
Prep Batch: 158295

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluorene	ND		1.78	1.28		mg/Kg	☼	72	10 - 150	4	36
Indeno[1,2,3-cd]pyrene	ND		1.78	1.22		mg/Kg	☼	69	10 - 150	4	31
Naphthalene	ND		1.78	1.28		mg/Kg	☼	72	10 - 150	0	33
Phenanthrene	ND		1.78	1.43		mg/Kg	☼	80	10 - 150	3	34
Pyrene	ND		1.78	1.22		mg/Kg	☼	69	10 - 150	5	45
1-Methylnaphthalene	ND		1.78	1.38		mg/Kg	☼	77	10 - 150	0	29
2-Methylnaphthalene	ND		1.78	1.31		mg/Kg	* ☼	73	10 - 150	0	32

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
2-Fluorobiphenyl	*69*		*44 - 108*
Nitrobenzene-d5 (Surr)	*58*		*27 - 114*
Terphenyl-d14 (Surr)	*70*		*36 - 134*

Login Sample Receipt Checklist

Client: Environmental Enterprise Group

Job Number: 400-66850-1

Login Number: 66850
List Number: 1
Creator: Crawford, Lauren E

List Source: TestAmerica Pensacola

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	N/A	
The cooler's custody seal, if present, is 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	0.6°C
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 sample IDs on the containers 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.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Certification Summary

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

TestAmerica Job ID: 400-66850-1

Laboratory	Authority	Program	EPA Region	Certification ID
TestAmerica Pensacola	Alabama	State Program	4	40150
TestAmerica Pensacola	Arizona	State Program	9	AZ0710
TestAmerica Pensacola	Arkansas DEQ	State Program	6	88-0689
TestAmerica Pensacola	Florida	NELAC	4	E81010
TestAmerica Pensacola	Georgia	State Program	4	N/A
TestAmerica Pensacola	Illinois	NELAC	5	200041
TestAmerica Pensacola	Iowa	State Program	7	367
TestAmerica Pensacola	Kansas	NELAC	7	E-10253
TestAmerica Pensacola	Kentucky (UST)	State Program	4	53
TestAmerica Pensacola	Louisiana	NELAC	6	30976
TestAmerica Pensacola	Maryland	State Program	3	233
TestAmerica Pensacola	Massachusetts	State Program	1	M-FL094
TestAmerica Pensacola	Michigan	State Program	5	9912
TestAmerica Pensacola	New Hampshire	NELAC	1	2505
TestAmerica Pensacola	New Jersey	NELAC	2	FL006
TestAmerica Pensacola	North Carolina DENR	State Program	4	314
TestAmerica Pensacola	Oklahoma	State Program	6	9810
TestAmerica Pensacola	Pennsylvania	NELAC	3	68-00467
TestAmerica Pensacola	Rhode Island	State Program	1	LAO00307
TestAmerica Pensacola	South Carolina	State Program	4	96026
TestAmerica Pensacola	Tennessee	State Program	4	TN02907
TestAmerica Pensacola	Texas	NELAC	6	T104704286-12-4
TestAmerica Pensacola	USDA	Federal		P330-10-00407
TestAmerica Pensacola	Virginia	NELAC	3	460166
TestAmerica Pensacola	Washington	State Program	10	C915
TestAmerica Pensacola	West Virginia DEP	State Program	3	136

Accreditation may not be offered or required for all methods and analytes reported in this package. Please contact your project manager for the laboratory's current list of certified methods and analytes.

400-66850 Chain of Custody

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) Pratt Shaw

Project ID: Laurel Bay Housing Project

Sampler Signature:

Project #:

Sample ID / Description	Date Sampled	Time Sampled	No. of Containers Shipped	Grab	Composite	Field Filtered	Preservative: Ice	HNO_3 (Red Label)	HCl (Blue Label) Sodium Bisulfate	NaOH (Orange Label)	H_2SO_4 Plastic (Yellow Label)	H_2SO_4 Glass(Yellow Label)	None (Black Label)	Other (Specify) Methanol	Matrix: Groundwater	Wastewater	Drinking Water	Sludge	Soil	Other (specify):	Analyze For: BTEX + Napth - 8260B	PAH - 8270D									RUSH TAT (Pre-Schedule)
1353 Cardinal	7/2/12	1615	5	X					3				2	1					X		X	X									
1022 Foxglove	7/3/12	1245	3	X					2				2	1					X		X	X									

Special Instructions:

Method of Shipment: FEDEX

Relinquished by:	Date	Time	Received by:	Date	Time
	7/5/12	1000	FEDEX		
Relinquished by:	Date	Time	Received by TestAmerica:	Date	Time
				7-6-12	1014

Laboratory Comments:
Temperature Upon Receipt: 0.6°C
VOCs Free of Headspace? Y

7/19/2012

ATTACHMENT A

NON-HAZARDOUS MANIFEST

WASTE MANAGEMENT

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

3. Generator's Mailing Address:
MCAS, BEAUFORT
LAUREL BAY HOUSING
BEAUFORT, SC 29907
4. Generator's Phone 843-228-6461

Generator's Site Address (If different than mailing):

A. Manifest Number: WMNA 00316829

B. State Generator's ID

5. Transporter 1 Company Name: EEG, INC.

6. US EPA ID Number

C. State Transporter's ID

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
HICKORY HILL LANDFILL
2621 LOW COUNTRY ROAD
RIDGELAND, SC 29936

10. US EPA ID Number

G. State Facility ID

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 WM Profile # 102655SC					
b. WM Profile #					
c. WM Profile #					
d. WM Profile #					

J. Additional Descriptions for Materials Listed Above
WASTE from: 1) 1353 Cardinal 2) 1366 Cardinal

K. Disposal Location
Cell | Level
Grid

15. Special Handling Instructions and Additional Information
3) 616 Dahlia 4) 614 Dahlia 5) 607 Dahlia 6) 260 Beech - 2

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
Timothy Whaley	Timothy Whaley	8	22	12

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed Name	Signature	Month	Day	Year
Pratt Shaw		8	22	12

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed Name	Signature	Month	Day	Year
James Baldwin	James Baldwin	8	23	12

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
Ruth Morelus	Ruth Morelus	08	23	12

White- TREATMENT, STORAGE, DISPOSAL FACILITY COPY
Blue- GENERATOR #2 COPY
Yellow- GENERATOR #1 COPY
Pink- FACILITY USE ONLY
Gold- TRANSPORTER #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: **QF26030-004**
Description: **BEALB1353TW01WG20150624**
Matrix: **Aqueous**
Date Sampled: **06/24/2015 1640**
Date Received: **06/26/2015**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2	5030B	8260B	1	07/07/2015 2157	JJG		79028

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Benzene	**71-43-2**	**8260B**	**0.38**	**J**	**5.0**	0.45	**0.21**	**ug/L**	**2**
Ethylbenzene	**100-41-4**	**8260B**	**2.5**	**J**	**5.0**	0.51	**0.21**	**ug/L**	**2**
Naphthalene	**91-20-3**	**8260B**	**11**		**5.0**	0.96	**0.14**	**ug/L**	**2**
Toluene	108-88-3	8260B	0.48	U	5.0	0.48	0.24	ug/L	2
Xylenes (total)	**1330-20-7**	**8260B**	**6.6**		**5.0**	0.57	**0.19**	**ug/L**	**2**

Surrogate	Q	Run 2 % Recovery	Acceptance Limits
Bromofluorobenzene		104	75-120
1,2-Dichloroethane-d4		99	70-120
Toluene-d8		100	85-120
Dibromofluoromethane		95	85-115

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 (SIM)

Client: **AECOM - Resolution Consultants**
Laboratory ID: **QF26030-004**
Description: **BEALB1353TW01WG20150624**
Matrix: **Aqueous**
Date Sampled: **06/24/2015 1640**
Date Received: **06/26/2015**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270D (SIM)	1	07/10/2015 1446	DRB1	06/29/2015 1632	78383

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Benzo(a)anthracene	56-55-3	8270D (SIM)	0.040	U	0.20	0.040	0.019	ug/L	1
Benzo(b)fluoranthene	205-99-2	8270D (SIM)	0.040	U	0.20	0.040	0.019	ug/L	1
Benzo(k)fluoranthene	207-08-9	8270D (SIM)	0.040	U	0.20	0.040	0.024	ug/L	1
Chrysene	218-01-9	8270D (SIM)	0.040	U	0.20	0.040	0.021	ug/L	1
Dibenzo(a,h)anthracene	53-70-3	8270D (SIM)	0.080	U	0.20	0.080	0.040	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Methylnaphthalene-d10		98	15-139
Fluoranthene-d10		94	23-154

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

D H E C

PROMOTE PROTECT PROSPER

Catherine B. Templeton, Director

May 15, 2014

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 Storage Tank Assessment Reports for:
See attached sheet

Dear Mr. Drawdy,

The South Carolina Department of Health and Environmental Control (the Department) received the above referenced Underground Storage Tank Assessment Reports for the addresses listed above. 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 assessment 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 this site.

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 kriegkm@dhec.sc.gov or 803-898-0255.

Sincerely,

Kent Krieg
Department of Defense Corrective Action Section
Bureau of Land and Waste Management
South Carolina Department of Health and Environmental Control

Cc: Russell Berry (via email)
Craig Ehde (via email)

Attachment to: Krieg to Drawdy
Subject: IGWA
Dated 5/15/2014

Laurel Bay Underground Storage Tank Assessment Reports for: (121 addresses/139 tanks)

137 Laurel Bay Tank 2	387 Acorn
139 Laurel Bay	392 Acorn Tank 2
229 Cypress Tank 2	396 Acorn Tank 1
261 Beech Tank 1	396 Acorn Tank 2
261 Beech Tank 3	430 Elderberry
273 Birch Tank 1	433 Elderberry
273 Birch Tank 2	439 Elderberry
273 Birch Tank 3	440 Elderberry
276 Birch Tank 2	442 Elderberry
278 Birch Tank 2	443 Elderberry
291 Birch Tank 2	444 Elderberry Tank 1
300 Ash	445 Elderberry
304 Ash	446 Elderberry
314 Ash Tank 1	448 Elderberry
314 Ash Tank 2	449 Elderberry
322 Ash Tank 2	451 Elderberry
323 Ash	453 Elderberry
324 Ash	456 Elderberry Tank 1
325 Ash Tank 1	456 Elderberry Tank 2
325 Ash Tank 2	458 Elderberry Tank 1
326 Ash	458 Elderberry Tank 3
336 Ash	464 Dogwood
339 Ash	466 Dogwood
343 Ash Tank 1	467 Dogwood
344 Ash Tank 1	468 Dogwood
348 Ash	469 Dogwood
349 Ash Tank 1	471 Dogwood Tank 2
353 Ash Tank 1	471 Dogwood Tank 3
362 Aspen	475 Dogwood Tank 1
376 Aspen	475 Dogwood Tank 2
380 Aspen	516 Laurel Bay Tank 1 (UST#03747)
383 Aspen Tank 2	518 Laurel Bay

Laurel Bay Underground Storage Tank Assessment Reports for: (121 addresses/139 tanks) cont.

531 Laurel Bay	1219 Cardinal
532 Laurel Bay	1272 Albatross
635 Dahlia Tank 2	1305 Eagle
638 Dahlia	1353 Cardinal
640 Dahlia Tank 1	1356 Cardinal
640 Dahlia Tank 2	1357 Cardinal
645 Dahlia	1359 Cardinal
647 Dahlia	1360 Cardinal
648 Dahlia Tank 2	1361 Cardinal
650 Dahlia Tank 1	1368 Cardinal
650 Dahlia Tank 2	1370 Cardinal Tank 1
652 Dahlia Tank 1	1377 Dove
652 Dahlia Tank 2	1381 Dove
760 Althea	1382 Dove
763 Althea	1384 Dove
771 Althea	1385 Dove
927 Albacore	1389 Dove
1015 Foxglove	1391 Dove
1046 Gardenia	1392 Dove
1062 Gardenia Tank 2	1393 Dove Tank 1
1070 Heather	1393 Dove Tank 2
1072 Heather	1406 Eagle
1102 Iris Tank 1	1407 Eagle Tank 1
1107 Iris	1411 Eagle Tank 1
1126 Iris	1411 Eagle Tank 2
1129 Iris	1412 Eagle
1132 Iris	1413 Albatross
1133 Iris Tank 1	1414 Albatross
1138 Iris	1422 Albatross
1144 Iris Tank 1	1425 Albatross
1144 Iris Tank 2	1426 Albatross
1148 Iris Tank 1	1432 Dove
1148 Iris Tank 2	1434 Dove
1161 Jasmine	1436 Dove
1167 Jasmine	1438 Dove Tank 1
1170 Jasmine	1440 Dove
1190 Bobwhite	1442 Dove Tank 1
1192 Bobwhite	

D H E C
PROMOTE PROTECT PROSPER

Catherine E. Heigel, Director
Promoting and protecting the health of the public and the environment

Division of Waste Management
Bureau of Land and Waste Management

February 22, 2016

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

RE: Approval and Concurrence with Draft Final Initial Groundwater Investigation Report-May and June 2015
Laurel Bay Military Housing Area Multiple Properties
Dated October 2015

Dear Mr. Drawdy,

The South Carolina Department of Health and Environmental Control (the Department) received groundwater data in the above referenced Groundwater Investigation Report for the addresses attached. 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 the Department's request, groundwater samples were collected from the attached referenced addresses. The Department 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 wells should be installed at the 52 stated addresses. For the remaining 91 addresses, there is no indication of contamination on the property and therefore no further investigation is required at this time.

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
RCRA Federal Facilities Section

Attachment: Specific Property Recommendations

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
Subject: Draft Final Initial Groundwater Investigation Report-May and June 2015
Specific Property Recommendations
Dated February 22, 2016

Draft Final Initial Groundwater Investigation Report for (143 addresses)

Permanent Monitoring Well Investigation recommendation (52 addresses)	
273 Birch Drive	1192 Bobwhite Drive
325 Ash Street	1194 Bobwhite Drive
326 Ash Street	1272 Albatross Drive
336 Ash Street	1352 Cardinal Lane
343 Ash Street	1356 Cardinal Lane
353 Ash Street	1359 Cardinal Lane
430 Elderberry Drive	1360 Cardinal Lane
440 Elderberry Drive	1362 Cardinal Lane
456 Elderberry Drive	1370 Cardinal Lane
458 Elderberry Drive	1382 Dove Lane
468 Dogwood Drive	1384 Dove lane
518 Laurel Bay Blvd	1385 Dove Lane
635 Dahlia Drive	1389 Dove Lane
638 Dahlia Drive	1392 Dove Lane
640 Dahlia Drive	1393 Dove Lane
647 Dahlia Drive	1407 Eagle Lane
648 Dahlia Drive	1411 Eagle Lane
650 Dahlia Drive	1418 Albatross Drive
652 Dahlia Drive	1420 Albatross Drive
760 Althea Street	1426 Albatross Drive
1102 Iris Lane	1429 Albatross Drive
1132 Iris Lane	1434 Dove Lane
1133 Iris Lane	1436 Dove Lane
1144 Iris Lane	1440 Dove Lane
1148 Iris Lane	1442 Dove Lane
1186 Bobwhite Drive	1444 Dove Lane
No Further Action recommendation (91 addresses):	
137 Laurel Bay Blvd	771 Althea Street
139 Laurel Bay Blvd	927 Albacore Street
229 Cypress Street	1015 Foxglove Street
261 Beech Street	1046 Gardenia Drive
276 Birch Drive	1062 Gardenia Drive
278 Birch Drive	1070 Heather Street
291 Birch Drive	1072 Heather Street

300 Ash Street	1107 Iris Lane
304 Ash Street	1126 Iris Lane
314 Ash Street	1129 Iris Lane
322 Ash Street	1138 Iris Lane
323 Ash Street	1161 Jasmine Street
324 Ash Street	1167 Jasmine Street
339 Ash Street	1170 Jasmine Street
344 Ash Street	1190 Bobwhite Drive
348 Ash Street	1219 Cardinal Lane
349 Ash Street	1305 Eagle Lane
362 Aspen Street	1353 Cardinal Lane
376 Aspen Street	1354 Cardinal Lane
380 Aspen Street	1357 Cardinal Lane
383 Aspen Street	1361 Cardinal Lane
387 Acorn Drive	1364 Cardinal Lane
392 Acorn Drive	1368 Cardinal Lane
396 Acorn Drive	1377 Dove Lane
433 Elderberry Drive	1381 Dove Lane
439 Elderberry Drive	1391 Dove Lane
442 Elderberry Drive	1403 Eagle Lane
443 Elderberry Drive	1404 Eagle Lane
444 Elderberry Drive	1405 Eagle Lane
445 Elderberry Drive	1406 Eagle Lane
446 Elderberry Drive	1408 Eagle Lane
448 Elderberry Drive	1410 Eagle Lane
449 Elderberry Drive	1412 Eagle Lane
451 Elderberry Drive	1413 Albatross Drive
453 Elderberry Drive	1414 Albatross Drive
464 Dogwood Drive	1417 Albatross Drive
466 Dogwood Drive	1421 Albatross Drive
467 Dogwood Drive	1422 Albatross Drive
469 Dogwood Drive	1425 Albatross Drive
471 Dogwood Drive	1427 Albatross Drive
475 Dogwood Drive	1430 Dove Lane
516 Laurel Bay Blvd	1432 Dove Lane
531 Laurel Bay Blvd	1438 Dove Lane
532 Laurel Bay Blvd	1453 Cardinal Lane
645 Dahlia Drive	1455 Cardinal Lane
763 Althea Street	