SUMMARY REPORT
47 ASH STREET (FORMERLY 302 ASH 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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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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Appendices

List of Acronyms

bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and xylenes
CTO	Contract Task Order
COPC	constituents of potential concern
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 47 Ash Street (Formerly 302 Ash 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 47 Ash Street (Formerly 302 Ash Street). Details regarding the soil investigation at this site are provided in the *SCDHEC UST Assessment Report – 302 Ash Street* (MCAS Beaufort, 2012). The UST Assessment Report is provided in Appendix B.

2.1 UST Removal and Soil Sampling

On August 29, 2012, a single 280 gallon heating oil UST was removed from the concrete porch area adjacent to the driveway at 47 Ash Street (Formerly 302 Ash Street). The former UST location is indicated on Figures 2 and 3 of the UST Assessment Report (Appendix B). The UST was removed and properly disposed of (i.e., shipped offsite for recycling or transported to a landfill). 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 5'9" 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 47 Ash Street (Formerly 302 Ash Street) were less than the SCDHEC RBSLs, which indicated the subsurface was not impacted by COPCs associated with the former UST at concentrations that presented a potential risk to human health and the environment.

3.0 PROPERTY STATUS

Based on the analytical results for soil, SCDHEC made the determination that NFA was required for 47 Ash Street (Formerly 302 Ash Street). This NFA determination was obtained in a letter dated May 15, 2014. SCDHEC's NFA letter is provided in Appendix C.

4.0 REFERENCES

Marine Corps Air Station Beaufort, 2012. *South Carolina Department of Health and Environmental Control (SCDHEC) Underground Storage Tank Assessment Report – 302 Ash Street, Laurel Bay Military Housing Area*, October 2012.

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.

Table

Table 1
Laboratory Analytical Results - Soil
47 Ash Street (Formerly 302 Ash Street)
Laurel Bay Military Housing Area
Marine Corps Air Station Beaufort
Beaufort, South Carolina

Constituent	SCDHEC RBSLs [(1)]	Results Sample Collected 08/29/12
Volatile Organic Compounds Analyzed by EPA Method 8260B (mg/kg)		
Benzene	0.003	ND
Ethylbenzene	1.15	ND
Naphthalene	0.036	ND
Toluene	0.627	ND
Xylenes, Total	13.01	ND
Semivolatile Organic Compounds Analyzed by EPA Method 8270D (mg/kg)		
Benzo(a)anthracene	0.66	**0.112**
Benzo(b)fluoranthene	0.66	**0.119**
Benzo(k)fluoranthene	0.66	**0.0574**
Chrysene	0.66	**0.124**
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 - milligram per kilogram

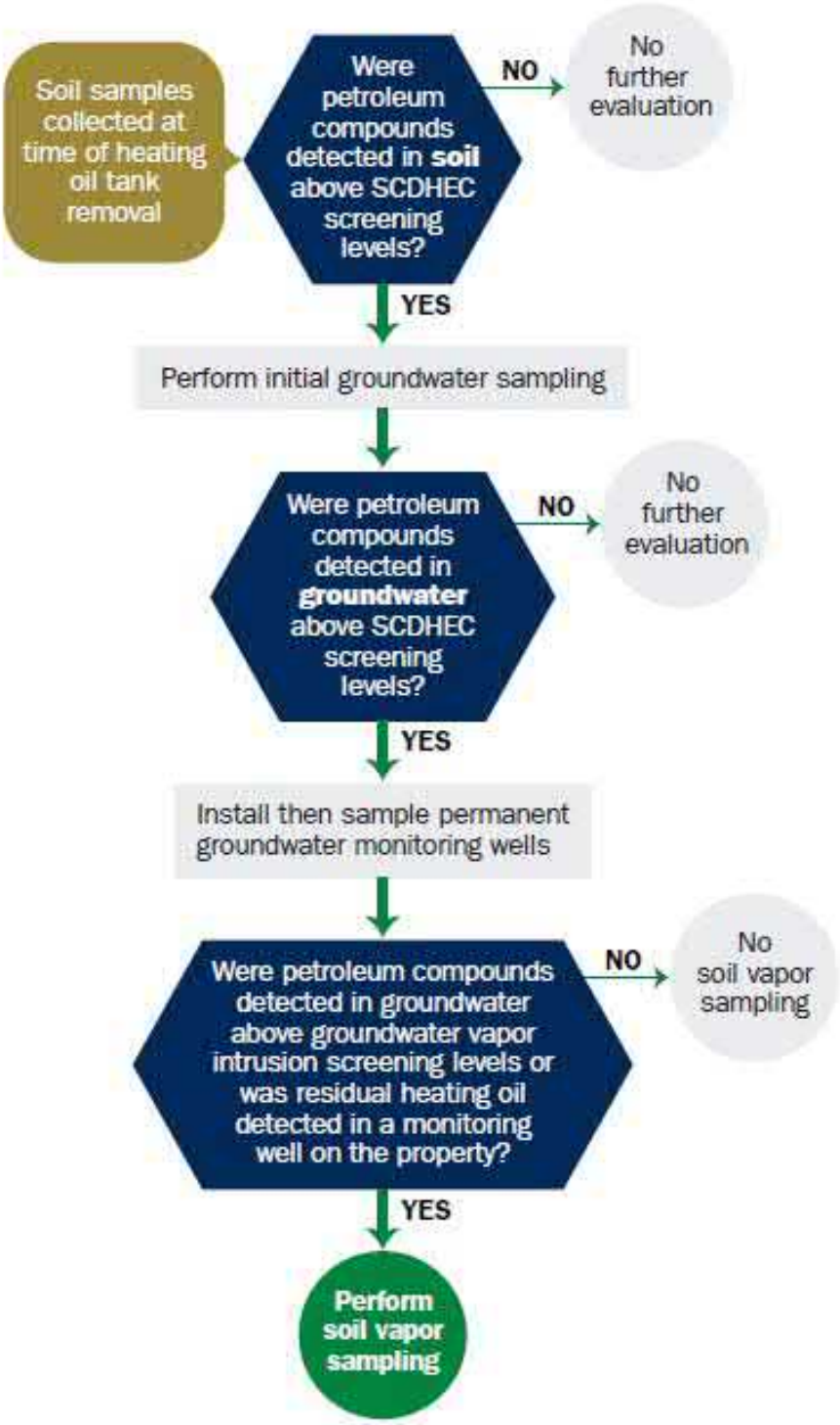
ND - not detected at the reporting limit (or method detection limit if shown on the laboratory report). The laboratory report is provided in Appendix B.

RBSL - Risk-Based Screening Level

SCDHEC - South Carolina Department Of Health and Environmental Control

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

302 Ash 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).....	302Ash				
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 1980s				
G.	Spill Prevention Equipment Y/N.....	5'9"				
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.....	8/29/2012				
L.	Visible Holes Y/N.....	Yes				
		Yes				

M. Method of disposal for any USTs removed from the ground (attach disposal manifests)
UST 302Ash was removed from the ground, cleaned and recycled. See Attachment "A."

N. Method of disposal for any liquid petroleum, sludges, or wastewaters removed from the USTs (attach disposal manifests)
Contaminated water was pumped from UST 302Ash and disposed by MCAS.

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

A. Construction Material..(ex. Steel, FRP).....	302Ash				
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 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 #
302Ash	Excav at fill end	Soil	Sandy	5'9"	8/29/12 1400 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.

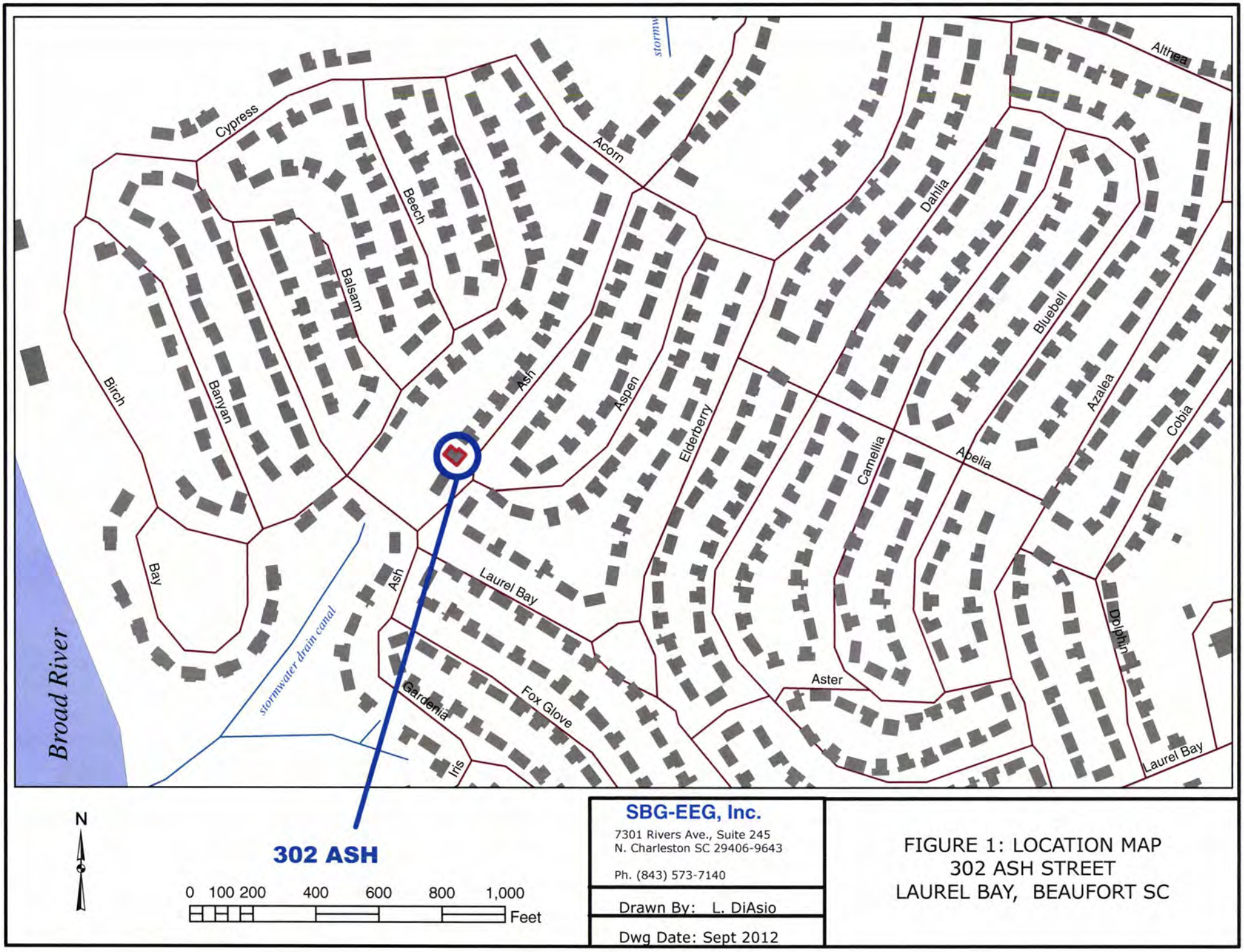
XII. RECEPTORS

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

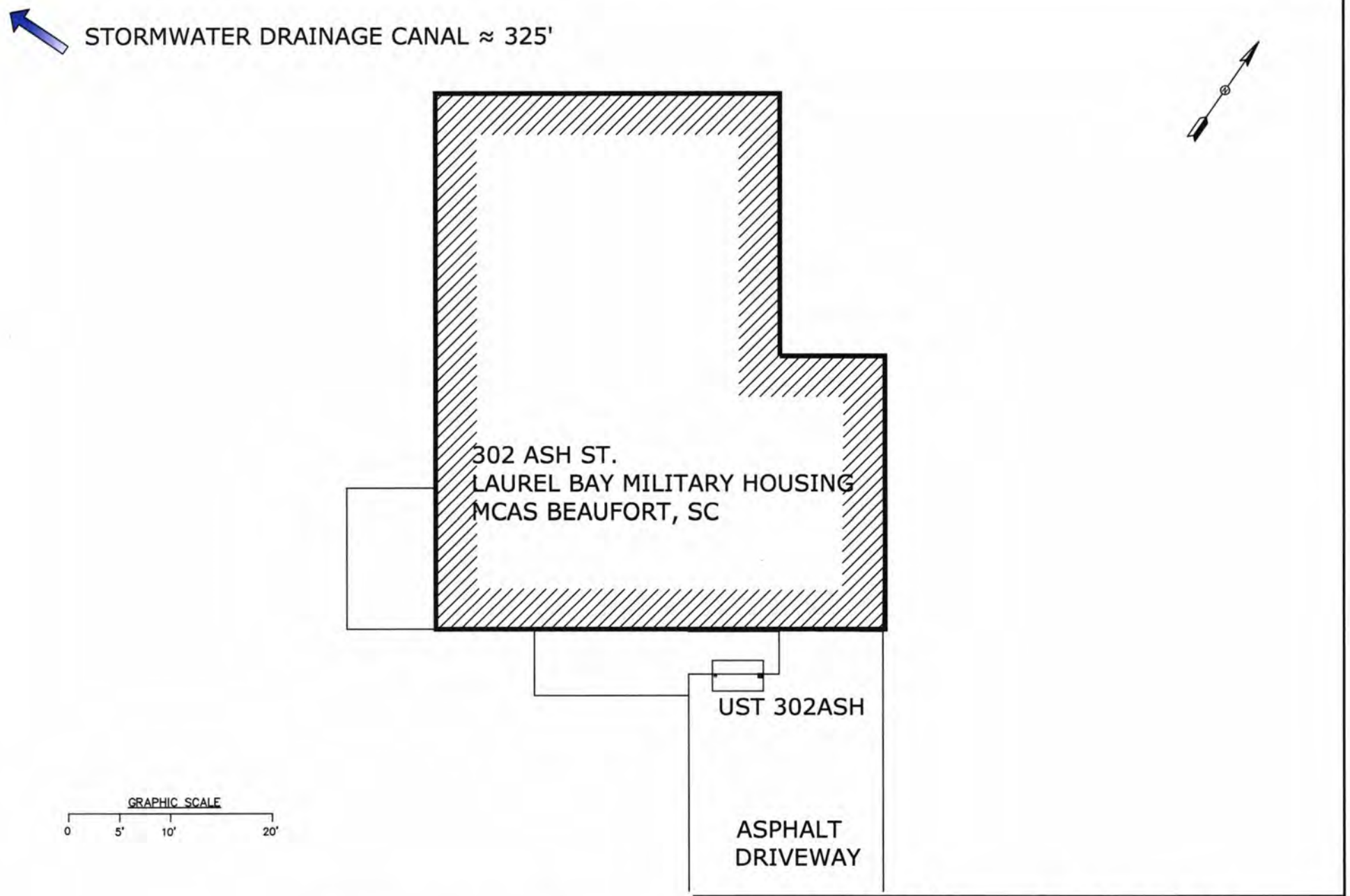


SBG-EEG, Inc.
7301 Rivers Ave., Suite 245
N. Charleston SC 29406-9643
Ph. (843) 573-7140

Drawn By: L. DiAsio

Dwg Date: Sept 2012

FIGURE 1: LOCATION MAP
302 ASH STREET
LAUREL BAY, BEAUFORT SC

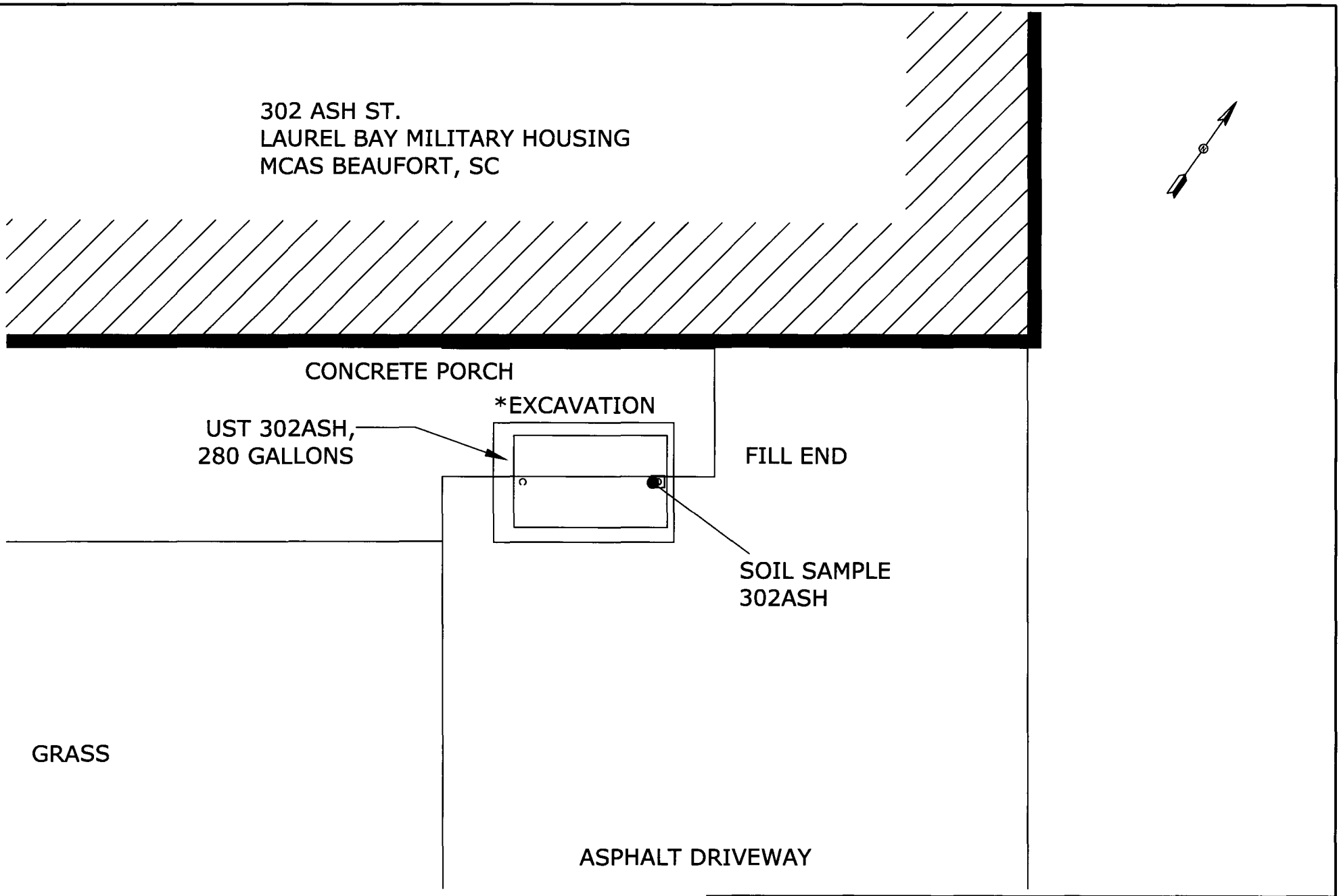


UST 302ASH WAS
33" BELOW GRADE.

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

FIGURE 2 SITE MAP
302 ASH ST., LAUREL BAY
MCAS BEAUFORT SC

SCALE: GRAPHIC | DWG DATE SEPT 2012



*A PORTION OF THE CONCRETE 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
302 ASH ST., LAUREL BAY
MCAS BEAUFORT SC

SCALE: GRAPHIC | DWG DATE SEPT 2012

Picture 1: Location of UST 302Ash.

Picture 2: UST 302Ash 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	302Ash						
Benzene	ND						
Toluene	ND						
Ethylbenzene	ND						
Xylenes	ND						
Naphthalene	ND						
Benzo (a) anthracene	0.112 mg/kg						
Benzo (b) fluoranthene	0.119 mg/kg						
Benzo (k) fluoranthene	0.0574 mg/kg						
Chrysene	0.124 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: 490-5630-1
TestAmerica Sample Delivery Group: 1063
Client Project/Site: Laurel Bay Housing

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

Attn: Mr. Tom McElwee

Authorized for release by:
9/13/2012 8:46:05 PM

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

Table of Contents

Sample Summary

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

TestAmerica Job ID: 490-5630-1
SDG: 1063

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
490-5630-1	302 Ash	Solid	08/29/12 14:00	09/05/12 08:20
490-5630-2	304 Ash	Solid	08/29/12 12:45	09/05/12 08:20

Job ID: 490-5630-1

Laboratory: TestAmerica Nashville

Narrative

Job Narrative
490-5630-1

Comments
No additional comments.

Receipt
The samples were received on 9/5/2012 8:20 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.2° C.

GC/MS VOA
Method(s) 8260B: Surrogate recovery for the following sample(s) was outside control limits: 304 Ash (490-5630-2). Evidence of matrix interference is present; However, re-extraction and/or re-analysis was required for multiple compounds being over the calibration limit.

Method(s) 8260B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for batch 17848 were outside control limits. The associated laboratory control sample (LCS) recovery met acceptance criteria.

Method(s) 8260B: The method blank for batch 19243 contained Xylenes above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method(s) 8260B: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with batch 19243. LCS/LCSD was performed for batch precision.

Method(s) 8260B: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with batch 19243.

No other analytical or quality issues were noted.

GC/MS Semi VOA
Method(s) 8270D: The matrix spike / matrix spike duplicate (MS/MSD) percent recoveries and %RPD for batch 17856 were outside control limits; therefore, they were not reported. LCS recovery was in range.

No other 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
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
F	MS or MSD exceeds the control limits
X	Surrogate is outside control limits
B	Compound was found in the blank and sample.

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
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)

Client Sample ID: 302 Ash

Date Collected: 08/29/12 14:00
Date Received: 09/05/12 08:20

Lab Sample ID: 490-5630-1

Matrix: Solid
Percent Solids: 79.9

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.00198	0.000663	mg/Kg	☼	09/05/12 14:30	09/06/12 19:00	1
Ethylbenzene	ND		0.00198	0.000663	mg/Kg	☼	09/05/12 14:30	09/06/12 19:00	1
Naphthalene	ND		0.00495	0.00168	mg/Kg	☼	09/05/12 14:30	09/06/12 19:00	1
Toluene	ND		0.00198	0.000732	mg/Kg	☼	09/05/12 14:30	09/06/12 19:00	1
Xylenes, Total	ND		0.00495	0.000663	mg/Kg	☼	09/05/12 14:30	09/06/12 19:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*70 - 130*	*09/05/12 14:30*	*09/06/12 19:00*	*1*
4-Bromofluorobenzene (Surr)	*94*		*70 - 130*	*09/05/12 14:30*	*09/06/12 19:00*	*1*
Dibromofluoromethane (Surr)	*100*		*70 - 130*	*09/05/12 14:30*	*09/06/12 19:00*	*1*
Toluene-d8 (Surr)	*92*		*70 - 130*	*09/05/12 14:30*	*09/06/12 19:00*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	0.0724	J	0.0835	0.0125	mg/Kg	☼	09/06/12 07:07	09/07/12 17:36	1
Acenaphthylene	0.0587	J	0.0835	0.0112	mg/Kg	☼	09/06/12 07:07	09/07/12 17:36	1
Anthracene	0.0496	J	0.0835	0.0112	mg/Kg	☼	09/06/12 07:07	09/07/12 17:36	1
Benzo[a]anthracene	0.112		0.0835	0.0187	mg/Kg	☼	09/06/12 07:07	09/07/12 17:36	1
Benzo[a]pyrene	0.0790	J	0.0835	0.0149	mg/Kg	☼	09/06/12 07:07	09/07/12 17:36	1
Benzo[b]fluoranthene	0.119		0.0835	0.0149	mg/Kg	☼	09/06/12 07:07	09/07/12 17:36	1
Benzo[g,h,i]perylene	0.0568	J	0.0835	0.0112	mg/Kg	☼	09/06/12 07:07	09/07/12 17:36	1
Benzo[k]fluoranthene	0.0574	J	0.0835	0.0174	mg/Kg	☼	09/06/12 07:07	09/07/12 17:36	1
Pyrene	0.314		0.0835	0.0149	mg/Kg	☼	09/06/12 07:07	09/07/12 17:36	1
Phenanthrene	0.391		0.0835	0.0112	mg/Kg	☼	09/06/12 07:07	09/07/12 17:36	1
Chrysene	0.124		0.0835	0.0112	mg/Kg	☼	09/06/12 07:07	09/07/12 17:36	1
Dibenz(a,h)anthracene	ND		0.0835	0.00872	mg/Kg	☼	09/06/12 07:07	09/07/12 17:36	1
Fluoranthene	0.191		0.0835	0.0112	mg/Kg	☼	09/06/12 07:07	09/07/12 17:36	1
Fluorene	0.155		0.0835	0.0149	mg/Kg	☼	09/06/12 07:07	09/07/12 17:36	1
Indeno[1,2,3-cd]pyrene	0.0485	J	0.0835	0.0125	mg/Kg	☼	09/06/12 07:07	09/07/12 17:36	1
Naphthalene	ND		0.0835	0.0112	mg/Kg	☼	09/06/12 07:07	09/07/12 17:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*62*		*29 - 120*	*09/06/12 07:07*	*09/07/12 17:36*	*1*
Terphenyl-d14 (Surr)	*80*		*13 - 120*	*09/06/12 07:07*	*09/07/12 17:36*	*1*
Nitrobenzene-d5 (Surr)	*57*		*27 - 120*	*09/06/12 07:07*	*09/07/12 17:36*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	80		0.10	0.10	%			09/05/12 13:54	1

Client Sample ID: 304 Ash

Date Collected: 08/29/12 12:45
Date Received: 09/05/12 08:20

Lab Sample ID: 490-5630-2

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	0.000861	J	0.00200	0.000671	mg/Kg	☼	09/05/12 14:30	09/06/12 19:32	1
Ethylbenzene	0.102		0.00200	0.000671	mg/Kg	☼	09/05/12 14:30	09/06/12 19:32	1
Naphthalene	2.27		0.308	0.105	mg/Kg	☼	09/05/12 14:36	09/12/12 12:38	1
Toluene	0.00237		0.00200	0.000741	mg/Kg	☼	09/05/12 14:30	09/06/12 19:32	1
Xylenes, Total	1.37	B	0.308	0.0419	mg/Kg	☼	09/05/12 14:36	09/12/12 12:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*70 - 130*	*09/05/12 14:30*	*09/06/12 19:32*	*1*
1,2-Dichloroethane-d4 (Surr)	*87*		*70 - 130*	*09/05/12 14:36*	*09/12/12 12:38*	*1*
4-Bromofluorobenzene (Surr)	*158*	*X*	*70 - 130*	*09/05/12 14:30*	*09/06/12 19:32*	*1*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*	*09/05/12 14:36*	*09/12/12 12:38*	*1*
Dibromofluoromethane (Surr)	*99*		*70 - 130*	*09/05/12 14:30*	*09/06/12 19:32*	*1*
Dibromofluoromethane (Surr)	*81*		*70 - 130*	*09/05/12 14:36*	*09/12/12 12:38*	*1*
Toluene-d8 (Surr)	*148*	*X*	*70 - 130*	*09/05/12 14:30*	*09/06/12 19:32*	*1*
Toluene-d8 (Surr)	*94*		*70 - 130*	*09/05/12 14:36*	*09/12/12 12:38*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	0.228		0.0844	0.0126	mg/Kg	☼	09/06/12 07:07	09/07/12 18:40	1
Acenaphthylene	0.119		0.0844	0.0113	mg/Kg	☼	09/06/12 07:07	09/07/12 18:40	1
Anthracene	0.369		0.0844	0.0113	mg/Kg	☼	09/06/12 07:07	09/07/12 18:40	1
Benzo[a]anthracene	0.733		0.0844	0.0189	mg/Kg	☼	09/06/12 07:07	09/07/12 18:40	1
Benzo[a]pyrene	0.281		0.0844	0.0151	mg/Kg	☼	09/06/12 07:07	09/07/12 18:40	1
Benzo[b]fluoranthene	0.467		0.0844	0.0151	mg/Kg	☼	09/06/12 07:07	09/07/12 18:40	1
Benzo[g,h,i]perylene	0.0858		0.0844	0.0113	mg/Kg	☼	09/06/12 07:07	09/07/12 18:40	1
Benzo[k]fluoranthene	0.203		0.0844	0.0176	mg/Kg	☼	09/06/12 07:07	09/07/12 18:40	1
Pyrene	1.52		0.0844	0.0151	mg/Kg	☼	09/06/12 07:07	09/07/12 18:40	1
Phenanthrene	2.07		0.0844	0.0113	mg/Kg	☼	09/06/12 07:07	09/07/12 18:40	1
Chrysene	0.665		0.0844	0.0113	mg/Kg	☼	09/06/12 07:07	09/07/12 18:40	1
Dibenz(a,h)anthracene	ND		0.0844	0.00881	mg/Kg	☼	09/06/12 07:07	09/07/12 18:40	1
Fluoranthene	1.84		0.0844	0.0113	mg/Kg	☼	09/06/12 07:07	09/07/12 18:40	1
Fluorene	0.579		0.0844	0.0151	mg/Kg	☼	09/06/12 07:07	09/07/12 18:40	1
Indeno[1,2,3-cd]pyrene	0.0891		0.0844	0.0126	mg/Kg	☼	09/06/12 07:07	09/07/12 18:40	1
Naphthalene	0.432		0.0844	0.0113	mg/Kg	☼	09/06/12 07:07	09/07/12 18:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*57*		*29 - 120*	*09/06/12 07:07*	*09/07/12 18:40*	*1*
Terphenyl-d14 (Surr)	*74*		*13 - 120*	*09/06/12 07:07*	*09/07/12 18:40*	*1*
Nitrobenzene-d5 (Surr)	*53*		*27 - 120*	*09/06/12 07:07*	*09/07/12 18:40*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	79		0.10	0.10	%			09/05/12 13:54	1

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

Lab Sample ID: 490-5523-A-10-C MS
Matrix: Solid
Analysis Batch: 17848

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 17644

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	0.00394		0.0506	0.02388		mg/Kg	☼	39	31 - 143
Ethylbenzene	0.00123	J	0.0506	0.01106	F	mg/Kg	☼	19	23 - 161
Naphthalene	ND		0.0506	0.002868	J F	mg/Kg	☼	6	10 - 176
Toluene	0.00418		0.0506	0.01531	F	mg/Kg	☼	22	30 - 155
Xylenes, Total	0.00152	J	0.152	0.02539	F	mg/Kg	☼	16	25 - 162

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*70 - 130*
4-Bromofluorobenzene (Surr)	*93*		*70 - 130*
Dibromofluoromethane (Surr)	*101*		*70 - 130*
Toluene-d8 (Surr)	*92*		*70 - 130*

Lab Sample ID: 490-5523-A-10-D MSD
Matrix: Solid
Analysis Batch: 17848

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 17644

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	0.00394		0.0479	0.03308		mg/Kg	☼	61	31 - 143	32	50
Ethylbenzene	0.00123	J	0.0479	0.01642		mg/Kg	☼	32	23 - 161	39	50
Naphthalene	ND		0.0479	0.004168	J F	mg/Kg	☼	9	10 - 176	37	50
Toluene	0.00418		0.0479	0.02317		mg/Kg	☼	40	30 - 155	41	50
Xylenes, Total	0.00152	J	0.144	0.04061		mg/Kg	☼	27	25 - 162	46	50

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*98*		*70 - 130*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*
Dibromofluoromethane (Surr)	*102*		*70 - 130*
Toluene-d8 (Surr)	*94*		*70 - 130*

Lab Sample ID: MB 490-17848/6
Matrix: Solid
Analysis Batch: 17848

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			09/06/12 13:14	1
Ethylbenzene	ND		0.00200	0.000670	mg/Kg			09/06/12 13:14	1
Naphthalene	ND		0.00500	0.00170	mg/Kg			09/06/12 13:14	1
Toluene	ND		0.00200	0.000740	mg/Kg			09/06/12 13:14	1
Xylenes, Total	ND		0.00500	0.000670	mg/Kg			09/06/12 13:14	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*70 - 130*		*09/06/12 13:14*	*1*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*		*09/06/12 13:14*	*1*
Dibromofluoromethane (Surr)	*99*		*70 - 130*		*09/06/12 13:14*	*1*
Toluene-d8 (Surr)	*93*		*70 - 130*		*09/06/12 13:14*	*1*

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

Lab Sample ID: LCS 490-17848/3
Matrix: Solid
Analysis Batch: 17848

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	0.05887		mg/Kg		118	75 - 127
Ethylbenzene	0.0500	0.05471		mg/Kg		109	80 - 134
Naphthalene	0.0500	0.05185		mg/Kg		104	69 - 150
Toluene	0.0500	0.05348		mg/Kg		107	80 - 132
Xylenes, Total	0.150	0.1645		mg/Kg		110	80 - 137

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*98*		*70 - 130*
4-Bromofluorobenzene (Surr)	*94*		*70 - 130*
Dibromofluoromethane (Surr)	*101*		*70 - 130*
Toluene-d8 (Surr)	*89*		*70 - 130*

Lab Sample ID: LCSD 490-17848/4
Matrix: Solid
Analysis Batch: 17848

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	0.05618		mg/Kg		112	75 - 127	5	50
Ethylbenzene	0.0500	0.05183		mg/Kg		104	80 - 134	5	50
Naphthalene	0.0500	0.04879		mg/Kg		98	69 - 150	6	50
Toluene	0.0500	0.05085		mg/Kg		102	80 - 132	5	50
Xylenes, Total	0.150	0.1542		mg/Kg		103	80 - 137	6	50

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*97*		*70 - 130*
4-Bromofluorobenzene (Surr)	*94*		*70 - 130*
Dibromofluoromethane (Surr)	*102*		*70 - 130*
Toluene-d8 (Surr)	*94*		*70 - 130*

Lab Sample ID: MB 490-19243/7
Matrix: Solid
Analysis Batch: 19243

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			09/12/12 12:08	1
Ethylbenzene	ND		0.100	0.0340	mg/Kg			09/12/12 12:08	1
Naphthalene	ND		0.250	0.0850	mg/Kg			09/12/12 12:08	1
Toluene	ND		0.100	0.0370	mg/Kg			09/12/12 12:08	1
Xylenes, Total	0.04278	J	0.250	0.0340	mg/Kg			09/12/12 12:08	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*93*		*70 - 130*		*09/12/12 12:08*	*1*
4-Bromofluorobenzene (Surr)	*104*		*70 - 130*		*09/12/12 12:08*	*1*
Dibromofluoromethane (Surr)	*80*		*70 - 130*		*09/12/12 12:08*	*1*
Toluene-d8 (Surr)	*94*		*70 - 130*		*09/12/12 12:08*	*1*

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

Lab Sample ID: LCS 490-19243/3
Matrix: Solid
Analysis Batch: 19243

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	0.05126		mg/Kg		103	75 - 127
Ethylbenzene	0.0500	0.05601		mg/Kg		112	80 - 134
Naphthalene	0.0500	0.06030		mg/Kg		121	69 - 150
Toluene	0.0500	0.04744		mg/Kg		95	80 - 132
Xylenes, Total	0.150	0.1655		mg/Kg		110	80 - 137

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*98*		*70 - 130*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*
Dibromofluoromethane (Surr)	*93*		*70 - 130*
Toluene-d8 (Surr)	*89*		*70 - 130*

Lab Sample ID: LCSD 490-19243/4
Matrix: Solid
Analysis Batch: 19243

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	0.05166		mg/Kg		103	75 - 127	1	50
Ethylbenzene	0.0500	0.05648		mg/Kg		113	80 - 134	1	50
Naphthalene	0.0500	0.06217		mg/Kg		124	69 - 150	3	50
Toluene	0.0500	0.04900		mg/Kg		98	80 - 132	3	50
Xylenes, Total	0.150	0.1680		mg/Kg		112	80 - 137	2	50

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*93*		*70 - 130*
4-Bromofluorobenzene (Surr)	*108*		*70 - 130*
Dibromofluoromethane (Surr)	*92*		*70 - 130*
Toluene-d8 (Surr)	*90*		*70 - 130*

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

Lab Sample ID: MB 490-17856/1-A
Matrix: Solid
Analysis Batch: 18351

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 17856

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		0.0670	0.0100	mg/Kg		09/06/12 07:07	09/07/12 17:15	1
Acenaphthylene	ND		0.0670	0.00900	mg/Kg		09/06/12 07:07	09/07/12 17:15	1
Anthracene	ND		0.0670	0.00900	mg/Kg		09/06/12 07:07	09/07/12 17:15	1
Benzo[a]anthracene	ND		0.0670	0.0150	mg/Kg		09/06/12 07:07	09/07/12 17:15	1
Benzo[a]pyrene	ND		0.0670	0.0120	mg/Kg		09/06/12 07:07	09/07/12 17:15	1
Benzo[b]fluoranthene	ND		0.0670	0.0120	mg/Kg		09/06/12 07:07	09/07/12 17:15	1
Benzo[g,h,i]perylene	ND		0.0670	0.00900	mg/Kg		09/06/12 07:07	09/07/12 17:15	1
Benzo[k]fluoranthene	ND		0.0670	0.0140	mg/Kg		09/06/12 07:07	09/07/12 17:15	1
Pyrene	ND		0.0670	0.0120	mg/Kg		09/06/12 07:07	09/07/12 17:15	1
Phenanthrene	ND		0.0670	0.00900	mg/Kg		09/06/12 07:07	09/07/12 17:15	1
Chrysene	ND		0.0670	0.00900	mg/Kg		09/06/12 07:07	09/07/12 17:15	1
Dibenz(a,h)anthracene	ND		0.0670	0.00700	mg/Kg		09/06/12 07:07	09/07/12 17:15	1
Fluoranthene	ND		0.0670	0.00900	mg/Kg		09/06/12 07:07	09/07/12 17:15	1

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

Lab Sample ID: MB 490-17856/1-A
Matrix: Solid
Analysis Batch: 18351

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 17856

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	ND		0.0670	0.0120	mg/Kg		09/06/12 07:07	09/07/12 17:15	1
Indeno[1,2,3-cd]pyrene	ND		0.0670	0.0100	mg/Kg		09/06/12 07:07	09/07/12 17:15	1
Naphthalene	ND		0.0670	0.00900	mg/Kg		09/06/12 07:07	09/07/12 17:15	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*52*		*29 - 120*	*09/06/12 07:07*	*09/07/12 17:15*	*1*
Terphenyl-d14 (Surr)	*76*		*13 - 120*	*09/06/12 07:07*	*09/07/12 17:15*	*1*
Nitrobenzene-d5 (Surr)	*50*		*27 - 120*	*09/06/12 07:07*	*09/07/12 17:15*	*1*

Lab Sample ID: LCS 490-17856/2-A
Matrix: Solid
Analysis Batch: 18351

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 17856

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthylene	1.67	1.043		mg/Kg		63	38 - 120
Anthracene	1.67	1.066		mg/Kg		64	46 - 124
Benzo[a]anthracene	1.67	1.023		mg/Kg		61	45 - 120
Benzo[a]pyrene	1.67	1.082		mg/Kg		65	45 - 120
Benzo[b]fluoranthene	1.67	0.9871		mg/Kg		59	42 - 120
Benzo[g,h,i]perylene	1.67	0.9472		mg/Kg		57	38 - 120
Benzo[k]fluoranthene	1.67	1.062		mg/Kg		64	42 - 120
Pyrene	1.67	1.062		mg/Kg		64	43 - 120
Phenanthrene	1.67	0.9924		mg/Kg		60	45 - 120
Chrysene	1.67	1.044		mg/Kg		63	43 - 120
Dibenz(a,h)anthracene	1.67	0.8675		mg/Kg		52	32 - 128
Fluoranthene	1.67	0.9947		mg/Kg		60	46 - 120
Fluorene	1.67	1.004		mg/Kg		60	42 - 120
Indeno[1,2,3-cd]pyrene	1.67	0.9313		mg/Kg		56	41 - 121
Naphthalene	1.67	1.054		mg/Kg		63	32 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*46*		*29 - 120*
Terphenyl-d14 (Surr)	*64*		*13 - 120*
Nitrobenzene-d5 (Surr)	*45*		*27 - 120*

Method: Moisture - Percent Moisture

Lab Sample ID: 490-5523-B-1 DU
Matrix: Solid
Analysis Batch: 17581

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Percent Solids	93		94		%		0.8	20

QC Association Summary

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

TestAmerica Job ID: 490-5630-1
SDG: 1063

GC/MS VOA

Prep Batch: 17644

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-5523-A-10-C MS	Matrix Spike	Total/NA	Solid	5035	
490-5523-A-10-D MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Prep Batch: 17758

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-5630-1	302 Ash	Total/NA	Solid	5035	
490-5630-2	304 Ash	Total/NA	Solid	5035	

Prep Batch: 17763

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-5630-2	304 Ash	Total/NA	Solid	5035	

Analysis Batch: 17848

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-5523-A-10-C MS	Matrix Spike	Total/NA	Solid	8260B	17644
490-5523-A-10-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8260B	17644
490-5630-1	302 Ash	Total/NA	Solid	8260B	17758
490-5630-2	304 Ash	Total/NA	Solid	8260B	17758
LCS 490-17848/3	Lab Control Sample	Total/NA	Solid	8260B	
LCSD 490-17848/4	Lab Control Sample Dup	Total/NA	Solid	8260B	
MB 490-17848/6	Method Blank	Total/NA	Solid	8260B	

Analysis Batch: 19243

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-5630-2	304 Ash	Total/NA	Solid	8260B	17763
LCS 490-19243/3	Lab Control Sample	Total/NA	Solid	8260B	
LCSD 490-19243/4	Lab Control Sample Dup	Total/NA	Solid	8260B	
MB 490-19243/7	Method Blank	Total/NA	Solid	8260B	

GC/MS Semi VOA

Prep Batch: 17856

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-5630-1	302 Ash	Total/NA	Solid	3550C	
490-5630-2	304 Ash	Total/NA	Solid	3550C	
LCS 490-17856/2-A	Lab Control Sample	Total/NA	Solid	3550C	
MB 490-17856/1-A	Method Blank	Total/NA	Solid	3550C	

Analysis Batch: 18351

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-5630-1	302 Ash	Total/NA	Solid	8270D	17856
490-5630-2	304 Ash	Total/NA	Solid	8270D	17856
LCS 490-17856/2-A	Lab Control Sample	Total/NA	Solid	8270D	17856
MB 490-17856/1-A	Method Blank	Total/NA	Solid	8270D	17856

General Chemistry

Analysis Batch: 17581

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-5523-B-1 DU	Duplicate	Total/NA	Solid	Moisture	
490-5630-1	302 Ash	Total/NA	Solid	Moisture	
490-5630-2	304 Ash	Total/NA	Solid	Moisture	

Lab Chronicle

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

TestAmerica Job ID: 490-5630-1
SDG: 1063

Client Sample ID: 302 Ash

Date Collected: 08/29/12 14:00
Date Received: 09/05/12 08:20

Lab Sample ID: 490-5630-1

Matrix: Solid
Percent Solids: 79.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			17758	09/05/12 14:30	TP	TAL NSH
Total/NA	Analysis	8260B		1	17848	09/06/12 19:00	AF	TAL NSH
Total/NA	Prep	3550C			17856	09/06/12 07:07	AK	TAL NSH
Total/NA	Analysis	8270D		1	18351	09/07/12 17:36	WS	TAL NSH
Total/NA	Analysis	Moisture		1	17581	09/05/12 13:54	RS	TAL NSH

Client Sample ID: 304 Ash

Date Collected: 08/29/12 12:45
Date Received: 09/05/12 08:20

Lab Sample ID: 490-5630-2

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			17758	09/05/12 14:30	TP	TAL NSH
Total/NA	Analysis	8260B		1	17848	09/06/12 19:32	AF	TAL NSH
Total/NA	Prep	5035			17763	09/05/12 14:36	TP	TAL NSH
Total/NA	Analysis	8260B		1	19243	09/12/12 12:38	AF	TAL NSH
Total/NA	Prep	3550C			17856	09/06/12 07:07	AK	TAL NSH
Total/NA	Analysis	8270D		1	18351	09/07/12 18:40	WS	TAL NSH
Total/NA	Analysis	Moisture		1	17581	09/05/12 13:54	RS	TAL NSH

Laboratory References:

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

Method Summary

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

TestAmerica Job ID: 490-5630-1
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

TestAmerica Job ID: 490-5630-1
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	10-30-12
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	10-31-12
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	10-31-12
Kentucky	State Program	4	90038	12-31-12
Kentucky (UST)	State Program	4	19	09-15-13
Louisiana	NELAC	6	LA110014	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	09-30-13
New Hampshire	NELAC	1	2963	10-09-12
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
Nashville, TN

Charleston

COOLER RECEIPT FORM

490-5630 Chain of

Cooler Received/Opened On 9/5/2012 @ 8:20

1. Tracking # 8562 (last 4 digits, FedEx)

Courier: FEDEX IR Gun ID 17960357

2. Temperature of rep. sample or temp blank when opened: 1.2 *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: 2 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) _____

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

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

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

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) _____

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) _____

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

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

BIS = Broken in shipment
Cooler Receipt Form.doc

LF-1
End of Form

Revised 6/24/09

9/13/2012

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) Prah 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)	NaOH (Orange Label)	H_2SO_4 Plastic (Yellow Label)	H_2SO_4 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)
302 Ash	8/29/12	1400	5	X					2				2	1					X		X	X								-01	
304 Ash	8/30/12	1245	5	X					2				2	1					X		X	X								02	

Special Instructions:

Method of Shipment: FEDEX

Relinquished by:	Date	Time	Received by:	Date	Time
	8/31/12	0830	Fedex		
Relinquished by:	Date	Time	Received by TestAmerica:	Date	Time
			TAN	9-5-12	0820

Laboratory Comments:

Temperature Upon Receipt: 1.2c

VOCs Free of Headspace? Y

9/13/2012

Login Sample Receipt Checklist

Client: Environmental Enterprise Group

Job Number: 490-5630-1
SDG Number: 1063

Login Number: 5630
List Number: 1
Creator: McBride, Mike

List Source: TestAmerica Nashville

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	
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	1.2°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 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.	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	

ATTACHMENT A

UST Certificate of Disposal

CONTRACTOR

Small Business Group, Inc.
10179 Highway 78
Ladson, SC 29456

TEL (843) 879-0403
FAX (843) 879-0401

TANK ID & LOCATION

UST 302Ash; 302 Ash Street, Laurel Bay Housing Area, MCAS Beaufort, S.C.

DISPOSAL LOCATION

Coastal Auto Salvage Co., Inc.
130 Laurel Bay Road
Beaufort, S.C. 29906

TYPE OF TANK	SIZE (GAL)
Steel	280

CLEANING/DISPOSAL METHOD

The tank and piping were unearthed, cut open, cleaned with a pressure washer, cut into sections, and recycled.

DISPOSAL CERTIFICATION

I certify that the above tank, piping and equipment has been properly cleaned and disposed of.

T.C. Wallace / 9/20/12

(Name) (Date)

Appendix C
Regulatory Correspondence

CDM - AECOM
Multimedia Joint Venture

D H E C
PROMOTE PROTECT PROSPER
Catherine B. Templeton, Director
Promoting and protecting the health of the public and the environment

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: No Further Action
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 Tanks (USTs) 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 and agrees there is no indication of soil or groundwater contamination on these properties, 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 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)

D H E C
PROMOTE PROTECT PROSPER
Catherine B. Templeton, Director
Promoting and protecting the health of the public and the environment

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

Laurel Bay Underground Storage Tank Assessment Reports for: (143 addresses/146 tanks)

212 Balsam	503 Laurel Bay
219 Balsam	508 Laurel Bay
260 Beech Tank 1	510 Laurel Bay
260 Beech Tank 2	523 Laurel Bay
267 Birch	525 Laurel Bay
287 Birch	529 Laurel Bay
302 Ash	533 Laurel Bay
305 Ash	537 Laurel Bay
334 Ash	556 Dahlia
338 Ash Tank 1	557 Dahlia
338 Ash Tank 2	559 Dahlia
361 Aspen	562 Dahlia
371 Aspen	568 Dahlia
372 Aspen Tank 1	581 Aster
372 Aspen Tank 2	582 Aster
375 Aspen	584 Aster
385 Aspen	602 Dahlia
403 Elderberry	607 Dahlia
407 Elderberry	614 Dahlia
411 Elderberry	616 Dahlia
414 Elderberry	619 Dahlia
415 Elderberry	625 Dahlia
421 Elderberry	629 Dahlia
427 Elderberry	631 Dahlia
428 Elderberry	634 Dahlia
431 Elderberry	660 Camellia
455 Elderberry	661 Camellia
484 Laurel Bay	666 Camellia
490 Laurel Bay	669 Camellia
502 Laurel Bay	672 Camellia

Laurel Bay Underground Storage Tank Assessment Reports for: (143 addresses/146 tanks) cont.

674 Camellia	880 Cobia
677 Camellia	890 Cobia
679 Camellia	892 Cobia
686 Camellia	900 Barracuda
690 Camellia	906 Barracuda
698 Abelia	911 Barracuda
700 Bluebell	912 Barracuda
704 Bluebell	917 Barracuda
705 Bluebell	919 Barracuda
708 Bluebell	928 Albacore
710 Bluebell	1024 Foxglove
711 Bluebell	1028 Foxglove
714 Bluebell	1029 Foxglove
715 Bluebell	1038 Iris
726 Bluebell	1049 Gardenia
728 Bluebell	1079 Heather
731 Bluebell	1103 Iris
734 Bluebell	1122 Iris
759 Althea	1136 Iris
761 Althea	1173 Bobwhite
773 Althea	1200 Cardinal
778 Laurel Bay	1221 Cardinal
807 Azalea	1238 Dove
814 Azalea	1241 Dove
815 Azalea	1242 Dove
818 Azalea	1248 Dove
820 Azalea	1262 Dove
821 Azalea	1265 Dove
831 Azalea	1267 Dove
832 Azalea	1289 Eagle
834 Azalea	1298 Eagle
835 Azalea	1300 Eagle
841 Azalea	1303 Eagle
853 Dolphin	1304 Eagle
858 Dolphin	1315 Albatross
869 Cobia	1316 Albatross
874 Cobia	1320 Albatross
875 Cobia	1338 Albatross

1340 Albatross	
1342 Albatross	
1344 Cardinal	
1345 Cardinal	
1349 Cardinal	
1355 Cardinal	
1366 Cardinal	
1374 Dove	
1375 Dove	
1415 Albatross	