SUMMARY REPORT 332 WEST CARDINAL LANE (FORMERLY 1351 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

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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



Summary Report 332 West Cardinal Lane (Formerly 1351 West Cardinal Lane) Laurel Bay Military Housing Area, Marine Corps Air Station Beaufort June 2021

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List of Acronyms

bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and xylenes
СТО	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 332 West Cardinal Lane (Formerly 1351 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 332 West Cardinal Lane (Formerly 1351 West Cardinal Lane). Details regarding the soil investigation at this site are provided in the *SCDHEC UST Assessment Report – 1351 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 – November and December 2015* (Resolution Consultants, 2016). 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 October 4, 2012, a single 280 gallon heating oil UST was removed from underneath the front concrete porch at 332 West Cardinal Lane (Formerly 1351 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 5'8" 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 332 West Cardinal Lane (Formerly 1351 West Cardinal Lane) were greater than the SCDHEC RBSLs, which indicated further investigation was required. In a letter dated July 1, 2015, SCDHEC requested an IGWA for 332 West Cardinal Lane (Formerly 1351 West Cardinal Lane (Formerly 1351 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 December 3, 2015, a temporary monitoring well was installed at 332 West Cardinal Lane (Formerly 1351 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 – November and December 2015* (Resolution Consultants, 2016).



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 – November and December 2015* (Resolution Consultants, 2016).

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 332 West Cardinal Lane (Formerly 1351 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 332 West Cardinal Lane (Formerly 1351 West Cardinal Lane). This NFA determination was obtained in a letter dated June 8, 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 – 1351 Cardinal Lane, Laurel Bay Military Housing Area, February 2013.
- Resolution Consultants, 2016. *Initial Groundwater Investigation Report November and December 2015 for Laurel Bay Military Housing Area, Multiple Properties, Laurel Bay Military Housing Area, Marine Corps Air Station Beaufort, Beaufort, South Carolina*, April 2016.



- 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 1Laboratory Analytical Results - Soil332 West Cardinal Lane (Formerly 1351 West Cardinal Lane)Laurel Bay Military Housing AreaMarine Corps Air Station BeaufortBeaufort, South Carolina

Constituent	SCDHEC RBSLs ⁽¹⁾	Results Sample Collected 10/04/12			
Volatile Organic Compounds Analyze	d by EPA Method 8260B (mg/kg)				
Benzene	0.003	0.0311			
Ethylbenzene	1.15	0.00919			
Naphthalene	0.036	0.0181			
Toluene	0.627	0.0529			
Xylenes, Total	13.01	0.0540			
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 3.0 and 3.1 (SCDHEC, May 2015 and SCDHEC, February 2016) and the Underground Storage Tank Assessment Guidelines (SCDHEC, February 2006).

Bold font indicates the analyte was detected.

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

EPA - United States Environmental Protection Agency

mg/kg - milligrams per kilogram

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

RBSL - Risk-Based Screening Level

SCDHEC - South Carolina Department Of Health and Environmental Control

Table 2 Laboratory Analytical Results - Groundwater 332 West Cardinal Lane (Formerly 1351 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 12/03/15		
Volatile Organic Compounds Analyzed	l by EPA Method 8260B (µg	/L)			
Benzene	5	16.24	ND		
Ethylbenzene	700	45.95	ND		
Naphthalene	25	29.33	ND		
Toluene	1000	105,445	ND		
Xylenes, Total	10,000	2,133	ND		
Semivolatile Organic Compounds Ana	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 1×10^{-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

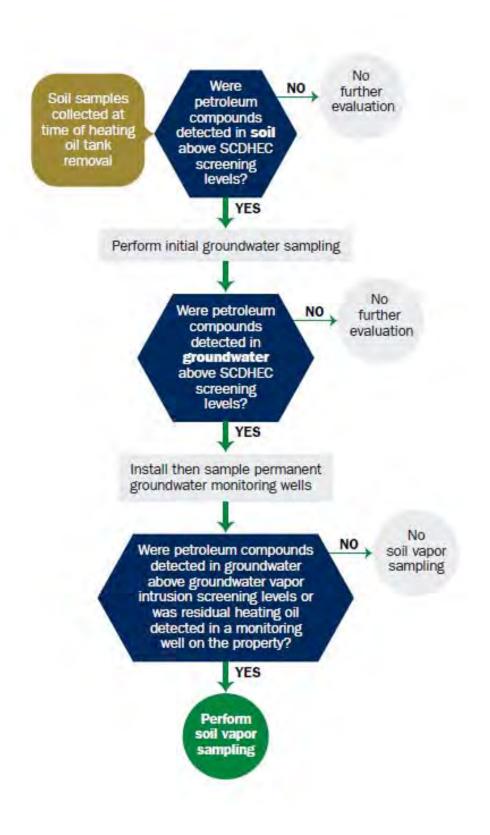
SCDHEC - South Carolina Department Of Health and Environmental Control

µg/L - micrograms per liter

VISL - Vapor Intrusion Screening Level

Appendix A Multi-Media Selection Process for LBMH





Appendix A - Multi-Media Selection Process for LBMH

Appendix B UST Assessment Report



Attachment 1

South Carolina Department of Health and Environmental Control (SCDHEC) Underground Storage Tank (UST) Assessment Report

Date Received

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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,	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					
1351 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)	
B. Capacity(ex. 1k, 2k) 280 gal	
C. Age Late 1950s	
D. Construction Material(ex. Steel, FRP)	
E. Month/Year of Last Use	
F. Depth (ft.) To Base of Tank	
G. Spill Prevention Equipment Y/N	
H. Overfill Prevention Equipment Y/N	
I. Method of Closure Removed/Filled	
J. Date Tanks Removed/Filled	
K. Visible Corrosion or Pitting Y/N Yes	
L. Visible Holes Y/N	

1351

Method of disposal for any USTs removed from the ground (attach disposal manifests) M. UST 1351Cardinal was removed from the ground and disposed

at a Subtitle "D" landfill. See Attachment "A"

Method of disposal for any liquid petroleum, sludges, or wastewaters removed from the USTs (attach N. disposal manifests)

UST 1351Cardinal was previously filled with sand by others.

If any corrosion, pitting, or holes were observed, describe the location and extent for each UST 0. Corrosion, pitting and holes were found throughout the tank.

VII. PIPING INFORMATION

		1351 Cardinal
		Steel
A.	Construction Material(ex. Steel, FRP)	& Copper
B.	Distance from UST to Dispenser	N/A
C.	Number of Dispensers	N/A
D.	Type of System Pressure or Suction	Suction
E.	Was Piping Removed from the Ground? Y/N	No
F.	Visible Corrosion or Pitting Y/N	Yes
G.	Visible Holes Y/N	No
H.	Age	Late 1950s
I.	If any corrosion, pitting, or holes were observed, de	scribe 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. S	ITE CON	DITIONS
-------	---------	---------

	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.		Х	
B. Were any petroleum odors detected in the excavation, soil borings, trenches, or monitoring wells?		Х	
If yes, indicate location on site map and describe the odor (strong, mild, etc.)			
C. Was water present in the UST excavation, soil borings, or trenches?		Х	
If yes, how far below land surface (indicate location and depth)?			
D. Did contaminated soils remain stockpiled on site after closure?		Х	
If yes, indicate the stockpile location on the site map.			
Name of DHEC representative authorizing soil removal:			
E. Was a petroleum sheen or free product detected on any excavation or boring waters?		x	
If yes, indicate location and thickness.			

X. SAMPLE INFORMATION

A. SCDHEC Lab Certification Number 84009

В.

Sample #	Location	Sample Type (Soil/Water)	Soil Type (Sand/Clay)	Depth*	Date/Time of Collection	Collected by	OVA #
1351 Cardinal	Excav at fill end	Soil	Sandy	5'8"	10/4/12 1415 hrs	P. Shaw	
Cardinal	TITI GUO		buildy		1112	F. DIIAW	
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 <u>and</u> 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.

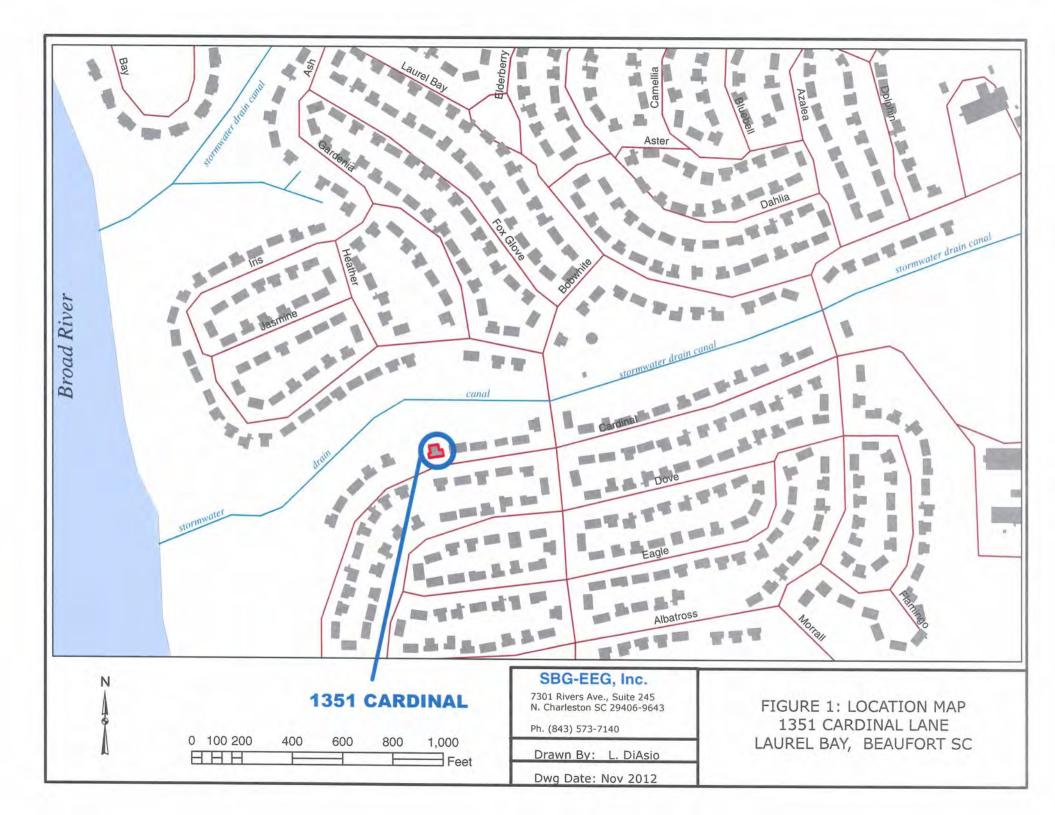
XII. RECEPTORS

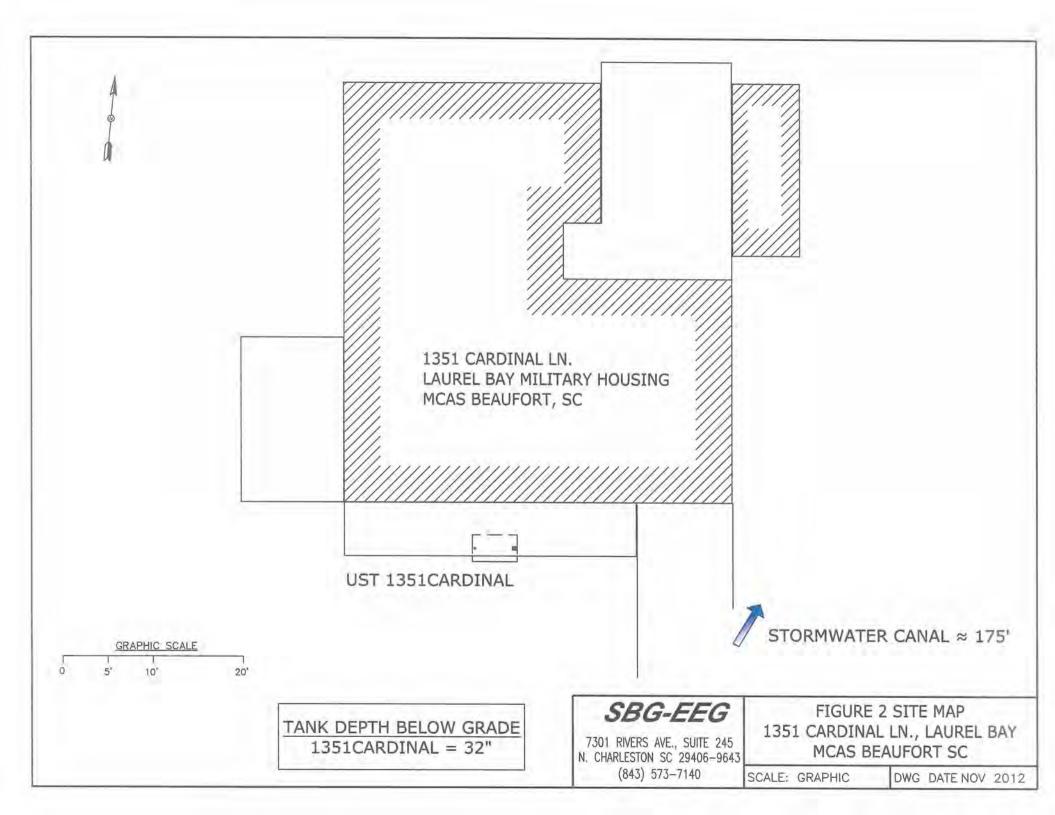
		Yes	No
A.	Are there any lakes, ponds, streams, or wetlands located within 1000 feet of the UST system?	*X	
	*Stormwater drainage ca	hal	
	If yes, indicate type of receptor, distance, and direction on site map.		
B.	Are there any public, private, or irrigation water supply wells within 1000 feet of the UST system?		Х
	If yes, indicate type of well, distance, and direction on site map.		
C.	Are there any underground structures (e.g., basements) Located within 100 feet of the UST system?		Х
	If yes, indicate type of structure, distance, and direction on site map.		
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	*X	
	contamination? *Sewer, water, elec	trici	ty
	cable & fiber optic If yes, indicate the type of utility, distance, and direction on the site map.		
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?		Х
	If yes, indicate the area of contaminated soil on the site map.		

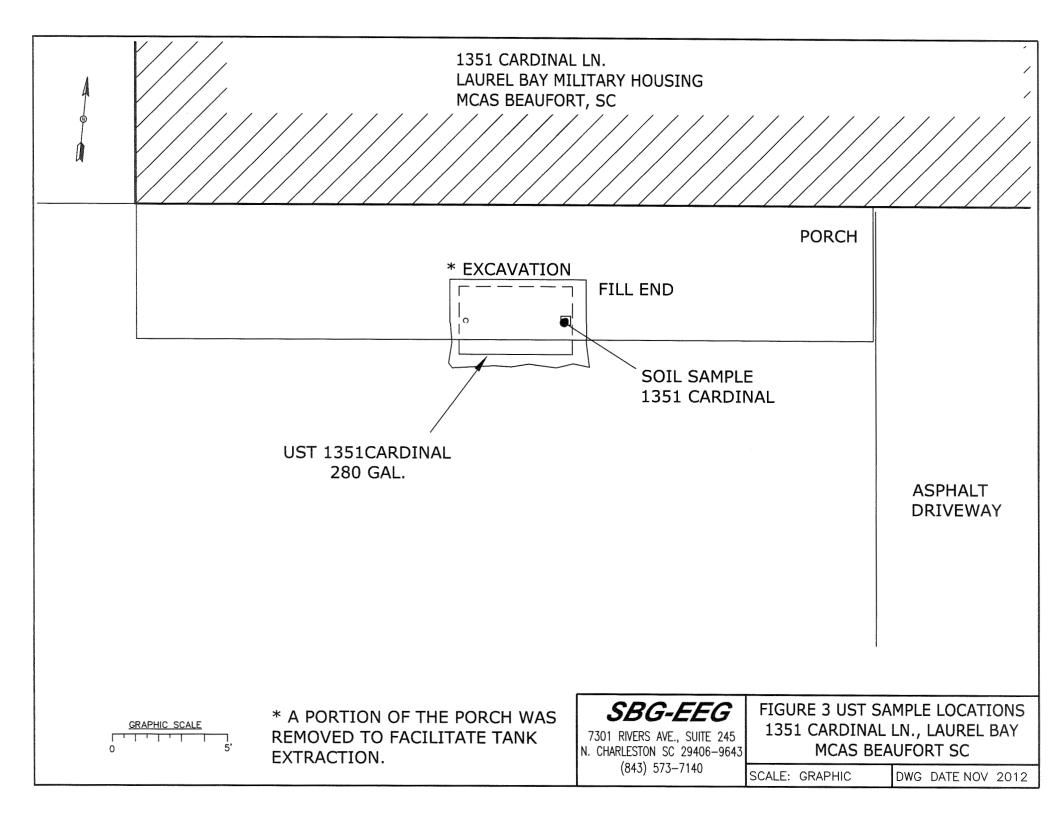
XIII. SITE MAP

You must supply a <u>scaled</u> 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)









Picture 1: Location of UST 1351Cardinal.



Picture 2: UST 1351Cardinal 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	1351Ca	rdinal						
Benzene	0.0311	. mg/kg						
Toluene	0.0529) mg/kg						
Ethylbenzene	0.0091	9 mg/k	a					
Xylenes	0.0540	mg/kg						
Naphthalene	0.0181 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								

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		- mirea ⁴⁰⁰⁰¹⁻¹¹		
Xylenes	10,000				
Total BTEX	N/A				
МТВЕ	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)



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: 490-8693-1

Client Project/Site: Laurel Bay Housing Project

For:

Environmental Enterprise Group 10179 Highway 78 Ladson, South Carolina 29456

Attn: Mr. Tom McElwee

Kuth Hay

Authorized for release by: 10/22/2012 6:17:54 PM

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

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

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Sample Summary

TestAmerica Job ID: 490-8693-1

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

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
490-8693-1	508 Laurel Bay	Solid	10/01/12 15:00	10/09/12 08:00
490-8693-2	704 Bluebell	Solid	10/02/12 11:45	10/09/12 08:00
490-8693-3	853 Dolphin	Solid	10/03/12 12:00	10/09/12 08:00
490-8693-4	1351 Cardinal	Solid	10/04/12 14:15	10/09/12 08:00

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

Job ID: 490-8693-1

Laboratory: TestAmerica Nashville

Narrative

Job Narrative 490-8693-1

Comments No additional comments.

Receipt

The samples were received on 10/9/2012 8:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.4° C.

GC/MS VOA

Method(s) 8260B: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with batch 27218.

Method(s) 8260B: The method blank for batch 27218 contained Naphthalene 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.

No other analytical or quality issues were noted.

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

Organic Prep

Method(s) Moisture: The sample duplicate precision for the following sample associated with batch 26781 was outside control limits: (500-51048-1 DU). The associated Laboratory Control Sample / Laboratory Control Sample Duplicate (LCS/LCSD) precision met acceptance criteria.

No other analytical or quality issues were noted.

VOA Prep

No analytical or quality issues were noted.

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
в	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
	14004

GC/MS Semi VOA

Qualifier	Qualifier Description
L	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.
12	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: 508 Laurel Bay

Date Collected: 10/01/12 15:00 Date Received: 10/09/12 08:00

Lab Sample ID: 490-8693-1 Matrix: Solid Percent Solids: 89.2

Method: 8260B - Volatile Orga Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.00221	0.000741		0	10/09/12 16:36	10/11/12 16:19	1
Ethylbenzene	ND		0.00221	0.000741	0.0	ė.	10/09/12 16:36	10/11/12 16:19	1
Naphthalene	0.00217	JB	0.00553	0.00188	mg/Kg	2	10/09/12 16:36	10/11/12 16:19	1
Toluene	ND		0.00221	0.000819		0	10/09/12 16:36	10/11/12 16:19	1
Xylenes, Total	ND		0.00553	0.000741		à	10/09/12 16:36	10/11/12 16:19	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		70 - 130				10/09/12 16:36	10/11/12 16:19	1
4-Bromofluorobenzene (Surr)	111		70 - 130				10/09/12 16:36	10/11/12 16:19	1
Dibromofluoromethane (Surr)	102		70 - 130				10/09/12 16:36	10/11/12 16:19	1
Toluene-d8 (Surr)	108		70 - 130				10/09/12 16:36	10/11/12 16:19	1
Method: 8270D - Semivolatile	Organic Compou	nds (GC/MS	5)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		0.0662	0.00988	mg/Kg	-01	10/12/12 13:26	10/15/12 17:51	1
Acenaphthylene	ND		0.0662	0.00889	mg/Kg	9	10/12/12 13:26	10/15/12 17:51	1
Anthracene	ND		0.0662	0.00889	mg/Kg	0	10/12/12 13:26	10/15/12 17:51	1
Benzo[a]anthracene	ND		0.0662	0.0148	mg/Kg	a	10/12/12 13:26	10/15/12 17:51	1
Benzo[a]pyrene	ND		0.0662	0.0119	mg/Kg	Ð	10/12/12 13:26	10/15/12 17:51	1
Benzo[b]fluoranthene	ND		0.0662	0.0119	mg/Kg	-0-	10/12/12 13:26	10/15/12 17:51	1
Benzo[g,h,i]perylene	ND		0.0662	0.00889	mg/Kg	÷.	10/12/12 13:26	10/15/12 17:51	1
Benzo[k]fluoranthene	ND		0.0662	0.0138	mg/Kg	Ċ.	10/12/12 13:26	10/15/12 17:51	1
Pyrene	ND		0.0662	0.0119	mg/Kg	ŵ	10/12/12 13:26	10/15/12 17:51	1
Phenanthrene	ND		0.0662	0.00889	mg/Kg	0	10/12/12 13:26	10/15/12 17:51	1
Chrysene	ND		0.0662	0.00889	mg/Kg	0	10/12/12 13:26	10/15/12 17:51	1
Dibenz(a,h)anthracene	ND		0.0662	0.00692	mg/Kg	0	10/12/12 13:26	10/15/12 17:51	1
Fluoranthene	ND		0.0662	0.00889	mg/Kg	0	10/12/12 13:26	10/15/12 17:51	1
Fluorene	ND		0.0662	0.0119	mg/Kg	0	10/12/12 13:26	10/15/12 17:51	1
Indeno[1,2,3-cd]pyrene	ND		0.0662	0.00988	mg/Kg	12	10/12/12 13:26	10/15/12 17:51	1
Naphthalene	ND		0.0662	0.00889	mg/Kg	0	10/12/12 13:26	10/15/12 17:51	1
2-Methylnaphthalene	ND		0.0662	0.0158	mg/Kg	-92	10/12/12 13:26	10/15/12 17:51	1
1-Methylnaphthalene	ND		0.0662	0.0138	mg/Kg	¢	10/12/12 13:26	10/15/12 17:51	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	53		29 - 120				10/12/12 13:26	10/15/12 17:51	1
Terphenyl-d14 (Surr)	79		13 - 120				10/12/12 13:26	10/15/12 17:51	1
Nitrobenzene-d5 (Surr)	54		27 - 120				10/12/12 13:26	10/15/12 17:51	7
General Chemistry							a		
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	89		0.10	0.10	%			10/09/12 15:35	1

Client Sample ID: 704 Bluebell

Date Collected: 10/02/12 11:45 Date Received: 10/09/12 08:00

Lab Sample ID: 490-8693-2 Matrix: Solid Percent Solids: 95.3

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Method: 8260B - Volatile Orga Analyte	and a second	(GC/MS) Qualifier	RL	MDL	Unit	D	Descend	And and	
Benzene	ND		0.00219	0.000735		0	Prepared 10/09/12 16:36	Analyzed	Dil Fac
Ethylbenzene	ND		0.00219	0.000735		ō	10/09/12 16:36	10/11/12 16:46	1
Naphthalene	ND		0.00219	0.000735		0	10/09/12 16:36	10/11/12 16:46	1
Toluene	ND		0.00349		0.0	3		10/11/12 16:46	1
Xylenes, Total	ND		0.00219	0.000812		4	10/09/12 16:36	10/11/12 16:46	1
Aylenes, rolar	140		0.00345	0.000735	mg/kg		10/09/12 16:36	10/11/12 16:46	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		70 - 130				10/09/12 16:36	10/11/12 16:46	1
4-Bromofluorobenzene (Surr)	113		70 - 130				10/09/12 16:36	10/11/12 16:46	1
Dibromofluoromethane (Surr)	102		70 - 130				10/09/12 16:36	10/11/12 16:46	1
Toluene-d8 (Surr)	107		70 - 130				10/09/12 16:36	10/11/12 16:46	1
Method: 8270D - Semivolatile	Organic Compou	inds (GC/MS	5)						
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		0.0661	0.00987	mg/Kg	1	10/12/12 13:26	10/15/12 18:12	1
Acenaphthylene	ND		0.0661	0.00888	mg/Kg	4/3	10/12/12 13:26	10/15/12 18:12	1
Anthracene	0.0244	J	0.0661	0.00888	mg/Kg	ζ,5	10/12/12 13:26	10/15/12 18:12	1
Benzo[a]anthracene	0.132		0.0661	0.0148	mg/Kg	C ²	10/12/12 13:26	10/15/12 18:12	1
Benzo[a]pyrene	ND		0.0661	0.0118	mg/Kg	15	10/12/12 13:26	10/15/12 18:12	i
Benzo[b]fluoranthene	ND		0.0661	0.0118	mg/Kg	4	10/12/12 13:26	10/15/12 18:12	1
Benzo[g,h,i]perylene	ND		0.0661	0.00888	mg/Kg	0	10/12/12 13:26	10/15/12 18:12	1
Benzo[k]fluoranthene	ND		0.0661	0.0138	mg/Kg	0	10/12/12 13:26	10/15/12 18:12	1
Pyrene	0.372		0.0661	0.0118	mg/Kg	.0	10/12/12 13:26	10/15/12 18:12	1
Phenanthrene	0.0649	J	0.0661	0.00888	mg/Kg	0	10/12/12 13:26	10/15/12 18:12	1
Chrysene	0.0702		0.0661	0.00888	mg/Kg	0	10/12/12 13:26	10/15/12 18:12	1
Dibenz(a,h)anthracene	ND		0.0661		mg/Kg	ġ.	10/12/12 13:26	10/15/12 18:12	1
Fluoranthene	0.448		0.0661	0.00888	mg/Kg	4	10/12/12 13:26	10/15/12 18:12	1
Fluorene	ND		0.0661	0.0118	mg/Kg	4	10/12/12 13:26	10/15/12 18:12	1
Indeno[1,2,3-cd]pyrene	ND		0.0661	0.00987	mg/Kg	6	10/12/12 13:26	10/15/12 18:12	1
Naphthalene	ND		0.0661	0.00888	mg/Kg		10/12/12 13:26	10/15/12 18:12	1
2-Methylnaphthalene	ND		0.0661	0.0158	mg/Kg	10	10/12/12 13:26	10/15/12 18:12	1
1-Methylnaphthalene	ND		0.0661	0.0138	mg/Kg	ø	10/12/12 13:26	10/15/12 18:12	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	58		29 - 120				10/12/12 13:26	10/15/12 18:12	1
Terphenyl-d14 (Surr)	77		13 - 120				10/12/12 13:26	10/15/12 18:12	1
Nitrobenzene-d5 (Surr)	56		27 - 120				10/12/12 13:26	10/15/12 18:12	1
General Chemistry									
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	95	Constraints.	0.10		%	-		10/09/12 15:35	1

Client Sample ID: 853 Dolphin

Date Collected: 10/03/12 12:00 Date Received: 10/09/12 08:00

Lab Sample ID: 490-8693-3 Matrix: Solid Percent Solids: 91.1

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Method: 8260B - Volatile Orga	anic Compounds	(GC/MS)							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.00238	0.000797	mg/Kg	¢.	10/09/12 16:36	10/11/12 17:13	4
Ethylbenzene	ND		0.00238	0.000797	mg/Kg	Q.	10/09/12 16:36	10/11/12 17:13	1
Naphthalene	ND		0.00595	0.00202	mg/Kg	12	10/09/12 16:36	10/11/12 17:13	1
Toluene	ND		0.00238	0.000881	mg/Kg	25	10/09/12 16:36	10/11/12 17:13	1
Xylenes, Total	ND		0.00595	0.000797	mg/Kg	ß	10/09/12 16:36	10/11/12 17:13	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	.95		70 - 130				10/09/12 16:36	10/11/12 17:13	1
4-Bromofluorobenzene (Surr)	110		70 - 130				10/09/12 16:36	10/11/12 17:13	1
Dibromofluoromethane (Surr)	103		70 - 130				10/09/12 16:36	10/11/12 17:13	1
Toluene-d8 (Surr)	109		70 - 130				10/09/12 16:36	10/11/12 17:13	1
Method: 8270D - Semivolatile	Organic Compou	nds (GC/MS	5)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		0.0650	0.00970	mg/Kg	Ψ	10/12/12 13:26	10/15/12 18:33	1
Acenaphthylene	ND		0.0650	0.00873	mg/Kg	-38	10/12/12 13:26	10/15/12 18:33	1
Anthracene	ND		0.0650	0.00873	mg/Kg	4	10/12/12 13:26	10/15/12 18:33	1
Benzo[a]anthracene	ND		0.0650	0.0146	mg/Kg	¢.	10/12/12 13:26	10/15/12 18:33	1
Benzo[a]pyrene	ND		0.0650	0.0116	mg/Kg	23	10/12/12 13:26	10/15/12 18:33	1
Benzo[b]fluoranthene	ND		0.0650	0.0116	mg/Kg	-325	10/12/12 13:26	10/15/12 18:33	1
Benzo[g,h,i]perylene	ND		0.0650	0.00873	mg/Kg	-0	10/12/12 13:26	10/15/12 18:33	1
Benzo[k]fluoranthene	ND		0.0650	0.0136	mg/Kg	P	10/12/12 13:26	10/15/12 18:33	1
Pyrene	ND		0.0650	0.0116	mg/Kg	0	10/12/12 13:26	10/15/12 18:33	1
Phenanthrene	ND		0.0650	0.00873	mg/Kg	-0-	10/12/12 13:26	10/15/12 18:33	1
Chrysene	ND		0.0650	0.00873	mg/Kg	0	10/12/12 13:26	10/15/12 18:33	1
Dibenz(a,h)anthracene	ND		0.0650	0.00679	mg/Kg	62	10/12/12 13:26	10/15/12 18:33	1
Fluoranthene	ND		0.0650	0.00873	mg/Kg	37	10/12/12 13:26	10/15/12 18:33	1
Fluorene	ND		0.0650	0.0116	mg/Kg	52	10/12/12 13:26	10/15/12 18:33	1
Indeno[1,2,3-cd]pyrene	ND		0.0650	0.00970	mg/Kg	-	10/12/12 13:26	10/15/12 18:33	1
Naphthalene	ND		0.0650	0.00873	mg/Kg	*	10/12/12 13:26	10/15/12 18:33	1
2-Methylnaphthalene	ND		0.0650	0.0155	mg/Kg	Ø.,	10/12/12 13:26	10/15/12 18:33	1
1-Methylnaphthalene	ND		0.0650	0.0136	mg/Kg	Q	10/12/12 13:26	10/15/12 18:33	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	45		29 - 120				10/12/12 13:26	10/15/12 18:33	1
Terphenyl-d14 (Surr)	67		13 - 120				10/12/12 13:26	10/15/12 18:33	1
litrobenzene-d5 (Surr)	43		27 - 120				10/12/12 13:26	10/15/12 18:33	1
General Chemistry									
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	91		0.10	0.10	%			10/09/12 15:35	1

Client Sample ID: 1351 Cardinal

Date Collected: 10/04/12 14:15 Date Received: 10/09/12 08:00

Lab Sample ID: 490-8693-4 Matrix: Solid Percent Solids: 82.0

Method: 8260B - Volatile Org Analyte		(GC/MS) Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.0311		0.00226	0.000756	mg/Kg	- 0	10/09/12 16:36	10/11/12 17:40	1
Ethylbenzene	0.00919		0.00226	0.000756	mg/Kg	0	10/09/12 16:36	10/11/12 17:40	1
Naphthalene	0.0181	в	0.00564	0.00192	mg/Kg		10/09/12 16:36	10/11/12 17:40	1
Toluene	0.0529		0.00226	0.000835	mg/Kg	1	10/09/12 16:36	10/11/12 17:40	1
Xylenes, Total	0.0540		0.00564	0.000756	mg/Kg	0	10/09/12 16:36	10/11/12 17:40	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	93		70 - 130				10/09/12 16:36	10/11/12 17:40	1
4-Bromofluorobenzene (Surr)	109		70 - 130				10/09/12 16:36	10/11/12 17:40	1
Dibromofluoromethane (Surr)	103		70 - 130				10/09/12 16:36	10/11/12 17:40	1
Toluene-d8 (Surr)	108		70 - 130				10/09/12 16:36	10/11/12 17:40	7
Method: 8270D - Semivolatile	Organic Compou	nds (GC/Ms	5)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		0.0654	0.00976	mg/Kg	p.	10/12/12 13:26	10/15/12 18:53	1
Acenaphthylene	ND		0.0654	0.00878	mg/Kg	¢.	10/12/12 13:26	10/15/12 18:53	1
Anthracene	ND		0.0654	0.00878	mg/Kg	\$	10/12/12 13:26	10/15/12 18:53	1
Benzo[a]anthracene	ND		0.0654	0.0146	mg/Kg	<i>\$</i>	10/12/12 13:26	10/15/12 18:53	1
Benzo[a]pyrene	ND		0.0654	0.0117	mg/Kg	siz	10/12/12 13:26	10/15/12 18:53	1
Benzo[b]fluoranthene	ND		0.0654	0.0117	mg/Kg	ø	10/12/12 13:26	10/15/12 18:53	1
Benzo[g,h,i]perylene	ND		0.0654	0.00878	mg/Kg	-Ø	10/12/12 13:26	10/15/12 18:53	1
Benzo[k]fluoranthene	ND		0.0654	0.0137	mg/Kg	Ð	10/12/12 13:26	10/15/12 18:53	1
Pyrene	ND		0.0654	0.0117	mg/Kg	0	10/12/12 13:26	10/15/12 18:53	1
Phenanthrene	ND		0.0654	0.00878	mg/Kg	¢	10/12/12 13:26	10/15/12 18:53	1
Chrysene	ND		0.0654	0.00878	mg/Kg	¢.	10/12/12 13:26	10/15/12 18:53	1
Dibenz(a,h)anthracene	ND		0.0654	0.00683	mg/Kg		10/12/12 13:26	10/15/12 18:53	Ť
Fluoranthene	ND		0.0654	0.00878	mg/Kg	-0	10/12/12 13:26	10/15/12 18:53	1
Fluorene	ND		0.0654	0.0117	mg/Kg	0	10/12/12 13:26	10/15/12 18:53	1
Indeno[1,2,3-cd]pyrene	ND		0.0654	0.00976	mg/Kg	1	10/12/12 13:26	10/15/12 18:53	1
Naphthalene	ND		0.0654	0.00878	mg/Kg	0	10/12/12 13:26	10/15/12 18:53	1
2-Methylnaphthalene	ND		0.0654	0.0156	mg/Kg	- <i>Q</i> .	10/12/12 13:26	10/15/12 18:53	1
1-Methylnaphthalene	ND		0.0654	0.0137	mg/Kg	۰	10/12/12 13:26	10/15/12 18:53	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	61		29 - 120				10/12/12 13:26	10/15/12 18:53	1
Terphenyl-d14 (Surr)	72		13 - 120				10/12/12 13:26	10/15/12 18:53	1
Nitrobenzene-d5 (Surr)	63		27 - 120				10/12/12 13:26	10/15/12 18:53	1
General Chemistry									
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	82		0.10	0.10	%			10/09/12 15:35	1

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

Lab Sample ID: MB 490-27218/6							Client S	ample ID: Metho	d Blank
Matrix: Solid								Prep Type: 1	Total/NA
Analysis Batch: 27218									
	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.00200	0.000670	mg/Kg			10/11/12 08:55	1
Ethylbenzene	ND		0.00200	0.000670	mg/Kg			10/11/12 08:55	1
Naphthalene	0.002298	J	0.00500	0.00170	mg/Kg			10/11/12 08:55	1
Toluene	ND		0.00200	0.000740	mg/Kg			10/11/12 08:55	1
Xylenes, Total	ND		0.00500	0.000670	mg/Kg			10/11/12 08:55	1
	MB	MB							
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		70 - 130					10/11/12 08:55	1

1,2-Dichloroethane-04 (Sull)	94	10 - 130	10/11/12 08:55	1
4-Bromofluorobenzene (Surr)	110	70 - 130	10/11/12 08:55	1
Dibromofluoromethane (Surr)	102	70 - 130	10/11/12 08:55	1
Toluene-d8 (Surr)	109	70 - 130	10/11/12 08:55	1

Lab Sample ID: LCS 490-27218/3 Matrix: Solid

Analysis Batch: 27218

			Spike	LCS	LCS			
Analyte			Added	Result	Qualifier	Unit	D	%Rec
Benzene			0.0500	0.04811		mg/Kg		96
Ethylbenzene			0.0500	0.04986		mg/Kg		100
Naphthalene			0.0500	0.05048		mg/Kg		101
Toluene			0.0500	0.05028		mg/Kg		101
Xylenes, Total			0.150	0.1537		mg/Kg		102
	LCS	LCS						
Surrogate	%Recovery	Qualifier	Limits					
1,2-Dichloroethane-d4 (Surr)	93		70 - 130					
4-Bromofluorobenzene (Surr)	112		70 - 130					

70 - 130

70 - 130

101

107

Lab Sample ID: LCSD 490-27218/4 Matrix: Solid

Analysis Batch: 27218

Dibromofluoromethane (Surr)

Toluene-d8 (Surr)

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

			Spike	LCSD	LCSD				%Rec.		RPD
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene			0.0500	0.04930		mg/Kg		99	75 - 127	2	50
Ethylbenzene			0.0500	0.05083		mg/Kg		102	80 - 134	2	50
Naphthalene			0.0500	0.04942		mg/Kg		99	69 - 150	2	50
Toluene			0.0500	0.05153		mg/Kg		103	80 - 132	2	50
Xylenes, Total			0.150	0.1549		mg/Kg		103	80 - 137	1	50
	LCSD	LCSD									
Surrogate	%Recovery	Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	94		70 - 130								
4-Bromofluorobenzene (Surr)	110		70 - 130								
Dibromofluoromethane (Surr)	102		70 - 130								
Toluene-d8 (Surr)	109		70 - 130								

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

%Rec. Limits 75 - 127 80 - 134 69 - 150 80 - 132 80 - 137

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 27734

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

Lab Sample ID: MB 490-27734/1-A Matrix: Solid Analysis Batch: 28036

, many and a second second								a a company survival	to do t t of t
	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		0.0670	0.0100	mg/Kg		10/12/12 13:26	10/15/12 11:19	1
Acenaphthylene	ND		0.0670	0.00900	mg/Kg		10/12/12 13:26	10/15/12 11:19	1
Anthracene	ND		0.0670	0.00900	mg/Kg		10/12/12 13:26	10/15/12 11:19	1
Benzo[a]anthracene	ND		0.0670	0.0150	mg/Kg		10/12/12 13:26	10/15/12 11:19	1
Benzo[a]pyrene	ND		0.0670	0.0120	mg/Kg		10/12/12 13:26	10/15/12 11:19	1
Benzo[b]fluoranthene	ND		0.0670	0.0120	mg/Kg		10/12/12 13:26	10/15/12 11:19	1
Benzo[g,h,i]perylene	ND		0.0670	0.00900	mg/Kg		10/12/12 13:26	10/15/12 11:19	1
Benzo[k]fluoranthene	ND		0.0670	0.0140	mg/Kg		10/12/12 13:26	10/15/12 11:19	1
Pyrene	ND		0.0670	0.0120	mg/Kg		10/12/12 13:26	10/15/12 11:19	1
Phenanthrene	ND		0.0670	0.00900	mg/Kg		10/12/12 13:26	10/15/12 11:19	1
Chrysene	ND		0.0670	0.00900	mg/Kg		10/12/12 13:26	10/15/12 11:19	1
Dibenz(a,h)anthracene	ND		0.0670	0.00700	mg/Kg		10/12/12 13:26	10/15/12 11:19	Ť
Fluoranthene	ND		0.0670	0.00900	mg/Kg		10/12/12 13:26	10/15/12 11:19	1
Fluorene	ND		0.0670	0.0120	mg/Kg		10/12/12 13:26	10/15/12 11:19	1
Indeno[1,2,3-cd]pyrene	ND		0.0670	0.0100	mg/Kg		10/12/12 13:26	10/15/12 11:19	1
Naphthalene	ND		0.0670	0.00900	mg/Kg		10/12/12 13:26	10/15/12 11:19	1
2-Methylnaphthalene	ND		0.0670	0.0160	mg/Kg		10/12/12 13:26	10/15/12 11:19	1
1-Methylnaphthalene	ND		0.0670	0.0140	mg/Kg		10/12/12 13:26	10/15/12 11:19	1
	MB	MB							
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	72		29 - 120				10/12/12 13:26	10/15/12 11:19	1
Terphenyl-d14 (Surr)	95		13 - 120				10/12/12 13:26	10/15/12 11:19	1
Nitrobenzene-d5 (Surr)	69		27 - 120				10/12/12 13:26	10/15/12 11:19	1

Lab Sample ID: LCS 490-27734/2-A Matrix: Solid

Analysis Batch: 28036

	Spike	LCS L	CS		%Rec.
Analyte	Added	Result Q	ualifier Unit	D %Rec	Limits
Acenaphthylene	1.67	1,355	mg/Kg	81	38 - 120
Anthracene	1.67	1.373	mg/Kg	82	46 - 124
Benzo[a]anthracene	1.67	1.417	mg/Kg	85	45 - 120
Benzo[a]pyrene	1.67	1.493	mg/Kg	90	45 - 120
Benzo[b]fluoranthene	1,67	1.419	mg/Kg	85	42 - 120
Benzo[g,h,i]perylene	1.67	1.383	mg/Kg	83	38 - 120
Benzo[k]fluoranthene	1.67	1.581	mg/Kg	95	42 - 120
Pyrene	1.67	1.455	mg/Kg	87	43 - 120
Phenanthrene	1.67	1.378	mg/Kg	83	45 - 120
Chrysene	1.67	1.380	mg/Kg	83	43 - 120
Dibenz(a,h)anthracene	1.67	1.264	mg/Kg	76	32 - 128
Fluoranthene	1,67	1.386	mg/Kg	83	46 - 120
Fluorene	1.67	1.458	mg/Kg	87	42 - 120
Indeno[1,2,3-cd]pyrene	1.67	1.385	mg/Kg	83	41 - 121
Naphthalene	1.67	1.372	mg/Kg	82	32 - 120
2-Methylnaphthalene	1.67	1.281	mg/Kg	77	28 - 120
1-Methylnaphthalene	1.67	1.239	mg/Kg	74	32 - 120
	State Street and Street				

	LUS	LCS	
Surrogate	%Recovery	Qualifier	Limits
2-Fluorobiphenyl (Surr)	58		29 - 120

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

Prep Batch: 27734

Prep Type: Total/NA

Prep Type: Total/NA

Prep Batch: 27734

Client Sample ID: Lab Control Sample

Client Sample ID: Lab Control Sample Dup

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

Lab Sample ID: LCS 490-27734/2-A Matrix: Solid Analysis Batch: 28036

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
Terphenyl-d14 (Surr)	75		13 - 120
Nitrobenzene-d5 (Surr)	56		27 - 120

Lab Sample ID: LCSD 490-27734/3-A Matrix: Solid

Analysia Dataha 20020							
Analysis Batch: 28036		and the second				Batch:	
	Spike	LCSD LCSD			%Rec.		RPD
Analyte	Added	Result Qualifi	ier Unit	D %Re	c Limits	RPD	Limit
Acenaphthylene	1.67	1.501	mg/Kg	9	0 38 - 120	10	50
Anthracene	1.67	1.470	mg/Kg	8	8 46 - 124	7	49
Benzo[a]anthracene	1.67	1.504	mg/Kg	9	45 - 120	6	50
Benzo[a]pyrene	1.67	1.582	mg/Kg	9	5 45 - 120	6	50
Benzo[b]fluoranthene	1.67	1.454	mg/Kg	8	42 - 120	2	50
Benzo[g,h,i]perylene	1.67	1.462	mg/Kg	8	3 38 - 120	6	50
Benzo[k]fluoranthene	1.67	1.628	mg/Kg	9	42 - 120	3	45
Pyrene	1.67	1.550	mg/Kg	9:	43 - 120	6	50
Phenanthrene	1.67	1.479	mg/Kg	8	45 - 120	7	50
Chrysene	1.67	1.489	mg/Kg	8	43 - 120	8	49
Dibenz(a,h)anthracene	1.67	1.321	mg/Kg	79	32 - 128	4	50
Fluoranthene	1.67	1.471	mg/Kg	88	46 - 120	6	50
Fluorene	1.67	1.543	mg/Kg	93	42 - 120	6	50
Indeno[1,2,3-cd]pyrene	1.67	1.438	mg/Kg	86	6 41 - 121	4	50
Naphthalene	1.67	1.521	mg/Kg	91	32 - 120	10	50
2-Methylnaphthalene	1.67	1.421	mg/Kg	85	28 - 120	10	50
1-Methylnaphthalene	1.67	1.359	mg/Kg	82	32 - 120	9	50
	LCSD LCSD						

	LUSD	LUSD	
Surrogate	%Recovery	Qualifier	Limits
2-Fluorobiphenyl (Surr)	64		29 - 120
Terphenyl-d14 (Surr)	80		13 - 120
Nitrobenzene-d5 (Surr)	61		27 - 120

Lab Sample ID: 490-8674-A-8-E MS Matrix: Solid

Analysis Batch: 28036

Analysis Batch: 28036									Prep Batch	1: 27734
	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Acenaphthylene	0.0623	J	1.66	1.502		mg/Kg	Ö.	86	25 - 120	
Anthracene	0.0907		1.66	1.431		mg/Kg	0	81	28 - 125	
Benzo[a]anthracene	0.382		1.66	1.680		mg/Kg	0	78	23 - 120	
Benzo[a]pyrene	0.373		1.66	1.860		mg/Kg	-2	89	15 - 128	
Benzo[b]fluoranthene	0.845		1.66	2.110		mg/Kg	0	76	12 - 133	
Benzo[g,h,i]perylene	0.205		1.66	1.387		mg/Kg	ø	71	22 - 120	
Benzo[k]fluoranthene	0.295		1.66	1.790		mg/Kg	0	90	28 - 120	
Pyrene	0.641		1.66	1.876		mg/Kg	ġ.	74	20 - 123	
Phenanthrene	0.123		1.66	1.412		mg/Kg	9	77	21 - 122	
Chrysene	0.535		1.66	1.745		mg/Kg	ġ.	73	20 - 120	
Dibenz(a,h)anthracene	0.0666		1.66	1.208		mg/Kg	1	69	12 - 128	
Fluoranthene	0.638		1.66	1.899		mg/Kg	*	76	10 - 143	
Fluorene	ND		1.66	1.441		mg/Kg	9	87	20 - 120	

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

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

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

63

58

65

59

Lab Sample ID: 490-8674-A-8-E MS Matrix: Solid Analysis Batch: 28036	5							Client	Sample ID: Matrix Spike Prep Type: Total/NA Prep Batch: 27734
	Sample	Sample	Spike	MS	MS				%Rec.
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
Indeno[1,2,3-cd]pyrene	0.202		1.66	1.380		mg/Kg	0	71	22 - 121
Naphthalene	0.0365	J	1.66	1.531		mg/Kg	0	90	10 - 120
2-Methylnaphthalene	0.0410	J	1.66	1.405		mg/Kg	0	82	13 - 120
1-Methylnaphthalene	0.0323	J	1.66	1.371		mg/Kg	92	80	10 - 120
	MS	MS							
Surrogate %	Recovery	Qualifier	Limits						
2-Fluorobiphenyl (Surr)	61		29 - 120						
Terphenyl-d14 (Surr)	72		13 - 120						

27 - 120

Lab Sample ID: 490-8674-A-8-F MSD Matrix: Solid

Nitrobenzene-d5 (Surr)

TRANSFER THE									a sector s	Jher in	
Analysis Batch: 28036									Prep	Batch:	27734
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Acenaphthylene	0.0623	J	1.63	1.505		mg/Kg		89	25 - 120	0	50
Anthracene	0.0907		1.63	1.434		mg/Kg	0	83	28 - 125	0	49
Benzo[a]anthracene	0.382		1.63	1.805		mg/Kg	Ö	88	23 - 120	7	50
Benzo[a]pyrene	0.373		1.63	2.027		mg/Kg	0	102	15 - 128	9	50
Benzo[b]fluoranthene	0.845		1.63	2.799		mg/Kg	÷	120	12 - 133	28	50
Benzo[g,h,i]perylene	0.205		1.63	1.501		mg/Kg	0	80	22 - 120	8	50
Benzo[k]fluoranthene	0.295		1.63	1.907		mg/Kg	\$	99	28 - 120	6	45
Pyrene	0.641		1.63	2.316		mg/Kg	0	103	20 - 123	21	50
Phenanthrene	0.123		1.63	1.374		mg/Kg	0	77	21 - 122	3	50
Chrysene	0.535		1.63	2.075		mg/Kg	Q-	95	20 - 120	17	49
Dibenz(a,h)anthracene	0.0666		1.63	1.199		mg/Kg	- 45	70	12 - 128	1	50
Fluoranthene	0.638		1.63	2.282		mg/Kg	0	101	10 - 143	18	50
Fluorene	ND		1,63	1.419		mg/Kg	ø	87	20 - 120	2	50
Indeno[1,2,3-cd]pyrene	0.202		1.63	1.508		mg/Kg	\$	80	22 - 121	9	50
Naphthalene	0.0365	1	1.63	1,492		mg/Kg	\$	90	10 - 120	3	50
2-Methylnaphthalene	0.0410	J	1.63	1.413		mg/Kg	6	84	13 - 120	1	50
1-Methylnaphthalene	0.0323	J	1.63	1.355		mg/Kg	*	81	10 - 120	1	50
	MSD	MSD									
Surrogate	%Recovery	Qualifier	Limits								

Method: Moisture - Percent Moisture

2-Fluorobiphenyl (Surr)

Terphenyl-d14 (Surr)

Nitrobenzene-d5 (Surr)

Lab Sample ID: 500-51048-B- Matrix: Solid	DU						Client Sample ID: Dup Prep Type: To	
Analysis Batch: 26781								
	Sample	Sample	DU	DU				RPD
Analyte	Result	Qualifier	Result	Qualifier	Unit	D	RPD	Limit
Percent Solids	94		92		%		2	20

29 - 120

13 - 120

27 - 120

QC Association Summary

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

GC/MS VOA

Prep Batch: 26822

Prep Batch: 26822					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-8693-1	508 Laurel Bay	Total/NA	Solid	5035	
490-8693-2	704 Bluebell	Total/NA	Solid	5035	
490-8693-3	853 Dolphin	Total/NA	Solid	5035	
490-8693-4	1351 Cardinal	Total/NA	Solid	5035	
Analysis Batch: 27218	3				
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-8693-1	508 Laurel Bay	Total/NA	Solid	8260B	26822
490-8693-2	704 Bluebell	Total/NA	Solid	8260B	26822
490-8693-3	853 Dolphin	Total/NA	Solid	8260B	26822
490-8693-4	1351 Cardinal	Total/NA	Solid	8260B	26822
LCS 490-27218/3	Lab Control Sample	Total/NA	Solid	8260B	noonn
LCSD 490-27218/4	Lab Control Sample Dup	Total/NA	Solid	8260B	
MB 490-27218/6	Method Blank	Total/NA	Solid	8260B	
GC/MS Semi VOA					
Prep Batch: 27734					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-8674-A-8-E MS	Matrix Spike	Total/NA	Solid	3550C	
490-8674-A-8-F MSD	Matrix Spike Duplicate	Total/NA	Solid	3550C	
490-8693-1	508 Laurel Bay	Total/NA	Solid	3550C	
490-8693-2	704 Bluebell	Total/NA	Solid	3550C	
490-8693-3	853 Dolphin	Total/NA	Solid	3550C	
490-8693-4	1351 Cardinal	Total/NA	Solid	3550C	
LCS 490-27734/2-A	Lab Control Sample	Total/NA	Solid	3550C	
LCSD 490-27734/3-A	Lab Control Sample Dup	Total/NA	Solid	3550C	
MB 490-27734/1-A	Method Blank	Total/NA	Solid	3550C	
Analysis Batch: 28036					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-8674-A-8-E MS	Matrix Spike	Total/NA	Solid	8270D	27734
490-8674-A-8-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8270D	27734
490-8693-1	508 Laurel Bay	Total/NA	Solid	8270D	27734
490-8693-2	704 Bluebell	Total/NA	Solid	8270D	27734
490-8693-3	853 Dolphin	Total/NA	Solid	8270D	27734
490-8693-4	1351 Cardinal	Total/NA	Solid	8270D	27734
LCS 490-27734/2-A	Lab Control Sample	Total/NA	Solid	8270D	27734
LCSD 490-27734/3-A	Lab Control Sample Dup	Total/NA	Solid	8270D	27734
MB 490-27734/1-A	Method Blank	Total/NA	Solid	8270D	27734
General Chemistry					
Analysis Batch: 26781					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-8693-1	508 Laurel Bay	Total/NA	Solid	Moisture	Frep Batch
490-8693-2	704 Bluebell	Total/NA	Solid	Moisture	
490-8693-3	853 Dolphin	Total/NA	Solid	Moisture	
490-8693-4	1351 Cardinal	Total/NA	Solid	Moisture	
500-51048-B-1 DU	Duplicate	Total/NA	Solid	Moisture	
the subscription of the second second		1 Stat 11/1	Solid	MOISTOR	

Client Sample ID: 508 Laurel Bay

Date Collected: 10/01/12 15:00 Date Received: 10/09/12 08:00

Lab Sample ID: 490-8693-1 Matrix: Solid

Lab Sample ID: 490-8693-2

Lab Sample ID: 490-8693-3

Lab Sample ID: 490-8693-4

Matrix: Solid

Matrix: Solid

Matrix: Solid

Percent Solids: 82.0

Percent Solids: 91.1

Percent Solids: 95.3

Percent Solids: 89.2

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			26822	10/09/12 16:36	ML	TAL NSH
Total/NA	Analysis	8260B		1	27218	10/11/12 16:19	AF	TAL NSH
Total/NA	Prep	3550C			27734	10/12/12 13:26	AK	TAL NSH
Total/NA	Analysis	8270D		1	28036	10/15/12 17:51	WS	TAL NSH
Total/NA	Analysis	Moisture		1	26781	10/09/12 15:35	RS	TAL NSH

Client Sample ID: 704 Bluebell

Date Collected: 10/02/12 11:45

Date Received: 10/09/12 08:00

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			26822	10/09/12 16:36	ML	TAL NSH
Total/NA	Analysis	8260B		1	27218	10/11/12 16:46	AF	TAL NSH
Total/NA	Prep	3550C			27734	10/12/12 13:26	AK	TAL NSH
Total/NA	Analysis	8270D		1	28036	10/15/12 18:12	WS	TAL NSH
Total/NA	Analysis	Moisture		1	26781	10/09/12 15:35	RS	TAL NSH

Client Sample ID: 853 Dolphin

Date Collected: 10/03/12 12:00 Date Received: 10/09/12 08:00

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			26822	10/09/12 16:36	ML	TAL NSH
Total/NA	Analysis	8260B		1	27218	10/11/12 17:13	AF	TAL NSH
Total/NA	Prep	3550C			27734	10/12/12 13:26	AK	TAL NSH
Total/NA	Analysis	8270D		1	28036	10/15/12 18:33	WS	TAL NSH
Total/NA	Analysis	Moisture		1	26781	10/09/12 15:35	RS	TAL NSH

Client Sample ID: 1351 Cardinal

Date Collected: 10/04/12 14:15 Date Received: 10/09/12 08:00

	Batch	Batch		Dilution	Batch	Prepared			
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab	
Total/NA	Prep	5035			26822	10/09/12 16:36	ML	TAL NSH	
Total/NA	Analysis	8260B		1	27218	10/11/12 17:40	AF	TAL NSH	
Total/NA	Prep	3550C			27734	10/12/12 13:26	AK	TAL NSH	
Total/NA	Analysis	8270D		1	28036	10/15/12 18:53	WS	TAL NSH	
Total/NA	Analysis	Moisture		1	26781	10/09/12 15:35	RS	TAL NSH	

Laboratory References:

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

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

Protocol References:

EPA = US Environmental Protection Agency

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

Laboratory References:

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

Certification Summary

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

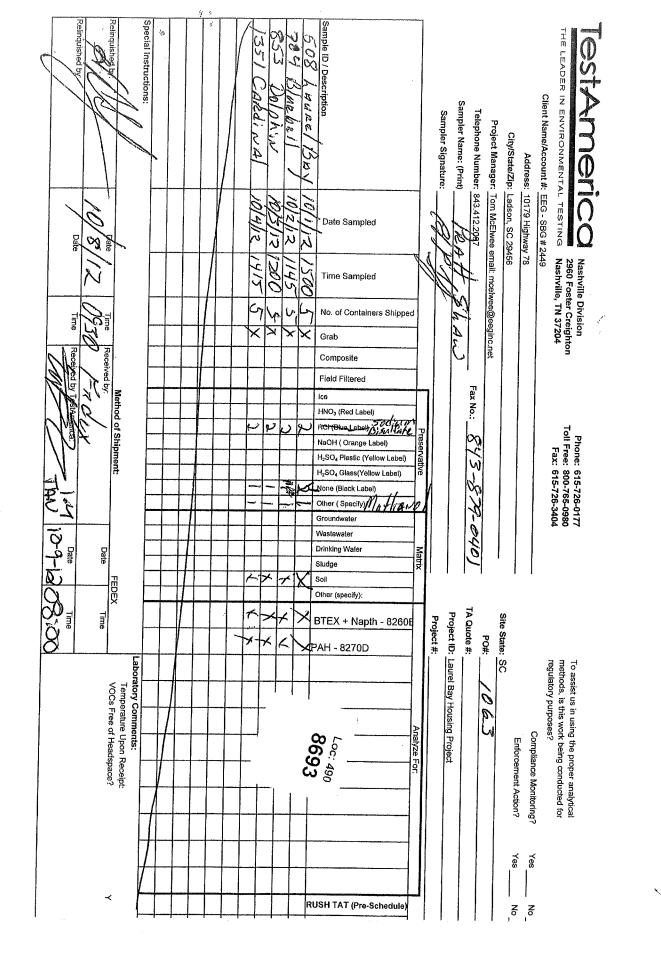
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Laboratory: TestAmerica Nashville

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

Authority	Program ACIL	EPA Region	Certification ID 393	Expiration Date
A2LA	ISO/IEC 17025		0453.07	10-30-12 12-31-13
Alabama	State Program	4	41150	100.01.00
Alaska (UST)			41150 UST-087	05-31-13
Arizona	State Program State Program	10	1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 -	07-24-13
Arkansas DEQ		9	AZ0473	05-05-13
California	State Program NELAC	6	88-0737	04-25-13
Canadian Assoc Lab Accred (CALA)	Canada	9	1168CA	10-31-12
Colorado	State Program	2	3744	03-08-14
Connecticut		8	N/A	02-28-13
Florida	State Program	1	PH-0220	12-31-13
	NELAG	4	E87358	06-30-13
Illinois	NELAC	5	200010	12-09-12
lowa	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	LA120025	12-31-12
Louisiana	NELAC	6	30613	06-30-13
Maryland	State Program	3	316	03-31-13
Massachusetts	State Program	1	M-TN032	06-30-13
Minnesota	NELAC	5	047-999-345	12-31-12
Mississippi	State Program	4	N/A	06-30-13
Montana (UST)	State Program	8	NA	01-01-15
Nevada	State Program	.9	TN00032	07-31-13
New Hampshire	NELAC	1	2963	10-09-13
New Jersey	NELAC	2	TN965	06-30-13
New York	NELAC	2	11342	04-01-13
North Carolina DENR	State Program	4	387	12-31-12
North Dakota	State Program	8	R-146	06-30-13
Ohio VAP	State Program	5	CL0033	01-19-14
Oklahoma	State Program	6	9412	08-31-13
Oregon	NELAC	10	TN200001	04-30-13
Pennsylvania	NELAC	3	68-00585	06-30-13
Rhode Island	State Program	1	LAO00268	12-30-12
South Carolina	State Program	4	84009 (001)	02-28-13
South Carolina	State Program	4	84009 (002)	02-23-14
Tennessee	State Program	4	2008	02-23-14
Texas	NELAC	6	T104704077-09-TX	08-31-13
USDA	Federal		S-48469	11-02-13
Utah	NELAC	8	TAN	06-30-13
Virginia	NELAC	3	460152	06-14-13
Washington	State Program	10	C789	07-19-13
West Virginia DEP	State Program	3	219	02-28-13
Wisconsin	State Program	5	998020430	08-31-13
Wyoming (UST)	AZLA	8	453.07	12-31-13

<u>TestAmerica</u>	
THE LEADER IN ENVIRONMENTAL TESTING Nashville, TN COOLER RECEIPT FORM	
Nashville, TN COOLER RECEIPT FORM	490-8693 Chain of
Cooler Received/Opened On 10/9/2012 @ 0800	UUUUUZ
1. Tracking #8757(last 4 digits, FedEx)	v
Courier: <u>FEDEX</u> IR Gun ID <u>97310166</u>	
2. Temperature of rep. sample or temp blank when opened:Degrees	s Celsius
3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank fr	ozen? YESNO(NA)
4. Were custody seals on outside of cooler?	YESNONA
If yes, how many and where: ONE From & Back	
5. Were the seals intact, signed, and dated correctly?	(YESNONA
6. Were custody papers inside cooler?	(YES).NONA
I certify that I opened the cooler and answered questions 1-6 (intial)	
7. Were custody seals on containers: YES (NO) and Intact	YESNO
Were these signed and dated correctly?	YESNO.
8. Packing mat'l used? Bubblewrap-Plastic bag Peanuts Vermiculite Foam Insert	Paper Other None
9. Cooling process: Ice-pack Ice (direct contact)	Dry ice Other None
10. Did all containers arrive in good condition (unbroken)?	ES.NONA
11. Were all container labels complete (#, date, signed, pres., etc)?	YES. NONA
12. Did all container labels and tags agree with custody papers?	VESNONA
13a. Were VOA vials received?	YESNONA
b. Was there any observable headspace present in any VOA vial?	YES. NO.NA-GOTTS
14. Was there a Trip Blank in this cooler? YESNO	s, sequence #_ <u></u>
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 l	evel? YESNO.(NA)
b. Did the bottle labels indicate that the correct preservatives were used	YESNONA
16. Was residual chlorine present?	YESNO.
l certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (ir	ntial)
17. Were custody papers properly filled out (ink, signed, etc)?	YES.NONA
18. Did you sign the custody papers in the appropriate place?	YES. NONA
19. Were correct containers used for the analysis requested?	ES NONA
20. Was sufficient amount of sample sent in each container?	YES.NONA
I certify that I entered this project into LIMS and answered questions 17-20 (intial)	<u></u>
I certify that I attached a label with the unique LIMS number to each container (intial)	£
21. Were there Non-Conformance issues at login? YESNO Was a PIPE generated? Y	/ES(0.)#



10/22/2012

Client: Environmental Enterprise Group

Login Number: 8693

List Number: 1 Creator: Ford, Easton

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

Job Number: 490-8693-1

1

List Source: TestAmerica Nashville

ATTACHMENT A



NON-HAZARDOUS MANIFEST

	1. Generator's	US EPA	A ID No.	Manifest Doc	No.	2. Page 1	of			
	NON-HAZARDOUS MANIFEST						1			
	3. Generator's Mailing Address:	Gene	erator's Site Address (f different than I	mailing):	A. Manif	est Number			
	MCAS, BEAUFORT					w N	/MNA	00316834		
	LAUREL BAY HOUSING				B. State Generator's ID					
	BEAUFORT, SC 29907									
	4. Generator's Phone 843-228-6461									
	5. Transporter 1 Company Name		6. US EPA	ID Number						
	EEG, INC.						ransporter's		070.04	
			8. US EPA	10 Number		D. Transp	orter's Phon	ie 843	-879-04	11
	7. Transporter 2 Company Name		8. US EPA	ID Number		F State T	ransporter's			<u></u>
							orter's Phon			
	9. Designated Facility Name and Site Address		10. US EP/	A ID Number						
	HICKORY HILL LANDFILL					G. State F	acility ID			
	2621 LOW COUNTRY ROAD					H. State F	acility Phone	e 843-	987-464	43
	RIDGELAND, SC 29936						eletion data			
			L	1 12 0	ontainers	1		<u> </u>		· · · · · · · · · · · · · · · · · · ·
G	11. Description of Waste Materials			No.	Туре	13. Total Quantity	14. Unit Wt./Vol.	Ι.	Misc. Comme	ents
E	a. HEATING OIL TANKS FILLED WITH SAND									
N E										
R	WM Profile # 1026555	C								
A	b.									
T O										
R	WM Profile #	· ·								
	с.									
	Man Due Gle H									
	d. WM Profile #		<u></u>					-		
	u.									
	WM Profile #				1 N N N	r a 1				· · · ·
ł	J. Additional Descriptions for Materials Listed Above			K. Dispos	al Location		L			<u> </u>
				Cell				Level		
$\left \right $	15. Special Handling Instructions and Additional Inform	ation	<u> 1-104</u>	Grid	to 1 k	64)1	2017	ARC	1 1	11
		acion	2 14	BLOR	0 <i>8.</i> 17		03 0			* ¢
	1) 508 LAURAL BA	- 7	3 843	Doll	Shint_) R (1200	A (b)	1	35
f	Purchase Order #	1	EMERGENCY CO					1 1 1 <u>1</u>	<u>, , , , , , , , , , , , , , , , , , , </u>	- 198 - 198 - 199 - 199 - 199 - 199 - 199 - 199 - 199 - 199 - 199 - 199 - 199 - 199 - 199 - 199 - 199 - 199 - 1
t	16. GENERATOR'S CERTIFICATE:									
	I hereby certify that the above-described materials are n	ot haz	zardous wastes as defi	ned by CFR P	art 261 or a	ny applicable	e state law, h	nave been fi	illy and	
	accurately described, classified and packaged and are in	prope			rding to app	licable regu	ations.		I	1
	Printed Name		Signature "On beha	alf of"		с. — т.		Month	Day	Year
r	17. Transporter 1 Acknowledgement of Receipt of Mate	rials		```````````````````````````````	71	an tanan an				1
	Printed Name	j	Signature	87773	V N			Month	Day	Year
•	TTT (1 MATTS	AA	ur C	t fille	- <u></u>			10	25	1
ŝ	18. Transporter 2 Acknowledgement of Receipt of Mate	rials		C.C.						
	Printed Name		Signature					Month	Day	Year
			All the second second		a 14 Norae a			110	an Sj	$= \frac{1}{2} \left(\frac{1}{2} \right)^{-1} \left(\frac{1}{2} \right)^{-1}$
	19. Certificate of Final Treatment/Disposal						· · · · · · · · · · · · · · · · · · ·		*	
	I certify, on behalf of the above listed treatment facility,			edge, the ab	ove-describ	ed waste wa	as managed i	in complian	ce with all	
-	applicable laws, regulations, permits and licenses on the	A								
-	20. Facility Owner or Operator: Certification of receipt of	of non-		overed by th	is manifest.					
	Printed Name		Signature					Month	Day	Year
	White- TREATMENT, STORAGE, DISPOSAL FACILITY COPY	/	Blue- GENERATOR	#2 COPY		Yel	low- GENERA	TOR #1 CO	<u> </u> РҮ	<u></u>
	Pink- FACILITY USE ONLY		Gold- TRANSPORTE			_				

Appendix C Laboratory Analytical Report - Groundwater



Volatile Organic Compounds by GC/MS

Client: AECOM - Reso Description: BEALB1351TW Date Sampled:12/03/2015 130 Date Received: 12/04/2015	/01WG20151203						Laboratory ID Matrix	: QL04022 : Aqueous			
RunPrep Method15030B	Analytical Method 8260B	Dilution 1		sis Date Analyst 2015 1551 ALL	Prep	Date	Batch 91718				
Parameter			CAS nber	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Benzene		71-	43-2	8260B	0.45	U	5.0	0.45	0.21	ug/L	1
Ethylbenzene		100-4	41-4	8260B	0.51	U	5.0	0.51	0.21	ug/L	1
Naphthalene		91-	20-3	8260B	0.96	U	5.0	0.96	0.14	ug/L	1
Toluene		108-	88-3	8260B	0.48	U	5.0	0.48	0.24	ug/L	1
Xylenes (total)		1330-	20-7	8260B	0.57	U	5.0	0.57	0.32	ug/L	1
Surrogate		Run 1 Recovery	Accepta Lim								
Bromofluorobenzene		100	75-12	20							
1,2-Dichloroethane-d4		101	70-12	20							
Toluene-d8		106	85-12	20							

85-115

97

PQL = Practical quantitation limitB = Detected in the method blankE = Quantitation of compound exceeded the calibration rangeH = Out of holding timeQ = Surrogate failureND = Not detected at or above the MDLJ = Estimated result < PQL and \geq MDLP = The RPD between two GC columns exceeds 40%N = Recovery is out of criteriaL = LCS/LCSD failureWhere applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"S = MS/MSD failureS = MS/MSD failure

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

Dibromofluoromethane

Semivolatile	Organic	Compounds by	y GC/MS (SIM)
--------------	---------	--------------	-----------	------

Description: BEALB1351TW01WG20151203

Laboratory ID: QL04022-008

Date Sampled:12/03/2015 1300

Matrix: Aqueous

Date Received: 12/04/2015

RunPrep Method13520C	Analytical Method D 8270D (SIM)		ysis Date Analyst /2015 2024 DRB1	•	Date 015 0918	Batch 91795				
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		un 1 Accept covery Lir	tance nits							
2-Methylnaphthalene-d10		72 15-	139							
Fluoranthene-d10		92 23-	154							

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

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





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

July 1, 2015

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 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 <u>et seq.</u>, 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,

that M. They

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) Bryan Beck (via email)



Catherine E. Heigel, Director

Promoting and protecting the health of the public and the environment

Attachment to:

Krieg to Drawdy Subject: IGWA Dated 7/1/2015

Laurel Bay Underground Storage Tank Assessment Reports for: (97 addresses/110 tanks)

118 Banyan	343 Ash Tank 2
126 Banyan	344 Ash Tank 2
127 Banyan	347 Ash Tank 2
130 Banyan Tank 1	378 Aspen Tank 2
141 Laurel Bay	379 Aspen
151 Laurel Bay	382 Aspen Tank 1
224 Cypress	382 Aspen Tank 2
227 Cypress	394 Acorn Tank 2
256 Beech Tank 2	400 Elderberry
257 Beech Tank 1	432 Elderberry
257 Beech Tank 2	436 Elderberry
264 Beech	473 Dogwood Tank 2
265 Beech Tank 2	482 Laurel Bay
265 Beech Tank 3	517 Laurel Bay
275 Birch	586 Aster
277 Birch Tank 1	632 Dahlia
285 Birch	639 Dahlia Tank 2
292 Birch Tank 3	643 Dahlia Tank 1
297 Birch	644 Dahlia Tank 1
301 Ash	644 Dahlia Tank 2
306 Ash	646 Dahlia Tank 1
310 Ash Tank 1	646 Dahlia Tank 2
313 Ash	665 Camellia
315 Ash Tank 2	699 Abelia
316 Ash	744 Blue Bell
319 Ash	745 Blue Bell Tank 1
320 Ash	747 Blue Bell Tank 1
321 Ash	747 Blue Bell Tank 2
329 Ash	747 Blue Bell Tank 3
330 Ash Tank 2	749 Blue Bell Tank 1
331 Ash	749 Blue Bell Tank 2
332 Ash	751 Blue Bell
333 Ash	762 Althea
335 Ash Tank 1	765 Althea Tank 2
335 Ash Tank 2	766 Althea Tank 4
341 Ash	767 Althea Tank 1
342 Ash Tank 1	768 Althea Tank 2
342 Ash Tank 2	768 Althea Tank 3

Laurel Bay Underground Storage Tank Assessment Reports for: (98 addresses/110 tanks) cont.

768 Althea Tank 4	1067 Gardenia
769 Althea Tank 1	1077 Heather
769 Althea Tank 2	1081 Heather
775 Althea	1101 Iris Tank 2
819 Azalea	1104 Iris
840 Azalea	1105 Iris Tank 2
878 Cobia	1124 Iris Tank 2
891 Cobia	1142 Iris Tank 2
913 Barracuda	1146 Iris Tank 2
916 Barracuda	1218 Cardinal
923 Albacore	1240 Dove
1004 Bobwhite	1266 Dove
1022 Foxglove	1292 Eagle
1031 Foxglove	1299 Eagle Tank 1
1034 Foxglove Tank 2	1302 Eagle
1061 Gardenia Tank 3	1336 Albatross
1064 Gardenia	1351 Cardinal



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

June 8, 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-November and December 2015 Laurel Bay Military Housing Area Multiple Properties Dated April 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 attached addresses on May 2, 2016. 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 15 stated addresses. For the remaining 80 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,

LIT

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-November and December 2015 Specific Property Recommendations Dated June 8, 2016

Draft Final Initial Groundwater Investigation Report for (95 addresses)

Permanent Monitoring Well Investigation recommendation (15 addresses)		
130 Banyan Drive	473 Dogwood Drive	
256 Beech Street	747 Blue Bell Lane	
285 Birch Drive	749 Blue Bell Lane	
292 Birch Drive	775 Althea Street	
330 Ash Street	1034 Foxglove Street	
331 Ash Street	1104 Iris Lane	
335 Ash Street	1124 Iris Lane	
342 Ash Street		

118 Banyan Drive	644 Dahlia Drive	
126 Banyan Drive	646 Dahlia Drive	
127 Banyan Drive	665 Camellia Drive	
141 Laurel Bay Blvd	699 Abelia Street	
151 Laurel Bay Blvd	744 Blue Bell Lane	
224 Cypress Street	745 Blue Bell Lane	
227 Cypress Street	751 Blue Bell Lane	
257 Beech Street	762 Althea Street	
264 Beech Street	765 Althea Street	
265 Beech Street	766 Althea Street	
275 Birch Drive	767 Althea Street	
277 Birch Drive	768 Althea Street	
297 Birch Drive	769 Althea Street	
301 Ash Street	819 Azalea Drive	
306 Ash Street	840 Azalea Drive	
310 Ash Street	878 Cobia Drive	
313 Ash Street	891 Cobia Drive	
315 Ash Street	913 Barracuda Drive	
316 Ash Street	916 Barracuda Drive	
319 Ash Street	923 Wren Lane	
320 Ash Street	1004 Bobwhite Drive	
321 Ash Street	1022 Foxglove Street	
329 Ash Street	1031 Foxglove Street	
332 Ash Street	1061 Gardenia Drive	
333 Ash Street	1064 Gardenia Drive	
341 Ash Street	1067 Gardenia Drive	
347 Ash Street	1077 Heather Street	
378 Aspen Street	1081 Heather Street	
379 Aspen Street	1101 Iris Lane	
382 Aspen Street	1105 Iris Lane	
394 Acorn Street	1142 Iris Lane	
400 Elderberry Drive	1146 Iris Lane	
432 Elderberry Drive	1218 Cardinal Lane	
436 Elderberry Drive	1240 Dove Lane	
482 Laurel Bay Blvd	1266 Dove Lane	
517 Laurel Bay Blvd	1292 Eagle Lane	
586 Aster Street	1299 Eagle Lane	
632 Dahlia Drive	1302 Eagle Lane	
639 Dahlia Drive	1336 Albatross Drive	
643 Dahlia Drive	1351 Cardinal Lane	

Attachment to: Petrus to Drawdy Subject: Draft Final Initial Groundwater Investigation Report-November and December 2015 Specific Property Recommendations Dated June 8, 2016, Page 2