SUMMARY REPORT 333 DAHLIA DRIVE (FORMERLY 614 DAHLIA DRIVE) 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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List of Acronyms

bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and xylenes
СТО	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 333 Dahlia Drive (Formerly 614 Dahlia Drive). 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 333 Dahlia Drive (Formerly 614 Dahlia Drive). Details regarding the soil investigation at this site are provided in the *SCDHEC UST Assessment Report – 614 Dahlia Drive* (MCAS Beaufort, 2012). The UST Assessment Report is provided in Appendix B.

2.1 UST Removal and Soil Sampling

On July 11, 2012, a single 280 gallon heating oil UST was removed from the concrete porch area at 333 Dahlia Drive (Formerly 614 Dahlia Drive). 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



6'1" bgs and a single soil sample was collected from that depth. The sample was collected from the fill port side of the former UST to represent a worst case scenario.

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

2.2 Soil Analytical Results

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

The soil sample results were submitted by MCAS Beaufort to SCDHEC utilizing SCDHEC's UST Assessment Report form (Appendix B). The results of the soil sampling at the former UST location were used by MCAS Beaufort, in consultation with SCDHEC, to determine a path forward (i.e., additional sampling or NFA) for the property. The soil results collected from 333 Dahlia Drive (Formerly 614 Dahlia Drive) 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 333 Dahlia Drive (Formerly 614 Dahlia Drive). 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 – 614 Dahlia Drive, 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 1Laboratory Analytical Results - Soil333 Dahlia Drive (Formerly 614 Dahlia Drive)Laurel Bay Military Housing AreaMarine Corps Air Station BeaufortBeaufort, South Carolina

Constituent	SCDHEC RBSLs ⁽¹⁾	Results Sample Collected 07/11/12
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 Anal		
Benzo(a)anthracene	0.66	ND
Benzo(b)fluoranthene	0.66	ND
Benzo(k)fluoranthene	0.66	ND
Chrysene	0.66	ND
Dibenz(a,h)anthracene	0.66	ND

Notes:

⁽¹⁾ South Carolina Risk-Based Screening Levels from the Quality Assurance Program Plan for the Underground Storage Tank Management Division, Revision 2.0 (SCDHEC, April 2013).

Bold font indicates the analyte was detected.

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

EPA - United States Environmental Protection Agency

mg/kg - 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





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

	1			
Date Received				
inter a	St	ate Use On	ly	

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

I. OWNERSHIP OF UST (S)

	anding Officer Attn: NR	EAO (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. #	<u> </u>						
Facility Name or Company	ary Housing Area, Marine Corps Air Station, Beaufort, SC y Site Identifier						
	614 Dahlia Drive, 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

		614Dahlia
A.	Product(ex. Gas, Kerosene)	Heating oil
B.	Capacity(ex. 1k, 2k)	280 gal
C.	Age	Late 1950s
D.	Construction Material(ex. Steel, FRP)	Steel
E·	Month/Year of Last Use	Mid 1980s
F.	Depth (ft.) To Base of Tank	6'1"
G.	Spill Prevention Equipment Y/N	No
H·	Overfill Prevention Equipment Y/N	No
I.	Method of Closure Removed/Filled	Removed
J _.	Date Tanks Removed/Filled	7/11/2012
K.	Visible Corrosion or Pitting Y/N	Yes
L.	Visible Holes Y/N	Yes

M. Method of disposal for any USTs removed from the ground (attach disposal manifests) <u>UST 614Dahlia was removed from the ground and disposed at a</u> Subtitle "D" landfill. See Attachment "A".

N. Method of disposal for any liquid petroleum, sludges, or wastewaters removed from the USTs (attach disposal manifests) UST 614Dahlia had been previously filled with sand by others.

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

VII. PIPING INFORMATION

		614Dahlia
		Steel
		SLEET
A.	Construction Material(ex. Steel, FRP)	& Copper
D		N/A
B.	Distance from UST to Dispenser	
C.	Number of Dispensers	N/A
D		Suction
D.	Type of System Pressure or 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.
	,, r	и г

<u>Corrosion and pitting were found on the surface of the steel vent</u>

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.

	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	
If yes, indicate deput and location on the site map.			
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? If yes, indicate the stockpile location on the site map.		х	
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.			

IX. SITE CONDITIONS

X. SAMPLE INFORMATION

A. SCDHEC Lab Certification Number 84009

Β.

Sample #	Location	Sample Type (Soil/Water)	Soil Type (Sand/Clay)	Depth*	Date/Time of Collection	Collected by	OVA #
614 Dahlia	Excav at fill end	Soil	Sandy	6'1"	7/11/12 1415 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 <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.

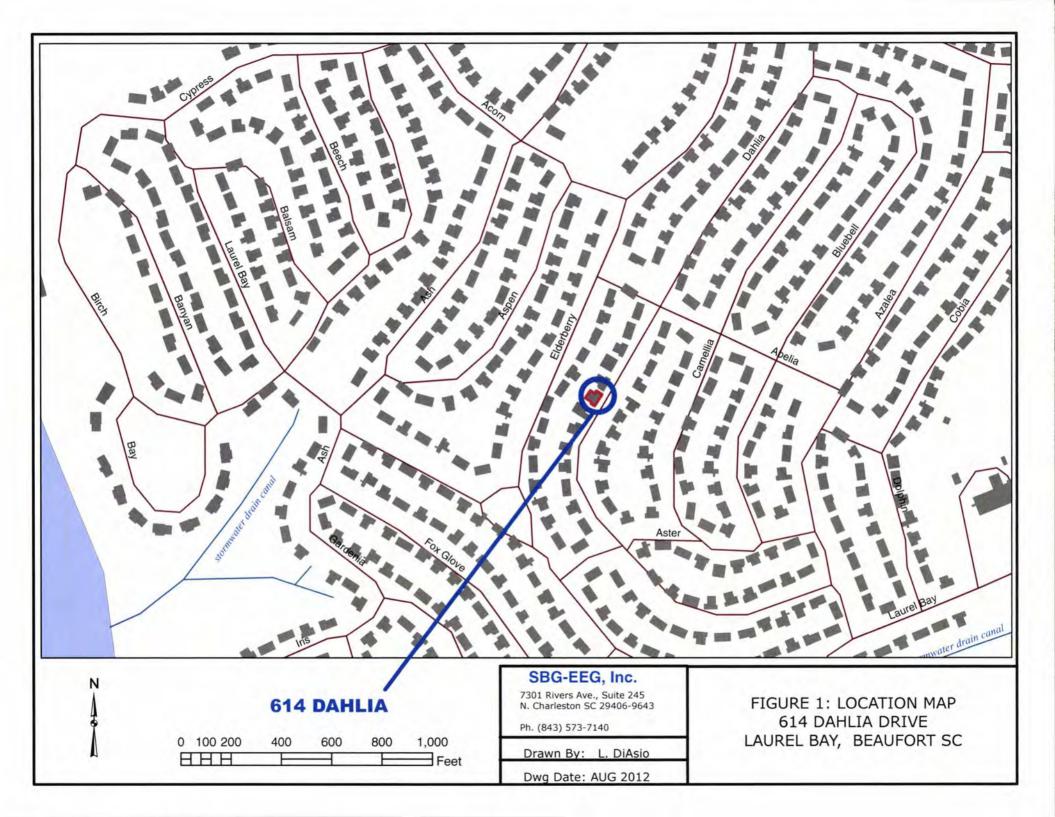
XII. RECEPTORS

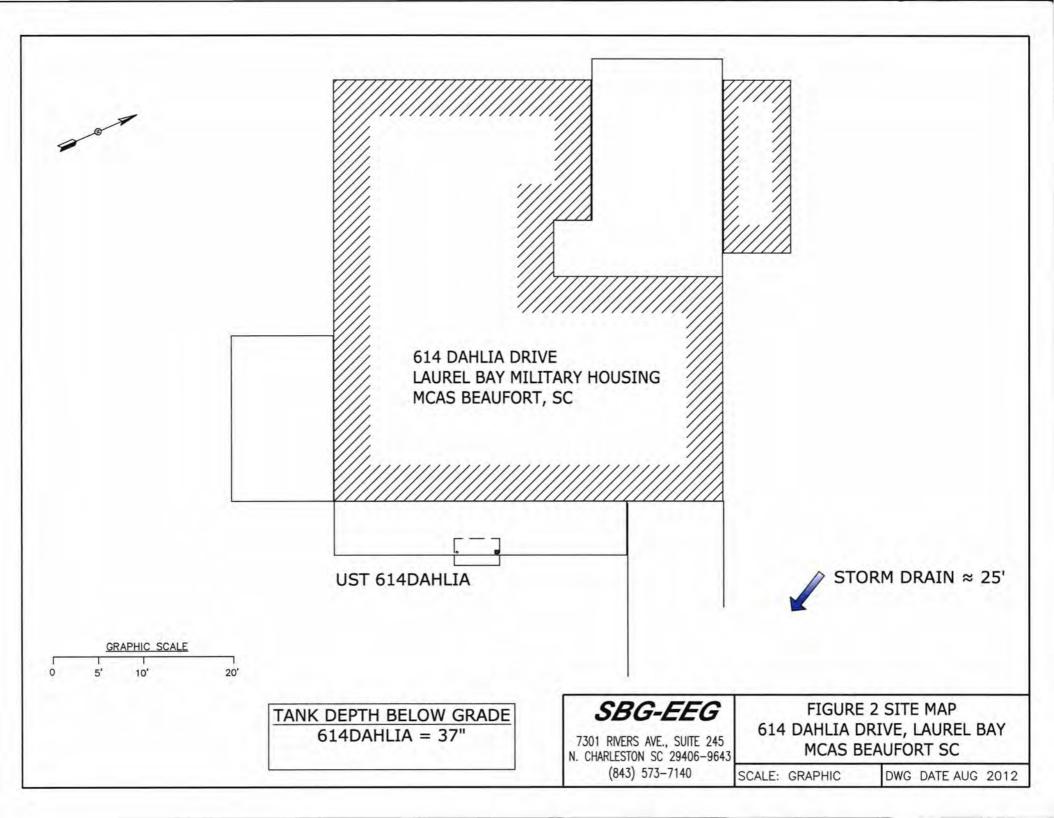
(<u></u>		Yes	No
A.	Are there any lakes, ponds, streams, or wetlands located within 1000 feet of the UST system?		x
	If yes, indicate type of receptor, distance, and direction on site map.		
В.	Are there any public, private, or irrigation water supply wells within 1000 feet of the UST system?		Х
	If 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?		x
	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 contamination? *Sewer, water, electri	*X city,	
	cable, fiber optic & s If yes, indicate the type of utility, distance, and direction on the site map.	torm	drain
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.		

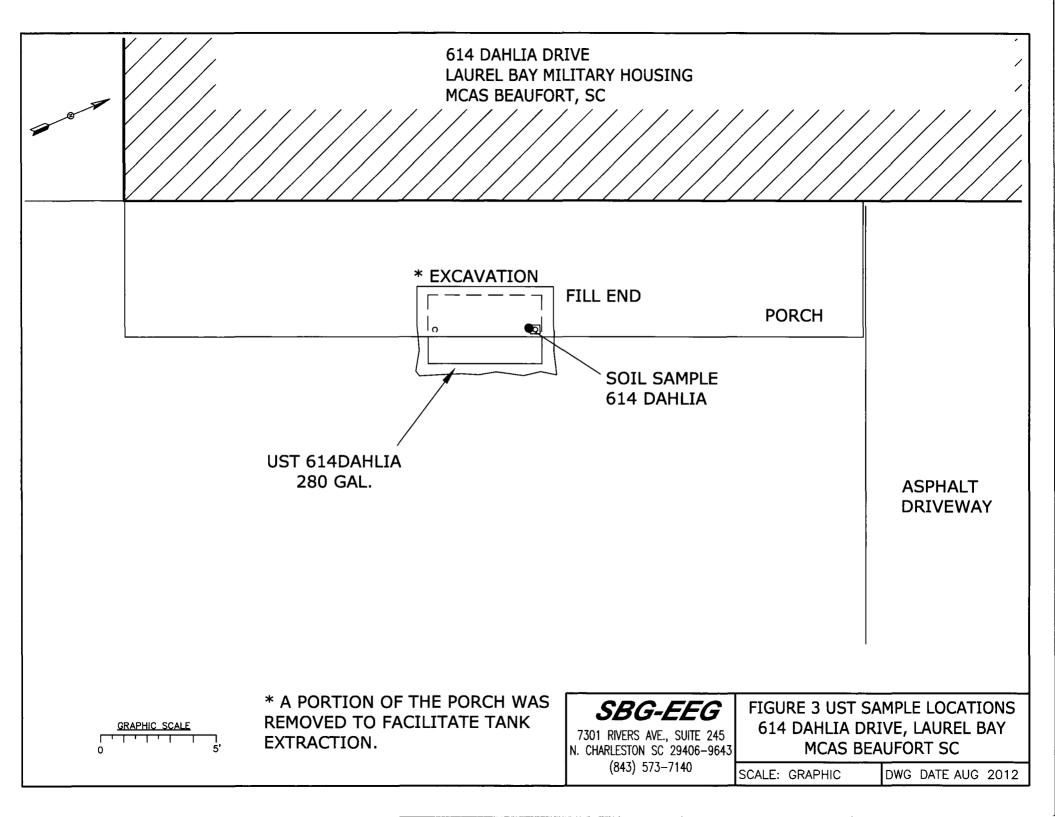
XIII. SITE MAP

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 614Dahlia.



Picture 2: UST 614Dahlia 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.

		1	 I	T	1
CoC UST	614Dahlia		 		
Benzene	ND				
Toluene	ND				
Ethylbenzene	ND				
Xylenes	ND				
Naphthalene	ND				
Benzo (a) anthracene	ND				
Benzo (b) fluoranthene	ND				
Benzo (k) fluoranthene	ND				
Chrysene	ND				
Dibenz (a, h) anthracene	ND				
ТРН (ЕРА 3550)					
CoC					
Benzene			 		
Toluene					
Ethylbenzene					
Xylenes					
Naphthalene					
Benzo (a) anthracene					
Benzo (b) fluoranthene					
Benzo (k) fluoranthene					
Chrysene					
Dibenz (a, h) anthracene					
ТРН (ЕРА 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				
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)



TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Pensacola 3355 McLemore Drive Pensacola, FL 32514 Tel: (850)474-1001

TestAmerica Job ID: 400-67078-1

Client Project/Site: Laurel Bay Housing Project

For:

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Expert

Environmental Enterprise Group 10179 Highway 78 Ladson, South Carolina 29456

Attn: Mr. Tom McElwee

huppedxiDhitmire

Authorized for release by: 7/27/2012 5:06:56 PM

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

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

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

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

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

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

Protocol References:

EPA = US Environmental Protection Agency

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

Laboratory References:

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

Sample Summary

Client: Environmental Enterprise Group Project/Site: Laurel Bay Housing Project TestAmerica Job ID: 400-67078-1

2

K

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-67078-1	1366 CARDINAL	Solid	07/10/12 10:45	07/14/12 09:02
400-67078-2	616 DAHLIA	Solid	07/10/12 15:15	07/14/12 09:02
400-67078-3	614 DAHLIA	Solid	07/11/12 14:15	07/14/12 09:02
400-67078-4	607 DAHLIA	Solid	07/12/12 10:45	07/14/12 09:02

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

Client Sample ID: 1366 CARDINAL

Date Collected: 07/10/12 10:45 Date Received: 07/14/12 09:02

Lab Sample ID: 400-67078-1 Matrix: Solid

Percent Solids: 78.1

Ŷ

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.0056	0.00055	mg/Kg	0	07/16/12 14:00	07/20/12 00:28	1
Ethylbenzene	ND		0.0056	0.00068	mg/Kg	\$	07/16/12 14:00	07/20/12 00:28	1
Toluene	ND		0.0056	0.00078	mg/Kg	\$	07/16/12 14:00	07/20/12 00:28	1
Xylenes, Total	ND		0.011	0.0021	mg/Kg	¢	07/16/12 14:00	07/20/12 00:28	1
Naphthalene	ND		0.0056	0.0011	mg/Kg	\$	07/16/12 14:00	07/20/12 00:28	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	107		72 - 122				07/16/12 14:00	07/20/12 00:28	1
Dibromofluoromethane	105		79 - 118				07/16/12 14:00	07/20/12 00:28	1
Toluene-d8 (Surr)	96		80 - 120				07/16/12 14:00	07/20/12 00:28	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		0.42	0.042	mg/Kg	ø	07/16/12 13:30	07/19/12 14:13	1
Acenaphthylene	ND		0.42	0.042	mg/Kg	¢	07/16/12 13:30	07/19/12 14:13	1
Anthracene	ND		0.42	0.042	mg/Kg	\$	07/16/12 13:30	07/19/12 14:13	1
Benzo[a]anthracene	ND		0.42	0.042	mg/Kg	\$	07/16/12 13:30	07/19/12 14:13	1
Benzo[a]pyrene	0.36	J	0.42	0.042	mg/Kg	\$	07/16/12 13:30	07/19/12 14:13	1
Benzo[b]fluoranthene	0.20	J	0.42	0.042	mg/Kg	\$	07/16/12 13:30	07/19/12 14:13	1
Benzo[g,h,i]perylene	0.14	J	0.42	0.042	mg/Kg	0	07/16/12 13:30	07/19/12 14:13	1
Benzo[k]fluoranthene	ND		0.42	0.042	mg/Kg	ø	07/16/12 13:30	07/19/12 14:13	1
Chrysene	ND		0.42	0.042	mg/Kg	ø	07/16/12 13:30	07/19/12 14:13	1
Dibenz(a,h)anthracene	ND		0.42	0.042	mg/Kg	\$	07/16/12 13:30	07/19/12 14:13	1
Fluoranthene	ND		0.42	0.042	mg/Kg	\$	07/16/12 13:30	07/19/12 14:13	1
Fluorene	ND		0.42	0.042	mg/Kg	ø	07/16/12 13:30	07/19/12 14:13	1
Indeno[1,2,3-cd]pyrene	0.14	J	0.42	0.042	mg/Kg	¢	07/16/12 13:30	07/19/12 14:13	1
Naphthalene	ND		0.42	0.042	mg/Kg	\$	07/16/12 13:30	07/19/12 14:13	1
Phenanthrene	ND		0.42	0.042	mg/Kg	¢	07/16/12 13:30	07/19/12 14:13	1
Pyrene	ND		0.42	0.042	mg/Kg	0	07/16/12 13:30	07/19/12 14:13	1
1-Methylnaphthalene	ND		0.42	0.042	mg/Kg	\$	07/16/12 13:30	07/19/12 14:13	1
2-Methylnaphthalene	ND		0.42	0.042	mg/Kg	\$	07/16/12 13:30	07/19/12 14:13	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	90		44 - 108				07/16/12 13:30	07/19/12 14:13	1
Nitrobenzene-d5 (Surr)	82		27 - 114				07/16/12 13:30	07/19/12 14:13	1
Terphenyl-d14 (Surr)	89		36 - 134				07/16/12 13:30	07/19/12 14:13	1

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

Client Sample ID: 616 DAHLIA

Date Collected: 07/10/12 15:15 Date Received: 07/14/12 09:02

Lab Sample ID: 400-67078-2 Matrix: Solid

Percent Solids: 96.1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.0054	0.00053	mg/Kg	ò	07/16/12 13:00	07/18/12 12:46	1
Ethylbenzene	ND		0.0054	0.00066	mg/Kg	\$	07/16/12 13:00	07/18/12 12:46	1
Toluene	ND		0.0054	0.00075	mg/Kg	ø	07/16/12 13:00	07/18/12 12:46	1
Xylenes, Total	ND		0.011	0.0020	mg/Kg	\$	07/16/12 13:00	07/18/12 12:46	1
Naphthalene	ND		0.0054	0.0011	mg/Kg	*	07/16/12 13:00	07/18/12 12:46	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	92		72 - 122				07/16/12 13:00	07/18/12 12:46	1
Dibromofluoromethane	102		79 - 118				07/16/12 13:00	07/18/12 12:46	1
Toluene-d8 (Surr)	98		80 - 120				07/16/12 13:00	07/18/12 12:46	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		0.34	0.034	mg/Kg	\$	07/16/12 13:30	07/19/12 14:47	1
Acenaphthylene	ND		0.34	0.034	mg/Kg	\$	07/16/12 13:30	07/19/12 14:47	1
Anthracene	ND		0.34	0.034	mg/Kg	\$	07/16/12 13:30	07/19/12 14:47	1
Benzo[a]anthracene	ND		0.34	0.034	mg/Kg	ø	07/16/12 13:30	07/19/12 14:47	1
Benzo[a]pyrene	ND		0.34	0.034	mg/Kg	ø	07/16/12 13:30	07/19/12 14:47	1
Benzo[b]fluoranthene	ND		0.34	0.034	mg/Kg	¢	07/16/12 13:30	07/19/12 14:47	1
Benzo[g,h,i]perylene	ND		0.34	0.034	mg/Kg	\$	07/16/12 13:30	07/19/12 14:47	1
Benzo[k]fluoranthene	ND		0.34	0.034	mg/Kg	\$	07/16/12 13:30	07/19/12 14:47	1
Chrysene	ND		0.34	0.034	mg/Kg	¢	07/16/12 13:30	07/19/12 14:47	1
Dibenz(a,h)anthracene	ND		0.34	0.034	mg/Kg	\$	07/16/12 13:30	07/19/12 14:47	1
Fluoranthene	ND		0.34	0.034	mg/Kg	\$	07/16/12 13:30	07/19/12 14:47	1
Fluorene	ND		0.34	0.034	mg/Kg	\$	07/16/12 13:30	07/19/12 14:47	1
Indeno[1,2,3-cd]pyrene	ND		0.34	0.034	mg/Kg	\$	07/16/12 13:30	07/19/12 14:47	1
Naphthalene	ND		0.34	0.034	mg/Kg	¢	07/16/12 13:30	07/19/12 14:47	1
Phenanthrene	ND		0.34	0.034	mg/Kg	\$3	07/16/12 13:30	07/19/12 14:47	1
Pyrene	ND		0.34	0.034	mg/Kg	¢	07/16/12 13:30	07/19/12 14:47	1
1-Methylnaphthalene	ND		0.34	0.034	mg/Kg	\$	07/16/12 13:30	07/19/12 14:47	1
2-Methylnaphthalene	ND		0.34	0.034	mg/Kg	\$	07/16/12 13:30	07/19/12 14:47	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	69		44 - 108				07/16/12 13:30	07/19/12 14:47	1
Nitrobenzene-d5 (Surr)	62		27 - 114				07/16/12 13:30	07/19/12 14:47	1
Terphenyl-d14 (Surr)	71		36 - 134				07/16/12 13:30	07/19/12 14:47	1

Client Sample ID: 614 DAHLIA

Date Collected: 07/11/12 14:15 Date Received: 07/14/12 09:02

Lab Sample ID: 400-67078-3 Matrix: Solid Percent Solids: 98.0

Method: 8260B - Volatile Or	ganic Compounds (GC/MS)							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.0054	0.00053	mg/Kg	\$	07/16/12 13:00	07/18/12 13:07	1
Ethylbenzene	ND		0.0054	0.00066	mg/Kg	D	07/16/12 13:00	07/18/12 13:07	1
Toluene	ND		0.0054	0.00076	mg/Kg	-3,0	07/16/12 13:00	07/18/12 13:07	1
Xylenes, Total	ND		0.011	0.0020	mg/Kg	32	07/16/12 13:00	07/18/12 13:07	1
Naphthalene	ND		0.0054	0.0011	mg/Kg	¢.	07/16/12 13:00	07/18/12 13:07	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	93		72 - 122				07/16/12 13:00	07/18/12 13:07	1
Dibromofluoromethane	105		79 - 118				07/16/12 13:00	07/18/12 13:07	1
Toluene-d8 (Surr)	100		80 - 120				07/16/12 13:00	07/18/12 13:07	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		0.33	0.033	mg/Kg	\$	07/16/12 13:30	07/19/12 15:21	1
Acenaphthylene	ND		0.33	0.033	mg/Kg	10	07/16/12 13:30	07/19/12 15:21	1
Anthracene	ND		0.33	0.033	mg/Kg	Q	07/16/12 13:30	07/19/12 15:21	1
Benzo[a]anthracene	ND		0.33	0.033	mg/Kg	-02	07/16/12 13:30	07/19/12 15:21	1
Benzo[a]pyrene	ND		0.33	0.033	mg/Kg	5.2	07/16/12 13:30	07/19/12 15:21	1
Benzo[b]fluoranthene	ND		0.33	0.033	mg/Kg	ø	07/16/12 13:30	07/19/12 15:21	1
Benzo[g,h,i]perylene	ND		0.33	0.033	mg/Kg	¢.	07/16/12 13:30	07/19/12 15:21	1
Benzo[k]fluoranthene	ND		0.33	0.033	mg/Kg	5,2	07/16/12 13:30	07/19/12 15:21	1
Chrysene	ND		0.33	0.033	mg/Kg	53	07/16/12 13:30	07/19/12 15:21	1
Dibenz(a,h)anthracene	ND		0.33	0.033	mg/Kg	\$	07/16/12 13:30	07/19/12 15:21	1
Fluoranthene	ND		0.33	0.033	mg/Kg	\$	07/16/12 13:30	07/19/12 15:21	1
Fluorene	ND		0.33	0.033	mg/Kg	12	07/16/12 13:30	07/19/12 15:21	1
Indeno[1,2,3-cd]pyrene	ND		0.33	0.033	mg/Kg	0	07/16/12 13:30	07/19/12 15:21	1
Naphthalene	ND		0.33	0.033	mg/Kg	-\$	07/16/12 13:30	07/19/12 15:21	1
Phenanthrene	ND		0.33	0.033	mg/Kg	0	07/16/12 13:30	07/19/12 15:21	1
Pyrene	ND		0.33	0.033	mg/Kg	ø	07/16/12 13:30	07/19/12 15:21	1
1-Methylnaphthalene	ND		0.33	0.033	mg/Kg	Q	07/16/12 13:30	07/19/12 15:21	1
2-Methylnaphthalene	ND		0.33	0.033	mg/Kg	¢	07/16/12 13:30	07/19/12 15:21	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	63		44 - 108				07/16/12 13:30	07/19/12 15:21	1
Nitrobenzene-d5 (Surr)	64		27 - 114				07/16/12 13:30	07/19/12 15:21	1
Terphenyl-d14 (Surr)	65		36 - 134				07/16/12 13:30	07/19/12 15:21	1

Client Sample ID: 607 DAHLIA

Date Collected: 07/12/12 10:45 Date Received: 07/14/12 09:02

Lab Sample ID: 400-67078-4 Matrix: Solid

Percent Solids: 95.4

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.0061	0.00059	mg/Kg	\$	07/16/12 13:00	07/18/12 13:27	1
Ethylbenzene	ND		0.0061	0.00074	mg/Kg	\$2	07/16/12 13:00	07/18/12 13:27	1
Toluene	ND		0.0061	0.00085	mg/Kg	\$	07/16/12 13:00	07/18/12 13:27	1
Xylenes, Total	ND		0.012	0.0023	mg/Kg	\$	07/16/12 13:00	07/18/12 13:27	1
Naphthalene	ND		0.0061	0.0012	mg/Kg	ø	07/16/12 13:00	07/18/12 13:27	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	91		72 - 122				07/16/12 13:00	07/18/12 13:27	1
Dibromofluoromethane	104		79 - 118				07/16/12 13:00	07/18/12 13:27	1
Toluene-d8 (Surr)	99		80 - 120				07/16/12 13:00	07/18/12 13:27	1

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

Analyte R	sult	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		0.34	0.034	mg/Kg	Ø	07/16/12 13:30	07/19/12 22:09	1
Acenaphthylene	ND		0.34	0.034	mg/Kg	Ф	07/16/12 13:30	07/19/12 22:09	1
Anthracene	ND		0.34	0.034	mg/Kg	\$	07/16/12 13:30	07/19/12 22:09	1
Benzo[a]anthracene	ND		0.34	0.034	mg/Kg	\$	07/16/12 13:30	07/19/12 22:09	1
Benzo[a]pyrene	ND		0.34	0.034	mg/Kg	*	07/16/12 13:30	07/19/12 22:09	1
Benzo[b]fluoranthene	ND		0.34	0.034	mg/Kg	\$	07/16/12 13:30	07/19/12 22:09	1
Benzo[g,h,i]perylene	ND		0.34	0.034	mg/Kg	\$	07/16/12 13:30	07/19/12 22:09	1
Benzo[k]fluoranthene	ND		0.34	0.034	mg/Kg	0	07/16/12 13:30	07/19/12 22:09	1
Chrysene	ND		0.34	0.034	mg/Kg	\$	07/16/12 13:30	07/19/12 22:09	1
Dibenz(a,h)anthracene	ND		0.34	0.034	mg/Kg	\$	07/16/12 13:30	07/19/12 22:09	1
Fluoranthene	ND		0.34	0.034	mg/Kg	\$	07/16/12 13:30	07/19/12 22:09	1
Fluorene	ND		0.34	0.034	mg/Kg	\$	07/16/12 13:30	07/19/12 22:09	1
Indeno[1,2,3-cd]pyrene	ND		0.34	0.034	mg/Kg	\$	07/16/12 13:30	07/19/12 22:09	1
Naphthalene	ND		0.34	0.034	mg/Kg	¢	07/16/12 13:30	07/19/12 22:09	1
Phenanthrene	ND		0.34	0.034	mg/Kg	0	07/16/12 13:30	07/19/12 22:09	1
Pyrene	ND		0.34	0.034	mg/Kg	\$	07/16/12 13:30	07/19/12 22:09	1
1-Methylnaphthalene	ND		0.34	0.034	mg/Kg	0	07/16/12 13:30	07/19/12 22:09	1
2-Methylnaphthalene	ND		0.34	0.034	mg/Kg	Q.	07/16/12 13:30	07/19/12 22:09	1
Surrogate %Reco	very	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	60		44 - 108				07/16/12 13:30	07/19/12 22:09	1
Nitrobenzene-d5 (Surr)	64		27 - 114				07/16/12 13:30	07/19/12 22:09	1
Terphenyl-d14 (Surr)	62		36 - 134				07/16/12 13:30	07/19/12 22:09	1

Definitions/Glossary

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

Qualifiers

GC/MS Semi VOA

Quali	fier
J	

 Qualifier Description

 Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

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

Lab Sample ID: 400-67078-2

Lab Sample ID: 400-67078-3

Matrix: Solid

Matrix: Solid

Percent Solids: 98.0

Percent Solids: 96.1

Client Samp						La	ab Sample	ID: 400-67078-1 Matrix: Solid
Date Received	: 07/14/12 09:0	02					P	ercent Solids: 78.1
Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035		, actor	158802	07/16/12 14:00	MG	TAL PEN
Total/NA	Analysis	8260B		1	158805	07/20/12 00:28	MG	TAL PEN
Total/NA	Prep	3550C			158525	07/16/12 13:30	RT	TAL PEN
Total/NA	Analysis	8270D		1	158702	07/19/12 14:13	JP	TAL PEN
Total/NA	Analysis	Moisture		1	158522	07/14/12 17:00	MS	TAL PEN

Client Sample ID: 616 DAHLIA

Date Collected: 07/10/12 15:15 Date Received: 07/14/12 09:02

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			158676	07/16/12 13:00	MG	TAL PEN
Total/NA	Analysis	8260B		1	158674	07/18/12 12:46	MG	TAL PEN
Total/NA	Prep	3550C			158525	07/16/12 13:30	RT	TAL PEN
Total/NA	Analysis	8270D		1	158702	07/19/12 14:47	JP	TAL PEN
Total/NA	Analysis	Moisture		1	158522	07/14/12 17:00	MS	TAL PEN

Client Sample ID: 614 DAHLIA Date Collected: 07/11/12 14:15 Date Received: 07/14/12 09:02

Ргер Туре	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			158676	07/16/12 13:00	MG	TAL PEN
Total/NA	Analysis	8260B		1	158674	07/18/12 13:07	MG	TAL PEN
Total/NA	Prep	3550C			158525	07/16/12 13:30	RT	TAL PEN
Total/NA	Analysis	8270D		1	158702	07/19/12 15:21	JP	TAL PEN
Total/NA	Analysis	Moisture		1	158522	07/14/12 17:00	MS	TAL PEN

Client Sample ID: 607 DAHLIA Date Collected: 07/12/12 10:45 Date Received: 07/14/12 09:02

Lab Samp	le ID:	400-67078-4
		Matrix: Solid

Percent Solids: 95.4

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			158676	07/16/12 13:00	MG	TAL PEN
Total/NA	Analysis	8260B		1	158674	07/18/12 13:27	MG	TAL PEN
Total/NA	Prep	3550C			158525	07/16/12 13:30	RT	TAL PEN
Total/NA	Analysis	8270D		1	158702	07/19/12 22:09	JP	TAL PEN
Total/NA	Analysis	Moisture		1	158522	07/14/12 17:00	MS	TAL PEN

Laboratory References:

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

QC Association Summary

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

R

GC/MS VOA

Analysis Batch: 158674

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-67078-2	616 DAHLIA	Total/NA	Solid	8260B	158676
400-67078-3	614 DAHLIA	Total/NA	Solid	8260B	158676
400-67078-4	607 DAHLIA	Total/NA	Solid	8260B	158676
LCS 400-158676/2-A	Lab Control Sample	Total/NA	Solid	8260B	158676
LCSD 400-158676/3-A	Lab Control Sample Dup	Total/NA	Solid	8260B	158676
MB 400-158676/1-A	Method Blank	Total/NA	Solid	8260B	158676
Prep Batch: 158676					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-67078-2	616 DAHLIA	Total/NA	Solid	5035	
400-67078-3	614 DAHLIA	Total/NA	Solid	5035	
400-67078-4	607 DAHLIA	Total/NA	Solid	5035	
LCS 400-158676/2-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 400-158676/3-A	Lab Control Sample Dup	Total/NA	Solid	5035	
MB 400-158676/1-A	Method Blank	Total/NA	Solid	5035	
Prep Batch: 158802					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-67078-1	1366 CARDINAL	Total/NA	Solid	5035	
LCS 400-158802/2-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 400-158802/3-A	Lab Control Sample Dup	Total/NA	Solid	5035	
MB 400-158802/1-A	Method Blank	Total/NA	Solid	5035	
Analysis Batch: 158805	6-				
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-67078-1	1366 CARDINAL	Total/NA	Solid	8260B	158802
LCS 400-158802/2-A	Lab Control Sample	Total/NA	Solid	8260B	158802
LCSD 400-158802/3-A	Lab Control Sample Dup	Total/NA	Solid	8260B	158802
MB 400-158802/1-A	Method Blank	Total/NA	Solid	8260B	158802
GC/MS Semi VOA					
GC/WS Semi VUA					
Prep Batch: 158525					
	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
Prep Batch: 158525	Client Sample ID Matrix Spike	Prep Type Total/NA	Matrix Solid	Method 3550C	Prep Batch
Prep Batch: 158525 Lab Sample ID					Prep Batch
Prep Batch: 158525 Lab Sample ID 400-67074-D-4-B MS	Matrix Spike	Total/NA	Solid	3550C	Prep Batch
Prep Batch: 158525 Lab Sample ID 400-67074-D-4-B MS 400-67074-D-4-C MSD	Matrix Spike Matrix Spike Duplicate	Total/NA Total/NA	Solid Solid	3550C 3550C	Prep Batch
Prep Batch: 158525 Lab Sample ID 400-67074-D-4-B MS 400-67074-D-4-C MSD 400-67078-1	Matrix Spike Matrix Spike Duplicate 1366 CARDINAL	Total/NA Total/NA Total/NA	Solid Solid Solid	3550C 3550C 3550C	Prep Batch
Prep Batch: 158525 Lab Sample ID 400-67074-D-4-B MS 400-67074-D-4-C MSD 400-67078-1 400-67078-2 400-67078-3	Matrix Spike Matrix Spike Duplicate 1366 CARDINAL 616 DAHLIA 614 DAHLIA	Total/NA Total/NA Total/NA Total/NA	Solid Solid Solid Solid	3550C 3550C 3550C 3550C 3550C 3550C	Prep Batch
Prep Batch: 158525 Lab Sample ID 400-67074-D-4-B MS 400-67074-D-4-C MSD 400-67078-1 400-67078-2 400-67078-3 400-67078-4	Matrix Spike Matrix Spike Duplicate 1366 CARDINAL 616 DAHLIA 614 DAHLIA 607 DAHLIA	Total/NA Total/NA Total/NA Total/NA Total/NA	Solid Solid Solid Solid Solid Solid	3550C 3550C 3550C 3550C 3550C 3550C	Prep Batch
Prep Batch: 158525 Lab Sample ID 400-67074-D-4-B MS 400-67074-D-4-C MSD 400-67078-1 400-67078-2 400-67078-3	Matrix Spike Matrix Spike Duplicate 1366 CARDINAL 616 DAHLIA 614 DAHLIA	Total/NA Total/NA Total/NA Total/NA Total/NA	Solid Solid Solid Solid Solid	3550C 3550C 3550C 3550C 3550C 3550C	Prep Batch
Prep Batch: 158525 Lab Sample ID 400-67074-D-4-B MS 400-67078-D-4-C MSD 400-67078-1 400-67078-2 400-67078-3 400-67078-4 LCS 400-158525/7-A MB 400-158525/8-A	Matrix Spike Matrix Spike Duplicate 1366 CARDINAL 616 DAHLIA 614 DAHLIA 607 DAHLIA Lab Control Sample Method Blank	Total/NA Total/NA Total/NA Total/NA Total/NA Total/NA	Solid Solid Solid Solid Solid Solid Solid	3550C 3550C 3550C 3550C 3550C 3550C 3550C	Prep Batch
Prep Batch: 158525 Lab Sample ID 400-67074-D-4-B MS 400-67078-D-4-C MSD 400-67078-1 400-67078-2 400-67078-3 400-67078-4 LCS 400-158525/7-A MB 400-158525/8-A	Matrix Spike Matrix Spike Duplicate 1366 CARDINAL 616 DAHLIA 614 DAHLIA 607 DAHLIA Lab Control Sample Method Blank	Total/NA Total/NA Total/NA Total/NA Total/NA Total/NA	Solid Solid Solid Solid Solid Solid Solid	3550C 3550C 3550C 3550C 3550C 3550C 3550C	Prep Batch
Prep Batch: 158525 Lab Sample ID 400-67074-D-4-B MS 400-67074-D-4-C MSD 400-67078-1 400-67078-2 400-67078-3 400-67078-3 400-67078-4 LCS 400-158525/7-A MB 400-158525/8-A Analysis Batch: 158609	Matrix Spike Matrix Spike Duplicate 1366 CARDINAL 616 DAHLIA 614 DAHLIA 607 DAHLIA Lab Control Sample Method Blank	Total/NA Total/NA Total/NA Total/NA Total/NA Total/NA	Solid Solid Solid Solid Solid Solid Solid	3550C 3550C 3550C 3550C 3550C 3550C 3550C 3550C	
Prep Batch: 158525 Lab Sample ID 400-67074-D-4-B MS 400-67078-D-4-C MSD 400-67078-1 400-67078-2 400-67078-3 400-67078-4 LCS 400-158525/7-A MB 400-158525/8-A Analysis Batch: 158609 Lab Sample ID	Matrix Spike Matrix Spike Duplicate 1366 CARDINAL 616 DAHLIA 614 DAHLIA 607 DAHLIA Lab Control Sample Method Blank	Total/NA Total/NA Total/NA Total/NA Total/NA Total/NA Total/NA	Solid Solid Solid Solid Solid Solid Solid Solid	3550C 3550C 3550C 3550C 3550C 3550C 3550C 3550C	Prep Batch
Prep Batch: 158525 Lab Sample ID 400-67074-D-4-B MS 400-67078-D-4-C MSD 400-67078-1 400-67078-2 400-67078-3 400-67078-4 LCS 400-158525/7-A MB 400-158525/8-A Analysis Batch: 158609 Lab Sample ID 400-67074-D-4-B MS	Matrix Spike Matrix Spike Duplicate 1366 CARDINAL 616 DAHLIA 614 DAHLIA 607 DAHLIA Lab Control Sample Method Blank Client Sample ID Matrix Spike	Total/NA Total/NA Total/NA Total/NA Total/NA Total/NA Total/NA Prep Type Total/NA	Solid Solid Solid Solid Solid Solid Solid Solid Solid	3550C 3550C 3550C 3550C 3550C 3550C 3550C 3550C 3550C	Prep Batch 158525

QC Association Summary

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

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GC/MS Semi VOA (Continued)

Analysis Batch: 158702

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-67078-1	1366 CARDINAL	Total/NA	Solid	8270D	158525
400-67078-2	616 DAHLIA	Total/NA	Solid	8270D	158525
400-67078-3	614 DAHLIA	Total/NA	Solid	8270D	158525
400-67078-4	607 DAHLIA	Total/NA	Solid	8270D	158525

General Chemistry

Analysis Batch: 158522

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-67078-1	1366 CARDINAL	Total/NA	Solid	Moisture	
400-67078-2	616 DAHLIA	Total/NA	Solid	Moisture	
400-67078-3	614 DAHLIA	Total/NA	Solid	Moisture	
400-67078-4	607 DAHLIA	Total/NA	Solid	Moisture	

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

Lab Sample ID: MB 400-1580	6/6/1-A										Client Sa	mple ID:		
Matrix: Solid													ype: To	
Analysis Batch: 158674												Prep I	Batch:	15867
		MB		120					1.	1.5			10	
Analyte			Qualifier	RL			Unit		D		repared	Analyz		Dil Fa
Benzene		ND		0.0050			mg/Kg				8/12 08:00	07/18/12		
Ethylbenzene		ND		0.0050			mg/Kg				8/12 08:00	07/18/12		
Foluene		ND		0.0050			mg/Kg				8/12 08:00	07/18/12		
Kylenes, Total		ND		0.010			mg/Kg				8/12 08:00	07/18/12		
Naphthalene		ND		0.0050	0.	.0010	mg/Kg			07/1	8/12 08:00	07/18/12	09:54	
			МВ									-		
Surrogate	%Recov		Qualifier	Limits							repared	Analyz		Dil Fa
-Bromofluorobenzene		93		72 - 122							8/12 08:00	07/18/12		
Dibromofluoromethane		99		79 - 118							8/12 08:00	07/18/12		
oluene-d8 (Surr)		98		80 - 120						07/1	8/12 08:00	07/18/12	09:54	
ab Sample ID: LCS 400-158	3676/2-A								C	lient	Sample	ID: Lab Co	ontrol S	Samp
Matrix: Solid												Prep T	ype: To	otal/N
Analysis Batch: 158674												Prep I	Batch:	15867
				Spike	LCS	LCS						%Rec.		
Analyte				Added	Result	Qua	lifier	Unit		D	%Rec	Limits		
Benzene				0.0500	0.0532			mg/Kg			106	74 - 119		
thylbenzene				0.0500	0.0557			mg/Kg			111	78 - 116		
oluene				0.0500	0.0534			mg/Kg			107	76 - 116		
Kylenes, Total				0.150	0.165			mg/Kg			110	77 - 118		
laphthalene				0.0500	0.0469			mg/Kg			94	64 - 126		
	LCS I													
Surrogate	%Recovery	Quali	fier	Limits										
I-Bromofluorobenzene	96			72 - 122										
Dibromofluoromethane	100			79 - 118										
Foluene-d8 (Surr)	100			80 - 120										
ab Sample ID: LCSD 400-1	58676/3-A							CI	ient	Sam	ple ID: L	ab Contro	I Samp	le Du
Matrix: Solid												Prep T	ype: To	otal/N
Analysis Batch: 158674												Prep I	Batch: *	15867
				Spike	LCSD							%Rec.		RP
Analyte				Added	Result	Qua	lifier	Unit		D	%Rec	Limits	RPD	Lin
Benzene				0.0500	0.0540			mg/Kg			108	74 - 119	1	
thylbenzene				0.0500	0.0564			mg/Kg			113	78 - 116	1	
oluene				0.0500	0.0541			mg/Kg			108	76 - 116	1	
(ylenes, Total				0.150	0.171			mg/Kg			114	77 - 118	4	
laphthalene				0.0500	0.0453			mg/Kg			91	64 - 126	3	
	LCSD I													
Surrogate	%Recovery (Quali	ner	Limits 72 - 122										
I-Bromofluorobenzene	97			72 - 122 79 - 118										
Dibromofluoromethane	101													
Toluene-d8 (Surr)	100			80 - 120										
ab Sample ID: MB 400-158	802/1-A										Client Sa	mple ID:		
Aatrix: Solid												Prep T	ype: To	otal/N
analysis Batch: 158805												Prep B	Ratch:	1500

Analysis Batch: 158805								Prep Batch:	158802
and the second se	MB	мв							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.0050	0.00049	mg/Kg		07/19/12 08:00	07/19/12 16:49	1

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

Lab Sample ID: MB 400-158802	2/1-A						Client Sa	mple ID: Metho	d Blank
Matrix: Solid								Prep Type: T	otal/NA
Analysis Batch: 158805								Prep Batch:	158802
	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		0.0050	0.00061	mg/Kg		07/19/12 08:00	07/19/12 16:49	1
Toluene	ND		0.0050	0.00070	mg/Kg		07/19/12 08:00	07/19/12 16:49	1
Xylenes, Total	ND		0.010	0.0019	mg/Kg		07/19/12 08:00	07/19/12 16:49	1
Naphthalene	ND		0.0050	0.0010	mg/Kg		07/19/12 08:00	07/19/12 16:49	1
	MB	МВ							
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	91		72 - 122				07/19/12 08:00	07/19/12 16:49	1
Dibromofluoromethane	100		79 - 118				07/19/12 08:00	07/19/12 16:49	1
Toluene-d8 (Surr)	101		80 - 120				07/19/12 08:00	07/19/12 16:49	1

Lab Sample ID: LCS 400-158802/2-A

Matrix: Solid Analysis Batch: 158805

	Spike	LCS LCS				%Rec.
Analyte	Added	Result Qualifier	Unit	D	%Rec	Limits
Benzene	0.0500	0.0553	mg/Kg		111	74 - 119
Ethylbenzene	0.0500	0.0560	mg/Kg		112	78 - 116
Toluene	0.0500	0.0556	mg/Kg		111	76 - 116
Xylenes, Total	0.150	0.167	mg/Kg		111	77 - 118
Naphthalene	0.0500	0.0496	mg/Kg		99	64 - 126

	LUS	LUS	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene	96		72 - 122
Dibromofluoromethane	101		79 - 118
Toluene-d8 (Surr)	99		80 - 120

98

102

100

Lab Sample ID: LCSD 400-158802/3-A

4-Bromofluorobenzene

Dibromofluoromethane

Toluene-d8 (Surr)

Matrix: Solid									Prep 1	ype: Tot	tal/NA
Analysis Batch: 158805									Prep	Batch: 1	58802
and the second se			Spike	LCSD	LCSD				%Rec.		RPD
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene			0.0500	0.0557		mg/Kg		111	74 - 119	1	10
Ethylbenzene			0.0500	0.0577		mg/Kg		115	78 - 116	3	12
Toluene			0.0500	0.0556		mg/Kg		111	76 - 116	0	11
Xylenes, Total			0.150	0.174		mg/Kg		116	77 - 118	4	12
Naphthalene			0.0500	0.0443		mg/Kg		89	64 - 126	11	16
	LCSD	LCSD									
Surrogate	%Recovery	Qualifier	Limits								

72 - 122

79 - 118

80 - 120

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

Client Sample ID: Lab Control Sample Dup

Prep Batch: 158802

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 158525

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

Lab Sample ID: MB 400-158525/8-A Matrix: Solid Analysis Batch: 158609

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		0.33	0.033	mg/Kg		07/16/12 09:00	07/17/12 16:16	1
Acenaphthylene	ND		0.33	0.033	mg/Kg		07/16/12 09:00	07/17/12 16:16	1
Anthracene	ND		0.33	0.033	mg/Kg		07/16/12 09:00	07/17/12 16:16	1
Benzo[a]anthracene	ND		0.33	0.033	mg/Kg		07/16/12 09:00	07/17/12 16:16	1
Benzo[a]pyrene	ND		0.33	0.033	mg/Kg		07/16/12 09:00	07/17/12 16:16	1
Benzo[b]fluoranthene	ND		0.33	0.033	mg/Kg		07/16/12 09:00	07/17/12 16:16	1
Benzo[g,h,i]perylene	ND		0.33	0.033	mg/Kg		07/16/12 09:00	07/17/12 16:16	1
Benzo[k]fluoranthene	ND		0.33	0.033	mg/Kg		07/16/12 09:00	07/17/12 16:16	1
Chrysene	ND		0.33	0.033	mg/Kg		07/16/12 09:00	07/17/12 16:16	1
Dibenz(a,h)anthracene	ND		0.33	0.033	mg/Kg		07/16/12 09:00	07/17/12 16:16	1
Fluoranthene	ND		0.33	0.033	mg/Kg		07/16/12 09:00	07/17/12 16:16	1
Fluorene	ND		0.33	0.033	mg/Kg		07/16/12 09:00	07/17/12 16:16	1
Indeno[1,2,3-cd]pyrene	ND		0.33	0.033	mg/Kg		07/16/12 09:00	07/17/12 16:16	1
Naphthalene	ND		0.33	0.033	mg/Kg		07/16/12 09:00	07/17/12 16:16	1
Phenanthrene	ND		0.33	0.033	mg/Kg		07/16/12 09:00	07/17/12 16:16	1
Pyrene	ND		0.33	0.033	mg/Kg		07/16/12 09:00	07/17/12 16:16	1
1-Methylnaphthalene	ND		0.33	0.033	mg/Kg		07/16/12 09:00	07/17/12 16:16	1
2-Methylnaphthalene	ND		0.33	0.033	mg/Kg		07/16/12 09:00	07/17/12 16:16	1
	МВ	MB							

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	78	44 - 108	07/16/12 09:00	07/17/12 16:16	1
Nitrobenzene-d5 (Surr)	72	27 - 114	07/16/12 09:00	07/17/12 16:16	1
Terphenyl-d14 (Surr)	76	36 - 134	07/16/12 09:00	07/17/12 16:16	1

Lab Sample ID: LCS 400-158525/7-A

Matrix: Solid Analysis Batch: 158609

Analyte Added Result Qualifier Unit D %Rec Limits Acenaphthene 1.67 1.30 mg/Kg 78 53.108 Acenaphthylene 1.67 1.24 mg/Kg 75 57.111 Anthracene 1.67 1.27 mg/Kg 76 56.110 Benzo[a]anthracene 1.67 1.52 mg/Kg 91 52.105 Benzo[a]pyrene 1.67 1.21 mg/Kg 78 49.95 Benzo[g],h.]perylene 1.67 1.46 mg/Kg 88 47.122 Benzo[k]fluoranthene 1.67 1.46 mg/Kg 88 56.102 Benzo[k]fluoranthene 1.67 1.46 mg/Kg 88 56.102 Dibenz(a,h)anthracene 1.67 1.46 mg/Kg 88 56.102 Dibenz(a,h)anthracene 1.67 1.34 mg/Kg 81 46.114 Fluorene 1.67 1.42 mg/Kg 85 51.116 Indeno[1,2,3-cd]pyrene		Spike	LCS	LCS				%Rec.
Acenaphthylene1.671.24mg/Kg7557.111Anthracene1.671.27mg/Kg7656.110Benzo[a]anthracene1.671.52mg/Kg9152.105Benzo[a]pyrene1.671.21mg/Kg7252.97Benzo[b]fluoranthene1.671.31mg/Kg7849.95Benzo[g,h,i]perylene1.671.46mg/Kg8847.122Benzo[k]fluoranthene1.671.35mg/Kg8157.113Chrysene1.671.46mg/Kg8856.102Dibenz(a,h)anthracene1.671.34mg/Kg8146.114Fluoranthene1.671.34mg/Kg8051.116Indeno[1,2,3-cd]pyrene1.671.42mg/Kg8548.119Naphthalene1.671.42mg/Kg6952.99Phenanthrene1.671.24mg/Kg6952.99Phenanthrene1.671.43mg/Kg6952.99	Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Anthracene1.671.27mg/Kg7656 - 110Benzo[a]anthracene1.671.52mg/Kg9152 - 105Benzo[a]pyrene1.671.21mg/Kg7252 - 97Benzo[b]fluoranthene1.671.31mg/Kg7849 - 95Benzo[k,i]perylene1.671.46mg/Kg8847 - 122Benzo[k,i]fluoranthene1.671.35mg/Kg8157 - 113Chrysene1.671.46mg/Kg8856 - 102Dibenz(a,h)anthracene1.671.34mg/Kg8146 - 114Fluoranthene1.671.34mg/Kg8051 - 116Indeno[1,2,3-cd]pyrene1.671.42mg/Kg8548 - 119Naphthalene1.671.43mg/Kg8552 - 99Phenanthrene1.671.43mg/Kg6952 - 99Pyrene1.671.43mg/Kg8656 - 100	Acenaphthene	1.67	1.30		mg/Kg		78	53 - 108
Benzo[a]anthracene1.671.52mg/Kg9152.105Benzo[a]pyrene1.671.21mg/Kg7252.97Benzo[b]fluoranthene1.671.31mg/Kg7849.95Benzo[g,h,i]perylene1.671.46mg/Kg8847.122Benzo[k]fluoranthene1.671.35mg/Kg8157.113Chrysene1.671.46mg/Kg8856.102Dibenz(a,h)anthracene1.671.34mg/Kg8146.114Fluoranthene1.671.24mg/Kg8051.116Indeno[1,2,3-cd]pyrene1.671.42mg/Kg8548.119Naphthalene1.671.15mg/Kg6952.99Phenanthrene1.671.24mg/Kg6952.99Phenanthrene1.671.43mg/Kg8666.103	Acenaphthylene	1.67	1.24		mg/Kg		75	57 - 111
Benzo[a]pyrene1.671.21mg/Kg7252.97Benzo[b]fluoranthene1.671.31mg/Kg7849.95Benzo[g,h,i]perylene1.671.46mg/Kg8847.122Benzo[k]fluoranthene1.671.35mg/Kg8157.113Chrysene1.671.46mg/Kg8856.102Dibenz(a,h)anthracene1.671.34mg/Kg8146.114Fluoranthene1.671.24mg/Kg8051.116Indeno[1,2,3-cd]pyrene1.671.42mg/Kg8548.119Naphthalene1.671.15mg/Kg6952.99Phenanthrene1.671.24mg/Kg7456.113Pyrene1.671.43mg/Kg8548.119	Anthracene	1.67	1.27		mg/Kg		76	56 - 110
Benzo[b]fluoranthene1.671.31mg/Kg7849.95Benzo[g,h,i]perylene1.671.46mg/Kg8847.122Benzo[k,lifluoranthene1.671.35mg/Kg8157.113Chrysene1.671.46mg/Kg8856.102Dibenz(a,h)anthracene1.671.34mg/Kg8146.114Fluoranthene1.671.24mg/Kg7456.120Fluorene1.671.34mg/Kg8051.116Indeno[1,2,3-cd]pyrene1.671.42mg/Kg8548.119Naphthalene1.671.15mg/Kg6952.99Phenanthrene1.671.24mg/Kg7456.113Pyrene1.671.43mg/Kg8656.100	Benzo[a]anthracene	1.67	1.52		mg/Kg		91	52 - 105
Benzo[g,h,i]perylene1.671.46mg/Kg8847 - 122Benzo[k]fluoranthene1.671.35mg/Kg8157 - 113Chrysene1.671.46mg/Kg8856 - 102Dibenz(a,h)anthracene1.671.34mg/Kg8146 - 114Fluoranthene1.671.24mg/Kg8051 - 116Fluorene1.671.34mg/Kg8051 - 116Indeno[1,2,3-cd]pyrene1.671.42mg/Kg8548 - 119Naphthalene1.671.15mg/Kg6952 - 99Phenanthrene1.671.24mg/Kg7456 - 113Pyrene1.671.43mg/Kg8656 - 100	Benzo[a]pyrene	1.67	1.21		mg/Kg		72	52 - 97
Benzo[k]fluoranthene1.671.35mg/Kg8157 - 113Chrysene1.671.46mg/Kg8856 - 102Dibenz(a,h)anthracene1.671.34mg/Kg8146 - 114Fluoranthene1.671.24mg/Kg7456 - 120Fluorene1.671.34mg/Kg8051 - 116Indeno[1,2,3-cd]pyrene1.671.42mg/Kg8548 - 119Naphthalene1.671.15mg/Kg6952 - 99Phenanthrene1.671.24mg/Kg7456 - 113Pyrene1.671.43mg/Kg8656 - 100	Benzo[b]fluoranthene	1.67	1.31		mg/Kg		78	49 - 95
Chrysene1.671.46mg/Kg8856 - 102Dibenz(a,h)anthracene1.671.34mg/Kg8146 - 114Fluoranthene1.671.24mg/Kg7456 - 120Fluorene1.671.34mg/Kg8051 - 116Indeno[1,2,3-cd]pyrene1.671.42mg/Kg8548 - 119Naphthalene1.671.15mg/Kg6952 - 99Phenanthrene1.671.24mg/Kg7456 - 113Pyrene1.671.43mg/Kg8656 - 100	Benzo[g,h,i]perylene	1.67	1.46		mg/Kg		88	47 - 122
Dibenz(a,h)anthracene1.671.34mg/Kg8146 - 114Fluoranthene1.671.24mg/Kg7456 - 120Fluorene1.671.34mg/Kg8051 - 116Indeno[1,2,3-cd]pyrene1.671.42mg/Kg8548 - 119Naphthalene1.671.15mg/Kg6952 - 99Phenanthrene1.671.24mg/Kg7456 - 113Pyrene1.671.43mg/Kg8656 - 100	Benzo[k]fluoranthene	1.67	1.35		mg/Kg		81	57 - 113
Fluoranthene1.671.24mg/Kg7456 - 120Fluorene1.671.34mg/Kg8051 - 116Indeno[1,2,3-cd]pyrene1.671.42mg/Kg8548 - 119Naphthalene1.671.15mg/Kg6952 - 99Phenanthrene1.671.24mg/Kg7456 - 113Pyrene1.671.43mg/Kg8656 - 100	Chrysene	1.67	1.46		mg/Kg		88	56 - 102
Fluorene1.671.34mg/Kg8051 - 116Indeno[1,2,3-cd]pyrene1.671.42mg/Kg8548 - 119Naphthalene1.671.15mg/Kg6952 - 99Phenanthrene1.671.24mg/Kg7456 - 113Pyrene1.671.43mg/Kg8656 - 100	Dibenz(a,h)anthracene	1.67	1.34		mg/Kg		81	46 - 114
Indeno[1,2,3-cd]pyrene 1.67 1.42 mg/Kg 85 48 - 119 Naphthalene 1.67 1.15 mg/Kg 69 52 - 99 Phenanthrene 1.67 1.24 mg/Kg 74 56 - 113 Pyrene 1.67 1.43 mg/Kg 86 56 - 100	Fluoranthene	1.67	1.24		mg/Kg		74	56 - 120
Naphthalene 1.67 1.15 mg/Kg 69 52 - 99 Phenanthrene 1.67 1.24 mg/Kg 74 56 - 113 Pyrene 1.67 1.43 mg/Kg 86 56 - 100	Fluorene	1.67	1.34		mg/Kg		80	51 - 116
Phenanthrene 1.67 1.24 mg/Kg 74 56 - 113 Pyrene 1.67 1.43 mg/Kg 86 56 - 100	Indeno[1,2,3-cd]pyrene	1.67	1.42		mg/Kg		85	48 - 119
Pyrene 1.67 1.43 mg/Kg 86 56 - 100	Naphthalene	1.67	1.15		mg/Kg		69	52 - 99
	Phenanthrene	1.67	1.24		mg/Kg		74	56 - 113
1-Methylnaphthalene 1.67 1.23 mg/Kg 74 58 - 104	Pyrene	1.67	1.43		mg/Kg		86	56 - 100
	1-Methylnaphthalene	1.67	1.23		mg/Kg		74	58 - 104
2-Methylnaphthalene 1.67 1.09 mg/Kg 65 53 - 99	2-Methylnaphthalene	1.67	1.09		mg/Kg		65	53 - 99

Client Sample ID: Lab Control Sample

Prep Type: Total/NA Prep Batch: 158525

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

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93

Lab Sample ID: LCS 400-158525/7-A Matrix: Solid

Analysis Batch: 158609

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
2-Fluorobiphenyl	68		44 - 108
Nitrobenzene-d5 (Surr)	70		27 - 114
Terphenyl-d14 (Surr)	86		36 - 134

Lab Sample ID: 400-67074-D-4-B MS Matrix: Solid

Analysis Batch: 158609

Analysis Batch: 158609									Prep	Batch: 158525
	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Acenaphthene	ND		1.76	1.47		mg/Kg	ø	84	10 - 150	
Acenaphthylene	ND		1.76	1.48		mg/Kg	\$	84	10 - 150	
Anthracene	ND		1.76	1.59		mg/Kg	Ø	91	10 - 150	
Benzo[a]anthracene	ND		1.76	1.79		mg/Kg	¢	102	10 - 150	
Benzo[a]pyrene	ND		1.76	1.33		mg/Kg	¢	75	10 - 150	
Benzo[b]fluoranthene	ND		1.76	1.53		mg/Kg	\$	87	10 - 150	
Benzo[g,h,i]perylene	ND		1.76	1.73		mg/Kg	\$	98	10 - 150	
Benzo[k]fluoranthene	ND		1.76	1.60		mg/Kg	\$	91	10 - 150	
Chrysene	ND		1.76	1.65		mg/Kg	\$	94	10 - 150	
Dibenz(a,h)anthracene	ND		1.76	1.54		mg/Kg	¢	88	32 - 111	
Fluoranthene	ND		1.76	1.58		mg/Kg	\$2	90	10 - 150	
Fluorene	0.037	J	1.76	1.56		mg/Kg	¢	86	10 - 150	
Indeno[1,2,3-cd]pyrene	ND		1.76	1.64		mg/Kg	¢	93	10 - 150	
Naphthalene	ND		1.76	1.32		mg/Kg	\$	75	10 - 150	
Phenanthrene	ND		1.76	1.52		mg/Kg	\$	86	10 - 150	
Pyrene	ND		1.76	1.70		mg/Kg	¢	97	10 - 150	
1-Methylnaphthalene	ND		1.76	1.38		mg/Kg	¢	78	10 - 150	
2-Methylnaphthalene	ND		1.76	1.37		mg/Kg	Q	78	10 - 150	
	MS	MS								
Surrogate	%Recovery	Qualifier	Limits							

Lab Sample ID: 400-67074-D-4-C MSD Matrix: Solid

Analysis Batch: 158609

2-Fluorobiphenyl

Nitrobenzene-d5 (Surr) Terphenyl-d14 (Surr)

Analysis Batch: 158609									Prep	Batch: 1	58525
and the second	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Acenaphthene	ND		1.75	1.44		mg/Kg	\$	82	10 - 150	2	36
Acenaphthylene	ND		1.75	1.45		mg/Kg	¢	83	10 - 150	2	29
Anthracene	ND		1.75	1.49		mg/Kg	\$	85	10 - 150	7	30
Benzo[a]anthracene	ND		1.75	1.72		mg/Kg	\$	98	10 - 150	4	33
Benzo[a]pyrene	ND		1.75	1.45		mg/Kg	\$	83	10 - 150	9	30
Benzo[b]fluoranthene	ND		1.75	1.48		mg/Kg	\$	85	10 - 150	3	31
Benzo[g,h,i]perylene	ND		1.75	1.69		mg/Kg	-02	96	10 - 150	2	30
Benzo[k]fluoranthene	ND		1.75	1.66		mg/Kg	\$	95	10 - 150	4	29
Chrysene	ND		1.75	1.72		mg/Kg	\$	98	10 - 150	4	33
Dibenz(a,h)anthracene	ND		1.75	1.61		mg/Kg	\$	92	32 - 111	4	30
Fluoranthene	ND		1.75	1.59		mg/Kg	\$	91	10 - 150	0	42

44 - 108 27 - 114

36 - 134

TestAmerica Pensacola 7/27/2012

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Dean Datah, 450505

Client Sample ID: Lab Control Sample Prep Type: Total/NA Prep Batch: 158525

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Desa Databa 450505

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

Lab Sample ID: 400-67074-D-4-C MSD Matrix: Solid

Client Sample ID: Matrix Spike Duplicate Prep Type: Total/NA Prep Batch: 158525

Analysis Batch: 158609									Prep	Batch: 1	58525
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Fluorene	0.037	J	1.75	1.58		mg/Kg	\$	88	10 - 150	2	36
Indeno[1,2,3-cd]pyrene	ND		1.75	1.72		mg/Kg	¢	98	10 - 150	4	31
Naphthalene	ND		1.75	1.28		mg/Kg	\$	73	10 - 150	4	33
Phenanthrene	ND		1.75	1.55		mg/Kg	\$	88	10 - 150	2	34
Pyrene	ND		1.75	1.67		mg/Kg	\$	95	10 - 150	2	45
1-Methylnaphthalene	ND		1.75	1.30		mg/Kg	\$	74	10 - 150	5	29
2-Methylnaphthalene	ND		1.75	1.24		mg/Kg	¢	71	10 - 150	10	32
	MSD	MSD									
Surrogate	%Recovery	Qualifier	Limits								
2-Fluorobiphenyl	71		44 - 108								
Nitrobenzene-d5 (Surr)	75		27 - 114								
Terphenyl-d14 (Surr)	97		36 - 134								

Login Sample Receipt Checklist

Client: Environmental Enterprise Group

Login Number: 67078 List Number: 1

Creator: Serratore, Maria

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	N/A	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.4°C
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Job Number: 400-67078-1

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List Source: TestAmerica Pensacola

TestAmerica Job ID: 400-67078-1

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Laboratory: TestAmerica Pensacola

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alabama	State Program	4	40150	06-30-13
Arizona	State Program	9	AZ0710	01-11-13
Arkansas DEQ	State Program	6	88-0689	09-01-13
Florida	NELAC	4	E81010	06-30-13
Georgia	State Program	4	N/A	06-30-13
Illinois	NELAC	5	200041	10-09-12
lowa	State Program	7	367	08-01-12
Kansas	NELAC	7	E-10253	10-31-12
Kentucky (UST)	State Program	4	53	07-05-13
Louisiana	NELAC	6	30976	06-30-13
Maryland	State Program	3	233	12-30-12
Massachusetts	State Program	1	M-FL094	06-30-13
Michigan	State Program	5	9912	06-30-12
New Hampshire	NELAC	1	2505	08-16-12
New Jersey	NELAC	2	FL006	06-30-13
North Carolina DENR	State Program	4	314	12-31-12
Oklahoma	State Program	6	9810	08-31-12
Pennsylvania	NELAC	3	68-00467	12-31-12
Rhode Island	State Program	1	LAO00307	12-30-12
South Carolina	State Program	4	96026	06-30-12
Tennessee	State Program	4	TN02907	06-30-13
Texas	NELAC	6	T104704286-12-4	09-30-12
USDA	Federal		P330-10-00407	12-10-13
Virginia	NELAC	3	460166	06-14-13
Washington	State Program	10	C915	08-08-12
West Virginia DEP	State Program	3	136	06-30-13

f Custody		No	°N N						Г	(eluberio&-อาๆ) TAT H&UЯ				-	+	-		H	1	4 >		
400-67078 Chain of Custody	To assist us in using the proper analytical methods, is this work being conducted for regulatory purposes?	 Compliance Monitoring? Yes 			1027		Project ID: Laurel Bay Housing Project		Analyze For:									/		Laboratory Comments: Temperature Upon Receipt: 2.4 °C VOCS Free of Headspace?		
	То теg			Site State: SC	:#Od	TA Quote #:	roject ID: Lau	Project #:		87EX + Napth - 82606	x	×	×	×		1					Time	G'OD
				S		TA	ď	۵.	ŀ	Other (specify):	×	×	×	^	-	\parallel		H		FEDEX	F	
						10/0			Matrix	Wastewater Drinking Water Sulde	×	2	X	X							Date	7/(14/1)
	Phone: 615-726-0177 Toll Free: 800-765-0980 Fax: 615-726-3404					- 668		10		H ₂ SO ₄ Glass(Yellow Label) None (Black Label) Other (Specify) MC+H (A Groundwater	121	21	21	16						ų		20
	Phone: 6 Toll Free: 8 Fax: 6					843-			Areservative	Het (Blue Label) - S (Yollow Label) MaOH (Orange Label) HSO, Plastic (Yollow Label)	2	R	2	2						Method of Shipment:	LX LX	estAmerica:
						Fax No.:			L	HKO ₃ (Red Label)									_	Metho	6 X	F Y
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	vision Creigh N 3720				a@eegir		N	XX	1	No. of Containers Shipped,	5	5	5-1	5	-	1		H			1000	Time
	Nashville Division 2960 Foster Creighton Nashville, TN 37204	49	8	99	nail: moetwee		A #	8 12		belqms2 emiT	1045	25151	14157	1045							121	
		EEG - SBG # 24	Address: 10179 Highway 78	Ladson, SC 294	Tom McElwee er	843.412.2097	Ph2	~		bəlqmə2 əteD	7/10/17	7/10/12	7/11/12	7/12/12							7/13	Date
	ICSTAMCICO	Client Name/Account #: EEG - SBG # 2449	Address: 1	City/State/Zip: Ladson, SC 29456	Project Manager: Tom McEwee email: mcelwee@eeginc.net	Telephone Number: 843.412.2097	Sampler Name: (Print)	Sampler Signature:		cription	CARdi NA/	DALIA	DANTA	DALI: 4						ions:	Th.	
	THE LEADER									Samole ID / Description	5 1366	616	614	600						Special Instructions:	Relinquished by	Relinquished by

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7/27/2012

ATTACHMENT A

WASTE MANAGEMENT	-HAZARI	DO	US	MA	NIF	EST				
NON-HAZARDOUS MANIFEST	US EPA ID No. Ma	nifest Doc I	No.	2. Page 1	of					
3. Generator's Mailing Address: MCAS, BEAUFORT	Concrete of a site Address in different									
BEAUFORT, SC 29907 4. Generator's Phone 843-228-6461	M. T. PL.				B. State (Generator's ID				
5. Transporter 1 Company Name EEG, INC.		Provide Library	ransporter's II orter's Phone							
7. Transporter 2 Company Name	8. US EPA ID	Number		THE PARTY OF LOT AND ADDRESS	ransporter's II orter's Phone	D				
9. Designated Facility Name and Site Address HICKORY HILL LANDFILL 2621 LOW COUNTRY ROAD	10. US EPA I	D Number		G. State Facility ID H. State Facility Phone 843-987-4643						
RIDGELAND, SC 29936	The second		- 13	TI. State I	active r none	045 507 4045				
11. Description of Waste Materials	Constant and	12. Co No.	ntainers Type	13. Total Quantity	14. Unit Wt./Vol	I. Misc. Comments				
a. HEATING OIL TANKS FILLED WITH SAND			1.0	1						
WM Profile # 1026555 b.	sc	10,05								
WM Profile #	JE-									
WM Profile #	and the second	The second second		1						
d.	Sanstan 4	14.7	Carl I	Carl In	14 12					
WM Profile # J. Additional Descriptions for Materials Listed Above	2124	K. Dispos	al Location							
D 1353 CARdinal	2)1366 CARdinal	Cell Grid				Level				
3 616 DALLIA 4)	G14 Dahlin	56	26	O BE	ih liA Ech	-2				
Purchase Order # 16. GENERATOR'S CERTIFICATE:	EMERGENCY CON	ITACT / PHO	ONE NO.:		Star Black	and the state				
I hereby certify that the above-described materials are accurately described, classified and packaged and are i		and the second sec		and the second se		ave been fully and				
Printed Name Timothy what 17. Transporter 1 Acknowledgement of Receipt of Mar	Signature "On behalf	of" ter	noth	e u	Maley	Month Day Year				
Printed Name PRAHShaw	Signature A	M	L		0	Month Day Year				
18. Transporter 2 Acknowledgement of Receipt of Mat Printed Name	terials Signature	0		1		Month Day Year				
JAMES Baldural 19. Certificate of Final Treatment/Disposal	Hames	Bal	dein	-		8 23 12				
I certify, on behalf of the above listed treatment facility applicable laws, regulations, permits and licenses on th	e dates listed above.				as managed ir	n compliance with all				
20. Facility Owner or Operator: Certification of receip	Signature	And		2	a lenge	Month Day Year				
White- TREATMENT, STORAGE, DISPOSAL FACILITY CO Pink- FACILITY USE ONLY	PY Blue- GENERATOR # Gold- TRANSPORTER			Ye	low- GENERA	TOR #1 COPY				

Appendix C Regulatory Correspondence





Catherine B. Templeton, Director *Propriating 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,

20m. The

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)



Catherine B. Templeton, Director Promosting 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

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

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