SUMMARY REPORT
610 WEST CARDINAL LANE (FORMERLY 1461 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 SUMMARY REPORT
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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



Table of Contents

1.0	INTRODUC	TION	L
1.1		ND INFORMATION	
1.2	UST REMO	VAL AND ASSESSMENT PROCESS	2
2.0	SAMPLING	ACTIVITIES AND RESULTS	1
2.1		VAL AND SOIL SAMPLING4	
2.2		/TICAL RESULTS	
2.3		ATER SAMPLING	
2.5	SOIL GAS S	SAMPLING	6
2.6	Soil Gas A	ANALYTICAL RESULTS6	õ
3.0	PROPERTY	STATUS	7
4.0	REFERENC	ES	7
		Tables	
Table	1	Laboratory Analytical Results - Soil	
Table	2	Laboratory Analytical Results - Groundwater	
Table	3	Laboratory Analytical Results - Vapor	
		Appendices	
Appen	ıdix A	Multi-Media Selection Process for LBMH	
Appendix B		UST Assessment Report	
Appen	dix C	Laboratory Analytical Report - Groundwater	
Appen	dix D	Laboratory Analytical Report - Vapor	
Appendix E		Regulatory Correspondence	



List of Acronyms

bgs below ground surface

BTEX benzene, toluene, ethylbenzene, and xylenes

CTO Contract Task Order

COPC constituents of potential concern

ft feet

IDIQ Indefinite Delivery, Indefinite Quantity

IGWA Initial Groundwater Assessment

JV Joint Venture

LBMH Laurel Bay Military Housing MCAS Marine Corps Air Station

NAVFAC Mid-Lant Naval Facilities Engineering Command Mid-Atlantic

NFA No Further Action

PAH polynuclear aromatic hydrocarbon

PPV Public-Private Venture

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

UFP SAP Uniform Federal Policy Sampling and Analysis Plan
USEPA United States Environmental Protection Agency

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 610 West Cardinal Lane (Formerly 1461 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.

In 2015, the Public-Private Venture (PPV) responsible for the management of the residential area at LBMH initiated a plan to replace outdated homes in the LBMH area. The plan includes the demolition of existing homes and subsequent construction of new homes. In discussions with the PPV it was revealed that construction of the new homes could occur on portions of the property where the USTs were formerly located. In response to this plan, MCAS Beaufort assessed subsurface soil gas concentrations in the area of the former USTs at select properties within the demolition areas. The subject property of this report is one of the properties within the planned demolition area which was selected for a soil gas evaluation. It should be noted that the house at the subject property has since been demolished and this property is an empty lot. There are no current plans for construction in this 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. A multi-media investigation selection process tree, applicable to the LBMH UST investigations, is presented as Appendix A.

In accordance with the multi-media investigation selection process (Appendix A), groundwater analytical results are typically compared to the site specific groundwater vapor intrusion screening levels (VISLs) to evaluate the potential for vapor intrusion into existing homes and the necessity for an investigation associated with this media. However, as previously stated, this property did not have an existing home and instead was among those selected for an evaluation of soil gas because of the planned demolition and construction activities.



2.0 SAMPLING ACTIVITIES AND RESULTS

The following section presents the sampling activities and associated results for 610 West Cardinal Lane (Formerly 1461 West Cardinal Lane). The sampling activities at 610 West Cardinal Lane (Formerly 1461 West Cardinal Lane) comprised a soil investigation, IGWA sampling, and a soil gas investigation. Details regarding the soil investigation at this site are provided in the SCDHEC UST Assessment Report – 1461 West Cardinal Lane (MCAS Beaufort, 2009). The UST Assessment Report is provided in Appendix B. Details regarding the IGWA sampling activities at this site are provided in the Initial Groundwater Investigation Report – February 2015 (Resolution Consultants, 2015). The laboratory report that includes the pertinent IGWA analytical results for this site is presented in Appendix C. Details regarding the vapor intrusion investigation at this site are provided in the Technical Memorandum – Soil Gas Sampling Results – October 2014 (Resolution Consultants, 2015). The laboratory report that includes the pertinent soil gas analytical results for this site is presented in Appendix D.

2.1 UST Removal and Soil Sampling

On August 10, 2009, a single 280 gallon heating oil UST was removed from the front grassed area at 610 West Cardinal Lane (Formerly 1461 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 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 6'0" bgs and a single soil sample was collected from that depth. The sample was collected from the fill port side of the former UST to represent a worst case scenario.

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

2.2 Soil Analytical Results

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



The soil sample results were submitted by MCAS Beaufort to SCDHEC utilizing SCDHEC's UST Assessment Report form (Appendix B). The results of the soil sampling at the former UST location were used by MCAS Beaufort, in consultation with SCDHEC, to determine a path forward (i.e., additional sampling or NFA) for the property. The soil results collected from 610 West Cardinal Lane (Formerly 1461 West Cardinal Lane) were greater than the SCDHEC RBSLs, which indicated further investigation was required. In a letter dated April 1, 2014, SCDHEC requested an IGWA for 610 West Cardinal Lane (Formerly 1461 West Cardinal Lane) to determine if the groundwater was impacted by petroleum COPCs. SCDHEC's request letter is provided in Appendix E.

2.3 Groundwater Sampling

On February 4, 2015, a temporary monitoring well was installed at 610 West Cardinal Lane (Formerly 1461 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 – February 2015* (Resolution Consultants, 2015).

The sampling strategy for this phase of the investigation required a one-time sampling event of the temporarily installed monitoring well. Following well installation and development, groundwater samples were collected using low-flow methods and shipped to an offsite laboratory for analysis of the petroleum COPCs. Upon completion of groundwater sampling, the temporary well was abandoned in accordance with the South Carolina Well Standards and Regulations R.61-71 (SCDHEC, 2016). Field forms are provided in the *Initial Groundwater Investigation Report – February 2015* (Resolution Consultants, 2015).

2.4 Groundwater Analytical Results

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

The groundwater results collected from 610 West Cardinal Lane (Formerly 1461 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.

2.5 Soil Gas Sampling

On October 2, 2014, a temporary subsurface soil gas well was installed at 610 West Cardinal Lane (Formerly 1461 West Cardinal Lane) in accordance with the SCDHEC approved *Uniform Federal Policy Sampling and Analysis Plan (UFP SAP) for Vapor Media* (Resolution Consultants, 2015). Soil gas sampling was conducted at this property to assess the potential risk for vapor intrusion associated with the possible construction of a new home on top of former the UST location. The soil gas well was placed in the same general location as the former heating oil UST and the IGWA sample location. The former UST location is indicated on Figures 2 and 3 of the UST Assessment Report (Appendix B). Further details are provided in the *Technical Memorandum – Soil Gas Sampling Results – October 2014* (Resolution Consultants, 2015).

The sampling strategy for this phase of the investigation required a one-time sampling event of the soil gas well. The subsurface soil gas well at 610 West Cardinal Lane (Formerly 1461 West Cardinal Lane) was sampled on October 7, 2014. A soil gas sample was collected and was shipped to an offsite laboratory for analysis of the petroleum COPCs. Upon completion of soil gas sampling, the temporary well was abandoned in accordance with the *UFP SAP for Vapor Media* (Resolution Consultants, 2015). Field forms are provided in the *Technical Memorandum – Soil Gas Sampling Results – October 2014* (Resolution Consultants, 2015).

2.6 Soil Gas Analytical Results

A summary of the laboratory analytical results and USEPA (United States Environmental Protection Agency) VISLs is presented in Table 3. A copy of the laboratory analytical data report is included in Appendix D.

The soil gas results collected from 610 West Cardinal Lane (Formerly 1461 West Cardinal Lane) were below the USEPA VISLs, which indicated that subsurface soil gas 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

The house at 610 West Cardinal Lane (Formerly 1461 West Cardinal Lane) was demolished and the property is an empty lot. There are no current plans for construction in this area. Based on the analytical results for groundwater, SCDHEC made the determination that NFA was required for 610 West Cardinal Lane (Formerly 1461 West Cardinal Lane). The NFA determination for groundwater was obtained in a letter dated May 5, 2015. Based on the analytical results for soil gas, it was determined that there was not a vapor intrusion concern at this property and a recommendation was made for no additional vapor intrusion assessment activities. SCDHEC approved the no further vapor intrusion investigation recommendation for 610 West Cardinal Lane (Formerly 1461 West Cardinal Lane) in a letter dated March 10, 2015. SCDHEC's letters are provided in Appendix E.

4.0 REFERENCES

- Marine Corps Air Station Beaufort, 2009. South Carolina Department of Health and Environmental Control (SCDHEC) Underground Storage Tank Assessment Report 1461 West Cardinal Lane, Laurel Bay Military Housing Area, November 2009.
- Resolution Consultants, 2015. *Initial Groundwater Investigation Report February 2015 for Laurel Bay Military Housing Area, Multiple Properties, Laurel Bay Military Housing Area, Marine Corps Air Station Beaufort, Beaufort, South Carolina*, April 2015.
- Resolution Consultants, 2015. *Technical Memorandum Soil Gas Sampling Results October*2014 for Laurel Bay Military Housing Area, Multiple Properties, Laurel Bay Military
 Housing Area, Marine Corps Air Station Beaufort, Beaufort, South Carolina, January
 2015.
- Resolution Consultants, 2015. *Uniform Federal Policy Sampling and Analysis Plan for Vapor Media, for Laurel Bay Military Housing Area, Marine Corps Air Station Beaufort, Beaufort, South Carolina*, February 2015.
- South Carolina Department of Health and Environmental Control Bureau of Land and Waste Management, 2013. *Quality Assurance Program Plan for the Underground Storage Tank Management* Division, *Revision 2.0*, April 2013.



- South Carolina Department of Health and Environmental Control Bureau of Land and Waste Management, 2015. *Quality Assurance Program Plan for the Underground Storage Tank Management* Division, *Revision 3.0*, May 2015.
- South Carolina Department of Health and Environmental Control Bureau of Land and Waste Management, 2016. *Quality Assurance Program Plan for the Underground Storage Tank Management* Division, *Revision 3.1*, February 2016.
- South Carolina Department of Health and Environmental Control Bureau of Land and Waste Management, 2017. *R.61-92, Part 280, Underground Storage Tank Control Regulations*, March 2017.
- South Carolina Department of Health and Environmental Control Bureau of Land and Waste Management, 2018. *Underground Storage Tank Assessment Instructions for Permanent Closure and Change-In-Service*, March 2018.
- South Carolina Department of Health and Environmental Control Bureau of Water, 2016. *R.61-71, Well Standards,* June 2016.
- United States Environmental Protection Agency, 2014. *USEPA OSWER Vapor Intrusion Assessment, Vapor Intrusion Screening Level Calculator, Version 3.3.1,* May 2014.

Tables



Table 1

Laboratory Analytical Results - Soil 610 West Cardinal Lane (Formerly 1461 West Cardinal Lane)

Laurel Bay Military Housing Area Marine Corps Air Station Beaufort Beaufort, South Carolina

Constituent	SCDHEC RBSLs (1)	Results Sample Collected 08/10/09
Volatile Organic Compounds Analyze	d by EPA Method 8260B (mg/kg)	
Benzene	0.007	ND
Ethylbenzene	1.15	0.0228
Naphthalene	0.036	0.0673
Toluene	1.45	ND
Xylenes, Total	14.5	0.0755
Semivolatile Organic Compounds Ana	alyzed by EPA Method 8270D (mg/kg)	
Benzo(a)anthracene	0.066	10.5
Benzo(b)fluoranthene	0.066	5.56
Benzo(k)fluoranthene	0.066	4.48
Chrysene	0.066	9.62
Dibenz(a,h)anthracene	0.066	ND

Notes:

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

⁽¹⁾ South Carolina Risk-Based Screening Levels from the Quality Assurance Program Plan for the Underground Storage Tank Management Division, Revision 1.0 (SCDHEC, May 2001).

Table 2

Laboratory Analytical Results - Groundwater 610 West Cardinal Lane (Formerly 1461 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 02/05/15
Volatile Organic Compounds Analyzed	d by EPA Method 8260B (µg	g/L)	
Benzene	5	16.24	ND
Ethylbenzene	700	45.95	0.35
Naphthalene	25	29.33	4.9
Toluene	1000	105,445	ND
Xylenes, Total	10,000	2,133	0.59
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 2.0 (SCDHEC, April 2013).
- (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

Table 3

Laboratory Analytical Results - Vapor 610 West Cardinal Lane (Formerly 1461 West Cardinal Lane)

Laurel Bay Military Housing Area Marine Corps Air Station Beaufort Beaufort, South Carolina

Constituent	USEPA VISL (1)	Results Sample Collected 10/07/14				
Volatile Organic Compounds Analyzed by USEPA Method TO-15 (μg/m³)						
Benzene	12	ND				
Toluene	17000	0.52				
Ethylbenzene	37	ND				
m,p-Xylenes	350	ND				
m,p-Xylenes o-Xylene	350	ND				
Naphthalene	2.8	ND				

Notes:

VISLs are based on a residual exposure scenario and a target risk level of $1x10^{-6}$ and a hazard quotient of 0.1. Bold font indicates the analyte was detected.

Bold font and shading indicates the concentration exceeds the residential VISL.

USEPA - United States Environmental Protection Agency

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

RBSL - Risk-Based Screening Level

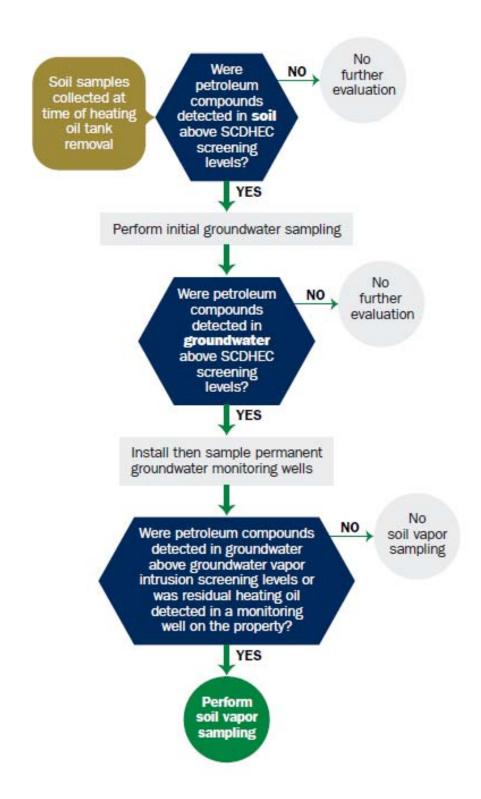
μg/m³ - micrograms per cubic meter

VISL - Vapor Intrusion Screening Level

⁽¹⁾ United States Environmental Protection Agency Exterior Soil Gas Vapor Intrusion Screening Level (VISL) from VISL Calculator (Version 3.3.1, May 2014).

Appendix A Multi-Media Selection Process for LBMH



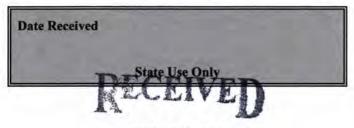


Appendix A - Multi-Media Selection Process for LBMH

Appendix B UST Assessment Report



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



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

NOV 0 9 2009

SC DHEC - Burasu of Land & Waste Management

I. OWNERSHIP OF UST (S)

	mmanding Officer Attn: N. n, Individual, Public Agency, Other)	REAO (Craig Ehde)
	i, 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

Dameit I D. #	_			
Permit I.D. #	***********************************		71. OL-11.	D
Laurel Bay Milita	ry Housing Area, Ma	rine Corps	Air Station,	Beaufort, SC
Facility Name or Company	Site Identifier			
1461 Cardinal Lan	ne, Laurel Bay Mili	tary Housin	g Area	
Street Address or State Roa				
	Con III			
Beaufort,	Beaufort			
City	County			
	13 5 - 1			

Attachment 2

III. INSURANCE INFORMATION

	Insuran	ce Statement
qualify to receive state monie	s to pay for appropriate fund, written confirmat	at Permit ID Number may site rehabilitation activities. Before participation is ion of the existence or non-existence of an environmental mpleted.
	ere ever been an insurar NO (check or	ice policy or other financial mechanism that covers this ne)
If you answere	d YES to the above que	stion, please complete the following information:
	My policy provider is:_ The policy deductible is The policy limit is:_	S:
If you have this type o	f insurance, please inclu	ide a copy of the policy with this report.
1 DO / DO NOT wi		GUPERB Program. (Circle one.)
V.	CERTIFICATION	(To be signed by the UST owner)
I certify that I have persona attached documents; and the information, I believe that the	ally examined and am hat based on my inqu he submitted informati	familiar with the information submitted in this and all iry of those individuals responsible for obtaining this on is true, accurate, and complete.
Name (Type or print.)		
Signature		 -
To be completed by No	otary Public:	
Sworn before me this	day of	, 20
(Name)		
Notary Public for the state of Please affix State seal if you a	re commissioned outsid	e South Carolina

VI. UST INFORMATION	1461Cardinal
Product(ex. Gas, Kerosene)	Heating oil
Capacity(ex. 1k, 2k)	280 gal
Age	Late 1950s
Construction Material(ex. Steel, FRP)	Steel
Month/Year of Last Use	Mid 1980s
Depth (ft.) To Base of Tank	61
Spill Prevention Equipment Y/N	No
Overfill Prevention Equipment Y/N	No
Method of Closure Removed/Filled	Removed
Date Tanks Removed/Filled	8/10/09
Visible Corrosion or Pitting Y/N	Yes
Visible Holes Y/N	Yes
Method of disposal for any USTs removed from the UST 1461Cardinal was removed from Subtitle "D" landfill. See Attack	m the ground and disposed of at a
Method of disposal for any liquid petroleum, sludg disposal manifests)	ges, or wastewaters removed from the USTs (attacously filled with sand by others.
	Capacity(ex. 1k, 2k)

VII. PIPING INFORMATION

		1461Cardinal
		Steel
	Construction Material(ex. Steel, FRP)	& Copper
	Distance from UST to Dispenser	N/A
	Number of Dispensers	N/A
	Type of System Pressure or Suction	Suction
	Was Piping Removed from the Ground? Y/N	Yes
	Visible Corrosion or Pitting Y/N	Yes
	Visible Holes Y/N	No
	Age	Late 1950s
	If any corrosion, pitting, or holes were observed, Corrosion and pitting were foun	d on the surface of the steel v
	pipe. Copper supply and return	lines were sound.
100		AND WETODY
	VIII. BRIEF SITE DESCR The USTs at the residences are c	
	The USTs at the residences are cand formerly contained fuel oil	onstructed of single wall steel for heating. These USTs were
	The USTs at the residences are c	onstructed of single wall steel for heating. These USTs were
	The USTs at the residences are cand formerly contained fuel oil	onstructed of single wall steel for heating. These USTs were
- A	The USTs at the residences are cand formerly contained fuel oil	onstructed of single wall steel for heating. These USTs were

IX. SITE CONDITIONS

	Yes	No	Unk
A. Were any petroleum-stained or contaminated soils found in the UST excavation, soil borings, trenches, or monitoring wells? If yes, indicate depth and location on the site map.		Х	
B. Were any petroleum odors detected in the excavation, soil borings, trenches, or monitoring wells?		x	
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. Name of DHEC representative authorizing soil removal:		Х	
E. Was a petroleum sheen or free product detected on any excavation		х	
or boring waters? If yes, indicate location and thickness.			

X. SAMPLE INFORMATION

A. SCDHEC Lab Certification Number 84009001

B.

Sample #	Location	Sample Type (Soil/Water)	Soil Type (Sand/Clay)	Depth*	Date/Time of Collection	Collected by	OVA #
1461 Cardinal	Excav at fill end	Soil	Sandy	6'	8/10/09 1315 hrs	P. Shaw	
					-		
		11					
o							
8				1			
9							
10							
11							
12	,						
13						1	
14							
15							
16							
17						1	
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.

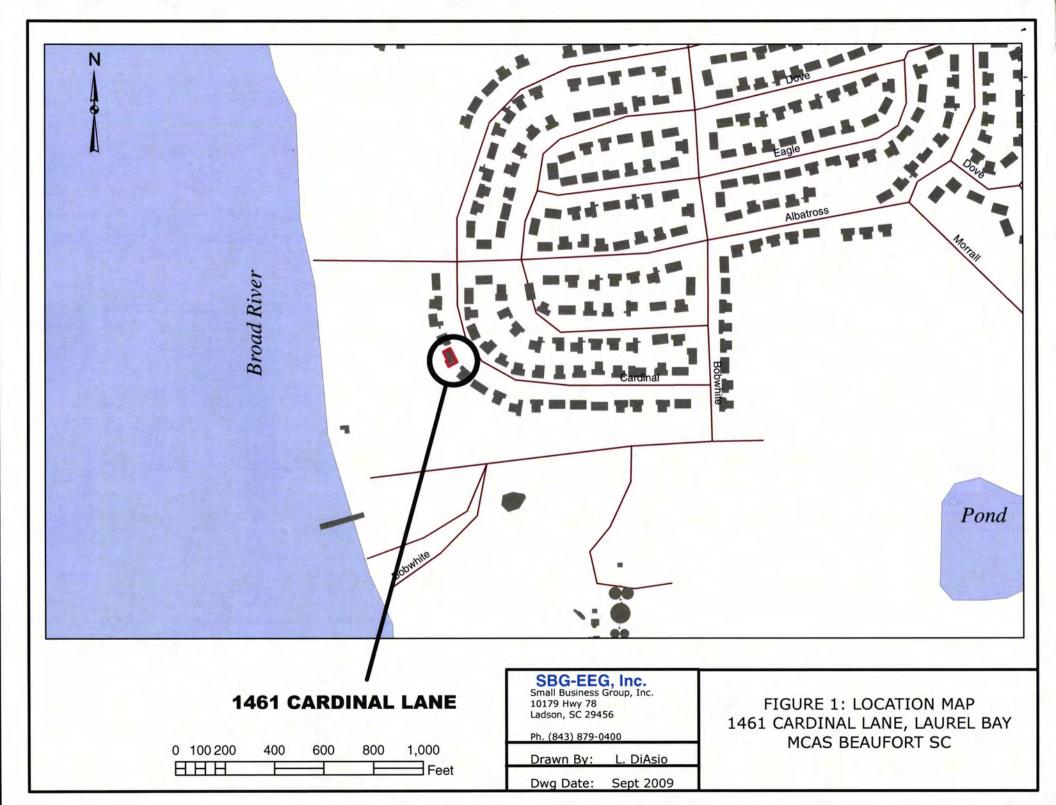
XII. RECEPTORS

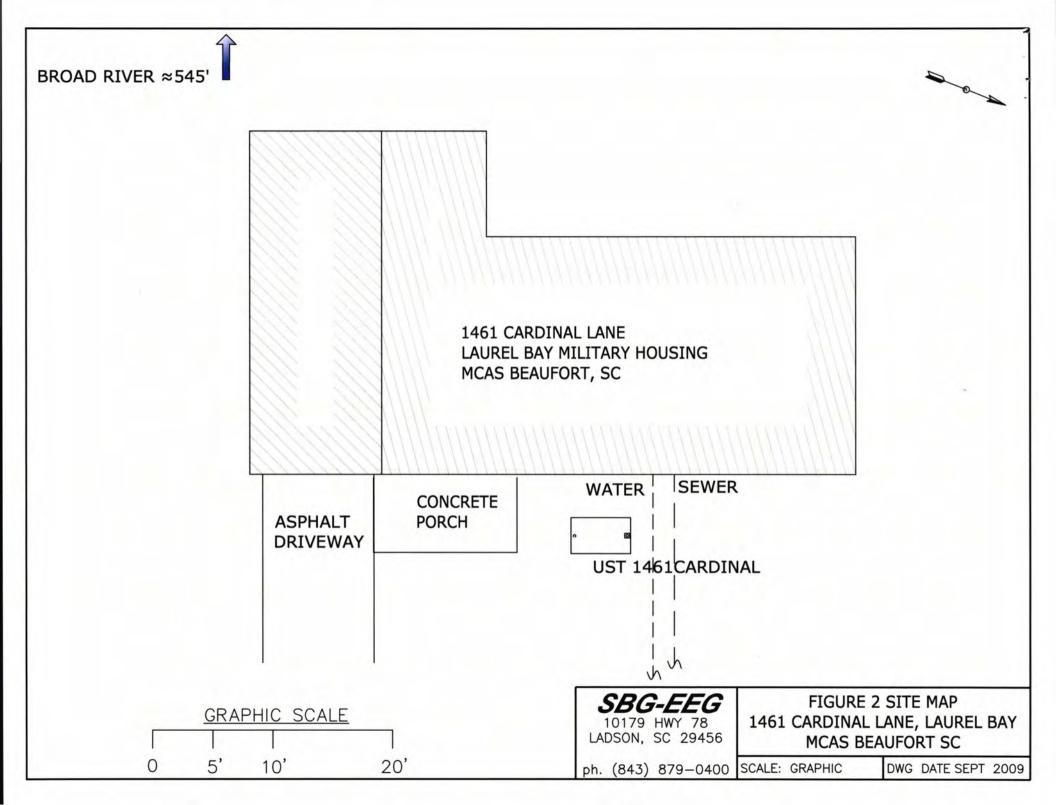
		Yes	No
A.	Are there any lakes, ponds, streams, or wetlands located within 1000 feet of the UST system? *Broad R. ~545'	*X	
	If yes, indicate type of receptor, distance, and direction on site map.		
B.	Are there any public, private, or irrigation water supply wells within 1000 feet of the UST system?		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 contamination? *Sewer & water.	*X	
	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)





1461 CARDINAL LANE SEWER CONCRETE **EXCAVATION PORCH** SOIL SAMPLE 1461 CARDINAL UST 1461CARDINAL, **GRASS** FILL END 280 GAL.

BROAD RIVER ≈545'

UST 1461CARDINAL WAS 36" BELOW GRADE

SBG-EEG 10179 HWY 78 LADSON, SC 29456

ph. (843) 879-0400 SCALE: GRAPHIC

FIGURE 3 UST SAMPLE LOCATIONS 1461 CARDINAL LANE, LAUREL BAY MCAS BEAUFORT SC

DWG DATE SEPT 2009





-

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	1461Cardinal		
Benzene	ND		
Toluene	ND		
Ethylbenzene	0.0228 mg/kg		
Xylenes	0.0755 mg/kg		
Naphthalene	0.0673 mg/kg		
Benzo (a) anthracene	10.5 mg/kg		
Benzo (b) fluoranthene	5.56 mg/kg		
Benzo (k) fluoranthene	4.48 mg/kg		
Chrysene	9.62 mg/kg		
Dibenz (a, h) anthracene	ND		
TPH (EPA 3550)			
3.2			
CoC			
Benzene			
Toluene			
Ethylbenzene			
Xylenes			
Naphthalene			
Benzo (a) anthracene			
Benzo (b) fluoranthene			
Benzo (k) fluoranthene			
Chrysene			
Dibenz (a, h) anthracene			

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				1
Xylenes	10,000				
Total BTEX	N/A				
МТВЕ	40			-	111
Naphthalene	25				100
Benzo (a) anthracene	10				
Benzo (b) flouranthene	10				
Benzo (k) flouranthene	10				
Chrysene	10				1 ==
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)





September 09, 2009

1:17:54PM

Client:

EEG - Small Business Group, Inc. (2449)

10179 Highway 78

Ladson, SC 29456

Attn:

Tom McElwee

Work Order:

NSH1232

Project Name:

Laurel Bay Housing Project

Project Nbr: P/O Nbr: [none] 08087

Date Received:

08/14/09

SAMPLE IDENTIFICATION	LAB NUMBER	COLLECTION DATE AND TIME
1461 Cardinal	NSH1232-01	08/10/09 13:15
1456 Cardinal	NSH1232-02	08/10/09 10:30
1465 Cardinal	NSH1232-03	08/10/09 15:30
1469 Cardinal	NSH1232-04	08/11/09 09:15
1471 Cardinal	NSH1232-05	08/11/09 12:00
1466 Cardinal	NSH1232-06	08/11/09 15:15
1475 Cardinal	NSH1232-07	08/12/09 10:30
1473 Cardinal	NSH1232-08	08/12/09 14:30
1470 Cardinal	NSH1232-09	08/13/09 10:30

An executed copy of the chain of custody, the project quality control data, and the sample receipt form are also included as an addendum to this report. If you have any questions relating to this analytical report, please contact your Laboratory Project Manager at 1-800-765-0980. Any opinions, if expressed, are outside the scope of the Laboratory's accreditation.

This material is intended only for the use of the individual(s) or entity to whom it is addressed, and may contain information that is privileged and confidential. If you are not the intended recipient, or the employee or agent responsible for delivering this material to the intended recipient, you are hereby notified that any dissemination, distribution, or copying of this material is strictly prohibited. If you have received this material in error, please notify us immediately at 615-726-0177.

Additional Laboratory Comments:

REVISED REPORT: 09/09/09 KAH - To correct sample ID for NSH1232-03 from 1565 Cardinal to 1465

Cardinal as shown on the COC. This report replaces the one generated on 08/28/09 @ 16:02.

South Carolina Certification Number: 84009001

The Chain(s) of Custody, 2 pages, are included and are an integral part of this report.

These results relate only to the items tested. This report shall not be reproduced except in full and with permission of the laboratory.

All solids results are reported in wet weight unless specifically stated.

Estimated uncertainty is available upon request.

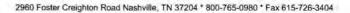
This report has been electronically signed.

Kem & A Hage

Report Approved By:

Ken A. Hayes

Senior Project Manager





10179 Highway 78 Ladson, SC 29456

Attn Tom McElwee

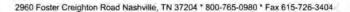
Work Order: NSH1232

Project Name: Laurel Bay Housing Project

Project Number: [none]

Received: 08/14/09 08:10

			ANALITICAL	KEIOKI					
Analyte	Result	Flag	Units	MRL	Dilution Factor	Analysis Date/Time	Method	Analyst	Batch
Sample ID: NSH1232-01 (1461 C	ardinal - Soil) S	ampled:	08/10/09 13:15	5					
General Chemistry Parameters									
% Dry Solids	81.4		9/6	0.500	1	08/21/09 09:35	SW-846	ВЈМ	9083242
Selected Volatile Organic Compound	s by EPA Method	8260B							
Benzene	ND		mg/kg dry	0.00212	1	08/21/09 16:32	SW846 8260B	SMS	9082342
Ethylbenzene.	0.0228		mg/kg dry	0.00212	a a	08/21/09 16:32	SW846 8260B	SMS	9082342
Naphthalene	0.0673		mg/kg dry	0.00530	1	08/21/09 16:32	SW846 8260B	SMS	9082342
Toluene	ND		mg/kg dry	0.00212	1	08/21/09 16:32	SW846 8260B	SMS	9082342
Xylenes, total	0.0755		mg/kg dry	0.00530	3	08/21/09 16:32	SW846 8260B	SMS	9082342
Surr: 1,2-Dichloroethane-d4 (67-138%)	133 %					08/21/09 16:32	SW846 8260B	SMS	908234.
Surr: Dibromofluoromethane (75-125%)	112%					08/21/09 16:32	SWN46 8260B	SMS	908234
Surr: Toluene-d8 (76-129%)	129 %					08/21/09 16:32	SW846 8260B	SMS	908234
Surr: 4-Bromofluorobenzene (67-147%)	336 %	ZX				08/21/09 16:32	SW846 8260B	SMS	908234.
Polyaromatic Hydrocarbons by EPA	3270D								
Acenaphthene	ND		mg/kg dry	0.810	10	08/22/09 05:57	SW846 8270D	JLS	9082465
Acenaphthylene	ND		mg/kg dry	0.810	10	08/22/09 05:57	SW846 8270D	JLS	9082465
Anthracene	2.14		mg/kg dry	0.810	10	08/22/09 05:57	SW846 8270D	JLS	9082465
Benzo (a) anthracene	10.5		mg/kg dry	0.810	10	08/22/09 05:57	SW846 8270D	JLS	9082465
Benzo (a) pyrene	4.71		mg/kg dry	0.810	10	08/22/09 05:57	SW846 8270D	JLS	9082465
Benzo (b) fluoranthene	5.56		mg/kg dry	0.810	10	08/22/09 05:57	SW846 8270D	JLS	9082465
Benzo (g,h,i) perylene	1.17		mg/kg dry	0.810	10	08/22/09 05:57	SW846 8270D	JLS	9082465
Benzo (k) fluoranthene	4.48		mg/kg dry	0.810	10	08/22/09 05;57	SW846 8270D	JLS	9082465
Chrysene	9.62		mg/kg dry	0.810	10	08/22/09 05:57	SW846.8270D	JLS	9082465
Dibenz (a,h) anthracene	ND		mg/kg dry	0.810	10	08/22/09 05:57	SW846 8270D	JLS	9082465
Fluoranthene	23.9		mg/kg dry	0.810	10	08/22/09 05:57	SW846 8270D	JLS	9082465
Fluorene	2.77		mg/kg dry	0.810	10	08/22/09 05:57	SW846 8270D	JLS	9082465
Indeno (1,2,3-cd) pyrene	1.37		mg/kg dry	0.810	10	08/22/09 05:57	SW846 8270D	JLS	9082465
Naphthalene	ND		mg/kg dry	0.810	10	08/22/09 05:57	SW846 8270D	JLS	9082465
Phenanthrene	7.63		mg/kg dry	0.810	10	08/22/09 05:57	SW846 8270D	JLS	9082465
Pyrene	22.6		mg/kg dry	0.810	10	08/22/09 05:57	SW846 8270D	JLS	9082465
I-Methylnaphthalene	6.05		mg/kg dry	0.810	10	08/22/09 05:57	SW846 8270D	JLS	9082465
2-Methylnaphthalene	7.79		mg/kg dry	0.810	10	08/22/09 05:57	SW846 8270D	JLS	9082465
Surr: Terphenyl-d14 (18-120%)	710 %					08/22/09 05:57	SW846 8270D	JLS	908246
Surr: 2-Fluorobiphenyl (14-120%)	103 %					08/22/09 05:57	SW846 8270D	JLS	9082465
Surr: Nitrobenzene-d5 (17-120%)	144%	ZX				08/22/09 05:57	SW846 8270D	JLS	9082465





10179 Highway 78 Ladson, SC 29456

Tom McElwee

Attn

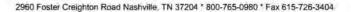
Work Order: NSH1232

Project Name: Laurel Bay Housing Project

Project Number: [none]

Received: 08/14/09 08:10

			ANALTTICAL	KEI OKI	- W-27-2-19	C. W. CARROL			_
Analyte	Result	Flag	Units	MRL	Dilution Factor	Analysis Date/Time	Method	Analyst	Batch
Sample ID: NSH1232-02 (1456 Ca	ardinal - Soil) S	ampled:	08/10/09 10:30	i.					
General Chemistry Parameters									
% Dry Solids	80.6		9/4	0.500	1	08/21/09 09:35	SW-846	вум	9083242
Selected Volatile Organic Compounds	s by EPA Method	8260B							
Benzene	ND		mg/kg dry	0.00217	I.	08/21/09 17:02	SW846 8260B	SMS	9082342
Ethylbenzene	0.669		mg/kg dry	0.106	50	08/24/09 17:09	SW846 8260B	SMS	9083618
Naphthalene	6.74		mg/kg dry	0.265	50	08/24/09 17:09	SW846 8260B	SMS	9083618
Toluene	ND		mg/kg dry	0.00217	1	08/21/09 17:02	SW846 8260B	SMS	9082342
Xylenes, total	1.71		mg/kg dry	0.265	50	08/24/09 17:09	SW846 8260B	SMS	9083618
Surr: 1,2-Dichloroethane-d4 (67-138%)	121 %					08/21/09 17:02	SW846 8260B	SMS	908234
Surr: 1,2-Dichloroethane-d4 (67-138%)	118 %					08/24/09 17:09	SW846 8260B	SMS	908361
Surr: Dibromofluoromethane (75-125%)	104 %					08/21/09 17:02	SW846 8260B	SMS	908234
Surr: Dibromofluoromethane (75-125%)	95 %					08/24/09 17:09	SW846 8260B	SMS	908361
Surr: Toluene-d8 (76-129%)	145 %	ZY				08/21/09 17:02	SW846 8260B	SMS	908234
Surr: Toluene-d8 (76-129%)	105 %					08/24/09 17:09	SW846 8260B	SMS	908361
Surr: 4-Bromofluorobenzene (67-147%)	245 %	ZX				08/21/09 17:02	SW846 8260B	SMS	908234
Surr: 4-Bromofluorobenzene (67-147%)	101%					08/24/09 17:09	SW846 8260B	SMS	908361
Polyaromatic Hydrocarbons by EPA 8	3270D								
Acenaphthene	ND		mg/kg dry	0.414	5	08/22/09 06:21	SW846 8270D	JLS	9082465
Acenaphthylene	ND		mg/kg dry	0.414	5	08/22/09 06:21	SW846 8270D	JLS	9082465
Anthracene	0.589		mg/kg dry	0.414	5	08/22/09 06:21	SW846 8270D	JLS	9082465
Benzo (a) anthracene	1.98		mg/kg dry	0.414	5	08/22/09 06:21	SW846 8270D	JLS	9082465
Benzo (a) pyrene	0.914		mg/kg dry	0.414	5	08/22/09 06:21	SW846 8270D	JLS	9082465
Benzo (b) fluoranthene	1.13		mg/kg dry	0.414	5	08/22/09 06:21	SW846 8270D	JLS	9082465
Benzo (g,h,i) perylene	ND		mg/kg dry	0.414	5	08/22/09 06:21	SW846 8270D	JLS	9082465
Benzo (k) fluoranthene	0.957		mg/kg dry	0.414	5	08/22/09 06:21	SW846 8270D	JLS	9082465
Chrysene	2.14		mg/kg dry	0.414	5	08/22/09 06:21	SW846 8270D	JLS	9082465
Dibenz (a,h) anthracene	ND		mg/kg dry	0.414	5	08/22/09 06:21	SW846 8270D	JLS	9082465
Fluoranthene	4.21		mg/kg dry	0.414	5	08/22/09 06:21	SW846 8270D	JLS	9082465
Fluorene	1.16		mg/kg dry	0.414	5	08/22/09 06:21	SW846 8270D	JLS	9082465
Indeno (1,2,3-cd) pyrene	ND		mg/kg dry	0.414	5	08/22/09 06:21	SW846 8270D	JLS	9082465
Naphthalene	1.19		mg/kg dry	0.414	5	08/22/09 06:21	SW846 8270D	JLS	9082465
Phenanthrene	2.99		mg/kg dry	0.414	5	08/22/09 06:21	SW846 8270D	JLS	9082465
Pyrene	3.64		mg/kg dry	0.414	5	08/22/09 06:21	SW846 8270D SW846 8270D	JLS	9082465
I-Methylnaphthalene	5.07		mg/kg dry	0.414	5	08/22/09 06:21	SW846 8270D SW846 8270D	JLS	9082465
2-Methylnaphthalene	6.50		mg/kg dry	0.414	5	08/22/09 06:21		JLS	9082465
Surr: Terphenyl-d14 (18-120%)	94 %					08/22/09 06:21	SW846-8270D	JLS	908246
Surr: 2-Fluorobiphenyl (14-120%)	82 %					08/22/09 06;21	SW846 8270D	JLS	908246
Surr: Nitrobenzene-d5 (17-120%)	104 %					08/22/09 06:21	SW846 8270D	JLS	908246





10179 Highway 78 Ladson, SC 29456

Tom McElwee

Attn

Work Order: N

NSH1232

Project Name: Laurel Bay Housing Project

Project Number: [none]

Received: 08/14/09 08:10

			ANALYTICAL	REPORT					
Analyte	Result	Flag	Units	MRL	Dilution Factor	Analysis Date/Time	Method	Analyst	Batch
Sample ID: NSH1232-03 (1465 Ca	ardinal - Soil) S	ampled:	08/10/09 15:30						
General Chemistry Parameters									
% Dry Solids	83.6		0/0	0.500	1	08/21/09 09:35	SW-846	ВЈМ	9083242
Selected Volatile Organic Compounds	by EPA Method	8260B							
Benzene	ND		mg/kg dry	0.00206	1	08/21/09 17:31	SW846 8260B	SMS	9082342
Ethylbenzene	0.404		mg/kg dry	0.110	.50	08/24/09 17:38	SW846 8260B	SMS	9083618
Naphthalene	4.97		mg/kg dry	0.276	50	08/24/09 17:38	SW846 8260B	SMS	9083618
Toluene	0.0106		mg/kg dry	0.00206	1	08/21/09 17:31	SW846 8260B	SMS	9082342
Xylenes, total	1.58		mg/kg dry	0.276	50	08/24/09 17:38	SW846 8260B	SMS	9083618
Surr: 1,2-Dichloroethane-d4 (67-138%)	113 %					08/21/09 17:31	SW846 8260B	SMS	908234
Surr: 1,2-Dichloroethane-d4 (67-138%)	130 %					08/24/09 17:38	SW846 8260B	SMS	908361
Surr: Dibromofluoromethane (75-125%)	99 %					08/21/09 17:31	SW846 8260B	SMS	908234
Surr: Dibromofluoromethane (75-125%)	101%					08/24/09 17:38	SW846 8260B	SMS	908361
Surr: Toluene-d8 (76-129%)	341 %	ZX				08/21/09 17:31	SW846 8260B	SMS	908234
Surr: Toluene-d8 (76-129%)	97 %					08/24/09 17:38	SW846 8260B	SMS	908361
Surv: 4-Bromofluorobenzene (67-147%)	4670%	ZX				08/21/09 17:31	SW846 8260B	SMS	908234
Surr: 4-Bromofluorobenzene (67-147%)	118 %					08/24/09 17:38	SW846 8260B	SMS	908361
Polyaromatic Hydrocarbons by EPA 8	3270D								
Acenaphthene	ND		mg/kg dry	0.779	10	08/22/09 06:45	SW846 8270D	JLS	9082465
Acenaphthylene	ND		mg/kg dry	0.779	10	08/22/09 06:45	SW846 8270D	JLS	9082465
Anthracene	1.22		mg/kg dry	0.779	10	08/22/09 06:45	SW846 8270D	JLS	9082465
Benzo (a) anthracene	1.16		mg/kg dry	0.779	10	08/22/09 06:45	SW846 8270D	JLS	9082465
Benzo (a) pyrene	ND		mg/kg dry	0.779	10	08/22/09 06:45	SW846 8270D	JLS	9082465
Benzo (b) fluoranthene	ND		mg/kg dry	0.779	1.0	08/22/09 06:45	SW846 8270D	JLS	9082465
Benzo (g,h,i) perylene	ND		mg/kg dry	0.779	10	08/22/09 06:45	SW846 8270D	JLS	9082465
Benzo (k) fluoranthene	ND		mg/kg dry	0.779	10	08/22/09 06:45	SW846 8270D	JLS	9082465
Chrysene	1.21		mg/kg dry	0,779	10	08/22/09 06:45	SW846 8270D	JLS	9082465
Dibenz (a,h) anthracene	ND		mg/kg dry	0.779	10	08/22/09 06:45	SW846 8270D	JLS	9082465
Fluoranthene	2.95		mg/kg dry	0,779	10	08/22/09 06:45	SW846 8270D	JLS	9082465
Fluorene	4.60		mg/kg dry	0.779	10	08/22/09 06:45	SW846 8270D	JLS	9082465
Indeno (1,2,3-cd) pyrene	ND		mg/kg dry	0,779	10	08/22/09 06:45 08/22/09 06:45	SW846 8270D SW846 8270D	JLS	9082465
Naphthalene	4.08		mg/kg dry	0.779 0.779	10	08/22/09 06:45	SW846 8270D	JLS	9082465
Phenanthrene	8.05 2.93		mg/kg dry mg/kg dry	0,779	10	08/22/09 06:45	SW846 8270D	JLS JLS	9082465
Pyrene I-Methylnaphthalene	19.3		mg/kg dry	0.779	10	08/22/09 06:45	SW846 8270D	JLS	9082465
2-Methylnaphthalene	23.6		mg/kg dry	0.779	10	08/22/09 06:45	SW846 8270D	JLS	9082465
Surr: Terphenyl-d14 (18-120%)	94 %		ing ng til	ALC: A	10	08/22/09 06:45	SW846 8270D	JLS	908246
	97%					08/22/09 06:45			908246
Surr: 2-Fluorobiphenyl (14-120%)							SW846 8270D	JLS	
Surr: Nitrobenzene-d5 (17-120%)	152 %	ZX'				08/22/09 06:45	SW846 8270D	JLS	908246





10179 Highway 78 Ladson, SC 29456

Atm Tom McElwee

Work Order: NSH1232

Project Name: Laurel Bay Housing Project

Project Number: [none]

Received: 08/14/09 08:10

		2	ANALYTICAL	REPORT					
Analyte	Result	Flag	Units	MRL	Dilution Factor	Analysis Date/Time	Method	Analyst	Batch
Sample ID: NSH1232-04 (1469 C	ardinal - Soil) S	ampled:	08/11/09 09:15	5					
General Chemistry Parameters									
% Dry Solids	84.0		%	0.500	1	08/21/09 09:35	SW-846	ВЈМ	9083242
Selected Volatile Organic Compound	s by EPA Method	8260B							
Benzene	ND		mg/kg dry	0.00212	1	08/21/09 18:01	SW846 8260B	SMS	9082342
Ethylbenzene	0.721		mg/kg dry	0.109	50	08/24/09 18:37	SW846 8260B	SMS	9083618
Naphthalene	6.55		mg/kg dry	0.273	50	08/24/09 18:37	SW846 8260B	SMS	9083618
Toluene	ND		mg/kg dry	0.00212	1	08/21/09 18:01	SW846 8260B	SMS	9082342
Xylenes, total	0.427		mg/kg dry	0.273	50	08/24/09 18:37	SW846-8260B	SMS	9083618
Surr: 1,2-Dichloroethane-d4 (67-138%)	111 %					08/21/09 18:01	SW846 8260B	SMS	908234
Surr: 1,2-Dichloroethane-d4 (67-138%)	116 %					08/24/09 18:37	SW846 8260B	SMS	908361
Surr: Dibromofluoromethane (75-125%)	104 %					08/21/09 18:01	SW846 8260B	SMS	908234.
Surr: Dibromofluoromethane (75-125%)	98 36					08/24/09 18:37	SW846 8260B	SMS	908361
Sur: Toluene-d8 (76-129%)	168 %	ZX				08/21/09 18:01	SW846 8260B	SMS	908234.
Surr: Toluene-d8 (76-129%)	105 %					08/24/09 18:37	SW846 8260B	SMS	908361
Surr: 4-Bromofluorobenzene (67-147%)	350 %	ZY				08/21/09 18:01	SW846 8260B	SMS	908234
Surr: 4-Bromofluorobenzene (67-147%)	106 %					08/24/09 18:37	SW846-8260B	SMS	908361
Polyaromatic Hydrocarbons by EPA	8270D								
Acenaphthene	ND		mg/kg dry	0.782	10	08/22/09 07:09	SW846 8270D	JLS.	9082465
Acenaphthylene	ND		mg/kg dry	0.782	10	08/22/09 07:09	SW846 8270D	JLS	9082465
Anthracene	0.817		mg/kg dry	0.782	10	08/22/09 07:09	SW846 8270D	JLS	9082465
Benzo (a) anthracene	ND		mg/kg dry	0.782	10	08/22/09 07:09	SW846 8270D	JLS	9082465
Benzo (a) pyrene	ND		mg/kg dry	0.782	10	08/22/09 07:09	SW846 8270D	JLS	9082465
Benzo (b) fluoranthene	ND		mg/kg dry	0.782	10	08/22/09 07:09	SW846 8270D	JLS	9082465
Benzo (g,h,i) perylene	ND		mg/kg dry	0.782	10	08/22/09 07:09	SW846 8270D	JLS	9082465
Benzo (k) fluoranthene	ND		mg/kg dry	0.782	10	08/22/09 07:09	SW846 8270D	JLS	9082465
Chrysene	ND		mg/kg dry	0.782	10	08/22/09 07:09	SW846 8270D	JLS	9082465
Dibenz (a,h) anthracene	ND		mg/kg dry	0.782	10	08/22/09 07:09	SW846 8270D	JLS	9082465
Fluoranthene	ND		mg/kg dry	0.782	10	08/22/09 07:09	SW846 8270D	JLS	9082465
Fluorene	3.90		mg/kg dry	0.782	10	08/22/09 07:09	SW846 8270D	JLS	9082465
Indeno (1,2,3-cd) pyrene	ND		mg/kg dry	0.782	10	08/22/09 07:09	SW846 8270D	JLS	9082465
Naphthalene	6.18		mg/kg dry	0.782	10	08/22/09 07:09	SW846 8270D	JLS	9082465
Phenanthrene	6.28		mg/kg dry	0.782	10	08/22/09 07:09	SW846 8270D	JLS	9082465
Pyrene	ND		mg/kg dry	0.782	10	08/22/09 07:09	SW846 8270D	JLS	9082465
1-Methylnaphthalene	20.4		mg/kg dry	0.782	10	08/22/09 07:09	SW846 8270D	JLS	9082465
2-Methylnaphthalene	28.4		mg/kg dry	0.782	10	08/22/09 07:09	SW846 8270D	JLS	9082465
Surr: Terphenyl-d14 (18-120%)	113 %					08/22/09 07:09	SW846 8270D	JLS	908246.
Surr: 2-Fluorobiphenyl (14-120%)	92 %					08/22/09 07:09	SW846 8270D	JLS	908246
Surr: Nitrobenzene-d5 (17-120%)	166 %	ZX				08/22/09 07:09	SW846 8270D	JLS	908246





10179 Highway 78 Ladson, SC 29456

Tom McElwee

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Work Order: NSH1232

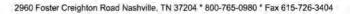
Project Name: La

Laurel Bay Housing Project

Project Number: [none]

Received: 08/14/09 08:10

		-	ANALYTICAL	REPORT	-				
Analyte	Result	Flag	Units	MRL	Dilution Factor	Analysis Date/Time	Method	Analyst	Batch
Sample ID: NSH1232-05 (1471 Ca	ardinal - Soil) S	ampled:	08/11/09 12:00						
General Chemistry Parameters									
% Dry Solids	82.1		%	0.500	0	08/21/09 09:35	SW-846	ВЈМ	9083242
Selected Volatile Organic Compounds	s by EPA Method	8260B							
Benzene	0.00635		mg/kg dry	0.00206	Y	08/21/09 18:30	SW846 8260B	SMS	9082342
Ethylbenzene	0.118		mg/kg dry	0.00206	1	08/21/09 18:30	SW846 8260B	SMS	9082342
Naphthalene	0.393		mg/kg dry	0,268	50	08/24/09 19:06	SW846 8260B	SMS	9083618
Toluene	0.00316		mg/kg dry	0.00206	Î	08/21/09 18:30	SW846 8260B	SMS	9082342
Xylenes, total	0.497		mg/kg dry	0.268	50	08/24/09 19:06	SW846 8260B	SMS	9083618
Surr: 1,2-Dichloroethane-d4 (67-138%)	112 %					08/21/09 18:30	SW846 8260B	SMS	908234.
Surr: 1,2-Dichloroethane-d4 (67-138%)	110%					08/24/09 19:06	SW846 8260B	SMS	908361
Surr: Dibromofluoromethane (75-125%)	101%					08/21/09 18:30	SW846 8260B	SMS	908234
Surr: Dibromofluoromethane (75-125%)	92 %					08/24/09 19:06	SW846 8260B	SMS	908361
Surr: Toluene-d8 (76-129%)	136 %	ZX				08/21/09 18:30	SW846 8260B	SMS	908234.
Surr: Toluene-d8 (76-129%)	102 %					08/24/09 19:06	SW846 8260B	SMS	908361
Surr: 4-Bromofluorobenzene (67-147%)	202 %	ZX				08/21/09 18:30	SW846 8260B	SMS	908234
Surr: 4-Bromofluorobenzene (67-147%)	102 %					08/24/09 19:06	SW846 8260B	SMS	908361
Polyaromatic Hydrocarbons by EPA 8	8270D								
Acenaphthene	ND		mg/kg dry	0.0794	1	08/21/09 21:29	SW846 8270D	JLS	9082465
Acenaphthylene	ND		mg/kg dry	0.0794	1	08/21/09 21:29	SW846 8270D	JLS	9082465
Anthracene	0.193		mg/kg dry	0.0794	1	08/21/09 21:29	SW846 8270D	JLS	9082465
Benzo (a) anthracene	ND		mg/kg dry	0.0794	-1	08/21/09 21:29	SW846 8270D	JLS	9082465
Benzo (a) pyrene	0.344		mg/kg dry	0.0794	1	08/21/09 21:29	SW846 8270D	JLS	9082465
Benzo (b) fluoranthene	ND		mg/kg dry	0.0794	Y	08/21/09 21:29	SW846 8270D	JLS	9082465
Benzo (g,h,i) perylene	0.135		mg/kg dry	0.0794	9	08/21/09 21:29	SW846 8270D	JLS	9082465
Benzo (k) fluoranthene	ND		mg/kg dry	0.0794	1	08/21/09 21:29	SW846 8270D	JLS	9082465
Chrysene	ND		mg/kg dry	0.0794	1	08/21/09 21:29	SW846 8270D	JLS	9082465
Dibenz (a,h) anthracene	ND		mg/kg dry	0.0794	1	08/21/09 21:29	SW846 8270D	JLS	9082465
Fluoranthene	0.220		mg/kg dry	0.0794	1	08/21/09 21:29	SW846 8270D	JLS	9082465
Fluorene	ND		mg/kg dry	0.0794	1	08/21/09 21:29	SW846 8270D	JLS	9082465
Indeno (1,2,3-cd) pyrene	0.137		mg/kg dry	0.0794	1	08/21/09 21:29	SW846 8270D SW846 8270D	JLS	9082465
Naphthalene	ND		mg/kg dry	0.0794	1	08/21/09 21:29	SW846 8270D	JLS	9082465
Phenanthrene Pyrene	0.758 0.102		mg/kg dry mg/kg dry	0.0794	1	08/21/09 21:29 08/21/09 21:29	SW846 8270D	JLS JLS	9082465 9082465
I-Methylnaphthalene	0.183		mg/kg dry mg/kg dry	0.0794	1	08/21/09 21:29	SW846 8270D	JLS	9082465
2-Methylnaphthalene	0.246		mg/kg dry	0.0794	1	08/21/09 21:29	SW846 8270D	JLS	9082465
Sure: Terphenyl-d14 (18-120%)	64 %		ing ng ury	0,073-4		08/21/09 21:29	SW846 8270D	JLS	908246.
	76%					08/21/09 21:29			
Surr: 2-Fluorobiphenyl (14-120%)							SW846 8270D	JLS	908246.
Surr: Nitrobenzene-d5 (17-120%)	63 %					08/21/09 21:29	SW846 8270D	JLS	908246





10179 Highway 78 Ladson, SC 29456

Tom McElwee

Attn

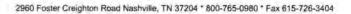
Work Order: NSH1232

Project Name: Laurel Bay Housing Project

Project Number: [none]

Received: 08/14/09 08:10

Analyte	Result	Flag	Units	MRL	Dilution Factor	Analysis Date/Time	Method	Analyst	Batch
Sample ID: NSH1232-06 (1466 Ca				1996				7	
뭐하다 하다 맛이 없어 되었다면 살이 살아 있다면 하다 하다.	i umai - Son, s	ampicu.	00/11/02 15:15						
General Chemistry Parameters	NA.			× × × ×		Scale Supercologue	****		www.co.i
% Dry Solids	82.7		%	0,500		08/21/09 09:35	SW-846	BJM	9083242
Selected Volatile Organic Compounds	by EPA Method	8260B							
Benzene	ND		mg/kg dry	0.00221	1	08/24/09 16:19	SW846 8260B	SMS	9083623
Ethylbenzene	ND		mg/kg dry	0.00221	1	08/24/09 16:19	SW846 8260B	SMS	9083623
Naphthalene	ND		mg/kg dry	0.00553	1	08/24/09 16:19	SW846 8260B	SMS	9083623
Toluene	ND		mg/kg dry	0.00221	4	08/24/09 16:19	SW846 8260B	SMS	9083623
Xylenes, total	ND		mg/kg dry	0.00553	1	08/24/09 16:19	SW846 8260B	SMS	9083623
Surr: 1,2-Dichloraethane-d4 (67-138%)	106 %					08/24/09 16:19	SW846-8260B	SMS	908362
Surr: Dibromofluoromethane (75-125%)	97%					08/24/09 16:19	SW846 8260B	SMS	908362
Surr: Toluene-d8 (76-129%)	99 %					08/24/09 16:19	SW846 8260B	SMS	908362
Surr: 4-Bromofluorobenzene (67-147%)	120 %					08/24/09 16:19	SW846 8260B	SMS	908362
Polyaromatic Hydrocarbons by EPA 82	270D								
Acenaphthene	ND	RL1	mg/kg dry	0.399	5	08/22/09 07:33	SW846 8270D	JLS	9082465
Acenaphthylene	ND	RL1	mg/kg dry	0.399	5	08/22/09 07:33	SW846 8270D	JLS	9082465
Anthracene	ND	RLI	mg/kg dry	0.399	5	08/22/09 07:33	SW846 8270D	JLS	9082465
Benzo (a) anthracene	ND	RL1	mg/kg dry	0.399	5	08/22/09 07:33	SW846 8270D	JLS	9082465
Benzo (a) pyrene	ND	RL1	mg/kg dry	0.399	5	08/22/09 07:33	SW846 8270D	JLS	9082465
Benzo (b) fluoranthene	ND	RLI	mg/kg dry	0.399	5	08/22/09 07;33	SW846 8270D	JLS	9082465
Benzo (g,h,i) perylene	ND	RL1	mg/kg dry	0.399	5	08/22/09 07:33	SW846 8270D	JLS	9082465
Benzo (k) fluoranthene	ND	RL1	mg/kg dry	0.399	5	08/22/09 07:33	SW846 8270D	JLS	9082465
Chrysene	ND	RLI	mg/kg dry	0.399	5	08/22/09 07:33	SW846 8270D	JLS	9082465
Dibenz (a,h) anthracene	ND	RLI	mg/kg dry	0.399	5	08/22/09 07:33	SW846 8270D	JLS	9082465
Fluoranthene	ND	RL1	mg/kg dry	0.399	5	08/22/09 07:33	SW846 8270D	JLS	9082465
Fluorene	ND	RLI	mg/kg dry	0.399	5	08/22/09 07:33	SW846 8270D	JLS	9082465
Indeno (1,2,3-cd) pyrene	ND	RL1	mg/kg dry	0.399	5	08/22/09 07:33	SW846 8270D	JLS	9082465
Naphthalene	ND	RL1	mg/kg dry	0.399	5	08/22/09 07:33	SW846 8270D	JLS	9082465
Phenanthrene	ND	RL1	mg/kg dry	0.399	5	08/22/09 07:33	SW846 8270D	JLS	9082465
Pyrene	ND	RL1	mg/kg dry	0.399	5	08/22/09 07:33	SW846 8270D	JLS	9082465
I-Methylnaphthalene	ND	RL1	mg/kg dry	0.399	5	08/22/09 07:33	SW846 8270D	JLS	9082465
2-Methylnaphthalene	ND	RL1	mg/kg dry	0.399	5	08/22/09 07:33	SW846 8270D	JLS	9082465
Surr: Terphenyl-d14 (18-120%)	95 %					08/22/09 07:33	SW846 8270D	JLS	908246
Surr: 2-Fluorobiphenyl (14-120%)	81 %					08/22/09 07:33	SW846 8270D	JL5	908246





10179 Highway 78 Ladson, SC 29456

Tom McElwce

Attn

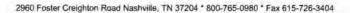
Work Order: NSH1232

Project Name: Laurel Bay Housing Project

Project Number: [none]

Received: 08/14/09 08:10

			ANALITICAL	KEPUKI					
Analyte	Result	Flag	Units	MRL	Dilution Factor	Analysis Date/Time	Method	Analyst	Batch
Sample ID: NSH1232-07 (1475 C	ardinal - Soil) S	ampled:	08/12/09 10:30						
General Chemistry Parameters									
% Dry Solids	85.8		%	0.500	1.	08/21/09 09:35	SW-846	влм	9083242
Selected Volatile Organic Compound	s by EPA Method	8260B							
Benzene	ND		mg/kg dry	0.00214	T.	08/24/09 16:49	SW846 8260B	SMS	9083623
Ethylbenzene	ND		mg/kg dry	0.00214	1	08/24/09 16:49	SW846 8260B	SMS	9083623
Naphthalene	ND		mg/kg dry	0.00536	1	08/24/09 16:49	SW846 8260B	SMS	9083623
Toluene	ND		mg/kg dry	0.00214	1	08/24/09 16:49	SW846-8260B	SMS	9083623
Xylenes, total	ND		mg/kg dry	0.00536	T.	08/24/09 16:49	SW846 8260B	SMS	9083623
Surr: 1,2-Dichloroethane-d4 (67-138%)	93 %					08/24/09 16:49	SW846 8260B	SMS	908362
Surr: Dibromofluoromethane (75-125%)	9/ %					08/24/09 16:49	SW846 8260B	SMS	908362
Surr: Toluene-d8 (76-129%)	103 %					08/24/09 16:49	SW846 8260B	SMS	908362
Surr: 4-Bromofluorobenzene (67-147%)	108 %6					08/24/09 16:49	SW846 8260B	SMS	908362.
Polyaromatic Hydrocarbons by EPA 8	3270D								
Acenaphthene	ND		mg/kg dry	0.0780	$-\bar{4}$	08/21/09 22:29	SW846 8270D	JLS	9082465
Acenaphthylene	ND		mg/kg dry	0.0780		08/21/09 22:29	SW846 8270D	JLS	9082465
Anthracene	ND		mg/kg dry	0.0780	(J	08/21/09 22:29	SW846 8270D	JLS	9082465
Benzo (a) anthracene	ND		mg/kg dry	0.0780	1	08/21/09 22:29	SW846 8270D	JLS	9082465
Benzo (a) pyrene	ND		mg/kg dry	0.0780	1	08/21/09 22:29	SW846 8270D	JLS	9082465
Benzo (b) fluoranthene	ND		mg/kg dry	0.0780	1	08/21/09 22:29	SW846 8270D	JLS	9082465
Benzo (g,h,i) perylene	ND		mg/kg dry	0.0780	1	08/21/09 22:29	SW846 8270D	JLS	9082465
Benzo (k) fluoranthene	ND		mg/kg dry	0.0780	U	08/21/09 22:29	SW846 8270D	JLS	9082465
Chrysene	ND		mg/kg dry	0.0780	Υ	08/21/09 22:29	SW846 8270D	JLS	9082465
Dibenz (a,h) anthracene	ND		mg/kg dry	0.0780	+	08/21/09 22:29	SW846 8270D	JLS	9082465
Fluoranthene	ND		mg/kg dry	0.0780	1.	08/21/09 22:29	SW846 8270D	JLS	9082465
Fluorene	ND		mg/kg dry	0.0780	1	08/21/09 22:29	SW846 8270D	JLS	9082465
Indeno (1,2,3-cd) pyrene	ND		mg/kg dry	0.0780	.1	08/21/09 22:29	SW846 8270D	JLS	9082465
Naphthalene	ND		mg/kg dry	0.0780	1	08/21/09 22:29	SW846 8270D	JLS	9082465
Phenanthrene	ND		mg/kg dry	0.0780	1	08/21/09 22:29	SW846 8270D	JLS	9082465
Pyrene	ND		mg/kg dry	0.0780	1	08/21/09 22:29	SW846 8270D	JLS	9082465
I-Methylnaphthalene	ND		mg/kg dry	0.0780	1	08/21/09 22:29	SW846 8270D	JLS	9082465
2-Methylnaphthalene	ND		mg/kg dry	0.0780	T	08/21/09 22:29	SW846 8270D	JLS	9082465
urr: Terphenyl-d14 (18-120%)	71 %					08/21/09 22:29	SW846 8270D	JLS	908246
Surr: 2-Fluorobiphenyl (14-120%)	59 %					08/21/09 22:29	SW846 8270D	JLS	908246
Surr: Nitrobenzene-d5 (17-120%)	58 %					08/21/09 22:29	SW846 827015	JLS	908246





10179 Highway 78 Ladson, SC 29456

Tom McElwee

Attn

Work Order: NSH1232

Project Name: Laurel Bay Housing Project

Project Number: [none]

Received: 08/14/09 08:10

			ANALYTICAL	REPORT					
Analyte	Result	Flag	Units	MRL	Dilution Factor	Analysis Date/Time	Method	Analyst	Batch
Sample ID: NSH1232-08 (1473 Ca	ardinal - Soil) S	ampled:	08/12/09 14:30	6					
General Chemistry Parameters									
% Dry Solids	82.2		%	0.500	1	08/21/09 09:35	SW-846	ВЈМ	9083242
Selected Volatile Organic Compounds	s by EPA Method	8260B							
Benzene	ND		mg/kg dry	0.00209	1	08/21/09 19:58	SW846-8260B	SMS	9082342
Ethylbenzene	0.274		mg/kg dry	0.110	50	08/24/09 19:36	SW846 8260B	SMS	9083618
Naphthalene	0.177		mg/kg dry	0.00522	Í.	08/21/09 19:58	SW846 8260B	SMS	9082342
Toluene	0.0265		mg/kg dry	0.00209	1	08/21/09 19:58	SW846 8260B	SMS	9082342
Xylenes, total	1.46		mg/kg dry	0,276	50	08/24/09 19:36	SW846 8260B	SMS	9083618
Surr: 1,2-Dichloroethane-d4 (67-138%)	116%					08/21/09 19:58	SW846 8260B	SMS	908234
Surr: 1,2-Dichloroethane-d4 (67-138%)	121 %					08/24/09 19:36	SW846 8260B	SMS	908361
Surr: Dibromofluoromethane (75-125%)	105 %					08/21/09 19:58	SW846 8260B	SMS	908234
Surr: Dibromofluoromethane (75-125%)	90 %					08/24/09 19:36	SW846-8260B	SMS	908361
Surr: Toluene-d8 (76-129%)	156 %	ZX				08/21/09 19:58	SW846 8260B	SMS	908234
Surr: Toluene-d8 (76-129%)	102 %					08/24/09 19:36	SW846 8260B	SMS	908361
Surr: 4-Bromofluorobenzene (67-147%)	430 %	ZY				08/21/09 19:58	SW846 8260B	SMS	908234
Surr: 4-Bromofluorohenzene (67-147%)	113 %	60.0				08/24/09 19:36	SW846 8260B	SMS	908361
Polyaromatic Hydrocarbons by EPA 8	8270D								
Acenaphthene	ND		mg/kg dry	0.789	10	08/22/09 07:57	SW846 8270D	JLS	9082465
Acenaphthylene	ND		mg/kg dry	0.789	10	08/22/09 07:57	SW846 8270D	JLS	9082465
Anthracene	ND		mg/kg dry	0.789	10	08/22/09 07:57	SW846 8270D	JLS	9082465
Benzo (a) anthracene	ND		mg/kg dry	0.789	10	08/22/09 07:57	SW846 8270D	JLS	9082465
Benzo (a) pyrene	ND		mg/kg dry	0.789	10	08/22/09 07:57	SW846 8270D	JLS	9082465
Benzo (b) fluoranthene	ND		mg/kg dry	0.789	10	08/22/09 07:57	SW846 8270D	JLS	9082465
Benzo (g,h,i) perylene	ND		mg/kg dry	0.789	10	08/22/09 07:57	SW846 8270D	JLS	9082465
Benzo (k) fluoranthene	ND		mg/kg dry	0.789	10	08/22/09 07:57	SW846.8270D	JLS	9082465
Chrysene	0.813		mg/kg dry	0.789	10	08/22/09 07:57	SW846 8270D	JLS	9082465
Dibenz (a,h) anthracene	ND		mg/kg dry	0.789	10	08/22/09 07;57	SW846 8270D	JLS	9082465
Fluoranthene	ND		mg/kg dry	0.789	10	08/22/09 07:57	SW846 8270D	JLS	9082465
Fluorene	0.844		mg/kg dry	0.789	1.0	08/22/09 07:57	SW846 8270D	JLS	9082465
Indeno (1,2,3-cd) pyrene	ND		mg/kg dry	0.789	10	08/22/09 07:57	SW846 8270D	JLS	9082465
Naphthalene	0.939		mg/kg dry	0.789	10	08/22/09 07:57	SW846 8270D	JLS	9082465
Phenanthrene	1.23		mg/kg dry	0.789	10	08/22/09 07:57	SW846 8270D SW846 8270D	JLS	9082465
Pyrene			mg/kg dry	0.789	10	08/22/09 07:57	SW846 8270D SW846 8270D	JLS	
1-Methylnaphthalene	3.18 3.40		mg/kg dry	0.789	10	08/22/09 07:57 08/22/09 07:57	SW846 8270D	JLS	9082465
2-Methylnaphthalene			mg/kg dry	0.789	10			JLS	
Surr: Terphenyl-d14 (18-120%)	94 %					08/22/09 07:57	SW846 8270D	JLS	9082463
Surr: 2-Fluorohiphenyl (14-120%)	89 %					08/22/09 07:57	SW846 8270D	JLS	9082463
Surr: Nitrobenzene-d5 (17-120%)	94 %					08/22/09 07:57	SW846 8270D	JLS	9082465





10179 Highway 78 Ladson, SC 29456

Tom McElwee

Attn

Work Order: NSH1232

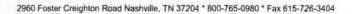
Project Name: L

Laurel Bay Housing Project

Project Number: [none]

Received: 08/14/09 08:10

			ANADI HCALIN	EIOKI					
Analyte	Result	Flag	Units	MRL	Dilution Factor	Analysis Date/Time	Method	Analyst	Batch
Sample ID: NSH1232-09 (1470 Ca	ardinal - Soil) S	Sampled:	08/13/09 10:30						
General Chemistry Parameters									
% Dry Solids	79.6		%	0.500	1.	08/21/09 09:35	SW-846	ВЈМ	9083242
Selected Volatile Organic Compounds	s by EPA Method	18260B							
Benzene	ND		mg/kg dry	0.00219	1	08/21/09 20:28	SW846 8260B	SMS	9082342
Ethylbenzene	ND		mg/kg dry	0.00219	T	08/21/09 20:28	SW846 8260B	SMS	9082342
Naphthalene	0.0514		mg/kg dry	0.00548	1.	08/21/09 20:28	SW846 8260B	SMS	9082342
Toluene	ND		mg/kg dry	0.00219	1	08/21/09 20:28	SW846 8260B	SMS	9082342
Xylenes, total	ND		mg/kg dry	0.00548	1	08/21/09 20:28	SW846 8260B	SMS	9082342
Surr. 1,2-Dichloroethane-d4 (67-138%)	113 %					08/21/09 20:28	SW846 8260B	SMS	908234
Surr: Dibromofluoromethane (75-125%)	102 %					08/21/09 20:28	SW846 8260B	SMS	908234
Surr: Toluene-d8 (76-129%)	108 %					08/21/09 20:28	SW846 8260B	SMS	908234
Surr: 4-Bromofluorobenzene (67-147%)	129 %					08/21/09 20:28	SW846 8260B	SMS	908234
Polyaromatic Hydrocarbons by EPA 8	8270D								
Acenaphthene	ND	RL1	mg/kg dry	0.838	10	08/22/09 08:21	SW846 8270D	JLS	9082465
Acenaphthylene	ND	RL1	mg/kg dry	0.838	10	08/22/09 08:21	SW846 8270D	JLS	9082465
Anthracene	ND	RL1	mg/kg dry	0.838	10	08/22/09 08:21	SW846 8270D	JLS	9082465
Benzo (a) anthracene	ND	RL1	mg/kg dry	0.838	10	08/22/09 08:21	SW846 8270D	JLS	9082465
Benzo (a) pyrene	ND	RLI	mg/kg dry	0.838	10	08/22/09 08:21	SW846 8270D	JLS	9082465
Benzo (b) fluoranthene	ND	RLI	mg/kg dry	0.838	10	08/22/09 08:21	SW846 8270D	JLS	9082465
Benzo (g,h,i) perylene	ND	RL1	mg/kg dry	0.838	10	08/22/09 08:21	SW846 8270D	JLS	9082465
Benzo (k) fluoranthene	ND	RL1	mg/kg dry	0.838	10	08/22/09 08:21	SW846 8270D	JLS	9082465
Chrysene	ND	RLI	mg/kg dry	0.838	10	08/22/09 08:21	SW846 8270D	JLS	9082465
Dibenz (a,h) anthracene	ND	RLI	mg/kg dry	0.838	10	08/22/09 08:21	SW846 8270D	JLS	9082465
Fluoranthene	ND	RL1	mg/kg dry	0.838	10	08/22/09 08:21	SW846 8270D	JLS	9082465
Fluorene	ND	RLI	mg/kg dry	0.838	10	08/22/09 08:21	SW846 8270D	JLS	9082465
Indeno (1,2,3-cd) pyrene	ND	RLI	mg/kg dry	0.838	10	08/22/09 08:21	SW846 8270D	JLS	9082465
Naphthalene	ND	RLI	mg/kg dry	0.838	1.0	08/22/09 08:21	SW846 8270D	JLS	9082465
Phenanthrene	ND	RL1	mg/kg dry	0.838	10	08/22/09 08:21	SW846 8270D	JLS	9082465
Pyrene	ND	RLI	mg/kg dry	0.838	10	08/22/09 08:21	SW846 8270D	JLS	9082465
1-Methylnaphthalene	ND	RLI	mg/kg dry	0.838	10	08/22/09 08:21	SW846 8270D	JLS	9082465
2-Methylnaphthalene	ND	RL1	mg/kg dry	0.838	1.0	08/22/09 08:21	SW846 8270D	JLS	9082465
Surv: Terphenyl-d14 (18-120%)	107 %					08/22/09 08:21	SW846 8270D	JLS	908246
Surr: 2-Fluorobiphenyl (14-120%)	97 %					08/22/09 08:21	SW846-8270D	JLS	908246
Surr; Nitrobenzene-d5 (17-120%)	112%					08/22/09 08:21	SW846 8270D	JLS	908246





10179 Highway 78 Ladson, SC 29456

Attn Tom McElwee

Work Order: NSH1232

Project Name: Laurel Bay Housing Project

Project Number: [none]

Received: 08/14/09 08:10

SAMPLE EXTRACTION DATA

		SAMPLEEA	TRACTION	DATA			
2.00	20.5	33400	Wt/Vol	64.4.100	Post.		Extraction
Parameter	Batch	Lab Number	Extracted	Extracted Vol	Date	Analyst	Method
Polyaromatic Hydrocarbons b							
SW846 8270D	9082465	NSH1232-01	30.47	1.00	08/19/09 15:30	TEM	EPA 3550C
SW846 8270D	9082465	NSH1232-01RE1	30.47	1.00	08/19/09 15:30	TEM	EPA 3550C
SW846 8270D	9082465	NSH1232-02	30.13	1.00	08/19/09 15:30	TEM	EPA 3550C
SW846 8270D	9082465	NSH1232-02RE1	30,13	1.00	08/19/09 15:30	TEM	EPA 3550C
SW846 8270D	9082465	NSH1232-03	30.86	1.00	08/19/09 15:30	TEM	EPA 3550C
SW846 8270D	9082465	NSH1232-03RE1	30.86	1.00	08/19/09 15:30	TEM	EPA 3550C
SW846 8270D	9082465	NSH1232-04	30.59	1.00	08/19/09 15:30	TEM	EPA 3550C
SW846 8270D	9082465	NSH1232-04RE1	30,59	1,00	08/19/09 15:30	TEM	EPA 3550C
SW846 8270D	9082465	NSH1232-05	30.85	1.00	08/19/09 15:30	TEM	EPA 3550C
SW846 8270D	9082465	NSH1232-06	30.42	1.00	08/19/09 15:30	TEM	EPA 3550C
SW846 8270D	9082465	NSH1232-06RE1	30.42	1.00	08/19/09 15:30	TEM	EPA 3550C
SW846 8270D	9082465	NSH1232-07	30.04	1.00	08/19/09 15:30	TEM	EPA 3550C
SW846 8270D	9082465	NSH1232-08	30.98	1.00	08/19/09 15:30	TEM	EPA 3550C
SW846 8270D	9082465	NSH1232-08RE1	30.98	1.00	08/19/09 15:30	TEM	EPA 3550C
SW846 8270D	9082465	NSH1232-09	30.15	1.00	08/19/09 15:30	TEM	EPA 3550C
SW846 8270D	9082465	NSH1232-09RE1	30.15	1.00	08/19/09 15:30	TEM	EPA 3550C
Selected Volatile Organic Con	mpounds by EPA Method	8260B					
SW846 8260B	9082342	NSH1232-01	5.80	5.00	08/10/09 13:15	СНН	EPA 5035
SW846 8260B	9082342	NSH1232-02	5,73	5.00	08/10/09 10:30	CHH	EPA 5035
SW846 8260B	9083618	NSH1232-02RE1	5.85	5.00	08/10/09 10:30	CHH	EPA 5035
SW846 8260B	9082342	NSH1232-03	5.81	5.00	08/10/09 15:30	СНН	EPA 5035
SW846 8260B	9083618	NSH1232-03RE1	5.42	5.00	08/10/09 15:30	СНН	EPA 5035
SW846 8260B	9083618	NSH1232-03RE2	5.42	5.00	08/10/09 15:30	СНН	EPA 5035
SW846 8260B	9082342	NSH1232-04	5.62	5.00	08/11/09 .09:15	CHH	EPA 5035
SW846 8260B	9083618	NSH1232-04RE1	5.45	5.00	08/11/09 09:15	СНН	EPA 5035
SW846 8260B	9082342	NSH1232-05	5,92	5.00	08/11/09 12:00	СНН	EPA 5035
SW846 8260B	9083618	NSH1232-05RE1	5.69	5.00	08/11/09 12:00	CHH	EPA 5035
SW846 8260B	9082342	NSH1232-06	5.49	5.00	08/11/09 15:15	СНН	EPA 5035
SW846 8260B	9083623	NSH1232-06RE1	5.47	5.00	08/11/09 15:15	СНН	EPA 5035
SW846 8260B	9082342	NSH1232-07	5.79	5.00	08/12/09 10:30	CHH	EPA 5035
SW846 8260B	9083623	NSH1232-07RE1	5.44	5.00	08/12/09 10:30	CHH	EPA 5035
SW846 8260B	9082342	NSH1232-08	5.83	5.00	08/12/09 14:30	CHH	EPA 5035
SW846 8260B	9083618	NSH1232-08RE1	5.51	5.00	08/12/09 14:30	СНН	EPA 5035
SW846 8260B	9082342	NSH1232-09	5.73	5,00	08/13/09 10:30	СИН	EPA 5035
SW846 8260B	9082342	NSH1232-09RE1	5.60	5,00	08/13/09 10:30	СНН	EPA 5035
		A Principal Association and the second					The second second



10179 Highway 78 Ladson, SC 29456

Attn Tom McElwee

Work Order: NSH1232

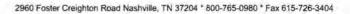
Project Name: Laurel Bay Housing Project

Project Number: [none]

Received: 08/14/09 08:10

PROJECT QUALITY CONTROL DATA Blank

Analyte	Blank Value	Q	Units	Q.C. Batch	Lab Number	Analyzed Date/Time
Selected Volatile Organic Compo	ounds by EPA Method	8260B				
9082342-BLK1						
Benzene	< 0.000670		mg/kg wet	9082342	9082342-BLK1	08/21/09 14:46
Ethylbenzene	< 0.000670		mg/kg wet	9082342	9082342-BLK1	08/21/09 14:46
Naphthalene	< 0.00170		mg/kg wet	9082342	9082342-BLK1	08/21/09 14:46
Toluene	< 0.000400		mg/kg wet	9082342	9082342-BLK1	08/21/09 14:46
Xylenes, total	< 0.00130		mg/kg wet	9082342	9082342-BLK1	08/21/09 14:46
Surrogate: 1,2-Dichloroethane-d4	124%			9082342	9082342-BLK1	08/21/09 14:46
Surrogate: Dibromofluoromethane	110%			9082342	9082342-BLK1	08/21/09 14:46
Surrogate: Toluene-d8	100%			9082342	9082342-BLK1	08/21/09 14:46
Surrogate: 4-Bromofluorobenzene	103%			9082342	9082342-BLK1	08/21/09 14:46
9083618-BLK1						
Benzene	< 0.000670		mg/kg wet	9083618	9083618-BLK1	08/24/09 13:21
Ethylbenzene	< 0.000670		mg/kg wet	9083618	9083618-BLK1	08/24/09 13:21
Naphthalene	< 0.00170		mg/kg wet	9083618	9083618-BLK1	08/24/09 13:21
Toluene	< 0.000400		mg/kg wet	9083618	9083618-BLK1	08/24/09 13;21
Xylenes, total	< 0.00130		mg/kg wet	9083618	9083618-BLK1	08/24/09 13:21
Surrogate: 1,2-Dichloroethane-d4	125%			9083618	9083618-BLK1	08/24/09 13:21
Surrogate: Dibromofluoromethane	102%			9083618	9083618-BLK1	08/24/09 13:21
Surrogate: Toluene-d8	104%			9083618	9083618-BLK1	08/24/09 13:21
Surrogate: 4-Bromofluarobenzene	109%			9083618	9083618-BLK1	08/24/09 13:21
9083623-BLK1						
Benzene	< 0.000670		mg/kg wet	9083623	9083623-BLK1	08/24/09 13:34
Ethylbenzene	< 0.000670		mg/kg wet	9083623	9083623-BLK1	08/24/09 13:34
Naphthalene	< 0.00170		mg/kg wet	9083623	9083623-BLK1	08/24/09 13:34
Toluene	< 0.000400		mg/kg wet	9083623	9083623-BLK1	08/24/09 13:34
Xylenes, total	< 0.00130		mg/kg wet	9083623	9083623-BLK1	08/24/09 13:34
Surrogate: 1,2-Dichloroethane-d4	101%			9083623	9083623-BLK1	08/24/09 13:34
Surrogate: Dibromofluoromethane	95%			9083623	9083623-BLK1	08/24/09 13:34
Surrogate: Toluene-d8	96%			9083623	9083623-BLK1	08/24/09 13:34
Surrogate: 4-Bromofluorobenzene	99%			9083623	9083623-BLK1	08/24/09 13:34
Polyaromatic Hydrocarbons by I	EPA 8270D					
9082465-BLK1						
Acenaphthene	< 0.0320		mg/kg wet	9082465	9082465-BLK1	08/21/09 17:01
Acenaphthylene	< 0.0310		mg/kg wet	9082465	9082465-BLK1	08/21/09 17:01
Anthracene	< 0.0330		mg/kg wet	9082465	9082465-BLK1	08/21/09 17:01
Benzo (a) anthracene	< 0.0380		mg/kg wet	9082465	9082465-BLK1	08/21/09 17:01
Benzo (a) pyrene	< 0.0300		mg/kg wet	9082465	9082465-BLK1	08/21/09 17:01
Benzo (b) fluoranthene	< 0.0300		mg/kg wet	9082465	9082465-BLK1	08/21/09 17:01
Benzo (g,h,i) perylene	< 0.0300		mg/kg wet	9082465	9082465-BLK1	08/21/09 17:01





10179 Highway 78 Ladson, SC 29456

Attn Tom McElwee

Work Order: NSH1232

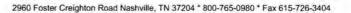
Project Name: Laurel Bay Housing Project

Project Number: [none]

Received: 08/14/09 08:10

PROJECT QUALITY CONTROL DATA Blank - Cont.

Analyte	Blank Value	Q	Units	Q.C. Batch	Lab Number	Analyzed Date/Time	
Polyaromatic Hydrocarbons by	y EPA 8270D						
9082465-BLK1							
Benzo (k) fluoranthene	< 0.0300		mg/kg wet	9082465	9082465-BLK1	08/21/09 17:01	
Chrysene	< 0.0400		mg/kg wet	9082465	9082465-BLK1	08/21/09 17:01	
Dibenz (a,h) anthracene	< 0.0310		mg/kg wet	9082465	9082465-BLK1	08/21/09 17:01	
Fluoranthene	< 0.0340		mg/kg wet	9082465	9082465-BLK1	08/21/09 17:01	
Fluorene	< 0.0360		mg/kg wet	9082465	9082465-BLK1	08/21/09 17:01	
Indeno (1,2,3-cd) pyrene	< 0.0310		mg/kg wet	9082465	9082465-BLK1	08/21/09 17:01	
Naphthalene	< 0.0410		mg/kg wet	9082465	9082465-BLK1	08/21/09 17:01	
Phenanthrene	< 0.0340		mg/kg wet	9082465	9082465-BLK1	08/21/09 17:01	
Pyrene	< 0.0410		mg/kg wet	9082465	9082465-BLK1	08/21/09 17:01	
Surrogate: Terphenyl-d14	82%			9082465	9082465-BLK1	08/21/09 17:01	
Surrogate: 2-Fluorobiphenyl	72%			9082465	9082465-BLK1	08/21/09 17:01	
Surrogate: Nitrobenzene-d5	69%			9082465	9082465-BLK1	08/21/09 17:01	





10179 Highway 78 Ladson, SC 29456

Attn Tom McElwee

Work Order: NSH1232

Project Name: Laurel Bay Housing Project

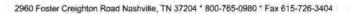
Project Number: [none]

Received: 08/14/09 08:10

PROJECT QUALITY CONTROL DATA

Duplicate

Analyte	Orig. Val.	Duplicate	Q	Units	RPD	Limit	Batch	Sample Duplicated	% Rec.	Analyzed Date/Time	
General Chemistry Parameters 9083242-DUP1											
% Dry Solids	82.9	82.9		%	0	20	9083242	NSH1220-01		08/21/09 09:35	





10179 Highway 78 Ladson, SC 29456

Attn Tom McElwee

Work Order: NSH1232

Project Name: Laurel Bay Housing Project

Project Number: [none]

Received: 08/14/09 08:10

PROJECT QUALITY CONTROL DATA LCS

Analyte	Known Val.	Analyzed Val	Q	Units	% Rec.	Target Range	Batch	Analyzed Date/Time
Selected Volatile Organic Compour	nds by EPA Method 82	60B						
9082342-BS1								
Benzene	50.0	45.3		ug/kg	91%	78 - 126	9082342	08/21/09 12:4
Ethylbenzene	50.0	45.1		ug/kg	90%	79 - 130	9082342	08/21/09 12:4
Naphthalene	50,0	44.3		ug/kg	89%	72 - 150	9082342	08/21/09 12:4
Toluene	50.0	45.0		ug/kg	90%	76 - 126	9082342	08/21/09 12:4
Xylenes, total	150	140		ug/kg	93%	80 - 130	9082342	08/21/09 12:4
Surrogate: 1,2-Dichloroethane-d4	50,0	60.9			122%	67 - 138	9082342	08/21/09 12:4
Surrogate: Dibromofluoromethane	50.0	54.6			109%	75 - 125	9082342	08/21/09 12:4
Surragate: Toluene-d8	50.0	50.5			101%	76 - 129	9082342	08/21/09 12:4
Surrogate: 4-Bromofluorobenzene	50.0	47.8			96%	67 - 147	9082342	08/21/09 12:4
9083618-BS1								
Benzene	50.0	49.2		ug/kg	98%	78 - 126	9083618	08/24/09 11:2
Ethylbenzene	50.0	47.9		ug/kg	96%	79 - 130	9083618	08/24/09 11:3
Naphthalene	50.0	49.8		ug/kg	100%	72 - 150	9083618	08/24/09 11:3
Toluene	50.0	48.0		ug/kg	96%	76 - 126	9083618	08/24/09 11:3
Xylenes, total	150	147		ug/kg	98%	80 - 130	9083618	08/24/09 11:3
Surrogate: 1,2-Dichloroethane-d4	50.0	56.5			113%	67 - 138	9083618	08/24/09 11:3
Surrogate: Dibromofluoromethane	50.0	53.1			106%	75 - 125	9083618	08/24/09 11:3
Surrogate: Toluene-d8	50.0	50.1			100%	76 - 129	9083618	08/24/09 11:3
Surrogate: 4-Bromofluorobenzene	50.0	48.8			98%	67 - 147	9083618	08/24/09 11:2
9083623-BS1								
Benzene	50,0	56.1		ug/kg	112%	78 - 126	9083623	08/24/09 11:3
Ethylbenzene	50.0	60.3		ug/kg	121%	79 - 130	9083623	08/24/09 11:
Naphthalene	50.0	59.7		ug/kg	119%	72 - 150	9083623	08/24/09 11:3
Toluene	50.0	57.4		ng/kg	115%	76 - 126	9083623	08/24/09 11:3
Xylenes, total	150	181		ug/kg	121%	80 - 130	9083623	08/24/09 11:
Surrogate: 1,2-Dichloroethane-d4	50,0	50.9			102%	67 - 138	9083623	08/24/09 11:3
Surrogate: Dibromofluoromethane	50.0	50.0			100%	75 - 125	9083623	08/24/09 11:3
Surrogate: Toluene-d8	50.0	50.0			100%	76 - 129	9083623	08/24/09 11:3
Surrogate: 4-Bromofluorohenzene	50.0	50.0			100%	67 - 147	9083623	08/24/09 11:3
Polyaromatic Hydrocarbons by EP	A 8270D							
9082465-BS1							N. 155.55	
Acenaphthene	1.67	1.16		mg/kg wet	70%	49 - 120	9082465	08/21/09 17:3
Acenaphthylene	1.67	1,16		mg/kg wet	69%	52 - 120	9082465	08/21/09 17:3
Anthracene	1.67	1,31		mg/kg wet	79%	58 - 120	9082465	08/21/09 17:2
Benzo (a) anthracene	1.67	1.25		mg/kg wet	75%	57 - 120	9082465	08/21/09 17:
Benzo (a) pyrene	1.67	1.33		mg/kg wet	80%	55 - 120	9082465	08/21/09 17:
Benzo (b) fluoranthene	1.67	1,27		mg/kg wet	76%	51 - 123	9082465	08/21/09 17:
Benzo (g,h,i) perylene	1.67	1,20		mg/kg wet	72%	49 - 121	9082465	08/21/09 17:3





10179 Highway 78 Ladson, SC 29456

Attn Tom McElwee

Work Order: NSH1232

Project Name: Laurel Bay Housing Project

Project Number: [none]

Received: 08/14/09 08:10

PROJECT QUALITY CONTROL DATA LCS - Cont.

Analyte	Known Val.	Analyzed Val	Q	Units	% Rec.	Target Range	Batch	Analyzed Date/Time
Allalyte	Known val.	Analyzed var	Q	Omis	Va Rec.	rung.	Daten	Days, Time
Polyaromatic Hydrocarbons by I	EPA 8270D							
9082465-BS1								
Benzo (k) fluoranthene	1.67	1.25		mg/kg wet	75%	42 - 129	9082465	08/21/09 17:31
Chrysene	1.67	1,22		mg/kg wet	73%	55 - 120	9082465	08/21/09 17:31
Dibenz (a,h) anthracene	1.67	1.27		mg/kg wet	76%	50 - 123	9082465	08/21/09 17:31
Fluoranthene	1.67	1.28		mg/kg wet	77%	58 - 120	9082465	08/21/09 17:31
Fluorene	1.67	1.35		mg/kg wet	81%	54 - 120	9082465	08/21/09 17:31
Indeno (1,2,3-cd) pyrene	1.67	1,26		mg/kg wet	76%	50 - 122	9082465	08/21/09 17:31
Naphthalene	1.67	1.11		mg/kg wet	67%	28 - 120	9082465	08/21/09 17:31
Phenanthrene	1.67	1.16		mg/kg wet	70%	56 - 120	9082465	08/21/09 17:31
Pyrene	1.67	1.21		mg/kg wet	73%	56 - 120	9082465	08/21/09 17:31
Surrogate: Terphenyl-d14	1.67	1.33			80%	18 - 120	9082465	08/21/09 17:31
Surrogate: 2-Fluorobiphenyl	1.67	1.27			76%	14 - 120	9082465	08/21/09 17:31
Surrogate: Nitrobenzene-d5	1.67	1,25			75%	17 - 120	9082465	08/21/09 17:31
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10179 Highway 78 Ladson, SC 29456

Tom McElwee

Atm

Work Order: NSH1232

Project Name: Laurel Bay Housing Project

Project Number: [none]

Received: 08/14/09 08:10

PROJECT QUALITY CONTROL DATA LCS Dup

Analyte	Orig. Val.	Duplicate	Q	Units	Spike Conc	% Rec	Target Range	RPD	Limit	Batch	Sample Duplicated	Analyzed Date/Time
Selected Volatile Organic Comp	ounds by EPA	Method 82	60B									
9082342-BSD1												
Benzene		44.2		ug/kg	50.0	88%	78 - 126	2	50	9082342		08/21/09 13:18
Ethylbenzene		46.7		ug/kg	50.0	93%	79 - 130	3	50	9082342		08/21/09 13:18
Naphthalene		46.6		ug/kg	50.0	93%	72 - 150	5	50	9082342		08/21/09 13:18
Toluene		45.8		ug/kg	50.0	92%	76 - 126	2	50	9082342		08/21/09 13:18
Xylenes, total		144		ug/kg	150	96%	80 - 130	3	50	9082342		08/21/09 13:18
Surrogate: 1,2-Dichloroethane-d4		60.0		ug/kg	50,0	120%	67 - 138			9082342		08/21/09 13:18
Surrogate: Dibromofluoromethane		45.4		ug/kg	50.0	91%	75 - 125			9082342		08/21/09 13:18
Surrogate: Toluene-d8		49.8		ug/kg	50.0	100%	76 - 129			9082342		08/21/09 13:18
Surrogate: 4-Bromofluorobenzene		46.6		ug/kg	50.0	93%	67 - 147			9082342		08/21/09 13:18
9083618-BSD1												
Benzene		48.9		ug/kg	50.0	98%	78 - 126	0.6	50	9083618		08/24/09 11:53
Ethylbenzene		50.9		ug/kg	50.0	102%	79 - 130	6	50	9083618		08/24/09 11:53
Naphthalene		47.5		ug/kg	50.0	95%	72 - 150	5	50	9083618		08/24/09 11:53
Toluene		53.0		ug/kg	50.0	106%	76 - 126	10	50	9083618		08/24/09 11:53
Xylenes, total		159		ug/kg	150	106%	80 - 130	8	50	9083618		08/24/09 11:53
Surrogate: 1,2-Dichloroethane-d4		61.7		ug/kg	50.0	123%	67 - 138			9083618		08/24/09 11:53
Surrogate: Dibromofluoromethane		54.3		ug/kg	50.0	109%	75 - 125			9083618		08/24/09 11:53
Surrogate: Toluene-d8		54.3		ug/kg	50.0	109%	76 - 129			9083618		08/24/09 11:53
Surrogate: 4-Bromofluorobenzene		50.6		ug/kg	50.0	101%	67 - 147			9083618		.08/24/09 11:53
9083623-BSD1												
Benzene		53.1		ug/kg	50.0	106%	78 - 126	6	50	9083623		08/24/09 12:04
Ethylbenzene		56.1		ug/kg	50.0	112%	79 - 130	7	50	9083623		08/24/09 12:04
Naphthalene		56.8		ug/kg	50,0	114%	72 - 150	5	50	9083623		08/24/09 12:04
Toluene		54.0		ug/kg	50.0	108%	76 - 126	6	50	9083623		08/24/09 12:04
Xylenes, total		168		ug/kg	150	112%	80 - 130	7	50	9083623		08/24/09 12:04
Surrogate: 1,2-Dichloroethane-d4		51.0		ug/kg	50.0	102%	67 - 138			9083623		08/24/09 12:04
Surrogate: Dibromofluoromethane		50,4		ug/kg	50.0	101%	75 - 125			9083623		08/24/09 12:04
Surrogate: Toluene-d8		49.9		ug/kg	50.0	100%	76 - 129			9083623		08/24/09 12:04
Surrogate: 4-Bromofluorobenzene		49.8		ug/kg	50.0	100%	67 - 147			9083623		08/24/09 12:04



10179 Highway 78 Ladson, SC 29456

Tom McElwee

Attn

Work Order: NSH1232

Project Name: Laurel
Project Number: [none]

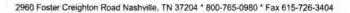
Laurel Bay Housing Project

Project Number: Received:

08/14/09 08:10

PROJECT QUALITY CONTROL DATA Matrix Spike

				Matrix Spil	(e					
Analyte	Orig. Val.	MS Val	Q	Units	Spike Conc	% Rec.	Target Range	Batch	Sample Spiked	Analyzed Date/Time
Selected Volatile Organic Compo 9082342-MS1	unds by EPA Me	thod 8260B								
Benzene	ND	2.11		mg/kg dry	2,80	75%	42 - 141	9082342	NSH1232-09RE	08/21/09 21:27
Ethylbenzene	ND	2.22		mg/kg dry	2.80	79%	21 - 165	9082342	NSH1232-09RE	08/21/09 21:27
Naphthalene	1,00	2.64		mg/kg dry	2,80	58%	10 - 160	9082342	NSH1232-09RE	08/21/09 21:27
Toluene	ND	2.14		mg/kg dry	2.80	76%	45 - 145	9082342	NSH1232-09RE	08/21/09 21:27
Xylenes, total	ND	7.01		mg/kg dry	8.41	83%	31 - 159	9082342	NSH1232-09RE	08/21/09 21:27
Surrogate: 1,2-Dichloroethane-d4		58.0		ug/kg	50.0	116%	67 - 138	9082342	NSH1232-09RE	08/21/09 21:27
Surrogate: Dibromofluoromethane		50.7		ug/kg	50,0	(01%	75 - 125	9082342	NSH1232-09RE	08/21/09 21:27
Surrogate: Toluene-d8		51,4		ug/kg	50.0	103%	76 - 129	9082342	NSH1232-09RE	08/21/09 21:27
Surrogate: 4-Bromofluorobenzene		51.4		ug/kg	50.0	103%	67 - 147	9082342	NSH1232-09RE 1	08/21/09 21:27
0083618-MS1										
Benzene	ND	2.19		mg/kg wet	2.22	99%	42 - 141	9083618	NSH1963-01RE 1	08/24/09 21:04
Ethylbenzene	ND	2,23		mg/kg wet	2.22	100%	21 - 165	9083618	NSH1963-01RE 1	08/24/09 21:04
Naphthalene	ND	1.92		mg/kg wet	2.22	86%	10 ~ 160	9083618	NSH1963-01RE	08/24/09 21:04
Toluene	ND	2.18		mg/kg wet	2.22	98%	45 - 145	9083618	NSH1963-01RE	08/24/09 21:04
Xylenes, total	ND	6.96		mg/kg wet	6.67	104%	31 - 159	9083618	NSH1963-01RE	08/24/09 21:04
Surrogate: 1,2-Dichloroethane-d4		61.8		ug/kg	50.0	124%	67 - 138	9083618	NSH1963-01RE	08/24/09 21:04
Surrogate: Dibromofluoromethane		52.3		ug/kg	50,0	105%	75 - 125	9083618	NSH1963-01RE	08/24/09 21:04
Surrogate: Toluene-d8		51,6		ug/kg	50.0	103%	76 - 129	9083618	NSH1963-01RE	08/24/09 21:04
Surrogate: 4-Bromofluorobenzene		52.2		ug/kg	50.0	104%	67 - 147	9083618	NSH1963-01RE 1	08/24/09 21:04
083623-MS1										
Benzene	ND	2.67		mg/kg wet	2.50	107%	42 - 141	9083623	NSH1342-04RE 1	08/24/09 21:02
Ethylbenzene	ND	2.76		mg/kg wet	2.50	110%	21 - 165	9083623	NSH1342-04RE	08/24/09 21:02
Naphthalene	ND	2.31		mg/kg wet	2.50	93%	10 - 160	9083623	NSH1342-04RE	08/24/09 21:02
Toluene	ND	2.57		mg/kg wet	2.50	103%	45 - 145	9083623	NSH1342-04RE	08/24/09 21:02





10179 Highway 78 Ladson, SC 29456

Tom McElwee

Attn

Work Order:

NSH1232

Project Name:

Laurel Bay Housing Project

Project Number:

[none]

Received: 08/14/09 08:10

PROJECT QUALITY CONTROL DATA Matrix Spike - Cont.

Analyte	Orig. Val.	MS Val	Q	Units	Spike Conc	% Rec.	Target Range	Batch	Sample Spiked	Analyzed Date/Time
Selected Volatile Organic Compo	ounds by EPA Me	thod 8260B								
9083623-MS1	The state of the s									
Xylenes, total	ND	8.40		mg/kg wet	7.50	112%	31 - 159	9083623	NSH1342-04RE 1	08/24/09 21:02
Surrogate: 1,2-Dichloroethane-d4		45.5		ug/kg	50.0	91%	67 - 138	9083623	NSH1342-04RE 1	08/24/09 21:02
Surrogate: Dibromofluoromethane		47.6		ug/kg	50.0	95%	75 - 125	9083623	NSH1342-04RE 1	08/24/09 21:02
Surrogate: Toluene-d8		47.2		ug/kg	50.0	94%	76 - 129	9083623	NSH1342-04RE 1	08/24/09 21:02
Surrogate: 4-Bromofluorobenzene		47.9		ug/kg	50.0	96%	67 - 147	9083623	NSH1342-04RE 1	08/24/09 21:02
Polyaromatic Hydrocarbons by E	EPA 8270D									
9082465-MS1										
Acenaphthene	ND	1.21		mg/kg dry	1.96	62%	42 - 120	9082465	NSH1309-08	08/21/09 18:01
Acenaphthylene	ND	1.20		mg/kg dry	1.96	62%	32 - 120	9082465	NSH1309-08	08/21/09 18:01
Anthracene	ND	1.37		mg/kg dry	1.96	70%	10 - 200	9082465	NSH1309-08	08/21/09 18:01
Benzo (a) anthracene	ND	1,31		mg/kg dry	1.96	67%	41 - 120	9082465	NSH1309-08	08/21/09 18:01
Benzo (a) pyrene	ND	1.40		mg/kg dry	1.96	72%	33 - 121	9082465	NSH1309-08	08/21/09 18:01
Benzo (b) fluoranthene	ND	1.34		mg/kg dry	1.96	69%	26 - 137	9082465	NSH1309-08	08/21/09 18:01
Benzo (g,h,i) perylene	ND	1.27		mg/kg dry	1.96	65%	21 - 124	9082465	NSH1309-08	08/21/09 18:01
Benzo (k) fluoranthene	ND	1.33		mg/kg dry	1.96	68%	14 - 140	9082465	NSH1309-08	08/21/09 18:01
Chrysene	ND	1.31		mg/kg dry	1.96	67%	28 - 123	9082465	NSH1309-08	08/21/09 18:01
Dibenz (a,h) anthracene	ND	1.34		mg/kg dry	1.96	69%	25 - 127	9082465	NSH1309-08	08/21/09 18:01
Fluoranthene	ND	1.38		mg/kg dry	1.96	70%	38 - 120	9082465	NSH1309-08	08/21/09 18:01
Fluorene	ND	1.45		mg/kg dry	1.96	74%	41 - 120	9082465	NSH1309-08	08/21/09 18:01
Indeno (1,2,3-cd) pyrene	ND	1.33		mg/kg dry	1.96	68%	25 - 123	9082465	NSH1309-08	08/21/09 18:01
Naphthalene	ND	1.09		mg/kg dry	1.96	56%	25 - 120	9082465	NSH1309-08	08/21/09 18:01
Phenanthrene	ND	1.26		mg/kg dry	1.96	65%	37 - 120	9082465	NSH1309-08	08/21/09 18:01
Pyrene	ND	1.30		mg/kg dry	1.96	67%	29 - 125	9082465	NSH1309-08	08/21/09 18:01
Surrogate: Terphenyl-d14		1.40		mg/kg dry	1.96	72%	18 - 120	9082465	NSH1309-08	08/21/09 18:01
Surrogate: 2-Fluorobiphenyl		1.25		mg/kg dry	1.96	64%	14 - 120	9082465	NSH1309-08	08/21/09 18:01
Surrogate: Nitrobenzene-d5		1.27		mg/kg dry	1.96	65%	17 - 120	9082465	NSH1309-08	08/21/09 18:01





10179 Highway 78 Ladson, SC 29456

Attn Tom McElwee

Work Order: NSH1232

Project Name: Laurel Bay Housing Project

Project Number: [none]

Received: 08/14/09 08:10

PROJECT QUALITY CONTROL DATA Matrix Spike Dup

Analyte	Orig. Val.	Duplicate	Q	Units	Spike Conc	% Rec.	Target Range	RPD	Limit	Batch	Sample Duplicated	Analyzed Date/Time
Selected Volatile Organic Compo	ounds by EPA	Method 82	60B									
9082342-MSD1												
Benzene	ND	2.47		mg/kg dry	2,80	88%	42 - 141	16	50	9082342	NSH1232-09R E1	08/21/09 21:5
Ethylbenzene	ND	2.53		mg/kg dry	2.80	90%	21 - 165	13	50	9082342	NSH1232-09R E1	08/21/09 21:5
Naphthalene	1.00	3.09		mg/kg dry	2.80	75%	10 - 160	16	50	9082342	NSH1232-09R E1	08/21/09 21:5
Toluene	ND	2.45		mg/kg dry	2,80	87%	45 - 145	13	50	9082342	NSH1232-09R	08/21/09 21:5
Xylenes, total	ND	7.94		mg/kg dry	8.41	94%	31 - 159	12.	50	9082342	E1 NSH1232-09R	08/21/09 21:5
urrogate: 1,2-Dichloroethane-d4		60.1		ug/kg	50.0	120%	67 - 138			9082342	E1 NSH1232-09R	08/21/09 21:50
urrogate; Dibromofluoromethane		51.7		ug/kg	50.0	103%	75 - 125			9082342	E1 NSH1232-09R	08/21/09 21:50
Surrogate: Toluene-d8		50.3		ug/kg	50.0	101%	76 - 129			9082342	E1 NSH1232-09R	08/21/09 21:5
Surrogate; 4-Bromofluorobenzene		53.0		ug/kg	50.0	106%	67 - 147			9082342	E1 NSH1232-09R E1	08/21/09 21:50
083618-MSD1												
Benzene	ND	1.99		mg/kg wet	2.22	90%	42 - 141	10	50	9083618	NSH1963-01R E1	08/24/09 21:3:
Ethylbenzene	ND	2.13		mg/kg wet	2.22	96%	21 - 165	4	50	9083618	NSH1963-01R E1	08/24/09 21:3
Naphthalene	ND	1.95		mg/kg wet	2.22	87%	10 - 160	1	50	9083618	NSH1963-01R E1	08/24/09 21:3
Toluene	ND	2.11		mg/kg wet	2.22	95%	45 - 145	3	50	9083618	NSH1963-01R E1	08/24/09 21:3
Xylenes, total	ND	6.51		mg/kg wet	6.67	98%	31 - 159	7	50	9083618	NSH1963-01R E1	08/24/09 21:3
urrogate: 1,2-Dichloroethane-d4		57.7		ug/kg	50.0	115%	67 - 138			9083618	NSH1963-01R E1	08/24/09 21:3
urrogate: Dibromofluoromethane		48.7		ug/kg	50,0	97%	75 - 125			9083618	NSH1963-01R E1	08/24/09 21:3:
urrogate: Toluene-d8		51.8		ug/kg	50.0	104%	76 - 129			9083618	NSH1963-01R E1	08/24/09 21:3
urrogate: 4-Bromofluorobenzene		52.7		ug/kg	50,0	105%	67 - 147			9083618	NSH1963-01R E1	08/24/09 21:3.
083623-MSD1												
Benzene	ND	2.17		mg/kg wet	2.50	87%	42 - 141	20	50	9083623	NSH1342-04R E1	08/24/09 21:3
Ethylbenzene	ND	2.24		mg/kg wet	2.50	89%	21 - 165	21	50	9083623	NSH1342-04R E1	08/24/09 21:3
Naphthalene	ND	2.04		mg/kg wet	2.50	82%	10 - 160	13	50	9083623	NSH1342-04R E1	08/24/09 21:32
Foluene	ND	2.14		mg/kg wet	2.50	86%	45 - 145	18	50	9083623	NSH1342-04R E1	08/24/09 21:3
Xylenes, total	ND	6.88		mg/kg wet	7.50	92%	31 - 159	20	50	9083623	NSH1342-04R E1	08/24/09 21:3



10179 Highway 78 Ladson, SC 29456

Attn Tom McElwee

Work Order: NSH1232

Project Name: Laurel Bay Housing Project

Project Number: [none]

Received: 08/14/09 08:10

PROJECT QUALITY CONTROL DATA Matrix Spike Dup - Cont.

Analyte	Orig. Val.	Duplicate	Q	Units	Spike Conc	% Rec.	Target Range	RPD	Limit	Batch	Sample Duplicated	Analyzed Date/Time
Selected Volatile Organic Comp	ounds by EPA	Method 826	60B									
9083623-MSD1												
Surrogate: 1,2-Dichloroethane-d4		46.6		ug/kg	50,0	93%	67 - 138			9083623	NSH1342-04R E1	08/24/09 21:32
Surrogate: Dibromofluoromethane		47.9		ug/kg	50.0	96%	75 - 125			9083623	NSH1342-04R E1	08/24/09 21:32
Surrogate: Toluene-d8		47.6		ug/kg	50,0	95%	76 - 129			9083623	NSH1342-04R E1	08/24/09 21:32
Surrogate: 4-Bromofluorohenzene		48.6		ug/kg	50.0	97%	67 - 147			9083623	NSH1342-04R E1	08/24/09 21:32
Polyaromatic Hydrocarbons by	EPA 8270D											
9082465-MSD1												
Acenaphthene	ND	1.37		mg/kg dry	1,95	71%	42 - 120	12	40	9082465	NSH1309-08	08/21/09 18:30
Acenaphthylene	ND	1.38		mg/kg dry	1.95	71%	32 - 120	14	30	9082465	NSH1309-08	08/21/09 18:30
Anthracene	ND	1.62		mg/kg dry	1.95	83%	10 - 200	17	50	9082465	NSH1309-08	08/21/09 18:30
Benzo (a) anthracene	ND	1.53		mg/kg dry	1.95	79%	41 - 120	15	30	9082465	NSH1309-08	08/21/09 18:30
Benzo (a) pyrene	ND	1.63		mg/kg dry	1,95	84%	33 - 121	15	33	9082465	NSH1309-08	08/21/09 18:30
Benzo (b) fluoranthene	ND	1.56		mg/kg dry	1.95	80%	26 - 137	15	42	9082465	NSH1309-08	08/21/09 18:30
Benzo (g,h,i) perylene	ND	1.38		mg/kg dry	1.95	71%	21 - 124	9	32	9082465	NSH1309-08	08/21/09 18:30
Benzo (k) fluoranthene	ND	1.54		mg/kg dry	1.95	79%	14 - 140	14	39	9082465	NSH1309-08	08/21/09 18:30
Chrysene	ND	1.49		mg/kg dry	1.95	77%	28 - 123	13	34	9082465	NSH1309-08	08/21/09 18:30
Dibenz (a,h) anthracene	ND	1.49		mg/kg dry	1.95	77%	25 - 127	10	31	9082465	NSH1309-08	08/21/09 18:30
Fluoranthene	ND	1.58		mg/kg dry	1.95	81%	38 - 120	14	35	9082465	NSH1309-08	08/21/09 18:30
Fluorene	ND	1.64		mg/kg dry	1.95	84%	41 - 120	13	37	9082465	NSH1309-08	08/21/09 18:30
Indeno (1,2,3-cd) pyrene	ND	1.49		mg/kg dry	1,95	77%	25 - 123	11	32	9082465	NSH1309-08	08/21/09 18:30
Naphthalene	ND	1.26		mg/kg dry	1,95	65%	25 - 120	14	42	9082465	NSH1309-08	08/21/09 18:30
Phenanthrene	ND	1.43		mg/kg dry	1.95	74%	37 - 120	12	32	9082465	NSH1309-08	08/21/09 18:30
Pyrene	ND	1.50		mg/kg dry	1.95	77%	29 - 125	14	40	9082465	NSH1309-08	08/21/09 18:30
Surrogate: Terphenyl-d14		1.54		mg/kg dry	1.95	79%	18 - 120			9082465	NSH1309-08	08/21/09 18:30
Surrogate: 2-Fluorobiphenyl		1.27		mg/kg dry	1.95	65%	14 - 120			9082465	NSH1309-08	08/21/09 18:30
Surrogate: Nitrobenzene-d5		1,31		mg/kg dry	1.95	67%	17 - 120			9082465	NSH1309-08	08/21/09 18:30



THE LEADER IN ENVIRONMENTAL TESTING

2960 Foster Creighton Road Nashville, TN 37204 * 800-765-0980 * Fax 615-726-3404

EEG - Small Business Group, Inc. (2449) Client

10179 Highway 78

Ladson, SC 29456 Tom McElwee

Work Order:

NSH1232

Project Name:

Laurel Bay Housing Project

Project Number:

Nelac

[none]

Received:

08/14/09 08:10

CERTIFICATION SUMMARY

TestAmerica Nashville

Attn

Method	Matrix	
SW846 8260B	Soil	
SW846 8270D	Soil	
SW-846	Soil	

AIHA

N/A

X X X X





10179 Highway 78 Ladson, SC 29456

Tom McElwee

Attn

Work Order: NSH1232

Project Name: Laurel Bay Housing Project

Project Number: [none]

Received: 08/14/09 08:10

DATA QUALIFIERS AND DEFINITIONS

RL1 Reporting limit raised due to sample matrix effects.

ZX Due to sample matrix effects, the surrogate recovery was outside the acceptance limits.

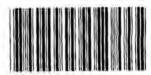
ND Not detected at the reporting limit (or method detection limit if shown)

METHOD MODIFICATION NOTES



Nashville. TN

COOLER RECE



Cooler Received/Opened On 08/14/09 @ p8:10 NSH1232 1. Tracking # (last 4 digits, Fe Courier: ___FED-EX IR Gun ID 97310166 2. Temperature of rep. sample or temp blank when opened: 5 Degrees Celsius 3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO. NA YES...NO...NA 4. Were custody seals on outside of cooler? If yes, how many and where: 5. Were the seals intact, signed, and dated correctly? 6. Were custody papers inside cooler? I certify that I opened the cooler and answered questions 1-6 (intial) 7. Were custody seals on containers: YES...NO. NA YES MO) and Intact Were these signed and dated correctly? YES...NO.CNA 8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None 9. Cooling process: (Ice) Ice-pack Ice (direct contact) Dry ice 10. Did all containers arrive in good condition (unbroken)? MES. NO...NA 11. Were all container labels complete (#, date, signed, pres., etc)? (ES).NO...NA 12. Did all container labels and tags agree with custody papers? (TES)..NO...NA 13a. Were VOA vials received? YES. NO...NA b. Was there any observable headspace present in any VOA vial? YES...NO..NA 14. Was there a Trip Blank in this cooler? YES...NO. (NA) If multiple coolers, sequence # (w) I certify that I unloaded the cooler and answered questions 7-14 (intial) 15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES..NØ(NA) b. Did the bottle labels indicate that the correct preservatives were used YES NO...NA 16. Was residual chlorine present? YES...NO. NAD [certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (intial) TES .. NO ... NA 17. Were custody papers properly filled out (ink, signed, etc)? 18. Did you sign the custody papers in the appropriate place? ..NO...NA ES).NO...NA 19. Were correct containers used for the analysis requested? ESI NO ... NA 20. Was sufficient amount of sample sent in each container? I certify that I entered this project into LIMS and answered questions 17-20 (intial) I certify that I attached a label with the unique LIMS number to each container (intial)

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

TestAmer	AL TESTING	Nashville 2960 Fos Nashville	ter Cre	ighto	n				II Fr	ne: 6 ee: 6 ax: 6	800-7	765-0	980)						To assist methods, regulatory	is this w	ork beir es?	ng cond	lucted fo	or			
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1456 CARD, N.41	8/10/09	1030	5	X			1	2	П			21			34		×	.3	2								02	
1465 CARDINAL	8/10/0	1530	_	X				2			1	21					X	13	2								B	
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4 1 5 h

ATTACHMENT A



NON-HAZARDOUS MANIFEST

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)					4	
NON-HAZARDOUS MANIFEST 1. Generator's US EPA ID) No. Doc	Manifest cument No.	2. Pag of 1	e 1		
3. Generator's Name and Mailing Address ACAS, Beaution Laure Bay Louising Beaution S. 4. Generator's Phone 843 228-6460			W	fest Number MNA Generator's ID	108	85469
Transporter 1 Company Name 6.	US EPA ID Number	3	C. State	Transporter's ID	L	
EEG, Inc.		LIT	D. Trans	sporter's Phone	3 879	0411
7. Transporter 2 Company Name 8.	US EPA ID Number		E. State	Transporter's ID	21.16.3	
		LII	F. Trans	sporter's Phone		
Designated Facility Name and Site Address 10.	US EPA ID Number		G. State	Facility's ID		
HICKORY HILL LANDFILL ROUTE 1, BOX 121 RINGELAND SC 29936 11. Description of Waste Materials		12. Conti			3 987-	4643
11. Description of Waste Materials			I Type	13. Total Quantity	14. Unit Wt./Vol.	Misc. Comments
^a Heating Oil Tank filled with Sand WM Profile # 1028	55SC	0 0 1		6.28	TN	12
b. WM Profile #						61
O R						-
c. WM Profile #						
		1	1		17/1	
WM Profile #		F 1		4 1 1 1		1 1
J. Additional Descriptions for Materials Listed Above			K. Dis	posal Location		-
Landfill Solidification	-		Cell		Leve	, ,
Bio Remediation			Grid			and was a second
15. Special Handling Instructions and Additional Information OKA UST'S TROM Purchase Order # 14 CARDINALY	1465 CARd; EMERGENCY CONTACT:	NA (400	1469 CX 1466 CX 1475 C	indi andi Arc	ual v
I hereby certify that the above-described material applicable state law, have been fully and accurate for transportation according to applicable regulation.	ely described, classifi					
Printed/Typed Name W.G. Walson, T.	Signature "On behalf of"					Month Day Year
T 17. Transporter 1 Acknowledgement of Receipt of Materials		-	-		7-1	20 2001
Printed/Typed Name Sames Baldward	Signature Games E	Bald		ensite and the second		Month Day Year
18. Transporter 2 Acknowledgement of Receipt of Materials Printed/Typed Name	Signature			Market State of the State of th		Month Day Year
19. Certificate of Final Treatment/Disposal			- 10		-	
I certify, on behalf of the above listed treatment fa was managed in compliance with all applicable la	ws, regulations, perm	nits and I				
20. Facitity Owner or Operator: Certification of receipt of non-hazardous m	1 1 5 55 1	est.		The state of the s	9 4	
Printed/Typed Name	Signature)0 M2)			Month Day Year

Appendix C Laboratory Analytical Report - Groundwater



Volatile Organic Compounds by GC/MS

Client: AECOM - Resolution Consultants

Description: BEALB1461TW01WG20150205

Laboratory ID: QB06006-014 Matrix: Aqueous

Date Sampled: 02/05/2015 1500 Date Received: 02/06/2015

Run Prep Method Analytical Method Dilution Analysis Date Analyst Prep Date Batch 5030B 02/12/2015 1531 67618

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL Units Run
Benzene	71-43-2	8260B	0.40	U	1.0	0.40	0.13 ug/L 1
Ethylbenzene	100-41-4	8260B	0.35	J	1.0	0.50	0.33 ug/L 1
Naphthalene	91-20-3	8260B	4.9		1.0	0.20	0.40 ug/L 1
Toluene	108-88-3	8260B	0.50	U	1.0	0.50	0.33 ug/L 1
Xylenes (total)	1330-20-7	8260B	0.59	J	1.0	0.40	0.33 ug/L 1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	
1,2-Dichloroethane-d4		93	70-120	
Bromofluorobenzene		100	75-120	
Toluene-d8		99	85-120	
Dibromofluoromethane		96	85-115	

PQL = Practical quantitation limit ND = Not detected at or above the MDL B = Detected in the method blank J = Estimated result < PQL and ≥ MDL

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

E = Quantitation of compound exceeded the calibration range P = The RPD between two GC columns exceeds 40%

H = Out of holding time N = Recovery is out of criteria

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Shealy Environmental Services, Inc.

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

Level 1 Report v2.1

Semivolatile Organic Compounds by GC/MS (SIM)

02/19/2015 1553 RBH 02/10/2015 1512 67395

Client: AECOM - Resolution Consultants

Description: BEALB1461TW01WG20150205

Laboratory ID: QB06006-014

Matrix: Aqueous

Date Sampled:02/05/2015 1500
Date Received: 02/06/2015

3520C

2

Date Received: 02/06/2015

Run Prep Method Analytical Method Dilution Analysis Date Analyst Prep Date Batch

8270D (SIM)

Parameter	CAS Number		Result	Q	LOQ	LOD	DL Units Run
Benzo(a)anthracene	56-55-3	8270D (SIM)	2.0	U	10	2.0	0.95 ug/L 2
Benzo(b)fluoranthene	205-99-2	8270D (SIM)	2.0	U	10	2.0	0.95 ug/L 2
Benzo(k)fluoranthene	207-08-9	8270D (SIM)	2.0	U	10	2.0	1.2 ug/L 2
Chrysene	218-01-9	8270D (SIM)	2.0	U	10	2.0	1.1 ug/L 2
Dibenzo(a,h)anthracene	53-70-3	8270D (SIM)	4.0	U	10	4.0	2.0 ug/L 2
Surrogate		eptance imits					
2-Methylnaphthalene-d10	71 1	5-139					
Fluoranthene-d10	37 2	3-154					

PQL = Practical quantitation limit
ND = Not detected at or above the MDL

 $B = Detected in the method blank \\ J = Estimated result < PQL and <math>\geq MDL$

E = Quantitation of compound exceeded the calibration range P = The RPD between two GC columns exceeds 40%

H = Out of holding timeN = Recovery is out of criteria

Q = Surrogate failure 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

Level 1 Report v2.1

Appendix D Laboratory Analytical Report - Vapor



ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 1

Client:AECOMALS Project ID: P1404131Client Sample ID:BEALB1461SG01GS20141007ALS Sample ID: P1404131-003

Client Project ID: JM30- Laurel Bay Military Housing Area, MCAS Beauf / 60272162.FI.WS

Test Code: EPA TO-15 Date Collected: 10/7/14
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 10/9/14
Analyst: Simon Cao Date Analyzed: 10/11/14

Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)

Test Notes:

Container ID: SC02012

Initial Pressure (psig): -2.26 Final Pressure (psig): 5.01

Canister Dilution Factor: 1.58

CAS#	Compound	Result µg/m³	LOQ μg/m³	LOD μg/m³	MDL μg/m³	Data Qualifier
71-43-2	Benzene	0.70	0.79	0.70	0.25	U
108-88-3	Toluene	0.52	0.79	0.66	0.27	J
100-41-4	Ethylbenzene	0.68	0.79	0.68	0.25	U
179601-23-1	m,p-Xylenes	1.3	1.6	1.3	0.47	U
95-47-6	o-Xylene	0.65	0.79	0.65	0.24	U
91-20-3	Naphthalene	0.65	0.79	0.65	0.28	U

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis. LOQ = Limit of Quantitation - The minimum quantity of a target analyte that can be confidently determined by the referenced method. J = The result is an estimated concentration that is less than the LOQ but greater than or equal to the MDL.

Appendix E Regulatory Correspondence



April 1, 2014

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

IGWA RE:

Laurel Bay Underground Storage Tank Assessment Reports for:

See attached sheet

Dear Mr. Drawdy,

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

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

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

If you have any questions, please contact me at kriegkm@gmail.com or 803-898-0255.

Sincerely,

Kent Krieg

Department of Defense Corrective Action Section

Bureau of Land and Waste Management

South Carolina Department of Health and Environmental Control

Cc: Russell Berry (via email)

Craig Ehde (via email)

the many that a man few that he had been been able to

Attachment to:

Krieg to Drawdy

Subject: IGWA Dated 4/1/2014

Laurel Bay Underground Storage Tank Assessment Reports for: (25 addresses/26 tanks)

1187 Bobwhite	1456 Cardinal		
1431 Dove	1457 Cardinal		
1433 Dove	1461 Cardinal		
1435 Dove Tank #1	1465 Cardinal		
1435 Dove Tank #2	1467 Cardinal		
1437 Dove	1469 Cardinal		
1439 Dove	1470 Cardinal		
1441 Dove	1471 Cardinal		
1447 Dove	1473 Cardinal		
1449 Dove	1477 Cardinal		
1451 Dove	1478 Cardinal		
1452 Cardinal	1479 Cardinal		
1454 Cardinal	1485 Cardinal		



May 5, 2015

W. Marshall Taylor Jr., Acting Director

Promoting and protecting the health of the public and the environment

Commanding Officer

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

RE: Correction - Recommendation Concurrence

Draft Final Initial Groundwater Investigation Report

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 addresses attached. The regulatory authority for the investigation and cleanup of releases from these tank systems is the South Carolina Pollution Control Act (S.C. Code Ann. §48-1-10 et seq., as amended).

Per the Department's request, groundwater samples were collected from the attached referenced addresses. The Department reviewed the groundwater data and previous investigations and it agrees with the conclusions and recommendations included in the document. To further assess the impact to groundwater, permanent wells should be installed at the 3 stated addresses. For the remaining 23 addresses, there is no indication of contamination on the property and therefore no further investigation is required at this time. *Note the correction to the attachment, properly referencing 1431 Dove and 1435 Dove Tank 1 and Tank 2 in the Permanent Monitoring Well Investigation recommendation section.*

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

If you have any questions, please contact me at kriegkm@dhec.sc.gov or 803-898-0255.

Sincerely,

Kent Krieg

Department of Defense Corrective Action Section

Bureau of Land and Waste Management

South Carolina Department of Health and Environmental Control

Attachment: Specific Property Recommendations

Cc: Russell Berry (via email)

Craig Ehde (via email) Bryan Beck (via email)



W. Marshall Taylor Jr., Acting Director

Promoting and protecting the health of the public and the environment

Attachment to: Krieg to Drawdy

Subject: Draft Final Initial Groundwater Investigation Report - April 2015

Specific Property Recommendations

Dated 5/5/2015

Draft Final Initial Groundwater Investigation Report for: (26 addresses/28 tanks)

Permanent Monitoring Well Investigation recommendation (3 addresses/4 tanks):				
1431 Dove	1435 Dove Tank 2			
1435 Dove Tank 1	1452 Cardinal			
No Further Action recommendation (23 addres	ses/24 tanks):			
1187 Bobwhite	1463 Cardinal			
1433 Dove	1465 Cardinal			
1437 Dove	1467 Cardinal			
1439 Dove	1469 Cardinal			
1441 Dove	1470 Cardinal			
1447 Dove	1473 Cardinal			
1449 Dove	1471 Cardinal			
1451 Dove	1477 Cardinal			
1454 Cardinal	1478 Cardinal			
1456 Cardinal	1479 Cardinal Tank 1			
1457 Cardinal	1479 Cardinal Tank 2			
1461 Cardinal	1485 Cardinal			



W. Marshall Taylor Jt., Acting Director Promoting and protecting the health of the public and the environment

Bureau of Land and Waste Management South Carolina Department of Health and Environmental Control

March 10, 2015

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

RE: Approval

Draft Final Technical Memorandum-Soil Gas Sampling Results

October 2014

Laurel Bay Military Housing Area

Dear Mr. Drawdy,

The South Carolina Department of Health and Environmental Control (the Department) received the above referenced soil gas sampling results for multiple former heating oil tank sites on February 2, 2015. During tank removal, contaminated soil had been observed at the former tank sites selected for this study. The purpose of this study was to evaluate whether the constituents observed in soil have potential for exposure and risk to residents through impacted vapor intrusion pathways. Sampling was performed at fourteen (14) former heating oil tank sites with a range of VOCs present in the soil at the time of tank removal. 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 soil gas sampling results. The Department has generated no comments on this report. Please note that the Department's decision is based on information provided by the Marine Corps Air Station (MCAS) to date. Any information found to be contradictory to this decision may require additional action. Furthermore, the Department retains the right to request further investigation if deemed necessary. If you have any questions, please contact me at petruslb@dhec.sc.gov or 803-898-0294.

Sincerely,

Laurel Petrus

LIPE

Department of Defense Corrective Action Section

Cc: Russell Berry, EQC Region 8

Shawn Dolan, Resolution Consultants