

**SUMMARY REPORT
85 BIRCH ROAD (FORMERLY 274 BIRCH ROAD)
LAUREL BAY MILITARY HOUSING AREA
MARINE CORPS AIR STATION BEAUFORT
BEAUFORT, SC**

**Revision: 0
Prepared for:**

**Department of the Navy
Naval Facilities Engineering Command, Mid-Atlantic
9324 Virginia Avenue
Norfolk, Virginia 23511-3095**

and



**Naval Facilities Engineering Command Atlantic
9324 Virginia Avenue
Norfolk, Virginia 23511-3095**

JUNE 2021

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Prepared by:

CDM - AECOM
Multimedia Joint Venture

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

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

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List of Acronyms

bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and xylenes
CTO	Contract Task Order
COPC	constituents of potential concern
ft	feet
IDIQ	Indefinite Delivery, Indefinite Quantity
IGWA	Initial Groundwater Assessment
JV	Joint Venture
LBMH	Laurel Bay Military Housing
MCAS	Marine Corps Air Station
NAVFAC Mid-Lant	Naval Facilities Engineering Command Mid-Atlantic
NFA	No Further Action
PAH	polynuclear aromatic hydrocarbon
QAPP	Quality Assurance Program Plan
RBSL	risk-based screening level
SCDHEC	South Carolina Department of Health and Environmental Control
Site	LBMH area at MCAS Beaufort, South Carolina
UST	underground storage tank
VISL	vapor intrusion screening level

1.0 INTRODUCTION

The CDM - AECOM Multimedia Joint Venture (JV) was contracted by the Naval Facilities Engineering Command, Mid-Atlantic (NAVFAC Mid-Lant) to provide reporting services for the heating oil underground storage tanks (USTs) located in Laurel Bay Military Housing (LBMH) area at the Marine Corps Air Station (MCAS) Beaufort, South Carolina (Site). This work has been awarded under Contract Task Order (CTO) WE52 of the Indefinite Delivery, Indefinite Quantity (IDIQ) Multimedia Environmental Compliance Contract (Contract No. N62470-14-D-9016).

As of January 2014, the LBMH addresses were re-numbered to comply with the E-911 emergency response addressing system; however, in order to remain consistent with historical sampling and reporting for LBMH area, the residences will continue to be referenced with their original address numbers in sample nomenclature and reporting documents.

This report summarizes the results the environmental investigation activities associated with the storage of home heating oil and the potential release of petroleum constituents at the referenced property. Based on the results of the investigation, a No Further Action (NFA) determination has been made by the South Carolina Department of Health and Environmental Control (SCDHEC) for 85 Birch Road (Formerly 274 Birch Road). This NFA determination indicates that there are no unacceptable risks to human health or the environment for the petroleum constituents associated with the home heating oil USTs. The following information is included in this report:

- Background information;
- Sampling activities and results; and
- A determination of the property status.

1.1 Background Information

The LBMH area is located approximately 3.5 miles west of MCAS Beaufort. The area is approximately 970 acres in size and serves as an enlisted and officer family housing area. The area is configured with single family and duplex residential structures, and includes recreation, open space, and community facilities. The community includes approximately 1,300 housing units, including legacy Capehart style homes and newer duplex style homes. The housing area

is bordered on the west by salt marshes and the Broad River, and to the north, east and south by uplands. Forested areas lie along the northern and northeastern borders.

Capehart style homes within the LBMH area were formerly heated using heating oil stored in USTs at each residence. There were 1,100 Capehart style housing units in the LBMH area. The newer duplex homes within the LBMH area never utilized heating oil tanks. Heating oil has not been used at Laurel Bay since the mid-1980s. As was the accepted practice at the time, USTs were drained, filled with dirt, capped, and left in place when they were removed from service. Residential USTs are not regulated in the State of South Carolina (i.e., there are no federal or state laws governing installation, management, or removal).

In 2007, MCAS Beaufort began a voluntary program to remove the unregulated, residential USTs and conduct sampling activities to determine if, and to what extent, petroleum constituents may have impacted the surrounding environment. MCAS Beaufort coordinated with SCDHEC to develop removal procedures that were consistent with procedural requirements for regulated USTs. All tank removal activities and follow-on actions are conducted in coordination with SCDHEC. To date, all known USTs have been removed from all residential properties within the LBMH area.

1.2 UST Removal and Assessment Process

During the UST removal process, a soil sample was collected from beneath the UST excavations (approximately 4 to 6 feet [ft] below ground surface [bgs]) and analyzed for a predetermined list of constituents of potential concern (COPCs) associated with the petroleum compounds found in home heating oil. These COPCs, derived from the *Quality Assurance Program Plan (QAPP) for the Underground Storage Tank Management Division, Revision 3.1* (SCDHEC, 2016) and the *Underground Storage Tank Assessment Instructions for Permanent Closure and Change-In-Service*, (SCDHEC, 2018), are as follows:

- benzene, toluene, ethylbenzene, and xylenes (BTEX),
- naphthalene, and
- five select polynuclear aromatic hydrocarbon (PAHs): benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene and dibenz(a,h)anthracene.

Soil sample results were submitted by MCAS Beaufort to SCDHEC utilizing SCDHEC's UST Assessment Report form. In accordance with SCDHEC's *QAPP for the UST Management*

Division (SCDHEC, 2016), the soil screening levels consists of SCDHEC risk-based screening levels (RBSLs). It should be noted that the RBSLs for select PAHs were revised in Revision 2.0 of the QAPP (SCDHEC, 2013) and were revised again in Revision 3.0 (SCDHEC, 2015). The screening levels used for evaluation at each site were those levels that were in effect at the time of reporting and review by SCDHEC.

The results of the soil sampling at each former UST location were used to determine if a potential for groundwater contamination exists (i.e., soil results greater than RBSLs) and subsequently to select properties for follow-up initial groundwater assessment (IGWA) sampling. The results of the IGWA sampling (if necessary) are used to determine the presence or absence of the aforementioned COPCs in groundwater and identify whether former UST locations will require additional delineation of COPCs in groundwater. In order to delineate the extent of impact to groundwater, permanent wells are installed and a sampling program is established for those former UST locations where IGWA sampling has indicated the presence of COPCs in excess of the SCDHEC RBSLs for groundwater. Groundwater analytical results are also compared to the site specific groundwater vapor intrusion screening levels (VISLs) to evaluate the potential for vapor intrusion and the necessity for an investigation associated with this media. A multi-media investigation selection process tree, applicable to the LBMH UST investigations, is presented as Appendix A.

2.0 SAMPLING ACTIVITIES AND RESULTS

The following section presents the sampling activities and associated results for 85 Birch Road (Formerly 274 Birch Road). Details regarding the soil investigation at this site are provided in the *SCDHEC UST Assessment Report – 274 Birch Road* (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 and March 2017* (Resolution Consultants, 2017). The laboratory report that includes the pertinent IGWA analytical results for this site is presented in Appendix C.

2.1 UST Removal and Soil Sampling

On April 13, 2009, a single 280 gallon heating oil UST was removed from the front landscaped bed area adjacent to the driveway at 85 Birch Road (Formerly 274 Birch Road). The former UST location is indicated on Figures 2 and 3 of the UST Assessment Report (Appendix B). The UST was removed, cleaned, and shipped offsite for recycling. There was no visual evidence (i.e.,

staining or sheen) of petroleum impact at the time of the UST removal. According to the UST Assessment Report (Appendix B), the depth to the base of the UST was 6'2" 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 85 Birch Road (Formerly 274 Birch Road) were greater than the SCDHEC RBSLs, which indicated further investigation was required. In a letter dated December 14, 2016, SCDHEC requested an IGWA for 85 Birch Road (Formerly 274 Birch Road) to determine if the groundwater was impacted by petroleum COPCs. SCDHEC's request letter is provided in Appendix D.

2.3 Groundwater Sampling

On March 2, 2017, a temporary monitoring well was installed at 85 Birch Road (Formerly 274 Birch Road), 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 and March 2017* (Resolution Consultants, 2017).

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 and March 2017* (Resolution Consultants, 2017).

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 85 Birch Road (Formerly 274 Birch Road) were less than the SCDHEC RBSLs and the site specific groundwater VISLs (Table 2), which indicated that the groundwater was not impacted by COPCs associated with the former UST at concentrations that present a potential risk to human health and the environment.

3.0 PROPERTY STATUS

Based on the analytical results for groundwater, SCDHEC made the determination that NFA was required for 85 Birch Road (Formerly 274 Birch Road). This NFA determination was obtained in a letter dated July 27, 2017. SCDHEC's NFA letter is provided in Appendix D.

4.0 REFERENCES

Marine Corps Air Station Beaufort, 2009. *South Carolina Department of Health and Environmental Control (SCDHEC) Underground Storage Tank Assessment Report – 274 Birch Road, Laurel Bay Military Housing Area*, April 2009.

Resolution Consultants, 2017. *Initial Groundwater Investigation Report – February and March 2017 for Laurel Bay Military Housing Area, Multiple Properties, Laurel Bay Military Housing Area, Marine Corps Air Station Beaufort, Beaufort, South Carolina*, June 2017.

South Carolina Department of Health and Environmental Control Bureau of Land and Waste Management, 2013. *Quality Assurance Program Plan for the Underground Storage Tank Management Division, Revision 2.0*, April 2013.

South Carolina Department of Health and Environmental Control Bureau of Land and Waste Management, 2015. *Quality Assurance Program Plan for the Underground Storage Tank Management Division, Revision 3.0*, May 2015.

South Carolina Department of Health and Environmental Control Bureau of Land and Waste Management, 2016. *Quality Assurance Program Plan for the Underground Storage Tank Management Division, Revision 3.1*, February 2016.

South Carolina Department of Health and Environmental Control Bureau of Land and Waste Management, 2017. *R.61-92, Part 280, Underground Storage Tank Control Regulations*, March 2017.

South Carolina Department of Health and Environmental Control Bureau of Land and Waste Management, 2018. *Underground Storage Tank Assessment Instructions for Permanent Closure and Change-In-Service*, March 2018.

South Carolina Department of Health and Environmental Control Bureau of Water, 2016. *R.61-71, Well Standards*, June 2016.

Tables

Table 1
Laboratory Analytical Results - Soil
85 Birch Road (Formerly 274 Birch Road)
Laurel Bay Military Housing Area
Marine Corps Air Station Beaufort
Beaufort, South Carolina

Constituent	SCDHEC RBSLs ⁽¹⁾	Results Sample Collected 04/16/09
Volatile Organic Compounds Analyzed by EPA Method 8260B (mg/kg)		
Benzene	0.003	ND
Ethylbenzene	1.15	ND
Naphthalene	0.036	0.724
Toluene	0.627	ND
Xylenes, Total	13.01	ND
Semivolatile Organic Compounds Analyzed by EPA Method 8270D (mg/kg)		
Benzo(a)anthracene	0.66	0.104
Benzo(b)fluoranthene	0.66	ND
Benzo(k)fluoranthene	0.66	ND
Chrysene	0.66	0.0957
Dibenz(a,h)anthracene	0.66	ND

Notes:

⁽¹⁾ South Carolina Risk-Based Screening Levels from the Quality Assurance Program Plan for the Underground Storage Tank Management Division, Revision 3.0 and 3.1 (SCDHEC, May 2015 and SCDHEC, February 2016) and the Underground Storage Tank Assessment Guidelines (SCDHEC, February 2006).

Bold font indicates the analyte was detected.

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

EPA - United States Environmental Protection Agency

mg/kg - milligrams per kilogram

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

RBSL - Risk-Based Screening Level

SCDHEC - South Carolina Department Of Health and Environmental Control

Table 2
Laboratory Analytical Results - Groundwater
85 Birch Road (Formerly 274 Birch Road)
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 03/03/17
Volatile Organic Compounds Analyzed by EPA Method 8260B (µg/L)			
Benzene	5	16.24	ND
Ethylbenzene	700	45.95	ND
Naphthalene	25	29.33	0.96
Toluene	1000	105,445	ND
Xylenes, Total	10,000	2,133	ND
Semivolatile Organic Compounds Analyzed by EPA Method 8270D (µg/L)			
Benzo(a)anthracene	10	NA	ND
Benzo(b)fluoranthene	10	NA	ND
Benzo(k)fluoranthene	10	NA	ND
Chrysene	10	NA	ND
Dibenz(a,h)anthracene	10	NA	ND

Notes:

⁽¹⁾ South Carolina Risk-Based Screening Levels from the Quality Assurance Program Plan for the Underground Storage Tank Management Division, Revision 3.1 (SCDHEC, February 2016).

⁽²⁾ Site-specific groundwater VISLs were calculated using the EPA JE Model Spreadsheets (Version 3.1, February 2004) and conservative modeling inputs representative of a small single-story house with an 8 foot ceiling. Site-specific groundwater VISLs were developed based on a target risk level of 1×10^{-6} , a target hazard quotient of 1 (per target organ), and a default residential exposure scenario, assuming exposure for 24 hours/day, 350 days/year, for 26 years. Modeling was performed for a range of depths to groundwater for application as appropriate in different areas of the Laurel Bay Military Housing Area. The most conservative levels are presented for comparison. Refer to Appendix H of the Uniform Federal Policy Sampling Analysis and Sampling Plan for Vapor Media, Revision 4 (Resolution Consultants, April 2017) for additional information.

Bold font indicates the analyte was detected.

Bold font and shading indicates the concentration exceeds the SCDHEC RBSL and/or the Site-Specific Groundwater VISL.

EPA - United States Environmental Protection Agency

JE - Johnson & Ettinger

NA - Not Applicable

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

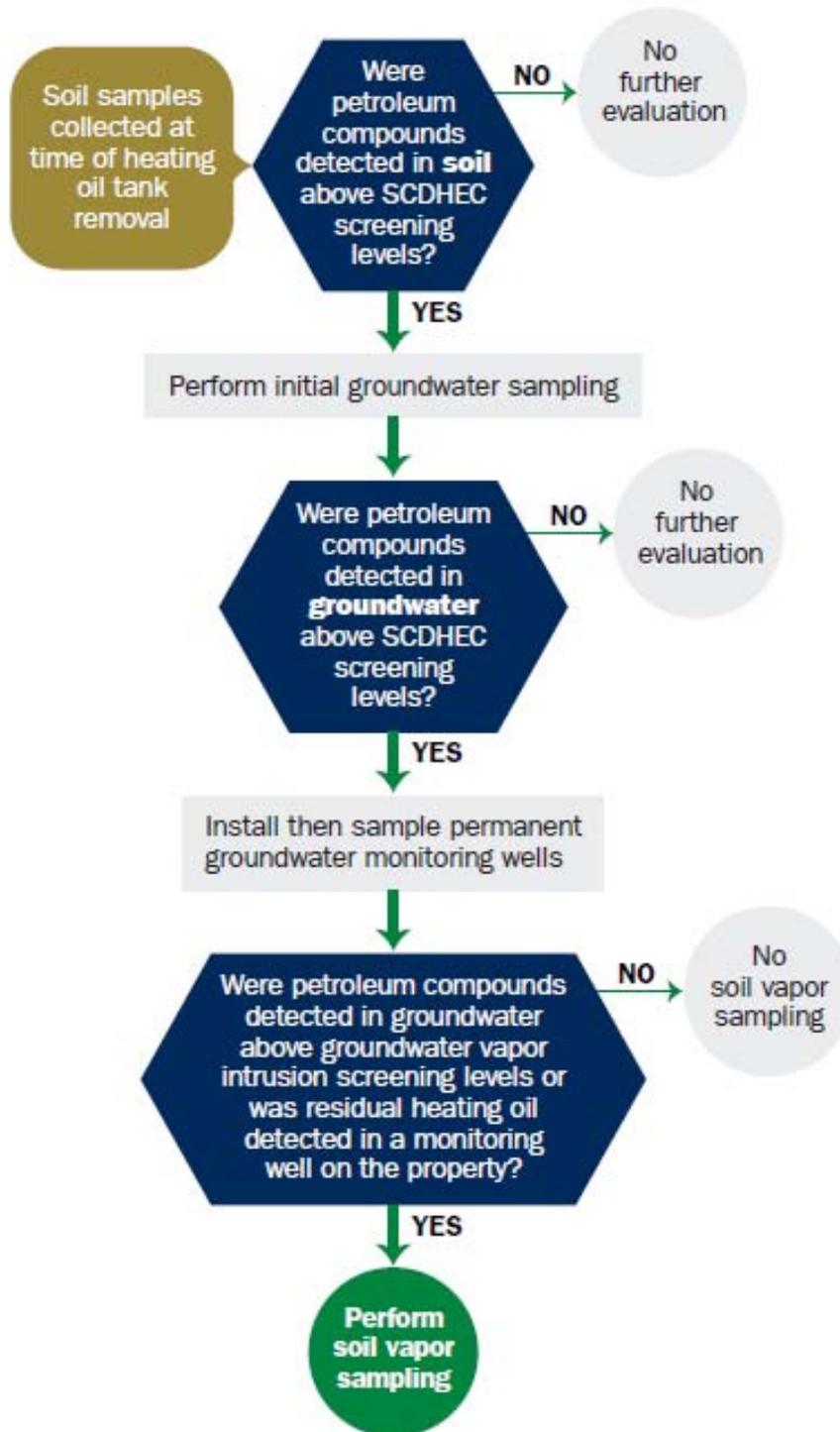
RBSL - Risk-Based Screening Level

SCDHEC - South Carolina Department Of Health and Environmental Control

µg/L - micrograms per liter

VISL - Vapor Intrusion Screening Level

Appendix A
Multi-Media Selection Process for LBMH



Appendix A - Multi-Media Selection Process for LBMH

Appendix B
UST Assessment Report

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

<p>Date Received</p> <p>State Use Only</p>

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

I. OWNERSHIP OF UST (S)

MCAS Beaufort, Commanding Officer Attn: NREAO (Craig Ehde)		
Owner Name (Corporation, Individual, Public Agency, Other)		
P.O. Box 55001		
Mailing Address		
Beaufort,	South Carolina	29904-5001
City	State	Zip Code
843	228-7317	Craig Ehde
Area Code	Telephone Number	Contact Person

II. SITE IDENTIFICATION AND LOCATION

Permit I.D. #	
Laurel Bay Military Housing Area, Marine Corps Air Station, Beaufort, SC	
Facility Name or Company Site Identifier	
274 Birch Dr., Laurel Bay Military Housing Area	
Street Address or State Road (as applicable)	
Beaufort,	Beaufort
City	County

III. INSURANCE INFORMATION

Insurance Statement

The petroleum release reported to DHEC on _____ at Permit ID Number _____ may qualify to receive state monies to pay for appropriate site rehabilitation activities. Before participation is allowed in the State Clean-up fund, written confirmation of the existence or non-existence of an environmental insurance policy is required. **This section must be completed.**

Is there now, or has there ever been an insurance policy or other financial mechanism that covers this UST release? YES ___ NO ___ (check one)

If you answered YES to the above question, please complete the following information:

My policy provider is: _____
The policy deductible is: _____
The policy limit is: _____

If you have this type of insurance, please include a copy of the policy with this report.

IV. REQUEST FOR SUPERB FUNDING

I **DO** / **DO NOT** wish to participate in the SUPERB Program. (Circle one.)

V. CERTIFICATION (To be signed by the UST owner)

I certify that I have personally examined and am familiar with the information submitted in this and all attached documents; and that based on my inquiry of those individuals responsible for obtaining this information, I believe that the submitted information is true, accurate, and complete.

Name (Type or print.)

Signature

To be completed by Notary Public:

Sworn before me this _____ day of _____, 20____

(Name)

Notary Public for the state of _____
Please affix State seal if you are commissioned outside South Carolina

VI. UST INFORMATION

274 Birch				
Heating oil				
280 gal				
Late 1950s				
Steel				
Mid 1980s				
6'2"				
No				
No				
Removed				
4/13/09				
Yes				
Yes				

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

M. Method of disposal for any USTs removed from the ground (attach disposal manifests)
 UST 274 Birch was removed from the ground, cleaned and recycled. See Attachment "A."

N. Method of disposal for any liquid petroleum, sludges, or wastewaters removed from the USTs (attach disposal manifests)
 Fluid was pumped from the tank and disposed of by MCAS.

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

VII. PIPING INFORMATION

- A. Construction Material..(ex. Steel, FRP).....
- B. Distance from UST to Dispenser.....
- C. Number of Dispensers.....
- D. Type of System Pressure or Suction.....
- E. Was Piping Removed from the Ground? Y/N
- F. Visible Corrosion or Pitting Y/N.....
- G. Visible Holes Y/N.....
- H. Age.....
- I. If any corrosion, pitting, or holes were observed, describe the location and extent for each piping run.

274 Birch					
Steel /Copper					
N/A					
N/A					
Suction					
Yes*					
Unknown					
Unknown					
Early 1950s					

*Condition of the steel vent piping is unknown as it was previously removed by others. Copper supply and return piping was cut and capped at the edge of excavation.

VIII. BRIEF SITE DESCRIPTION AND HISTORY

The USTs at the residences are constructed of single wall steel and formerly contained fuel oil for heating. These USTs were installed in the late 1950s and last used in the mid 1980s.

IX. SITE CONDITIONS

	Yes	No	Unk
<p>A. Were any petroleum-stained or contaminated soils found in the UST excavation, soil borings, trenches, or monitoring wells?</p> <p>If yes, indicate depth and location on the site map.</p>		X	
<p>B. Were any petroleum odors detected in the excavation, soil borings, trenches, or monitoring wells?</p> <p>If yes, indicate location on site map and describe the odor (strong, mild, etc.)</p>		X	
<p>C. Was water present in the UST excavation, soil borings, or trenches?</p> <p>If yes, how far below land surface (indicate location and depth)?</p>		X	
<p>D. Did contaminated soils remain stockpiled on site after closure?</p> <p>If yes, indicate the stockpile location on the site map.</p> <p>Name of DHEC representative authorizing soil removal:</p>		X	
<p>E. Was a petroleum sheen or free product detected on any excavation or boring waters?</p> <p>If yes, indicate location and thickness.</p>		X	

X. SAMPLE INFORMATION

A. SCDHEC Lab Certification Number 96012001

B.

Sample #	Location	Sample Type (Soil/Water)	Soil Type (Sand/Clay)	Depth*	Date/Time of Collection	Collected by	OVA #
274 Birch	Excav at fill end	Soil	Sandy clay	6'2"	4/13/09 1145 hrs	P. Shaw	
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

* = Depth Below the Surrounding Land Surface

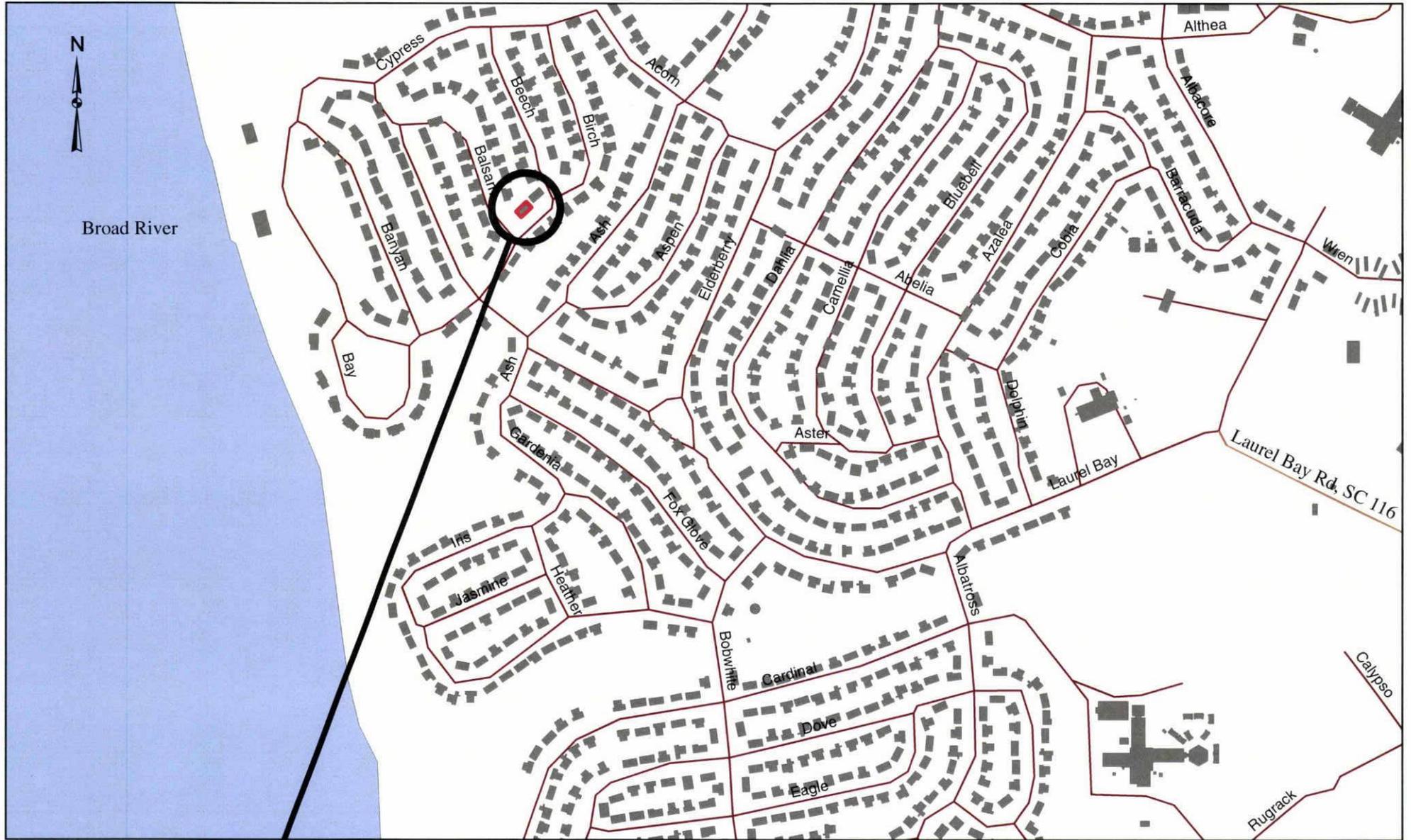
XII. RECEPTORS

	Yes	No
<p>A. Are there any lakes, ponds, streams, or wetlands located within 1000 feet of the UST system?</p> <p>If yes, indicate type of receptor, distance, and direction on site map.</p>		X
<p>B. Are there any public, private, or irrigation water supply wells within 1000 feet of the UST system?</p> <p>If yes, indicate type of well, distance, and direction on site map.</p>		X
<p>C. Are there any underground structures (e.g., basements) Located within 100 feet of the UST system?</p> <p>If yes, indicate type of structure, distance, and direction on site map.</p>		X
<p>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 and water, electricity, cable, and fiber optic.</p> <p>If yes, indicate the type of utility, distance, and direction on the site map.</p>	X*	
<p>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?</p> <p>If yes, indicate the area of contaminated soil on the site map.</p>		X

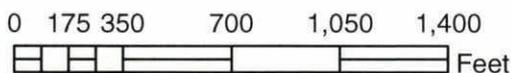
XIII. SITE MAP

You must supply a scaled site map. It should include all buildings, road names, utilities, tank and dispenser island locations, labeled sample locations, extent of excavation, and any other pertinent information.

(Attach Site Map Here)



274 BIRCH DR.

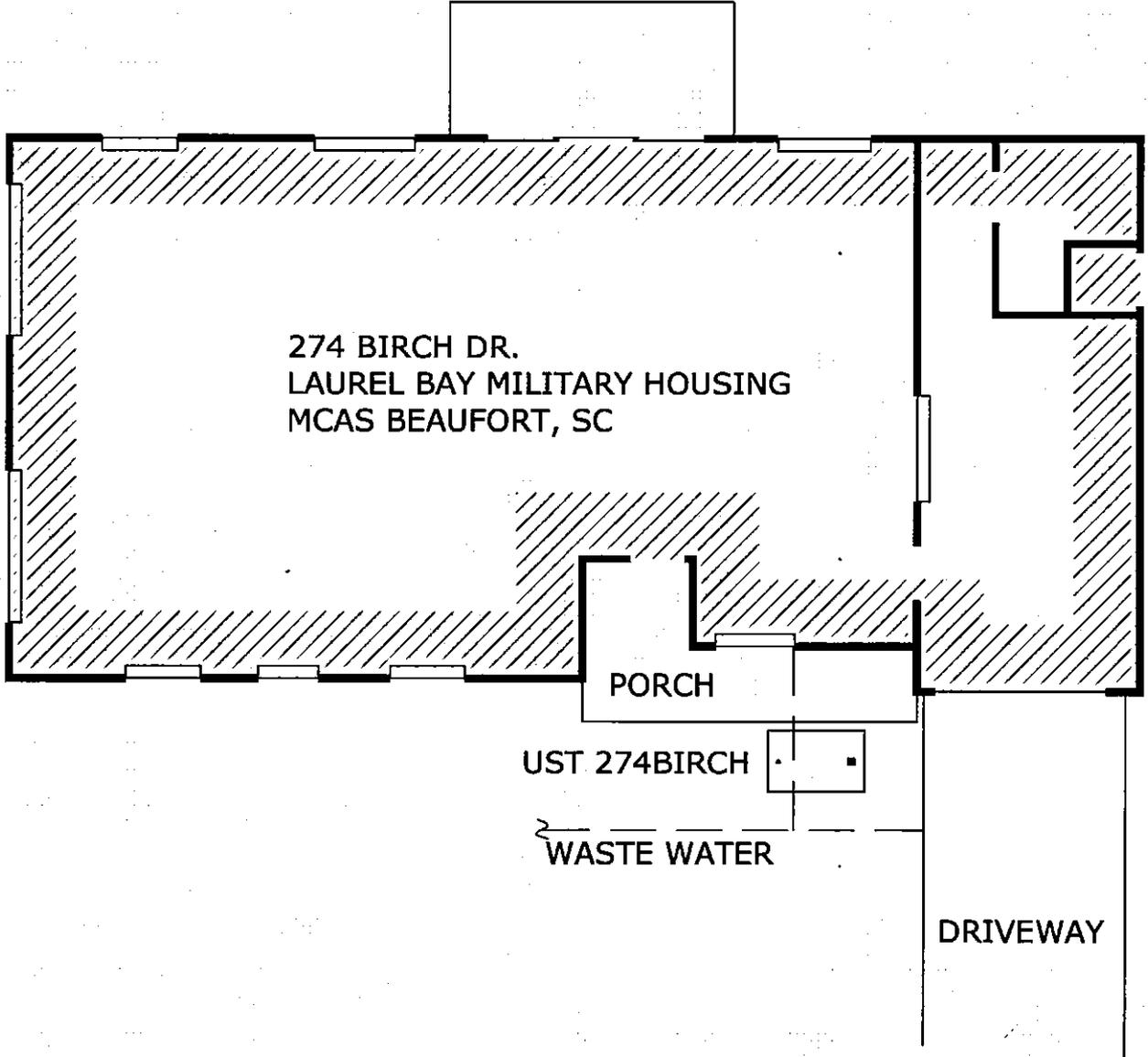
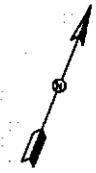


SBG-EEG, Inc.
 Small Business Group, Inc.
 10179 Hwy 78
 Ladson, SC 29456
 Ph. (843) 879-0400

Drawn By: L. DiAsio

Dwg Date: Apr 2009

FIGURE 1: LOCATION MAP
274 BIRCH DR., LAUREL BAY
MCAS BEAUFORT SC



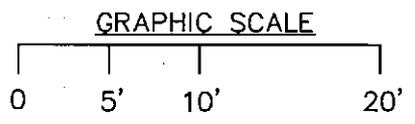
274 BIRCH DR.
LAUREL BAY MILITARY HOUSING
MCAS BEAUFORT, SC

PORCH

UST 274BIRCH

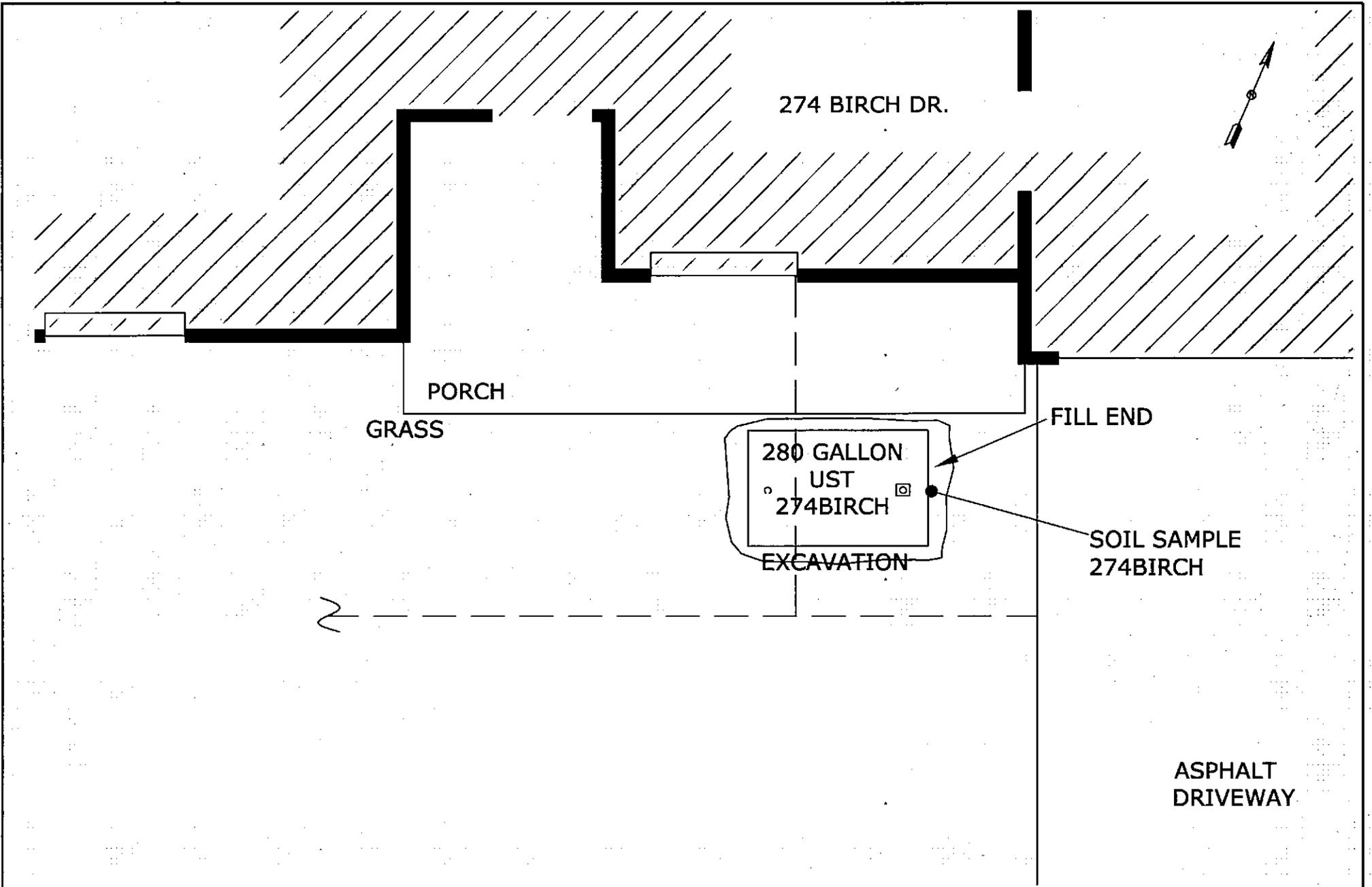
WASTE WATER

DRIVEWAY



SBG-EEG
10179 HWY 78
LADSON, SC 29456
ph. (843) 879-0400

FIGURE 2 SITE MAP
274 BIRCH DR., LAUREL BAY
MCAS BEAUFORT SC
SCALE: GRAPHIC DWG DATE APR 2009



UST 274BIRCH WAS 26" BELOW GRADE.

<p>SBG-EEG 10179 HWY 78 LADSON, SC 29456 ph. (843) 879-0400</p>	<p>FIGURE 3 UST SAMPLE LOCATIONS 274 BIRCH DR., LAUREL BAY MCAS BEAUFORT SC</p>	
	<p>SCALE: GRAPHIC</p>	<p>DWG DATE APR 2009</p>



Picture 1: UST 274Birch excavation site prior to removal.



Picture 2: UST 274Birch during removal from excavation.

XIV. SUMMARY OF ANALYSIS RESULTS

Enter the soil analytical data for each soil boring for all COC in the table below and on the following page.

CoC	274Birch						
Benzene	ND						
Toluene	ND						
Ethylbenzene	ND						
Xylenes	ND						
Naphthalene	0.724 mg/kg						
Benzo (a) anthracene	0.104 mg/kg						
Benzo (b) fluoranthene	ND						
Benzo (k) fluoranthene	ND						
Chrysene	0.0957 mg/kg						
Dibenz (a, h) anthracene	ND						
TPH (EPA 3550)							

CoC							
Benzene							
Toluene							
Ethylbenzene							
Xylenes							
Naphthalene							
Benzo (a) anthracene							
Benzo (b) fluoranthene							
Benzo (k) fluoranthene							
Chrysene							
Dibenz (a, h) anthracene							
TPH (EPA 3550)							

SUMMARY OF ANALYSIS RESULTS (cont'd)

Enter the ground water analytical data for each sample for all CoC in the table below. If free product is present, indicate the measured thickness to the nearest 0.01 feet.

CoC	RBSL (µg/l)	W-1	W-2	W -3	W -4
Free Product Thickness	None				
Benzene	5				
Toluene	1,000				
Ethylbenzene	700				
Xylenes	10,000				
Total BTEX	N/A				
MTBE	40				
Naphthalene	25				
Benzo (a) anthracene	10				
Benzo (b) flouranthene	10				
Benzo (k) flouranthene	10				
Chrysene	10				
Dibenz (a, h) anthracene	10				
EDB	.05				
1,2-DCA	5				
Lead	Site specific				

XV. ANALYTICAL RESULTS

You must submit the laboratory report and chain-of-custody form for the samples. These samples must be analyzed by a South Carolina certified laboratory.

(Attach Certified Analytical Results and Chain-of-Custody Here)
(Please see Form #4)

April 29, 2009 2:50:40PM

Client: EEG - Env. Enterprise Group (2449)
10179 Highway 78
Ladson, SC 29456
Attn: Tom McElwee

Work Order: NSD1532
Project Name: Laurel Bay Housing Project
Project Nbr: [none]
P/O Nbr: 0829
Date Received: 04/17/09

SAMPLE IDENTIFICATION	LAB NUMBER	COLLECTION DATE AND TIME
274 Birch	NSD1532-01	04/16/09 11:45

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.

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

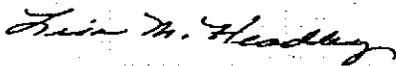
These results relate only to the items tested. This report shall not be reproduced except in full and with permission of the laboratory.

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

Estimated uncertainty is available upon request.

This report has been electronically signed.

Report Approved By:



Lisa Headley

Senior Project Manager

Client EEG - Env. Enterprise Group (2449)
 10179 Highway 78
 Ladson, SC 29456
 Attn Tom McElwee

Work Order: NSD1532
 Project Name: Laurel Bay Housing Project
 Project Number: [none]
 Received: 04/17/09 08:00

ANALYTICAL REPORT

Analyte	Result	Flag	Units	MRL	Dilution Factor	Analysis Date/Time	Method	Batch
Sample ID: NSD1532-01 (274 Birch - Soil) Sampled: 04/16/09 11:45								
General Chemistry Parameters								
% Dry Solids	76.8		%	0.500	1	04/23/09 06:46	SW-846	9043504
Selected Volatile Organic Compounds by EPA Method 8260B								
Benzene	ND	RL1	mg/kg dry	0.0886	50	04/27/09 21:36	SW846 8260B	9044297
Ethylbenzene	ND	RL1	mg/kg dry	0.0886	50	04/27/09 21:36	SW846 8260B	9044297
Naphthalene	0.724		mg/kg dry	0.221	50	04/27/09 21:36	SW846 8260B	9044297
Toluene	ND	RL1	mg/kg dry	0.0886	50	04/27/09 21:36	SW846 8260B	9044297
Xylenes, total	ND	RL1	mg/kg dry	0.221	50	04/27/09 21:36	SW846 8260B	9044297
Surr: 1,2-Dichloroethane-d4 (41-150%)	86 %					04/27/09 21:36	SW846 8260B	9044297
Surr: Dibromofluoromethane (55-139%)	86 %					04/27/09 21:36	SW846 8260B	9044297
Surr: Toluene-d8 (57-148%)	104 %					04/27/09 21:36	SW846 8260B	9044297
Surr: 4-Bromofluorobenzene (58-150%)	111 %					04/27/09 21:36	SW846 8260B	9044297
Polyaromatic Hydrocarbons by EPA 8270D								
Acenaphthene	ND		mg/kg dry	0.0871	1	04/21/09 19:28	SW846 8270D	9043183
Acenaphthylene	ND		mg/kg dry	0.0871	1	04/21/09 19:28	SW846 8270D	9043183
Anthracene	ND		mg/kg dry	0.0871	1	04/21/09 19:28	SW846 8270D	9043183
Benzo (a) anthracene	0.104		mg/kg dry	0.0871	1	04/21/09 19:28	SW846 8270D	9043183
Benzo (a) pyrene	ND		mg/kg dry	0.0871	1	04/21/09 19:28	SW846 8270D	9043183
Benzo (b) fluoranthene	ND		mg/kg dry	0.0871	1	04/21/09 19:28	SW846 8270D	9043183
Benzo (g,h,i) perylene	ND		mg/kg dry	0.0871	1	04/21/09 19:28	SW846 8270D	9043183
Benzo (k) fluoranthene	ND		mg/kg dry	0.0871	1	04/21/09 19:28	SW846 8270D	9043183
Chrysene	0.0957		mg/kg dry	0.0871	1	04/21/09 19:28	SW846 8270D	9043183
Dibenz (a,h) anthracene	ND		mg/kg dry	0.0871	1	04/21/09 19:28	SW846 8270D	9043183
Fluoranthene	0.245		mg/kg dry	0.0871	1	04/21/09 19:28	SW846 8270D	9043183
Fluorene	0.268		mg/kg dry	0.0871	1	04/21/09 19:28	SW846 8270D	9043183
Indeno (1,2,3-cd) pyrene	ND		mg/kg dry	0.0871	1	04/21/09 19:28	SW846 8270D	9043183
Naphthalene	ND		mg/kg dry	0.0871	1	04/21/09 19:28	SW846 8270D	9043183
Phenanthrene	0.517		mg/kg dry	0.0871	1	04/21/09 19:28	SW846 8270D	9043183
Pyrene	0.198		mg/kg dry	0.0871	1	04/21/09 19:28	SW846 8270D	9043183
1-Methylnaphthalene	0.822		mg/kg dry	0.0871	1	04/21/09 19:28	SW846 8270D	9043183
2-Methylnaphthalene	0.993		mg/kg dry	0.0871	1	04/21/09 19:28	SW846 8270D	9043183
Surr: Terphenyl-d14 (26-128%)	59 %					04/21/09 19:28	SW846 8270D	9043183
Surr: 2-Fluorobiphenyl (19-109%)	59 %					04/21/09 19:28	SW846 8270D	9043183
Surr: Nitrobenzene-d5 (22-104%)	64 %					04/21/09 19:28	SW846 8270D	9043183

Client EEG - Env. Enterprise Group (2449)
10179 Highway 78
Ladson, SC 29456
Attn Tom McElwee

Work Order: NSD1532
Project Name: Laurel Bay Housing Project
Project Number: [none]
Received: 04/17/09 08:00

SAMPLE EXTRACTION DATA

Parameter	Batch	Lab Number	Wt/Vol Extracted	Extracted Vol	Date	Analyst	Extraction Method
Polyaromatic Hydrocarbons by EPA 8270D							
SW846 8270D	9043183	NSD1532-01	30.06	1.00	04/21/09 09:28	JNS	EPA 3550B
Selected Volatile Organic Compounds by EPA Method 8260B							
SW846 8260B	9044297	NSD1532-01	7.35	5.00	04/16/09 11:45	JRL	EPA 5035
SW846 8260B	9044067	NSD1532-01RE1	6.75	5.00	04/16/09 11:45	JRL	EPA 5035

Client EEG - Env. Enterprise Group (2449)
 10179 Highway 78
 Ladson, SC 29456
 Attn Tom McElwee

Work Order: NSD1532
 Project Name: Laurel Bay Housing Project
 Project Number: [none]
 Received: 04/17/09 08:00

PROJECT QUALITY CONTROL DATA
Blank

Analyte	Blank Value	Q	Units	Q.C. Batch	Lab Number	Analyzed Date/Time
Selected Volatile Organic Compounds by EPA Method 8260B						
9044297-BLK1						
Benzene	<0.000670		mg/kg wet	9044297	9044297-BLK1	04/27/09 14:29
Ethylbenzene	<0.000670		mg/kg wet	9044297	9044297-BLK1	04/27/09 14:29
Naphthalene	<0.00151		mg/kg wet	9044297	9044297-BLK1	04/27/09 14:29
Toluene	<0.000670		mg/kg wet	9044297	9044297-BLK1	04/27/09 14:29
Xylenes, total	<0.00172		mg/kg wet	9044297	9044297-BLK1	04/27/09 14:29
Surrogate: 1,2-Dichloroethane-d4	91%			9044297	9044297-BLK1	04/27/09 14:29
Surrogate: Dibromofluoromethane	95%			9044297	9044297-BLK1	04/27/09 14:29
Surrogate: Toluene-d8	102%			9044297	9044297-BLK1	04/27/09 14:29
Surrogate: 4-Bromofluorobenzene	103%			9044297	9044297-BLK1	04/27/09 14:29
Polyaromatic Hydrocarbons by EPA 8270D						
9043183-BLK1						
Accenaphthene	<0.0310		mg/kg wet	9043183	9043183-BLK1	04/21/09 16:49
Accenaphthylene	<0.0320		mg/kg wet	9043183	9043183-BLK1	04/21/09 16:49
Anthracene	<0.0330		mg/kg wet	9043183	9043183-BLK1	04/21/09 16:49
Benzo (a) anthracene	<0.0380		mg/kg wet	9043183	9043183-BLK1	04/21/09 16:49
Benzo (a) pyrene	<0.0290		mg/kg wet	9043183	9043183-BLK1	04/21/09 16:49
Benzo (b) fluoranthene	<0.0320		mg/kg wet	9043183	9043183-BLK1	04/21/09 16:49
Benzo (g,h,i) perylene	<0.0290		mg/kg wet	9043183	9043183-BLK1	04/21/09 16:49
Benzo (k) fluoranthene	<0.0290		mg/kg wet	9043183	9043183-BLK1	04/21/09 16:49
Chrysene	<0.0390		mg/kg wet	9043183	9043183-BLK1	04/21/09 16:49
Dibenz (a,h) anthracene	<0.0310		mg/kg wet	9043183	9043183-BLK1	04/21/09 16:49
Fluoranthene	<0.0340		mg/kg wet	9043183	9043183-BLK1	04/21/09 16:49
Fluorene	<0.0390		mg/kg wet	9043183	9043183-BLK1	04/21/09 16:49
Indeno (1,2,3-cd) pyrene	<0.0310		mg/kg wet	9043183	9043183-BLK1	04/21/09 16:49
Naphthalene	<0.0410		mg/kg wet	9043183	9043183-BLK1	04/21/09 16:49
Phenanthrene	<0.0340		mg/kg wet	9043183	9043183-BLK1	04/21/09 16:49
Pyrene	<0.0410		mg/kg wet	9043183	9043183-BLK1	04/21/09 16:49
1-Methylnaphthalene	<0.0320		mg/kg wet	9043183	9043183-BLK1	04/21/09 16:49
2-Methylnaphthalene	<0.0330		mg/kg wet	9043183	9043183-BLK1	04/21/09 16:49
Surrogate: Terphenyl-d14	72%			9043183	9043183-BLK1	04/21/09 16:49
Surrogate: 2-Fluorobiphenyl	75%			9043183	9043183-BLK1	04/21/09 16:49
Surrogate: Nitrobenzene-d5	78%			9043183	9043183-BLK1	04/21/09 16:49

Client EEG - Env. Enterprise Group (2449)
10179 Highway 78
Ladson, SC 29456
Attn Tom McElwee

Work Order: NSD1532
Project Name: Laurel Bay Housing Project
Project Number: [none]
Received: 04/17/09 08:00

PROJECT QUALITY CONTROL DATA
Duplicate

Analyte	Orig. Val.	Duplicate	Q	Units	RPD	Limit	Batch	Sample Duplicated	% Rec.	Analyzed Date/Time
General Chemistry Parameters										
9043504-DUP1										
% Dry Solids	75.7	75.5		%	0.3	20	9043504	NSD1910-12		04/23/09 06:46

Client EEG - Env. Enterprise Group (2449)
 10179 Highway 78
 Ladson, SC 29456
 Attn Tom McElwee

Work Order: NSD1532
 Project Name: Laurel Bay Housing Project
 Project Number: [none]
 Received: 04/17/09 08:00

PROJECT QUALITY CONTROL DATA
 LCS

Analyte	Known Val.	Analyzed Val	Q	Units	% Rec.	Target Range	Batch	Analyzed Date/Time
Selected Volatile Organic Compounds by EPA Method 8260B								
9044297-BS1								
Benzene	50.0	50.2		ug/kg	100%	76 - 130	9044297	04/27/09 12:58
Ethylbenzene	50.0	56.0		ug/kg	112%	80 - 128	9044297	04/27/09 12:58
Naphthalene	50.0	64.8		ug/kg	130%	63 - 144	9044297	04/27/09 12:58
Toluene	50.0	50.1		ug/kg	100%	80 - 125	9044297	04/27/09 12:58
Xylenes, total	150	166		ug/kg	111%	79 - 130	9044297	04/27/09 12:58
Surrogate: 1,2-Dichloroethane-d4	50.0	44.4			89%	41 - 150	9044297	04/27/09 12:58
Surrogate: Dibromofluoromethane	50.0	48.3			97%	55 - 139	9044297	04/27/09 12:58
Surrogate: Toluene-d8	50.0	51.3			103%	57 - 148	9044297	04/27/09 12:58
Surrogate: 4-Bromofluorobenzene	50.0	53.2			106%	58 - 150	9044297	04/27/09 12:58
Polyaromatic Hydrocarbons by EPA 8270D								
9043183-BS1								
Accenaphthene	1.67	1.15		mg/kg wet	69%	52 - 106	9043183	04/21/09 17:12
Accenaphthylene	1.67	1.26		mg/kg wet	75%	53 - 109	9043183	04/21/09 17:12
Anthracene	1.67	1.34		mg/kg wet	80%	54 - 124	9043183	04/21/09 17:12
Benzo (a) anthracene	1.67	1.18		mg/kg wet	71%	53 - 111	9043183	04/21/09 17:12
Benzo (a) pyrene	1.67	1.27		mg/kg wet	76%	52 - 122	9043183	04/21/09 17:12
Benzo (b) fluoranthene	1.67	1.32		mg/kg wet	79%	48 - 115	9043183	04/21/09 17:12
Benzo (g,h,i) perylene	1.67	1.24		mg/kg wet	74%	46 - 114	9043183	04/21/09 17:12
Benzo (k) fluoranthene	1.67	1.18		mg/kg wet	71%	41 - 121	9043183	04/21/09 17:12
Chrysene	1.67	1.17		mg/kg wet	70%	49 - 113	9043183	04/21/09 17:12
Dibenz (a,h) anthracene	1.67	1.27		mg/kg wet	76%	47 - 117	9043183	04/21/09 17:12
Fluoranthene	1.67	1.33		mg/kg wet	80%	52 - 113	9043183	04/21/09 17:12
Fluorene	1.67	1.26		mg/kg wet	76%	54 - 107	9043183	04/21/09 17:12
Indeno (1,2,3-cd) pyrene	1.67	1.30		mg/kg wet	78%	47 - 115	9043183	04/21/09 17:12
Naphthalene	1.67	1.07		mg/kg wet	64%	34 - 107	9043183	04/21/09 17:12
Phenanthrene	1.67	1.26		mg/kg wet	76%	53 - 108	9043183	04/21/09 17:12
Pyrene	1.67	1.17		mg/kg wet	70%	54 - 113	9043183	04/21/09 17:12
1-Methylnaphthalene	1.67	0.995		mg/kg wet	60%	36 - 100	9043183	04/21/09 17:12
2-Methylnaphthalene	1.67	1.07		mg/kg wet	64%	42 - 112	9043183	04/21/09 17:12
Surrogate: Terphenyl-d14	1.67	1.12			67%	26 - 128	9043183	04/21/09 17:12
Surrogate: 2-Fluorobiphenyl	1.67	1.24			74%	19 - 109	9043183	04/21/09 17:12
Surrogate: Nitrobenzene-d5	1.67	1.21			73%	22 - 104	9043183	04/21/09 17:12

Client EEG - Env. Enterprise Group (2449)
10179 Highway 78
Ladson, SC 29456
Attn Tom McElwee

Work Order: NSD1532
Project Name: Laurel Bay Housing Project
Project Number: [none]
Received: 04/17/09 08:00

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 Compounds by EPA Method 8260B												
9044297-BSD1												
Benzene		48.7		ug/kg	50.0	97%	76 - 130	3	43	9044297		04/27/09 13:28
Ethylbenzene		54.1		ug/kg	50.0	108%	80 - 128	3	48	9044297		04/27/09 13:28
Naphthalene		62.1		ug/kg	50.0	124%	63 - 144	4	50	9044297		04/27/09 13:28
Toluene		49.2		ug/kg	50.0	98%	80 - 125	2	44	9044297		04/27/09 13:28
Xylenes, total		161		ug/kg	150	107%	79 - 130	3	48	9044297		04/27/09 13:28
Surrogate: 1,2-Dichloroethane-d4		44.8		ug/kg	50.0	90%	41 - 150			9044297		04/27/09 13:28
Surrogate: Dibromofluoromethane		46.3		ug/kg	50.0	93%	55 - 139			9044297		04/27/09 13:28
Surrogate: Toluene-d8		51.1		ug/kg	50.0	102%	57 - 148			9044297		04/27/09 13:28
Surrogate: 4-Bromofluorobenzene		52.3		ug/kg	50.0	105%	58 - 150			9044297		04/27/09 13:28

Polyaromatic Hydrocarbons by EPA 8270D

9043183-BSD1

Acenaphthene		1.18		mg/kg wet	1.67	71%	52 - 106	3	33	9043183		04/21/09 17:35
Acenaphthylene		1.31		mg/kg wet	1.67	79%	53 - 109	4	38	9043183		04/21/09 17:35
Anthracene		1.43		mg/kg wet	1.67	86%	54 - 124	6	32	9043183		04/21/09 17:35
Benzo (a) anthracene		1.24		mg/kg wet	1.67	74%	53 - 111	5	26	9043183		04/21/09 17:35
Benzo (a) pyrene		1.35		mg/kg wet	1.67	81%	52 - 122	6	31	9043183		04/21/09 17:35
Benzo (b) fluoranthene		1.24		mg/kg wet	1.67	74%	48 - 115	6	37	9043183		04/21/09 17:35
Benzo (g,h,i) perylene		1.32		mg/kg wet	1.67	79%	46 - 114	6	28	9043183		04/21/09 17:35
Benzo (k) fluoranthene		1.43		mg/kg wet	1.67	86%	41 - 121	19	35	9043183		04/21/09 17:35
Chrysene		1.25		mg/kg wet	1.67	75%	49 - 113	6	31	9043183		04/21/09 17:35
Dibenz (a,h) anthracene		1.35		mg/kg wet	1.67	81%	47 - 117	6	32	9043183		04/21/09 17:35
Fluoranthene		1.43		mg/kg wet	1.67	86%	52 - 113	7	36	9043183		04/21/09 17:35
Fluorene		1.33		mg/kg wet	1.67	80%	54 - 107	5	35	9043183		04/21/09 17:35
Indeno (1,2,3-cd) pyrene		1.36		mg/kg wet	1.67	82%	47 - 115	5	28	9043183		04/21/09 17:35
Naphthalene		1.05		mg/kg wet	1.67	63%	34 - 107	3	34	9043183		04/21/09 17:35
Phenanthrene		1.33		mg/kg wet	1.67	80%	53 - 108	5	33	9043183		04/21/09 17:35
Pyrene		1.21		mg/kg wet	1.67	72%	54 - 113	3	36	9043183		04/21/09 17:35
1-Methylnaphthalene		0.977		mg/kg wet	1.67	59%	36 - 100	2	34	9043183		04/21/09 17:35
2-Methylnaphthalene		1.05		mg/kg wet	1.67	63%	42 - 112	2	33	9043183		04/21/09 17:35
Surrogate: Terphenyl-d14		1.09		mg/kg wet	1.67	66%	26 - 128			9043183		04/21/09 17:35
Surrogate: 2-Fluorobiphenyl		1.19		mg/kg wet	1.67	71%	19 - 109			9043183		04/21/09 17:35
Surrogate: Nitrobenzene-d5		1.13		mg/kg wet	1.67	68%	22 - 104			9043183		04/21/09 17:35

Client EEG - Env. Enterprise Group (2449)
 10179 Highway 78
 Ladson, SC 29456
 Attn Tom McElwee

Work Order: NSD1532
 Project Name: Laurel Bay Housing Project
 Project Number: [none]
 Received: 04/17/09 08:00

PROJECT QUALITY CONTROL DATA
Matrix Spike

Analyte	Orig. Val.	MS Val	Q	Units	Spike Conc	% Rec.	Target Range	Batch	Sample Spiked	Analyzed Date/Time
Selected Volatile Organic Compounds by EPA Method 8260B										
9044297-MS1.										
Benzene	ND	40.9		ug/kg	50.0	82%	33 - 146	9044297	NSD1579-21RE	04/27/09 22:07
Ethylbenzene	1.30	44.7		ug/kg	50.0	87%	16 - 160	9044297	NSD1579-21RE	04/27/09 22:07
Naphthalene	1.34	30.3		ug/kg	50.0	58%	10 - 151	9044297	NSD1579-21RE	04/27/09 22:07
Toluene	10.8	43.0		ug/kg	50.0	65%	30 - 145	9044297	NSD1579-21RE	04/27/09 22:07
Xylenes, total	2.09	130		ug/kg	150	85%	16 - 159	9044297	NSD1579-21RE	04/27/09 22:07
Surrogate: 1,2-Dichloroethane-d4		42.6		ug/kg	50.0	85%	41 - 150	9044297	NSD1579-21RE	04/27/09 22:07
Surrogate: Dibromofluoromethane		46.5		ug/kg	50.0	93%	55 - 139	9044297	NSD1579-21RE	04/27/09 22:07
Surrogate: Toluene-d8		52.7		ug/kg	50.0	105%	57 - 148	9044297	NSD1579-21RE	04/27/09 22:07
Surrogate: 4-Bromofluorobenzene		52.9		ug/kg	50.0	106%	58 - 150	9044297	NSD1579-21RE	04/27/09 22:07
Polyaromatic Hydrocarbons by EPA 8270D										
9043183-MS1										
Acenaphthene	ND	1.15		mg/kg wet	1.66	69%	28 - 117	9043183	NSD1693-01	04/21/09 17:57
Acenaphthylene	ND	1.30		mg/kg wet	1.66	78%	33 - 113	9043183	NSD1693-01	04/21/09 17:57
Anthracene	ND	1.37		mg/kg wet	1.66	82%	31 - 131	9043183	NSD1693-01	04/21/09 17:57
Benzo (a) anthracene	ND	1.21		mg/kg wet	1.66	73%	29 - 124	9043183	NSD1693-01	04/21/09 17:57
Benzo (a) pyrene	ND	1.29		mg/kg wet	1.66	78%	30 - 127	9043183	NSD1693-01	04/21/09 17:57
Benzo (b) fluoranthene	ND	1.36		mg/kg wet	1.66	82%	26 - 128	9043183	NSD1693-01	04/21/09 17:57
Benzo (g,h,i) perylene	ND	1.27		mg/kg wet	1.66	77%	21 - 122	9043183	NSD1693-01	04/21/09 17:57
Benzo (k) fluoranthene	ND	1.21		mg/kg wet	1.66	73%	20 - 130	9043183	NSD1693-01	04/21/09 17:57
Chrysene	ND	1.21		mg/kg wet	1.66	73%	30 - 119	9043183	NSD1693-01	04/21/09 17:57
Dibenz (a,h) anthracene	ND	1.31		mg/kg wet	1.66	79%	27 - 122	9043183	NSD1693-01	04/21/09 17:57
Fluoranthene	ND	1.41		mg/kg wet	1.66	85%	23 - 132	9043183	NSD1693-01	04/21/09 17:57
Fluorene	ND	1.29		mg/kg wet	1.66	78%	38 - 110	9043183	NSD1693-01	04/21/09 17:57
Indeno (1,2,3-cd) pyrene	ND	1.33		mg/kg wet	1.66	80%	24 - 122	9043183	NSD1693-01	04/21/09 17:57
Naphthalene	ND	1.03		mg/kg wet	1.66	62%	14 - 117	9043183	NSD1693-01	04/21/09 17:57
Phenanthrene	ND	1.29		mg/kg wet	1.66	78%	21 - 130	9043183	NSD1693-01	04/21/09 17:57
Pyrene	ND	1.18		mg/kg wet	1.66	71%	24 - 133	9043183	NSD1693-01	04/21/09 17:57
1-Methylnaphthalene	ND	0.982		mg/kg wet	1.66	59%	10 - 121	9043183	NSD1693-01	04/21/09 17:57
2-Methylnaphthalene	ND	1.06		mg/kg wet	1.66	64%	26 - 116	9043183	NSD1693-01	04/21/09 17:57
Surrogate: Terphenyl-d14		1.06		mg/kg wet	1.66	64%	26 - 128	9043183	NSD1693-01	04/21/09 17:57
Surrogate: 2-Fluorobiphenyl		1.20		mg/kg wet	1.66	72%	19 - 109	9043183	NSD1693-01	04/21/09 17:57
Surrogate: Nitrobenzene-d5		1.14		mg/kg wet	1.66	69%	22 - 104	9043183	NSD1693-01	04/21/09 17:57

Client EEG - Env. Enterprise Group (2449)
10179 Highway 78
Ladson, SC 29456
Attn Tom McElwee

Work Order: NSD1532
Project Name: Laurel Bay Housing Project
Project Number: [none]
Received: 04/17/09 08:00

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
Polyaromatic Hydrocarbons by EPA 8270D										

Client EEG - Env. Enterprise Group (2449)
 10179 Highway 78
 Ladson, SC 29456
 Attn Tom McElwee

Work Order: NSD1532
 Project Name: Laurel Bay Housing Project
 Project Number: [none]
 Received: 04/17/09 08:00

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 Compounds by EPA Method 8260B												
9044297-MSD1												
Benzene	ND	35.0		ug/kg	50.0	70%	33 - 146	16	43	9044297	NSD1579-21R EI	04/27/09 22:37
Ethylbenzene	1.35	37.3		ug/kg	50.0	72%	16 - 160	18	48	9044297	NSD1579-21R EI	04/27/09 22:37
Naphthalene	1.39	16.5	R	ug/kg	50.0	30%	10 - 151	59	50	9044297	NSD1579-21R EI	04/27/09 22:37
Toluene	11.2	36.2		ug/kg	50.0	50%	30 - 145	17	44	9044297	NSD1579-21R EI	04/27/09 22:37
Xylenes, total	2.16	106		ug/kg	150	70%	16 - 159	20	48	9044297	NSD1579-21R EI	04/27/09 22:37
Surrogate: 1,2-Dichloroethane-d4		46.4		ug/kg	50.0	93%	41 - 150			9044297	NSD1579-21R EI	04/27/09 22:37
Surrogate: Dibromofluoromethane		46.2		ug/kg	50.0	92%	55 - 139			9044297	NSD1579-21R EI	04/27/09 22:37
Surrogate: Toluene-d8		51.5		ug/kg	50.0	103%	57 - 148			9044297	NSD1579-21R EI	04/27/09 22:37
Surrogate: 4-Bromofluorobenzene		52.7		ug/kg	50.0	105%	58 - 150			9044297	NSD1579-21R EI	04/27/09 22:37
Polyaromatic Hydrocarbons by EPA 8270D												
9043183-MSD1												
Acenaphthene	ND	1.09		mg/kg wet	1.66	66%	28 - 117	5	33	9043183	NSD1693-01	04/21/09 18:20
Acenaphthylene	ND	1.19		mg/kg wet	1.66	71%	33 - 113	9	38	9043183	NSD1693-01	04/21/09 18:20
Anthracene	ND	1.24		mg/kg wet	1.66	74%	31 - 131	10	32	9043183	NSD1693-01	04/21/09 18:20
Benzo (a) anthracene	ND	1.09		mg/kg wet	1.66	66%	29 - 124	10	26	9043183	NSD1693-01	04/21/09 18:20
Benzo (a) pyrene	ND	1.15		mg/kg wet	1.66	69%	30 - 127	12	31	9043183	NSD1693-01	04/21/09 18:20
Benzo (b) fluoranthene	ND	1.18		mg/kg wet	1.66	71%	26 - 128	14	37	9043183	NSD1693-01	04/21/09 18:20
Benzo (g,h,i) perylene	ND	1.13		mg/kg wet	1.66	68%	21 - 122	12	28	9043183	NSD1693-01	04/21/09 18:20
Benzo (k) fluoranthene	ND	1.15		mg/kg wet	1.66	69%	20 - 130	5	35	9043183	NSD1693-01	04/21/09 18:20
Chrysene	ND	1.08		mg/kg wet	1.66	65%	30 - 119	11	31	9043183	NSD1693-01	04/21/09 18:20
Dibenz (a,h) anthracene	ND	1.15		mg/kg wet	1.66	69%	27 - 122	13	32	9043183	NSD1693-01	04/21/09 18:20
Fluoranthene	ND	1.24		mg/kg wet	1.66	74%	23 - 132	13	36	9043183	NSD1693-01	04/21/09 18:20
Fluorene	ND	1.20		mg/kg wet	1.66	72%	38 - 110	7	35	9043183	NSD1693-01	04/21/09 18:20
Indeno (1,2,3-cd) pyrene	ND	1.18		mg/kg wet	1.66	71%	24 - 122	12	28	9043183	NSD1693-01	04/21/09 18:20
Naphthalene	ND	0.984		mg/kg wet	1.66	59%	14 - 117	5	34	9043183	NSD1693-01	04/21/09 18:20
Phenanthrene	ND	1.16		mg/kg wet	1.66	70%	21 - 130	11	33	9043183	NSD1693-01	04/21/09 18:20
Pyrene	ND	1.07		mg/kg wet	1.66	64%	24 - 133	9	36	9043183	NSD1693-01	04/21/09 18:20
1-Methylnaphthalene	ND	0.908		mg/kg wet	1.66	55%	10 - 121	8	34	9043183	NSD1693-01	04/21/09 18:20
2-Methylnaphthalene	ND	0.987		mg/kg wet	1.66	59%	26 - 116	7	33	9043183	NSD1693-01	04/21/09 18:20
Surrogate: Terphenyl-d14		1.04		mg/kg wet	1.66	63%	26 - 128			9043183	NSD1693-01	04/21/09 18:20
Surrogate: 2-Fluorobiphenyl		1.19		mg/kg wet	1.66	71%	19 - 109			9043183	NSD1693-01	04/21/09 18:20
Surrogate: Nitrobenzene-d5		1.13		mg/kg wet	1.66	68%	22 - 104			9043183	NSD1693-01	04/21/09 18:20

Client EEG - Env. Enterprise Group (2449)
10179 Highway 78
Ladson, SC 29456
Attn Tom McElwee

Work Order: NSD1532
Project Name: Laurel Bay Housing Project
Project Number: [none]
Received: 04/17/09 08:00

CERTIFICATION SUMMARY

TestAmerica Nashville

Method	Matrix	AIHA	Nelac	South Carolina
SW846 8260B	Soil	N/A	X	X
SW846 8270D	Soil			X
SW-846	Soil			

Client EEG - Env. Enterprise Group (2449)
10179 Highway 78
Ladson, SC 29456
Attn Tom McElwee

Work Order: NSD1532
Project Name: Laurel Bay Housing Project
Project Number: [none]
Received: 04/17/09 08:00

DATA QUALIFIERS AND DEFINITIONS

R The RPD exceeded the method control limit. The individual analyte QA/QC recoveries, however, were within acceptance limits.
RL1 Reporting limit raised due to sample matrix effects.
ND Not detected at the reporting limit (or method detection limit if shown)

METHOD MODIFICATION NOTES

ATTACHMENT A

UST Certificate of Disposal

CONTRACTOR

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

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

TANK ID & LOCATION

UST 274Birch, 274 Birch Dr., Laurel Bay Housing Area,
MCAS Beaufort, S.C.

DISPOSAL LOCATION

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

TYPE OF TANK

Steel

SIZE (GAL)

280

CLEANING/DISPOSAL METHOD

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

DISPOSAL CERTIFICATION

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

T.R. LeDoo , 4/30/09
(Name) (Date)

Appendix C
Laboratory Analytical Report - Groundwater

Volatile Organic Compounds by GC/MS

Client: AECOM - Resolution Consultants	Laboratory ID: SC04007-005
Description: BEALB274TW01WG20170303	Matrix: Aqueous
Date Sampled: 03/03/2017 1110	
Date Received: 03/04/2017	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	03/07/2017 1552	PMV		36403

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Benzene	71-43-2	8260B	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260B	0.80	U	1.0	0.80	0.40	ug/L	1
Naphthalene	91-20-3	8260B	0.96	J	1.0	0.80	0.40	ug/L	1
Toluene	108-88-3	8260B	0.80	U	1.0	0.80	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260B	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		106	85-114
Dibromofluoromethane		107	80-119
1,2-Dichloroethane-d4		99	81-118
Toluene-d8		97	89-112

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

Semivolatile Organic Compounds by GC/MS

Client: AECOM - Resolution Consultants	Laboratory ID: SC04007-005
Description: BEALB274TW01WG20170303	Matrix: Aqueous
Date Sampled: 03/03/2017 1110	
Date Received: 03/04/2017	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270D	1	03/15/2017 1444	RBH	03/07/2017 1304	36374

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Benzo(a)anthracene	56-55-3	8270D	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(b)fluoranthene	205-99-2	8270D	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(k)fluoranthene	207-08-9	8270D	0.10	U	0.20	0.10	0.040	ug/L	1
Chrysene	218-01-9	8270D	0.10	U	0.20	0.10	0.040	ug/L	1
Dibenzo(a,h)anthracene	53-70-3	8270D	0.10	U	0.20	0.10	0.040	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Nitrobenzene-d5		50	44-120
2-Fluorobiphenyl		49	44-119
Terphenyl-d14		88	50-134

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

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

Appendix D
Regulatory Correspondence



December 14, 2016

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

RE: IGWA
Laurel Bay Underground Tank Assessment Reports

Dear Mr. Drawdy:

The South Carolina Department of Health and Environmental Control (the Department) received the Underground Storage Tanks (USTs) Assessment Reports for the addresses listed in the attachment. 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 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 these sites.

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,

A handwritten signature in black ink, appearing to read "Laurel Petrus".

Laurel Petrus, Environmental Engineer Associate
RCRA Federal Facilities Section

Cc: Russell Berry, EQC Region 8 (via email)
Shawn Dolan, Resolution Consultants (via email)
Bryan Beck, NAVFAC MIDATLANTIC (via email)
Craig Ehde (via email)

Attachment to: Petrus to Drawdy, December 14, 2016
Subject: IGWA, Laurel Bay Underground Tank Assessment Reports

Draft Final Initial Groundwater Investigation Report for (41 addresses)

Monitoring Well Investigation Recommendation	
113 Birch	279 Birch
274 Birch	268 Beech



July 27, 2017

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

RE: Draft Final Initial Groundwater Investigation Report, February and March 2017

Dear Mr. Drawdy:

The South Carolina Department of Health and Environmental Control (DHEC) received groundwater data from temporary monitoring well installations in the Draft Final Groundwater Investigation Report, Laurel Bay Military Housing Area for the fifty two (52) addresses shown in the attachment. 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 DHEC's request, groundwater samples were collected from the attached referenced addresses. DHEC 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 groundwater monitoring wells should be installed at the three (3) stated addresses. For the remaining forty nine (49) addresses, there is no indication of contamination on the property and therefore no further investigation is required at this time.

Please note that DHEC'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, DHEC 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, Environmental Engineer Associate
Bureau of Land and Waste Management

Cc: Russell Berry, EQC Region 8
Shawn Dolan, Resolution Consultants
Bryan Beck, NAVFAC MIDLANT

Attachment to: Petrus to Drawdy Dated July 27, 2017

Draft Final Initial Groundwater Investigation Report for (52 addresses)

Permanent Well Installation recommendation (3 Addresses):

- o 254 Beech Street (110 ug/L)
- o 268 Beech Street (28 ug/L)
- o 774 Althea Street (35 ug/L)

No Further Action recommendation (49 addresses):

- o 113 Birch Drive
- o 121 Banyan Drive
- o 122 Banyan Drive
- o 159 Cypress Street
- o 221 Cypress Street
- o 274 Birch Drive
- o 279 Birch Drive
- o 283 Birch Drive
- o 328 Ash Street
- o 346 Ash Street
- o 359 Aspen Street
- o 370 Aspen Street
- o 377 Aspen Street
- o 409 Elderberry Drive
- o 465 Dogwood Drive
- o 480 Laurel Bay Boulevard
- o 486 Laurel Bay Boulevard
- o 515 Laurel Bay Boulevard
- o 542 Laurel Bay Boulevard
- o 593 Aster Street
- o 630 Dahlia Drive
- o 641 Dahlia Drive
- o 693 Camelia Drive
- o 723 Bluebell Lane
- o 860 Dolphin Street
- o 873 Cobia Drive
- o 883 Cobia Drive
- o 905 Barracuda Drive
- o 921 Barracuda Drive
- o 935 Albacore Street
- o 946 Albacore Street
- o 1037 Iris Lane
- o 1039 Iris Lane
- o 1110 Iris Lane
- o 1134 Iris Lane
- o 1143 Iris Lane
- o 1177 Bobwhite Drive
- o 1202 Cardinal Lane
- o 1212 Cardinal Lane
- o 1222 Cardinal Lane
- o 1224 Cardinal Lane
- o 1226 Dove Lane
- o 1236 Dove Lane
- o 1245 Dove Lane
- o 1247 Dove Lane
- o 1274 Albatross Drive
- o 1319 Albatross Drive
- o 1337 Albatross Drive
- o 1346 Cardinal Lane