SUMMARY REPORT 110 BIRCH DRIVE (FORMERLY 112 BIRCH DRIVE) LAUREL BAY MILITARY HOUSING AREA MARINE CORPS AIR STATION BEAUFORT BEAUFORT, SC

> Revision: 0 Prepared for:

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

and



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

JUNE 2021

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Prepared by:



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



## Table of Contents

1.0	INTRODUCTION	. 1
1.1 1.2	Background Information UST Removal and Assessment Process	.1 .2
2.0	SAMPLING ACTIVITIES AND RESULTS	. 3
2.1 2.2	UST REMOVAL AND SOIL SAMPLING Soil Analytical Results	. 3 . 4
3.0	PROPERTY STATUS	. 4
4.0	REFERENCES	. 4

#### Table

Tahlo 1	Laboratory	Analytical	Posults - Soil
	Laboratory	Anaryticar	Results - Soli

## Appendices

- Appendix A Multi-Media Selection Process for LBMH
- Appendix B UST Assesment Report
- Appendix C Regulatory Correspondence



## List of Acronyms

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



#### 1.0 INTRODUCTION

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

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

This report summarizes the results the environmental investigation activities associated with the storage of home heating oil and the potential release of petroleum constituents at the referenced property. Based on the results of the investigation, a No Further Action (NFA) determination has been made by the South Carolina Department of Health and Environmental Control (SCDHEC) for 110 Birch Drive (Formerly 112 Birch Drive). This NFA determination indicates that there are no unacceptable risks to human health or the environment for the petroleum constituents associated with the home heating oil USTs. The following information is included in this report:

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

## 1.1 Background Information

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



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

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

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

#### 1.2 UST Removal and Assessment Process

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

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

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



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

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

## 2.0 SAMPLING ACTIVITIES AND RESULTS

The following section presents the sampling activities and associated results for 110 Birch Drive (Formerly 112 Birch Drive). Details regarding the soil investigation at this site are provided in the *SCDHEC UST Assessment Report – 112 Birch Drive* (MCAS Beaufort, 2005). The UST Assessment Report is provided in Appendix B.

#### 2.1 UST Removal and Soil Sampling

On June 13, 2005, a single 280 gallon heating oil UST was removed from the front landscaped bed area adjacent to the driveway at 110 Birch Drive (Formerly 112 Birch Drive). The former UST location is indicated on Figure 3 of the UST Assessment Report (Appendix B). The UST was removed and properly disposed of (i.e., shipped offsite for recycling or transported to a landfill). There was no visual evidence (i.e., staining or sheen) of petroleum impact at the time of the UST removal. According to the UST Assessment Report (Appendix B), the depth to the base of the UST was 5'5" 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 two soil samples were collected from the side walls of the UST, 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 110 Birch Drive (Formerly 112 Birch Drive) were less than the SCDHEC RBSLs, which indicated the subsurface was not impacted by COPCs associated with the former UST at concentrations that presented a potential risk to human health and the environment.

#### 3.0 PROPERTY STATUS

Based on the analytical results for soil, SCDHEC made the determination that NFA was required for 110 Birch Drive (Formerly 112 Birch Drive). This NFA determination was obtained in a letter dated November 7, 2005. SCDHEC's NFA letter is provided in Appendix C.

#### 4.0 REFERENCES

- Marine Corps Air Station Beaufort, 2005. *South Carolina Department of Health and Environmental Control (SCDHEC) Underground Storage Tank Assessment Report 112 Birch Drive, Laurel Bay Military Housing Area*, November 2005.
- South Carolina Department of Health and Environmental Control Bureau of Land and Waste Management, 2013. *Quality Assurance Program Plan for the Underground Storage Tank Management* Division, *Revision 2.0*, April 2013.



- South Carolina Department of Health and Environmental Control Bureau of Land and Waste Management, 2015. *Quality Assurance Program Plan for the Underground Storage Tank Management* Division, *Revision 3.0*, May 2015.
- South Carolina Department of Health and Environmental Control Bureau of Land and Waste Management, 2016. *Quality Assurance Program Plan for the Underground Storage Tank Management* Division, *Revision 3.1*, February 2016.
- South Carolina Department of Health and Environmental Control Bureau of Land and Waste Management, 2017. *R.61-92, Part 280, Underground Storage Tank Control Regulations*, March 2017.
- South Carolina Department of Health and Environmental Control Bureau of Land and Waste Management, 2018. Underground Storage Tank Assessment Instructions for Permanent Closure and Change-In-Service, March 2018.

Table



# Table 1Laboratory Analytical Results - Soil110 Birch Drive (Formerly 112 Birch Drive)Laurel Bay Military Housing AreaMarine Corps Air Station BeaufortBeaufort, South Carolina

Constituent	SCDHEC BBSI s <sup>(1)</sup>	Results Sample Collected 06/13/2005		
	SEDILE RUSES	112L	112R	112B
Volatile Organic Compounds Analyzed	by EPA Method 8260B (mg/kg)			
Benzene	0.003	ND	ND	ND
Ethylbenzene	1.15	ND	ND	ND
Naphthalene	0.036	ND	ND	ND
Toluene	0.627	ND	ND	ND
Xylenes, Total	13.01	ND	ND	ND
Semivolatile Organic Compounds Anal	lyzed by EPA Method 8270D (mg/kg)			
Benzo(a)anthracene	0.66	ND	ND	ND
Benzo(b)fluoranthene	0.66	ND	ND	ND
Benzo(k)fluoranthene	0.66	ND	ND	ND
Chrysene	0.66	ND	ND	ND
Dibenz(a,h)anthracene	0.66	ND	ND	ND

Notes:

<sup>(1)</sup> South Carolina Risk-Based Screening Levels from the Quality Assurance Program Plan for the Underground Storage Tank Management Division, Revision 1.0 and 1.1 (SCDHEC, May 2001 and SCDHEC, February 2011) 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 - milligram per kilogram

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

RBSL - Risk-Based Screening Level

SCDHEC - South Carolina Department Of Health and Environmental Control

Appendix A Multi-Media Selection Process for LBMH





**Appendix A - Multi-Media Selection Process for LBMH** 

Appendix B UST Assessment Report



## FINAL ASSESSMENT REPORT

## LAUREL BAY HOUSING AREA, 112 BIRCH STREET MARINE CORPS AIR STATION, BEAUFORT, SOUTH CAROLINA

Prepared for:

Actus Lend Lease LLC P.O. Box 5160 Parris Island, SC 29905

Contract Number 50701040/02050105

Prepared By: ADVENT Environmental, Inc. 498 Wando Park Blvd. Suite 500 Mt. Pleasant SC 29464

Brian R. Crawford, R.E.M Project Manager

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CEIVE

Jeffrey C. Smoak, P.E. Principal

OCTOBER 2005 ADVENT 05-512

#### **Executive Summary**

The initial Statement of Work was to remove two (2) Underground Storage Tanks (USTs) at 110 and 112 Birch Street in the Laurel Bay Housing Area at the Marine Corps Air Station (MCAS) in Beaufort, South Carolina. One (1) UST was removed from 110 Birch Street, and one (1) UST was removed from 112 Birch Street.

The tanks were excavated and removed using a JCB 214 backhoe. Residual fluid inside the USTs was vacuumed out prior to removal. Soils were screened using a photo-ionized detector (PID) during excavation. The tanks were triple-rinsed using a pressure washer. Rinse-water was contained in the decon-pad area.

Three (3) soil samples were collected from the excavation pit after each tank removal. Two (2) soil samples were collected from the east and west walls of the excavation, and one (1) sample was collected from the floor of the excavation. Soil samples were preserved on ice and submitted to Pace Analytical (NELAC #99006) for the analysis of BTEX, MTBE, naphthalene, and PAHs, as required by the South Carolina Department of Health and Environmental Control (SCDHEC) guidance document dated March 15, 2000.

Concentrations of total PAHs, BTEX, MTBE, and naphthalene were reported below detection limits (BDL) or below risk based screening levels (RBSLs) in two (2) soil samples collected from the 110 excavation. Concentrations of PAHs and naphthalene were reported above RBSLs in soil sample 110B. Soil sample 110B was collected from the base of excavation 110. Concentrations of total PAHs, BTEX, MTBE, and naphthalene were reported below detection limits (BDL) in all three (3) soil samples collected from the 112 excavation.

Two (2) USTs, impacted soils, and associated decontamination water were disposed of off site (see assessment report). Personal Protective Equipment (PPE), impacted soils, and other excavation debris were contained in one (1) roll-off dumpster provided by Global Environmental, Inc. Decontamination water was removed from the decon-pad area by the vacuum truck.

The excavations were backfilled with clean soil and compacted in two foot lift intervals. Each lift was compacted to greater than 95%, as demonstrated on the attached compaction test results.

#### South Carolina Department of Health and Environmental Control (S.C.D.H.E.C.) Underground Storage Tank (UST) Assessment Report

Date Received

State Use Only

Submit Completed Form to: UST Regulatory Section SCDHEC 2600 Bull Street Columbia, South Carolina Telephone (803)896-6240

## I. OWNERSHIP OF UST(S)

Marine Corps Air Station-Laurel Bay Housing						
Owner Name (Cor	Owner Name (Corporation, Individual, Public Agency, Other)					
Building 601 2end Mailing Address	Building 601 2end floor Geiger Blvd. Mailing Address					
Beaufort	South Carolina	299904-5001				
City	State	Zip Code				
843 Area Code	228-7317 Telephone Number	Alice Howard Contact Person				

## **II. SITE IDENTIFICATION AND LOCATION**

<u>Heating Oil Tank (&gt;500 gallon)</u> Site I.D. #	
Laurel Bay Housing for MCAS Facility Name or Company Site Identifier	
<u>112 Birch Steet (off of Highway 21).</u> Street Address or State Road (as applicable)	
Beaufort City	Beaufort County

## **III. INSURANCE INFORMATION**

**Insurance Statement** 

The petroleum release reported to DHEC on <u>NA</u> at UST Permit #\_\_\_\_ 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. <u>This section must be completed.</u>

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

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.

And

I do/do not (circle one) wish to participate in the Superb Program.

## IV. CERTIFICATION (Read and sign after completing entire submittal.)

I certify that I have personally examined and am f obtaining this information, I believe that the subm	familiar with the information submitted in this and all attached documents; an atted information is true, accurate, and complete.	nd that based on my inquiry of those individuals responsible for
Name (Type or print.)		
Signature	Date	
To be completed by a Not	tary 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

## V. UST INFORMATION

)	A.	Product. (ex. Gas, Kerosene)	Heat			
	P	Connecity (av. 1k. 2k)	oil			
	D.	Capacity.(ex. 1k, 2k)	280			
	C.	Age	But		+	
)	D.	Construction Material.(ex. Steel, FRP)	>40			
			steel			
	E.	Month/Year of Last Use				
	F.	Depth (ft.) to Base of Tank	NA		+	
1	G.	Spill Prevention Equipment Y/N	4.0 ft	<u></u>		
	н	Overfill Prevention Equipment V/N	No			
	11.	Overfiller revention Equipment 1714	No			
	I.	Method of Closure Removed/Filled				
	r	Data tanks Domosiad/Filled	Removal			
)	J.	Date tanks Removed/Filled	6-13-05			
	K.	Visible Corrosion or Pitting Y/N			1	
	Ŧ		no			
	L.	VISIBLE HOLES Y/N	<b>n</b> o			
			10			
	M.	Method of Disposal of any USTs removed from th	e ground (attach dispos	sal manifest).		

Tank 1 | Tank 2 | Tank 3 | Tank 4 | Tank 5 | Tank 6

Tank was triple rinsed, destroyed and recycled at the Beaufort County Recycling Landfill

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

<u>Water used to decontaminate the UST was temporarily stored and then vacuumed and properly disposed of.</u> (see attached manifest)

O. If any corrosion, pits, or holes were observed, describe the location and extent for each UST. No holes or pitting were found in tank 112 Birch Street.

## VI. PIPING INFORMATION

A.	Construction Material (ex. Steel, FRP)	Copper/ steel
В.	Distance from UST to Dispenser	NA
C.	Number of Dispensers	1
D.	Type of System Pressure or Suction	Suction
E.	Was Piping Removed from the Ground? Y/N	Yes
F.	Visible Corrosion or Pitting Y/N	INO
G.	Visible Holes Y/N	No
H.	Age	- +0 y13

Tank 1Tank 2Tank 3Tank 4Tank 5Tank 6Copper/<br/>steelIIIIINAIIIII1IIIIISuctionIIIIYesIIIINoIIII>40 yrsIIII

I. If any corrosion, pitting, or holes were observed, describe the location and extent for each line.
None observed

## VII. BRIEF SITE DESCRIPTION AND HISTORY

Site was used for military housing for the MCAS. Tank was used as a heating oil tank for the adjacent dwelling which was built in the early 1950's. There are no records as to the date the tanks were taken out of commission.

## VIII. SITE CONDITIONS

		Yes	No	<u>Unk</u>
A.	Were any petroleum-stained or contaminated soils found in the UST excavation, soil borings, trenches, or monitoring wells?		X	
	If yes, indicate depth and location on the site map.			
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 boring, or trenches?			
	If yes, how far below land surface (indicate location and depth)?		X	
D.	Did contaminated soils remain stockpiled on site after closure ?			
	If yes, indicate the stockpile location on the site map.		X	
E.	Was a petroleum sheen or free product detected on any excavation or boring waters?			
	If yes, indicate location and thickness.		X	

## IX. SAMPLE INFORMATION

S.C.D.H.E.C. Lab Certification Number Pace Analytical Labs 99006

A. UST 112 was located within two feet of building 112. Soil samples were collected 13 June, 2005.

Sample	Location	Sample Type	Depth*	Date/Time of	Collected by	OVA
#		(Soil/Water)		Collection		Result
1	Side wall of tank	Soil	~ 4.0 ft bls	6-13-05	SCM	6.8ppm
112L				1300		
2	Side Wall of Tank	Soil	$\sim$ 4.0 ft bls	6-13-05	SCM	2.6ppm
112R				1315	· · · · · · · · · · · · · · · · · · ·	
3	Bottom of Tank	Soil	~ 5.5 ft bls	6-13-05	SCM	6.2ppm
112B				1330		
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
						<u> </u>

\* = Depth Below the Surrounding Land Surface.

## X. SAMPLING METHODOLOGY

Provide a detailed description of the methods used to collect and store (preserve) the samples. Please use the space provided below.

Soil Samples were collected using a hand auger. Samples were containerized in bottles with the appropriate preservatives provided by the laboratory. Once the sample was collected, it was put on ice and

shipped to the laboratory to be analyzed for the targeted parameters.

## XI. RECEPTORS

	Yes	No
<ul> <li>A. Are there any lakes, ponds, streams, or wetlands located within 1000 feet of the UST system?</li> <li>See Site Map.</li> </ul>		x
<ul> <li>B. Are there any public, private, or irrigation water supply wells within 1000 feet of the UST system?</li> <li>If yes, indicate type of well, distance, and direction on the site map.</li> </ul>		x
<ul> <li>C. Are there any underground structures (e.g. basements) located within 100 feet of the UST system?</li> <li>If yes, indicate the type of structure, distance, and direction on the site map.</li> </ul>		X
<ul> <li>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 contamination?</li> <li>If yes, indicate the type of utility, distance, and direction on the site map.</li> </ul>	x	
<ul> <li>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?</li> </ul>		x
If yes, indicate the area of contaminated soil on the site map.	<u> </u>	

SITE MAP MARINE CORPS AIR STATION 110 and 112 BIRCH STREET, BEAUFORT, SOUTH CAROLINA





## MANIFESTS FOR OILY WATER DISPOSAL

Alon Llongedays Minsternie Al			Prote	<u>st # 05</u>	-1111	
Non-mazaroous vvastewater Man	ifest	Numb	er. D-11	077		•
nator's EPA (D# (f applicatio):		Weste SD Nu	nder:			
nilor's Name and Mailing Address:		Phone (	)	e 1.		
Beaufort MCAS Beaufort SC	••••••	PO#:				
SANI-Tech Environment, LLC		Phone (	43 )797-0	402		
511 Old Mt, Rolly Rd. Goose Creek, SC 29445		P0#:				•
Sani-Tech Environment, LLC 511 Old Mt. Holly Rd. Goose Creek.SC 29445		Phone (	34 <u>3</u> 3 797-	0402		
Indier License Humber: sporter U.B. EPA IDI:						
ан. голу, от 2000		www.contention.com	0 40 110	and the second		·
ly U.S. EPA ID#: el: End Levrel:		Total Gallons	*		Tark Number	
hy U.S. EPA ID: el: End Levrel: S. DOT Desciption	No.	Total Gallon Ontainer Type	Unit		Tank Number Quentity	
ly U.S. EPA IDE: el: End Level: S. DOT Desciption Hazardous, non-regulated waste water	C No.	Total Gallon Ontainer Type	Unit 30-/25-	200	Tark Number Quentity	
Ny U.S. EPA IDN: N: End Land: S. DOT Desciption Hazardous, non-regulated waste water In al Onworkt from 110 and 112 13	No. No.	Total Gallon Ontainer Type Steet, Le	Unit 30-/25-	200	Tark Number Quantity	
ly U.S. EPA IDU: II: End Lonal: S. DOT Desciption Hazardous, non-regulated waste water Mad Gnumber from 110 and 112 F	No. No.	Total Gallons Ontainer Type Strect, Lo	Unit 30-/25 	200 J	Tark Number Quantity	
ly U.S. EPA IDU: II: End Lonal: S. DOT Desciption Hazardous, non-regulated waste water which and 112 F	No. No. 1 3 ach	Total Gallons Ontainer Type Strect, Le	Unit 30-/25 	200 J	Tark Number Quantity	
by U.S. EPA 100: w: End Lund: S. DOT Desciption Hazardous, non-regulated waste water und convert freen 110 and 112 13	No. No. 1 3 Ach	Total Gallons Ontainer Type	Unit 30-125 	200 J	Tark Number	
hy U.S. EPA IDE: T: End Loonel: S. DOT Desciption Hazardous, non-regulated waste water and anount four 110 and 112 F	No. 1 3 Ach	Total Gallon Ontainer Type Stect, La	Unit 30-125 	200 J	Tark Number	
by U.S. EPA IDD: d: End Level: S. DOT Desciption -Mazardous, non-regulated waste water -Mazardous, non-regulated waste water -Maza	C No. 3 nch 2 nch	Total Gallon Ontainer Type St ect , Lo An ars not satur		200 J	Tark Number Quentity	
In U.S. EPA IDE: I. End Level: S. DOT Desciption -Hazardous, non-regulated waste water In a another family family and the set of	No. No. Ach State Constant and, marked a lettons and th to Weste Pro	Total Gallons Ontainer Type St ect , Lo container Loss are not hazar nd jabalad, and m a laws of the Stat file Form providual	Unit 30-25 2010 By Control Cliff By Control of South Carol by cubmitted to a	DOD DOD T in or many ar in proper coto rat. I further o ref approved i	Tank Number Quentity CAL tere fully and accur ition for transport by artify that the contar y the Designated Fo	tion of the college
by U.S. EPA IDE: w: End Level: S. DOT Desciption -Hazardous, non-regulated waste water Man and any of four 110 and 112 F 	No. No. 2 3 ACh 2 3 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	Total Gallons Ontainer Type Steet, Lo steet, L	Unit 30-/25 	Dool T n or wing a in proper con rat. I further o red approved (	Tark Number Quentity CAL Tark Number CAL Calo For Start Suby and Secon Stor For preseport by artify that the conten- by the Designated For Detic Cal (13/ C	
v U.s. EPA 100:         i:       End Level:         i:       End Level:         i:       DOT Desciption         Hazardous, non-regulated waste water         n:       0.000 Desciption         Hadden and rational government regulation       0.000 Desciption: contained to the store of theme:         red Nerve:       Stgmiture:	No. No. 2 3 AC h 2 3 AC h 2 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	Total Gallons Ontainer Type Steet Lo Steet Lo Mit are not haten not labolad, and an a labolad, and a labolad,	Unit 30-/25 	200 	Tark Number Quantity A light by and according to the fully and according the for transport by acting that the conten- by the Designated For Detic A light by a light by the formation of the form	in of t

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MANIFESTS FOR CONTAMINATED SOILS

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## GLOBAL ENUTRONMENTALASSURANCE $\rightarrow$ 18432286349

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	Transporter of Dates 6/57 ********** TO Disposal Site: 4	65 BE COMP	Drive LETED BY OAK andfill DWP 139	r's Signature:	Algan		
	Transporter of Datas 6/57 ************************************	BE COMP	Drive LETED BY OARI andfill DWP 139	r's Signature:	AGa		
	Transporter of Dates 6/5/ ********** TO Disposal Site: 4 Description of V	BE COMP Dakridge La Waater SCA	Drive LETED BY OARI andfill DWP 130 (UST REMOVAL	r's Signature:	ACTOR		
	Transporter of Dates 6/5/ Dates TO Disposal Site: 4 Description of V	BE COMP Dakridge La Waater SCA	Drive LETED BY OAK andfall DWP 139 AUST REMOVAL	r's Signature:	ACTOR		
	Transporter of Dates 6/5/ Dates 6/5/ Disposal Site: 6 Description of V Ticket Number:	BE COMP Dakridge La Wanter SCA	Drive LETED BY OARI andfill DWP 130 (UST REMOVAL	r's Signature: RIDGE LANDS Tonnage:	ACTOR		
	Transporter of Date: 6/5/ Date: 6/5/ Disposal Site: 4 Description of V Ticket Number: Received Hy:	BE COMP Dakridge LA Wanter SCA	Drive LETED BY OARI andfill DWP 139 (UST REMOVAL	ris Signature: RIDGE LANDR Tonnage:	AGa		
	Transporter of Dates 6/5/ ********* TO Disposal Site: 4 Description of V Ticket Number: Received By2_	BE COMP Dakridge La Waater SCA	Drive LETED BY OARI andfill DWP 130 (UST REMOVAL	r's Signature: RIDGE LANDH Tohnage: Date:	ACTOR		
	Transporter of Datas 6/5/ HANDERS TO Disposal Site: 4 Description of V Ticket Namber: Received By2_	BE COMP Dakridge La Waater SCA	Drive LETED BY OAK andfill DWP 139 (UST REMOVAL 78. (FOB 148), HODANS	ris Signature: RIDGE LANDR Tonnage: Date:	ACTION		
	Transporter of Dates 6/5/ Dates 6/5/ Disposal Site: 0 Description of V Ticket Number: Received By:	BE COMP Dakridge La Wanter SCA 2183 HWY Tel	Drive LETED BY OAK andfall DWP 130 (UST REMOVAL UST REMOVAL 78. (FOB 145), BORCHE 403-663-2607, FAX BA	ris Signature: RIDGE LANDE Tonnåge: Date: STER, SC, 29437 563-4133	ACTOR		
	Transporter of Data: 6/5/ Data: 6/5/ Disposal Site: 6 Description of V Ticket Number: Received By:_	BE COMP Dakridge Wanter SCA 2183 HWY TEL	Drive LETED BY OAK andfill DWP 130 (UST REMOVAL (UST REMOVAL 78. (FOB 145), BORCHE (BIJ 563-2607, FAX: BO	ris Signature: RIDGE LANDH Tonnage: Date: STAB, SC. 29437 -563-4238	ACTION		
	Transporter of Date: 6/57 ************************************	BE COMP Dataridge La Wanter SCA 2143 HWY TEL	Drives LETED BY OARI andfill DWP 130 (UST REMOVAL (UST REMOVAL 78. (FOB 145), BORCHE ( BIJ 563-2607, FAX; BIJ	ris Signature: RIDGE LANDR Tohnage: Date: STER, 6C, 29437 543-4258			
	Transporter of Data: 6/5/ ********** TO Disposal Site: 4 Description of V Ticket Number: Received By2_	BE COMP Dakridge Waater SCA 2783 HWY TEL	Driver LETED BY OAKI andfill DWP 139 (UST REMOVAL 78. (FOB 145), BORCHE 183 563 7607, FAX: BO	ris Signature: RIDGE LANDR Tohnage: Date: STER, 5C. 29437 -563-4758	ACTOR		
	Transporter of Datas 6/5/ Datas 6/5/ Disposal Site: 4 Description of V Ticket Number: Received By:	BE COMP Dakridge Waater SCA 2183 HWY Tel	Drives LETED BY OAK andfill DWP 139 (UST REMOVAL (UST REMOVAL 78. (FOB 145), BORCHE (BA3-563-2607, FAX; BA3	r <sup>1</sup> 5 Signature: RIDGE LANDR Tonnåge: Date: STER, 6C, 29437 543-4258	ACTION		

MANIFESTS FOR SCRAP METAL DISPOSAL



ADVENT Environmental Inc. 498 Wando Park Blvd. Mt. Pleasant, SC 29464

(843) 388-1851 Phone (843) 388-1891 Fax

Origination of recyclable materials: 110 and 112 Birch Street, Laurel Bay MCAS-Beaufort, South Carolina.

Disposal Location: Beaufort County Public Works Solid Waste and Recycling Division 120 Shanklin Road Beaufort, South Carolina 29906 (843) 470-6406-Phone

I certify that the above scrap metal equipment has been properly cleaned (triple rinsed).

PRINT (ADVENT REPRESENTATIVE)

TURE DATE

I certify that the above tanks have been accepted and will be recycled by the Beaufort County Solid Waste and Recycling Division.

B. HUSTIN

BCPW Contact information: Gary Jones (843) 812-2052 Darrell Hylton (843) 812-3864

Mary B. Mustin signature Date

**PROCTOR TESTING RESULTS** 



# SOIL CONSULTANTS, IIIC.

**P.O. DRAWER 698** CHARLESTON, SC 29402 (843)723-4539

P.O. BOX 30457 MYRTLE BEACH, SC 29588 (843)236-6616

ORDER NO.

.512

OS String 20

DATE 6-21-2005

#### **REPORT OF IN-PLACE FIELD DENSITY TESTS**

REPORT NO. CMT-05-1412

CLIENT: ADVENT ENVIRONMENTAL

PROJECT: MCAB Laurel Bay 110 & 112 Birch Drive Beaufort, SC

METHOD OF TEST: ASTM D2922

LABORATORY TEST RESULTS:

MAXIMUM DRY DENSITY:

OPTIMUM MOISTURE CONTENT: 15.0 %

PERCENT COMPACTION REQUIRED: 95.0 %

SEE SKETCH ATTACHED

DATE	LOCATION	FIELD DRY DENSITY	FIELD MOISTURE	ACTUAL FIELD COMPACTION	REMARKS*
	LAUREL BAY 110	lbs./cu. ft.	%	%	
6-13-2005	1ST LIFT 0-12" +/-	102.6	12.0	99.6	S
	2ND LIFT 0-12" +/-	97.9	12.2	95.0	S
	LAUREL BAY 112				
	1ST LIFT 0-12" +/-	97.6	12.4	95.0	S
	2ND LIFT 0-12" +/-	98.0	13.3	95.1	S
				+	
				+	
<u> </u>					
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	- <u></u>				

\* S - SATISFACTORY **U - UNSATISFACTORY REMARKS:** 

**RESPECTFULLY SUBMITTED:** SOIL CONSULTANTS INC.

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BY:

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ANALYTICAL RESULT SUMMARY PAGE

#### Table 1: Summary of Soil Analytical Data Housing 112 Birch Street MCAS Beaufort

#### Soil Results

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		112L 6/13/2005		112R 6/13/2005		112B 6/13/2005
Constituents	Result	RBSL Clay Rich Soils	Result	RBSL Clay Rich Soils	Result	RBSL Clay Rich Soils
Volatile Organic Compounds Method 8260	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(valia)
Benzene	ND	3	ND	3	ND	3
Toluene	ND	627	ND	627	ND	627
Ethylbenzene	ND	1551	ND	1551	ND	1551
Xylenes	ND	13010	ND	13010	ND	13010
Naphthalene	ND	47	ND	47	ND	47

•

Semi-Volatile Organic Compounds Method 8270	(uplice)	(ug/kg)	(ug/kg)	(united)	(ug/ko)	(up/kg)
Benzo(a)anthracene	ND	66	ND	66	ND	66
Benzo(b)fluoranthene	ND	66	ND	66	ND	66
Benzo(k)fluoranthene	ND	66	ND	66	ND	66
Chrysene	ND	66	ND	66	ND	66
Dibenz(a,h)anthracene	ND	66	ND	66	ND	66

ND = Not detected/ Below the RBSLs

RBSL = Risked Based Screening Levels

ug/kg = micrograms per kilogram

ug/L = micrograms per Liter

## CHAIN OF CUSTODY AND ANALYTICAL RESULTS



Pace Analytical Services, Inc. 2225 Riverside Drive Asheville, NC 28804 Phone: 828.254.7176 Fax: 828.252.4618

June 30, 2005

Mr. Hillery Douglas Earth Sciences, Inc. PO Box 71042 Charleston, SC 29415

RE: Lab Project Number: 9296461 Client Project ID: 05-512

Dear Mr. Douglas:

Enclosed are the analytical results for sample(s) received by the laboratory on June 14, 2005. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

Inorganic Wet Chemistry and Metals Analyses were performed at our Pace Asheville laboratory and Organic testing was performed at our Pace Charlotte laboratory unless otherwise footnoted.

If you have any questions concerning this report please feel free to contact me.

Sincerely,



Richard Swartz Richard.Swartz@pacelabs.com Project Manager

Enclosures





Pace Analytical Services, Inc. 2225 Riverside Drive Asheville, NC 28804 Phone: 828.254.7176 Fax: 828.252.4618

Lab Project Number: 9296461 Client Project ID: 05-512

Solid results are reported on a dry weight basis

Lab Sample No: 925745986 Client Sample ID: 112L			Project Sample	Number: 9296461- Matrix: Soil	001 Date Collected: 06/13/05 13:00 Date Received: 06/14/05 10:20
Parameters	Results	Units	Report Limit	Analyzed	By CAS No. Qual RegLmt
Wet Chemistry	and the second				
Percent Moisture	Method: % Mo	isture		and and all and a state of	
Percent Moisture	18.6	%		06/15/05 10:13 T	NS
GC/MS Semivolatiles					
Semivolatile Organics	Prep/Method:	EPA 3545	/ EPA 8270		
Acenaphthene	ND	ug/kg	410	06/20/05 16:50 R	PJ 83-32-9
Acenaphthylene	ND	ug/kg	410	06/20/05 16:50 R	PJ 208-96-8
Anthracene	ND	ug/kg	410	06/20/05 16:50 R	PJ 120-12-7
Benzo(a)anthracene	ND	ug/kg	410	06/20/05 16:50 R	PJ 56-55-3
Benzo(a)pyrene	ND	ug/kg	410	06/20/05 16:50 R	PJ 50-32-8
Benzo(b)fluoranthene	ND	ug/kg	410	06/20/05 16:50 R	PJ 205-99-2
Benzo(g,h,i)perylene	ND	ug/kg	410	06/20/05 16:50 R	PJ 191-24-2
Benzo(k)fluoranthene	ND	ug/kg	410	06/20/05 16:50 R	PJ 207-08-9
Chrysene	ND	ug/kg	410	06/20/05 16:50 R	PJ 218-01-9
Dibenz(a, h) anthracene	ND	ug/kg	410	06/20/05 16:50 R	PJ 53-70-3
Fluoranthene	ND	ug/kg	410	06/20/05 16:50 R	PJ 206-44-0
Fluorene	ND	ug/kg	410	06/20/05 16:50 R	PJ 86-73-7
Indeno(1,2,3-cd)pyrene	ND	ug/kg	410	06/20/05 16:50 R	PJ 193-39-5
Naphthalene	ND	ug/kg	410	06/20/05 16:50 R	PJ 91-20-3
Phenanthrene	ND	ug/kg	410	06/20/05 16:50 R	PJ 85-01-8
Pyrene	ND	ug/kg	410	06/20/05 16:50 R	PJ 129-00-0
Nitrobenzene-d5 (S)	44	%		06/20/05 16:50 R	PJ 4165-60-0
2-Fluorobiphenyl (S)	42	%		06/20/05 16:50 R	PJ 321-60-8
Terphenyl-d14 (S)	69	%		06/20/05 16:50 R	PJ 1718-51-0
Date Extracted	06/15/05			06/15/05	
GC/MS Volatiles					
GC/MS VOCs 5035/8260 low level	Method: EPA	8260			
Benzene	ND	ug/kg	6.1	06/18/05 21:44 M	SF 71-43-2
Ethylbenzene	ND	ug/kg	6.1	06/18/05 21:44 M	SF 100-41-4
Methyl-tert-butyl ether	ND	ug/kg	6.1	06/18/05 21:44 M	SF 1634-04-4
Naphthalene	ND	ug/kg	6.1	06/18/05 21:44 M	SF 91-20-3
Toluene	ND	ug/kg	6.1	06/18/05 21:44 M	SF 108-88-3
m&p-Xylene	ND	ug/kg	12.	06/18/05 21:44 M	SF
o-Xylene	ND	ug/kg	6.1	06/18/05 21:44 M	SF 95-47-6
Toluene-d8 (S)	98	%		06/18/05 21:44 M	SF 2037-26-5
4-Bromofluorobenzene (S)	86	%		06/18/05 21:44 MS	SF 460-00-4

Date: 06/30/05

Page: 1 of 19



Pace Analytical Services, Inc. 2225 Riverside Drive Asheville, NC 28804 Phone: 828.254.7176 Fax: 828.252.4618

Lab Project Number: 9296461 Client Project ID: 05-512

Lab Sample No: 9	25745986			Project Sample	Number: 9296	461-001	Date Co	llected	: 06/13/05 13:00
Client Sample ID: 1	12L				Matrix: Soil		Date R	eceived	: 06/14/05 10:20
Parameters	(12) (12) (12) (12) (12) (12) (12) (12)	Results	Units	Report Limit	Analyzed	By	CAS No.	Qual	RegLmt
Dibromofluorometh	ane (S)	96	%		06/18/05 21:	44 MSF	1868-53-7		
1,2-Dichloroethan	e-d4 (S)	88	%		06/18/05 21:	44 MSF	17060-07-0		

Date: 06/30/05

Page: 2 of 19





Pace Analytical Services, Inc. 2225 Riverside Drive Asheville, NC 28804 Phone: 828.254.7176 Fax: 828.252.4618

Lab Project Number: 9296461 Client Project ID: 05-512

Lab Sample No: 925745994 Client Sample ID: 112R			Project Sample	Number: 9296461-002 Matrix: Soil	2 Date Collected: 06/13/05 13:00 Date Received: 06/14/05 10:20
Province	Provider	Think	Recent Finite	hardward by	
Wet Chemistry	Results	Units	Report Limit	Analyzed By	CAS NO. Qual Regimt
Net Chemistry	Mathad, & Ma				
Percent Moisture	Method: % Mo	iscure		AC /1E /AE 10.14 mm	
Percent Moisture	20.5	*		00/15/05 10:14 TNS	
GC/MS Semivolatiles					
Semivolatile Organics	Prep/Method:	EPA 3545	/ EPA 8270		
Acenaphthene	ND	ug/kg	410	06/20/05 13:06 RPJ	83-32-9
Acenaphthylene	ND	ug/kg	410	06/20/05 13:06 RPJ	208-96-8
Anthracene	ND	ug/kg	410	06/20/05 13:06 RPJ	120-12-7
Benzo(a)anthracene	ND	ug/kg	410	06/20/05 13:06 RPJ	56-55-3
Benzo(a)pyrene	ND	ug/kg	410	06/20/05 13:06 RPJ	50-32-8
Benzo(b)fluoranthene	ND	ug/kg	410	06/20/05 13:06 RPJ	205-99-2
Benzo(g,h,i)perylene	ND	ug/kg	410	06/20/05 13:06 RPJ	191-24-2
Benzo(k)fluoranthene	ND	ug/kg	410	06/20/05 13:06 RPJ	207-08-9
Chrysene	ND	ug/kg	410	06/20/05 13:06 RPJ	218-01-9
Dibenz(a, h) anthracene	ND	ug/kg	410	06/20/05 13:06 RPJ	53-70-3
Fluoranthene	ND	ug/kg	410	06/20/05 13:06 RPJ	206-44-0
Fluorene	ND	ug/kg	410	06/20/05 13:06 RPJ	86-73-7
Indeno(1,2,3-cd)pyrene	ND	ug/kg	410	06/20/05 13:06 RPJ	193-39-5
Naphthalene	ND	ug/kg	410	06/20/05 13:06 RPJ	91-20-3
Phenanthrene	ND	ug/kg	410	06/20/05 13:06 RPJ	85-01-8
Pyrene	ND	ug/kg	410	06/20/05 13:06 RPJ	129-00-0
Nitrobenzene-d5 (S)	54	%		06/20/05 13:06 RPJ	4165-60-0
2-Fluorobiphenyl (S)	56	%		06/20/05 13:06 RPJ	321-60-8
Terphenyl-d14 (S)	66	%		06/20/05 13:06 RPJ	1718-51-0
Date Extracted	06/15/05			06/15/05	
GC/MS Volatiles					
GC/MS VOCs 5035/8260 low level	Method: EPA	8260			
Benzene	ND	ug/kg	6.3	06/18/05 22:01 MSF	71-43-2
Ethylbenzene	ND	ug/kg	6.3	06/18/05 22:01 MSF	100-41-4
Methyl-tert-butyl ether	ND	ug/kg	6.3	06/18/05 22:01 MSF	1634-04-4
Naphthalene	ND	ug/kg	6.3	06/18/05 22:01 MSF	91-20-3
Toluene	ND	ug/kg	6.3	06/18/05 22:01 MSF	108-88-3
m&p-Xylene	ND	ug/kg	13.	06/18/05 22:01 MSF	
o-Xylene	ND	ug/kg	6.3	06/18/05 22:01 MSF	95-47-6
Toluene-d8 (S)	98	%		06/18/05 22:01 MSF	2037-26-5
4-Bromofluorobenzene (S)	83	%		06/18/05 22:01 MSF	460-00-4
Dibromofluoromethane (S)	96	%		06/18/05 22:01 MSF	1868-53-7

Date: 06/30/05

Page: 3 of 19





Pace Analytical Services, Inc. 2225 Riverside Drive Asheville, NC 28804 Phone: 828.254.7176 Fax: 828.252.4618

Lab Project Number: 9296461 Client Project ID: 05-512

Lab Sample No: Client Sample ID:	925745994 112R			Project Sample	Number: 92964 Matrix: Soil	61-002	Date C Date	Collected: Received:	06/13/05 13:00 06/14/05 10:20
Parameters		Results	Units	Report Limit	Analyzed	By	CAS No.	Qual	RegLmt
1,2-Dichloroeth	ane-d4 (S)	88	%		06/18/05 22:0	1 MSF	17060-07-0	)	

Date: 06/30/05

Page: 4 of 19





Pace Analytical Services, Inc. 2225 Riverside Drive Asheville, NC 28804 Phone: 828.254.7176 Fax: 828.252.4618

Lab Project Number: 9296461 Client Project ID: 05-512

Lab Sample No: 925746000 Client Sample ID: 112B			Project Sample	Number: 9296461-00 Matrix: Soil	Date Collected: 06/13/05 1 Date Received: 06/14/05 1	13:00 10:20
Parameters	Results	Units	Report Limit	Analyzed By	CAS No. Qual RegLmt	
Wet Chemistry						
Percent Moisture	Method: % Mo	isture				
Percent Moisture	12.7	%		06/15/05 10:15 TNS		
GC/MS Semivolatiles						
Semivolatile Organics	Prep/Method:	EPA 3545	/ EPA 8270			
Acenaphthene	ND	ug/kg	380	06/20/05 13:40 RPJ	83-32-9	
Acenaphthylene	ND	ug/kg	380	06/20/05 13:40 RPJ	208-96-8	
Anthracene	ND	ug/kg	380	06/20/05 13:40 RPJ	120-12-7	
Benzo(a)anthracene	ND	ug/kg	380	06/20/05 13:40 RPJ	56-55-3	
Benzo(a)pyrene	ND	ug/kg	380	06/20/05 13:40 RPJ	50-32-8	
Benzo(b)fluoranthene	ND	ug/kg	380	06/20/05 13:40 RPJ	205-99-2	
Benzo(g,h,i)perylene	ND	ug/kg	380	06/20/05 13:40 RPJ	191-24-2	
Benzo(k)fluoranthene	ND	ug/kg	380	06/20/05 13:40 RPJ	207-08-9	
Chrysene	ND	ug/kg	380	06/20/05 13:40 RPJ	218-01-9	
Dibenz(a, h) anthracene	ND	ug/kg	380	06/20/05 13:40 RPJ	53-70-3	
Fluoranthene	ND	ug/kg	380	06/20/05 13:40 RPJ	206-44-0	
Fluorene	ND	ug/kg	380	06/20/05 13:40 RPJ	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	380	06/20/05 13:40 RPJ	193-39-5	
Naphthalene	ND	ug/kg	380	06/20/05 13:40 RPJ	91-20-3	
Phenanthrene	ND	ug/kg	380	06/20/05 13:40 RPJ	85-01-8	
Pyrene	ND	ug/kg	380	06/20/05 13:40 RPJ	129-00-0	
Nitrobenzene-d5 (S)	37	%		06/20/05 13:40 RPJ	4165-60-0	
2-Fluorobiphenyl (S)	34	%		06/20/05 13:40 RPJ	321-60-8	
Terphenyl-d14 (S)	37	%		06/20/05 13:40 RPJ	1718-51-0	
Date Extracted	06/15/05			06/15/05		
GC/MS Volatiles						
GC/MS VOCs 5035/8260 low level	Method: EPA	8260				
Benzene	ND	ug/kg	5.7	06/19/05 22:54 MSF	71-43-2	
Ethylbenzene	ND	ug/kg	5.7	06/19/05 22:54 MSF	100-41-4	
Methyl-tert-butyl ether	ND	ug/kg	5.7	06/19/05 22:54 MSF	1634-04-4	
Naphthalene	ND	ug/kg	5.7	06/19/05 22:54 MSF	91-20-3	
Toluene	ND	ug/kg	5.7	06/19/05 22:54 MSF	108-88-3	
m&p-Xylene	ND	ug/kg	11.	06/19/05 22:54 MSF		
o-Xylene	ND	ug/kg	5.7	06/19/05 22:54 MSF	95-47-6	
Toluene-d8 (S)	95	%		06/19/05 22:54 MSF	2037-26-5	
4-Bromofluorobenzene (S)	89	*		06/19/05 22:54 MSF	460-00-4	
Dibromofluoromethane (S)	98	%		06/19/05 22:54 MSF	1868-53-7	

Date: 06/30/05

Page: 5 of 19





Pace Analytical Services, Inc. 2225 Riverside Drive Asheville, NC 28804 Phone: 828.254.7176 Fax: 828.252.4618

Lab Project Number: 9296461 Client Project ID: 05-512

Lab Sample No:	925746000		1	Project Sample	Number: 929646	1-003	Date C	collected	: 06/13/05 1	13:00
Client Sample ID:	112B				Matrix: Soil		Date	Received	: 06/14/05 1	10:20
Parameters		Results	Units	Report Limit	Analyzed	By	CAS No.	Qual	RegImt	
1,2-Dichloroetha	ane-d4 (S)	88	%		06/19/05 22:54	MSF	17060-07-0	)		

Date: 06/30/05

Page: 6 of 19





Pace Analytical Services, Inc. 2225 Riverside Drive Asheville, NC 28804 Phone: 828.254.7176 Fax: 828.252.4618

Lab Project Number: 9296461 Client Project ID: 05-512

#### PARAMETER FOOTNOTES

Method 9071B modified to use ASE.

All pH, Free Chlorine, Total Chlorine and Ferrous Iron analyses conducted outside of EPA recommended immediate hold time.

Depending on the moisture content the PRLs can be elevated for all soil samples reported on a dry weight basis.

2-Chloroethyl vinyl ether has been shown to degrade in the presence of acid.

ND Not detected at or above adjusted reporting limit

NC Not Calculable

- J Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit
- MDL Adjusted Method Detection Limit
- (S) Surrogate

Date: 06/30/05

Page: 13 of 19





Pace Analytical Services, Inc. 2225 Riverside Drive Asheville, NC 28804 Phone: 828.254.7176 Fax: 828.252.4618

#### QUALITY CONTROL DATA

Lab Project Number: 9296461 Client Project ID: 05-512

QC Batch: 130575		Ana	lysis Method	: EPA 8270			
QC Batch Method: EPA 3545		Analysis	Description	: Semivolatile	Organics		
Associated Lab Samples:	9257459 925746	86 92574599 034	9257460	00 92574601	8 9257460	26	
METHOD BLANK: 925752578	-	_	-				
Associated Lab Samples:	925745986	925745994	925746000	925746018	925746026	925746034	
		Blank	Report	ing			
Parameter	Units	Result	Limit	Footnotes			
Acenaphthene	ug/kg	ND	330				
Acenaphthylene	ug/kg	ND	330				
Anthracene	ug/kg	ND	330				
Benzo(k)fluoranthene	ug/kg	ND	330				
Benzo(b)fluoranthene	ug/kg	ND	330				
Benzo(a)anthracene	ug/kg	ND	330				
Benzo(g,h,i)perylene	ug/kg	ND	330				
Benzo(a)pyrene	ug/kg	ND	330				
Chrysene	ug/kg	ND	330				
Dibenz(a, h) anthracene	ug/kg	ND	330				
Fluoranthene	ug/kg	ND	330				
Fluorene	ug/kg	ND	330				
Indeno(1,2,3-cd)pyrene	ug/kg	ND	330				
Naphthalene	ug/kg	ND	330				
Phenanthrene	ug/kg	ND	330				
Pyrene	ug/kg	ND	330				
Nitrobenzene-d5 (S)	%	64					
2-Fluorobiphenyl (S)	%	69					
Terphenyl-d14 (S)	%	76					

LABORATORY CONTROL SAMPLE: 925752586

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	Footnotes
Acenaphthene	ug/kg	1667.00	1329	80	
Acenaphthylene	ug/kg	1667.00	1315	79	
Anthracene	ug/kg	1667.00	1367	82	
Benzo(k)fluoranthene	ug/kg	1667.00	1183	71	
Benzo(b)fluoranthene	ug/kg	1667.00	1191	72	

Date: 06/30/05

Page: 14 of 19



Pace Analytical Services, Inc. 2225 Riverside Drive Asheville, NC 28804 Phone: 828.254.7176 Fax: 828.252.4618

#### QUALITY CONTROL DATA

Lab Project Number: 9296461 Client Project ID: 05-512

		Spike	LCS	LCS	
Parameter	Units	Conc.	Result	% Rec	Footnotes
Benzo(a)anthracene	ug/kg	1667.00	1291	77	
Benzo(g,h,i)perylene	ug/kg	1667.00	1966	118	
Benzo(a)pyrene	ug/kg	1667.00	1285	77	
Chrysene	ug/kg	1667.00	1283	77	
Dibenz(a, h) anthracene	ug/kg	1667.00	1303	78	
Fluoranthene	ug/kg	1667.00	1235	74	
Fluorene	ug/kg	1667.00	1323	79	
Indeno(1,2,3-cd)pyrene	ug/kg	1667.00	1303	78	
Naphthalene	ug/kg	1667.00	1198	72	
Phenanthrene	ug/kg	1667.00	1283	77	
Pyrene	ug/kg	1667.00	1285	77	
Nitrobenzene-d5 (S)				68	
2-Fluorobiphenyl (S)				77	
Terphenyl-d14 (S)				79	

#### MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 925752602 925752610

Darameter	Unite	925743643	Spike	MS	MSD	MS % Rec	MSD	RPD	Footnotes
	United		1000	100010	1004		100	10	TOOCHOCED
Acenaphthene	ug/kg	U	1769.00	1600	1801	90	102	12	
Pyrene	ug/kg	158.6	1769.00	1565	1668	80	85	6	
Nitrobenzene-d5 (S)						76	82		
2-Fluorobiphenyl (S)						71	82		
Terphenyl-d14 (S)						78	82		

#### SAMPLE DUPLICATE: 925752594

Parameter	Unite	925743635 Begult	DUP	RPD	Footnotes
Acenaphthene	ug/kg	ND	ND	NC	TOOCHOCOB
Acenaphthylene	ug/kg	ND	ND	NC	
Anthracene	ug/kg	ND	ND	NC	
Benzo(k)fluoranthene	ug/kg	ND	ND	NC	
Benzo(b)fluoranthene	ug/kg	ND	ND	NC	
Benzo(a)anthracene	ug/kg	ND	ND	NC	

Date: 06/30/05

Page: 15 of 19



Pace Analytical Services, Inc. 2225 Riverside Drive Asheville, NC 28804 Phone: 828.254.7176 Fax: 828.252.4618

#### QUALITY CONTROL DATA

Lab Project Number: 9296461 Client Project ID: 05-512

SAMPLE	DUPLICATE:	925752594

		925743635	DUP		
Parameter	Units	Result	Result	RPD	Footnotes
Benzo(g,h,i)perylene	ug/kg	ND	ND	NC	
Benzo(a)pyrene	ug/kg	ND	ND	NC	
Chrysene	ug/kg	ND	ND	NC	
Dibenz(a, h) anthracene	ug/kg	ND	ND	NC	
Fluoranthene	ug/kg	ND	ND	NC	
Fluorene	ug/kg	940.0	1100	16	
Indeno(1,2,3-cd)pyrene	ug/kg	ND	ND	NC	
Naphthalene	ug/kg	900.0	1500	47	1
Phenanthrene	ug/kg	3000	3600	18	
Pyrene	ug/kg	550.0	630.0	13	
Nitrobenzene-d5 (S)	%	116	130		2
2-Fluorobiphenyl (S)	%	55	61		
Terphenyl-d14 (S)	%	74	76		

Date: 06/30/05

Page: 16 of 19



Pace Analytical Services, Inc. 2225 Riverside Drive Asheville, NC 28804 Phone: 828.254.7176 Fax: 828.252.4618

#### QUALITY CONTROL DATA

Lab Project Number: 9296461 Client Project ID: 05-512

QC Batch: 130810	Analysis Method: EPA 8260							
QC Batch Method: EPA 8260	Analysis Description: GC/MS VOCs 5035/8260 low level							
Associated Lab Samples:	9257459 925746	86 92574599 034	925746000	92574601	.8 9257460	026		
METHOD BLANK: 925766198	and an and a					20 A.M		
Associated Lab Samples:	925745986	925745994	925746000 9	25746018	925746026	925746034		
		Blank	Reporting					
Parameter	Units	Result	Limit	Footnotes				
Benzene	ug/kg	ND	5.0					
Ethylbenzene	ug/kg	ND	5.0					
Methyl-tert-butyl ether	ug/kg	ND	5.0					
Naphthalene	ug/kg	ND	5.0					
Toluene	ug/kg	ND	5.0					
m&p-Xylene	ug/kg	ND	10.					
o-Xylene	ug/kg	ND	5.0					
Toluene-d8 (S)	%	100						
4-Bromofluorobenzene (S)	%	97						
Dibromofluoromethane (S)	8	104						
		104						

LABORATORY CONTROL SAMPLE: 925766206

		Spike	LCS	LCS	
Parameter	Units	Conc.	Result	% Rec	Footnotes
Benzene	ug/kg	50.00	48.03	96	
Ethylbenzene	ug/kg	50.00	46.47	93	
Methyl-tert-butyl ether	ug/kg	50.00	48.91	98	
Naphthalene	ug/kg	50.00	46.13	92	
Toluene	ug/kg	50.00	45.50	91	
m&p-Xylene	ug/kg	100.00	91.34	91	
o-Xylene	ug/kg	50.00	44.29	89	
Toluene-d8 (S)				100	
4-Bromofluorobenzene (S)				102	
Dibromofluoromethane (S)				103	
1,2-Dichloroethane-d4 (S)				99	

Page: 17 of 19



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Pace Analytical Services, Inc. 9800 Kincey Avenue, Suite 100 Huntersville, NC 28078 Phone: 704.875.9092 Fax: 704.875.9091 Pace Analytical Services, Inc. 2225 Riverside Drive Asheville, NC 28804 Phone: 828.254.7176 Fax: 828.252.4618

#### QUALITY CONTROL DATA

Lab Project Number: 9296461 Client Project ID: 05-512

QC Batch: 130550 QC Batch Method:		Analysis Method: % Moisture Analysis Description: Percent Moisture					
Associated Lab Samples:	925745986 925746034	925745994	925746000	925746018	925746026		
SAMPLE DUPLICATE: 925750820							

		925748733	DUP		
Parameter	Units	Result	Result	RPD	Footnotes
Percent Moisture	%	32.30	32.20	0	

Date: 06/30/05

Page: 18 of 19





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Lab Project Number: 9296461 Client Project ID: 05-512

#### QUALITY CONTROL DATA PARAMETER FOOTNOTES

Consistent with EPA guidelines, unrounded concentrations are displayed and have been used to calculate % Rec and RPD values.

- LCS(D) Laboratory Control Sample (Duplicate)
- MS(D) Matrix Spike (Duplicate)
- DUP Sample Duplicate
- ND Not detected at or above adjusted reporting limit
- NC Not Calculable
- J Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit
- MDL Adjusted Method Detection Limit
- RPD Relative Percent Difference
- (S) Surrogate
- [1] The calculated RPD was outside QC acceptance limits.
- [2] Base/neutral surrogate recovery outside of control limits. The data was accepted based on valid recovery of remaining two base/neutral surrogates.

Date: 06/30/05

Page: 19 of 19

Appendix C Regulatory Correspondence



BOARD: Elizabeth M. Hagood Chairman

Edwin H. Cooper, III Vice Chairman

Steven G. Kisner Secretary



BOARD: Henry C. Scott

Paul C. Aughtry, III

Glenn A. McCall

Coleman F. Buckhouse, MD

C. Earl Hunter, Commissioner Promoting and protecting the health of the public and the environment.

#### 7 November 2005

United States Marine Corps Air Station Attention: S-4 NREAO (A.G. Howard) P.O. Box 55001 Beaufort, SC 29904-5001

Re: MCAS – Laurel Bay Housing – 112 Birch Street Site ID # 03095 Tank Closure Report received 4 November 2005 No Further Action Beaufort County

Dear Ms. Howard:

The Department has reviewed the referenced assessment report. Based on the laboratory data included in the report, there were no detections of contaminants of concern at this site.

Based on the information and analytical data submitted, the Department recognizes that MCAS has adequately addressed the known environmental contamination identified on the property to date in accordance with the approved scope of work. Consequently, no further investigation is required at this time. Please note, this statement pertains only to the portion of the site addressed in the referenced report and does not apply to other areas of the site and/or any other potential regulatory violations. Further, the Department retains the right to request further investigation if deemed necessary.

Should you have any questions, please contact me at 803-898-3553 (office phone), 803-898-2893 (fax) or <u>bishopma@dhec.sc.gov</u>.

Sincerely,

Michael Bishop, Hydrogeologist Groundwater Quality Section Bureau of Water

B. Thomas Knight, Manager

Groundwater Quality Section Bureau of Water

 cc: Region 8 District EQC
 Commander NAVFACENGCOM Southern Division, Attn: Code ES24 (Gabriel Magwood), P.O. Box 190010, North Charleston, SC 29419-9010
 Technical File