SUMMARY REPORT
827 WEST LAUREL BAY BOULEVARD
(FORMERLY 138 WEST LAUREL BAY BOULEVARD)
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

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Appendices

List of Acronyms

bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and xylenes
CTO	Contract Task Order
COPC	constituents of potential concern
ft	feet
GPR	ground penetrating radar
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
UFP SAP	Uniform Federal Policy Sampling and Analysis Plan
USEPA	United States Environmental Protection Agency
UST	underground storage tank
VI	vapor intrusion
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 827 West Laurel Bay Boulevard (Formerly 138 West Laurel Bay Boulevard). 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.

MCAS Beaufort does not have documentation of the UST removal activities at 34 properties where it was discovered that a structure (i.e., home addition, garage, porch, or shed) had been historically constructed on top of the suspected former UST locations. The results of a historical document review and ground penetrating radar (GPR) survey at the 34 properties indicated there was no evidence that any of the former USTs remained in place beneath the structures and it was likely that the USTs were removed prior to 2007. The LBMH UST removal and assessment process is described below in Section 1.2. The LBMH multi-media investigation selection process tree, used to evaluate the environmental impact of USTs for most sites at LBMH, is presented in Appendix A. It should be noted that because soil and groundwater were not sampled following the UST removal and analytical results were not available for evaluation, the subject property of this report did not follow the typical multi-media investigation selection process presented in Appendix A.

1.2 UST Assessment Process

As stated above, the assessment process at this property did not follow the typical process presented in Appendix A. Instead the process consisted first of a vapor intrusion (VI)

assessment to evaluate the potential risk to residents at the property. Soil gas samples for the VI assessment were collected from beneath the structure in the vicinity of the suspected location of the former UST. The VI assessment was later followed by an assessment of soil and groundwater outside the footprint of the house and in the vicinity of the suspected location of the former UST to evaluate the impact, if any, to these media.

During the VI investigation, soil gas samples were analyzed for a predetermined list of constituents of potential concern (COPCs) associated with the petroleum compounds found in home heating oil. These COPCs are as follows:

- benzene, toluene, ethylbenzene, and xylenes (BTEX), and
- naphthalene.

In accordance with the SCDHEC approved *Uniform Federal Policy Sampling and Analysis Plan (UFP SAP) for Vapor Media, Revision 3* (Resolution Consultants, 2016), soil gas analytical results were compared to the United States Environmental Protection Agency (USEPA) vapor intrusion screening levels (VISLs) for soil gas (USEPA, 2016). 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 soil gas results were used to determine whether petroleum vapors existed due to former USTs and to assess the associated risk to human health.

Following the VI investigations, soil and initial groundwater assessment (IGWA) investigations were conducted adjacent to the former UST locations at the 34 properties as an additional precautionary measure. Soil and groundwater samples collected were analyzed for a predetermined list of 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:

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

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). 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 IGWA sampling were used to determine the presence or absence of the aforementioned COPCs in groundwater and identify whether former UST locations required additional delineation of COPCs in groundwater. Groundwater analytical results were compared to SCDHEC RBSLs for groundwater. The groundwater analytical results were also compared to the site specific groundwater VISLs as another line of evidence that VI is not a concern.

A GPR investigation was conducted in 2019 to identify any additional USTs located at LBMH. If an anomaly was detected at a property, intrusive investigations including use of probe rods and hand digging were used to confirm the presence of a UST. If a UST was identified, it was removed, and a soil sample was collected from beneath the UST excavation (approximately 4 to 6 feet [ft] below ground surface [bgs]) and analyzed for the petroleum COPCs. Soil sample results were submitted by MCAS Beaufort to SCDHEC utilizing SCDHEC's UST Assessment Report form.

2.0 SAMPLING ACTIVITIES AND RESULTS

The following section presents the sampling activities and associated results for 827 West Laurel Bay Boulevard (Formerly 138 West Laurel Bay Boulevard). The sampling activities at 827 West Laurel Bay Boulevard (Formerly 138 West Laurel Bay Boulevard) comprised a VI investigation, a soil investigation, IGWA sampling and an additional soil investigation following a UST removal. Details regarding the VI investigation at this site are provided in the *Letter Report Petroleum Vapor Intrusion Investigations – June 2016 and January 2017, Revision 1* (Resolution Consultants, 2017). The laboratory report that includes the pertinent soil gas analytical results for this site is presented in Appendix B. Details regarding the soil and IGWA sampling activities at this site are provided in the *Soil and Initial Groundwater Investigation Report – September and October 2017, Revision 1* (CDM-AECOM Multimedia JV, 2018). The laboratory reports that include the pertinent soil and IGWA analytical results for this site are presented in Appendices C and D, respectively.

2.1 Soil Gas Sampling

On June 17, 2016, a temporary near-slab vapor pin was installed and sampled at 827 West Laurel Bay Boulevard (Formerly 138 West Laurel Bay Boulevard) in accordance with the SCDHEC approved *UFP SAP for Vapor Media, Revision 3* (Resolution Consultants, 2016). Soil gas sampling was conducted at this property to assess the potential risk for vapor intrusion associated with the suspected location of a former UST. The near-slab vapor pin was placed in the same general location as the suspected former heating oil UST, as determined by review of historical documents and GPR analysis. Further details are provided in the *Letter Report Petroleum Vapor Intrusion Investigations – June 2016 and January 2017, Revision 1* (Resolution Consultants, 2017).

The sampling strategy for this phase of the investigation required a one-time sampling event of the near-slab vapor pin. The near-slab vapor pin at 827 West Laurel Bay Boulevard (Formerly 138 West Laurel Bay Boulevard) was sampled on June 17, 2016. A soil gas sample was collected and shipped to an offsite laboratory for analysis of the petroleum COPCs. Upon completion of soil gas sampling, the vapor pin was abandoned in accordance with the *UFP SAP for Vapor Media, Revision 3* (Resolution Consultants, 2016). Field forms are provided in the *Letter Report Petroleum Vapor Intrusion Investigations – June 2016 and January 2017, Revision 1* (Resolution Consultants, 2017).

2.2 Soil Gas Analytical Results

A summary of the laboratory analytical results and USEPA VISLs is presented in Table 1. A copy of the laboratory analytical data report is included in Appendix B.

The soil gas results collected from 827 West Laurel Bay Boulevard (Formerly 138 West Laurel Bay Boulevard) were below USEPA VISLs, which indicated that the subsurface soil gas was not impacted by COPCs associated with the former UST at concentrations that present a potential risk to human health and the environment.

2.3 Soil Sampling

On September 20, 2017, a single soil boring was advanced near the suspected former UST location at 827 West Laurel Bay Boulevard (Formerly 138 West Laurel Bay Boulevard). The soil boring location is indicated on Figure 4 of the *Soil and Initial Groundwater Investigation Report – September and October 2017, Revision 1* (CDM-AECOM Multimedia JV, 2018) and was

collocated with the temporary monitoring well discussed in Section 2.5. A single soil sample was collected at a depth of approximately 6 ft bgs. The soil sample was shipped to an offsite laboratory for analysis of the petroleum COPCs. Soil sampling was performed in accordance with the *UFP SAP for Soil and Groundwater Media* (CDM-AECOM Multimedia JV, 2017) and the applicable South Carolina regulation R.61-92, Part 280 (SCDHEC, 2017) and assessment guidelines. Field forms are provided in the *Soil and Initial Groundwater Investigation Report – September and October 2017, Revision 1* (CDM-AECOM Multimedia JV, 2018).

2.4 Soil 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 as Appendix C.

The soil results collected from 827 West Laurel Bay Boulevard (Formerly 138 West Laurel Bay Boulevard) were less than the SCDHEC RBSLs (Table 2), which indicated that the soil was not impacted by COPCs associated with the former UST at concentrations that present a potential risk to human health and the environment.

2.5 Groundwater Sampling

On September 20, 2017, the soil boring was converted into a temporary monitoring well and then sampled at 827 West Laurel Bay Boulevard (Formerly 138 West Laurel Bay Boulevard), 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 near the suspected location of the former heating oil UST. Further details are provided in the *Soil and Initial Groundwater Investigation Report – September and October 2017, Revision 1* (CDM-AECOM Multimedia JV, 2018).

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 *Soil and Initial Groundwater Investigation Report – September and October 2017, Revision 1* (CDM-AECOM Multimedia JV, 2018).

2.6 Groundwater Analytical Results

A summary of the laboratory analytical results and SCDHEC RBSLs is presented in Table 3. A copy of the laboratory analytical data report is included in Appendix D.

The groundwater results collected from 827 West Laurel Bay Boulevard (Formerly 138 West Laurel Bay Boulevard) were less than the SCDHEC RBSLs and the site-specific groundwater VISLs (Table 3), which indicated that the groundwater was not impacted by COPCs associated with the former UST at concentrations that present a potential risk to human health and the environment.

2.7 UST Removal and Soil Sampling

Between January and April 2019, GPR investigations occurred at LBMH to identify previously undocumented USTs. An anomaly was detected at 827 West Laurel Bay Boulevard (Formerly 138 West Laurel Bay Boulevard. Intrusive investigations including use of a probe rod and hand digging were used to confirm the anomaly and a UST was identified at 827 West Laurel Bay Boulevard (138 West Laurel Bay Boulevard). Further details are provided in the *Technical Memorandum For Ground Penetrating Radar Investigations* (CDM-AECOM Multimedia JV, 2019).

On December 16, 2019, a single 280 gallon heating oil UST was removed from the front landscaped area, adjacent to the concrete porch at 827 West Laurel Bay Boulevard (Formerly 138 West Laurel Bay Boulevard). The former UST location is indicated on Figures 2 and 3 of the UST Assessment Report (Appendix E). 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 E), the depth to the base of the UST was 4'3" bgs. A single soil sample was collected from a depth of 2'1" bgs. The sample was collected from the fill port side of the former UST to represent a worst case scenario 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.

2.8 Soil Analytical Results

A summary of the laboratory analytical results and SCDHEC RBSLs is presented in Table 4. A copy of the laboratory analytical data report is included in the UST Assessment Report

presented in Appendix E. 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 E). 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 the former UST location at 827 West Laurel Bay Boulevard (Formerly 138 West Laurel Bay Boulevard) 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 gas, it was determined that there was not a VI concern at this property and a recommendation was made for no additional VI assessment activities. SCDHEC approved the no further VI investigation recommendation for 827 West Laurel Bay Boulevard (Formerly 138 West Laurel Bay Boulevard) in a letter dated June 20, 2017. Based on the analytical results for soil gas, soil, and groundwater, and soil following the UST removal, SCDHEC made the determination that NFA was required for 827 West Laurel Bay Boulevard (Formerly 138 West Laurel Bay Boulevard). The NFA determination for soil and groundwater was obtained in a letter dated March 29, 2018. The NFA determination for soil following the UST removal was obtained in a letter dated March 19, 2020. SCDHEC's NFA letters are provided in Appendix F.

4.0 REFERENCES

CDM-AECOM Multimedia JV, 2017. *Uniform Federal Policy Sampling and Analysis Plan for Soil and Groundwater Media for Laurel Bay Military Housing Area, Marine Corps Air Station Beaufort, Beaufort, South Carolina*, July 2017.

CDM-AECOM Multimedia JV, 2018. *Soil and Initial Groundwater Investigation Report – September and October 2017 for Laurel Bay Military Housing Area, Revision 1, Multiple Properties, Laurel Bay Military Housing Area, Marine Corps Air Station Beaufort, Beaufort, South Carolina*, February 2018.

CDM-AECOM Multimedia JV, 2019. *Technical Memorandum For Ground Penetrating Radar for Laurel Bay Military Housing Area*, *Marine Corps Air Station Beaufort, Beaufort SC,* September 2019.

Marine Corps Air Station Beaufort, 2020. *South Carolina Department of Health and Environmental Control (SCDHEC) Underground Storage Tank Assessment Report – 827 West Laurel Bay Blvd (Formerly 138 West Laurel Bay Blvd), Laurel Bay Military Housing Area*, February 2020.

Resolution Consultants, 2016. *Uniform Federal Policy Sampling and Analysis Plan for Vapor Media for Laurel Bay Military Housing Area, Revision 3, Multiple Properties, Laurel Bay Military Housing Area, Marine Corps Air Station Beaufort, Beaufort, South Carolina*, June 2016.

Resolution Consultants, 2017. *Letter Report Petroleum Vapor Intrusion Investigations – June 2016 and January 2017 for Laurel Bay Military Housing Area, Revision 1, 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.

United States Environmental Protection Agency, 2016. *USEPA OSWER Vapor Intrusion Assessment, Vapor Intrusion Screening Level Calculator, Version 3.5.1,* May 2016.

Tables

Table 1
Laboratory Analytical Results - Vapor
827 West Laurel Bay Boulevard (Formerly 138 West Laurel Bay Boulevard)
Laurel Bay Military Housing Area
Marine Corps Air Station Beaufort
Beaufort, South Carolina

Constituent	USEPA VISL [(1)]	Results Sample Collected 06/17/16
Volatile Organic Compounds Analyzed by USEPA Method TO-15 (µg/m^3)		
Benzene	12	**2.2**
Toluene	17000	**26**
Ethylbenzene	37	**4.1**
m,p-Xylenes	350	**13**
o-Xylene	350	**4.5**
Naphthalene	2.8	ND

Notes:

[(1)] United States Environmental Protection Agency Exterior Soil Gas Vapor Intrusion Screening Level (VISL) from VISL Calculator (Version 3.5.1, May 2016).

VISLs are based on a residual exposure scenario and a target risk level of $1x10^{-6}$ and a hazard quotient of 0.1.

Bold font indicates the analyte was detected.

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

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

USEPA - United States Environmental Protection Agency

µg/m^3 - micrograms per cubic meter

VISL - Vapor Intrusion Screening Level

Table 2
Laboratory Analytical Results - Soil - Grab Sample
827 West Laurel Bay Boulevard (Formerly 138 West Laurel Bay Boulevard)
Laurel Bay Military Housing Area
Marine Corps Air Station Beaufort
Beaufort, South Carolina

Constituent	SCDHEC RBSLs [(1)]	Results Sample Collected 09/20/17
Volatile Organic Compounds Analyzed by EPA Method 8260B (mg/kg)		
Benzene	0.007	ND
Ethylbenzene	1.15	ND
Naphthalene	0.036	ND
Toluene	1.45	ND
Xylenes, Total	14.5	ND
Semivolatile Organic Compounds Analyzed by EPA Method 8270D (mg/kg)		
Benzo(a)anthracene	0.066	ND
Benzo(b)fluoranthene	0.066	ND
Benzo(k)fluoranthene	0.066	ND
Chrysene	0.066	ND
Dibenz(a,h)anthracene	0.066	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).

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 C.

RBSL - Risk-Based Screening Level

SCDHEC - South Carolina Department Of Health and Environmental Control

Table 3
Laboratory Analytical Results - Groundwater
827 West Laurel Bay Boulevard (Formerly 138 West Laurel Bay Boulevard)
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 09/20/17
Volatile Organic Compounds Analyzed by EPA Method 8260B (µg/L)			
Benzene	5	16.24	ND
Ethylbenzene	700	45.95	ND
Naphthalene	25	29.33	ND
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 $1x10^{-6}$, 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 D.

RBSL - Risk-Based Screening Level

SCDHEC - South Carolina Department Of Health and Environmental Control

µg/L - micrograms per liter

VISL - Vapor Intrusion Screening Level

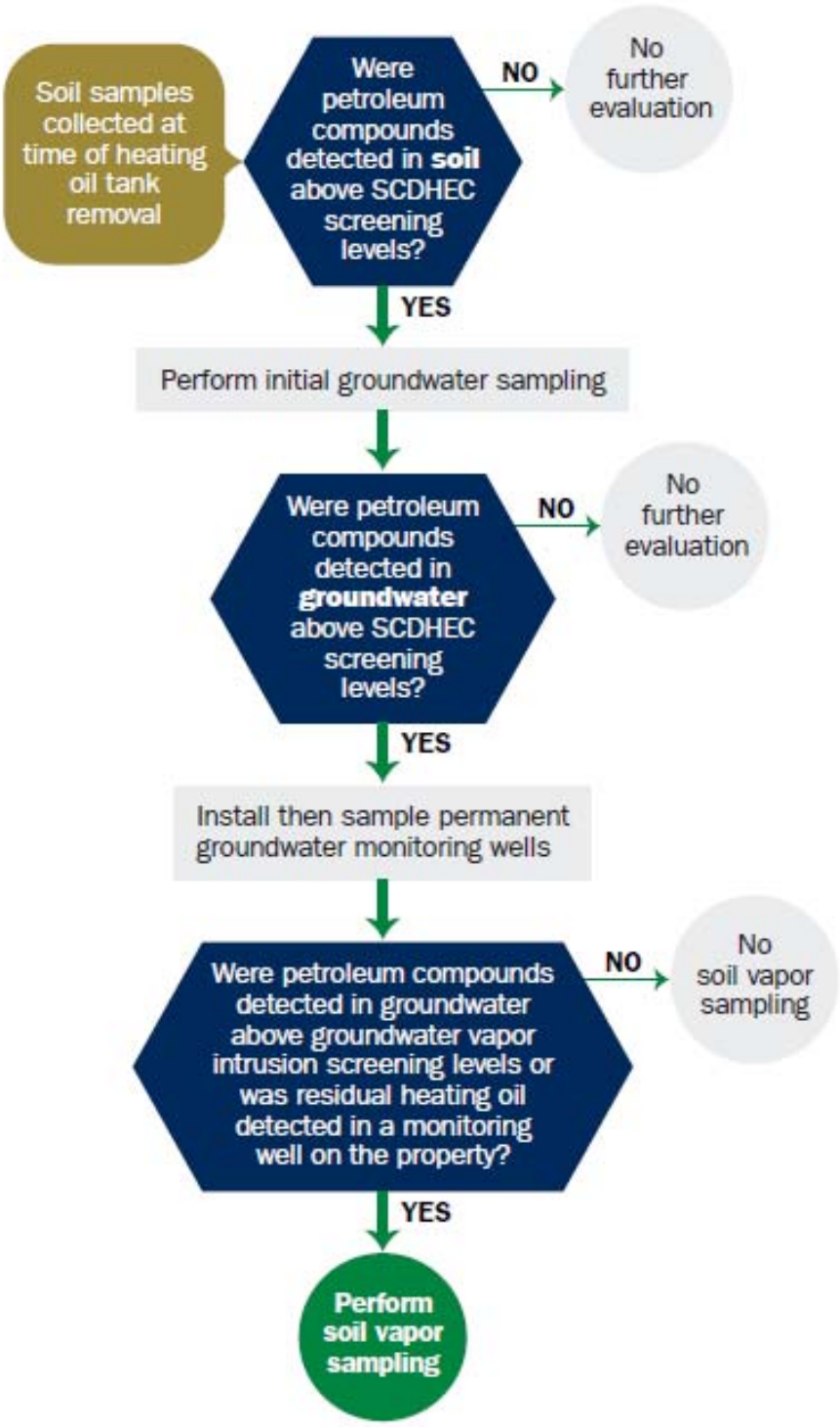
Table 4
Laboratory Analytical Results - Soil - UST Removal
827 West Laurel Bay Boulevard (Formerly 138 West Laurel Bay Boulevard)
Laurel Bay Military Housing Area
Marine Corps Air Station Beaufort
Beaufort, South Carolina

Constituent	SCDHEC RBSLs [(1)]	Results Sample Collected 12/16/19
Volatile Organic Compounds Analyzed by EPA Method 8260B (mg/kg)		
Benzene	0.003	ND
Ethylbenzene	1.15	ND
Naphthalene	0.036	ND
Toluene	0.627	ND
Xylenes, Total	13.01	ND
Semivolatile Organic Compounds Analyzed by EPA Method 8270E (mg/kg)		
Benzo(a)anthracene	0.066	ND
Benzo(b)fluoranthene	0.066	ND
Benzo(k)fluoranthene	0.066	ND
Chrysene	0.066	ND
Dibenz(a,h)anthracene	0.066	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).
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 E.
RBSL - Risk-Based Screening Level
SCDHEC - South Carolina Department Of Health and Environmental Control

Appendix A
Multi-Media Selection Process for LBMH

CDM - AECOM
Multimedia Joint Venture



Appendix A - Multi-Media Selection Process for LBMH

Appendix B
Laboratory Analytical Report - Vapor

CDM - AECOM
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ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **AECOM**
Client Sample ID: **BEALB138SS01GS20160617**
Client Project ID: **WE75 -827 Laurel Bay Blvd / 60492362.FI.WI**

ALS Project ID: P1603197
ALS Sample ID: P1603197-001

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13
Analyst: Evelyn Alvarez
Sampling Media: 1.0 L Summa Canister
Test Notes:
Container ID: 1SC01164

Date Collected: 6/17/16
Date Received: 6/24/16
Date Analyzed: 6/27/16
Volume(s) Analyzed: 0.40 Liter(s)

Initial Pressure (psig): -0.84 Final Pressure (psig): 5.01

Canister Dilution Factor: 1.42

CAS #	Compound	Result µg/m³	LOQ µg/m³	LOD µg/m³	MDL µg/m³	Data Qualifier
71-43-2	Benzene	**2.2**	1.8	1.6	0.57	
108-88-3	Toluene	**26**	1.8	1.5	0.60	
100-41-4	Ethylbenzene	**4.1**	1.8	1.5	0.57	
179601-23-1	m,p-Xylenes	**13**	3.6	2.9	1.1	
95-47-6	o-Xylene	**4.5**	1.8	1.5	0.53	
91-20-3	Naphthalene	1.4	1.8	1.4	0.64	**U**

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.
LOQ = Limit of Quantitation - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Appendix C
Laboratory Analytical Report - Soil

CDM - AECOM
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Volatile Organic Compounds by GC/MS

Client: AECOM - Resolution Consultants
Laboratory ID: SI21025-007
Description: BEALB138SB0106SO20170920
Matrix: Solid
Date Sampled: 09/20/2017 0915
% Solids: 75.2 09/21/2017 2237
Date Received: 09/21/2017

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260B	1	09/27/2017 1801	TML		52617

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Benzene	71-43-2	8260B	4.2	U	5.2	4.2	2.1	ug/kg	1
Ethylbenzene	100-41-4	8260B	4.2	U	5.2	4.2	2.1	ug/kg	1
Naphthalene	91-20-3	8260B	4.2	U	5.2	4.2	2.1	ug/kg	1
Toluene	108-88-3	8260B	4.2	U	5.2	4.2	2.1	ug/kg	1
Xylenes (total)	1330-20-7	8260B	8.0	U	10	8.0	4.1	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		97	79-119
Dibromofluoromethane		95	78-119
1,2-Dichloroethane-d4		88	71-136
Toluene-d8		100	85-116

LOQ = Limit of Quantitation
U = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: AECOM - Resolution Consultants
Laboratory ID: SI21025-007
Description: BEALB138SB0106SO20170920
Matrix: Solid
Date Sampled: 09/20/2017 0915
% Solids: 75.2 09/21/2017 2237
Date Received: 09/21/2017

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8270D (SIM)	1	10/02/2017 1101	JCG	09/21/2017 2154	52123

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Benzo(a)anthracene	56-55-3	8270D (SIM)	2.6	U	4.3	2.6	0.77	ug/kg	1
Benzo(b)fluoranthene	205-99-2	8270D (SIM)	1.3	U	4.3	1.3	0.65	ug/kg	1
Benzo(k)fluoranthene	207-08-9	8270D (SIM)	1.3	U	4.3	1.3	0.62	ug/kg	1
Chrysene	218-01-9	8270D (SIM)	1.3	U	4.3	1.3	0.58	ug/kg	1
Dibenzo(a,h)anthracene	53-70-3	8270D (SIM)	2.6	U	4.3	2.6	0.66	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Fluoranthene-d10		77	37-135
2-Methylnaphthalene-d10		68	17-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOQ	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Appendix D
Laboratory Analytical Report - Groundwater

CDM - AECOM
Multimedia Joint Venture

Volatile Organic Compounds by GC/MS

Client: **AECOM - Resolution Consultants**
Laboratory ID: **SI20018-018**
Description: **BEALB138TW01WG20170920**
Matrix: **Aqueous**
Date Sampled: **09/20/2017 1230**
Date Received: **09/21/2017**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2	5030B	8260B	1	09/27/2017 0004	ECP		52529

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	2
Ethylbenzene	100-41-4	8260B	0.80	U	1.0	0.80	0.40	ug/L	2
Naphthalene	91-20-3	8260B	0.80	U	1.0	0.80	0.40	ug/L	2
Toluene	108-88-3	8260B	0.80	U	1.0	0.80	0.40	ug/L	2
Xylenes (total)	1330-20-7	8260B	0.80	U	1.0	0.80	0.40	ug/L	2

Surrogate	Q	Run 2 % Recovery	Acceptance Limits
Bromofluorobenzene		97	85-114
Dibromofluoromethane		94	80-119
1,2-Dichloroethane-d4		84	81-118
Toluene-d8		94	89-112

LOQ = Limit of Quantitation
U = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **AECOM - Resolution Consultants**
Laboratory ID: **SI20018-018**
Description: **BEALB138TW01WG20170920**
Matrix: **Aqueous**
Date Sampled: **09/20/2017 1230**
Date Received: **09/21/2017**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270D	1	09/26/2017 1716	CMP2	09/24/2017 1331	52281

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		67	44-120
2-Fluorobiphenyl		69	44-119
Terphenyl-d14		80	50-134

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOQ	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Appendix E
UST Assessment Report

CDM - AECOM
Multimedia Joint Venture

Underground Storage Tank Management Division
Bureau of Land and Waste Management
2600 Bull Street
Columbia, SC 29201
(This form may be used to comply with SC UST Regulation 280.72)

STATE USE ONLY

Date Received

UNDERGROUND STORAGE TANK (UST) ASSESSMENT REPORT

Is this a change in service? Yes ____ No__X__
(The change in storage to a non-regulated substance)

I. OWNERSHIP OF UST(S)

MCAS Beaufort, Commanding Officer Attn: NREAO (Craig Ehde)
Owner Name (Corporation, Individual, Public Agency, Other)

Post Office Box 55001
Mailing Address

Beaufort	**South Carolina**	**29904-50001**
City	State	Zip Code

843	**228-7317**	**Craig Ehde**
Area Code	Telephone Number	Contact Person

II. SITE IDENTIFICATION AND LOCATION

	Laurel Bay Military Housing Area, Marine Corps Air Station, Beaufort, SC
Permit I.D. #	Facility Name

827 West Laurel Bay Blvd. (Formerly 138 West Laurel Bay Blvd.), Laurel Bay Military Housing Area
Street Address

Beaufort	**29906**	**Beaufort**
City	Zip Code	County

III. INSURANCE INFORMATION AND SUPERB FUNDING

Please complete the following 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.**

Pursuant to the State Underground Petroleum Environmental Response Bank (SUPERB) Act 44-2-130(E)(1): "An owner or operator of an underground storage tank or his agent seeking to qualify for compensation from the SUPERB account for site rehabilitation shall submit a written application to the Department." Please complete **DHEC Form 1300** regarding SUPERB compensation and the existence of an environmental insurance policy.

IV. 24 HOUR RELEASE REPORT

If free product is observed during closure activities, please submit **DHEC Form 1364** within 24 hours. Please note that this **DHEC Form 1364** should not be submitted for sampling analysis or other release designations. For the purpose of closure activities, this report form is solely for the observance of free product.

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

Date of Permanent Closure (Month/Day/Year): **12/16/2019**

Note: Answer each question as completely as possible. For those questions that are yes or no , please indicate Y or N in the box. For all other questions, please provide the specific information.

Requested Information	UST 138-1 Laurel Bay Blvd					
Product (Gas, Kerosene, etc.)	Heating Oil					
Capacity in gallons (1K, 2K etc)	280 gallon					
Approximate age in years	Late 1950s					
Construction material (Steel, Fiberglass, etc)	Steel					
Month/Year of last use	Mid 1980s					
Depth in feet to the base of the tank	4.3'					
Spill prevention present (Y or N)	N					
Overfill prevention present (Y or N)	N					
Tanks removed (Y or N)	Y					
Tanks filled in place (Y or N) If yes, indicate fill material in the box	Tank Previously Filled with Sand					
Visible Corrosion or Pitting (Y or N)	Y					
Visible Holes (Y or N)	Y					

1. Indicate the method of disposal for any USTs removed from the ground (Do not forget to attach the disposal manifests): **Filled tank was removed, wrapped in plastic, and disposed of at Waste Management Hickory Hill Landfill. See Attachment A.**

2. Indicate the method of disposal for any liquid petroleum, sludges, or wastewaters removed from the USTs (Do not forget to attach the disposal manifests): **None present as the tank was filled with sand. Sand was shipped with tank.**

3. If any corrosion, pitting, or holes were observed, describe the location and extent for each UST:
Tank shell showed signs of corrosion. One large hole was found in the area of the fill port which appeared to have been created and utilized to fill the tank in place previously. Tank shell fell apart while being removed from the ground due to being highly corroded.

VII. PIPING INFORMATION

Date of Permanent Closure (Month/Day/Year): 12/16/2019

Note: Answer each question as completely as possible. For those questions that are yes or no , please indicate Y or N in the box. For all other questions, please provide the specific information.

Requested Information	UST 138-1 Laurel Bay Blvd					
Approximate age in years	Not Present					
Construction material (Steel, Fiberglass, etc)	Not Present					
Distance in feet from UST to Dispenser(s)	Tank lines previously removed					
Number of Dispensers	None					
Type of System (Pressure or Suction)	Suction					
Was piping removed from the ground (Y or N)	None Present					
If piping was not removed were both ends of the piping capped off (Y or N)	N/A					
Visible Corrosion or Pitting (Y or N)	N/A					
Visible Holes (Y or N)	N/A					

1. If any corrosion, pitting, or holes were observed, describe the location and extent for each piping run.

Tank had previously been exposed, opened, and filled with sand. No tank lines or associated piping were encountered during the removal.

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. The tank was located in front of Northeastern facing wall of the house and approximately one foot to the Southeast of the front porch of the single family home. The nearest surface water drainage ditch is approximately 340 feet to the southeast and nearest water body is over 900 feet from the former tank location.

IX. SITE CONDITIONS

Note: Answer each question as completely as possible. For those questions that are yes or no , please check Y or N. If the information is unknown or cannot be obtained, check unknown. For all other questions, please provide the specific information.

Requested Information	Yes	No	Unk
Were any petroleum-stained or contaminated soils found in the UST excavation, soil borings, trenches, or monitoring wells? ***Note:*** If yes, indicate depth and location on the site map.		x	
Were any petroleum odors detected in the excavation, soil borings, trenches, or monitoring wells? ***Note:*** If yes, indicate location and describe the odor (strong, mild, etc.) on the site map.		x	
Was water present in the UST excavation, soil borings, or trenches? ***Note:*** If yes, how far below land surface (indicate location and depth on the site map)?		x	
Did contaminated soils remain stockpiled on site after closure? ***Note***: If yes, indicate the stockpile location on the site map. ***Note:*** If yes, Indicate the name of DHEC representative that authorized the soil removal: _____		x	
Was a petroleum sheen or free product detected on any excavation or boring waters? ***Note:*** If yes, indicate location and thickness on the site map.		x	

X. SAMPLE INFORMATION

SCDHEC Lab Certification Number 32010001
Date that samples were taken: 12/16/2019

Sample #	Location	Sample Type (Soil/Water)	Soil Type (Sand/Clay)	Depth*	Date/Time of Collection	Collected by	OVA #
BEALB138SB01	138-1	Soil	Sand	2'1"	12/16/19 0900	Reibling	

* = Depth Below the Surrounding Land Surface

XI. SAMPLING METHODOLOGY

Provide a detailed description of the methods used to collect and store the samples. Also, include the preservative used for each sample. Please use the space provided below.

Sampling was performed in accordance with SC DHEC R.61-92 Part 280 and SCDHEC Assessment Guidelines. Sample containers were prepared by the testing laboratory. The grab method was utilized to fill the sample containers leaving as little head space as possible and immediately capped. Soil samples were extracted from the fill port side of the tank. The samples were marked, logged, and immediately placed in a sample cooler packed with ice to maintain an appropriate temperature of 4 degrees Celsius. Tools were thoroughly cleaned and decontaminated with the seven step decon process after each use. The samples remained in custody of AECOM until they were transferred to Shealy Environmental Laboratory for analysis as documented in the Chain of Custody Record.

XII. RECEPTORS

Note: Answer each question as completely as possible. For those questions that are yes or no , please check Y or N. If the information is unknown or cannot be obtained, check unknown. For all other questions, please provide the specific information.

Requested Information	Yes	No	Unk
Are there any lakes, ponds, streams, or wetlands located within 1000 feet of the UST system? If yes, indicate type of receptor, distance, and direction on site map.	X **Stormwater drainage canal ~340'**		
Are there any public, private, or irrigation water supply wells within 1000 feet of the UST system? If yes, indicate type of well, distance, and direction on site map.		X	
Are there any underground structures (e.g., basements) located within 100 feet of the UST system? If yes, indicate type of structure, distance, and direction on site map.		X	
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? If yes, indicate the type of utility, distance, and direction on the site map.	X **Sewer, water, electricity, cable, and fiber optic**		
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? If yes, indicate the area of contaminated soil on the site map.		X	

XIII. SITE MAP

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

(Attach Site Map Here)

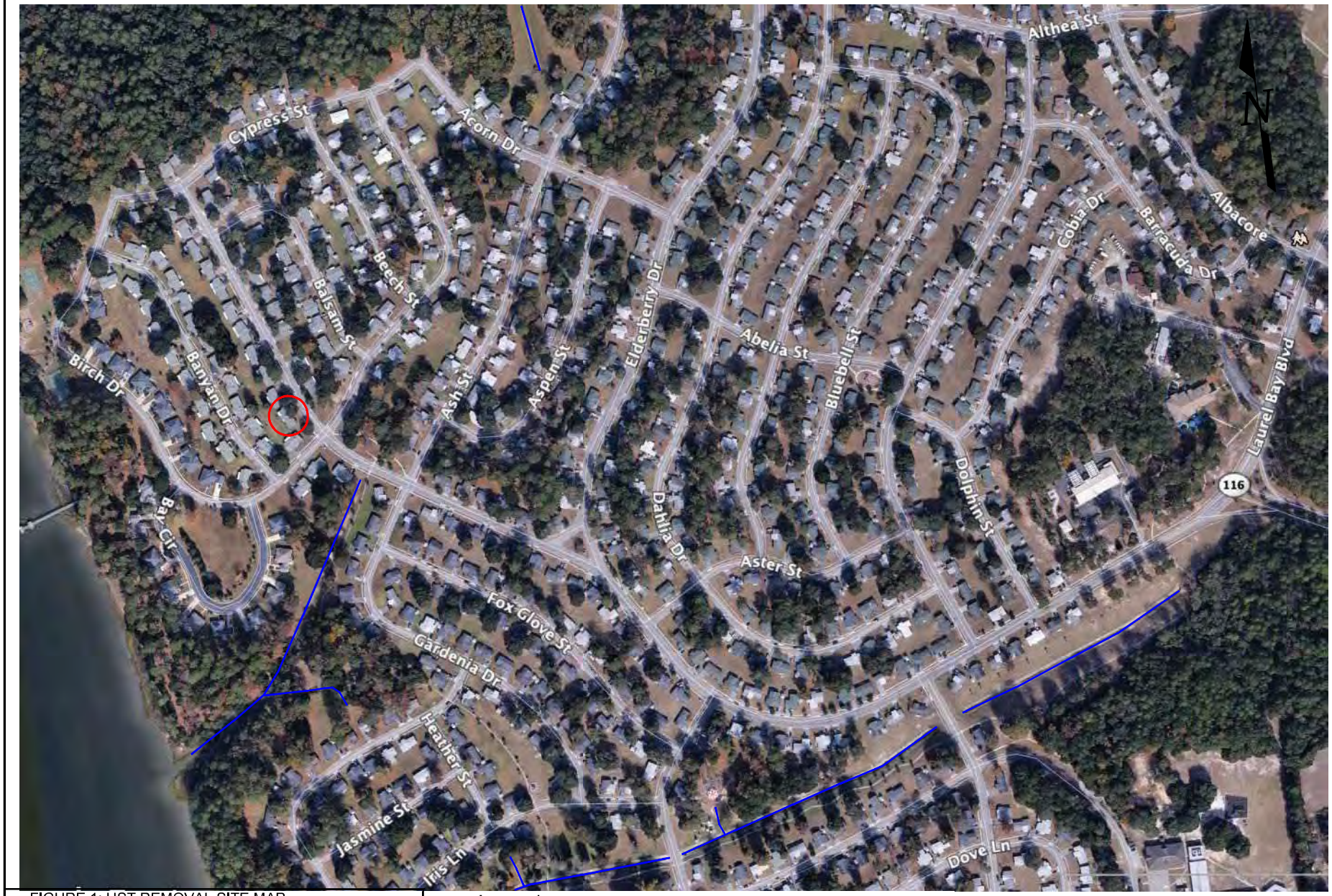

FIGURE 1: UST REMOVAL SITE MAP
827 W LAUREL BAY BLVD (FORMERLY 138 W LAUREL BAY BLVD)
LAUREL BAY HOUSING AREA
MCAS BEAUFORT, SC

Legend

DRAINAGE

HOUSE LOCATION

0' 1000'

envirosmart
P.O. BOX 20666
CHARLESTON, SC 29413
843.722.0062

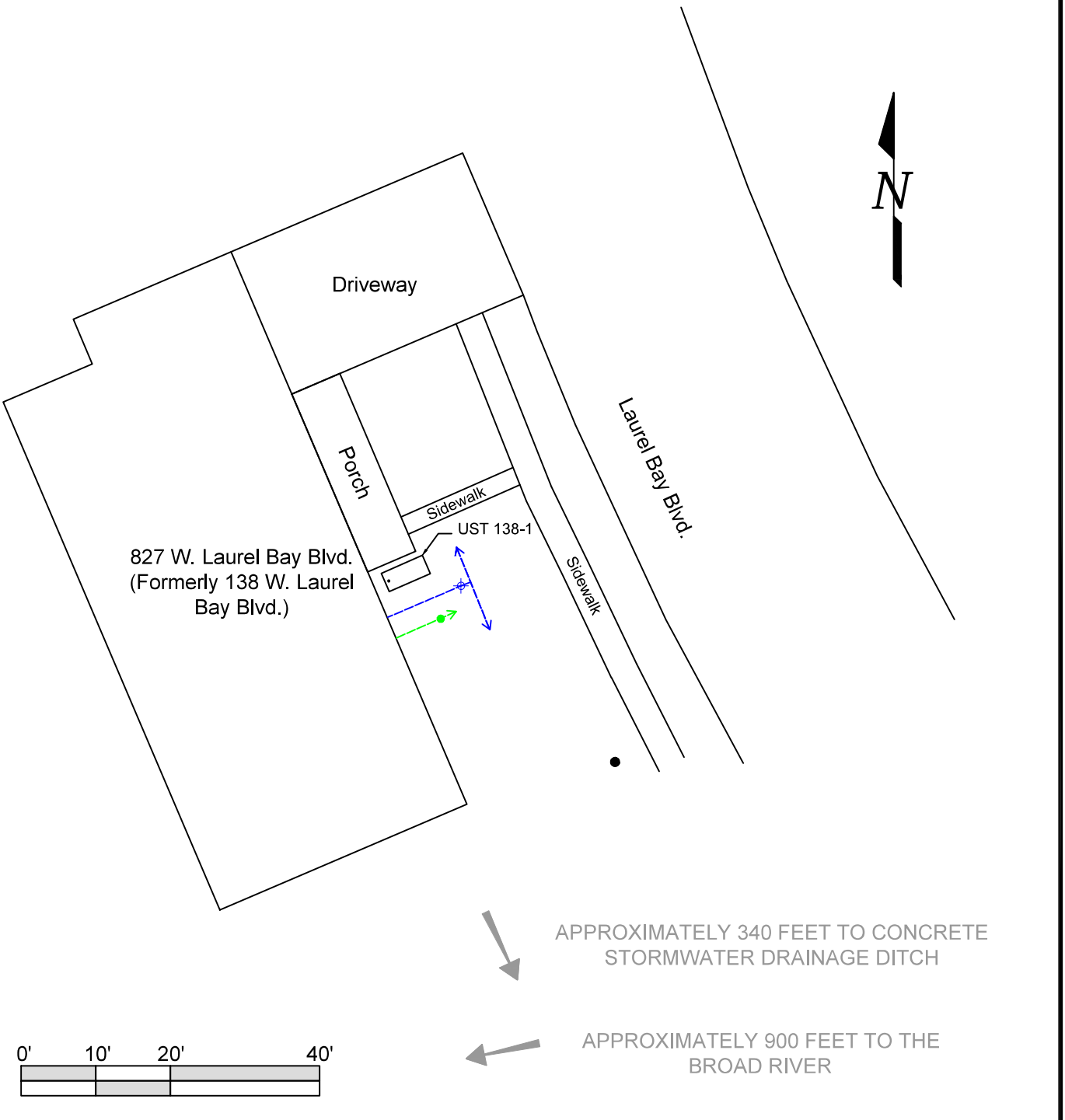

FIGURE 2: UST REMOVAL SITE MAP
827 W LAUREL BAY BLVD (FORMERLY
138 W LAUREL BAY BLVD)
LAUREL BAY HOUSING AREA
MCAS BEAUFORT, SC

envirosmart
P.O. BOX 20666
CHARLESTON, SC 29413
843.722.0062

Drawing Date: 01/03/2020

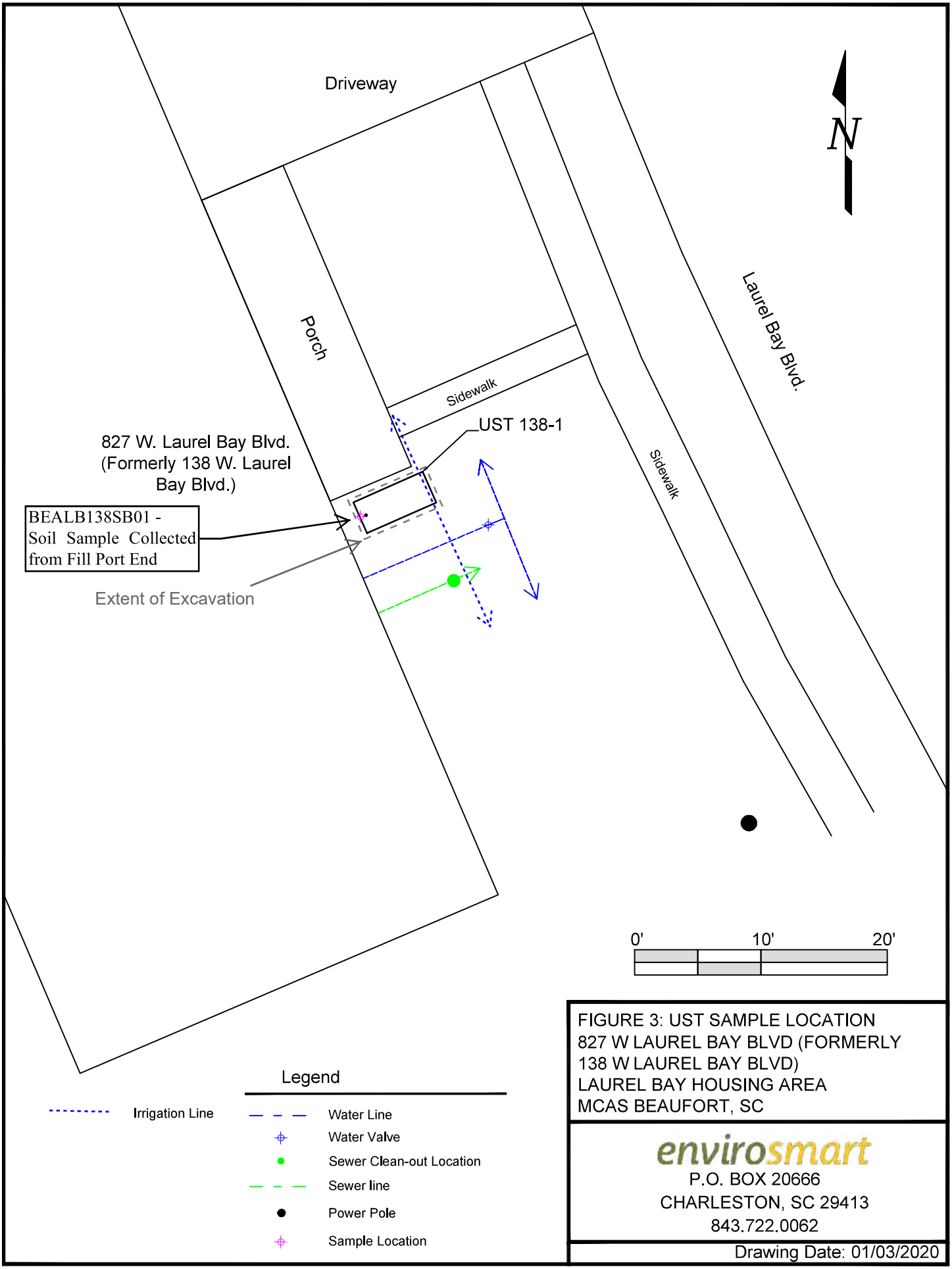

FIGURE 3: UST SAMPLE LOCATION
827 W LAUREL BAY BLVD (FORMERLY
138 W LAUREL BAY BLVD)
LAUREL BAY HOUSING AREA
MCAS BEAUFORT, SC

envirosmart
P.O. BOX 20666
CHARLESTON, SC 29413
843.722.0062

Drawing Date: 01/03/2020

Photo 1: Tank Site Location

Photo 2: Tank Removed

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	BEALB138SB01SO 20191216						
Benzene	<5.1						
Toluene	<5.1						
Ethylbenzene	<5.1						
Xylenes	<10						
Naphthalene	<5.1						
Benzo(a)anthracene	<26						
Benzo(b)fluoranthene	<26						
Benzo(k)fluoranthene	<19						
Chrysene	<19						
Dibenz(a,h)anthracene	<26						
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 (ug/l)	W-1	W-2	W-3	W-4	W-5
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)

SHEALY ENVIRONMENTAL SERVICES, INC.

Report of Analysis

AECOM
4016 Salt Pointe Parkway
North Charleston, SC 29405
Attention: Shawn Dolan

Project Name: 18F7033 - LBMH, MCAS Beaufort, SC

Project Number: 60J86174.5

Lot Number:**UL17068**

Date Completed:12/30/2019

N. Saikaly

01/07/2020 1:28 PM
Approved and released by:
Project Manager: Nisreen Saikaly

The electronic signature above is the equivalent of a handwritten signature.

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

Case Narrative
AECOM
Lot Number: UL17068

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report.

Sample receipt, sample analysis, and data review have been performed in accordance with the Shealy Environmental Services, Inc. ("Shealy") Quality Assurance Management Plan (QAMP), applicable Shealy standard operating procedures (SOPs), the 2003 NELAC standard, and Shealy policies. Additionally, the DoD QSM version 5.1 has been followed for these samples. Any exceptions to the QAMP, SOPs, NELAC standards, the DoD QSM, or policies are qualified on the results page or discussed below.

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

If you have any questions regarding this report please contact the Shealy Project Manager listed on the cover page.

Volatile Organic Compounds

Internal standard response for the DUP and MS associated with following sample exceeded the lower control limit: UL17068-001, UL17068-002. As such, the DUP and MS results may be biased high.

The matrix spike and matrix spike duplicate (MS/MSD) recoveries in batch 40011 were outside acceptance criteria. All other QC criteria for the batch was within acceptance criteria and method control limits. The MS/MSD recovery results are attributed to matrix interference. The associated sample results were reported and no corrective action was required.

Semivolatile Organic Compounds

The following samples were diluted due to the nature of the sample matrix: UL17068-001, UL17068-002. The LOQ has been elevated to reflect the dilution.

Sample Summary
AECOM
Lot Number: UL17068

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	BEALB138SB01SO20191216	Solid	12/16/2019 0900	12/17/2019
002	BEALB138SB01SO20191216-a	Solid	12/16/2019 0900	12/17/2019
003	BEALB138SB01SO20191216-d	Aqueous	12/16/2019 0930	12/17/2019
004	BEALB138SB01SO20191216-c	Aqueous	12/16/2019 0930	12/17/2019

(4 samples)

Detection Summary

AECOM

Lot Number: UL17068

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
002	BEALB138SB01SO20191216-a	Solid	Benzo(b)fluoranthene	8270E	4.1	J	ug/kg	8

(1 detection)

Volatile Organic Compounds by GC/MS

Client: **AECOM**
Laboratory ID: **UL17068-001**
Description: **BEALB138SB01SO20191216**
Matrix: **Solid**
Date Sampled: **12/16/2019 0900**
% Solids: **75.7** **12/18/2019 0046**
Date Received: **12/17/2019**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	12/24/2019 1303	JM1		40011

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Benzene	71-43-2	8260D	5.1	U	6.4	5.1	2.5	ug/kg	1
Ethylbenzene	100-41-4	8260D	5.1	U	6.4	5.1	2.5	ug/kg	1
Naphthalene	91-20-3	8260D	5.1	U	6.4	5.1	2.5	ug/kg	1
Toluene	108-88-3	8260D	5.1	U	6.4	5.1	2.5	ug/kg	1
Xylenes (total)	1330-20-7	8260D	10	U	13	10	5.1	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		98	79-119
Dibromofluoromethane		97	78-119
1,2-Dichloroethane-d4		94	71-136
Toluene-d8		108	85-116

LOQ = Limit of Quantitation
U = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

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

Semivolatile Organic Compounds by GC/MS

Client: **AECOM**
Description: **BEALB138SB01SO20191216**
Date Sampled: **12/16/2019 0900**
Date Received: **12/17/2019**

Laboratory ID: **UL17068-001**
Matrix: **Solid**
% Solids: **75.7** **12/18/2019 0046**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	8270E	10	12/20/2019 1902	SCD	12/19/2019 2101	39600

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Benzo(a)anthracene	56-55-3	8270E	26	U	35	26	7.7	ug/kg	1
Benzo(b)fluoranthene	205-99-2	8270E	26	U	35	26	6.6	ug/kg	1
Benzo(k)fluoranthene	207-08-9	8270E	19	U	35	19	6.3	ug/kg	1
Chrysene	218-01-9	8270E	19	U	35	19	5.9	ug/kg	1
Dibenzo(a,h)anthracene	53-70-3	8270E	26	U	35	26	6.7	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		69	44-115
Nitrobenzene-d5		62	37-122
Terphenyl-d14		86	54-127

LOQ = Limit of Quantitation
U = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **AECOM**
Description: **BEALB138SB01SO20191216-a**
Date Sampled: **12/16/2019 0900**
Date Received: **12/17/2019**

Laboratory ID: **UL17068-002**
Matrix: **Solid**
% Solids: **85.7** **12/18/2019 0046**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	12/24/2019 1326	JM1		40011

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Benzene	71-43-2	8260D	4.3	US	5.4	4.3	2.2	ug/kg	1
Ethylbenzene	100-41-4	8260D	4.3	US	5.4	4.3	2.2	ug/kg	1
Naphthalene	91-20-3	8260D	4.3	U	5.4	4.3	2.2	ug/kg	1
Toluene	108-88-3	8260D	4.3	U	5.4	4.3	2.2	ug/kg	1
Xylenes (total)	1330-20-7	8260D	8.8	US	11	8.8	4.3	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		94	79-119
Dibromofluoromethane		92	78-119
1,2-Dichloroethane-d4		90	71-136
Toluene-d8		103	85-116

LOQ = Limit of Quantitation
U = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **AECOM**
Description: **BEALB138SB01SO20191216-a**
Date Sampled: **12/16/2019 0900**
Date Received: **12/17/2019**

Laboratory ID: **UL17068-002**
Matrix: **Solid**
% Solids: **85.7** **12/18/2019 0046**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	8270E	2	12/21/2019 1438	SCD	12/19/2019 2101	39600

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Benzo(a)anthracene	56-55-3	8270E	4.6	U	6.2	4.6	1.4	ug/kg	1
Benzo(b)fluoranthene	**205-99-2**	**8270E**	**4.1**	**J**	**6.2**	4.6	**1.2**	**ug/kg**	**1**
Benzo(k)fluoranthene	207-08-9	8270E	3.4	U	6.2	3.4	1.1	ug/kg	1
Chrysene	218-01-9	8270E	3.4	U	6.2	3.4	1.0	ug/kg	1
Dibenzo(a,h)anthracene	53-70-3	8270E	4.6	U	6.2	4.6	1.2	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		68	44-115
Nitrobenzene-d5		68	37-122
Terphenyl-d14		79	54-127

LOQ = Limit of Quantitation
U = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **AECOM**
Laboratory ID: **UL17068-003**
Description: **BEALB138SB01SO20191216-d**
Matrix: **Aqueous**
Date Sampled: **12/16/2019 0930**
Date Received: **12/17/2019**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	12/24/2019 0508	JTH		39964

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

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		101	85-114
Dibromofluoromethane		97	80-119
1,2-Dichloroethane-d4		108	81-118
Toluene-d8		99	89-112

LOQ = Limit of Quantitation
U = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **AECOM**
Laboratory ID: **UL17068-003**
Description: **BEALB138SB01SO20191216-d**
Matrix: **Aqueous**
Date Sampled: **12/16/2019 0930**
Date Received: **12/17/2019**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	12/21/2019 1502	SCD	12/19/2019 1849	39590

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

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		63	44-119
Nitrobenzene-d5		71	44-120
Terphenyl-d14		77	50-134

LOQ = Limit of Quantitation
U = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **AECOM**
Laboratory ID: **UL17068-004**
Description: **BEALB138SB01SO20191216-c**
Matrix: **Aqueous**
Date Sampled: **12/16/2019 0930**
Date Received: **12/17/2019**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	12/24/2019 0532	JTH		39964

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

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		102	85-114
Dibromofluoromethane		98	80-119
1,2-Dichloroethane-d4		108	81-118
Toluene-d8		100	89-112

LOQ = Limit of Quantitation
U = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

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QC Summary

Volatile Organic Compounds by GC/MS - MB

Sample ID: UQ39964-001
Batch: 39964
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Benzene	0.80	U	1	1.0	0.80	0.40	ug/L	12/23/2019 2155
Ethylbenzene	0.80	U	1	1.0	0.80	0.40	ug/L	12/23/2019 2155
Naphthalene	0.80	U	1	1.0	0.80	0.40	ug/L	12/23/2019 2155
Toluene	0.80	U	1	1.0	0.80	0.40	ug/L	12/23/2019 2155
Xylenes (total)	0.80	U	1	1.0	0.80	0.40	ug/L	12/23/2019 2155

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		102	85-114
Dibromofluoromethane		98	80-119
1,2-Dichloroethane-d4		104	81-118
Toluene-d8		99	89-112

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
U = Not detected at or above the LOQ

N = Recovery is out of criteria
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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Volatile Organic Compounds by GC/MS - LCS

Sample ID: UQ39964-002
Batch: 39964
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Benzene	50	44		1	89	79-120	12/23/2019 1954
Ethylbenzene	50	45		1	90	79-121	12/23/2019 1954
Naphthalene	50	45		1	90	61-128	12/23/2019 1954
Toluene	50	45		1	90	80-121	12/23/2019 1954
Xylenes (total)	100	93		1	93	79-121	12/23/2019 1954

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		95	85-114
Dibromofluoromethane		89	80-119
1,2-Dichloroethane-d4		96	81-118
Toluene-d8		92	89-112

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
U = Not detected at or above the LOQ

N = Recovery is out of criteria
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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Volatile Organic Compounds by GC/MS - LCSD

Sample ID: UQ39964-003
Batch: 39964
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Benzene	50	45		1	90	1.5	79-120	20	12/23/2019 2018
Ethylbenzene	50	47		1	94	4.4	79-121	20	12/23/2019 2018
Naphthalene	50	48		1	97	7.5	61-128	20	12/23/2019 2018
Toluene	50	46		1	92	2.9	80-121	20	12/23/2019 2018
Xylenes (total)	100	95		1	95	2.9	79-121	20	12/23/2019 2018

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		109	85-114
Dibromofluoromethane		95	80-119
1,2-Dichloroethane-d4		99	81-118
Toluene-d8		100	89-112

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
U = Not detected at or above the LOQ

N = Recovery is out of criteria
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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Volatile Organic Compounds by GC/MS - MB

Sample ID: UQ40011-001
Batch: 40011
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Benzene	4.0	U	1	5.0	4.0	2.0	ug/kg	12/24/2019 1009
Ethylbenzene	4.0	U	1	5.0	4.0	2.0	ug/kg	12/24/2019 1009
Naphthalene	4.0	U	1	5.0	4.0	2.0	ug/kg	12/24/2019 1009
Toluene	4.0	U	1	5.0	4.0	2.0	ug/kg	12/24/2019 1009
Xylenes (total)	8.0	U	1	10	8.0	4.0	ug/kg	12/24/2019 1009

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		101	79-119
Dibromofluoromethane		92	78-119
1,2-Dichloroethane-d4		90	71-136
Toluene-d8		101	85-116

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
U = Not detected at or above the LOQ

N = Recovery is out of criteria
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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Volatile Organic Compounds by GC/MS - LCS

Sample ID: UQ40011-002
Batch: 40011
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Benzene	50	55		1	110	77-121	12/24/2019 0924
Ethylbenzene	50	57		1	114	76-122	12/24/2019 0924
Naphthalene	50	51		1	101	62-129	12/24/2019 0924
Toluene	50	54		1	108	77-121	12/24/2019 0924
Xylenes (total)	100	110		1	113	78-124	12/24/2019 0924

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		103	79-119
Dibromofluoromethane		100	78-119
1,2-Dichloroethane-d4		99	71-136
Toluene-d8		109	85-116

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
U = Not detected at or above the LOQ

N = Recovery is out of criteria
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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Volatile Organic Compounds by GC/MS - Duplicate

Sample ID: UL17068-001DU
Batch: 40011
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Sample Amount (ug/kg)	Result (ug/kg)	Q	Dil	% RPD	% RPD Limit	Analysis Date
Benzene	ND	ND		1	0.00	20	12/24/2019 2004
Ethylbenzene	ND	ND		1	0.00	20	12/24/2019 2004
Naphthalene	ND	ND		1	0.00	20	12/24/2019 2004
Toluene	ND	ND		1	0.00	20	12/24/2019 2004
Xylenes (total)	ND	ND		1	0.00	20	12/24/2019 2004

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		99	79-119
Dibromofluoromethane		100	78-119
1,2-Dichloroethane-d4		102	71-136
Toluene-d8		103	85-116

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
U = Not detected at or above the LOQ

N = Recovery is out of criteria
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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Volatile Organic Compounds by GC/MS - MS

Sample ID: UL17068-002MS
Batch: 40011
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Sample Amount (ug/kg)	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Benzene	ND	57	69	N	1	123	77-121	12/24/2019 2027
Ethylbenzene	ND	57	72	N	1	128	76-122	12/24/2019 2027
Naphthalene	ND	57	41		1	72	62-129	12/24/2019 2027
Toluene	ND	57	68		1	120	77-121	12/24/2019 2027
Xylenes (total)	ND	110	140	N	1	125	78-124	12/24/2019 2027

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		97	79-119
Dibromofluoromethane		94	78-119
1,2-Dichloroethane-d4		92	71-136
Toluene-d8		109	85-116

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
U = Not detected at or above the LOQ

N = Recovery is out of criteria
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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Semivolatile Organic Compounds by GC/MS - MB

Sample ID: UQ39590-001
Batch: 39590
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 12/19/2019 1849

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Benzo(a)anthracene	0.10	U	1	0.20	0.10	0.040	ug/L	12/21/2019 1123
Benzo(b)fluoranthene	0.10	U	1	0.20	0.10	0.040	ug/L	12/21/2019 1123
Benzo(k)fluoranthene	0.10	U	1	0.20	0.10	0.040	ug/L	12/21/2019 1123
Chrysene	0.10	U	1	0.20	0.10	0.040	ug/L	12/21/2019 1123
Dibenzo(a,h)anthracene	0.10	U	1	0.20	0.10	0.040	ug/L	12/21/2019 1123

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		60	44-119
Nitrobenzene-d5		66	44-120
Terphenyl-d14		79	50-134

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
U = Not detected at or above the LOQ

N = Recovery is out of criteria
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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Semivolatile Organic Compounds by GC/MS - LCS

Sample ID: UQ39590-002
Batch: 39590
Analytical Method: 8270E
Matrix: Aqueous
Prep Method: 3520C
Prep Date: 12/19/2019 1849

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Benzo(a)anthracene	8.0	5.6		1	71	58-125	12/21/2019 1147
Benzo(b)fluoranthene	8.0	5.8		1	72	53-131	12/21/2019 1147
Benzo(k)fluoranthene	8.0	6.0		1	75	57-129	12/21/2019 1147
Chrysene	8.0	5.7		1	71	59-123	12/21/2019 1147
Dibenzo(a,h)anthracene	8.0	6.1		1	76	51-134	12/21/2019 1147

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		66	44-119
Nitrobenzene-d5		70	44-120
Terphenyl-d14		80	50-134

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
U = Not detected at or above the LOQ
N = Recovery is out of criteria
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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Semivolatile Organic Compounds by GC/MS - MS

Sample ID: UL17068-003MS
Batch: 39590
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 12/19/2019 1849

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Benzo(a)anthracene	ND	16	12		1	73	58-125	12/21/2019 1527
Benzo(b)fluoranthene	ND	16	12		1	77	53-131	12/21/2019 1527
Benzo(k)fluoranthene	ND	16	13		1	80	57-129	12/21/2019 1527
Chrysene	ND	16	12		1	73	59-123	12/21/2019 1527
Dibenzo(a,h)anthracene	ND	16	12		1	73	51-134	12/21/2019 1527

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		69	44-119
Nitrobenzene-d5		72	44-120
Terphenyl-d14		84	50-134

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
U = Not detected at or above the LOQ

N = Recovery is out of criteria
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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

Semivolatile Organic Compounds by GC/MS - MSD

Sample ID: UL17068-003MD
Batch: 39590
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 12/19/2019 1849

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Benzo(a)anthracene	ND	16	12		1	72	2.1	58-125	20	12/21/2019 1551
Benzo(b)fluoranthene	ND	16	12		1	77	0.42	53-131	20	12/21/2019 1551
Benzo(k)fluoranthene	ND	16	13		1	79	0.23	57-129	20	12/21/2019 1551
Chrysene	ND	16	12		1	73	0.45	59-123	20	12/21/2019 1551
Dibenzo(a,h)anthracene	ND	16	11		1	71	3.2	51-134	20	12/21/2019 1551

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		62	44-119
Nitrobenzene-d5		68	44-120
Terphenyl-d14		81	50-134

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
U = Not detected at or above the LOQ

N = Recovery is out of criteria
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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

Semivolatile Organic Compounds by GC/MS - MB

Sample ID: UQ39600-001
Batch: 39600
Analytical Method: 8270E
Matrix: Solid
Prep Method: 3546
Prep Date: 12/19/2019 2101

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Benzo(a)anthracene	2.0	U	1	2.7	2.0	0.59	ug/kg	12/20/2019 1118
Benzo(b)fluoranthene	2.0	U	1	2.7	2.0	0.50	ug/kg	12/20/2019 1118
Benzo(k)fluoranthene	1.5	U	1	2.7	1.5	0.48	ug/kg	12/20/2019 1118
Chrysene	1.5	U	1	2.7	1.5	0.45	ug/kg	12/20/2019 1118
Dibenzo(a,h)anthracene	2.0	U	1	2.7	2.0	0.51	ug/kg	12/20/2019 1118

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		67	44-115
Nitrobenzene-d5		60	37-122
Terphenyl-d14		73	54-127

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
U = Not detected at or above the LOQ
N = Recovery is out of criteria
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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

Semivolatile Organic Compounds by GC/MS - LCS

Sample ID: UQ39600-002
Batch: 39600
Analytical Method: 8270E
Matrix: Solid
Prep Method: 3546
Prep Date: 12/19/2019 2101

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Benzo(a)anthracene	130	100		1	78	49-126	12/20/2019 1142
Benzo(b)fluoranthene	130	110		1	82	45-132	12/20/2019 1142
Benzo(k)fluoranthene	130	110		1	82	47-132	12/20/2019 1142
Chrysene	130	100		1	78	50-124	12/20/2019 1142
Dibenzo(a,h)anthracene	130	110		1	84	45-134	12/20/2019 1142

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		69	44-115
Nitrobenzene-d5		69	37-122
Terphenyl-d14		87	54-127

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
U = Not detected at or above the LOQ
N = Recovery is out of criteria
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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

Chain of Custody
and
Miscellaneous Documents

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

SHEALY ENVIRONMENTAL SERVICES, INC.
106 Vantage Point Drive • West Columbia, SC 29172
Telephone No. 803-791-9700 Fax No. 803-791-9111
www.shealylab.com

SHEALY Chain of Custody Record

Number 76934

Client: NAVFAC Mid-Lant	Report to Contact: Doria Cullom / Shawn Dolan	Telephone No. / E-mail: 864-234-8928 / Doria.Cullom@aecom.com	Quote No.
Address: 4016 Salt Pointe Parkway	Sampler's Signature:	Analysis (Attach list if more space is needed)	Page 1 of 1
City: N. Charleston	State: SC	Zip Code: 29405	Printed Name: Brian Reibling
Project Name: 18F7033 - LBMH, MCAS Beaufort, SC			
Project No.: 60586174.5	P.O. No.: Non-PO	Micro-Purchase	

Sample ID / Description (Containers for each sample may be combined on one line)	Date: 2019	Time	G=Grab C=Composite	Matrix: Aqueous	Soil	Non Aqueous	No of Containers by Preservative Type: Unpres	H2SO4	HNO3	HCl	NaOH	Soda Ash	BTEX + MTBE (8260B)	Select PAHs (8270D)	Remarks / Cooler I.D.
BEALB1385B01502019 1216	12/16	0900	G		X		2					4	X	X	
BEALB1385B01502019 1216-2	"	0900	G		X		2					4	X	X	
BEALB1385B01502019 1216-d	"	0930	G	X			2			3			X	X	
~~BEALB1385B01502019 1216-d~~	"	~~0930~~	~~G~~	~~X~~			~~2~~			~~3~~					
BEALB1385B01502019 1216-c	12/16	0930	G	X						2			X		

Turn Around Time Required (Prior lab approval required for expedited TAT.)	Sample Disposal	Possible Hazard Identification	QC Requirements (Specify)
☒ Standard ☐ Rush (Specify)	☐ Return to Client ☒ Disposal by Lab	☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison ☐ Unknown	

	Date	Time		Date	Time
1. Relinquished by	12/16/19	1845	1. Received by: Fed Ex	12/16/19	1900
2. Relinquished by	Date	Time	2. Received by	Date	Time
3. Relinquished by	Date	Time	3. Received by	Date	Time
4. Relinquished by: FedEx	12/17/19	1340	4. Laboratory received by	12/17/19	1340

Note: All samples are retained for four weeks from receipt unless other arrangements are made.

LAB USE ONLY
Received on ice (Circle) (Yes) No Ice Pack
Receipt Temp 3.1 °C

UL17068

DISTRIBUTION: WHITE & YELLOW-Return to laboratory with Sample(s); PINK-Field/Client Copy

Document Number: F-AD-123 Effective Date: 09-01-2014

SHEALY ENVIRONMENTAL SERVICES, INC.

Shealy Environmental Services, Inc.
Document Number: ME0018C-14

Page 1 of 1
Effective Date: 8/2/2018

Sample Receipt Checklist (SRC)

Client: AECOM Cooler Inspected by/date: JSH / 12/17/19 Lot #: UL17068

Means of receipt: ☐ SESI ☐ Client ☐ UPS ☑ FedEx ☐ Other: ____

☑ Yes	☐ No		1. Were custody seals present on the cooler?
☑ Yes	☐ No	☐ NA	2. If custody seals were present, were they intact and unbroken?

pH Strip ID: NA Chlorine Strip ID: NA Tested by: NA

Original temperature upon receipt / Derived (Corrected) temperature upon receipt %Solid Snap-Cup ID: 19-2313

3.1 / 3.1 °C NA / NA °C NA / NA °C NA / NA °C

Method: ☑ Temperature Blank ☐ Against Bottles IR Gun ID: 6 IR Gun Correction Factor: 0 °C

Method of coolant: ☑ Wet Ice ☐ Ice Packs ☐ Dry Ice ☐ None

☐ Yes	☐ No	☑ NA	3. If temperature of any cooler exceeded 6.0°C, was Project Manager Notified? PM was Notified by: phone / email / face-to-face (circle one).
☑ Yes	☐ No	☐ NA	4. Is the commercial courier's packing slip attached to this form?
☑ Yes	☐ No		5. Were proper custody procedures (relinquished/received) followed?
☑ Yes	☐ No		6. Were sample IDs listed on the COC?
☑ Yes	☐ No		7. Were sample IDs listed on all sample containers?
☑ Yes	☐ No		8. Was collection date & time listed on the COC?
☑ Yes	☐ No		9. Was collection date & time listed on all sample containers?
☑ Yes	☐ No		10. Did all container label information (ID, date, time) agree with the COC?
☑ Yes	☐ No		11. Were tests to be performed listed on the COC?
☑ Yes	☐ No		12. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)? ____
☑ Yes	☐ No		13. Was adequate sample volume available?
☑ Yes	☐ No		14. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
☐ Yes	☑ No		15. Were any samples containers missing/excess (circle one) samples Not listed on COC?
☑ Yes	☐ No	☐ NA	16. For VOA and RSK-175 samples, were bubbles present >"pea-size" (¼"or 6mm in diameter) in any of the VOA vials?
☐ Yes	☐ No	☑ NA	17. Were all DRO/metals/nutrient samples received at a pH of < 2?
☐ Yes	☐ No	☑ NA	18. Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?
☐ Yes	☐ No	☑ NA	19. Were all applicable NH_3/TKN/cyanide/phenol/625 (< 0.5mg/L) samples free of residual chlorine?
☐ Yes	☐ No	☑ NA	20. Were client remarks/requests (i.e. requested dilutions, MS/MSD designations, etc…) correctly transcribed from the COC into the comment section in LIMS?
☐ Yes	☑ No		21. Was the quote number listed on the container label? If yes, Quote # NA

Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)

Sample(s) NA ____ were received incorrectly preserved and were adjusted accordingly in sample receiving with NA mL of circle one: H_2SO_4, HNO_3, HCl, NaOH using SR # NA.
Time of preservation NA. If more than one preservative is needed, please note in the comments below.

Sample(s) UL17068-004/BEALB138SB015020191216-c(2) ____ were received with bubbles >6 mm in diameter.

Samples(s) NA ____ were received with TRC > 0.5 mg/L (If #19 is ***no***) and were adjusted accordingly in sample receiving with sodium thiosulfate ($Na_2S_2O_3$) with Shealy ID: NA.

SR barcode labels applied by: JSH Date: 12/17/19

Comments:

ATTACHMENT A

Waste Disposal Documentation

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
	1		

GENERATOR

5. Generator's Name and Mailing Address: MCAS Beaufort
Laurel Bay Housing
Beaufort, SC 29904

Generator's Phone: 843.288.6461

Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name: Enviro Smart Inc.

U.S. EPA ID Number:

7. Transporter 2 Company Name:

U.S. EPA ID Number:

8. Designated Facility Name and Site Address: WM Hickory Hill Landfill
2621 Low Country Drive
Ridgeland, SC 29936

~~U.S. EPA ID~~ State Number: 272401-1101

Facility's Phone: 843.548.6004

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1.	Heating oil tanks filled with sand	1	DT	Est. 5	T	2.48 TON
2.						
3.						
4.						

13. Special Handling Instructions and Additional Information
WM Profile: 1026555C
Beaufort County

Bill to: Enviro Smart Inc.
PO Box 20666
Charleston, SC 29413
MAST# 210-678

14. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offeror's Printed/Typed Name: Corey Jackson | Signature | Month 12 | Day 16 | Year 19

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:

Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Ryan Galloway | Signature | Month 12 | Day 16 | Year 19

Transporter 2 Printed/Typed Name: | Signature | Month | Day | Year

DESIGNATED FACILITY

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator) | U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator) | Month | Day | Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name: JoAnn Cofield | Signature | Month 12 | Day 16 | Year 19

169-BLS-C 5 11979 (Rev. 9/09)

DESIGNATED FACILITY TO GENERATOR

NON-HAZARDOUS MANIFEST

WASTE MANAGEMENT

NON-HAZARDOUS MANIFEST

1. Generator's US EPA ID No. Manifest Doc No.

2. Page 1 of 1

3. Generator's Mailing Address:
MCAS BEAUFORT
LAUREL BAY HOUSING
BEAUFORT, SC 29904
4. Generator's Phone 843-228-6461

Generator's Site Address (If different than mailing):

A. Manifest Number 2019121701

B. State Generator's ID

5. Transporter 1 Company Name
Envirosmart Inc.

6. US EPA ID Number

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
HICKORY HILL LANDFILL
2621 LOW COUNTRY DRIVE
RIDGELAND, SC 29936

10. US EPA ID Number

G. State Facility ID 272401-1101

H. State Facility Phone **843-548-6004**

GENERATOR

11. Description of Waste Materials	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt./Vol.	I. Misc. Comments
a HEATING OIL TANKS FILLED WITH SAND	1	DT	Est 2	T	
WM Profile # 102655SC	1	RT/TLR	1.44	TON	
b.					
WM Profile #					
c.					
WM Profile #					
d.					
WM Profile #					

J. Additional Descriptions for Materials Listed Above

K. Disposal Location

Cell | Level

Grid

15. Special Handling Instructions and Additional Information
BEAUFORT COUNTY

Purchase Order # EMERGENCY CONTACT / PHONE NO.:

16. GENERATOR'S CERTIFICATE:
I hereby certify that the above-described materials are not hazardous wastes as defined by 40 CFR Part 261 or any applicable state law, have been fully and accurately described, classified and packaged and are in proper condition for transportation according to applicable regulations.

Printed Name	Signature "On behalf of"	Month	Day	Year
Corey Jackson		12	17	19

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed Name	Signature	Month	Day	Year
Ryan Galloway		12	17	19

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed Name	Signature	Month	Day	Year

FACILITY

19. Certificate of Final Treatment/Disposal
I certify, on behalf of the above listed treatment facility, that to the best of my knowledge, the above-described waste was managed in compliance with all applicable laws, regulations, permits and licenses on the dates listed above.

20. Facility Owner or Operator: Certification of receipt of non-hazardous materials covered by this manifest.

Printed Name	Signature	Month	Day	Year
JoAnn Cofield		12	17	19

Appendix F
Regulatory Correspondence

CDM - AECOM
Multimedia Joint Venture

dhec
Healthy People. Healthy Communities.

June 20, 2017

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

RE: Approval Response to Comments and Draft Final Revision 1 Vapor Intrusion Report July 2015, January 2016 and May 2016, Laurel Bay Military Housing Area, Multiple Properties

RE: Approval Response to Comments and Draft Final Revision 1 Letter Report - Petroleum Vapor Intrusion Investigations - June 2016 and January 2017, Multiple Properties, Laurel Bay Military Housing Area

Dear Mr. Drawdy:

The South Carolina Department of Health and Environmental Control (DHEC) received the above referenced response to comments and errata pages on May 24 and June 7, 2017. 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).

DHEC has reviewed the response to comments and errata pages. Based on this review, DHEC did not generate any additional comments. Please note that the Department's decision is based on information provided by the Marine Corps Air Station (MCAS) to date. Any information found to be contradictory to this decision may require additional action. Furthermore, the Department retains the right to request further investigation if deemed necessary. If you have any questions, please contact me at petruslb@dhec.sc.gov or 803-898-0294.

Sincerely,

Laurel Petrus
Department of Defense Corrective Action Section

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

dhec
Healthy People. Healthy Communities.

March 29, 2018

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

RE: Approved Response to Comments
Draft Final Revision 1 Soil and Initial Groundwater Investigation Report
September and October 2017
Laurel Bay Military Housing Area

Dear Mr. Drawdy:

The South Carolina Department of Health and Environmental Control (DHEC) received the above referenced Response to Comments and change pages on February 27, 2018. 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).

DHEC has reviewed the responses and change pages. Based on this review, DHEC has not generated any additional comments. The Department agrees there is no indication of soil or groundwater contamination on 36 of the 37 properties and therefore no further investigation is required at this time on the 36 properties. (See attached list). 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
Department of Defense Corrective Action Section

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

Attachment

March 22, 2018

Draft Final Revision 1 Soil and Initial Groundwater Investigation Report
September and October 2017
Laurel Bay Military Housing Area

Properties recommended for NFA:

117 Banyan Drive	215 Balsam Street	521 Laurel Bay Blvd
138 Laurel Bay Blvd	217 Balsam Street	606 Dahlia Drive
146 Laurel Bay Blvd	266 Beech Street	620 Dahlia Drive
147 Laurel Bay Blvd	272 Birch Drive	680 Camelia Drive
149 Laurel Bay Blvd	307 Ash Street	685 Camelia Drive
157 Cypress Street	327 Ash Street	753 Althea Street
204 Balsam Street	365 Aspen Street	918 Barracuda Drive
205 Balsam Street	374 Aspen Street	932 Albacore Street
206 Balsam Street	393 Acorn Drive	942 Albacore Street
207 Balsam Street	406 Elderberry Drive	1203 Cardinal Lane
209 Balsam Street	438 Elderberry Drive	1229 Dove Lane
213 Balsam Street	461 Elderberry Drive	1313 Albatross Drive

March 19, 2020

Commanding Officer
Attention: NREAO Mr. Christopher L. Vaigneur
United States Marine Corps Air Station (MCAS)
Post Office Box 55001
Beaufort, SC 29904-5001

RE: Draft Final UST Removal Completion Report dated December 2019
Laurel Bay Military Housing Area

Dear Mr. Vaigneur,

The South Carolina Department of Health and Environmental Control (DHEC) received the above referenced report on February 10, 2020. 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). DHEC has reviewed the report. Based on this review, DHEC concurs with the following recommendations:

1. An NFA for both 138 West Laurel Bay Blvd (Tank 1) and 1137 Iris Lane (Tank 2) locations.
2. An IGWA for the 316 Ash Street (Tank 2) location since submitted analytical results indicate that petroleum constituents are above established Risk Based Screening Levels. DHEC requests that a groundwater sampling proposal be generated to determine if there has been an impact to groundwater at this tank location.

No change to this document is necessary and DHEC considers this report to be final.

Please note that DHEC's decision is based on information provided by 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 Kent Krieg at kriegkm@dhec.sc.gov or 803-898-0255.

Sincerely,

Lisa Appel, Project Manager
RCRA Federal Facilities Section
Division of Waste Management

cc: Bryan Beck, NAVFAC MIDLANT (via email)
Craig Ehde, NREAO (via email)
Shawn Dolan, Resolution Consultants (via email)
Reahnita Tuten, EQC Region 8 (via email)