



April 29, 2019

North Carolina Department of Transportation
Geotechnical Unit
Mail Service Center 1592
Raleigh, North Carolina 27699-1592

Attention: Mr. Craig Haden

email: cehaden@ncdot.gov

Reference: **Preliminary Site Assessment Report**
NCDOT Project I-5986B, WBS Element 47532.1.3
Parcel 140-Former Robin Hood Truck Stop
60 Robin Hood Road
Dunn, Harnett County, North Carolina
S&ME Project 4305-18-175A

Dear Mr. Haden:

S&ME, Inc. (S&ME) is submitting this Preliminary Site Assessment (PSA) Report to the North Carolina Department of Transportation (NCDOT). This report presents the background/project information, field activities, findings, conclusions, and recommendations. These services were performed in general accordance with S&ME Proposal No. 4305-18-175 CO-01 REV-01 dated January 2, 2019, and Contract Number 7000018853 dated April 12, 2018 between NCDOT and S&ME, Inc., authorized by NCDOT in its January 8, 2019 Notice to Proceed Letter.

◆ Background/Project Information

Based on NCDOT’s November 2, 2018, Request for Technical and Cost Proposal, the PSA was conducted within the NCDOT right-of-way (ROW) and/or easement as indicated on the preliminary plan sheets provided by NCDOT at the following property:

NCDOT Parcel No.	Property Owner	Site Address
140	Robin Whitely Hood, II	(Former Robin Hood Truck Stop) 60 Robin Hood Road, Dunn, NC



The property is the site of a former truck stop identified as Robin Hood Truck Stop. The truck stop facility has been razed and the petroleum underground storage tanks (USTs) that the facility operated have been removed. Information regarding the former UST systems listed for this site is provided in the following table:

UST Facility ID No. 0-00-000017933

Number of Tanks	Contents	Capacity (gallons)	Date Installed	Date Removed
1	Gasoline	8,000	1964	2010
1	Gasoline	6,000	1964	2010
1	Diesel	20,000	1981	2010
1	Other	20,000	1981	2010
3	Gasoline	6,000	1981	2010

The property is listed with one North Carolina Department of Environmental Quality (NCDEQ) Incident (Incident #29655) associated with petroleum releases from USTs which occurred in 2010. The property is not listed with NCDEQ Incidents associated with petroleum releases from aboveground storage tanks.

The PSA included a geophysical survey, subsequent limited soil sampling (eight soil borings up to 10 feet below ground surface (ft.-bgs.) and limited groundwater sampling (two groundwater samples), within accessible areas of the proposed ROW/easement in preparation for construction activities. **Figure 1** shows the vicinity and site location, and **Figure 2** shows the site and boring locations. Soil and groundwater sampling results are shown on **Figure 3**.

◆ Field Services

Prior to field activities, a site specific Health and Safety Plan was prepared as required by the Occupational Health and Safety Act (OSHA). Underground utilities were located and marked by the North Carolina One-Call Service. A private utility locator (Troxler Geologic, Inc.) was also used to locate and mark underground utilities.

◆ Geophysical Survey

From February 5 through 7, 2019, S&ME personnel performed a geophysical survey within accessible areas of the proposed ROW/easement at Parcel 140. S&ME used a combination of the Time Domain Electromagnetic (TDEM) and Ground Penetrating Radar (GPR) methods to explore for buried subsurface features at the site such as underground storage tanks (USTs) and other possible buried obstructions. Brief descriptions of these complementary geophysical techniques are presented in the following paragraphs.

Time Domain Electromagnetics (TDEM)

TDEM measures the electrical conductivity of subsurface materials and discriminates between moderately conductive earth materials and very conductive metallic targets within the shallow subsurface. The conductivity is determined by transmitting a time-varying magnetic pulse into the subsurface and measuring the amplitude and phase shift of the secondary magnetic field. The secondary magnetic field is created when the conductive materials become an inductor as the primary magnetic field is passed through them. TDEM data are acquired



continuously at a walking pace typically along a series of parallel or perpendicular lines. The system generates audible and visual indications when metallic targets are encountered. These measurements can also be supported with a global positioning system (GPS) which is output directly into the TDEM data file.

We used a Geonics Limited EM-61 MK2 TDEM system in general accordance with ASTM D6820-02 (2007) "Standard Guide for Use of the Time Domain Electromagnetic Method for Subsurface Investigation." Data was collected along lines spaced at approximately five feet using a Juniper® Systems Geode™ sub-meter GPS as positioning support. The presence of vehicles, thick vegetation and other surficial obstructions within the requested survey area however prevented TDEM data collection in several locations. The approximate TDEM data collection paths are presented in **Figure 4**. Golden Software's Surfer® program was used to grid and plot the data (**Figures 5 and 6**). The TDEM data has been presented as Plots A and B in order to provide both opaque and transparent views, respectively.

Ground Penetrating Radar (GPR)

GPR transmits electromagnetic waves into the subsurface from an antenna at a specific frequency and measures the time for wave reflections to be received by interfaces between materials with differing material properties (e.g. soil/metal, etc.). The intensity of the reflected GPR wave is a function of the contrast in the material properties (i.e. dielectric permittivity) at the interface, the conductivity of the material that the wave is traveling through, and the frequency of the signal.

We used a Geophysical Survey Systems, Inc. (GSSI) SIR® 3000 GPR system equipped with a 400 MHz antenna in general accordance with ASTM D6432-11 "Standard Guide for Using the Surface Ground Penetrating Radar Method for Subsurface Investigation" to further characterize anomalies/features identified during the TDEM survey.

A total of 15 GPR profiles (Lines 1 through 15) were collected for documentation (**Figure 7**). The data was post-processed using the GSSI Radan® 7 GPR software program for additional analysis.

Geophysical Findings

However, four anomalous features unrelated to known surficial targets were identified in the geophysical data sets (Anomalies A through D; **Figures 5 through 7**). Anomalies A, B, and C are characterized by high amplitude GPR responses located in the upper one ft-bgs and likely related to isolated buried metallic targets/debris. Anomaly D is characterized by two relative high isolated TDEM responses located within the existing curb area along the frontage road to the west. These feature were only identified in the TDEM data during post-processing and not in the field, and as such, GPR data was not collected over these features so interpretations regarding possible size and depth cannot not be determined. Possible steel reinforcement within the concrete curb may have masked the slightly higher responses while in the field. Anomalies A, B, and C were also marked in the field using white spray paint. Example GPR profiles are presented in **Figures 7 through 10**.

◆ Soil Sampling

On February 18, 2019, Troxler Geologic, Inc. (Troxler's) drill crew utilized a track mounted Geoprobe® rig to advance eight soil borings (B-1 through B-8) and to collect soil samples within accessible areas of the proposed ROW/easement at Parcel 140. The approximate location of the soil borings are shown in **Figure 2**. A



photographic log is included in **Appendix I**. Troxler's drill crew advanced the Geoprobe® borings up to a depth of approximately 10 ft.-bgs. During the advancement of the soil borings, groundwater was encountered at depths ranging from approximately four ft.-bgs to 6.5 ft.-bgs. Soil samples were continuously collected in four-foot long disposable acetate-plastic sleeves that line the hollow stainless-steel sample probes. Soil recovered from the sleeves was classified on-site by S&ME personnel and screened with a Photoionization Detector (PID) at approximately two foot depth intervals to measure relative headspace concentrations of volatile organic compounds (VOCs).

VOC headspace readings were obtained from an aliquot of each soil sample that was placed in a re-sealable bag. Another portion of the sample was placed in a separate re-sealable bag and stored in an insulated container with ice for possible laboratory analyses. After waiting approximately 15 minutes to allow the sample to reach ambient temperature and headspace equilibrium, the PID probe was inserted into the bag to obtain a headspace reading. A summary of the PID readings and logs of the soil borings are included in **Appendix II**.

Petroleum odors and elevated PID readings were noted at soil borings B-7 and B-8 at the four to six foot depth intervals, which are either below or within the vadose zone of the groundwater encountered at these borings. Groundwater was encountered at boring B-7 and B-8 at depths of five ft.-bgs and four ft.-bgs, respectively. Petroleum odors or elevated PID readings were not noted at the other soil borings on the site. Therefore, various soil samples at varying depth intervals were selected from each boring and provided to RED Lab, LLC (Red Lab) for on-site analysis. A total of ten soil samples were analyzed by RED Lab for Total Petroleum Hydrocarbons (TPH)-Gasoline Range Organics (GRO) and Diesel Range Organics (DRO) using ultra-violet fluorescence (UVF) spectroscopy with product (fuel) identification.

Soil Analytical Results

TPH-GRO and TPH-DRO were not reported at concentrations exceeding the North Carolina TPH Action Levels. TPH-DRO was reported at borings B-1, B-2, B-4, B-5, B-6 and B-8 at the two to four foot depth intervals at concentrations ranging from 0.16 milligrams per kilograms (mg/kg) to 9.8 mg/kg, which are below its North Carolina TPH Action Level of 100 mg/kg. TPH-DRO was also reported at borings B-7 and B-8 at the four to six foot depth interval at concentrations of 62.8 mg/kg and 72.71 mg/kg, respectively. TPH-GRO was reported at borings B-3 and B-4 at the two to four foot depth interval at a concentration of 3.5 mg/kg and 6 mg/kg, respectively, which are below its North Carolina TPH Action Level of 50 mg/kg. TPH-GRO and TPH-DRO were not reported at concentrations exceeding the laboratory method reporting limits at the remaining soil samples. A summary of the soil analytical results is presented in **Table 1** and shown on **Figure 3**. A copy of the laboratory analytical report provided by RED Lab is presented in **Appendix III**.

◆ Groundwater Sampling

During the advancement of the soil borings, groundwater was encountered within approximately 10 ft.-bgs. Therefore, the Geoprobe® was used to advance two of the soil borings into the groundwater table for the collection of groundwater samples. Based on petroleum odors, elevated PID readings and analytical results of soil samples, soil borings B-7 and B-8 were selected for the collection of groundwater samples. The collection of a groundwater sample was attempted at boring B-7 by extending the Geoprobe® groundwater sampling screen into the borehole from a depth of approximately four to eight ft.-bgs. However, the collection of a groundwater sample was unsuccessful at this depth due to clayey material within the boring. The sampling screen was



advanced within boring B-7 to a depth of approximately 12 ft.-bgs and a groundwater sample was collected. A groundwater sample was collected at boring B-8 by advancing the Geoprobe® groundwater sampling screen into the borehole and extending the screen from a depth of approximately four to eight ft.-bgs. Groundwater was purged from the screens until relatively clear using disposable tubing attached to a peristaltic pump. The flow rates were reduced and laboratory supplied containers were filled directly from the tubing, labeled as B-7/TW-1 and B-8/TW-2, respectively and placed in an insulated cooler with ice for transport to Con-Test Laboratories for analysis of VOCs by EPA Method 8260 and polycyclic aromatic compounds (PAHs) by EPA Method 8270.

Upon completion of the soil and groundwater sampling, the sampling equipment was removed and the soil borings backfilled with bentonite pellets and soil cuttings. Investigative derived wastes (IDW), such as additional soil cuttings generated during the soil boring advancement, purge water and decontamination water, were spread on the ground in accordance with the procedures specified by North Carolina Department of Environmental Quality (NCDEQ). Used gloves, tubing, re-sealable bags and acetate sleeves were bagged and disposed off-site.

Groundwater Analytical Results

Based upon analytical results of groundwater samples analyzed by Con-Test Laboratories, benzene, naphthalene, and 2-methylnaphthalene were reported at B-7/TW-1 at concentrations exceeding their 15A NCAC 2L Groundwater Quality Standards (2L Standards). Benzene, naphthalene, 2-methylnaphthalene and benzo (a) anthracene were reported at B-8/TW-2 at concentrations exceeding their 2L Standards. A summary of the groundwater analytical results is presented in **Table 2** and shown on **Figure 3**. A copy of the laboratory analytical report provided by Con-Test Laboratories is presented in **Appendix III**.

◆ Conclusion and Recommendations

Four anomalous features unrelated to known surficial targets were identified in the geophysical data sets (Anomalies A through D). Anomalies A, B, and C are likely related to isolated buried metallic targets/debris. However, Anomaly D was characterized by two relatively high isolated TDEM responses located within the existing curb area along the frontage road to the west. These feature were only identified in the TDEM data during post-processing and not in the field, and as such, GPR data was not collected over these features so interpretations regarding possible size and depth cannot not be determined. Possible steel reinforcement within the curb may have masked the slightly higher responses while in the field. Due to the lack of GPR data at Anomaly D, it is uncertain if Anomaly D is associated with a potential UST. Borings B-5 and B-6 were installed near Anomaly D where field observations and lab data for assessment of petroleum impacted soil did not indicate a petroleum release in this area. Workers in the area of Anomaly D should be aware of the possibility of a UST or buried metallic objects or debris.

S&ME advanced eight soil borings (B-1 through B-8) to a depth of up to approximately 10 ft.-bgs at the site. Petroleum odors and elevated PID readings were noted within collected soil samples at soil borings B-7 and B-8 at the four to six foot depth intervals, which are either below or within the vadose zone of the groundwater encountered at these borings. Groundwater was encountered at borings B-7 and B-8 at depths of five ft.-bgs and four ft.-bgs, respectively.

Selected soil samples from the soil borings were analyzed onsite for TPH-GRO and TPH-DRO using UVF spectroscopy. TPH-DRO was reported at borings B-1, B-2, B-4, B-5, B-6 and B-8 at the two to four foot depth



intervals. TPH-DRO was also reported at borings B-7 and B-8 at the four to six foot depth interval. TPH-GRO was reported at borings B-3 and B-4 at the two to four foot depth interval. However, TPH-DRO and TPH-GRO were not reported at concentrations exceeding their North Carolina TPH Action Levels. During the soil boring advancement, groundwater was encountered at depths ranging from approximately four ft.-bgs to 6.5 ft.-bgs across the site. Temporary well (TW-1) was installed at soil boring B-7 and temporary well TW-2 was installed at soil boring B-8. Groundwater at TW-1 and TW-2 analyzed by Con-Test Laboratories for VOCs by EPA Method 8260 and PAHs by EPA Method 8270. Benzene, naphthalene, and 2-methylnaphthalene were reported at B-7/TW-1 at concentrations exceeding their 2L Standards. Benzene, naphthalene, 2-methylnaphthalene and benzo (a) anthracene were reported at B-8/TW-2 at concentrations exceeding their 2L Standards.

Based on the analytical results of soil and groundwater samples, it is likely that during construction, NCDOT may encounter soil and groundwater impacted with petroleum at the site. Saturated petroleum impacted soil at concentrations below the North Carolina TPH Action Levels soil may be encountered within the vicinity of soil borings B-7 and B-8 near the groundwater at a depth of approximately four to five ft.-bgs. Assuming that a section of petroleum impacted soil approximately two feet thick and 40 feet in diameter at B-7 and B-8 at a depth of four to six ft.-bgs, which is near the groundwater table; up to 200 cubic yards of soil near borings B-7 and B-8 may be impacted.

If petroleum stained or odorous soils are encountered during construction, these soils should be properly handled and disposed at a licensed facility. If construction dewatering is required, petroleum impacted groundwater must be properly disposed or treated at a licensed facility.

S&ME recommends maintaining an awareness level for the presence of petroleum in the soil and groundwater at the site for the safety of workers and the public.

◆ **Limitations**

The results of this preliminary investigation are limited to the boring locations presented herein. The results of this Preliminary Site Assessment are not all inclusive and may not represent existing conditions across the entire property. These results only reflect the current conditions at the locations sampled on the date this Preliminary Site Assessment was performed. This report has been prepared in accordance with generally accepted environmental engineering and geophysical practice for specific application to this project. The conclusions and recommendations contained in this report are based upon applicable standards of our practice in this geographic area at the time this report was prepared. No other warranty, expressed or implied, is made.

The geophysical methods used for this survey have inherent limitations. Site metallic features (e.g., buildings, reinforced concrete, vehicles, etc.) and overhead transmission lines can produce a false electromagnetic response and may mask subsurface features. The depth of exploration of the GPR signal is highly site specific, and is greatly limited by signal attenuation (absorption) of the subsurface materials. Signal attenuation is dependent upon the electrical conductivity of the subsurface materials. Signal attenuation is greatest in materials with relatively high electrical conductivities such as clay soils, and lowest in relatively low conductivity materials such as unsaturated sand. For this project location, the GPR data sets appear to have a maximum depth of penetration of approximately about five ft.-bgs.



Regardless of the thoroughness of a geophysical study, there is always a possibility that actual conditions may not match the interpretations. The results should be considered accurate only to the degree implied by the methods used and the method's limitations and data coverage. Accordingly, the possibility exists that not all features at a project site will be located due to either subsurface soil conditions or the occurrence of features outside the lateral limits and below the depth of penetration of the methods used. As with most surface geophysical methods, resolution of the subsurface will also decrease with depth. As such, the size and/or contrast of features compared to the imaged subsurface media must be significant enough to produce the anticipated response. The location and/or determination (or the lack thereof) of potential buried features is based on our review of the provided information and of the geophysical survey. Under no circumstances does S&ME assume any responsibility for damages resulting from the presence of subsurface features that may exist but were not identified by our survey.


This Preliminary Site Assessment was performed solely for NCDOT regarding the above-referenced site and assessment area. This report is provided for the sole use of NCDOT. Use of this report by any other parties will be at such party's sole risk. S&ME disclaims liability for any such use or reliance by third parties. The observations presented in this report are indicative of conditions during the time of the assessment and of the specific areas referenced.

◆ Closing


S&ME appreciates the opportunity to provide these services to you. If you have any questions or comments regarding this report, please contact us at your convenience.

Sincerely,

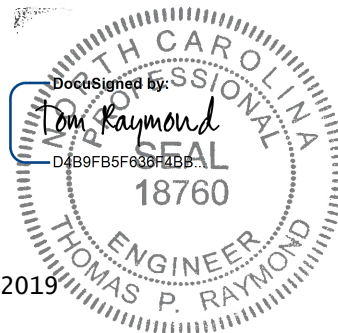
S&ME, Inc.


DocuSigned by:

 4C890EAE25F488...

Jamie T Honeycutt
 Environmental Professional
jhoneycutt@smeinc.com

DocuSigned by:

 861E52DDEF4F4C7...

Michael W. Pfeifer
 Senior Project Manager
mpfeifer@smeinc.com



DocuSigned by:

 D4B9FB5F03BF4BB...

Thomas P. Raymond, P.E., P.M.P.
 Senior Consultant
traymond@smeinc.com

Attachments:

5/6/2019

Table 1: Summary of Soil Sampling Results

Table 2: Summary of Groundwater Sampling Results

Figure 1: Vicinity Map



Preliminary Site Assessment Report
NCDOT Project I-5986B, WBS Element 47532.1.3
Parcel 140-Former Robin Hood Truck Stop
Dunn, Harnett County, North Carolina
S&ME Project No. 4305-18-175A

Figure 2: Site Map

Figure 3: Soil and Groundwater Constituent Map

Figure 4: TDEM Path Location Plan

Figure 5: TDEM Data Plot A

Figure 6: TDEM Data Plot B

Figure 7: Geophysical Anomaly Location Plan

Figure 8: Example GPR Data – Lines 12 and 13

Figure 9: Example GPR Data – Lines 14 and 15

Figure 10: Example GPR Data – Lines 3 and 4

Appendix I: Photographs

Appendix II: Boring Logs

Appendix III: Laboratory Analytical Reports and Chain of Custody

Tables



TABLE 1
SUMMARY OF SOIL SAMPLING RESULTS
NCDOT Project I-5986B
Parcel 140 - (Former Robin Hood Truck Stop)
60 Robin Hood Road
Dunn, Harnett County, North Carolina
S&ME Project No. 4305-18-175A

Analytical Method→			Total Petroleum Hydrocarbons (TPH) Gasoline Range Organics (GRO) and Diesel Range Organics (DRO) by Ultraviolet Fluorescence (UVF) Spectrometry	
Sample ID	Date	Contaminant of Concern→	TPH-GRO	TPH-DRO
		Sample Depth (ft.-bgs)		
B-1	2/18/2019	2 to 4	<0.65	0.52
B-2	2/18/2019	2 to 4	<0.48	0.16
B-3	2/18/2019	2 to 4	3.5	<0.22
B-4	2/18/2019	2 to 4	6	9.8
B-5	2/18/2019	2 to 4	<0.59	0.78
B-6	2/18/2019	2 to 4	<0.44	1.5
B-7	2/18/2019	2 to 4	<0.49	<0.19
		4 to 6	<0.51	62.8
B-8	2/18/2019	2 to 4	<0.84	1.9
		4 to 6	<0.47	72.7
North Carolina TPH Action Levels			50	100

Notes:

1. UVF analysis performed by RED Lab, LLC
2. Concentrations are reported in milligrams per kilogram (mg/Kg).
3. ft.-bgs:- feet below ground surface.
4. Concentrations exceeding the laboratory's reporting limits are shown in **BOLD** fields.
5. Concentrations exceeding the North Carolina TPH Action Levels are shown in Shaded and **BOLD** fields.



TABLE 2
SUMMARY OF GROUNDWATER SAMPLING RESULTS
 NCDOT Project I-5986B
 Parcel 140 - (Former Robin Hood Truck Stop)
 60 Robin Hood Road
 Dunn, Harnett County, North Carolina
 S&ME Project No. 4305-18-175A

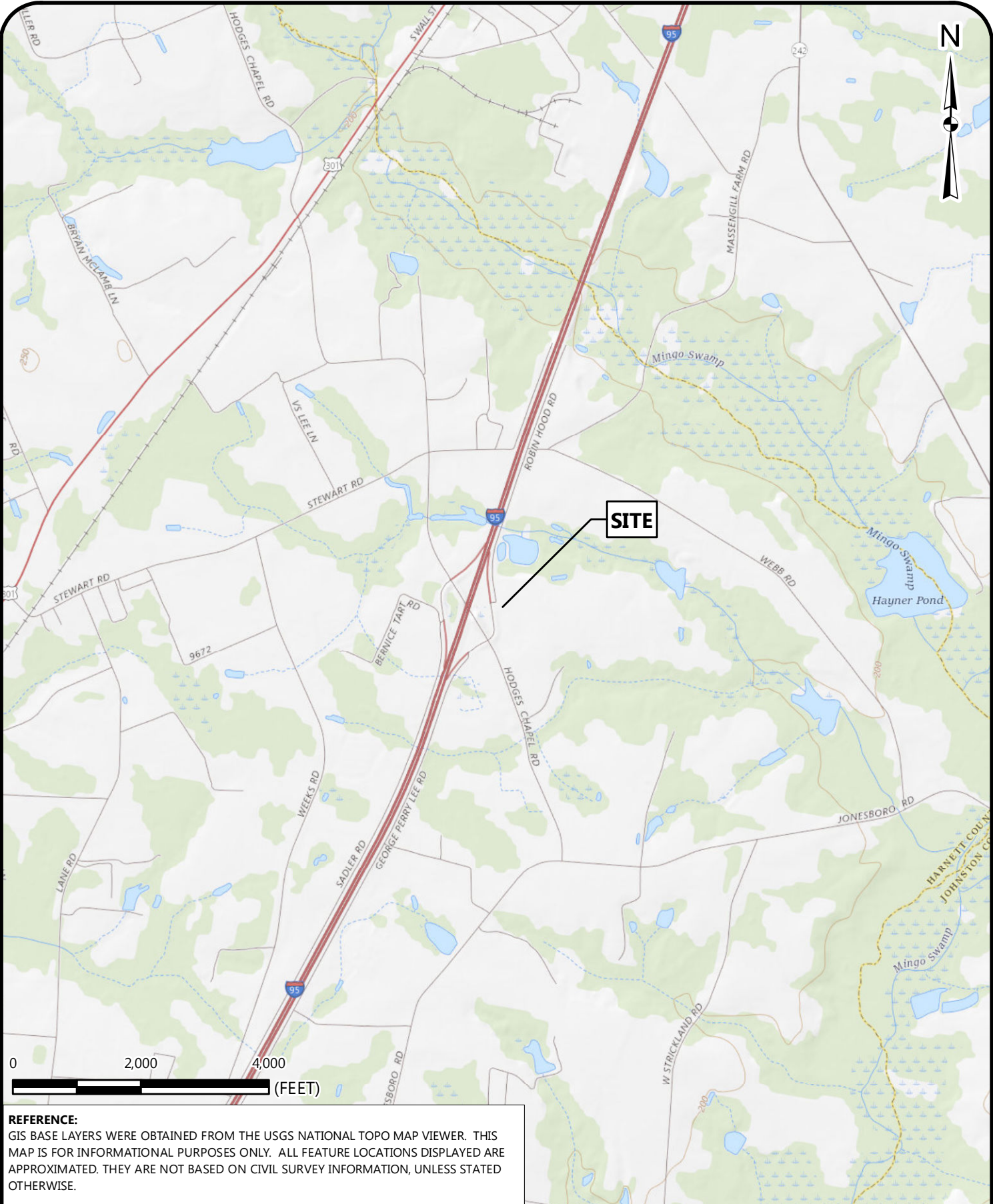
Analytical Method→		Volatile Organic Compounds by EPA Method 8260														Polycyclic Aromatic Compounds (PAHs) by EPA Method 8270										
Sample ID	Contaminant of Concern→	Benzene	Ethylbenzene	Isopropylbenzene	MTBE	Naphthalene	n-Butylbenzene	sec-Butylbenzene	tert-Amyl Methyl Ether	n-Propylbenzene	p-Isopropyltoluene	Toluene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Total Xylenes	Acenaphthene	Anthracene	Benzo (a) anthracene	Acenaphthylene	Chrysene	Fluoranthene	Fluorene	Naphthalene	Pyrene	Phenanthrene	2-Methylnaphthalene
	Date																									
B-7/TW-1	2/18/2019	27	120	5	3.4	110	2.2	1.3 J	2.5	8.5	0.94 J	41	69	16	370	1.2 J	<5.0	<1.2	<5.0	<5.0	<12	1.6 J	55	<25	1.6	39
B-8/TW-2	2/18/2019	<2.0	0.66 J	1.3 J	<2.0	87	5.3	7.6	0.58 J	3.2	4.6	<2.0	<2.0	<2.0	<4.0	13	6.7	0.20 J	5	0.36 J	0.81 J	31	38	4.4 J	76	160
2L Standard (µg/L)		1	600	70	20	6	70	70	128	70	25	600	400	400	500	80	2,000	0.05	200	5	300	300	6	200	200	30
GCL (µg/L)		5,000	84,500	25,000	20,000	6,000	6,900	8,500	128,000	30,000	11,700	260,000	28,500	25,000	85,500	2,120	2,000	4.7	1,965	5	300	990	6,000	200	410	12,500

Notes:

1. Analytes that are not shown for the method were not detected.
2. Concentrations are reported in micrograms per liter (µg/L).
3. 2L Standard: North Carolina Groundwater Quality Standards: 15A NCAC 2L.0202
4. Concentrations exceeding the laboratory's reporting limits are shown in **BOLD** fields.
5. Concentrations exceeding the 2L Standards are shown in Shaded and **BOLD** fields.
6. GCL: Gross Contamination Level.
7. J: Estimated concentration detected below the reporting limit.

Figures

Drawing Path: T:\Projects\2018\ENV\4305-18-175A_NCDOT\GIS\Parcel140\VICINITY 140.mxd plotted by abentz 03-21-2019



REFERENCE:
 GIS BASE LAYERS WERE OBTAINED FROM THE USGS NATIONAL TOPO MAP VIEWER. THIS MAP IS FOR INFORMATIONAL PURPOSES ONLY. ALL FEATURE LOCATIONS DISPLAYED ARE APPROXIMATED. THEY ARE NOT BASED ON CIVIL SURVEY INFORMATION, UNLESS STATED OTHERWISE.

	VICINITY MAP		SCALE: 1" = 2,000'	FIGURE NO. 1
	NCDOT I-5986B PARCEL NO. 140 (FORMER ROBIN HOOD TRUCK STOP) 60 ROBIN HOOD ROAD, DUNN, HARNETT COUNTY, NORTH CAROLINA		DATE: 3-21-19	
			PROJECT NUMBER 4305-18-175A	



**PARCEL 140
FORMER ROBIN HOOD TRUCK STOP**

B-8/TW-2

B-7/TW-1

B-6

B-5

B-4

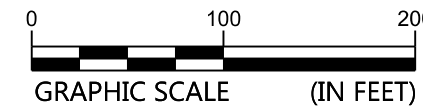
B-3

B-2

B-1

LEGEND

- Geoenvironmental Boring:
- Underground Storage Tank (UST):
- Map Source: NCDOT Project I-5986B
- Image Source: NC ONEMAP, Dated 2016
- Known Soil Contamination:
- Possible Soil Contamination:
- Existing Contamination Known - Water:



SITE MAP

NCDOT Project: I-5986B
 PARCEL 140 - (FORMER ROBIN HOOD TRUCK STOP)
 60 Robin Hood Road, Dunn, Harnett County, North Carolina

SCALE: 1" = 100'	2
DATE: MARCH 2019	
PROJECT NUMBER: 4305-18-175A	
FIGURE NO.	





SOIL AND GROUNDWATER CONSTITUENT MAP

NC DOT I-5986B
 PARCEL NO. 140 (FORMER ROBIN HOOD TRUCK STOP)
 60 ROBIN HOOD ROAD, DUNN, HARNETT COUNTY, NORTH CAROLINA

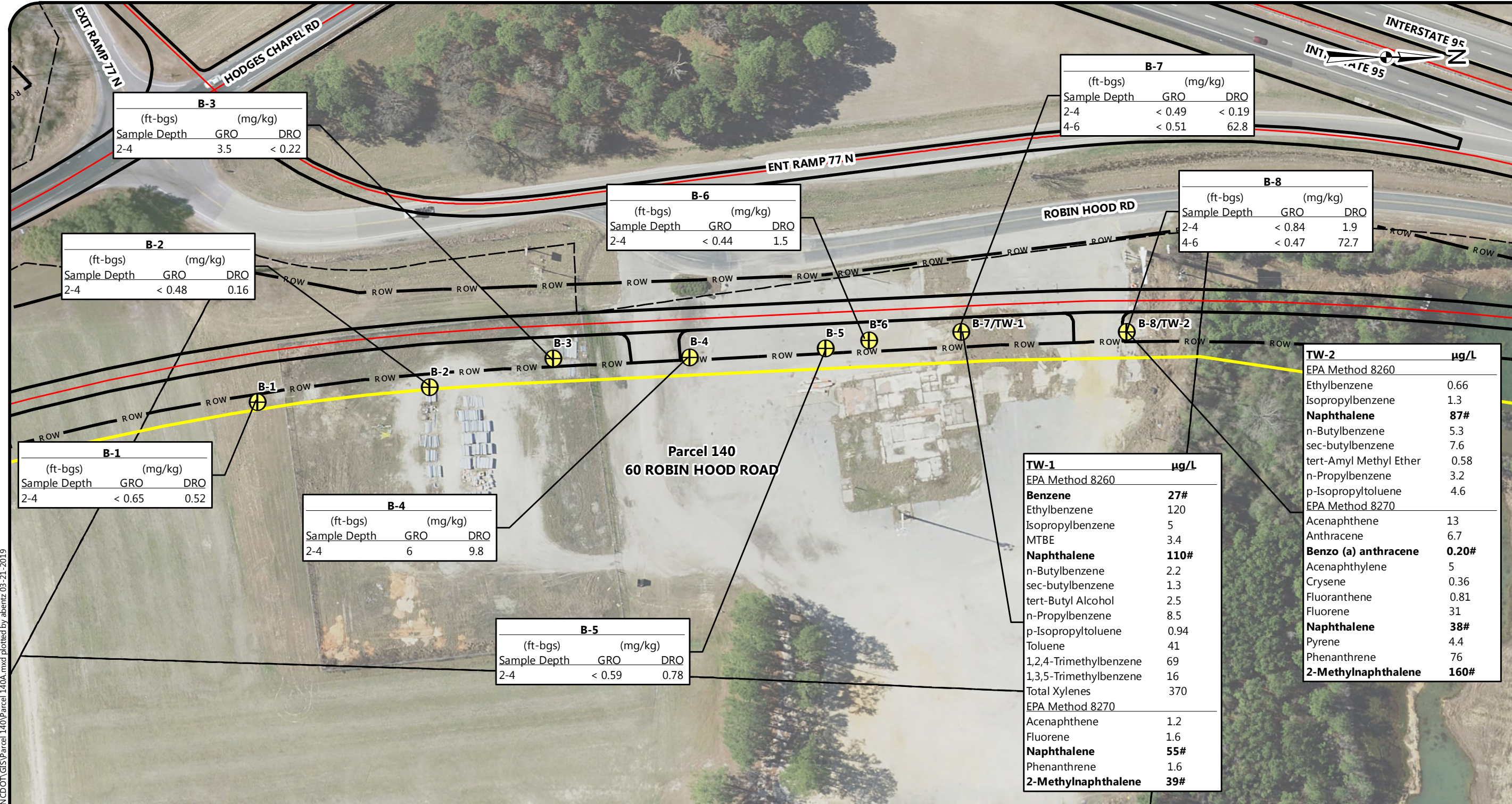
SCALE:
 1" = 100'

DATE:
 3-21-19

PROJECT NUMBER
 4305-18-175

FIGURE NO.

3



B-3

Sample Depth	(mg/kg)	
	GRO	DRO
2-4	3.5	< 0.22

B-2

Sample Depth	(mg/kg)	
	GRO	DRO
2-4	< 0.48	0.16

B-1

Sample Depth	(mg/kg)	
	GRO	DRO
2-4	< 0.65	0.52

B-4

Sample Depth	(mg/kg)	
	GRO	DRO
2-4	6	9.8

B-5

Sample Depth	(mg/kg)	
	GRO	DRO
2-4	< 0.59	0.78

B-6

Sample Depth	(mg/kg)	
	GRO	DRO
2-4	< 0.44	1.5

B-7

Sample Depth	(mg/kg)	
	GRO	DRO
2-4	< 0.49	< 0.19
4-6	< 0.51	62.8

B-8

Sample Depth	(mg/kg)	
	GRO	DRO
2-4	< 0.84	1.9
4-6	< 0.47	72.7

TW-1 µg/L

EPA Method 8260	
Benzene	27#
Ethylbenzene	120
Isopropylbenzene	5
MTBE	3.4
Naphthalene	110#
n-Butylbenzene	2.2
sec-butylbenzene	1.3
tert-Butyl Alcohol	2.5
n-Propylbenzene	8.5
p-Isopropyltoluene	0.94
Toluene	41
1,2,4-Trimethylbenzene	69
1,3,5-Trimethylbenzene	16
Total Xylenes	370
EPA Method 8270	
Acenaphthene	1.2
Fluorene	1.6
Naphthalene	55#
Phenanthrene	1.6
2-Methylnaphthalene	39#

TW-2 µg/L

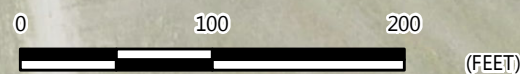
EPA Method 8260	
Ethylbenzene	0.66
Isopropylbenzene	1.3
Naphthalene	87#
n-Butylbenzene	5.3
sec-butylbenzene	7.6
tert-Amyl Methyl Ether	0.58
n-Propylbenzene	3.2
p-Isopropyltoluene	4.6
EPA Method 8270	
Acenaphthene	13
Anthracene	6.7
Benzo (a) anthracene	0.20#
Acenaphthylene	5
Crysene	0.36
Fluoranthene	0.81
Fluorene	31
Naphthalene	38#
Pyrene	4.4
Phenanthrene	76
2-Methylnaphthalene	160#

mg/kg: Milligrams per Kilogram
 µg/L: Micrograms per Liter
 GRO: Total Petroleum Hydrocarbon Gasoline Range Organics
 DRO: Total Petroleum Hydrocarbon Diesel Range Organics
BOLD*: Indicates Exceedance of NC TPH Action Levels
BOLD#: Indicates Exceedance of 2L Groundwater Samples
 ft-bgs: Feet Below Ground Surface
 PAH: Polycyclic Aromatic Compounds

Samples Collected 2-18-2019.

GRO/DRO Analyzed by Ultraviolet Fluorescence (UVF) by RED Lab, LLC

- Sample Location
- Proposed Alignment
- Proposed Permanent ROW
- Proposed Permanent Utility Easement
- Proposed Edge of Pavement
- Tax Parcels

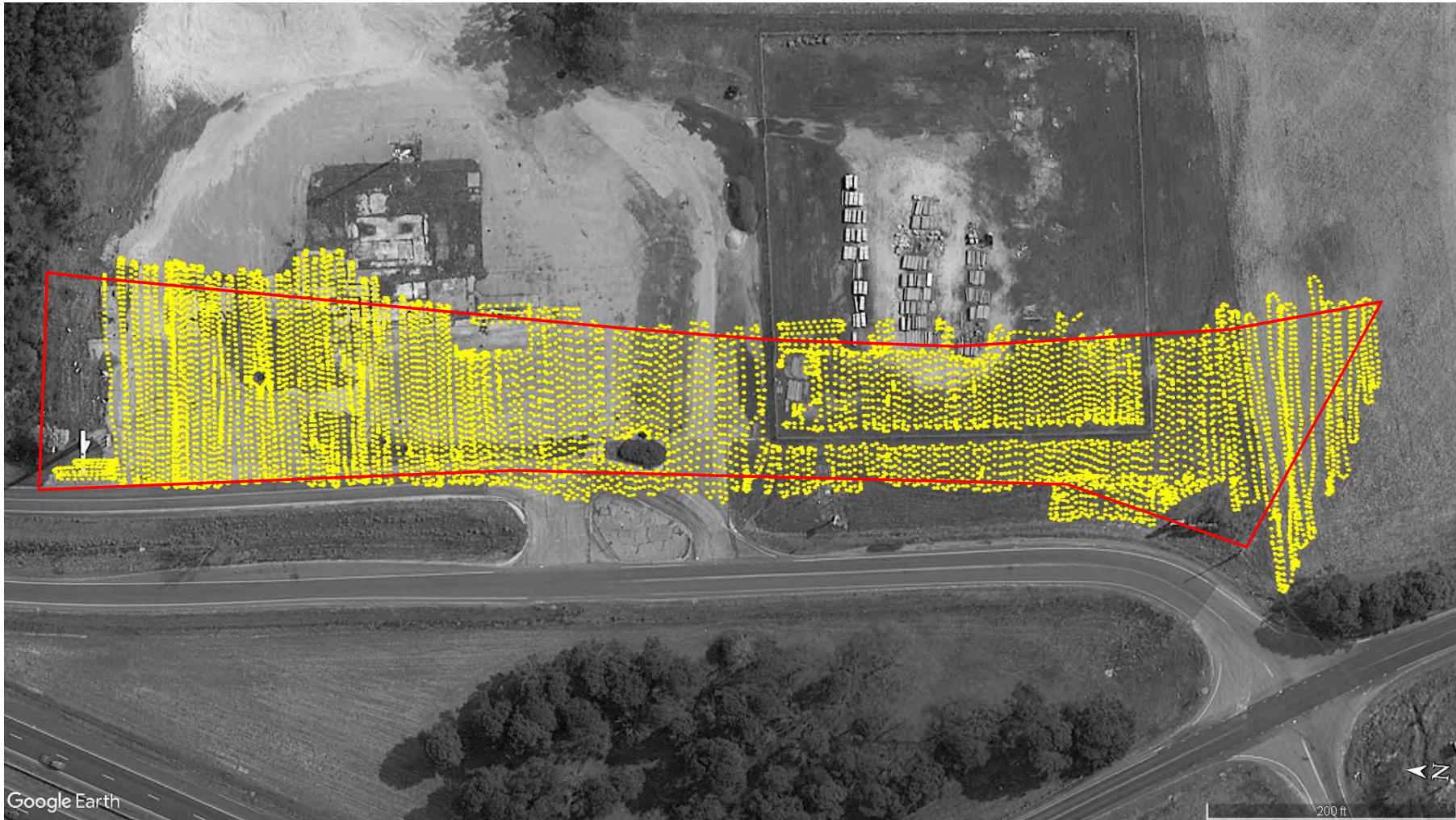


REFERENCE:
 GIS BASE LAYERS WERE OBTAINED FROM THE 2017 NCONEMAP AERIAL ORTHOIMAGERY LAYER. THIS MAP IS FOR INFORMATIONAL PURPOSES ONLY. ALL FEATURE LOCATIONS DISPLAYED ARE APPROXIMATED. THEY ARE NOT BASED ON CIVIL SURVEY INFORMATION, UNLESS STATED OTHERWISE.

Drawing Path: T:\Projects\2018\ENV\4305-18-175A\NCDOT\GIS\Parcel_140\Parcel_140A.mxd plotted by abentz 03-21-2019



REFERENCE:
(GOOGLE EARTH PRO) AERIAL PHOTOGRAPH
(DATED, MARCH, 04 2018)



LEGEND

Approximate TDEM Path



Approximate Requested Survey Area

TDEM PATH LOCATION PLAN

NC DOT PROJECT: I-5986B
PARCEL 140 - (FORMER ROBIN HOOD TRUCK STOP)
60 ROBIN HOOD ROAD, DUNN, HARNETT COUNTY, NORTH CAROLINA

SCALE:
AS SHOWN

DATE:
3/22/2019

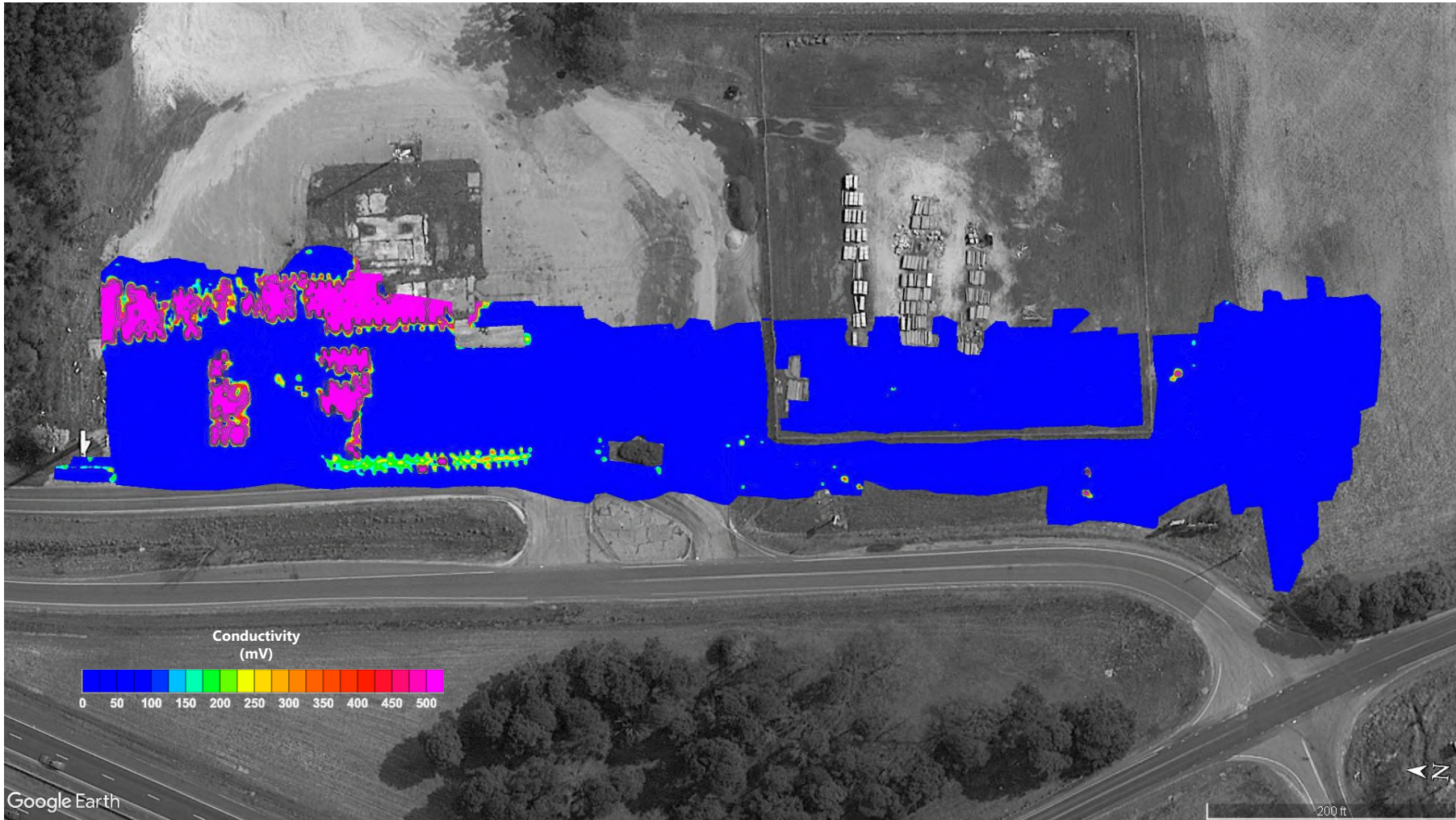
PROJECT NUMBER
4305-18-175A

FIGURE NO.

4



REFERENCE:
(GOOGLE EARTH PRO) AERIAL PHOTOGRAPH
(DATED, MARCH, 04 2018)



TDEM DATA PLOT A

NC DOT PROJECT: I-5986B
PARCEL 140 - (FORMER ROBIN HOOD TRUCK STOP)
60 ROBIN HOOD ROAD, DUNN, HARNETT COUNTY, NORTH CAROLINA

SCALE:
AS SHOWN

DATE:
3/22/2019

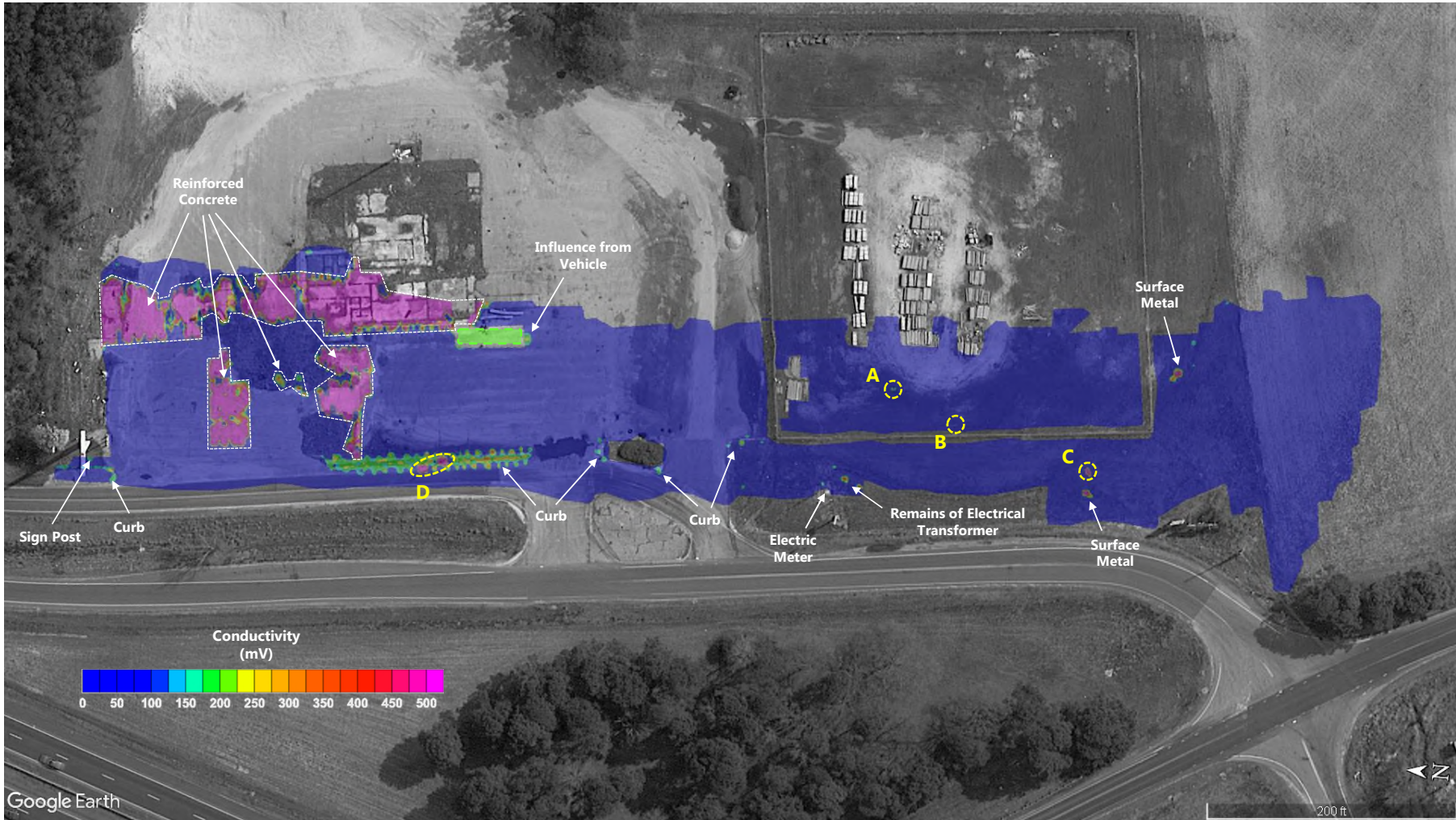
PROJECT NUMBER
4305-18-175A

FIGURE NO.

5



REFERENCE:
 (GOOGLE EARTH PRO) AERIAL PHOTOGRAPH
 (DATED, MARCH, 04 2018)



LEGEND



Approximate Location of TDEM Anomaly



Approximate Location of Vehicles



Approximate Location of Possible Utility

TDEM DATA PLOT B

NC DOT PROJECT: I-5986B
 PARCEL 140 - (FORMER ROBIN HOOD TRUCK STOP)
 60 ROBIN HOOD ROAD, DUNN, HARNETT COUNTY, NORTH CAROLINA

SCALE:
 AS SHOWN

DATE:
 3/22/2019

PROJECT NUMBER
 4305-18-175A

FIGURE NO.

6



REFERENCE:
 (GOOGLE EARTH PRO) AERIAL PHOTOGRAPH
 (DATED, MARCH, 04 2018)



LEGEND



Approximate Location of TDEM Anomaly



Approximate Location of Vehicles



Approximate Location of Possible Utility



Approximate Location of GPR Profile

GEOPHYSICAL ANOMALY LOCATION PLAN

NC DOT PROJECT: I-59866
 PARCEL 140 - (FORMER ROBIN HOOD TRUCK STOP)
 60 ROBIN HOOD ROAD, DUNN, HARNETT COUNTY, NORTH CAROLINA

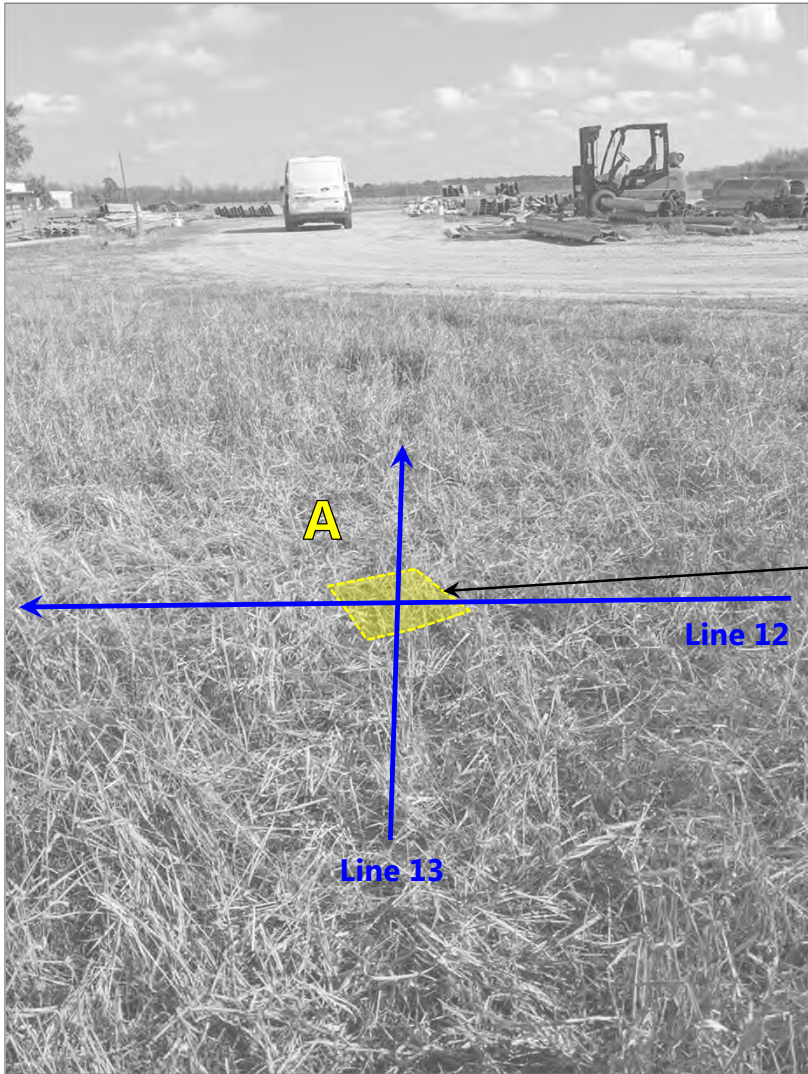
SCALE:
 AS SHOWN

DATE:
 3/22/2019

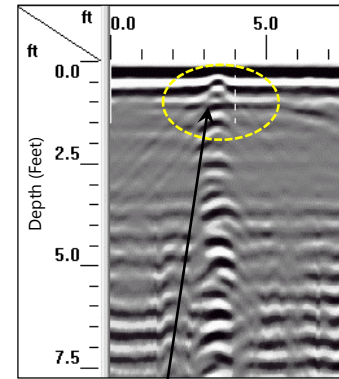
PROJECT NUMBER
 4305-18-175A

FIGURE NO.

7

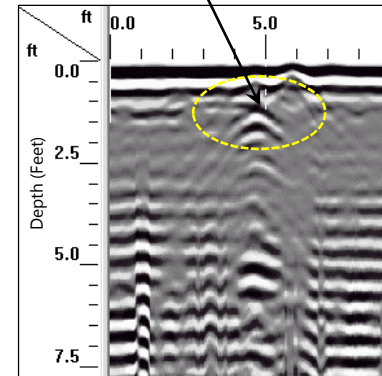


Line 12 →



TDEM
Anomaly A

Line 13 →



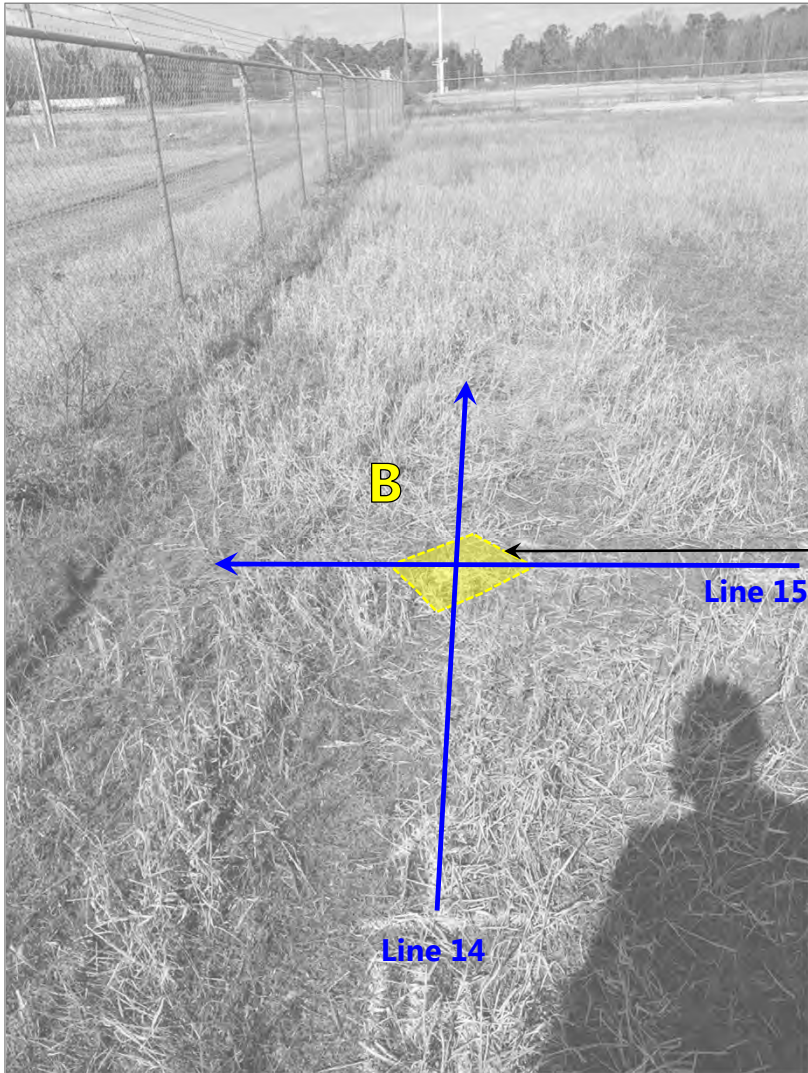
Note: Presented GPR profile depths are based on an assumed average dielectric and should be considered approximate



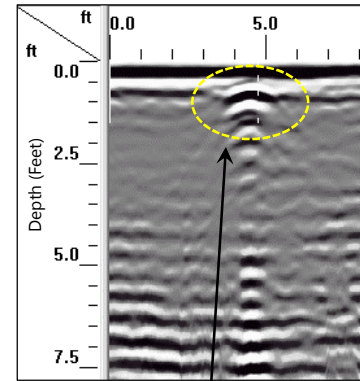
EXAMPLE GPR DATA – LINES 12 AND 13

NC DOT PROJECT: I-59868
 PARCEL 140 – (FORMER ROBIN HOOD TRUCK STOP)
 60 ROBIN HOOD ROAD, DUNN, HARNETT COUNTY, NORTH CAROLINA

SCALE:
AS SHOWN
 DATE:
3/22/2019
 PROJECT NUMBER
4305-18-175A
 FIGURE NO.

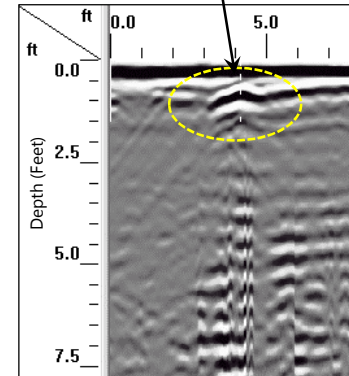


Line 14 →



TDEM
Anomaly B

Line 15 →

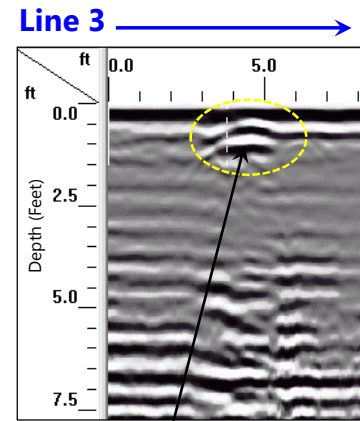
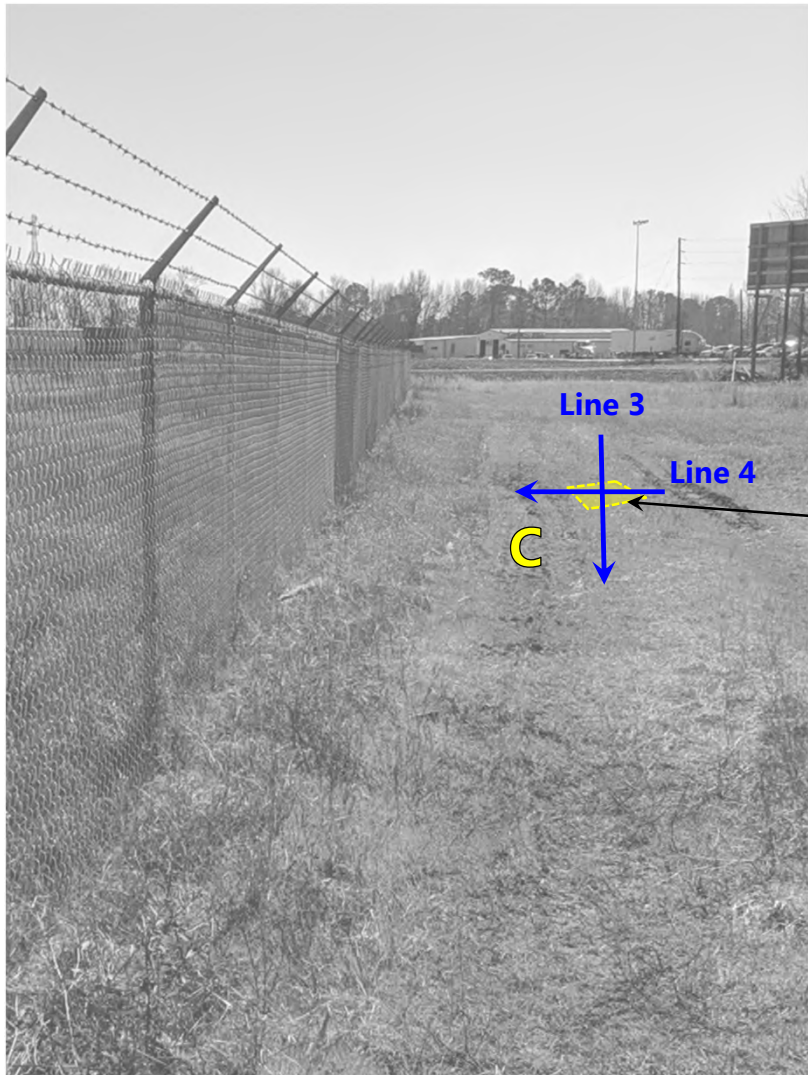


EXAMPLE GPR DATA – LINES 14 AND 15

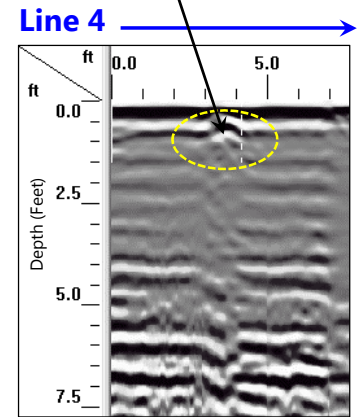
NC DOT PROJECT: I-59868
 PARCEL 140 – (FORMER ROBIN HOOD TRUCK STOP)
 60 ROBIN HOOD ROAD, DUNN, HARNETT COUNTY, NORTH CAROLINA

SCALE:
AS SHOWN
 DATE:
3/22/2019
 PROJECT NUMBER
4305-18-175A
 FIGURE NO.

Note: Presented GPR profile depths are based on an assumed average dielectric and should be considered approximate



TDEM
Anomaly C



EXAMPLE GPR DATA – LINES 3 AND 4

NC DOT PROJECT: I-59868B
 PARCEL 140 – (FORMER ROBIN HOOD TRUCK STOP)
 60 ROBIN HOOD ROAD, DUNN, HARNETT COUNTY, NORTH CAROLINA

SCALE:
AS SHOWN

DATE:
3/22/2019

PROJECT NUMBER
4305-18-175A

FIGURE NO.

Note: Presented GPR profile depths are based on an assumed average dielectric and should be considered approximate

Appendix I – Photographs

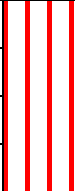

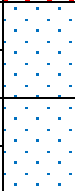





Preliminary Site Assessment Report
NCDOT Project I-5986B, WBS Element 47532.1.3
Parcel 140-Former Robin Hood Truck Stop
Dunn, Harnett County, North Carolina
S&ME Project No. 4305-18-175A

	<p> ☉ 354°N (T) ● 35°20'34"N, 78°33'22"W ±16.4ft ▲ 308ft </p>	Date: 2/18/2019				
	<p style="text-align: right; font-size: x-small;">18 Feb 2019, 11:27:15</p>	Photographer: JTH				
1	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Location / Orientation</td> <td>View of northern portion of the site looking north.</td> </tr> <tr> <td>Remarks</td> <td>Former truck stop area.</td> </tr> </table>	Location / Orientation	View of northern portion of the site looking north.	Remarks	Former truck stop area.	
Location / Orientation	View of northern portion of the site looking north.					
Remarks	Former truck stop area.					

	<p> ☉ 88°E (T) ● 35°20'36"N, 78°33'23"W ±16.4ft ▲ 294ft </p>	Date: 2/18/2019				
	<p style="text-align: right; font-size: x-small;">18 Feb 2019, 14:55:18</p>	Photographer: JTH				
2	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Location / Orientation</td> <td>View looking east of B-7/TW-1.</td> </tr> <tr> <td>Remarks</td> <td>None</td> </tr> </table>	Location / Orientation	View looking east of B-7/TW-1.	Remarks	None	
Location / Orientation	View looking east of B-7/TW-1.					
Remarks	None					

Appendix II – Boring Logs

PROJECT:		NCDOT I-5986B Parcel 140-60 Robin Hood Road, Dunn, NC S&ME Project No. 4305-18-175A		BORING LOG: B-7/TW-1							
DATE DRILLED:	Monday, February 18, 2019	BORING DEPTH (FT):		8							
DRILL RIG:	Geoprobe 6620 DT	WATER LEVEL:		5							
DRILLER:	Troxler Geologic, Inc.	CAVE-IN DEPTH:		Not Applicable							
HAMMER TYPE:	Not Applicable	LOGGED BY:		J. Honeycutt							
SAMPLING METHOD:	Macro-Core Sampler	NORTHING:									
DRILLING METHOD:	Macro-Core Sampler (3-in. OD)	EASTING:									
DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION		WATER LEVEL	SAMPLE	PID READING (PPM)	LABORATORY ANALYSES	Sample Time / 1st 6in	2nd 6in	3rd 6in	N VALUE
0		Silty Sand, Tan, Orange, Brown,		▼		0.0	No				
5		Sandy Clay, Gray, Tan,				0.3	Yes				
		Sandy Clay, Gray, Tan, Petroleum Odors				7.6	Yes				
10		Boring Terminated at 8 Ft-BGS									
15											
20											
25											
30											

Appendix III – Laboratory Analytical Reports and Chain of Custody



Hydrocarbon Analysis Results

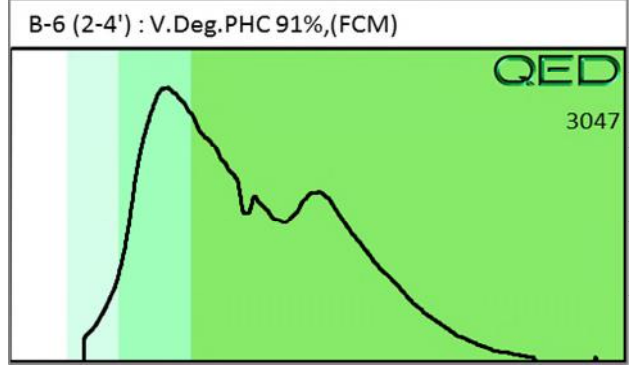
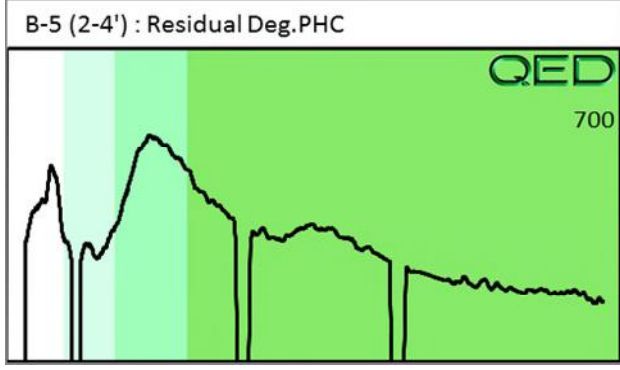
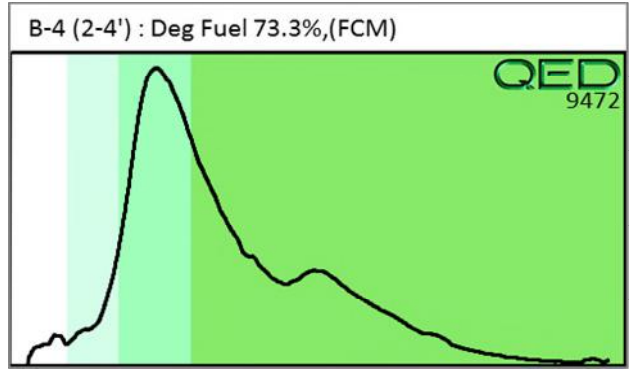
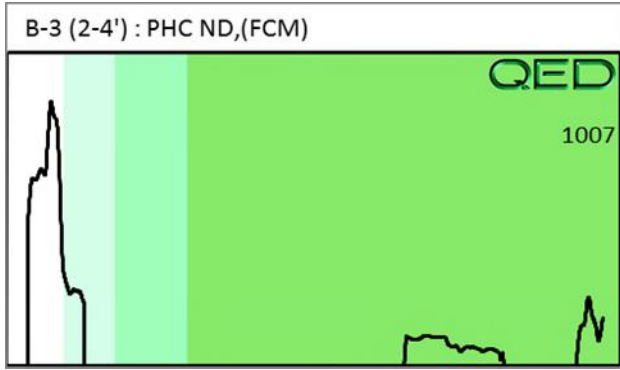
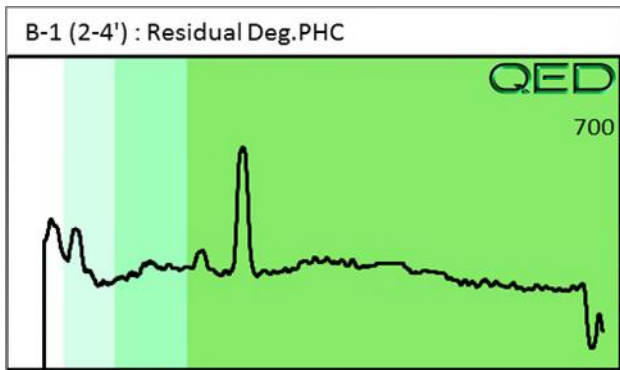
Client: S&ME
 Address:
 Contact: JAMIE HONEYCUTT
 Project: 4305-18-175A ; PARCEL 140

Samples taken: Monday, February 18, 2019
 Samples extracted: Monday, February 18, 2019
 Samples analysed: Monday, February 18, 2019

Operator: MAX MOYER

											F03640		
Matrix	Sample ID	Dilution used	BTEX (C6 - C9)	GRO (C5 - C10)	DRO (C10 - C35)	TPH (C5 - C35)	Total Aromatics (C10-C35)	16 EPA PAHs	BaP	Ratios			HC Fingerprint Match
										% light	% mid	% heavy	
Soil	B-1 (2-4')	26.0	<0.65	<0.65	0.52	0.52	0.49	0.02	<0.008	0	91	9	Residual Deg.PHC
Soil	B-2 (2-4')	19.1	<0.48	<0.48	0.16	0.16	0.15	0.02	<0.006	0	71.3	28.7	Residual HC
Soil	B-3 (2-4')	21.8	<0.55	3.5	<0.22	3.5	<0.01	<0.01	<0.007	100	0	0	PHC ND,(FCM)
Soil	B-4 (2-4')	23.0	<1.2	6	9.8	15.8	3.7	0.18	0.003	66.2	30.5	3.3	Deg Fuel 73.3%,(FCM)
Soil	B-5 (2-4')	23.4	<0.59	<0.59	0.78	0.78	0.74	0.08	<0.007	0	91.9	8.1	Residual Deg.PHC
Soil	B-6 (2-4')	17.4	<0.44	<0.44	1.5	1.5	0.72	0.04	0.001	0	80.4	19.6	V.Deg.PHC 91%,(FCM)
Initial Calibrator QC check			OK			Final FCM QC Check			OK			103.4%	

Results generated by a QED HC-1 analyser. Concentration values in mg/kg for soil samples and mg/L for water samples. Soil values are not corrected for moisture or stone content
 Fingerprints provide a tentative hydrocarbon identification. The abbreviations are:- FCM = Results calculated using Fundamental Calibration Mode : % = confidence for sample fingerprint match to library
 (SBS) or (LBS) = Site Specific or Library Background Subtraction applied to result : (PFM) = Poor Fingerprint Match : (T) = Turbid : (P) = Particulate present





Hydrocarbon Analysis Results

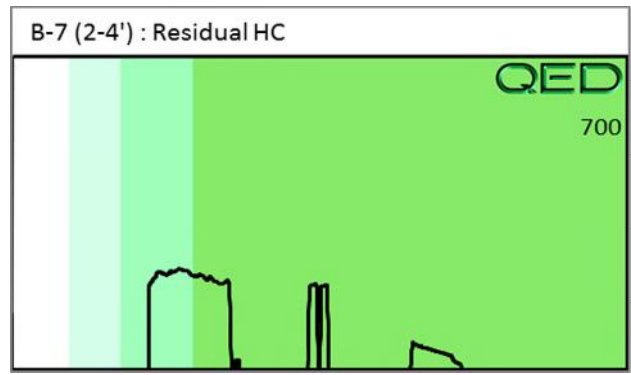
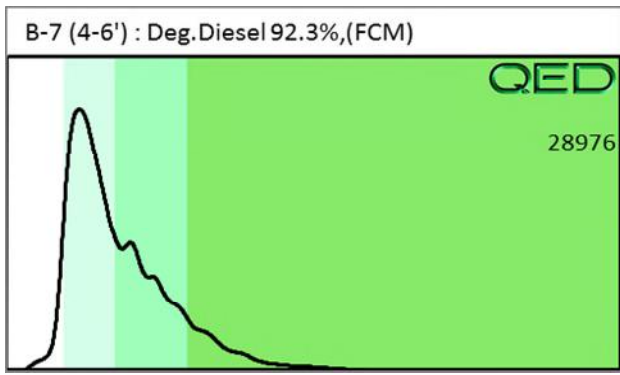
Client: S&ME
 Address:
 Contact: JAMIE HONEYCUTT
 Project: 4305-18-175A ; PARCEL 140

Samples taken: Monday, February 18, 2019
 Samples extracted: Monday, February 18, 2019
 Samples analysed: Monday, February 18, 2019

Operator: MAX MOYER

											F03640		
Matrix	Sample ID	Dilution used	BTEX (C6 - C9)	GRO (C5 - C10)	DRO (C10 - C35)	TPH (C5 - C35)	Total Aromatics (C10-C35)	16 EPA PAHs	BaP	Ratios			HC Fingerprint Match
										% light	% mid	% heavy	
Soil	B-7 (4-6')	20.5	<0.51	<0.51	62.8	62.8	31.1	1.1	<0.001	0	99.4	0.6	Deg.Diesel 92.3%,(FCM)
Soil	B-7 (2-4')	19.4	<0.49	<0.49	<0.19	0.03	0.03	0.004	<0.006	0	100	0	Residual HC
Initial Calibrator QC check			OK			Final FCM QC Check			OK			103.0%	

Results generated by a QED HC-1 analyser. Concentration values in mg/kg for soil samples and mg/L for water samples. Soil values are not corrected for moisture or stone content
 Fingerprints provide a tentative hydrocarbon identification. The abbreviations are:- FCM = Results calculated using Fundamental Calibration Mode : % = confidence for sample fingerprint match to library
 (SBS) or (LBS) = Site Specific or Library Background Subtraction applied to result : (PFM) = Poor Fingerprint Match : (T) = Turbid : (P) = Particulate present





Hydrocarbon Analysis Results

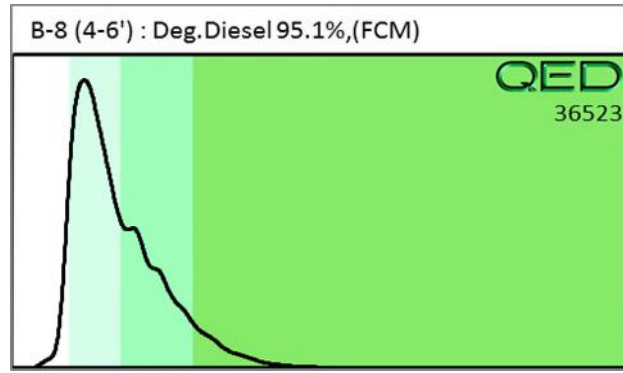
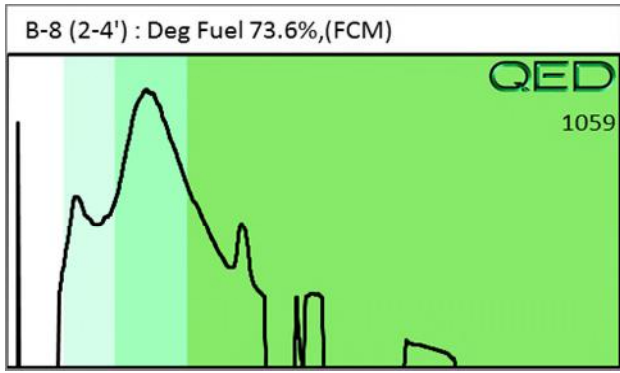
Client: S&ME
 Address:
 Contact: JAMIE HONEYCUTT
 Project: 4305-18-175A ; PARCEL 140

Samples taken: Monday, February 18, 2019
 Samples extracted: Monday, February 18, 2019
 Samples analysed: Monday, February 18, 2019

Operator: MAX MOYER

											F03640		
Matrix	Sample ID	Dilution used	BTEX (C6 - C9)	GRO (C5 - C10)	DRO (C10 - C35)	TPH (C5 - C35)	Total Aromatics (C10-C35)	16 EPA PAHs	BaP	Ratios			HC Fingerprint Match
										% light	% mid	% heavy	
Soil	B-8 (2-4')	33.7	<0.84	<0.84	1.9	1.9	1.2	0.06	<0.01	0	97.8	2.2	Deg Fuel 73.6%,(FCM)
Soil	B-8 (4-6')	18.7	<0.47	<0.47	72.7	72.7	31.5	1.2	<0.006	0	99.5	0.5	Deg.Diesel 95.1%,(FCM)
Initial Calibrator QC check			OK			Final FCM QC Check			OK			100.5%	

Results generated by a QED HC-1 analyser. Concentration values in mg/kg for soil samples and mg/L for water samples. Soil values are not corrected for moisture or stone content
 Fingerprints provide a tentative hydrocarbon identification. The abbreviations are:- FCM = Results calculated using Fundamental Calibration Mode : % = confidence for sample fingerprint match to library
 (SBS) or (LBS) = Site Specific or Library Background Subtraction applied to result : (PFM) = Poor Fingerprint Match : (T) = Turbid : (P) = Particulate present



March 1, 2019

Jamie Honeycutt
S&ME, Inc - Raleigh, NC
3201 Spring Forest Rd.
Raleigh, NC 27616

Project Location: 60 Robin Hood Road, Dunn, NC
Client Job Number:
Project Number: 4305-18-175A
Laboratory Work Order Number: 19B0931

Enclosed are results of analyses for samples received by the laboratory on February 20, 2019. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Kerry K. McGee". The signature is written in a cursive, flowing style.

Kerry K. McGee
Project Manager

Table of Contents

Sample Summary	3
Hits Only Report	4
Case Narrative	5
Sample Results	8
19B0931-01	8
19B0931-02	11
Sample Preparation Information	14
QC Data	15
Volatile Organic Compounds by GC/MS	15
B224172	15
Semivolatile Organic Compounds by GC/MS	20
B224345	20
Flag/Qualifier Summary	22
Certifications	23
Chain of Custody/Sample Receipt	26

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

S&ME, Inc - Raleigh, NC
3201 Spring Forest Rd.
Raleigh, NC 27616
ATTN: Jamie Honeycutt

REPORT DATE: 3/1/2019

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 4305-18-175A

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 19B0931

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: 60 Robin Hood Road, Dunn, NC

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
B-7/ TW-1	19B0931-01	Ground Water		SW-846 8260D SW-846 8270D	
B-8/ TW-2	19B0931-02	Ground Water		SW-846 8260D SW-846 8270D	

EXECUTIVE SUMMARY

Client ID: **B-7/ TW-1**

Lab ID: **19B0931-01**

Analyte	Results/Qual	DL	RL	Units	Method
1,2,4-Trimethylbenzene	69	0.36	2.0	µg/L	SW-846 8260D
1,3,5-Trimethylbenzene	16	0.26	2.0	µg/L	SW-846 8260D
Benzene	27	0.24	2.0	µg/L	SW-846 8260D
Ethylbenzene	120	0.26	2.0	µg/L	SW-846 8260D
Isopropylbenzene (Cumene)	5.0	0.24	2.0	µg/L	SW-846 8260D
m+p Xylene	230	0.51	4.0	µg/L	SW-846 8260D
Methyl tert-Butyl Ether (MTBE)	3.4	0.18	2.0	µg/L	SW-846 8260D
Naphthalene	110	0.24	10	µg/L	SW-846 8260D
n-Butylbenzene	2.2	0.30	2.0	µg/L	SW-846 8260D
n-Propylbenzene	8.5	0.26	2.0	µg/L	SW-846 8260D
o-Xylene	140	0.26	2.0	µg/L	SW-846 8260D
p-Isopropyltoluene (p-Cymene)	0.94 J	0.30	2.0	µg/L	SW-846 8260D
sec-Butylbenzene	1.3 J	0.26	2.0	µg/L	SW-846 8260D
tert-Amyl Methyl Ether (TAME)	2.5	0.21	1.0	µg/L	SW-846 8260D
Toluene	41	0.34	2.0	µg/L	SW-846 8260D
2-Methylnaphthalene (SIM)	39	1.6	25	µg/L	SW-846 8270D
Acenaphthene (SIM)	1.2 J	0.82	7.5	µg/L	SW-846 8270D
Fluorene (SIM)	1.6 J	0.85	25	µg/L	SW-846 8270D
Naphthalene (SIM)	55	6.4	25	µg/L	SW-846 8270D
Phenanthrene (SIM)	1.6	0.75	1.2	µg/L	SW-846 8270D

Client ID: **B-8/ TW-2**

Lab ID: **19B0931-02**

Analyte	Results/Qual	DL	RL	Units	Method
Ethylbenzene	0.66 J	0.26	2.0	µg/L	SW-846 8260D
Isopropylbenzene (Cumene)	1.3 J	0.24	2.0	µg/L	SW-846 8260D
Naphthalene	87	0.24	10	µg/L	SW-846 8260D
n-Butylbenzene	5.3	0.30	2.0	µg/L	SW-846 8260D
n-Propylbenzene	3.2	0.26	2.0	µg/L	SW-846 8260D
p-Isopropyltoluene (p-Cymene)	4.6	0.30	2.0	µg/L	SW-846 8260D
sec-Butylbenzene	7.6	0.26	2.0	µg/L	SW-846 8260D
tert-Butylbenzene	0.58 J	0.24	2.0	µg/L	SW-846 8260D
2-Methylnaphthalene (SIM)	160	3.2	51	µg/L	SW-846 8270D
Acenaphthene (SIM)	13	0.34	3.1	µg/L	SW-846 8270D
Acenaphthylene (SIM)	5.0	0.36	2.0	µg/L	SW-846 8270D
Anthracene (SIM)	6.7	0.33	2.0	µg/L	SW-846 8270D
Benzo(a)anthracene (SIM)	0.20 J	0.16	0.51	µg/L	SW-846 8270D
Chrysene (SIM)	0.36 J	0.15	2.0	µg/L	SW-846 8270D
Fluoranthene (SIM)	0.81 J	0.26	5.1	µg/L	SW-846 8270D
Fluorene (SIM)	31	0.35	10	µg/L	SW-846 8270D
Naphthalene (SIM)	38	2.6	10	µg/L	SW-846 8270D
Phenanthrene (SIM)	76	0.31	0.51	µg/L	SW-846 8270D
Pyrene (SIM)	4.4 J	0.23	10	µg/L	SW-846 8270D

Con-Test does not accept liability for the consequences of any actions taken solely on the basis of the information provided in the Executive Summary section of this report. Users must review this report in its entirety to determine data usability and assessment.

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

For method 8270, only PAHs were requested and reported.

For method 8260D, elevated reporting limits for sample(s) 19B0931-01 due to a high concentration of target compounds.

For method 8260D, elevated reporting limits for sample(s) 19B0931-02 due to a high concentration of non-target compounds.

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332
SW-846 8260D

Qualifications:**L-07A**

Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD outside of control limits. Reduced precision anticipated for any reported result for this compound.

Analyte & Samples(s) Qualified:**Vinyl Acetate**

B224172-BS1

R-05

Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.

Analyte & Samples(s) Qualified:**Acetone**

19B0931-01[B-7/ TW-1], 19B0931-02[B-8/ TW-2], B224172-BLK1, B224172-BS1, B224172-BSD1, S032911-CCV1

Vinyl Acetate

B224172-BLK1, B224172-BS1, B224172-BSD1, S032911-CCV1

RL-11

Elevated reporting limit due to high concentration of target compounds.

Analyte & Samples(s) Qualified:

19B0931-01[B-7/ TW-1]

RL-13

Elevated reporting limit due to high concentration of non-target compounds.

Analyte & Samples(s) Qualified:

19B0931-02[B-8/ TW-2]

V-16

Response factor is less than method specified minimum acceptable value. Reduced precision and accuracy may be associated with reported result.

Analyte & Samples(s) Qualified:**1,4-Dioxane**

19B0931-01[B-7/ TW-1], 19B0931-02[B-8/ TW-2], B224172-BLK1, B224172-BS1, B224172-BSD1, S032911-CCV1

V-20

Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

Analyte & Samples(s) Qualified:**Bromochloromethane**

B224172-BS1, B224172-BSD1, S032911-CCV1

V-36

Initial calibration verification (ICV) did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

Analyte & Samples(s) Qualified:**Carbon Disulfide**

B224172-BS1, B224172-BSD1, S032911-CCV1

SW-846 8270D

Qualifications:**I-02**

Result not attainable due to sample matrix interferences (a chemical or physical interference which could not be eliminated).

Analyte & Samples(s) Qualified:**Acenaphthene-d10**

19B0931-02RE1[B-8/ TW-2]

S-02

The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.

Analyte & Samples(s) Qualified:**2-Fluorobiphenyl**

19B0931-02RE1[B-8/ TW-2]

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

A handwritten signature in black ink, appearing to read "Lisa A. Worthington", is written over a light gray rectangular background.

Lisa A. Worthington
Project Manager

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 60 Robin Hood Road, Dunn, NC

Sample Description:

Work Order: 19B0931

Date Received: 2/20/2019

Field Sample #: B-7/ TW-1

Sampled: 2/18/2019 14:15

Sample ID: 19B0931-01

Sample Matrix: Ground Water

Sample Flags: RL-11

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	100	19	µg/L	2	R-05	SW-846 8260D	2/22/19	2/27/19 5:29	LBD
Acrylonitrile	ND	10	1.2	µg/L	2		SW-846 8260D	2/22/19	2/27/19 5:29	LBD
tert-Amyl Methyl Ether (TAME)	2.5	1.0	0.21	µg/L	2		SW-846 8260D	2/22/19	2/27/19 5:29	LBD
Benzene	27	2.0	0.24	µg/L	2		SW-846 8260D	2/22/19	2/27/19 5:29	LBD
Bromobenzene	ND	2.0	0.30	µg/L	2		SW-846 8260D	2/22/19	2/27/19 5:29	LBD
Bromochloromethane	ND	2.0	0.45	µg/L	2		SW-846 8260D	2/22/19	2/27/19 5:29	LBD
Bromodichloromethane	ND	1.0	0.59	µg/L	2		SW-846 8260D	2/22/19	2/27/19 5:29	LBD
Bromoform	ND	2.0	0.42	µg/L	2		SW-846 8260D	2/22/19	2/27/19 5:29	LBD
Bromomethane	ND	4.0	1.9	µg/L	2		SW-846 8260D	2/22/19	2/27/19 5:29	LBD
2-Butanone (MEK)	ND	40	4.7	µg/L	2		SW-846 8260D	2/22/19	2/27/19 5:29	LBD
tert-Butyl Alcohol (TBA)	ND	40	4.3	µg/L	2		SW-846 8260D	2/22/19	2/27/19 5:29	LBD
n-Butylbenzene	2.2	2.0	0.30	µg/L	2		SW-846 8260D	2/22/19	2/27/19 5:29	LBD
sec-Butylbenzene	1.3	2.0	0.26	µg/L	2	J	SW-846 8260D	2/22/19	2/27/19 5:29	LBD
tert-Butylbenzene	ND	2.0	0.24	µg/L	2		SW-846 8260D	2/22/19	2/27/19 5:29	LBD
tert-Butyl Ethyl Ether (TBEE)	ND	1.0	0.19	µg/L	2		SW-846 8260D	2/22/19	2/27/19 5:29	LBD
Carbon Disulfide	ND	8.0	2.0	µg/L	2		SW-846 8260D	2/22/19	2/27/19 5:29	LBD
Carbon Tetrachloride	ND	10	0.49	µg/L	2		SW-846 8260D	2/22/19	2/27/19 5:29	LBD
Chlorobenzene	ND	2.0	0.32	µg/L	2		SW-846 8260D	2/22/19	2/27/19 5:29	LBD
Chlorodibromomethane	ND	1.0	0.21	µg/L	2		SW-846 8260D	2/22/19	2/27/19 5:29	LBD
Chloroethane	ND	4.0	0.56	µg/L	2		SW-846 8260D	2/22/19	2/27/19 5:29	LBD
Chloroform	ND	4.0	0.44	µg/L	2		SW-846 8260D	2/22/19	2/27/19 5:29	LBD
Chloromethane	ND	4.0	1.1	µg/L	2		SW-846 8260D	2/22/19	2/27/19 5:29	LBD
2-Chlorotoluene	ND	2.0	0.24	µg/L	2		SW-846 8260D	2/22/19	2/27/19 5:29	LBD
4-Chlorotoluene	ND	2.0	0.28	µg/L	2		SW-846 8260D	2/22/19	2/27/19 5:29	LBD
1,2-Dibromo-3-chloropropane (DBCP)	ND	10	0.74	µg/L	2		SW-846 8260D	2/22/19	2/27/19 5:29	LBD
1,2-Dibromoethane (EDB)	ND	1.0	0.30	µg/L	2		SW-846 8260D	2/22/19	2/27/19 5:29	LBD
Dibromomethane	ND	2.0	0.32	µg/L	2		SW-846 8260D	2/22/19	2/27/19 5:29	LBD
1,2-Dichlorobenzene	ND	2.0	0.34	µg/L	2		SW-846 8260D	2/22/19	2/27/19 5:29	LBD
1,3-Dichlorobenzene	ND	2.0	0.34	µg/L	2		SW-846 8260D	2/22/19	2/27/19 5:29	LBD
1,4-Dichlorobenzene	ND	2.0	0.30	µg/L	2		SW-846 8260D	2/22/19	2/27/19 5:29	LBD
trans-1,4-Dichloro-2-butene	ND	4.0	0.62	µg/L	2		SW-846 8260D	2/22/19	2/27/19 5:29	LBD
Dichlorodifluoromethane (Freon 12)	ND	4.0	0.57	µg/L	2		SW-846 8260D	2/22/19	2/27/19 5:29	LBD
1,1-Dichloroethane	ND	2.0	0.32	µg/L	2		SW-846 8260D	2/22/19	2/27/19 5:29	LBD
1,2-Dichloroethane	ND	2.0	0.39	µg/L	2		SW-846 8260D	2/22/19	2/27/19 5:29	LBD
1,1-Dichloroethylene	ND	2.0	0.42	µg/L	2		SW-846 8260D	2/22/19	2/27/19 5:29	LBD
cis-1,2-Dichloroethylene	ND	2.0	0.29	µg/L	2		SW-846 8260D	2/22/19	2/27/19 5:29	LBD
trans-1,2-Dichloroethylene	ND	2.0	0.30	µg/L	2		SW-846 8260D	2/22/19	2/27/19 5:29	LBD
1,2-Dichloropropane	ND	2.0	0.26	µg/L	2		SW-846 8260D	2/22/19	2/27/19 5:29	LBD
1,3-Dichloropropane	ND	1.0	0.26	µg/L	2		SW-846 8260D	2/22/19	2/27/19 5:29	LBD
2,2-Dichloropropane	ND	2.0	0.43	µg/L	2		SW-846 8260D	2/22/19	2/27/19 5:29	LBD
1,1-Dichloropropene	ND	4.0	0.26	µg/L	2		SW-846 8260D	2/22/19	2/27/19 5:29	LBD
cis-1,3-Dichloropropene	ND	1.0	0.24	µg/L	2		SW-846 8260D	2/22/19	2/27/19 5:29	LBD
trans-1,3-Dichloropropene	ND	1.0	0.22	µg/L	2		SW-846 8260D	2/22/19	2/27/19 5:29	LBD
Diethyl Ether	ND	4.0	0.44	µg/L	2		SW-846 8260D	2/22/19	2/27/19 5:29	LBD

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 60 Robin Hood Road, Dunn, NC

Sample Description:

Work Order: 19B0931

Date Received: 2/20/2019

Field Sample #: B-7/ TW-1

Sampled: 2/18/2019 14:15

Sample ID: 19B0931-01

Sample Matrix: Ground Water

Sample Flags: RL-11

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Diisopropyl Ether (DIPE)	ND	1.0	0.36	µg/L	2		SW-846 8260D	2/22/19	2/27/19 5:29	LBD
1,4-Dioxane	ND	100	53	µg/L	2	V-16	SW-846 8260D	2/22/19	2/27/19 5:29	LBD
Ethylbenzene	120	2.0	0.26	µg/L	2		SW-846 8260D	2/22/19	2/27/19 5:29	LBD
Hexachlorobutadiene	ND	2.0	1.2	µg/L	2		SW-846 8260D	2/22/19	2/27/19 5:29	LBD
2-Hexanone (MBK)	ND	20	3.0	µg/L	2		SW-846 8260D	2/22/19	2/27/19 5:29	LBD
Isopropylbenzene (Cumene)	5.0	2.0	0.24	µg/L	2		SW-846 8260D	2/22/19	2/27/19 5:29	LBD
p-Isopropyltoluene (p-Cymene)	0.94	2.0	0.30	µg/L	2	J	SW-846 8260D	2/22/19	2/27/19 5:29	LBD
Methyl tert-Butyl Ether (MTBE)	3.4	2.0	0.18	µg/L	2		SW-846 8260D	2/22/19	2/27/19 5:29	LBD
Methylene Chloride	ND	10	6.4	µg/L	2		SW-846 8260D	2/22/19	2/27/19 5:29	LBD
4-Methyl-2-pentanone (MIBK)	ND	20	2.9	µg/L	2		SW-846 8260D	2/22/19	2/27/19 5:29	LBD
Naphthalene	110	10	0.24	µg/L	2		SW-846 8260D	2/22/19	2/27/19 5:29	LBD
n-Propylbenzene	8.5	2.0	0.26	µg/L	2		SW-846 8260D	2/22/19	2/27/19 5:29	LBD
Styrene	ND	2.0	0.30	µg/L	2		SW-846 8260D	2/22/19	2/27/19 5:29	LBD
1,1,1,2-Tetrachloroethane	ND	2.0	0.24	µg/L	2		SW-846 8260D	2/22/19	2/27/19 5:29	LBD
1,1,2,2-Tetrachloroethane	ND	1.0	0.32	µg/L	2		SW-846 8260D	2/22/19	2/27/19 5:29	LBD
Tetrachloroethylene	ND	2.0	0.54	µg/L	2		SW-846 8260D	2/22/19	2/27/19 5:29	LBD
Tetrahydrofuran	ND	20	2.1	µg/L	2		SW-846 8260D	2/22/19	2/27/19 5:29	LBD
Toluene	41	2.0	0.34	µg/L	2		SW-846 8260D	2/22/19	2/27/19 5:29	LBD
1,2,3-Trichlorobenzene	ND	10	0.28	µg/L	2		SW-846 8260D	2/22/19	2/27/19 5:29	LBD
1,2,4-Trichlorobenzene	ND	2.0	0.38	µg/L	2		SW-846 8260D	2/22/19	2/27/19 5:29	LBD
1,3,5-Trichlorobenzene	ND	2.0	0.34	µg/L	2		SW-846 8260D	2/22/19	2/27/19 5:29	LBD
1,1,1-Trichloroethane	ND	2.0	0.26	µg/L	2		SW-846 8260D	2/22/19	2/27/19 5:29	LBD
1,1,2-Trichloroethane	ND	2.0	0.47	µg/L	2		SW-846 8260D	2/22/19	2/27/19 5:29	LBD
Trichloroethylene	ND	2.0	0.40	µg/L	2		SW-846 8260D	2/22/19	2/27/19 5:29	LBD
Trichlorofluoromethane (Freon 11)	ND	4.0	0.29	µg/L	2		SW-846 8260D	2/22/19	2/27/19 5:29	LBD
1,2,3-Trichloropropane	ND	4.0	0.43	µg/L	2		SW-846 8260D	2/22/19	2/27/19 5:29	LBD
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	2.0	0.39	µg/L	2		SW-846 8260D	2/22/19	2/27/19 5:29	LBD
1,2,4-Trimethylbenzene	69	2.0	0.36	µg/L	2		SW-846 8260D	2/22/19	2/27/19 5:29	LBD
1,3,5-Trimethylbenzene	16	2.0	0.26	µg/L	2		SW-846 8260D	2/22/19	2/27/19 5:29	LBD
Vinyl Chloride	ND	4.0	0.27	µg/L	2		SW-846 8260D	2/22/19	2/27/19 5:29	LBD
m+p Xylene	230	4.0	0.51	µg/L	2		SW-846 8260D	2/22/19	2/27/19 5:29	LBD
o-Xylene	140	2.0	0.26	µg/L	2		SW-846 8260D	2/22/19	2/27/19 5:29	LBD

Surrogates	% Recovery	Recovery Limits	Flag/Qual
1,2-Dichloroethane-d4	91.9	70-130	2/27/19 5:29
Toluene-d8	99.8	70-130	2/27/19 5:29
4-Bromofluorobenzene	100	70-130	2/27/19 5:29

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 60 Robin Hood Road, Dunn, NC

Sample Description:

Work Order: 19B0931

Date Received: 2/20/2019

Field Sample #: B-7/TW-1

Sampled: 2/18/2019 14:15

Sample ID: 19B0931-01

Sample Matrix: Ground Water

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene (SIM)	1.2	7.5	0.82	µg/L	25	J	SW-846 8270D	2/23/19	2/27/19 13:56	CLA
Acenaphthylene (SIM)	ND	5.0	0.88	µg/L	25		SW-846 8270D	2/23/19	2/27/19 13:56	CLA
Anthracene (SIM)	ND	5.0	0.80	µg/L	25		SW-846 8270D	2/23/19	2/27/19 13:56	CLA
Benzo(a)anthracene (SIM)	ND	1.2	0.40	µg/L	25		SW-846 8270D	2/23/19	2/27/19 13:56	CLA
Benzo(a)pyrene (SIM)	ND	2.5	0.30	µg/L	25		SW-846 8270D	2/23/19	2/27/19 13:56	CLA
Benzo(b)fluoranthene (SIM)	ND	1.2	0.38	µg/L	25		SW-846 8270D	2/23/19	2/27/19 13:56	CLA
Benzo(g,h,i)perylene (SIM)	ND	12	0.45	µg/L	25		SW-846 8270D	2/23/19	2/27/19 13:56	CLA
Benzo(k)fluoranthene (SIM)	ND	5.0	0.30	µg/L	25		SW-846 8270D	2/23/19	2/27/19 13:56	CLA
Chrysene (SIM)	ND	5.0	0.38	µg/L	25		SW-846 8270D	2/23/19	2/27/19 13:56	CLA
Dibenz(a,h)anthracene (SIM)	ND	2.5	0.42	µg/L	25		SW-846 8270D	2/23/19	2/27/19 13:56	CLA
Fluoranthene (SIM)	ND	12	0.62	µg/L	25		SW-846 8270D	2/23/19	2/27/19 13:56	CLA
Fluorene (SIM)	1.6	25	0.85	µg/L	25	J	SW-846 8270D	2/23/19	2/27/19 13:56	CLA
Indeno(1,2,3-cd)pyrene (SIM)	ND	2.5	0.45	µg/L	25		SW-846 8270D	2/23/19	2/27/19 13:56	CLA
2-Methylnaphthalene (SIM)	39	25	1.6	µg/L	25		SW-846 8270D	2/23/19	2/27/19 13:56	CLA
Naphthalene (SIM)	55	25	6.4	µg/L	25		SW-846 8270D	2/23/19	2/27/19 13:56	CLA
Phenanthrene (SIM)	1.6	1.2	0.75	µg/L	25		SW-846 8270D	2/23/19	2/27/19 13:56	CLA
Pyrene (SIM)	ND	25	0.58	µg/L	25		SW-846 8270D	2/23/19	2/27/19 13:56	CLA
Surrogates		% Recovery	Recovery Limits			Flag/Qual				
Nitrobenzene-d5 (SIM)		67.8	30-130						2/27/19 13:56	
2-Fluorobiphenyl		48.6	30-130						2/27/19 13:56	
p-Terphenyl-d14		44.7	30-130						2/27/19 13:56	

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 60 Robin Hood Road, Dunn, NC

Sample Description:

Work Order: 19B0931

Date Received: 2/20/2019

Field Sample #: B-8/ TW-2

Sampled: 2/18/2019 15:15

Sample ID: 19B0931-02

Sample Matrix: Ground Water

Sample Flags: RL-13

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	100	19	µg/L	2	R-05	SW-846 8260D	2/22/19	2/27/19 4:58	LBD
Acrylonitrile	ND	10	1.2	µg/L	2		SW-846 8260D	2/22/19	2/27/19 4:58	LBD
tert-Amyl Methyl Ether (TAME)	ND	1.0	0.21	µg/L	2		SW-846 8260D	2/22/19	2/27/19 4:58	LBD
Benzene	ND	2.0	0.24	µg/L	2		SW-846 8260D	2/22/19	2/27/19 4:58	LBD
Bromobenzene	ND	2.0	0.30	µg/L	2		SW-846 8260D	2/22/19	2/27/19 4:58	LBD
Bromochloromethane	ND	2.0	0.45	µg/L	2		SW-846 8260D	2/22/19	2/27/19 4:58	LBD
Bromodichloromethane	ND	1.0	0.59	µg/L	2		SW-846 8260D	2/22/19	2/27/19 4:58	LBD
Bromoform	ND	2.0	0.42	µg/L	2		SW-846 8260D	2/22/19	2/27/19 4:58	LBD
Bromomethane	ND	4.0	1.9	µg/L	2		SW-846 8260D	2/22/19	2/27/19 4:58	LBD
2-Butanone (MEK)	ND	40	4.7	µg/L	2		SW-846 8260D	2/22/19	2/27/19 4:58	LBD
tert-Butyl Alcohol (TBA)	ND	40	4.3	µg/L	2		SW-846 8260D	2/22/19	2/27/19 4:58	LBD
n-Butylbenzene	5.3	2.0	0.30	µg/L	2		SW-846 8260D	2/22/19	2/27/19 4:58	LBD
sec-Butylbenzene	7.6	2.0	0.26	µg/L	2		SW-846 8260D	2/22/19	2/27/19 4:58	LBD
tert-Butylbenzene	0.58	2.0	0.24	µg/L	2	J	SW-846 8260D	2/22/19	2/27/19 4:58	LBD
tert-Butyl Ethyl Ether (TBEE)	ND	1.0	0.19	µg/L	2		SW-846 8260D	2/22/19	2/27/19 4:58	LBD
Carbon Disulfide	ND	8.0	2.0	µg/L	2		SW-846 8260D	2/22/19	2/27/19 4:58	LBD
Carbon Tetrachloride	ND	10	0.49	µg/L	2		SW-846 8260D	2/22/19	2/27/19 4:58	LBD
Chlorobenzene	ND	2.0	0.32	µg/L	2		SW-846 8260D	2/22/19	2/27/19 4:58	LBD
Chlorodibromomethane	ND	1.0	0.21	µg/L	2		SW-846 8260D	2/22/19	2/27/19 4:58	LBD
Chloroethane	ND	4.0	0.56	µg/L	2		SW-846 8260D	2/22/19	2/27/19 4:58	LBD
Chloroform	ND	4.0	0.44	µg/L	2		SW-846 8260D	2/22/19	2/27/19 4:58	LBD
Chloromethane	ND	4.0	1.1	µg/L	2		SW-846 8260D	2/22/19	2/27/19 4:58	LBD
2-Chlorotoluene	ND	2.0	0.24	µg/L	2		SW-846 8260D	2/22/19	2/27/19 4:58	LBD
4-Chlorotoluene	ND	2.0	0.28	µg/L	2		SW-846 8260D	2/22/19	2/27/19 4:58	LBD
1,2-Dibromo-3-chloropropane (DBCP)	ND	10	0.74	µg/L	2		SW-846 8260D	2/22/19	2/27/19 4:58	LBD
1,2-Dibromoethane (EDB)	ND	1.0	0.30	µg/L	2		SW-846 8260D	2/22/19	2/27/19 4:58	LBD
Dibromomethane	ND	2.0	0.32	µg/L	2		SW-846 8260D	2/22/19	2/27/19 4:58	LBD
1,2-Dichlorobenzene	ND	2.0	0.34	µg/L	2		SW-846 8260D	2/22/19	2/27/19 4:58	LBD
1,3-Dichlorobenzene	ND	2.0	0.34	µg/L	2		SW-846 8260D	2/22/19	2/27/19 4:58	LBD
1,4-Dichlorobenzene	ND	2.0	0.30	µg/L	2		SW-846 8260D	2/22/19	2/27/19 4:58	LBD
trans-1,4-Dichloro-2-butene	ND	4.0	0.62	µg/L	2		SW-846 8260D	2/22/19	2/27/19 4:58	LBD
Dichlorodifluoromethane (Freon 12)	ND	4.0	0.57	µg/L	2		SW-846 8260D	2/22/19	2/27/19 4:58	LBD
1,1-Dichloroethane	ND	2.0	0.32	µg/L	2		SW-846 8260D	2/22/19	2/27/19 4:58	LBD
1,2-Dichloroethane	ND	2.0	0.39	µg/L	2		SW-846 8260D	2/22/19	2/27/19 4:58	LBD
1,1-Dichloroethylene	ND	2.0	0.42	µg/L	2		SW-846 8260D	2/22/19	2/27/19 4:58	LBD
cis-1,2-Dichloroethylene	ND	2.0	0.29	µg/L	2		SW-846 8260D	2/22/19	2/27/19 4:58	LBD
trans-1,2-Dichloroethylene	ND	2.0	0.30	µg/L	2		SW-846 8260D	2/22/19	2/27/19 4:58	LBD
1,2-Dichloropropane	ND	2.0	0.26	µg/L	2		SW-846 8260D	2/22/19	2/27/19 4:58	LBD
1,3-Dichloropropane	ND	1.0	0.26	µg/L	2		SW-846 8260D	2/22/19	2/27/19 4:58	LBD
2,2-Dichloropropane	ND	2.0	0.43	µg/L	2		SW-846 8260D	2/22/19	2/27/19 4:58	LBD
1,1-Dichloropropene	ND	4.0	0.26	µg/L	2		SW-846 8260D	2/22/19	2/27/19 4:58	LBD
cis-1,3-Dichloropropene	ND	1.0	0.24	µg/L	2		SW-846 8260D	2/22/19	2/27/19 4:58	LBD
trans-1,3-Dichloropropene	ND	1.0	0.22	µg/L	2		SW-846 8260D	2/22/19	2/27/19 4:58	LBD
Diethyl Ether	ND	4.0	0.44	µg/L	2		SW-846 8260D	2/22/19	2/27/19 4:58	LBD

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 60 Robin Hood Road, Dunn, NC

Sample Description:

Work Order: 19B0931

Date Received: 2/20/2019

Field Sample #: B-8/ TW-2

Sampled: 2/18/2019 15:15

Sample ID: 19B0931-02

Sample Matrix: Ground Water

Sample Flags: RL-13

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Diisopropyl Ether (DIPE)	ND	1.0	0.36	µg/L	2		SW-846 8260D	2/22/19	2/27/19 4:58	LBD
1,4-Dioxane	ND	100	53	µg/L	2	V-16	SW-846 8260D	2/22/19	2/27/19 4:58	LBD
Ethylbenzene	0.66	2.0	0.26	µg/L	2	J	SW-846 8260D	2/22/19	2/27/19 4:58	LBD
Hexachlorobutadiene	ND	2.0	1.2	µg/L	2		SW-846 8260D	2/22/19	2/27/19 4:58	LBD
2-Hexanone (MBK)	ND	20	3.0	µg/L	2		SW-846 8260D	2/22/19	2/27/19 4:58	LBD
Isopropylbenzene (Cumene)	1.3	2.0	0.24	µg/L	2	J	SW-846 8260D	2/22/19	2/27/19 4:58	LBD
p-Isopropyltoluene (p-Cymene)	4.6	2.0	0.30	µg/L	2		SW-846 8260D	2/22/19	2/27/19 4:58	LBD
Methyl tert-Butyl Ether (MTBE)	ND	2.0	0.18	µg/L	2		SW-846 8260D	2/22/19	2/27/19 4:58	LBD
Methylene Chloride	ND	10	6.4	µg/L	2		SW-846 8260D	2/22/19	2/27/19 4:58	LBD
4-Methyl-2-pentanone (MIBK)	ND	20	2.9	µg/L	2		SW-846 8260D	2/22/19	2/27/19 4:58	LBD
Naphthalene	87	10	0.24	µg/L	2		SW-846 8260D	2/22/19	2/27/19 4:58	LBD
n-Propylbenzene	3.2	2.0	0.26	µg/L	2		SW-846 8260D	2/22/19	2/27/19 4:58	LBD
Styrene	ND	2.0	0.30	µg/L	2		SW-846 8260D	2/22/19	2/27/19 4:58	LBD
1,1,1,2-Tetrachloroethane	ND	2.0	0.24	µg/L	2		SW-846 8260D	2/22/19	2/27/19 4:58	LBD
1,1,2,2-Tetrachloroethane	ND	1.0	0.32	µg/L	2		SW-846 8260D	2/22/19	2/27/19 4:58	LBD
Tetrachloroethylene	ND	2.0	0.54	µg/L	2		SW-846 8260D	2/22/19	2/27/19 4:58	LBD
Tetrahydrofuran	ND	20	2.1	µg/L	2		SW-846 8260D	2/22/19	2/27/19 4:58	LBD
Toluene	ND	2.0	0.34	µg/L	2		SW-846 8260D	2/22/19	2/27/19 4:58	LBD
1,2,3-Trichlorobenzene	ND	10	0.28	µg/L	2		SW-846 8260D	2/22/19	2/27/19 4:58	LBD
1,2,4-Trichlorobenzene	ND	2.0	0.38	µg/L	2		SW-846 8260D	2/22/19	2/27/19 4:58	LBD
1,3,5-Trichlorobenzene	ND	2.0	0.34	µg/L	2		SW-846 8260D	2/22/19	2/27/19 4:58	LBD
1,1,1-Trichloroethane	ND	2.0	0.26	µg/L	2		SW-846 8260D	2/22/19	2/27/19 4:58	LBD
1,1,2-Trichloroethane	ND	2.0	0.47	µg/L	2		SW-846 8260D	2/22/19	2/27/19 4:58	LBD
Trichloroethylene	ND	2.0	0.40	µg/L	2		SW-846 8260D	2/22/19	2/27/19 4:58	LBD
Trichlorofluoromethane (Freon 11)	ND	4.0	0.29	µg/L	2		SW-846 8260D	2/22/19	2/27/19 4:58	LBD
1,2,3-Trichloropropane	ND	4.0	0.43	µg/L	2		SW-846 8260D	2/22/19	2/27/19 4:58	LBD
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	2.0	0.39	µg/L	2		SW-846 8260D	2/22/19	2/27/19 4:58	LBD
1,2,4-Trimethylbenzene	ND	2.0	0.36	µg/L	2		SW-846 8260D	2/22/19	2/27/19 4:58	LBD
1,3,5-Trimethylbenzene	ND	2.0	0.26	µg/L	2		SW-846 8260D	2/22/19	2/27/19 4:58	LBD
Vinyl Chloride	ND	4.0	0.27	µg/L	2		SW-846 8260D	2/22/19	2/27/19 4:58	LBD
m+p Xylene	ND	4.0	0.51	µg/L	2		SW-846 8260D	2/22/19	2/27/19 4:58	LBD
o-Xylene	ND	2.0	0.26	µg/L	2		SW-846 8260D	2/22/19	2/27/19 4:58	LBD

Surrogates	% Recovery	Recovery Limits	Flag/Qual
1,2-Dichloroethane-d4	95.9	70-130	2/27/19 4:58
Toluene-d8	98.4	70-130	2/27/19 4:58
4-Bromofluorobenzene	105	70-130	2/27/19 4:58

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 60 Robin Hood Road, Dunn, NC

Sample Description:

Work Order: 19B0931

Date Received: 2/20/2019

Field Sample #: B-8/ TW-2

Sampled: 2/18/2019 15:15

Sample ID: 19B0931-02

Sample Matrix: Ground Water

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene (SIM)	13	3.1	0.34	µg/L	10		SW-846 8270D	2/23/19	2/27/19 14:24	CLA
Acenaphthylene (SIM)	5.0	2.0	0.36	µg/L	10		SW-846 8270D	2/23/19	2/27/19 14:24	CLA
Anthracene (SIM)	6.7	2.0	0.33	µg/L	10		SW-846 8270D	2/23/19	2/27/19 14:24	CLA
Benzo(a)anthracene (SIM)	0.20	0.51	0.16	µg/L	10	J	SW-846 8270D	2/23/19	2/27/19 14:24	CLA
Benzo(a)pyrene (SIM)	ND	1.0	0.12	µg/L	10		SW-846 8270D	2/23/19	2/27/19 14:24	CLA
Benzo(b)fluoranthene (SIM)	ND	0.51	0.15	µg/L	10		SW-846 8270D	2/23/19	2/27/19 14:24	CLA
Benzo(g,h,i)perylene (SIM)	ND	5.1	0.18	µg/L	10		SW-846 8270D	2/23/19	2/27/19 14:24	CLA
Benzo(k)fluoranthene (SIM)	ND	2.0	0.12	µg/L	10		SW-846 8270D	2/23/19	2/27/19 14:24	CLA
Chrysene (SIM)	0.36	2.0	0.15	µg/L	10	J	SW-846 8270D	2/23/19	2/27/19 14:24	CLA
Dibenz(a,h)anthracene (SIM)	ND	1.0	0.17	µg/L	10		SW-846 8270D	2/23/19	2/27/19 14:24	CLA
Fluoranthene (SIM)	0.81	5.1	0.26	µg/L	10	J	SW-846 8270D	2/23/19	2/27/19 14:24	CLA
Fluorene (SIM)	31	10	0.35	µg/L	10		SW-846 8270D	2/23/19	2/27/19 14:24	CLA
Indeno(1,2,3-cd)pyrene (SIM)	ND	1.0	0.18	µg/L	10		SW-846 8270D	2/23/19	2/27/19 14:24	CLA
2-Methylnaphthalene (SIM)	160	51	3.2	µg/L	50		SW-846 8270D	2/23/19	2/27/19 15:50	CLA
Naphthalene (SIM)	38	10	2.6	µg/L	10		SW-846 8270D	2/23/19	2/27/19 14:24	CLA
Phenanthrene (SIM)	76	0.51	0.31	µg/L	10		SW-846 8270D	2/23/19	2/27/19 14:24	CLA
Pyrene (SIM)	4.4	10	0.23	µg/L	10	J	SW-846 8270D	2/23/19	2/27/19 14:24	CLA
Surrogates	% Recovery		Recovery Limits		Flag/Qual					
Nitrobenzene-d5 (SIM)	60.9		30-130				2/27/19 14:24			
Nitrobenzene-d5 (SIM)	57.0		30-130				2/27/19 15:50			
2-Fluorobiphenyl	*		30-130		S-02		2/27/19 14:24			
2-Fluorobiphenyl	37.9		30-130				2/27/19 15:50			
p-Terphenyl-d14	42.5		30-130				2/27/19 14:24			
p-Terphenyl-d14	38.5		30-130				2/27/19 15:50			

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Sample Extraction Data**Prep Method: SW-846 5030B-SW-846 8260D**

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19B0931-01 [B-7/ TW-1]	B224172	2.5	5.00	02/22/19
19B0931-02 [B-8/ TW-2]	B224172	2.5	5.00	02/22/19

Prep Method: SW-846 3510C-SW-846 8270D

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19B0931-01RE1 [B-7/ TW-1]	B224345	1000	1.00	02/23/19
19B0931-02RE1 [B-8/ TW-2]	B224345	980	1.00	02/23/19
19B0931-02RE2 [B-8/ TW-2]	B224345	980	1.00	02/23/19

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B224172 - SW-846 5030B

Blank (B224172-BLK1)

Prepared: 02/22/19 Analyzed: 02/26/19

Acetone	ND	50	µg/L							R-05
Acrylonitrile	ND	5.0	µg/L							
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L							
Benzene	ND	1.0	µg/L							
Bromobenzene	ND	1.0	µg/L							
Bromochloromethane	ND	1.0	µg/L							
Bromodichloromethane	ND	0.50	µg/L							
Bromoform	ND	1.0	µg/L							
Bromomethane	ND	2.0	µg/L							
2-Butanone (MEK)	ND	20	µg/L							
tert-Butyl Alcohol (TBA)	ND	20	µg/L							
n-Butylbenzene	ND	1.0	µg/L							
sec-Butylbenzene	ND	1.0	µg/L							
tert-Butylbenzene	ND	1.0	µg/L							
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L							
Carbon Disulfide	ND	4.0	µg/L							
Carbon Tetrachloride	ND	5.0	µg/L							
Chlorobenzene	ND	1.0	µg/L							
Chlorodibromomethane	ND	0.50	µg/L							
Chloroethane	ND	2.0	µg/L							
Chloroform	ND	2.0	µg/L							
Chloromethane	ND	2.0	µg/L							
2-Chlorotoluene	ND	1.0	µg/L							
4-Chlorotoluene	ND	1.0	µg/L							
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	µg/L							
1,2-Dibromoethane (EDB)	ND	0.50	µg/L							
Dibromomethane	ND	1.0	µg/L							
1,2-Dichlorobenzene	ND	1.0	µg/L							
1,3-Dichlorobenzene	ND	1.0	µg/L							
1,4-Dichlorobenzene	ND	1.0	µg/L							
trans-1,4-Dichloro-2-butene	ND	2.0	µg/L							
Dichlorodifluoromethane (Freon 12)	ND	2.0	µg/L							
1,1-Dichloroethane	ND	1.0	µg/L							
1,2-Dichloroethane	ND	1.0	µg/L							
1,1-Dichloroethylene	ND	1.0	µg/L							
cis-1,2-Dichloroethylene	ND	1.0	µg/L							
trans-1,2-Dichloroethylene	ND	1.0	µg/L							
1,2-Dichloropropane	ND	1.0	µg/L							
1,3-Dichloropropane	ND	0.50	µg/L							
2,2-Dichloropropane	ND	1.0	µg/L							
1,1-Dichloropropene	ND	2.0	µg/L							
cis-1,3-Dichloropropene	ND	0.50	µg/L							
trans-1,3-Dichloropropene	ND	0.50	µg/L							
Diethyl Ether	ND	2.0	µg/L							
Diisopropyl Ether (DIPE)	ND	0.50	µg/L							
1,4-Dioxane	ND	50	µg/L							V-16
Ethylbenzene	ND	1.0	µg/L							
Hexachlorobutadiene	ND	0.60	µg/L							
2-Hexanone (MBK)	ND	10	µg/L							
Isopropylbenzene (Cumene)	ND	1.0	µg/L							
p-Isopropyltoluene (p-Cymene)	ND	1.0	µg/L							
Methyl tert-Butyl Ether (MTBE)	ND	1.0	µg/L							

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B224172 - SW-846 5030B										
Blank (B224172-BLK1)										
					Prepared: 02/22/19 Analyzed: 02/26/19					
Methylene Chloride	ND	5.0	µg/L							
4-Methyl-2-pentanone (MIBK)	ND	10	µg/L							
Naphthalene	ND	2.0	µg/L							
n-Propylbenzene	ND	1.0	µg/L							
Styrene	ND	1.0	µg/L							
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L							
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L							
Tetrachloroethylene	ND	1.0	µg/L							
Tetrahydrofuran	ND	10	µg/L							
Toluene	ND	1.0	µg/L							
1,2,3-Trichlorobenzene	ND	5.0	µg/L							
1,2,4-Trichlorobenzene	ND	1.0	µg/L							
1,3,5-Trichlorobenzene	ND	1.0	µg/L							
1,1,1-Trichloroethane	ND	1.0	µg/L							
1,1,2-Trichloroethane	ND	1.0	µg/L							
Trichloroethylene	ND	1.0	µg/L							
Trichlorofluoromethane (Freon 11)	ND	2.0	µg/L							
1,2,3-Trichloropropane	ND	2.0	µg/L							
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	1.0	µg/L							
1,2,4-Trimethylbenzene	ND	1.0	µg/L							
1,3,5-Trimethylbenzene	ND	1.0	µg/L							
Vinyl Acetate	ND	20	µg/L							R-05
Vinyl Chloride	ND	2.0	µg/L							
m+p Xylene	ND	2.0	µg/L							
o-Xylene	ND	1.0	µg/L							
Surrogate: 1,2-Dichloroethane-d4	23.4		µg/L	25.0		93.8	70-130			
Surrogate: Toluene-d8	24.6		µg/L	25.0		98.5	70-130			
Surrogate: 4-Bromofluorobenzene	25.5		µg/L	25.0		102	70-130			
LCS (B224172-BS1)										
					Prepared: 02/22/19 Analyzed: 02/26/19					
Acetone	125	50	µg/L	100		125	70-160			R-05 †
Acrylonitrile	9.46	5.0	µg/L	10.0		94.6	70-130			
tert-Amyl Methyl Ether (TAME)	10.7	0.50	µg/L	10.0		107	70-130			
Benzene	10.3	1.0	µg/L	10.0		103	70-130			
Bromobenzene	10.3	1.0	µg/L	10.0		103	70-130			
Bromochloromethane	12.0	1.0	µg/L	10.0		120	70-130			V-20
Bromodichloromethane	10.6	0.50	µg/L	10.0		106	70-130			
Bromoform	10.2	1.0	µg/L	10.0		102	70-130			
Bromomethane	5.35	2.0	µg/L	10.0		53.5	40-160			†
2-Butanone (MEK)	98.5	20	µg/L	100		98.5	40-160			†
tert-Butyl Alcohol (TBA)	92.4	20	µg/L	100		92.4	40-160			†
n-Butylbenzene	9.08	1.0	µg/L	10.0		90.8	70-130			
sec-Butylbenzene	9.48	1.0	µg/L	10.0		94.8	70-130			
tert-Butylbenzene	9.57	1.0	µg/L	10.0		95.7	70-130			
tert-Butyl Ethyl Ether (TBEE)	9.76	0.50	µg/L	10.0		97.6	70-130			
Carbon Disulfide	11.6	4.0	µg/L	10.0		116	70-130			V-36
Carbon Tetrachloride	10.9	5.0	µg/L	10.0		109	70-130			
Chlorobenzene	10.4	1.0	µg/L	10.0		104	70-130			
Chlorodibromomethane	11.4	0.50	µg/L	10.0		114	70-130			
Chloroethane	10.0	2.0	µg/L	10.0		100	70-130			
Chloroform	10.5	2.0	µg/L	10.0		105	70-130			
Chloromethane	7.80	2.0	µg/L	10.0		78.0	40-160			†

QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B224172 - SW-846 5030B										
LCS (B224172-BS1)										
					Prepared: 02/22/19 Analyzed: 02/26/19					
2-Chlorotoluene	10.5	1.0	µg/L	10.0		105	70-130			
4-Chlorotoluene	10.3	1.0	µg/L	10.0		103	70-130			
1,2-Dibromo-3-chloropropane (DBCP)	8.31	5.0	µg/L	10.0		83.1	70-130			
1,2-Dibromoethane (EDB)	11.0	0.50	µg/L	10.0		110	70-130			
Dibromomethane	11.3	1.0	µg/L	10.0		113	70-130			
1,2-Dichlorobenzene	9.99	1.0	µg/L	10.0		99.9	70-130			
1,3-Dichlorobenzene	10.0	1.0	µg/L	10.0		100	70-130			
1,4-Dichlorobenzene	9.73	1.0	µg/L	10.0		97.3	70-130			
trans-1,4-Dichloro-2-butene	9.34	2.0	µg/L	10.0		93.4	70-130			
Dichlorodifluoromethane (Freon 12)	8.72	2.0	µg/L	10.0		87.2	40-160			†
1,1-Dichloroethane	10.5	1.0	µg/L	10.0		105	70-130			
1,2-Dichloroethane	10.2	1.0	µg/L	10.0		102	70-130			
1,1-Dichloroethylene	10.4	1.0	µg/L	10.0		104	70-130			
cis-1,2-Dichloroethylene	10.2	1.0	µg/L	10.0		102	70-130			
trans-1,2-Dichloroethylene	10.8	1.0	µg/L	10.0		108	70-130			
1,2-Dichloropropane	10.2	1.0	µg/L	10.0		102	70-130			
1,3-Dichloropropane	10.5	0.50	µg/L	10.0		105	70-130			
2,2-Dichloropropane	9.51	1.0	µg/L	10.0		95.1	40-130			†
1,1-Dichloropropene	10.7	2.0	µg/L	10.0		107	70-130			
cis-1,3-Dichloropropene	10.2	0.50	µg/L	10.0		102	70-130			
trans-1,3-Dichloropropene	10.0	0.50	µg/L	10.0		100	70-130			
Diethyl Ether	10.3	2.0	µg/L	10.0		103	70-130			
Diisopropyl Ether (DIPE)	9.31	0.50	µg/L	10.0		93.1	70-130			
1,4-Dioxane	94.9	50	µg/L	100		94.9	40-130			V-16 †
Ethylbenzene	9.99	1.0	µg/L	10.0		99.9	70-130			
Hexachlorobutadiene	9.55	0.60	µg/L	10.0		95.5	70-130			
2-Hexanone (MBK)	95.9	10	µg/L	100		95.9	70-160			†
Isopropylbenzene (Cumene)	10.6	1.0	µg/L	10.0		106	70-130			
p-Isopropyltoluene (p-Cymene)	9.60	1.0	µg/L	10.0		96.0	70-130			
Methyl tert-Butyl Ether (MTBE)	10.7	1.0	µg/L	10.0		107	70-130			
Methylene Chloride	9.81	5.0	µg/L	10.0		98.1	70-130			
4-Methyl-2-pentanone (MIBK)	91.0	10	µg/L	100		91.0	70-160			†
Naphthalene	8.58	2.0	µg/L	10.0		85.8	40-130			†
n-Propylbenzene	10.5	1.0	µg/L	10.0		105	70-130			
Styrene	10.5	1.0	µg/L	10.0		105	70-130			
1,1,1,2-Tetrachloroethane	11.1	1.0	µg/L	10.0		111	70-130			
1,1,2,2-Tetrachloroethane	10.0	0.50	µg/L	10.0		100	70-130			
Tetrachloroethylene	11.4	1.0	µg/L	10.0		114	70-130			
Tetrahydrofuran	8.68	10	µg/L	10.0		86.8	70-130			J
Toluene	10.6	1.0	µg/L	10.0		106	70-130			
1,2,3-Trichlorobenzene	9.96	5.0	µg/L	10.0		99.6	70-130			
1,2,4-Trichlorobenzene	9.88	1.0	µg/L	10.0		98.8	70-130			
1,3,5-Trichlorobenzene	10.1	1.0	µg/L	10.0		101	70-130			
1,1,1-Trichloroethane	10.7	1.0	µg/L	10.0		107	70-130			
1,1,2-Trichloroethane	11.1	1.0	µg/L	10.0		111	70-130			
Trichloroethylene	11.4	1.0	µg/L	10.0		114	70-130			
Trichlorofluoromethane (Freon 11)	9.37	2.0	µg/L	10.0		93.7	70-130			
1,2,3-Trichloropropane	10.1	2.0	µg/L	10.0		101	70-130			
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	10.5	1.0	µg/L	10.0		105	70-130			
1,2,4-Trimethylbenzene	9.12	1.0	µg/L	10.0		91.2	70-130			
1,3,5-Trimethylbenzene	10.2	1.0	µg/L	10.0		102	70-130			

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B224172 - SW-846 5030B

LCS (B224172-BS1)

Prepared: 02/22/19 Analyzed: 02/26/19

Vinyl Acetate	65.2	20	µg/L	100		65.2	* 70-130			R-05, L-07A
Vinyl Chloride	8.95	2.0	µg/L	10.0		89.5	40-160			†
m+p Xylene	20.6	2.0	µg/L	20.0		103	70-130			
o-Xylene	10.3	1.0	µg/L	10.0		103	70-130			
Surrogate: 1,2-Dichloroethane-d4	23.7		µg/L	25.0		94.7	70-130			
Surrogate: Toluene-d8	24.5		µg/L	25.0		97.9	70-130			
Surrogate: 4-Bromofluorobenzene	25.2		µg/L	25.0		101	70-130			

LCS Dup (B224172-BSD1)

Prepared: 02/22/19 Analyzed: 02/26/19

Acetone	94.8	50	µg/L	100		94.8	70-160	27.3	* 25	R-05	†
Acrylonitrile	9.77	5.0	µg/L	10.0		97.7	70-130	3.22	25		
tert-Amyl Methyl Ether (TAME)	10.3	0.50	µg/L	10.0		103	70-130	3.43	25		
Benzene	10.3	1.0	µg/L	10.0		103	70-130	0.388	25		
Bromobenzene	10.6	1.0	µg/L	10.0		106	70-130	2.20	25		
Bromochloromethane	12.4	1.0	µg/L	10.0		124	70-130	3.36	25	V-20	
Bromodichloromethane	10.9	0.50	µg/L	10.0		109	70-130	3.07	25		
Bromoform	10.3	1.0	µg/L	10.0		103	70-130	0.586	25		
Bromomethane	6.67	2.0	µg/L	10.0		66.7	40-160	22.0	25		†
2-Butanone (MEK)	90.8	20	µg/L	100		90.8	40-160	8.10	25		†
tert-Butyl Alcohol (TBA)	92.1	20	µg/L	100		92.1	40-160	0.358	25		†
n-Butylbenzene	9.28	1.0	µg/L	10.0		92.8	70-130	2.18	25		
sec-Butylbenzene	9.52	1.0	µg/L	10.0		95.2	70-130	0.421	25		
tert-Butylbenzene	9.52	1.0	µg/L	10.0		95.2	70-130	0.524	25		
tert-Butyl Ethyl Ether (TBEE)	9.75	0.50	µg/L	10.0		97.5	70-130	0.103	25		
Carbon Disulfide	11.1	4.0	µg/L	10.0		111	70-130	3.96	25	V-36	
Carbon Tetrachloride	10.6	5.0	µg/L	10.0		106	70-130	2.14	25		
Chlorobenzene	10.5	1.0	µg/L	10.0		105	70-130	0.287	25		
Chlorodibromomethane	11.4	0.50	µg/L	10.0		114	70-130	0.351	25		
Chloroethane	9.72	2.0	µg/L	10.0		97.2	70-130	3.24	25		
Chloroform	10.3	2.0	µg/L	10.0		103	70-130	1.83	25		
Chloromethane	7.75	2.0	µg/L	10.0		77.5	40-160	0.643	25		†
2-Chlorotoluene	10.6	1.0	µg/L	10.0		106	70-130	0.190	25		
4-Chlorotoluene	10.4	1.0	µg/L	10.0		104	70-130	0.386	25		
1,2-Dibromo-3-chloropropane (DBCP)	8.81	5.0	µg/L	10.0		88.1	70-130	5.84	25		
1,2-Dibromoethane (EDB)	11.1	0.50	µg/L	10.0		111	70-130	0.903	25		
Dibromomethane	11.1	1.0	µg/L	10.0		111	70-130	1.78	25		
1,2-Dichlorobenzene	10.1	1.0	µg/L	10.0		101	70-130	1.19	25		
1,3-Dichlorobenzene	10.2	1.0	µg/L	10.0		102	70-130	0.990	25		
1,4-Dichlorobenzene	9.70	1.0	µg/L	10.0		97.0	70-130	0.309	25		
trans-1,4-Dichloro-2-butene	9.55	2.0	µg/L	10.0		95.5	70-130	2.22	25		
Dichlorodifluoromethane (Freon 12)	8.54	2.0	µg/L	10.0		85.4	40-160	2.09	25		†
1,1-Dichloroethane	10.2	1.0	µg/L	10.0		102	70-130	2.80	25		
1,2-Dichloroethane	10.4	1.0	µg/L	10.0		104	70-130	2.04	25		
1,1-Dichloroethylene	9.88	1.0	µg/L	10.0		98.8	70-130	4.84	25		
cis-1,2-Dichloroethylene	10.3	1.0	µg/L	10.0		103	70-130	1.07	25		
trans-1,2-Dichloroethylene	10.5	1.0	µg/L	10.0		105	70-130	2.63	25		
1,2-Dichloropropane	10.0	1.0	µg/L	10.0		100	70-130	1.78	25		
1,3-Dichloropropane	10.4	0.50	µg/L	10.0		104	70-130	0.479	25		
2,2-Dichloropropane	9.41	1.0	µg/L	10.0		94.1	40-130	1.06	25		†
1,1-Dichloropropene	10.5	2.0	µg/L	10.0		105	70-130	1.98	25		
cis-1,3-Dichloropropene	10.2	0.50	µg/L	10.0		102	70-130	0.784	25		
trans-1,3-Dichloropropene	10.1	0.50	µg/L	10.0		101	70-130	0.894	25		

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B224172 - SW-846 5030B										
LCS Dup (B224172-BSD1)										
					Prepared: 02/22/19 Analyzed: 02/26/19					
Diethyl Ether	10.0	2.0	µg/L	10.0	100	100	70-130	2.75	25	
Diisopropyl Ether (DIPE)	9.40	0.50	µg/L	10.0	94.0	94.0	70-130	0.962	25	
1,4-Dioxane	87.0	50	µg/L	100	87.0	87.0	40-130	8.75	50	V-16 † ‡
Ethylbenzene	10.2	1.0	µg/L	10.0	102	102	70-130	2.57	25	
Hexachlorobutadiene	9.49	0.60	µg/L	10.0	94.9	94.9	70-130	0.630	25	
2-Hexanone (MBK)	93.8	10	µg/L	100	93.8	93.8	70-160	2.21	25	†
Isopropylbenzene (Cumene)	10.8	1.0	µg/L	10.0	108	108	70-130	1.21	25	
p-Isopropyltoluene (p-Cymene)	9.59	1.0	µg/L	10.0	95.9	95.9	70-130	0.104	25	
Methyl tert-Butyl Ether (MTBE)	10.7	1.0	µg/L	10.0	107	107	70-130	0.187	25	
Methylene Chloride	9.45	5.0	µg/L	10.0	94.5	94.5	70-130	3.74	25	
4-Methyl-2-pentanone (MIBK)	94.0	10	µg/L	100	94.0	94.0	70-160	3.17	25	†
Naphthalene	8.74	2.0	µg/L	10.0	87.4	87.4	40-130	1.85	25	†
n-Propylbenzene	10.4	1.0	µg/L	10.0	104	104	70-130	0.478	25	
Styrene	10.6	1.0	µg/L	10.0	106	106	70-130	1.33	25	
1,1,1,2-Tetrachloroethane	10.8	1.0	µg/L	10.0	108	108	70-130	2.84	25	
1,1,2,2-Tetrachloroethane	11.1	0.50	µg/L	10.0	111	111	70-130	10.6	25	
Tetrachloroethylene	11.2	1.0	µg/L	10.0	112	112	70-130	1.59	25	
Tetrahydrofuran	9.65	10	µg/L	10.0	96.5	96.5	70-130	10.6	25	J
Toluene	10.5	1.0	µg/L	10.0	105	105	70-130	0.951	25	
1,2,3-Trichlorobenzene	10.3	5.0	µg/L	10.0	103	103	70-130	3.16	25	
1,2,4-Trichlorobenzene	10.2	1.0	µg/L	10.0	102	102	70-130	2.89	25	
1,3,5-Trichlorobenzene	10.1	1.0	µg/L	10.0	101	101	70-130	0.198	25	
1,1,1-Trichloroethane	10.6	1.0	µg/L	10.0	106	106	70-130	0.659	25	
1,1,2-Trichloroethane	11.0	1.0	µg/L	10.0	110	110	70-130	1.17	25	
Trichloroethylene	10.5	1.0	µg/L	10.0	105	105	70-130	8.21	25	
Trichlorofluoromethane (Freon 11)	9.02	2.0	µg/L	10.0	90.2	90.2	70-130	3.81	25	
1,2,3-Trichloropropane	10.6	2.0	µg/L	10.0	106	106	70-130	5.02	25	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	9.91	1.0	µg/L	10.0	99.1	99.1	70-130	5.50	25	
1,2,4-Trimethylbenzene	9.23	1.0	µg/L	10.0	92.3	92.3	70-130	1.20	25	
1,3,5-Trimethylbenzene	10.2	1.0	µg/L	10.0	102	102	70-130	0.391	25	
Vinyl Acetate	91.2	20	µg/L	100	91.2	91.2	70-130	33.3 *	25	R-05
Vinyl Chloride	8.77	2.0	µg/L	10.0	87.7	87.7	40-160	2.03	25	†
m+p Xylene	20.6	2.0	µg/L	20.0	103	103	70-130	0.194	25	
o-Xylene	10.4	1.0	µg/L	10.0	104	104	70-130	1.06	25	
Surrogate: 1,2-Dichloroethane-d4	23.6		µg/L	25.0	94.2	94.2	70-130			
Surrogate: Toluene-d8	24.9		µg/L	25.0	99.6	99.6	70-130			
Surrogate: 4-Bromofluorobenzene	26.2		µg/L	25.0	105	105	70-130			

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

QUALITY CONTROL

Semivolatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B224345 - SW-846 3510C

Blank (B224345-BLK1)

Prepared: 02/23/19 Analyzed: 02/26/19

Acenaphthene (SIM)	ND	0.30	µg/L							
Acenaphthylene (SIM)	ND	0.20	µg/L							
Anthracene (SIM)	ND	0.20	µg/L							
Benzo(a)anthracene (SIM)	ND	0.050	µg/L							
Benzo(a)pyrene (SIM)	ND	0.10	µg/L							
Benzo(b)fluoranthene (SIM)	ND	0.050	µg/L							
Benzo(g,h,i)perylene (SIM)	ND	0.50	µg/L							
Benzo(k)fluoranthene (SIM)	ND	0.20	µg/L							
Chrysene (SIM)	ND	0.20	µg/L							
Dibenz(a,h)anthracene (SIM)	ND	0.10	µg/L							
Fluoranthene (SIM)	ND	0.50	µg/L							
Fluorene (SIM)	ND	1.0	µg/L							
Indeno(1,2,3-cd)pyrene (SIM)	ND	0.10	µg/L							
2-Methylnaphthalene (SIM)	ND	1.0	µg/L							
Naphthalene (SIM)	ND	1.0	µg/L							
Phenanthrene (SIM)	ND	0.050	µg/L							
Pyrene (SIM)	ND	1.0	µg/L							
Surrogate: Nitrobenzene-d5 (SIM)	77.0		µg/L	100		77.0	30-130			
Surrogate: 2-Fluorobiphenyl	56.4		µg/L	100		56.4	30-130			
Surrogate: p-Terphenyl-d14	59.9		µg/L	100		59.9	30-130			

LCS (B224345-BS1)

Prepared: 02/23/19 Analyzed: 02/26/19

Acenaphthene (SIM)	34.4	7.5	µg/L	50.0		68.9	40-140			
Acenaphthylene (SIM)	34.0	5.0	µg/L	50.0		68.0	40-140			
Anthracene (SIM)	37.6	5.0	µg/L	50.0		75.1	40-140			
Benzo(a)anthracene (SIM)	32.0	1.2	µg/L	50.0		64.0	40-140			
Benzo(a)pyrene (SIM)	37.0	2.5	µg/L	50.0		74.1	40-140			
Benzo(b)fluoranthene (SIM)	37.3	1.2	µg/L	50.0		74.6	40-140			
Benzo(g,h,i)perylene (SIM)	38.5	12	µg/L	50.0		77.0	40-140			
Benzo(k)fluoranthene (SIM)	36.9	5.0	µg/L	50.0		73.8	40-140			
Chrysene (SIM)	34.2	5.0	µg/L	50.0		68.3	40-140			
Dibenz(a,h)anthracene (SIM)	41.5	2.5	µg/L	50.0		83.0	40-140			
Fluoranthene (SIM)	34.3	12	µg/L	50.0		68.6	40-140			
Fluorene (SIM)	34.4	25	µg/L	50.0		68.8	40-140			
Indeno(1,2,3-cd)pyrene (SIM)	40.7	2.5	µg/L	50.0		81.4	40-140			
2-Methylnaphthalene (SIM)	33.5	25	µg/L	50.0		67.0	40-140			
Naphthalene (SIM)	31.4	25	µg/L	50.0		62.8	40-140			
Phenanthrene (SIM)	35.6	1.2	µg/L	50.0		71.1	40-140			
Pyrene (SIM)	31.8	25	µg/L	50.0		63.7	40-140			
Surrogate: Nitrobenzene-d5 (SIM)	63.0		µg/L	100		63.0	30-130			
Surrogate: 2-Fluorobiphenyl	48.4		µg/L	100		48.4	30-130			
Surrogate: p-Terphenyl-d14	47.8		µg/L	100		47.8	30-130			

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

QUALITY CONTROL

Semivolatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B224345 - SW-846 3510C										
LCS Dup (B224345-BSD1)										
					Prepared: 02/23/19 Analyzed: 02/26/19					
Acenaphthene (SIM)	34.5	7.5	µg/L	50.0		69.0	40-140	0.217	20	
Acenaphthylene (SIM)	34.0	5.0	µg/L	50.0		68.1	40-140	0.221	20	
Anthracene (SIM)	37.1	5.0	µg/L	50.0		74.2	40-140	1.27	20	
Benzo(a)anthracene (SIM)	31.4	1.2	µg/L	50.0		62.7	40-140	2.13	20	
Benzo(a)pyrene (SIM)	36.6	2.5	µg/L	50.0		73.2	40-140	1.22	20	
Benzo(b)fluoranthene (SIM)	37.0	1.2	µg/L	50.0		74.0	40-140	0.740	20	
Benzo(g,h,i)perylene (SIM)	38.7	12	µg/L	50.0		77.4	40-140	0.454	20	
Benzo(k)fluoranthene (SIM)	37.4	5.0	µg/L	50.0		74.8	40-140	1.21	20	
Chrysene (SIM)	33.5	5.0	µg/L	50.0		67.0	40-140	1.92	20	
Dibenz(a,h)anthracene (SIM)	41.4	2.5	µg/L	50.0		82.7	40-140	0.302	20	
Fluoranthene (SIM)	35.0	12	µg/L	50.0		70.0	40-140	2.09	20	
Fluorene (SIM)	35.6	25	µg/L	50.0		71.3	40-140	3.64	20	
Indeno(1,2,3-cd)pyrene (SIM)	40.7	2.5	µg/L	50.0		81.4	40-140	0.00	20	‡
2-Methylnaphthalene (SIM)	34.5	25	µg/L	50.0		69.0	40-140	2.94	20	
Naphthalene (SIM)	31.6	25	µg/L	50.0		63.2	40-140	0.556	20	
Phenanthrene (SIM)	35.4	1.2	µg/L	50.0		70.8	40-140	0.423	20	
Pyrene (SIM)	31.0	25	µg/L	50.0		62.1	40-140	2.54	20	
Surrogate: Nitrobenzene-d5 (SIM)	62.2		µg/L	100		62.2	30-130			
Surrogate: 2-Fluorobiphenyl	46.1		µg/L	100		46.1	30-130			
Surrogate: p-Terphenyl-d14	44.5		µg/L	100		44.5	30-130			

FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
I-02	Result not attainable due to sample matrix interferences (a chemical or physical interference which could not be eliminated).
J	Detected but below the Reporting Limit (lowest calibration standard); therefore, result is an estimated concentration (CLP J-Flag).
L-07A	Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD outside of control limits. Reduced precision anticipated for any reported result for this compound.
R-05	Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.
RL-11	Elevated reporting limit due to high concentration of target compounds.
RL-13	Elevated reporting limit due to high concentration of non-target compounds.
S-02	The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.
V-16	Response factor is less than method specified minimum acceptable value. Reduced precision and accuracy may be associated with reported result.
V-20	Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
V-36	Initial calibration verification (ICV) did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>SW-846 8260D in Water</i>	
Acetone	NC
Acrylonitrile	NC
tert-Amyl Methyl Ether (TAME)	NC
Benzene	NC
Bromobenzene	NC
Bromochloromethane	NC
Bromodichloromethane	NC
Bromoform	NC
Bromomethane	NC
2-Butanone (MEK)	NC
tert-Butyl Alcohol (TBA)	NC
n-Butylbenzene	NC
sec-Butylbenzene	NC
tert-Butylbenzene	NC
tert-Butyl Ethyl Ether (TBEE)	NC
Carbon Disulfide	NC
Carbon Tetrachloride	NC
Chlorobenzene	NC
Chlorodibromomethane	NC
Chloroethane	NC
Chloroform	NC
Chloromethane	NC
2-Chlorotoluene	NC
4-Chlorotoluene	NC
1,2-Dibromo-3-chloropropane (DBCP)	NC
1,2-Dibromoethane (EDB)	NC
Dibromomethane	NC
1,2-Dichlorobenzene	NC
1,3-Dichlorobenzene	NC
1,4-Dichlorobenzene	NC
trans-1,4-Dichloro-2-butene	NC
Dichlorodifluoromethane (Freon 12)	NC
1,1-Dichloroethane	NC
1,2-Dichloroethane	NC
1,1-Dichloroethylene	NC
cis-1,2-Dichloroethylene	NC
trans-1,2-Dichloroethylene	NC
1,2-Dichloropropane	NC
1,3-Dichloropropane	NC
2,2-Dichloropropane	NC
1,1-Dichloropropene	NC
cis-1,3-Dichloropropene	NC
trans-1,3-Dichloropropene	NC
Diethyl Ether	NC
Diisopropyl Ether (DIPE)	NC
1,4-Dioxane	NC
Ethylbenzene	NC

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>SW-846 8260D in Water</i>	
Hexachlorobutadiene	NC
2-Hexanone (MBK)	NC
Isopropylbenzene (Cumene)	NC
p-Isopropyltoluene (p-Cymene)	NC
Methyl tert-Butyl Ether (MTBE)	NC
Methylene Chloride	NC
4-Methyl-2-pentanone (MIBK)	NC
Naphthalene	NC
n-Propylbenzene	NC
Styrene	NC
1,1,1,2-Tetrachloroethane	NC
1,1,2,2-Tetrachloroethane	NC
Tetrachloroethylene	NC
Tetrahydrofuran	NC
Toluene	NC
1,2,3-Trichlorobenzene	NC
1,2,4-Trichlorobenzene	NC
1,3,5-Trichlorobenzene	NC
1,1,1-Trichloroethane	NC
1,1,2-Trichloroethane	NC
Trichloroethylene	NC
Trichlorofluoromethane (Freon 11)	NC
1,2,3-Trichloropropane	NC
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	NC
1,2,4-Trimethylbenzene	NC
1,3,5-Trimethylbenzene	NC
Vinyl Chloride	NC
m+p Xylene	NC
o-Xylene	NC

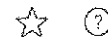
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2005	100033	03/1/2020
MA	Massachusetts DEP	M-MA100	06/30/2019
CT	Connecticut Department of Public Health	PH-0567	09/30/2019
NY	New York State Department of Health	10899 NELAP	04/1/2019
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2020
RI	Rhode Island Department of Health	LAO00112	12/30/2019
NC	North Carolina Div. of Water Quality	652	12/31/2019
NJ	New Jersey DEP	MA007 NELAP	06/30/2019
FL	Florida Department of Health	E871027 NELAP	06/30/2019
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2019
ME	State of Maine	2011028	06/9/2019
VA	Commonwealth of Virginia	460217	12/14/2019
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2019
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2019
NC-DW	North Carolina Department of Health	25703	07/31/2019



774519142837



Delivered
Thursday 2/21/2019 at 10:25 am



DELIVERED

Signed for by: B.BECCA

GET STATUS UPDATES

OBTAIN PROOF OF DELIVERY

FROM
Raleigh, NC US

TO
EAST LONGMEADOW, MA US

Shipment Facts

TRACKING NUMBER
774519142837

SERVICE
FedEx Priority Overnight

WEIGHT
15 lbs / 6.8 kgs

DIMENSIONS
25x14x14 in.

DELIVERED TO
Shipping/Receiving

TOTAL PIECES
1

TOTAL SHIPMENT WEIGHT
15 lbs / 6.8 kgs

TERMS
Third Party

SHIPPER REFERENCE
80

PACKAGING
Your Packaging

SPECIAL HANDLING SECTION
Deliver Weekday, Additional Handling
Surcharge

STANDARD TRANSIT
 2/21/2019 by 10:30 am

SHIP DATE

Wed 2/20/2019

ACTUAL DELIVERY
Thu 2/21/2019 10:25 am

Travel History

Local Scan Time

Thursday, 2/21/2019		
10:25 am	EAST LONGMEADOW, MA	Delivered
8:58 am	WINDSOR LOCKS, CT	On FedEx vehicle for delivery
8:47 am	WINDSOR LOCKS, CT	At local FedEx facility

I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples _____



con-test
ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client S + ME

Received By RHP Date 2/21/19 Time 10:25

How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____
 Direct from Sampling _____ Ambient _____ Melted Ice _____

Were samples within Temperature? 2-6°C T By Gun # 1 Actual Temp - 49
 By Blank # _____ Actual Temp - _____

Was Custody Seal Intact? NA Were Samples Tampered with? NA
 Was COC Relinquished? T Does Chain Agree With Samples? T

Are there broken/leaking/loose caps on any samples? F

Is COC in ink/ Legible? T Were samples received within holding time? T
 Did COC include all pertinent Information? Client T Analysis T Sampler Name T
 Project T ID's T Collection Dates/Times T

Are Sample labels filled out and legible? T

Are there Lab to Filters? F Who was notified? _____
 Are there Rushes? F Who was notified? _____
 Are there Short Holds? F Who was notified? _____

Is there enough Volume? T

Is there Headspace where applicable? F MS/MSD? f

Proper Media/Containers Used? T Is splitting samples required? f

Were trip blanks received? F On COC? F

Do all samples have the proper pH? NA Acid _____ Base _____

Vials	#	Containers:	#	#	#	#
Unp-		1 Liter Amb.	4	1 Liter Plastic		16 oz Amb.
HCL-	6	500 mL Amb.		500 mL Plastic		8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic		4oz Amb/Clear
Bisulfate-		Flashpoint		Col./Bacteria		2oz Amb/Clear
DI-		Other Glass		Other Plastic		Encore
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:
Sulfuric-		Perchlorate		Ziplock		

Unused Media

Vials	#	Containers:	#	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic		8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic		4oz Amb/Clear
Bisulfate-		Col./Bacteria		Flashpoint		2oz Amb/Clear
DI-		Other Plastic		Other Glass		Encore
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:
Sulfuric-		Perchlorate		Ziplock		

Comments: