



January 9, 2020

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-5878, WBS Element 53078.1.1
Parcel 90 – Shell Food and Tobacco Mart
1009 E. Cumberland Street
Dunn, Harnett County, North Carolina
S&ME Project 4305-19-161

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. 43-1900576 REV-01 dated August 9, 2019, and Contract Number 7000018853 dated April 12, 2018 between NCDOT and S&ME, Inc., authorized by NCDOT in its September 5, 2019 Notice to Proceed Letter.

◆ Background/Project Information

Based on NCDOT’s July 24, 2019, 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
90	Dahir Properties, LLC	(Shell Food and Tobacco Mart) 1009 E. Cumberland Street, Dunn, NC



The property is developed with an active gasoline/convenience store identified as Shell Food and Tobacco Mart, which utilizes several petroleum underground storage tanks (USTs). The USTs are located on the northeastern portion of the site, away from the ROW. Information regarding the UST systems listed for this site is provided in the following table:

UST Facility ID No. 0-00-000034814

Number of Tanks	Contents	Capacity (gallons)	Date Installed	Date Removed
1	Gasoline	10,000	4/25/1989	Active USTs
2	Gasoline	6,000	4/25/1989	Active USTs
3	Gasoline	6,000	4/25/1989	Active USTs

The Shell Food and Tobacco Mart property is listed with a North Carolina Department of Environmental Quality (NCDEQ) Incident (Incident # 29133-Smokers Friendly Texaco) associated with a petroleum release from USTs which was discovered in May 2004. In May 2004, soil and groundwater samples were collected at the site from temporary monitor wells. Analytical results of soil samples collected at the site were reported to be below the Soil-to-Groundwater Maximum Soil Contaminant Concentrations (MSCCs). Groundwater at the site was reported to have been encountered at a depth of approximately seven feet below ground surface (ft.-bgs) and flowing to the southeast. Several petroleum related target constituents were reported in the groundwater at concentrations exceeding their 15A NCAC 2L Groundwater Quality Standards (2L Standards). Benzene was reported in temporary well P-1, which was located on the western side of the property near E. Cumberland Street, at a concentration of 4,600 micrograms per liter ($\mu\text{g/L}$) which exceeds its 2L Standard of 1 $\mu\text{g/L}$ (*Limited Soil and Groundwater Sampling Report* prepared by S&ME dated May 13, 2004).

The PSA included a geophysical survey, subsequent limited soil sampling (seven soil borings up to 10 feet below ground surface (ft.-bgs)) and limited groundwater sampling (one groundwater sample), 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 (East Coast Underground, LLC) was also used to locate and mark underground utilities.

◆ Geophysical Survey

On July 25, 2019, S&ME completed Time Domain Electromagnetic (TDEM) and Ground Penetrating Radar (GPR) surveys within accessible areas of the proposed ROW/easement at Parcel 90. 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 "*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 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 semi-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® 4000 GPR system equipped with a 350 MHz antenna in general accordance with ASTM D6432 "*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 five GPR profiles (Lines 1 through 5) were collected for documentation (**Figure 7**). The data was post-processed using the GSSI Radan® 7 GPR software program for additional analysis.

Geophysical Findings

Responses indicative of a potential UST were not identified in the geophysical data sets collected at the site. One anomalous feature unrelated to known surficial targets was identified in the geophysical data sets (Anomaly A; **Figures 6 and 7**). Anomaly A is characterized by high amplitude GPR responses located about one foot below ground surface (bgs) and may be related to a relatively small isolated buried metallic object. The anomaly was marked in the field using white spray paint. Example GPR profiles are presented in **Figure 8**.

◆ Soil Sampling

On October 31, 2019, Troxler Geologic, Inc. (Troxler's) drill crew utilized a track mounted Geoprobe® rig to advance seven soil borings (B-1 through B-7) and to collect soil samples within accessible areas of the proposed ROW/easement at Parcel 90. 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 a depth of approximately 7.5 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 borings B-2, B-3, B-4 and B-6 starting at depths ranging from three to four ft.-bgs and extending to boring termination at eight ft.-bgs. Groundwater was encountered at a depth of approximately 7.5 ft.-bgs. Therefore, soil samples were selected from borings B-2, B-3, and B-6 at the four to six foot depth interval. A soil sample was selected from boring B-4 at the two to four foot depth interval. Various soil samples at varying depth intervals were selected from the remaining borings. The soil samples were placed into laboratory supplied containers and transported to RED Lab, LLC (Red Lab) in an insulated cooler with ice for analysis. A total of seven soil samples (one soil sample per boring) were analyzed by RED Lab for TPH-GRO and TPH-DRO using ultra-violet fluorescence (UVF) spectroscopy with product (fuel) identification.

Soil Analytical Results

Based upon analytical results of soil samples analyzed by RED Lab using UVP spectroscopy, TPH-GRO and TPH-DRO were reported at concentrations exceeding their respective North Carolina TPH Action Levels. TPH-GRO and TPH-DRO were reported in boring B-4 at the two to four foot depth interval, at concentrations of 178.7 mg/kg and 107.4 mg/kg, respectively, which exceed their North Carolina TPH Action Levels of 50 mg/kg and 100 mg/kg, respectively. TPH-DRO was also reported in borings B-3 (208 mg/kg) and B-6 (108 mg/kg) at the four to six foot depth interval, at concentrations above its North Carolina TPH Action Level. TPH-DRO was reported in borings B-1, B-2, B-5 and B-7 at the two to four or four to six foot depth interval at concentrations below its North Carolina TPH Action Level. TPH-GRO was reported in borings B-2, B-3, B-6 and B-7 at the four to six foot depth interval at concentrations below its North Carolina TPH Action Level. 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 at a depth of approximately 7.5 ft.-bgs. Therefore, the Geoprobe® was used to advance one of the soil borings into the groundwater table for the collection of a groundwater sample. Based on petroleum odors, elevated PID readings and apparent location near former temporary well P-1, boring B-4 was selected for collection of a groundwater sample. A temporary monitor well (TW-1) was installed at boring B-4 to a depth of approximately 12 ft.-bgs using a ten foot section of one-inch



diameter, Schedule 40 PVC well riser attached to a five foot section of 0.01-inch slotted screen that intersected the groundwater table. Groundwater within the temporary monitor well at boring B-4 was measured at 7.5 ft.-bgs. Groundwater was purged from the temporary well using disposable tubing attached to a peristaltic pump. The temporary well purged dry and was allowed to recharge to fill the laboratory supplied containers. Due to a slow recharge and lack of sufficient water, only the containers for VOC analysis were filled. The containers (three-40 milliliters) were filled directly from the tubing, labeled as TW-1 and placed in an insulated cooler with ice for transport to Con-Test Laboratories (Con-Test) for analysis of VOCs by EPA Method 8260. The larger containers (two-one liter) for analysis of polycyclic aromatic compounds (PAHs) by EPA Method 8270 were not filled.

Upon completion of the soil and groundwater sampling, the well materials were removed and the soil borings backfilled with bentonite pellets and soil cuttings. Investigative derived wastes (IDW), such as soil cuttings generated during the soil boring advancement and decontamination water, were spread on the ground in accordance with the procedures specified by NCDEQ. Used gloves and tubing were bagged and disposed off-site.

Groundwater Analytical Results

Based upon analytical results of the groundwater sample analyzed by Con-Test, several petroleum related target constituents were reported 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 is presented in **Appendix III**.

◆ Conclusion and Recommendations

The geophysical survey identified one anomalous feature (Anomaly A) which may be related to a relatively small isolated buried metallic object. Responses indicative of a potential UST were not identified in the geophysical data sets collected at the site.

S&ME advanced seven soil borings (B-1 through B-7) to a depth of up to approximately 10 ft.-bgs at the site. Petroleum odors and elevated PID readings were noted at borings B-2, B-3, B-4 and B-6 starting at depths ranging from two to four ft.-bgs and extending to boring termination at eight ft.-bgs. Selected soil samples from the soil borings were analyzed for TPH-GRO and TPH-DRO using UVF spectroscopy.

TPH-GRO and TPH-DRO were reported at concentrations exceeding their respective North Carolina TPH Action Levels. TPH-GRO and TPH-DRO were reported in boring B-4 at the two to four foot depth interval, at concentrations of 178.7 mg/kg and 107.4 mg/kg, respectively, which exceed their North Carolina TPH Action Levels. TPH-DRO was also reported in borings B-3 (208 mg/kg) and B-6 (108 mg/kg) at the four to six foot depth interval, at concentrations above its North Carolina TPH Action Level. TPH-DRO was reported in borings B-1, B-2, B-5 and B-7 at the two to four or four to six foot depth interval at concentrations below its North Carolina TPH Action Level. TPH-GRO was reported in borings B-2, B-3, B-6 and B-7 at the four to six foot depth interval at concentrations below its North Carolina TPH Action Level. TPH-GRO and TPH-DRO were not reported at concentrations exceeding the laboratory method reporting limits at the remaining soil samples.



During the soil boring advancement, groundwater was encountered at a depth of approximately 7.5 ft.-bgs. One temporary well (TW-1) was installed at soil boring B-4. Groundwater at TW-1 was measured at 7.5 ft.-bgs and analyzed by Con-Test for VOCs by EPA Method 8260. Due to slow recharge and lack of sufficient water, the sample containers for PAHs analysis by EPA Method 8270 were not filled and therefore not analyzed. Several petroleum related target constituents were reported at concentrations exceeding their 2L Standards.

Based on the findings of the geophysical survey and analytical results of soil and groundwater samples, it is likely that during construction, NCDOT may encounter impacted soil and groundwater impacted with petroleum at the site. Petroleum impacted soil at concentrations exceeding the North Carolina TPH Action Levels may be encountered within the vicinity of borings B-3, B-4 and B-6. Assuming that a section of petroleum impacted soil approximately 5.5 feet thick, 65 feet long and 33 feet wide at a depth of two to 7.5 ft.-bgs (groundwater was encountered at a depth of 7.5 ft.-bgs); up to 440 cubic yards of soil may be impacted. It should also be assumed that saturated petroleum impacted soil will be encountered if construction excavations extend deeper than 7.5 ft.-bgs.

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., reinforced concrete, utilities, 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 about seven 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,



**Preliminary Site Assessment Report
NCDOT Project I-5878, WBS Element 53078.1.1
Parcel 90-Shell Food and Tobacco Mart
Dunn, Harnett County, North Carolina
S&ME Project No. 4305-19-161**

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:

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Tom Raymond

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1/27/2020

Thomas P. Raymond, P.E., P.M.P.
Senior Consultant
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Attachments:

Table 1: Summary of Soil Sampling Results

Table 2: Summary of Groundwater Sampling Results

Figure 1: Vicinity Map

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 3 and 5

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-5878
Parcel 90 - (Shell Food and Tobacco Mart)
1009 E. Cumberland Street
Dunn, Harnett County, North Carolina
S&ME Project No. 4305-19-161

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	10/31/2019	2 to 4	<0.3	1.2
B-2	10/31/2019	4 to 6	5.7	21.5
B-3	10/31/2019	4 to 6	12.2	208
B-4	10/31/2019	2 to 4	178.7	107.4
B-5	10/31/2019	4 to 6	<0.61	2.2
B-6	10/31/2019	4 to 6	35.4	108
B-7	10/31/2019	4 to 6	2.4	22.9
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-5878
Parcel 90 - (Shell Food and Tobacco Mart)
1009 E. Cumberland Street
Dunn, Harnett County, North Carolina
S&ME Project No. 4305-19-161

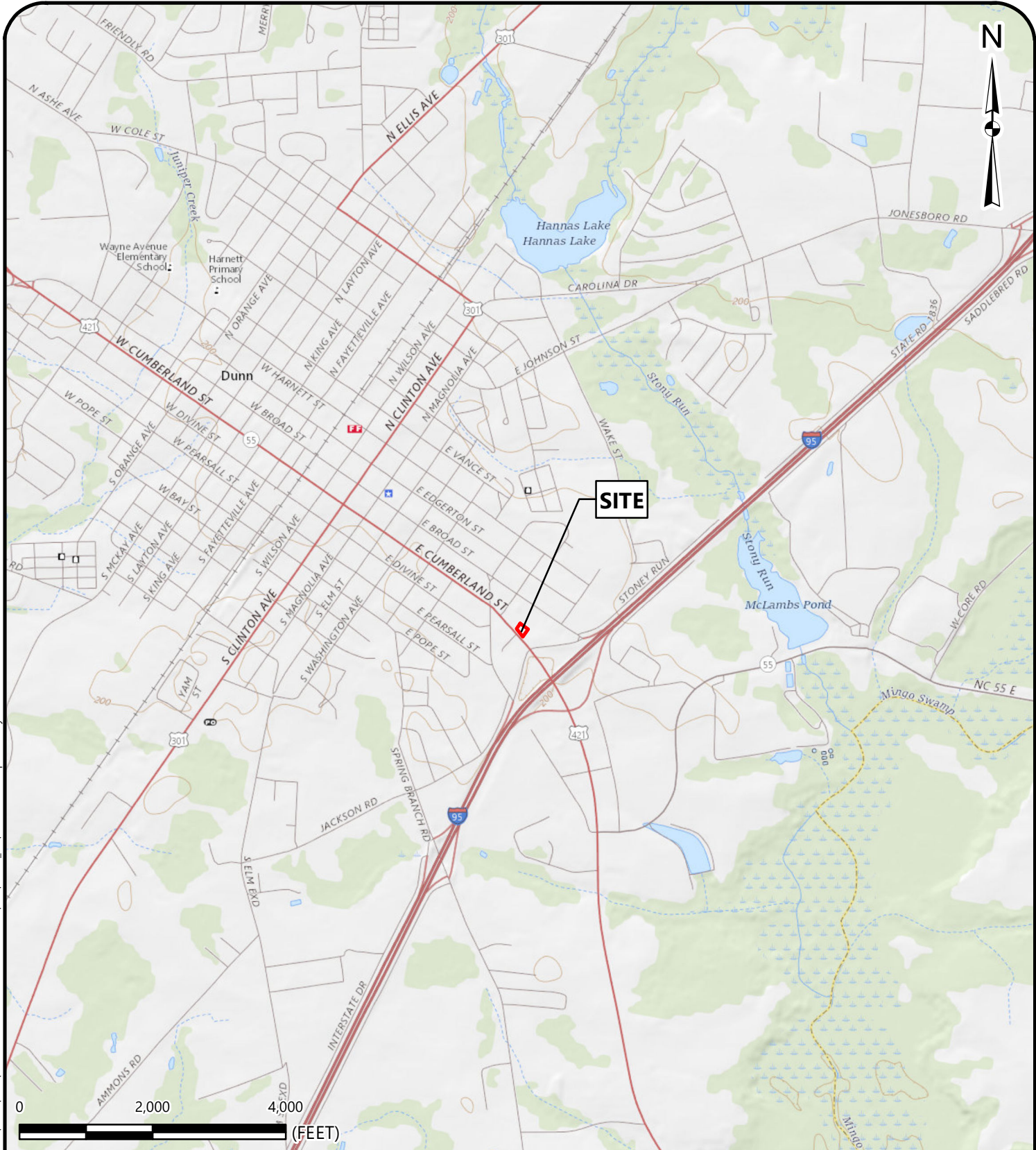
Analytical Method→		Volatile Organic Compounds by EPA Method 8260													Polycyclic Aromatic Compounds (PAHs) by EPA Method 8270
Sample ID	Contaminant of Concern→	Benzene	Ethylbenzene	Isopropylbenzene	MTBE	Naphthalene	n-Butylbenzene	sec-Butylbenzene	tert-Butyl Alcohol	n-Propylbenzene	Toluene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Total Xylenes	Constituent Specific
	Date														
B-4/TW-1	10/31/2019	3,100	2,800	160	1,800	240	82 J	37 J	1,500 J	410	12,000	2,500	660	13,200	Not Analyzed *
2L Standard (µg/L)		1	600	70	20	6	70	70	10	70	600	400	400	500	Not Applicable
GCL (µg/L)		5,000	84,500	25,000	20,000	6,000	6,900	8,500	10,000	30,000	260,000	28,500	25,000	85,500	

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.
8. * Temporary well purged dry and did not recover. Therefore, EPA Method 8270 analysis not performed


Figures

Drawing Path: T:\Projects\2019\ENV\4305-19-161 NCDOT I-5878 PSAs\GIS\Parcel_90\VICINITY.mxd plotted by abentz 11-25-2019



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.

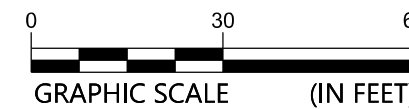
 Site Parcel

	VICINITY MAP	SCALE: 1" = 2,000'	FIGURE NO.
	NCDOT PROJECT I-5878	DATE: 11-25-19	1
	PARCEL NO. 90 (SHELL FOOD AND TOBACCO MART) 1009 E. CUMBERLAND ST, DUNN, HARNETT COUNTY, NORTH CAROLINA	PROJECT NUMBER 4305-19-161	



LEGEND

- Geoenvironmental Boring: Known Soil Contamination:
- Underground Storage Tank (UST): Possible Soil Contamination:
- Map Source: NCDOT Project I-59868 Existing Contamination Known - Water:
- Image Source: NC ONEMAP, Dated 2016

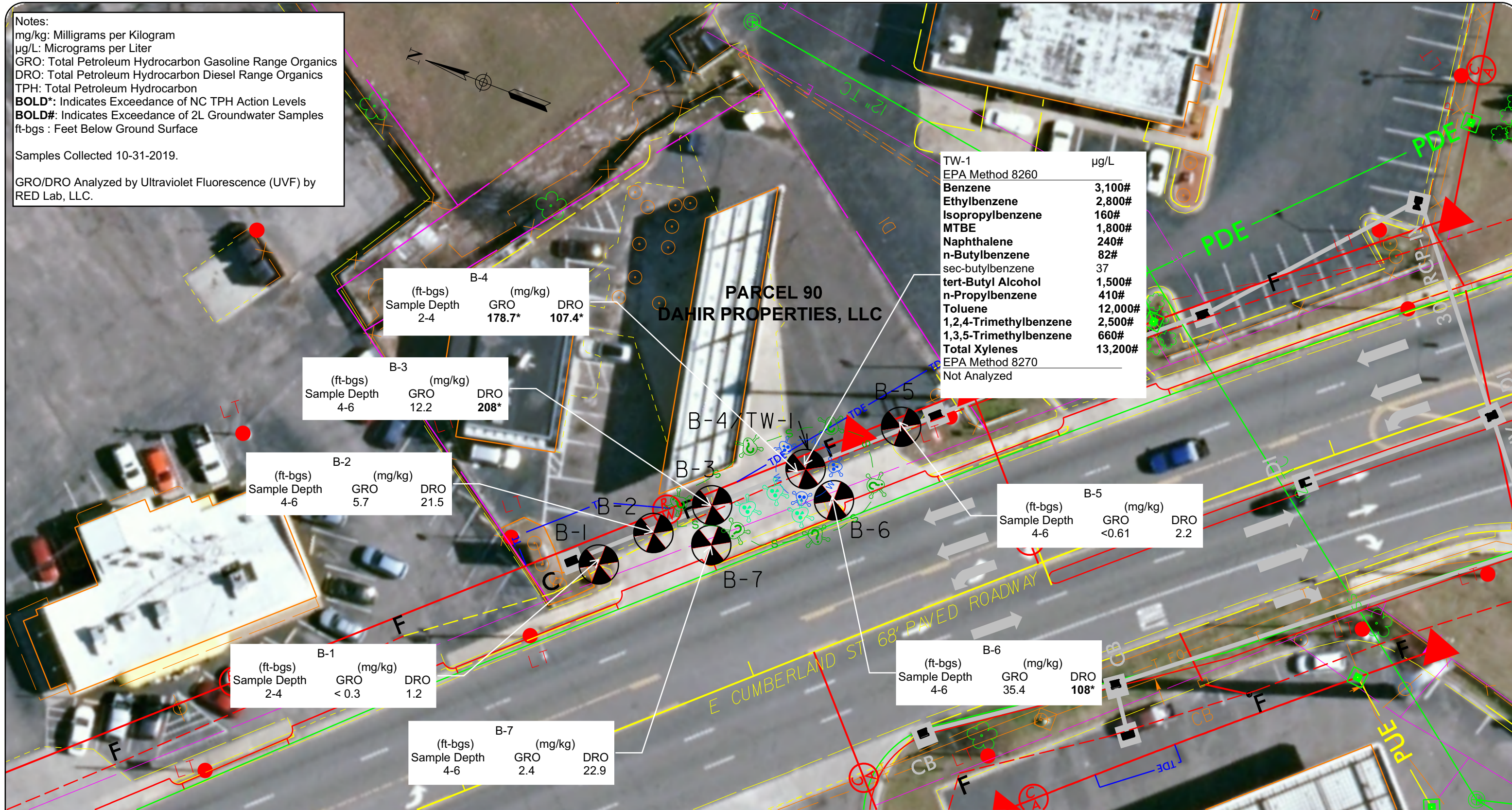


	SITE MAP	SCALE: 1" = 30'	FIGURE NO.
	NCDOT Project: I-5878 PARCEL 90 - SHELL FOOD & TOBACCO MART 1009 E. Cumberland St., Dunn, Harnett County, North Carolina	DATE: JAN. 2020	2
		PROJECT NUMBER: 4305-19-161	

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

Samples Collected 10-31-2019.

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



LEGEND

Geoenvironmental Boring:

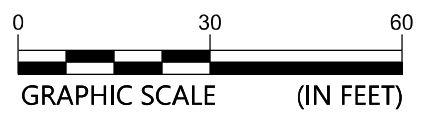
Underground Storage Tank (UST):

Map Source: NCDOT Project I-59868
 Image Source: NC ONEMAP, Dated 2016

Known Soil Contamination:

Possible Soil Contamination:

Existing Contamination Known - Water:



SOIL AND GROUNDWATER CONSTITUENT MAP

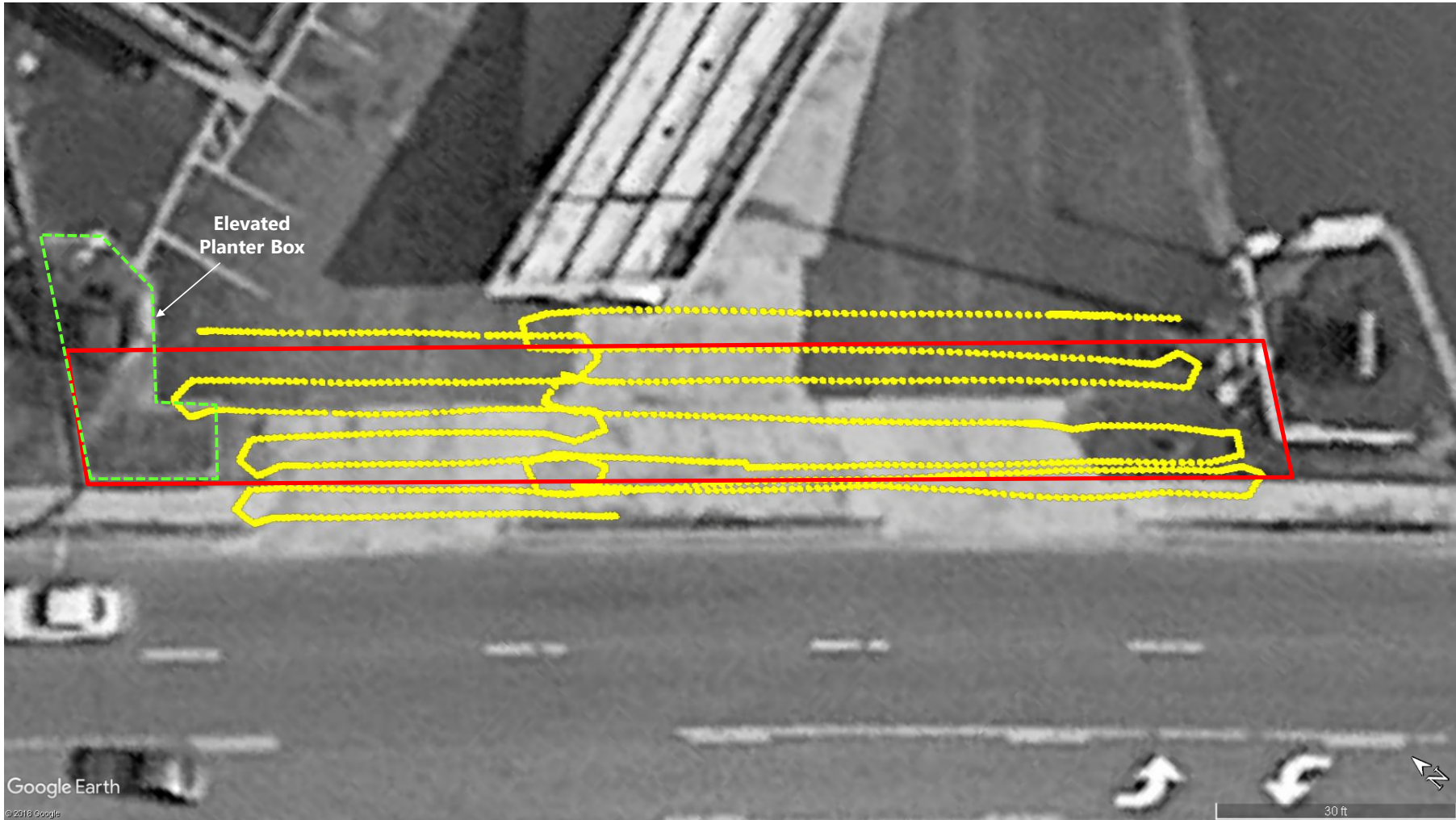
NCDOT Project: I-5878
 PARCEL 90 - SHELL FOOD & TOBACCO MART
 1009 E. Cumberland St., Dunn, Harnett County, North Carolina

SCALE:	FIGURE NO.
1" = 30'	3
DATE:	
NOV. 2019	
PROJECT NUMBER	
4305-19-161	





REFERENCE:
GOOGLE EARTH PRO AERIAL PHOTOGRAPH
(DATED MARCH 4, 2018)



Google Earth
© 2018 Google

LEGEND

- Approximate TDEM Path
- Approximate Requested Survey Area

TDEM PATH LOCATION PLAN

NC DOT PROJECT: I-5878
PARCEL #90 - (SHELL FOOD AND TOBACCO MART)
1009 E. CUMBERLAND STREET, DUNN, HARNETT COUNTY, NORTH CAROLINA

SCALE:
AS SHOWN

DATE:
11/26/2019

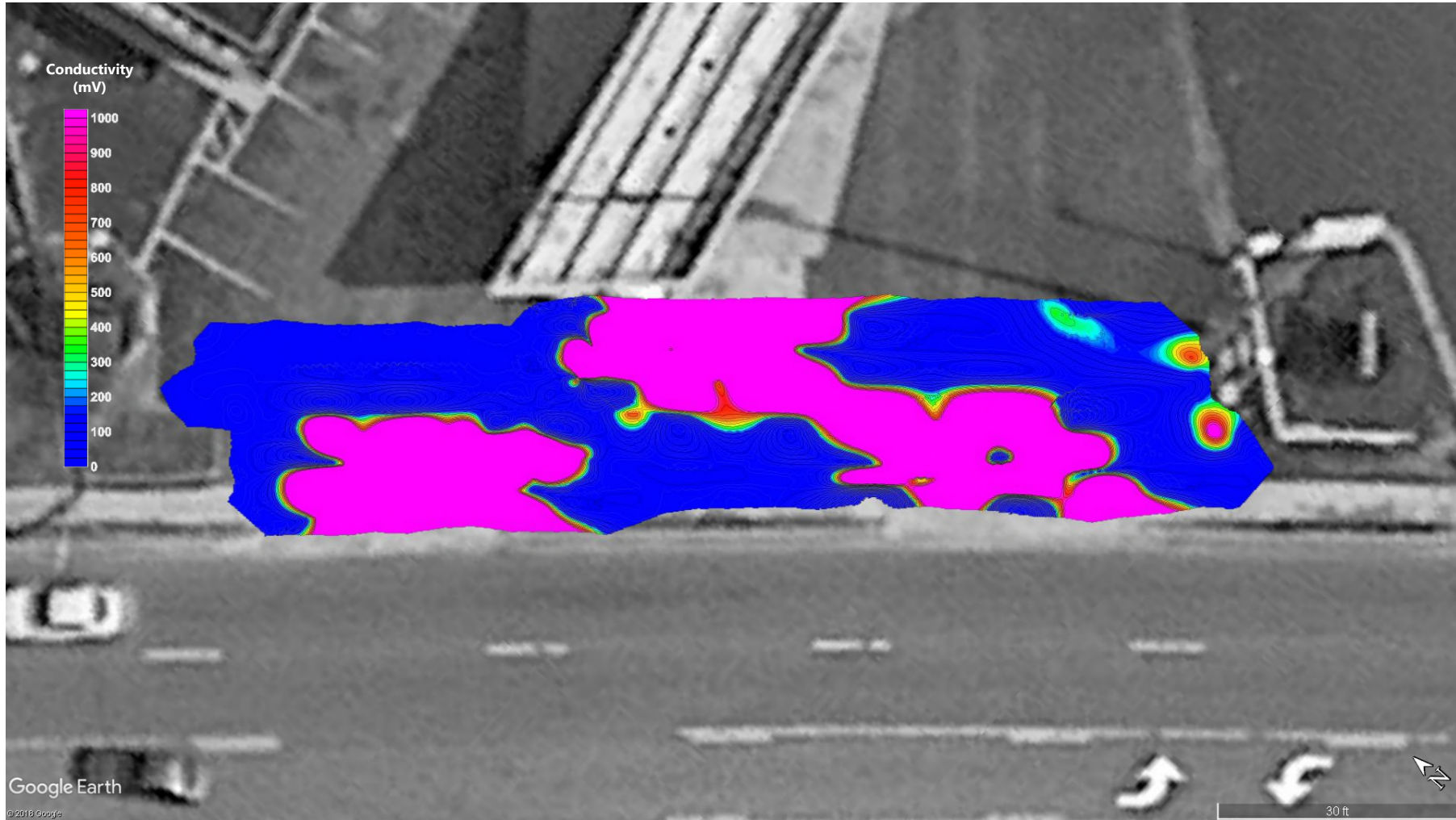
PROJECT NUMBER
4305-19-161

FIGURE NO.

4



REFERENCE:
GOOGLE EARTH PRO AERIAL PHOTOGRAPH
(DATED MARCH 4, 2018)



TDEM DATA PLOT A

NC DOT PROJECT: I-5878
PARCEL #90 - (SHELL FOOD AND TOBACCO MART)
1009 E. CUMBERLAND STREET, DUNN, HARNETT COUNTY, NORTH CAROLINA

SCALE:
AS SHOWN

DATE:
11/26/2019

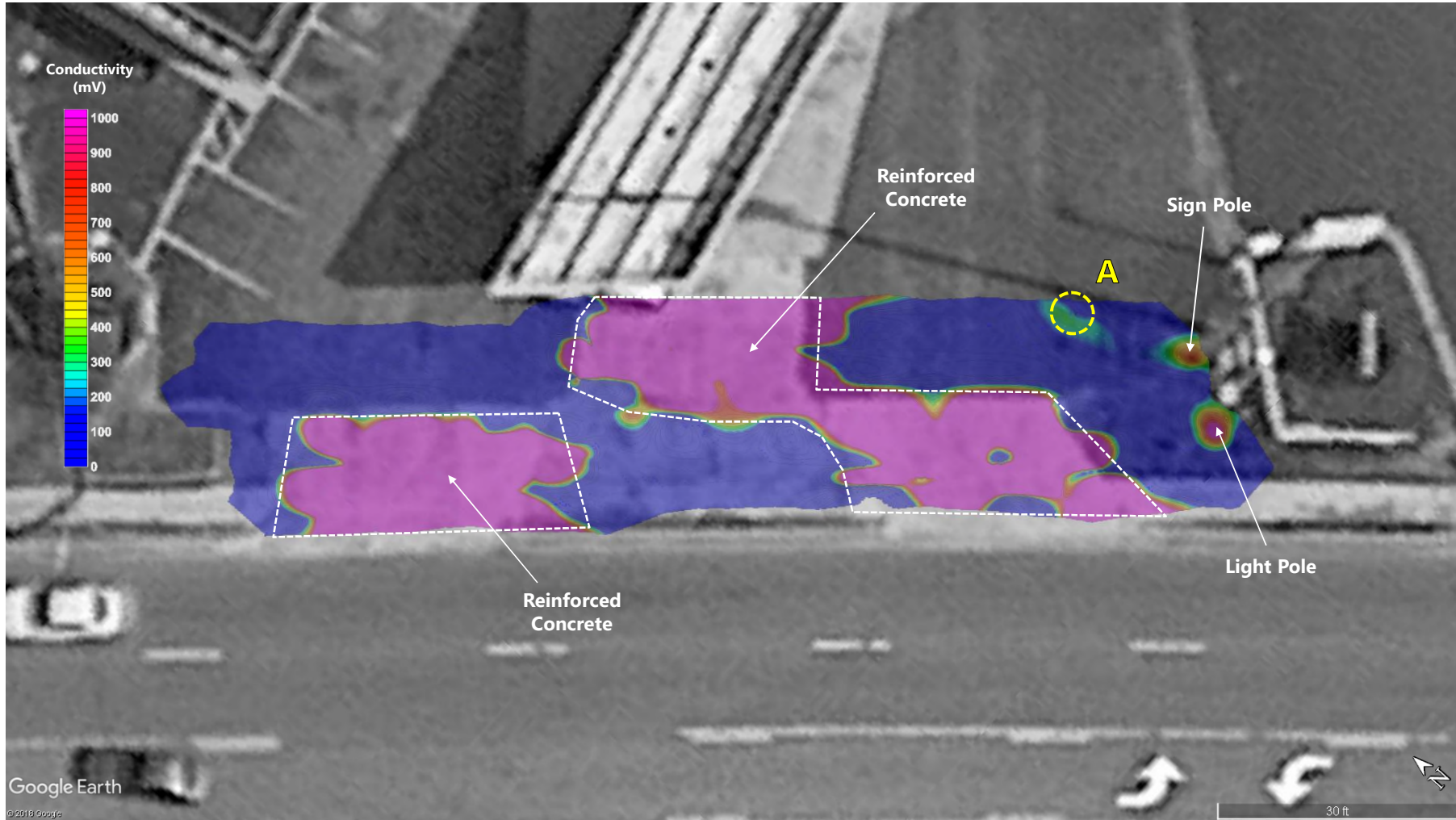
PROJECT NUMBER
4305-19-161

FIGURE NO.


5



REFERENCE:
 GOOGLE EARTH PRO AERIAL PHOTOGRAPH
 (DATED MARCH 4, 2018)



LEGEND

 Approximate Location of Geophysical Anomaly

TDEM DATA PLOT B

NC DOT PROJECT: I-5878
 PARCEL #90 - (SHELL FOOD AND TOBACCO MART)
 1009 E. CUMBERLAND STREET, DUNN, HARNETT COUNTY, NORTH CAROLINA

SCALE:
 AS SHOWN

DATE:
 11/26/2019

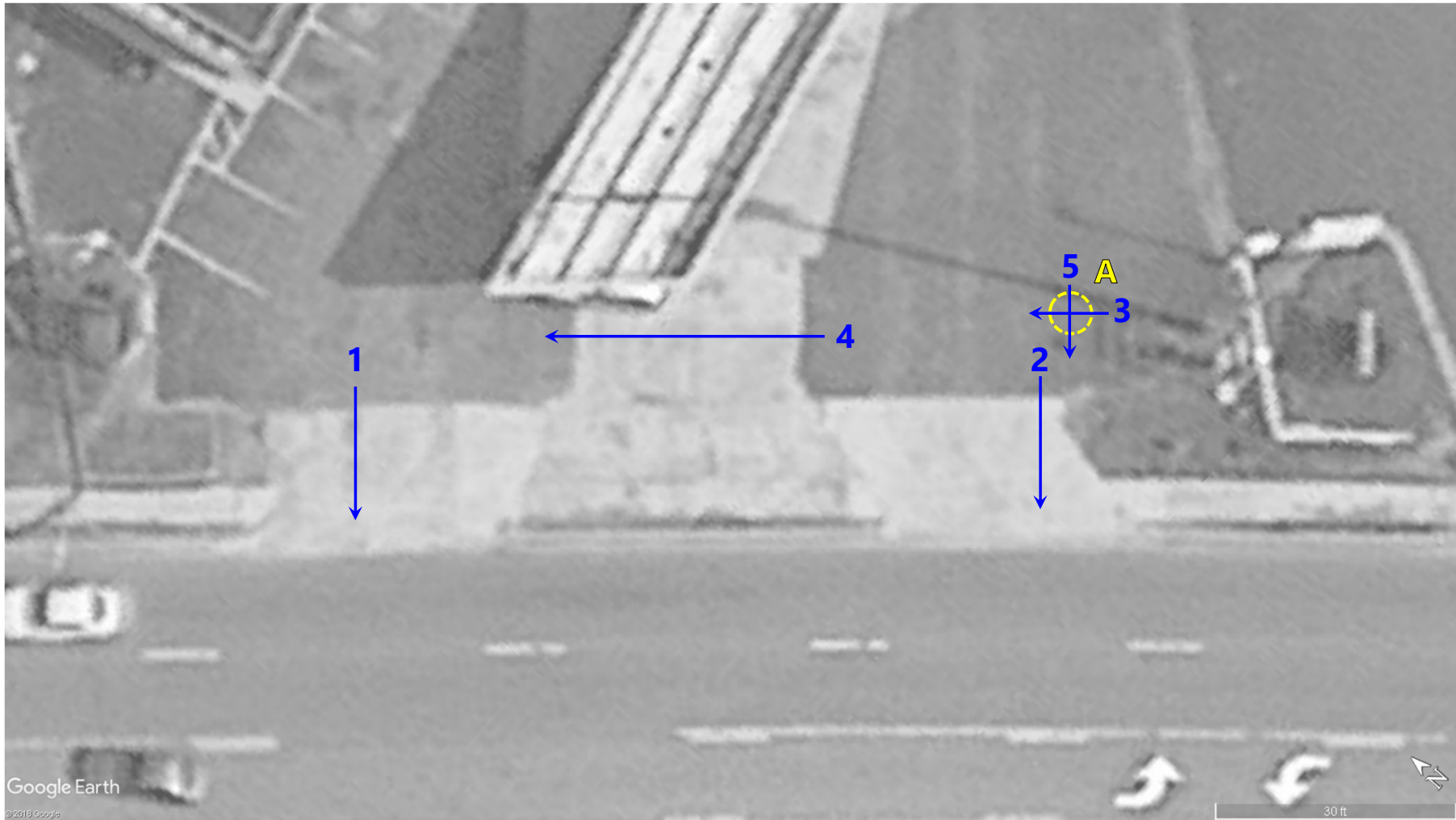
PROJECT NUMBER
 4305-19-161

FIGURE NO.

6



REFERENCE:
 GOOGLE EARTH PRO AERIAL PHOTOGRAPH
 (DATED MARCH 4, 2018)



Google Earth
 © 2018 Google

LEGEND

- Approximate Location of Geophysical Anomaly
- Approximate Location of GPR Profile

GEOPHYSICAL ANOMALY LOCATION PLAN

NCDOT PROJECT: I-5878
 PARCEL #90 - (SHELL FOOD AND TOBACCO MART)
 1009 E. CUMBERLAND STREET, DUNN, HARNETT COUNTY, NORTH CAROLINA

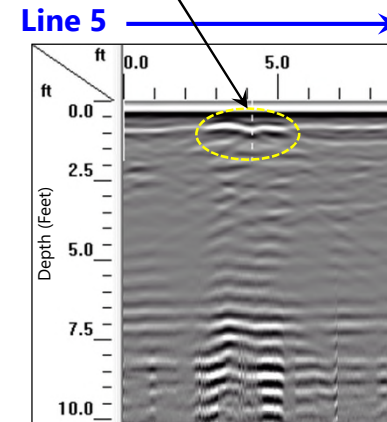
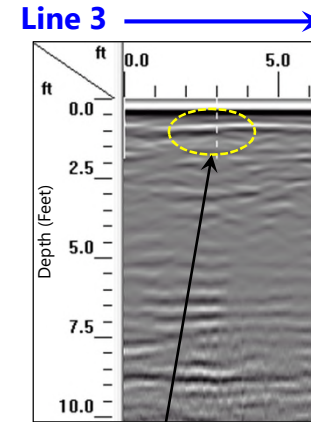
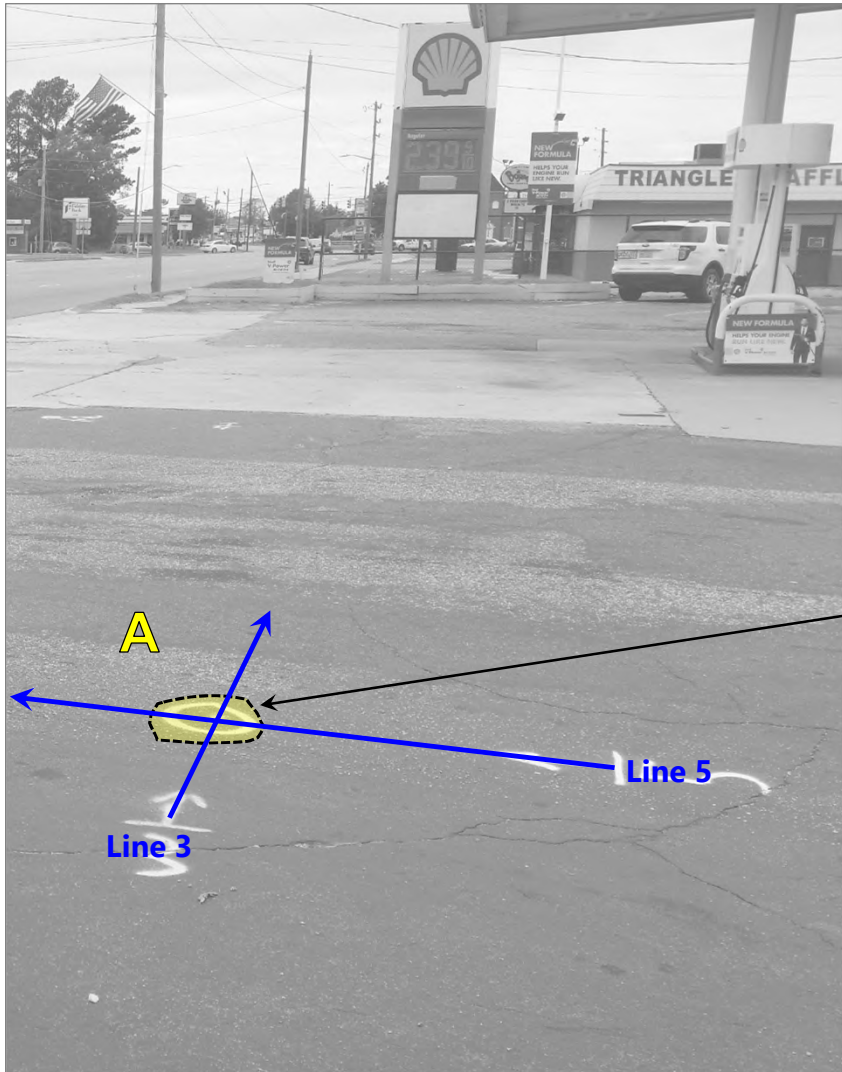
SCALE:
 AS SHOWN

DATE:
 11/26/2019

PROJECT NUMBER
 4305-19-161

FIGURE NO.

7



Anomaly A



EXAMPLE GPR DATA – LINES 3 AND 5

NCDOT PROJECT: I-5878
 PARCEL #90 – (SHELL FOOD AND TOBACCO MART)
 1009 E. CUMBERLAND STREET, DUNN, HARNETT COUNTY, NORTH CAROLINA

SCALE:
 AS SHOWN

DATE:
 11/26/2019

PROJECT NUMBER
 4305-19-161

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-5878, WBS Element 53078.1.1
 Parcel 90-Shell Food and Tobacco Mart
 Dunn, Harnett County, North Carolina
 S&ME Project No. 4305-19-161

		Date: 10/30/2019
		Photographer: JTH
1	Location / Orientation	Front view of site looking north from across E. Cumberland St.
	Remarks	None

		Date: 10/30/2019
		Photographer: JTH
2	Location / Orientation	View looking east-south across front of site.
	Remarks	None.



Preliminary Site Assessment Report
NCDOT Project I-5878, WBS Element 53078.1.1
Parcel 90-Shell Food and Tobacco Mart
Dunn, Harnett County, North Carolina
S&ME Project No. 4305-19-161

		Date: 10/30/2019
		Photographer: JTH
3	Location / Orientation	View looking north.
	Remarks	Note sampling of TW-1 at boring B-4.

Appendix II – Boring Logs

Appendix III – Laboratory Analytical Reports and Chain of Custody



Hydrocarbon Analysis Results

Client: S&ME
Address: 3201 Spring Forest Rd
 Raleigh, NC

Samples taken Thursday, October 31, 2019
Samples extracted Thursday, October 31, 2019
Samples analysed Friday, November 1, 2019

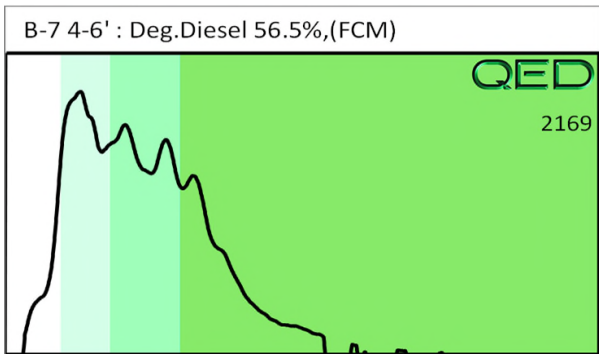
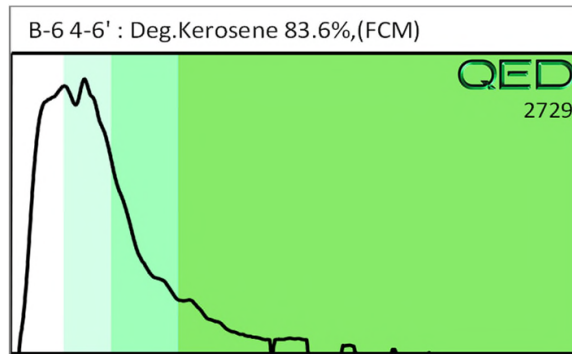
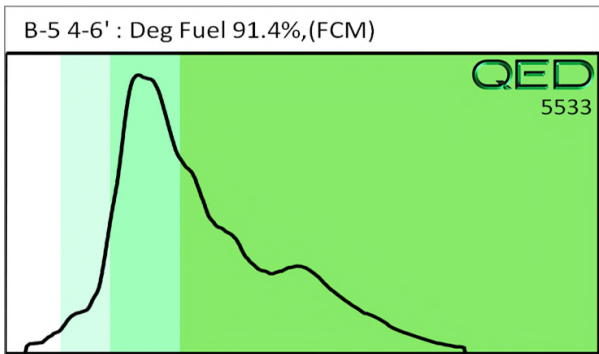
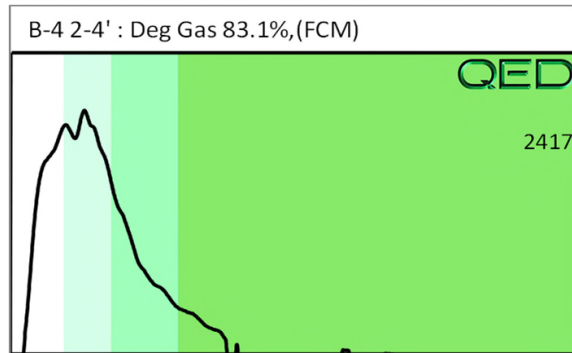
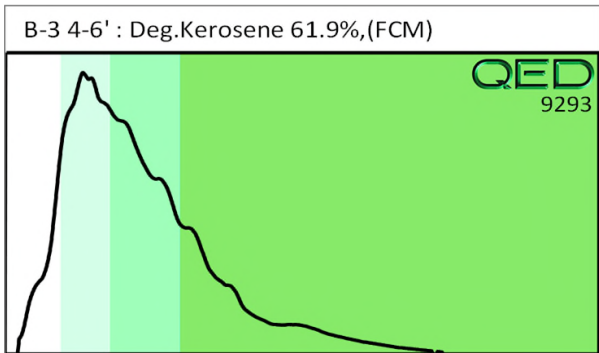
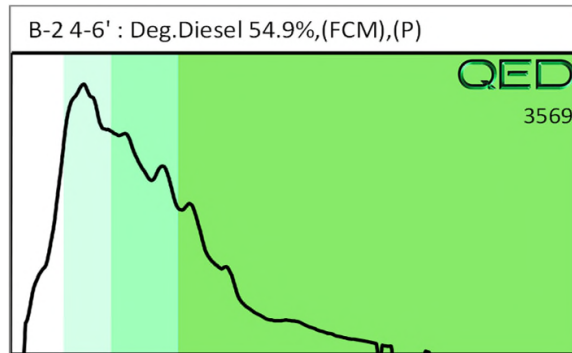
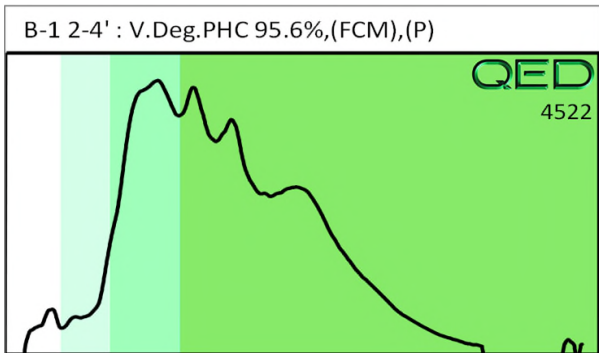
Contact: Jamie T Honeycutt

Operator Harry Wooten

Project: NCDOT I-5878 Parcel 90

											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					
s	B-1 2-4'	11.8	<0.3	<0.3	1.2	1.2	0.64	<0.09	<0.012	0	69.8	30.2	V.Deg.PHC 95.6%,(FCM),(P)				
s	B-2 4-6'	13.9	<0.35	5.7	21.5	27.2	1.8	<0.11	<0.014	96.1	3	0.9	Deg.Diesel 54.9%,(FCM),(P)				
s	B-3 4-6'	13.5	<0.34	12.2	208	220.2	8.8	0.33	<0.013	95.4	3.7	0.8	Deg.Kerosene 61.9%,(FCM)				
s	B-4 2-4'	211.0	<5.3	178.7	107.4	286.1	26.3	<1.7	<0.21	99.5	0.5	0	Deg Gas 83.1%,(FCM)				
s	B-5 4-6'	24.2	<0.61	<0.61	2.2	2.2	1.9	<0.19	<0.024	12.1	72.6	15.2	Deg Fuel 91.4%,(FCM)				
s	B-6 4-6'	24.4	<0.61	35.4	108	143.4	3.4	<0.2	<0.024	99.7	0.3	0	Deg.Kerosene 83.6%,(FCM)				
s	B-7 4-6'	24.6	<0.62	2.4	22.9	25.3	1.9	<0.2	<0.025	90.7	7.3	2.1	Deg.Diesel 56.5%,(FCM)				
Initial Calibrator QC check											OK		Final FCM QC Check		OK		108.6 %

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



November 7, 2019

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

Project Location: Dunn, NC
Client Job Number:
Project Number: 4305-19-161
Laboratory Work Order Number: 19K0022

Enclosed are results of analyses for samples received by the laboratory on October 31, 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	6
19K0022-01	6
Sample Preparation Information	8
QC Data	9
Volatile Organic Compounds by GC/MS	9
B245122	9
Flag/Qualifier Summary	14
Certifications	15
Chain of Custody/Sample Receipt	18

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: 11/7/2019

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 4305-19-161

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 19K0022

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

PROJECT LOCATION: Dunn, NC

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
TW-1	19K0022-01	Ground Water		SW-846 8260D	

EXECUTIVE SUMMARY

Client ID: **TW-1**

Lab ID: **19K0022-01**

Analyte	Results/Qual	DL	RL	Units	Method
1,2,4-Trimethylbenzene	2500	18	100	µg/L	SW-846 8260D
1,3,5-Trimethylbenzene	660	14	100	µg/L	SW-846 8260D
Benzene	3100	18	100	µg/L	SW-846 8260D
Ethylbenzene	2800	13	100	µg/L	SW-846 8260D
Isopropylbenzene (Cumene)	160	17	100	µg/L	SW-846 8260D
m+p Xylene	9000	30	200	µg/L	SW-846 8260D
Methyl tert-Butyl Ether (MTBE)	1800	25	100	µg/L	SW-846 8260D
Naphthalene	240	31	200	µg/L	SW-846 8260D
n-Butylbenzene	82 J	21	100	µg/L	SW-846 8260D
n-Propylbenzene	410	13	100	µg/L	SW-846 8260D
o-Xylene	4200	17	100	µg/L	SW-846 8260D
sec-Butylbenzene	37 J	16	100	µg/L	SW-846 8260D
tert-Butyl Alcohol (TBA)	1500 J	420	2000	µg/L	SW-846 8260D
Toluene	12000	14	100	µg/L	SW-846 8260D

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 8260D elevated reporting limits for sample 19K0022-01 due to high concentrations of target compounds.

SW-846 8260D**Qualifications:****RL-11**

Elevated reporting limit due to high concentration of target compounds.

Analyte & Samples(s) Qualified:

19K0022-01[TW-1]

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:**Bromomethane**

B245122-BS1, B245122-BSD1, S042311-CCV1

Chloromethane

B245122-BS1, B245122-BSD1, S042311-CCV1

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.



Lisa A. Worthington
Technical Representative

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

Project Location: Dunn, NC

Sample Description:

Work Order: 19K0022

Date Received: 10/31/2019

Field Sample #: TW-1

Sampled: 10/31/2019 12:10

Sample ID: 19K0022-01

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	5000	380	µg/L	100		SW-846 8260D	11/5/19	11/6/19 11:38	EEH
Acrylonitrile	ND	500	52	µg/L	100		SW-846 8260D	11/5/19	11/6/19 11:38	EEH
tert-Amyl Methyl Ether (TAME)	ND	50	14	µg/L	100		SW-846 8260D	11/5/19	11/6/19 11:38	EEH
Benzene	3100	100	18	µg/L	100		SW-846 8260D	11/5/19	11/6/19 11:38	EEH
Bromobenzene	ND	100	15	µg/L	100		SW-846 8260D	11/5/19	11/6/19 11:38	EEH
Bromochloromethane	ND	100	32	µg/L	100		SW-846 8260D	11/5/19	11/6/19 11:38	EEH
Bromodichloromethane	ND	50	16	µg/L	100		SW-846 8260D	11/5/19	11/6/19 11:38	EEH
Bromoform	ND	100	46	µg/L	100		SW-846 8260D	11/5/19	11/6/19 11:38	EEH
Bromomethane	ND	200	78	µg/L	100		SW-846 8260D	11/5/19	11/6/19 11:38	EEH
2-Butanone (MEK)	ND	2000	190	µg/L	100		SW-846 8260D	11/5/19	11/6/19 11:38	EEH
tert-Butyl Alcohol (TBA)	1500	2000	420	µg/L	100	J	SW-846 8260D	11/5/19	11/6/19 11:38	EEH
n-Butylbenzene	82	100	21	µg/L	100	J	SW-846 8260D	11/5/19	11/6/19 11:38	EEH
sec-Butylbenzene	37	100	16	µg/L	100	J	SW-846 8260D	11/5/19	11/6/19 11:38	EEH
tert-Butylbenzene	ND	100	17	µg/L	100		SW-846 8260D	11/5/19	11/6/19 11:38	EEH
tert-Butyl Ethyl Ether (TBEE)	ND	50	16	µg/L	100		SW-846 8260D	11/5/19	11/6/19 11:38	EEH
Carbon Disulfide	ND	500	440	µg/L	100		SW-846 8260D	11/5/19	11/6/19 11:38	EEH
Carbon Tetrachloride	ND	100	11	µg/L	100		SW-846 8260D	11/5/19	11/6/19 11:38	EEH
Chlorobenzene	ND	100	15	µg/L	100		SW-846 8260D	11/5/19	11/6/19 11:38	EEH
Chlorodibromomethane	ND	50	21	µg/L	100		SW-846 8260D	11/5/19	11/6/19 11:38	EEH
Chloroethane	ND	200	35	µg/L	100		SW-846 8260D	11/5/19	11/6/19 11:38	EEH
Chloroform	ND	200	17	µg/L	100		SW-846 8260D	11/5/19	11/6/19 11:38	EEH
Chloromethane	ND	200	45	µg/L	100		SW-846 8260D	11/5/19	11/6/19 11:38	EEH
2-Chlorotoluene	ND	100	12	µg/L	100		SW-846 8260D	11/5/19	11/6/19 11:38	EEH
4-Chlorotoluene	ND	100	14	µg/L	100		SW-846 8260D	11/5/19	11/6/19 11:38	EEH
1,2-Dibromo-3-chloropropane (DBCP)	ND	500	53	µg/L	100		SW-846 8260D	11/5/19	11/6/19 11:38	EEH
1,2-Dibromoethane (EDB)	ND	50	19	µg/L	100		SW-846 8260D	11/5/19	11/6/19 11:38	EEH
Dibromomethane	ND	100	37	µg/L	100		SW-846 8260D	11/5/19	11/6/19 11:38	EEH
1,2-Dichlorobenzene	ND	100	16	µg/L	100		SW-846 8260D	11/5/19	11/6/19 11:38	EEH
1,3-Dichlorobenzene	ND	100	12	µg/L	100		SW-846 8260D	11/5/19	11/6/19 11:38	EEH
1,4-Dichlorobenzene	ND	100	13	µg/L	100		SW-846 8260D	11/5/19	11/6/19 11:38	EEH
trans-1,4-Dichloro-2-butene	ND	200	31	µg/L	100		SW-846 8260D	11/5/19	11/6/19 11:38	EEH
Dichlorodifluoromethane (Freon 12)	ND	200	26	µg/L	100		SW-846 8260D	11/5/19	11/6/19 11:38	EEH
1,1-Dichloroethane	ND	100	16	µg/L	100		SW-846 8260D	11/5/19	11/6/19 11:38	EEH
1,2-Dichloroethane	ND	100	41	µg/L	100		SW-846 8260D	11/5/19	11/6/19 11:38	EEH
1,1-Dichloroethylene	ND	100	32	µg/L	100		SW-846 8260D	11/5/19	11/6/19 11:38	EEH
cis-1,2-Dichloroethylene	ND	100	13	µg/L	100		SW-846 8260D	11/5/19	11/6/19 11:38	EEH
trans-1,2-Dichloroethylene	ND	100	31	µg/L	100		SW-846 8260D	11/5/19	11/6/19 11:38	EEH
1,2-Dichloropropane	ND	100	20	µg/L	100		SW-846 8260D	11/5/19	11/6/19 11:38	EEH
1,3-Dichloropropane	ND	50	11	µg/L	100		SW-846 8260D	11/5/19	11/6/19 11:38	EEH
2,2-Dichloropropane	ND	100	20	µg/L	100		SW-846 8260D	11/5/19	11/6/19 11:38	EEH
1,1-Dichloropropene	ND	200	16	µg/L	100		SW-846 8260D	11/5/19	11/6/19 11:38	EEH
cis-1,3-Dichloropropene	ND	50	13	µg/L	100		SW-846 8260D	11/5/19	11/6/19 11:38	EEH
trans-1,3-Dichloropropene	ND	50	23	µg/L	100		SW-846 8260D	11/5/19	11/6/19 11:38	EEH
Diethyl Ether	ND	200	34	µg/L	100		SW-846 8260D	11/5/19	11/6/19 11:38	EEH

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

Project Location: Dunn, NC

Sample Description:

Work Order: 19K0022

Date Received: 10/31/2019

Field Sample #: TW-1

Sampled: 10/31/2019 12:10

Sample ID: 19K0022-01

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	50	17	µg/L	100		SW-846 8260D	11/5/19	11/6/19 11:38	EEH
1,4-Dioxane	ND	5000	2200	µg/L	100		SW-846 8260D	11/5/19	11/6/19 11:38	EEH
Ethylbenzene	2800	100	13	µg/L	100		SW-846 8260D	11/5/19	11/6/19 11:38	EEH
Hexachlorobutadiene	ND	60	47	µg/L	100		SW-846 8260D	11/5/19	11/6/19 11:38	EEH
2-Hexanone (MBK)	ND	1000	150	µg/L	100		SW-846 8260D	11/5/19	11/6/19 11:38	EEH
Isopropylbenzene (Cumene)	160	100	17	µg/L	100		SW-846 8260D	11/5/19	11/6/19 11:38	EEH
p-Isopropyltoluene (p-Cymene)	ND	100	20	µg/L	100		SW-846 8260D	11/5/19	11/6/19 11:38	EEH
Methyl tert-Butyl Ether (MTBE)	1800	100	25	µg/L	100		SW-846 8260D	11/5/19	11/6/19 11:38	EEH
Methylene Chloride	ND	500	34	µg/L	100		SW-846 8260D	11/5/19	11/6/19 11:38	EEH
4-Methyl-2-pentanone (MIBK)	ND	1000	170	µg/L	100		SW-846 8260D	11/5/19	11/6/19 11:38	EEH
Naphthalene	240	200	31	µg/L	100		SW-846 8260D	11/5/19	11/6/19 11:38	EEH
n-Propylbenzene	410	100	13	µg/L	100		SW-846 8260D	11/5/19	11/6/19 11:38	EEH
Styrene	ND	100	11	µg/L	100		SW-846 8260D	11/5/19	11/6/19 11:38	EEH
1,1,1,2-Tetrachloroethane	ND	100	27	µg/L	100		SW-846 8260D	11/5/19	11/6/19 11:38	EEH
1,1,2,2-Tetrachloroethane	ND	50	22	µg/L	100		SW-846 8260D	11/5/19	11/6/19 11:38	EEH
Tetrachloroethylene	ND	100	18	µg/L	100		SW-846 8260D	11/5/19	11/6/19 11:38	EEH
Tetrahydrofuran	ND	1000	51	µg/L	100		SW-846 8260D	11/5/19	11/6/19 11:38	EEH
Toluene	12000	100	14	µg/L	100		SW-846 8260D	11/5/19	11/6/19 11:38	EEH
1,2,3-Trichlorobenzene	ND	500	57	µg/L	100		SW-846 8260D	11/5/19	11/6/19 11:38	EEH
1,2,4-Trichlorobenzene	ND	100	40	µg/L	100		SW-846 8260D	11/5/19	11/6/19 11:38	EEH
1,3,5-Trichlorobenzene	ND	100	30	µg/L	100		SW-846 8260D	11/5/19	11/6/19 11:38	EEH
1,1,1-Trichloroethane	ND	100	20	µg/L	100		SW-846 8260D	11/5/19	11/6/19 11:38	EEH
1,1,2-Trichloroethane	ND	100	16	µg/L	100		SW-846 8260D	11/5/19	11/6/19 11:38	EEH
Trichloroethylene	ND	100	24	µg/L	100		SW-846 8260D	11/5/19	11/6/19 11:38	EEH
Trichlorofluoromethane (Freon 11)	ND	200	33	µg/L	100		SW-846 8260D	11/5/19	11/6/19 11:38	EEH
1,2,3-Trichloropropane	ND	200	25	µg/L	100		SW-846 8260D	11/5/19	11/6/19 11:38	EEH
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	100	32	µg/L	100		SW-846 8260D	11/5/19	11/6/19 11:38	EEH
1,2,4-Trimethylbenzene	2500	100	18	µg/L	100		SW-846 8260D	11/5/19	11/6/19 11:38	EEH
1,3,5-Trimethylbenzene	660	100	14	µg/L	100		SW-846 8260D	11/5/19	11/6/19 11:38	EEH
Vinyl Chloride	ND	200	45	µg/L	100		SW-846 8260D	11/5/19	11/6/19 11:38	EEH
m+p Xylene	9000	200	30	µg/L	100		SW-846 8260D	11/5/19	11/6/19 11:38	EEH
o-Xylene	4200	100	17	µg/L	100		SW-846 8260D	11/5/19	11/6/19 11:38	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual
1,2-Dichloroethane-d4	93.2	70-130	11/6/19 11:38
Toluene-d8	100	70-130	11/6/19 11:38
4-Bromofluorobenzene	97.1	70-130	11/6/19 11:38

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
19K0022-01 [TW-1]	B245122	0.05	5.00	11/05/19

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
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch B245122 - SW-846 5030B

Blank (B245122-BLK1)

Prepared: 11/05/19 Analyzed: 11/06/19

Acetone	ND	50	µg/L							
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	5.0	µg/L							
Carbon Tetrachloride	ND	1.0	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							
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
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Batch B245122 - SW-846 5030B

Blank (B245122-BLK1)

Prepared: 11/05/19 Analyzed: 11/06/19

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 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	23.6		µg/L	25.0		94.4	70-130			
Surrogate: Toluene-d8	24.4		µg/L	25.0		97.4	70-130			
Surrogate: 4-Bromofluorobenzene	24.4		µg/L	25.0		97.4	70-130			

LCS (B245122-BS1)

Prepared: 11/05/19 Analyzed: 11/06/19

Acetone	88.7	50	µg/L	100		88.7	70-160			†
Acrylonitrile	8.30	5.0	µg/L	10.0		83.0	70-130			
tert-Amyl Methyl Ether (TAME)	9.48	0.50	µg/L	10.0		94.8	70-130			
Benzene	10.7	1.0	µg/L	10.0		107	70-130			
Bromobenzene	10.4	1.0	µg/L	10.0		104	70-130			
Bromochloromethane	10.4	1.0	µg/L	10.0		104	70-130			
Bromodichloromethane	10.5	0.50	µg/L	10.0		105	70-130			
Bromoform	9.77	1.0	µg/L	10.0		97.7	70-130			
Bromomethane	9.88	2.0	µg/L	10.0		98.8	40-160		V-20	†
2-Butanone (MEK)	87.5	20	µg/L	100		87.5	40-160			†
tert-Butyl Alcohol (TBA)	80.3	20	µg/L	100		80.3	40-160			†
n-Butylbenzene	9.81	1.0	µg/L	10.0		98.1	70-130			
sec-Butylbenzene	11.1	1.0	µg/L	10.0		111	70-130			
tert-Butylbenzene	10.9	1.0	µg/L	10.0		109	70-130			
tert-Butyl Ethyl Ether (TBEE)	9.24	0.50	µg/L	10.0		92.4	70-130			
Carbon Disulfide	11.8	5.0	µg/L	10.0		118	70-130			
Carbon Tetrachloride	10.3	1.0	µg/L	10.0		103	70-130			
Chlorobenzene	11.4	1.0	µg/L	10.0		114	70-130			
Chlorodibromomethane	10.0	0.50	µg/L	10.0		100	70-130			
Chloroethane	11.6	2.0	µg/L	10.0		116	70-130			
Chloroform	10.4	2.0	µg/L	10.0		104	70-130			
Chloromethane	9.02	2.0	µg/L	10.0		90.2	40-160			
2-Chlorotoluene	10.6	1.0	µg/L	10.0		106	70-130		V-20	†

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 B245122 - SW-846 5030B										
LCS (B245122-BS1)										
					Prepared: 11/05/19 Analyzed: 11/06/19					
4-Chlorotoluene	10.5	1.0	µg/L	10.0		105	70-130			
1,2-Dibromo-3-chloropropane (DBCP)	9.08	5.0	µg/L	10.0		90.8	70-130			
1,2-Dibromoethane (EDB)	10.8	0.50	µg/L	10.0		108	70-130			
Dibromomethane	10.4	1.0	µg/L	10.0		104	70-130			
1,2-Dichlorobenzene	11.0	1.0	µg/L	10.0		110	70-130			
1,3-Dichlorobenzene	11.5	1.0	µg/L	10.0		115	70-130			
1,4-Dichlorobenzene	11.2	1.0	µg/L	10.0		112	70-130			
trans-1,4-Dichloro-2-butene	7.67	2.0	µg/L	10.0		76.7	70-130			
Dichlorodifluoromethane (Freon 12)	8.34	2.0	µg/L	10.0		83.4	40-160			†
1,1-Dichloroethane	10.7	1.0	µg/L	10.0		107	70-130			
1,2-Dichloroethane	9.98	1.0	µg/L	10.0		99.8	70-130			
1,1-Dichloroethylene	11.0	1.0	µg/L	10.0		110	70-130			
cis-1,2-Dichloroethylene	10.6	1.0	µg/L	10.0		106	70-130			
trans-1,2-Dichloroethylene	10.5	1.0	µg/L	10.0		105	70-130			
1,2-Dichloropropane	10.8	1.0	µg/L	10.0		108	70-130			
1,3-Dichloropropane	10.3	0.50	µg/L	10.0		103	70-130			
2,2-Dichloropropane	8.49	1.0	µg/L	10.0		84.9	40-130			†
1,1-Dichloropropene	10.5	2.0	µg/L	10.0		105	70-130			
cis-1,3-Dichloropropene	10.0	0.50	µg/L	10.0		100	70-130			
trans-1,3-Dichloropropene	9.41	0.50	µg/L	10.0		94.1	70-130			
Diethyl Ether	10.8	2.0	µg/L	10.0		108	70-130			
Diisopropyl Ether (DIPE)	10.1	0.50	µg/L	10.0		101	70-130			
1,4-Dioxane	86.6	50	µg/L	100		86.6	40-130			†
Ethylbenzene	11.0	1.0	µg/L	10.0		110	70-130			
Hexachlorobutadiene	9.83	0.60	µg/L	10.0		98.3	70-130			
2-Hexanone (MBK)	84.3	10	µg/L	100		84.3	70-160			†
Isopropylbenzene (Cumene)	11.1	1.0	µg/L	10.0		111	70-130			
p-Isopropyltoluene (p-Cymene)	10.7	1.0	µg/L	10.0		107	70-130			
Methyl tert-Butyl Ether (MTBE)	10.3	1.0	µg/L	10.0		103	70-130			
Methylene Chloride	11.0	5.0	µg/L	10.0		110	70-130			
4-Methyl-2-pentanone (MIBK)	86.6	10	µg/L	100		86.6	70-160			†
Naphthalene	7.64	2.0	µg/L	10.0		76.4	40-130			†
n-Propylbenzene	10.6	1.0	µg/L	10.0		106	70-130			
Styrene	10.9	1.0	µg/L	10.0		109	70-130			
1,1,1,2-Tetrachloroethane	11.3	1.0	µg/L	10.0		113	70-130			
1,1,2,2-Tetrachloroethane	10.8	0.50	µg/L	10.0		108	70-130			
Tetrachloroethylene	11.5	1.0	µg/L	10.0		115	70-130			
Tetrahydrofuran	9.60	10	µg/L	10.0		96.0	70-130			J
Toluene	10.9	1.0	µg/L	10.0		109	70-130			
1,2,3-Trichlorobenzene	8.06	5.0	µg/L	10.0		80.6	70-130			
1,2,4-Trichlorobenzene	8.70	1.0	µg/L	10.0		87.0	70-130			
1,3,5-Trichlorobenzene	9.18	1.0	µg/L	10.0		91.8	70-130			
1,1,1-Trichloroethane	10.4	1.0	µg/L	10.0		104	70-130			
1,1,2-Trichloroethane	11.0	1.0	µg/L	10.0		110	70-130			
Trichloroethylene	11.1	1.0	µg/L	10.0		111	70-130			
Trichlorofluoromethane (Freon 11)	9.61	2.0	µg/L	10.0		96.1	70-130			
1,2,3-Trichloropropane	10.3	2.0	µg/L	10.0		103	70-130			
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	11.5	1.0	µg/L	10.0		115	70-130			
1,2,4-Trimethylbenzene	10.8	1.0	µg/L	10.0		108	70-130			
1,3,5-Trimethylbenzene	10.4	1.0	µg/L	10.0		104	70-130			
Vinyl Chloride	9.58	2.0	µg/L	10.0		95.8	40-160			†

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 B245122 - SW-846 5030B

LCS (B245122-BS1)

Prepared: 11/05/19 Analyzed: 11/06/19

m+p Xylene	21.3	2.0	µg/L	20.0		106	70-130			
o-Xylene	11.1	1.0	µg/L	10.0		111	70-130			
Surrogate: 1,2-Dichloroethane-d4	23.4		µg/L	25.0		93.6	70-130			
Surrogate: Toluene-d8	25.0		µg/L	25.0		99.9	70-130			
Surrogate: 4-Bromofluorobenzene	24.6		µg/L	25.0		98.4	70-130			

LCS Dup (B245122-BSD1)

Prepared: 11/05/19 Analyzed: 11/06/19

Acetone	91.2	50	µg/L	100		91.2	70-160	2.72	25	†
Acrylonitrile	9.01	5.0	µg/L	10.0		90.1	70-130	8.20	25	
tert-Amyl Methyl Ether (TAME)	9.41	0.50	µg/L	10.0		94.1	70-130	0.741	25	
Benzene	10.4	1.0	µg/L	10.0		104	70-130	3.23	25	
Bromobenzene	10.0	1.0	µg/L	10.0		100	70-130	4.00	25	
Bromochloromethane	10.4	1.0	µg/L	10.0		104	70-130	0.865	25	
Bromodichloromethane	10.2	0.50	µg/L	10.0		102	70-130	3.68	25	
Bromoform	10.2	1.0	µg/L	10.0		102	70-130	3.91	25	
Bromomethane	9.76	2.0	µg/L	10.0		97.6	40-160	1.22	25	V-20 †
2-Butanone (MEK)	89.8	20	µg/L	100		89.8	40-160	2.63	25	†
tert-Butyl Alcohol (TBA)	83.6	20	µg/L	100		83.6	40-160	4.00	25	†
n-Butylbenzene	9.65	1.0	µg/L	10.0		96.5	70-130	1.64	25	
sec-Butylbenzene	11.0	1.0	µg/L	10.0		110	70-130	1.18	25	
tert-Butylbenzene	10.8	1.0	µg/L	10.0		108	70-130	1.11	25	
tert-Butyl Ethyl Ether (TBEE)	9.17	0.50	µg/L	10.0		91.7	70-130	0.760	25	
Carbon Disulfide	10.8	5.0	µg/L	10.0		108	70-130	8.59	25	
Carbon Tetrachloride	10.2	1.0	µg/L	10.0		102	70-130	1.46	25	
Chlorobenzene	11.5	1.0	µg/L	10.0		115	70-130	0.610	25	
Chlorodibromomethane	9.73	0.50	µg/L	10.0		97.3	70-130	2.84	25	
Chloroethane	10.8	2.0	µg/L	10.0		108	70-130	7.24	25	
Chloroform	10.1	2.0	µg/L	10.0		101	70-130	2.53	25	
Chloromethane	8.77	2.0	µg/L	10.0		87.7	40-160	2.81	25	V-20 †
2-Chlorotoluene	10.7	1.0	µg/L	10.0		107	70-130	0.845	25	
4-Chlorotoluene	10.4	1.0	µg/L	10.0		104	70-130	1.34	25	
1,2-Dibromo-3-chloropropane (DBCP)	8.90	5.0	µg/L	10.0		89.0	70-130	2.00	25	
1,2-Dibromoethane (EDB)	10.7	0.50	µg/L	10.0		107	70-130	1.58	25	
Dibromomethane	10.2	1.0	µg/L	10.0		102	70-130	2.33	25	
1,2-Dichlorobenzene	11.0	1.0	µg/L	10.0		110	70-130	0.181	25	
1,3-Dichlorobenzene	11.4	1.0	µg/L	10.0		114	70-130	0.872	25	
1,4-Dichlorobenzene	10.9	1.0	µg/L	10.0		109	70-130	3.07	25	
trans-1,4-Dichloro-2-butene	8.71	2.0	µg/L	10.0		87.1	70-130	12.7	25	
Dichlorodifluoromethane (Freon 12)	8.23	2.0	µg/L	10.0		82.3	40-160	1.33	25	†
1,1-Dichloroethane	10.2	1.0	µg/L	10.0		102	70-130	4.40	25	
1,2-Dichloroethane	9.91	1.0	µg/L	10.0		99.1	70-130	0.704	25	
1,1-Dichloroethylene	10.6	1.0	µg/L	10.0		106	70-130	3.90	25	
cis-1,2-Dichloroethylene	10.1	1.0	µg/L	10.0		101	70-130	5.01	25	
trans-1,2-Dichloroethylene	10.3	1.0	µg/L	10.0		103	70-130	2.50	25	
1,2-Dichloropropane	10.8	1.0	µg/L	10.0		108	70-130	0.649	25	
1,3-Dichloropropane	10.4	0.50	µg/L	10.0		104	70-130	0.870	25	
2,2-Dichloropropane	8.15	1.0	µg/L	10.0		81.5	40-130	4.09	25	†
1,1-Dichloropropene	10.4	2.0	µg/L	10.0		104	70-130	1.06	25	
cis-1,3-Dichloropropene	9.73	0.50	µg/L	10.0		97.3	70-130	3.14	25	
trans-1,3-Dichloropropene	9.66	0.50	µg/L	10.0		96.6	70-130	2.62	25	
Diethyl Ether	10.3	2.0	µg/L	10.0		103	70-130	4.65	25	
Diisopropyl Ether (DIPE)	9.94	0.50	µg/L	10.0		99.4	70-130	1.99	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 B245122 - SW-846 5030B										
LCS Dup (B245122-BSD1)										
					Prepared: 11/05/19 Analyzed: 11/06/19					
1,4-Dioxane	92.6	50	µg/L	100		92.6	40-130	6.72	50	† ‡
Ethylbenzene	10.7	1.0	µg/L	10.0		107	70-130	2.12	25	
Hexachlorobutadiene	10.1	0.60	µg/L	10.0		101	70-130	2.41	25	
2-Hexanone (MBK)	84.4	10	µg/L	100		84.4	70-160	0.0712	25	†
Isopropylbenzene (Cumene)	10.6	1.0	µg/L	10.0		106	70-130	3.96	25	
p-Isopropyltoluene (p-Cymene)	10.5	1.0	µg/L	10.0		105	70-130	2.36	25	
Methyl tert-Butyl Ether (MTBE)	10.2	1.0	µg/L	10.0		102	70-130	0.585	25	
Methylene Chloride	10.6	5.0	µg/L	10.0		106	70-130	3.60	25	
4-Methyl-2-pentanone (MIBK)	90.1	10	µg/L	100		90.1	70-160	4.02	25	†
Naphthalene	8.02	2.0	µg/L	10.0		80.2	40-130	4.85	25	†
n-Propylbenzene	10.3	1.0	µg/L	10.0		103	70-130	2.11	25	
Styrene	10.4	1.0	µg/L	10.0		104	70-130	4.90	25	
1,1,1,2-Tetrachloroethane	11.3	1.0	µg/L	10.0		113	70-130	0.265	25	
1,1,2,2-Tetrachloroethane	11.1	0.50	µg/L	10.0		111	70-130	3.01	25	
Tetrachloroethylene	11.5	1.0	µg/L	10.0		115	70-130	0.348	25	
Tetrahydrofuran	10.0	10	µg/L	10.0		100	70-130	4.28	25	
Toluene	10.5	1.0	µg/L	10.0		105	70-130	3.82	25	
1,2,3-Trichlorobenzene	7.86	5.0	µg/L	10.0		78.6	70-130	2.51	25	
1,2,4-Trichlorobenzene	8.34	1.0	µg/L	10.0		83.4	70-130	4.23	25	
1,3,5-Trichlorobenzene	8.42	1.0	µg/L	10.0		84.2	70-130	8.64	25	
1,1,1-Trichloroethane	9.84	1.0	µg/L	10.0		98.4	70-130	5.24	25	
1,1,2-Trichloroethane	11.0	1.0	µg/L	10.0		110	70-130	0.364	25	
Trichloroethylene	11.1	1.0	µg/L	10.0		111	70-130	0.180	25	
Trichlorofluoromethane (Freon 11)	9.30	2.0	µg/L	10.0		93.0	70-130	3.28	25	
1,2,3-Trichloropropane	10.0	2.0	µg/L	10.0		100	70-130	2.85	25	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	11.1	1.0	µg/L	10.0		111	70-130	4.07	25	
1,2,4-Trimethylbenzene	10.7	1.0	µg/L	10.0		107	70-130	0.650	25	
1,3,5-Trimethylbenzene	9.97	1.0	µg/L	10.0		99.7	70-130	3.93	25	
Vinyl Chloride	9.25	2.0	µg/L	10.0		92.5	40-160	3.51	25	†
m+p Xylene	21.3	2.0	µg/L	20.0		106	70-130	0.0470	25	
o-Xylene	11.1	1.0	µg/L	10.0		111	70-130	0.541	25	
Surrogate: 1,2-Dichloroethane-d4	22.9		µg/L	25.0		91.5	70-130			
Surrogate: Toluene-d8	25.2		µg/L	25.0		101	70-130			
Surrogate: 4-Bromofluorobenzene	24.6		µg/L	25.0		98.5	70-130			

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.
- J Detected but below the Reporting Limit (lowest calibration standard); therefore, result is an estimated concentration (CLP J-Flag).
- RL-11 Elevated reporting limit due to high concentration of target compounds.
- 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.

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 - ISO17025:2017	100033	03/1/2020
MA	Massachusetts DEP	M-MA100	06/30/2020
CT	Connecticut Department of Public Health	PH-0567	09/30/2021
NY	New York State Department of Health	10899 NELAP	04/1/2020
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	06/30/2020
FL	Florida Department of Health	E871027 NELAP	06/30/2020
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2020
ME	State of Maine	2011028	06/9/2021
VA	Commonwealth of Virginia	460217	12/14/2019
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2020
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2020
NC-DW	North Carolina Department of Health	25703	07/31/2020
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2020



Company Name: **S-FINE**

Address: **3201 Spruce Forest Rd, Raleigh NC**
 Phone: **910 972-7614**
 Project Name: **NC DOT I-8878 Phase 90**
 Project Location: **DURHAM, NC**
 Project Number: **4305-19-164**
 Project Manager: **Janice Thompson**
 Con-Test Quote Name/Number: _____
 Invoice Recipient: **Janice Thompson**
 Sampled By: **1**

of Containers: _____
 2 Preservation Code: _____
 3 Container Code: _____

Dissolved Metals Samples
 Field Filtered
 Lab to Filter

Orthophosphate Samples
 Field Filtered
 Lab to Filter

1 Matrix Codes:
 GW = Ground Water
 WW = Waste Water
 DW = Drinking Water
 A = Air
 S = Soil
 SL = Sludge
 SOL = Solid
 O = Other (please define)

2 Preservation Codes:
 I = Iced
 H = HCL
 M = Methanol
 N = Nitric Acid
 S = Sulfuric Acid
 B = Sodium Bisulfate
 X = Sodium Hydroxide
 T = Sodium Thiosulfate
 O = Other (please define)

3 Container Codes:
 A = Amber Glass
 G = Glass
 P = Plastic
 ST = Sterile
 V = Vial
 S = Summa Canister
 T = Tedlar Bag
 O = Other (please define)

PCB ONLY
 Soxhlet
 Non Soxhlet

Requested Turnaround Time	7-Day	10-Day	Due Date:	1-Day	3-Day	2-Day	4-Day	Format:	PDF	EXCEL	Other:	CLP Like Data Pkg Required:	Email To:	Fax To #:	Beginning Date/Time	Ending Date/Time	Composite	Grab	Matrix Code	Conc Code
ANALYSIS REQUESTED															10-31-19	1210			GW	H

Please use the following codes to indicate possible sample concentration within the Conc Code column above:
 H - High; M - Medium; L - Low; C - Clean; U - Unknown

Program Information

DSCA UST/Trust Fund
 SWS Landfill REC
 IHSB Orphaned Landfill
 State Lead
 Other: _____

North Carolina Detection Limit Requirements

2L GWPC
 SWSL IHSB
 MSCC

Other: _____

Project Entity

Government Municipality
 Federal Brownfield
 City School

Other: **MEAC and AIHA-LAP, LLC Accredited**

Comments: _____

Relinquished by: (signature) **Janice Thompson** Date/Time: **10-31-19 1500**
 Received by: (signature) **M. J. 1111** Date/Time: **11M 002**
 Relinquished by: (signature) _____ Date/Time: _____
 Received by: (signature) _____ Date/Time: _____
 Relinquished by: (signature) _____ Date/Time: _____
 Received by: (signature) _____ Date/Time: _____

IMPORTANT!

The wildfires are causing hazardous conditions in California. [Learn More](#)



411359783302



Delivered
Friday 11/01/2019 at 9:02 am



DELIVERED

Signed for by: R.PETRIAS

[GET STATUS UPDATES](#)

[OBTAIN PROOF OF DELIVERY](#)

FROM
Autryville, NC US

TO
East Longmeadow, MA US

Shipment Facts

TRACKING NUMBER
411359783302

SERVICE
FedEx Priority Overnight

WEIGHT
53.4 lbs / 24.22 kgs

DELIVERED TO
Shipping/Receiving

TOTAL PIECES
1

TOTAL SHIPMENT WEIGHT
53.4 lbs / 24.22 kgs

RETURN REASON

TERMS
Third Party

PACKAGING
Your Packaging

SPECIAL HANDLING SECTION
Deliver Weekday

STANDARD TRANSIT
 11/01/2019 by 10:30 am

SHIP DATE
 Thu 10/31/2019

ACTUAL DELIVERY
Fri 11/01/2019 9:02 am

Travel History

Local Scan Time

Friday, 11/01/2019		
9:02 am	East Longmeadow, MA	Delivered
7:45 am	WINDSOR LOCKS, CT	On FedEx vehicle for delivery
6:27 am	EAST GRANBY, CT	At destination sort 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 STME

Received By RAF Date 11/1/19 Time 002

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 # 2 Actual Temp - 4.1
 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? NA

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.		1 Liter Plastic		16 oz Amb.
HCL-	<u>3</u>	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: