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 49-Former Welcome Mart
601 Spring Branch Road
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
49	Jessie Anna Walker	(Former Welcome Mart) 601 Spring Branch Road (aka Pope Road), Dunn, NC

The property was previously developed with a gasoline convenience store identified as Welcome Mart and a hotel. At the time of our field activities, the property was a cleared lot with several piles of concrete and asphalt. The former gasoline convenience store and hotel buildings had been razed. The petroleum underground storage tanks (USTs) that the former Welcome Mart operated were previously removed. Information regarding the former UST system listed for this site is provided in the following table:

UST Facility ID No. 0-00-000021703

Number of Tanks	Contents	Capacity (gallons)	Date Installed	Date Removed
1	Gasoline	8,000	1986	8/6/2012
2	Gasoline	8,000	1986	8/6/2012
3	Gasoline	8,000	1986	8/6/2012

The property is listed with one North Carolina Department of Environmental Quality (NCDEQ) Incident (Incident #29782) associated with petroleum releases from USTs discovered during their removal in August 2012. According to the *Phase I Limited Site Assessment* dated January 25, 2013 prepared by Geological Resources, Inc., groundwater was measured in a temporary monitor well installed within the former UST excavation area in August 2012 at a depth of 8.94 feet below ground surface (ft.-bgs). Benzene, lead and C5-C8 Aliphatics were reported in groundwater samples collected from the temporary well in 2012 at concentrations exceeding their respective 15A NCAC 2L Groundwater Quality Standards (2L Standards). Various target constituents were reported in soil samples collected within the former dispenser excavation at depths of five and six ft.-bgs and along the east sidewall of the UST basin at a depth of eight ft.-bgs at concentrations exceeding their respective Soil-to-Groundwater Maximum Soil Contaminant Concentrations (MSCCs) but below their respective Residential MSCCs.

The PSA included a geophysical survey and subsequent limited soil sampling (ten soil borings up to 10 ft.-bgs), 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 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 49. 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 presence of debris piles, thick vegetation, and equipment within the survey area, however, prevented TDEM data collection in a significant portion of the site. 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 seven GPR profiles (Lines 1 through 7) 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. Two anomalous features unrelated to known surficial targets were identified in the geophysical data sets (Anomalies A and B; **Figures 6 and 7**). Anomalies A and B are characterized by high amplitude GPR responses located about three feet and 0.5 bgs respectively, and may be related to relatively small, isolated metallic objects **(Figures 8 and 9).** The anomalies were marked in the field using white spray paint. Example GPR profiles are presented in **Figures 8 and 9**.

Soil Sampling

On October 21, 2019, Troxler Geologic, Inc. (Troxler's) drill crew utilized a track mounted Geoprobe® rig to advance ten soil borings (B-1 through B-10) and to collect soil samples within accessible areas of the proposed ROW/easement at Parcel 49. 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 not encountered. 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.**

Slight petroleum odors and slightly elevated PID readings were noted at boring B-5, which was located within the former pump island area, starting at a depth of approximately four ft.-bgs and boring B-7, which was located within the former UST basin area, starting at a depth of approximately eight ft.-bgs and extending to boring termination at 10 ft-bgs. Petroleum odors and elevated PID readings were not noted at the other borings on the site. Therefore, soil samples were selected from boring B-5 at the four to six foot depth interval and at boring B-7 at the eight to ten 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 10 soil samples (one soil sample per boring) 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.

Upon completion of the soil sampling, the soil borings were backfilled with bentonite pellets and soil cuttings. Investigative derived wastes (IDW), such as additional 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, re-sealable bags and acetate sleeves were bagged and disposed off-site.

Soil Analytical Results

Based upon analytical results of soil samples analyzed by RED Lab using UVP spectroscopy, TPH-GRO and TPH-DRO were not reported at concentrations exceeding the North Carolina TPH Action Levels. TPH-DRO was reported at boring B-4 at the four to six foot depth interval, at a concentration of 0.53 milligrams per kilograms (mg/kg) which is below its North Carolina TPH Action Level of 100 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.**

♦ Conclusion and Recommendations

The geophysical survey identified two anomalies (Anomalies A and B) which may be related to relatively small, isolated metallic objects. Responses indicative of a potential UST were not identified in the geophysical data sets collected at the site.

S&ME advanced ten soil borings (B-1 through B-10) to a depth of up to approximately 10 ft.-bgs at the site. Slight petroleum odors and slightly elevated PID readings were noted at boring B-5, which was located within the former pump island area, starting at a depth of approximately four ft.-bgs and boring B-7, which was located within the former UST basin area, starting at a depth of approximately eight ft.-bgs and extending to boring termination at 10 ft-bgs. Petroleum odors and elevated PID readings were not noted at the other borings on the site. Selected soil samples from the soil borings were analyzed for TPH-GRO and TPH-DRO using UVF spectroscopy. TPH-DRO was reported at boring B-4 at the four to six foot depth interval, at a concentration slightly above the laboratory reporting limits but well 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 not encountered. Therefore, groundwater sampling was not performed.

However, in 2012 groundwater was reported within the former UST excavation area at a depth of 8.94 ft.-bgs with petroleum impacts reported above 2L Standards. In 2012, petroleum impacted soil was reported in soil samples collected within the former pump island excavation at a depth of five and six ft.-bgs and along the eastern sidewall of the UST excavation at a depth of eight ft.-bgs at concentrations exceeding the Soil-to-Groundwater MSCCs. Soil samples collected within these areas at these approximate depths did not indicate petroleum impacts above North Carolina TPH Action Levels.

Based on the findings of the geophysical survey, analytical results of soil samples and analytical results of previous soil and groundwater samples, it is likely that during construction, NCDOT may encounter soil and groundwater impacted with petroleum at the site. Petroleum impacted soil at concentrations exceeding the Soil-to-Groundwater MSCCs may be encountered within the vicinity of the former pump island excavation at depths of five to six ft.-bgs and at the UST excavation at a depth of eight ft.-bgs. If construction excavations extend deeper than 10 ft.-bgs, petroleum impacted groundwater may also be encountered within these areas.

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., surficial debris, 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, 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:
Jamie Honeycutt
4C890EAEC25F488...

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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

Figure 1: Vicinity Map
Figure 2: Site Map
Figure 3: Soil 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 – Line 3
Figure 9: Example GPR Data – Lines 6 and 7

Appendix I: Photographs
Appendix II: Boring Logs
Appendix III: Laboratory Analytical Reports and Chain of Custody

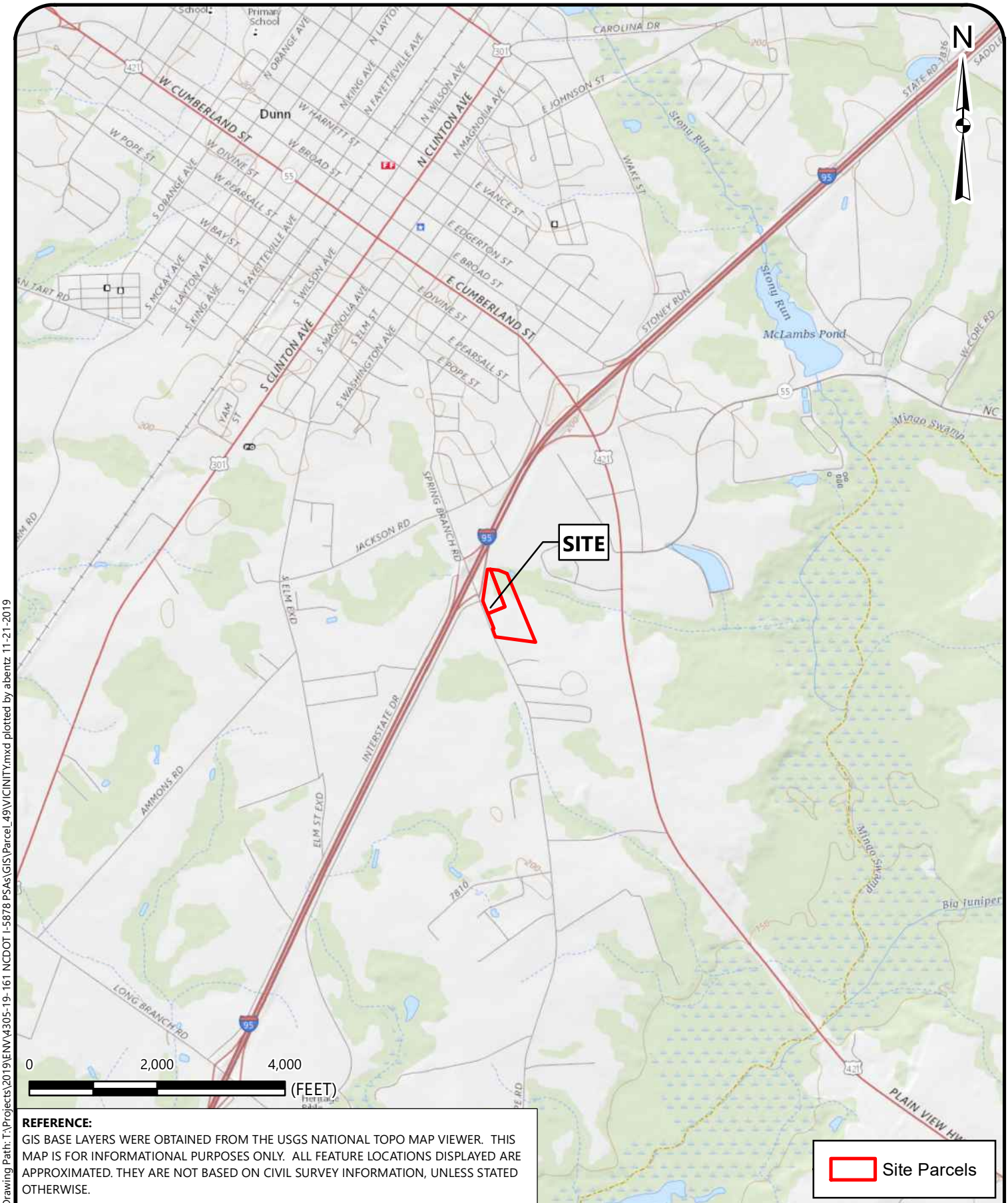
Tables

TABLE 1
SUMMARY OF SOIL SAMPLING RESULTS
NCDOT Project I-5878
Parcel 49 - (Former Welcome Mart)
601 Spring Branch Road
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→ / Sample Depth (ft.-bgs)	TPH-GRO	TPH-DRO
B-1	10/21/2019	6 to 8	<0.54	<0.54
B-2	10/21/2019	6 to 8	<0.5	<0.5
B-3	10/21/2019	2 to 4	<0.53	<0.53
B-4	10/21/2019	4 to 6	<0.53	**0.53**
B-5	10/21/2019	4 to 6	<0.54	<0.54
B-6	10/21/2019	8 to 10	<0.49	<0.49
B-7	10/21/2019	8 to 10	<0.5	<0.5
B-8	10/21/2019	8 to 10	<0.55	<0.55
B-9	10/21/2019	8 to 10	<0.29	<0.29
B-10	10/21/2019	6 to 8	<0.51	<0.51
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.

Figures



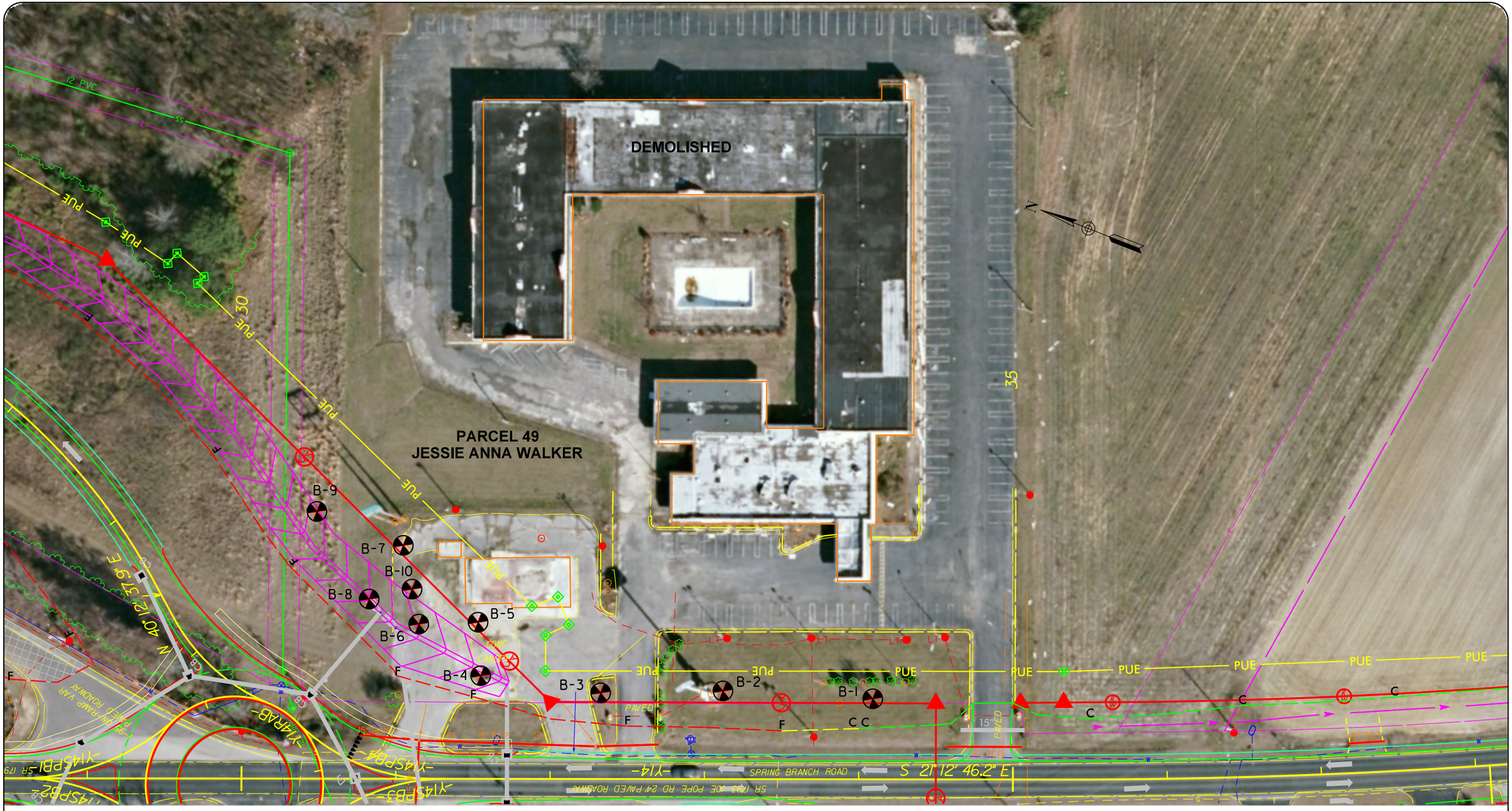
REFERENCE:
GIS BASE LAYERS WERE OBTAINED FROM THE USGS NATIONAL TOPO MAP VIEWER. THIS MAP IS FOR INFORMATIONAL PURPOSES ONLY. ALL FEATURE LOCATIONS DISPLAYED ARE APPROXIMATED. THEY ARE NOT BASED ON CIVIL SURVEY INFORMATION, UNLESS STATED OTHERWISE.

Drawing Path: T:\Projects\2019\ENV\4305-19-161 NCDOT I-5878 PSAs\GIS\Parcel_49\VICINITY.mxd plotted by abentz 11-21-2019

VICINITY MAP

NCDOT PROJECT I-5878
PARCEL NO. 49 (FORMER WELCOME MART)
601 SPRING BRANCH RD, DUNN, HARNETT COUNTY, NORTH CAROLINA

SCALE:	FIGURE NO.
1 " = 2,000 '	1
DATE: 11-21-19	
PROJECT NUMBER 4305-19-161	



SITE MAP

NCDOT Project: I-5878
PARCEL 49 - (FORMER WELCOME MART)
601 Spring Branch Road, Dunn, Harnett County, North Carolina

SCALE:	FIGURE NO.
1" = 60'	2
DATE:	
JAN. 2020	
PROJECT NUMBER	
4305-19-161	

Notes:
mg/kg: Milligrams per Kilogram
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
ft-bgs : Feet Below Ground Surface

Samples Collected 10-21-2019.

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

DEMOLISHED

PARCEL 49
JESSIE ANNA WALKER

B-9		
(ft-bgs)	(mg/kg)	
Sample Depth	GRO	DRO
8-10	<0.29	<0.29

B-7		
(ft-bgs)	(mg/kg)	
Sample Depth	GRO	DRO
8-10	<0.5	<0.5

B-10		
(ft-bgs)	(mg/kg)	
Sample Depth	GRO	DRO
6-8	<0.51	<0.51

B-8		
(ft-bgs)	(mg/kg)	
Sample Depth	GRO	DRO
8-10	<0.55	<0.55

B-5		
(ft-bgs)	(mg/kg)	
Sample Depth	GRO	DRO
4-6	<0.54	<0.54

B-6		
(ft-bgs)	(mg/kg)	
Sample Depth	GRO	DRO
8-10	<0.49	<0.49

B-2		
(ft-bgs)	(mg/kg)	
Sample Depth	GRO	DRO
6-8	<0.5	<0.5

B-4		
(ft-bgs)	(mg/kg)	
Sample Depth	GRO	DRO
4-6	<0.53	0.53

B-3		
(ft-bgs)	(mg/kg)	
Sample Depth	GRO	DRO
2-4	<0.53	<0.53

B-1		
(ft-bgs)	(mg/kg)	
Sample Depth	GRO	DRO
6-8	<0.54	<0.54

LEGEND

Geoenvironmental Boring:
Underground Storage Tank (UST): UST

Known Soil Contamination:
Possible Soil Contamination: — S —
Existing Contamination Known - Water: — W —

Map Source: NCDOT Project I-5986B
Image Source: NC ONEMAP, Dated 2016

0 60 120
GRAPHIC SCALE (IN FEET)

SOIL CONSTITUENT MAP

NCDOT Project: I-5878
PARCEL 49 - (FORMER WELCOME MART)
601 Spring Branch Road, Dunn, Harnett County, North Carolina

SCALE:	FIGURE NO.
1" = 60'	3
DATE:	
NOV. 2019	
PROJECT NUMBER	
4305-19-161	

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

LEGEND

Approximate TDEM Path

Approximate Requested Survey Area

TDEM PATH LOCATION PLAN

NCDOT PROJECT: I-5878
PARCEL #49 - (FORMER WELCOME MART)
601 SPRING BRANCH ROAD, DUNN, HARNETT COUNTY, NORTH CAROLINA

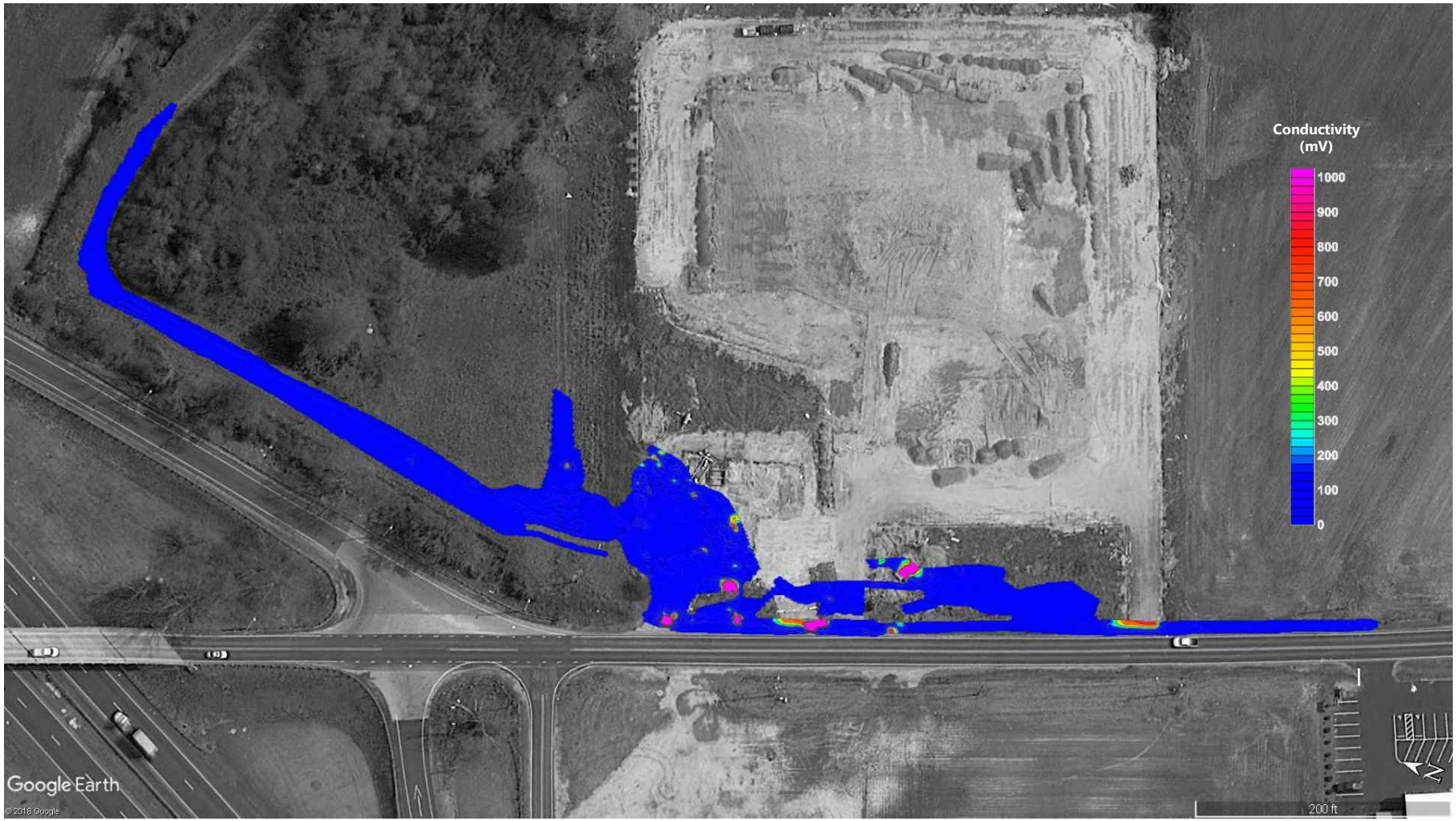
SCALE:
AS SHOWN

DATE:
11/19/2019

PROJECT NUMBER
4305-19-161

FIGURE NO.
4

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

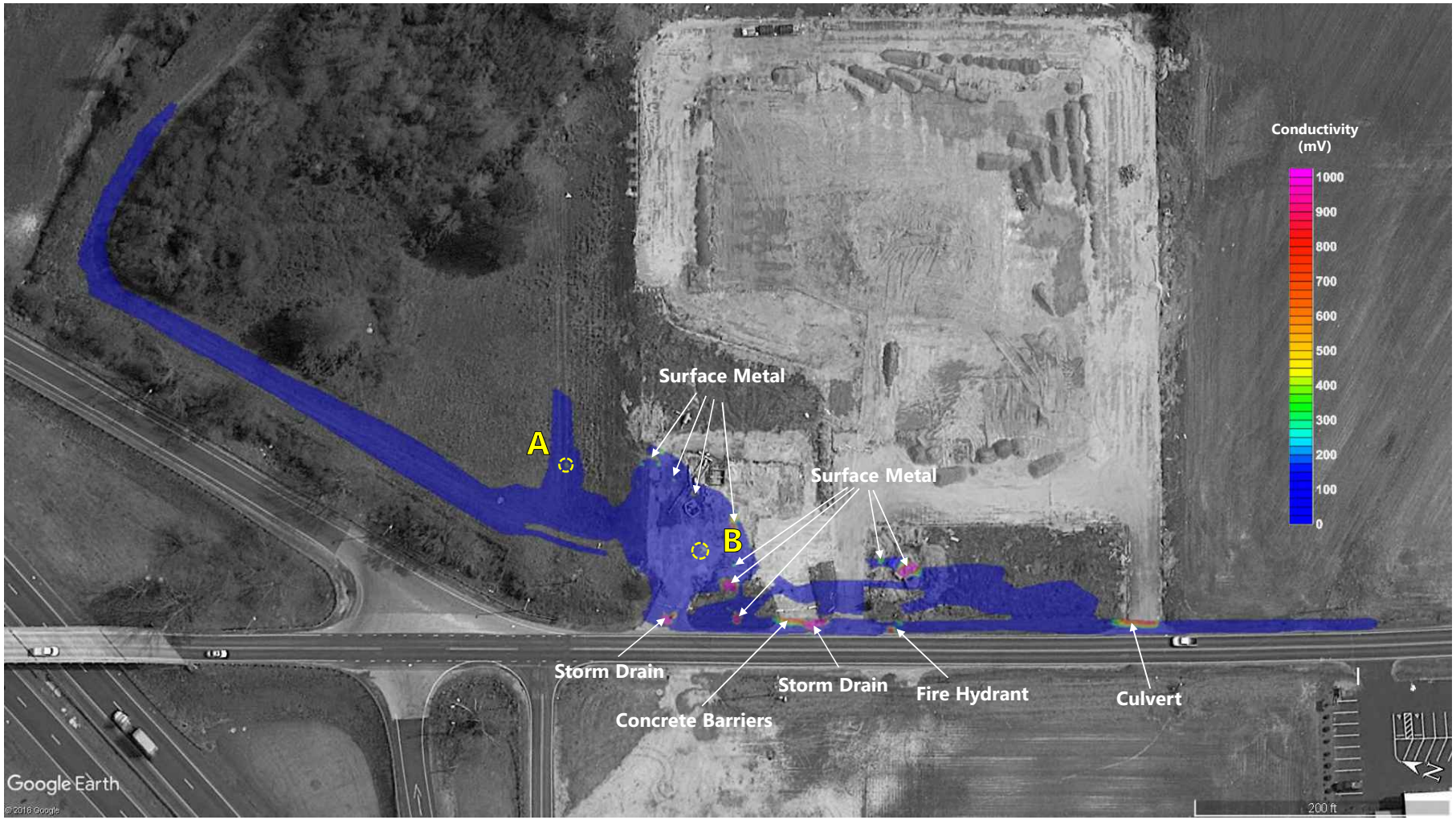


TDEM DATA PLOT A

NCDOT PROJECT: I-5878
PARCEL #49 - (FORMER WELCOME MART)
601 SPRING BRANCH ROAD, DUNN, HARNETT COUNTY, NORTH CAROLINA

SCALE:	AS SHOWN
DATE:	11/19/2019
PROJECT NUMBER	4305-19-161
FIGURE NO.	5

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



LEGEND

Approximate Location of Geophysical Anomaly

Approximate Location of Possible Utility

TDEM DATA PLOT B

NCDOT PROJECT: I-5878
PARCEL #49 - (FORMER WELCOME MART)
601 SPRING BRANCH ROAD, DUNN, HARNETT COUNTY, NORTH CAROLINA

SCALE:
AS SHOWN

DATE:
11/19/2019

PROJECT NUMBER
4305-19-161

FIGURE NO.
6

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

LEGEND

Approximate Location of Geophysical Anomaly

Approximate Location of GPR Profile

Approximate Location of Possible Utility

GEOPHYSICAL ANOMALY LOCATION PLAN

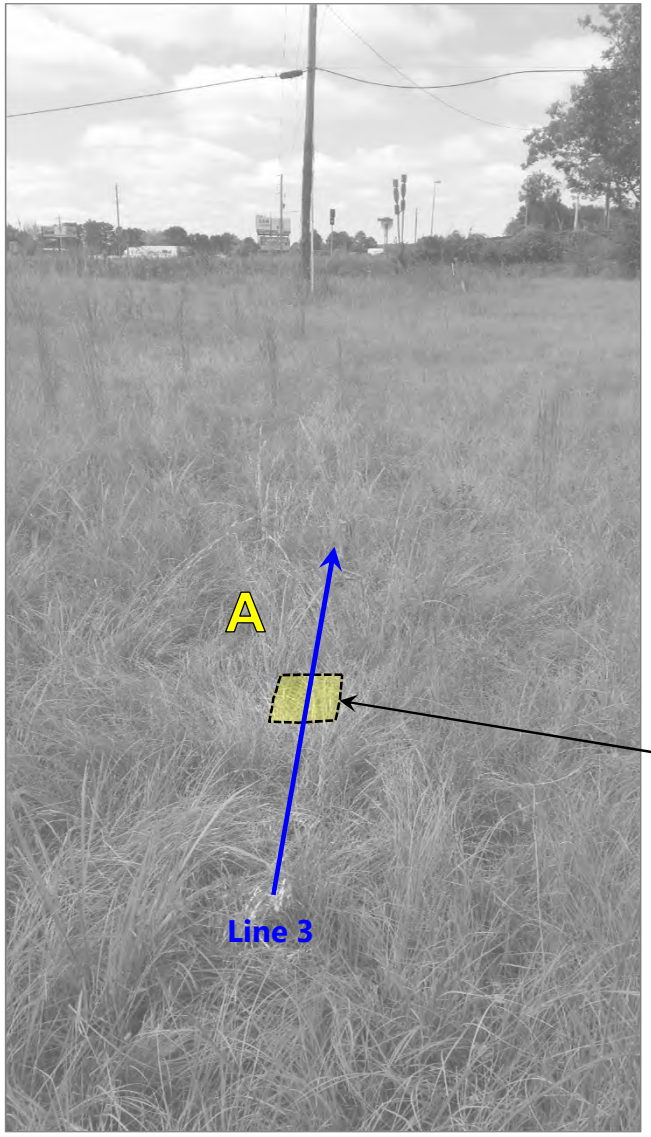
NCDOT PROJECT: I-5878
PARCEL #49 - (FORMER WELCOME MART)
601 SPRING BRANCH ROAD, DUNN, HARNETT COUNTY, NORTH CAROLINA

SCALE:
AS SHOWN

DATE:
11/19/2019

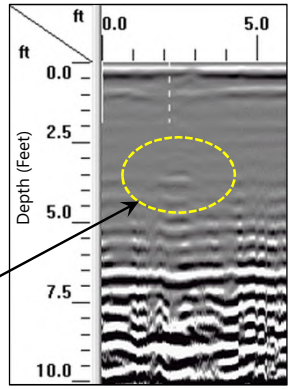
PROJECT NUMBER
4305-19-161

FIGURE NO.
7



Anomaly A

Line 3



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

EXAMPLE GPR DATA – LINE 3

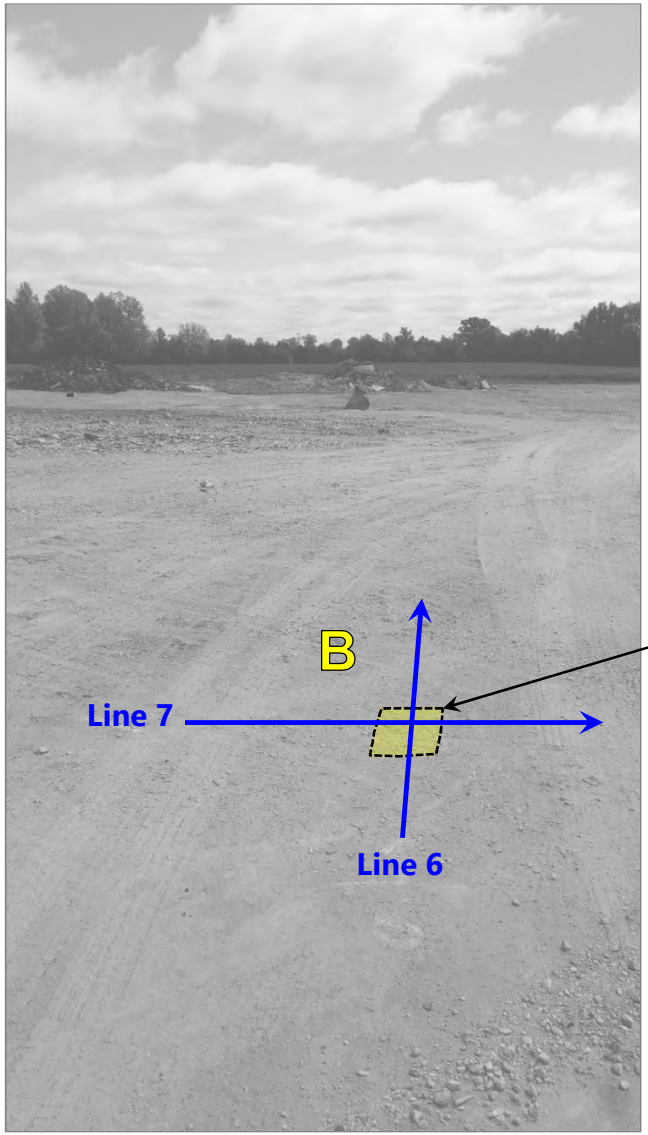
NCDOT PROJECT: I-5878
PARCEL #49 - (FORMER WELCOME MART)
601 SPRING BRANCH ROAD, DUNN, HARNETT COUNTY, NORTH CAROLINA

SCALE: AS SHOWN

DATE: 11/19/2019

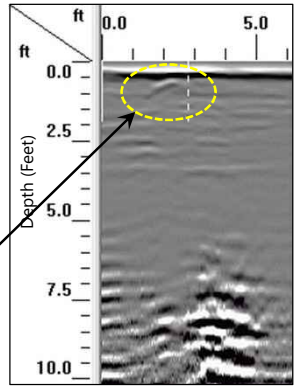
PROJECT NUMBER 4305-19-161

FIGURE NO. **8**

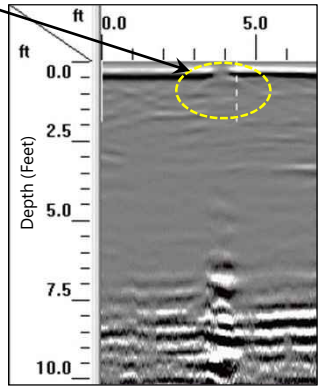


Anomaly B

Line 6



Line 7



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

EXAMPLE GPR DATA – LINES 6 AND 7

NCDOT PROJECT: I-5878
PARCEL #49 - (FORMER WELCOME MART)
601 SPRING BRANCH ROAD, DUNN, HARNETT COUNTY, NORTH CAROLINA

SCALE: AS SHOWN

DATE: 11/19/2019

PROJECT NUMBER 4305-19-161

FIGURE NO. 9

Appendix I – Photographs

Date: 10/21/2019

Photographer: JTH

1	**Location / Orientation**	View of site looking east.
	Remarks	View is of former gasoline convenience store area.

Date: 10/21/2019

Photographer: JTH

2	**Location / Orientation**	View looking east at former UST basin area.
	Remarks	None

Appendix II – Boring Logs

PROJECT:	**NCDOT I-5878** Parcel 49-601 Spring Branch Rd (Former Welcome Mart), Dunn, NC S&ME Project No. 4305-19-161		**BORING LOG: B-1**
DATE DRILLED:	Monday, October 21, 2019	BORING DEPTH (FT):	10
DRILL RIG:	Geoprobe 54DT	WATER LEVEL:	
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
		Topsoil,								
		Clayey Sand, Orange, Tan,			3.2	No				
		Sandy Clay, Red, Orange, Gray,			5.1	No				
5					4.9	No				
					4.7	Yes	945			
10					4.5	No				
		Boring Terminated at 10 Ft-BGS								
15										
20										
25										
30										

PROJECT:	**NCDOT I-5878** Parcel 49-601 Spring Branch Rd (Former Welcome Mart), Dunn, NC S&ME Project No. 4305-19-161		**BORING LOG: B-2**
DATE DRILLED:	Monday, October 21, 2019	BORING DEPTH (FT):	10
DRILL RIG:	Geoprobe 54DT	WATER LEVEL:	
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
		Topsoil,								
		Clayey Sand, Orange, Tan,			3.9	No				
					4.7	No				
5		Silty Sand, Gray,								
		Clayey Sand, Red, Orange, Gray,			4.7	No				
					5.3	Yes	1000			
10					5.2	No				
		Boring Terminated at 10 Ft-BGS								
15										
20										
25										
30										

PROJECT:	**NCDOT I-5878** Parcel 49-601 Spring Branch Rd (Former Welcome Mart), Dunn, NC S&ME Project No. 4305-19-161		**BORING LOG: B-3**
DATE DRILLED:	Monday, October 21, 2019	BORING DEPTH (FT):	10
DRILL RIG:	Geoprobe 54DT	WATER LEVEL:	
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
		Silty Sand, Brown, Tan,								
		Clayey Sand, Orange, Tan,			2.3	No				
					4.4	Yes	1030			
5					2.0	No				
		Clayey Sand, Red, Orange, Gray,			1.7	No				
10					1.6	No				
		Boring Terminated at 10 Ft-BGS								
15										
20										
25										
30										

PROJECT:	**NCDOT I-5878** Parcel 49-601 Spring Branch Rd (Former Welcome Mart), Dunn, NC S&ME Project No. 4305-19-161		**BORING LOG: B-4**
DATE DRILLED:	Monday, October 21, 2019	BORING DEPTH (FT):	10
DRILL RIG:	Geoprobe 54DT	WATER LEVEL:	
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
		Silty Sand, Brown, Tan,								
		Clayey Sand, Orange, Tan,			2.2	No				
					2.4	No				
5					2.6	Yes	1115			
		Clayey Sand, Red, Orange, Gray,			2.4	No				
10					0.6	No				
		Boring Terminated at 10 Ft-BGS								
15										
20										
25										
30										

PROJECT:	**NCDOT I-5878** Parcel 49-601 Spring Branch Rd (Former Welcome Mart), Dunn, NC S&ME Project No. 4305-19-161		**BORING LOG: B-5**
DATE DRILLED:	Monday, October 21, 2019	BORING DEPTH (FT):	10
DRILL RIG:	Geoprobe 54DT	WATER LEVEL:	
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
		Silty Sand, Gray,			2.7	No				
					17.6	No				
5		Clayey Sand, Gray, Tan, Slight Petroleum Odors			71.7	Yes	1130			
		Clayey Sand, Red, Orange, Gray, Slight Petroleum Odors			10.7	No				
10					27.2	No				
		Boring Terminated at 10 Ft-BGS								
15										
20										
25										
30										

PROJECT:	**NCDOT I-5878** Parcel 49-601 Spring Branch Rd (Former Welcome Mart), Dunn, NC S&ME Project No. 4305-19-161		**BORING LOG: B-6**
DATE DRILLED:	Monday, October 21, 2019	BORING DEPTH (FT):	10
DRILL RIG:	Geoprobe 54DT	WATER LEVEL:	
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		Clayey Sand, Brown, Gray,			4.6	No				
					4.4	No				
5		Clayey Sand, Tan, Orange,			4.7	No				
					4.2	No				
		Clayey Sand, Red, Orange, Gray,			4.9	Yes	1200			
10		Boring Terminated at 10 Ft-BGS								
15										
20										
25										
30										

PROJECT:	**NCDOT I-5878** Parcel 49-601 Spring Branch Rd (Former Welcome Mart), Dunn, NC S&ME Project No. 4305-19-161		**BORING LOG: B-7**
DATE DRILLED:	Monday, October 21, 2019	BORING DEPTH (FT):	10
DRILL RIG:	Geoprobe 54DT	WATER LEVEL:	
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		Clayey Sand, Orange,			4.6	No				
					8.0	No				
5		Clayey Sand, Tan, Orange, Gray,			7.6	No				
					9.0	No				
		Clayey Sand, Tan, Orange, Gray, Slight Petroleum Odors			8.8	Yes	1340			
10		Boring Terminated at 10 Ft-BGS								
15										
20										
25										
30										

PROJECT:	**NCDOT I-5878** Parcel 49-601 Spring Branch Rd (Former Welcome Mart), Dunn, NC S&ME Project No. 4305-19-161		**BORING LOG: B-8**
DATE DRILLED:	Monday, October 21, 2019	BORING DEPTH (FT):	10
DRILL RIG:	Geoprobe 54DT	WATER LEVEL:	
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
		Gravel,								
		Clayey Sand, Tan, Orange, Gray,			7.1	No				
					7.7	No				
5		Clayey Sand, Orange, Red,			5.4	No				
					7.5	No				
10		Boring Terminated at 10 Ft-BGS			8.6	Yes	1400			
15										
20										
25										
30										

PROJECT:	**NCDOT I-5878** Parcel 49-601 Spring Branch Rd (Former Welcome Mart), Dunn, NC S&ME Project No. 4305-19-161		**BORING LOG: B-9**
DATE DRILLED:	Monday, October 21, 2019	BORING DEPTH (FT):	10
DRILL RIG:	Geoprobe 54DT	WATER LEVEL:	
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
		Gravel,								
		Clayey Sand, Tan, Orange, Gray,			4.7	No				
					5.6	No				
5		Clayey Sand, Orange, Red,			6.0	No				
					7.9	No				
10		Boring Terminated at 10 Ft-BGS			6.9	Yes	1415			
15										
20										
25										
30										

PROJECT:	**NCDOT I-5878** Parcel 49-601 Spring Branch Rd (Former Welcome Mart), Dunn, NC S&ME Project No. 4305-19-161		**BORING LOG: B-10**
DATE DRILLED:	Monday, October 21, 2019	BORING DEPTH (FT):	10
DRILL RIG:	Geoprobe 54DT	WATER LEVEL:	
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
		Gravel,			3.3	No				
					7.4	No				
5		Clayey Sand, Black, Gray,			7.0	No				
					10.1	Yes	1445			
		Clayey Sand, Orange, Red, Gray,								
10					6.0	No				
		Boring Terminated at 10 Ft-BGS								
15										
20										
25										
30										

Appendix III – Laboratory Analytical Reports and Chain of Custody

QED REDLAB RAPID ENVIRONMENTAL DIAGNOSTICS QROS

Hydrocarbon Analysis Results

Client: S&ME
Address: 3201 SPRING FOREST RD
RALEIGH NC

Samples taken Monday, October 21, 2019
Samples extracted Monday, October 21, 2019
Samples analysed Wednesday, October 23, 2019

Contact: JAMIE HONEYCUTT

Operator JENN RYAN

Project: NCDOT I-5878 PARCEL 49

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 (6 - 8')	21.5	<0.54	<0.54	<0.54	<0.54	<0.11	<0.17	<0.021	0	0	0	PHC not detected,(BO)
s	B - 2 (6 - 8')	20.0	<0.5	<0.5	<0.5	<0.5	<0.1	<0.16	<0.02	0	0	0	PHC not detected,(BO)
s	B - 3 (2 - 4')	21.1	<0.53	<0.53	<0.53	<0.53	<0.11	<0.17	<0.021	0	0	0	PHC not detected,(BO)
s	B - 4 (4 - 6')	21.3	<0.53	<0.53	0.53	0.53	0.48	<0.17	<0.021	0	72.4	27.6	V.Deg.PHC 72.9%,(FCM)
s	B - 5 (4 - 6')	21.5	<0.54	<0.54	<0.54	0.28	0.28	<0.17	<0.021	0	93.6	6.4	Residual HC
s	B - 6 (8 - 10')	19.4	<0.49	<0.49	<0.49	<0.49	<0.1	<0.16	<0.019	0	0	100	PHC not detected,(BO)
s	B - 7 (8 - 10')	20.2	<0.5	<0.5	<0.5	<0.5	<0.1	<0.16	<0.02	0	0	100	PHC not detected,(BO)
s	B - 8 (8 - 10')	21.8	<0.55	<0.55	<0.55	<0.55	<0.11	<0.17	<0.022	0	0	0	PHC not detected
s	B - 9 (8 - 10')	11.5	<0.29	<0.29	<0.29	<0.29	<0.06	<0.09	<0.011	0	0	0	,(FCM)
s	B - 10 (6 - 8')	20.3	<0.51	<0.51	<0.51	<0.51	<0.1	<0.16	<0.02	0	0	0	PHC not detected

Initial Calibrator QC check OK Final FCM QC Check OK 102.4 %

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

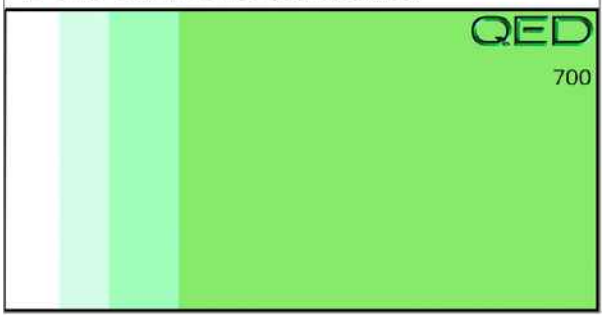
Fingerprints provide a tentative hydrocarbon identification. The abbreviations are:- FCM = Results calculated using Fundamental Calibration Mode : % = confidence for sample fingerprint match to library

(SBS) or (LBS) = Site Specific or Library Background Subtraction applied to result : (PFM) = Poor Fingerprint Match : (T) = Turbid : (P) = Particulate present

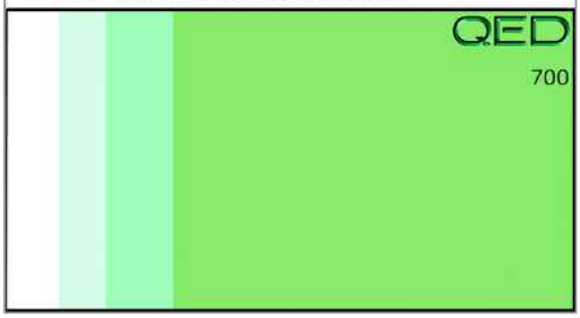
QED Hydrocarbon Fingerprints

Project: NCDOT I-5878 PARCEL 49 ##################

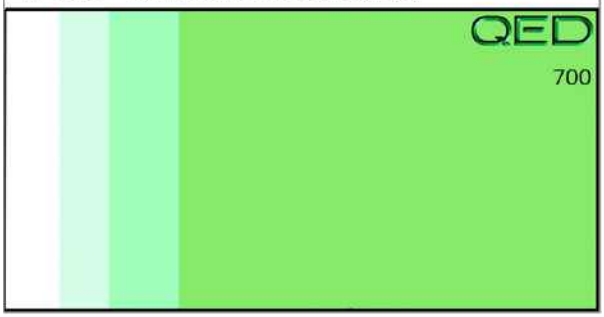
B - 1 (6 - 8') : PHC not detected,(BO)



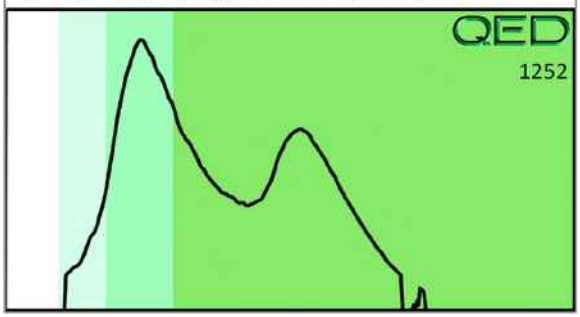
B - 2 (6 - 8') : PHC not detected,(BO)



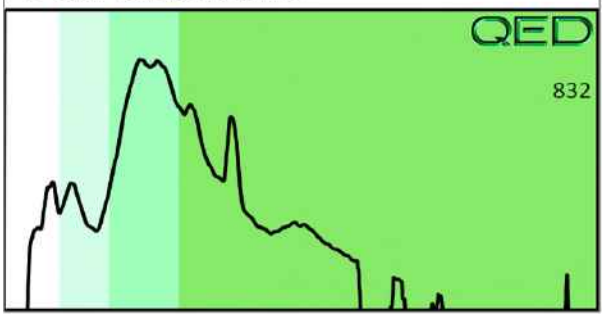
B - 3 (2 - 4') : PHC not detected,(BO)



B - 4 (4 - 6') : V.Deg.PHC 72.9%,(FCM)

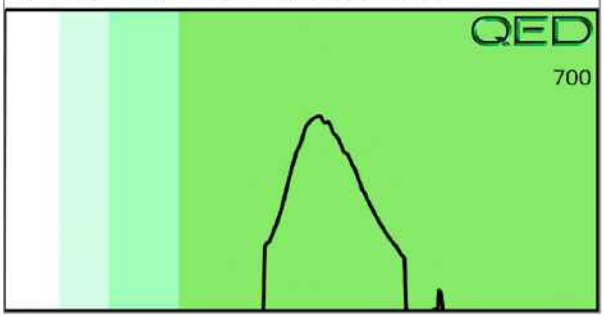


B - 5 (4 - 6') : Residual HC



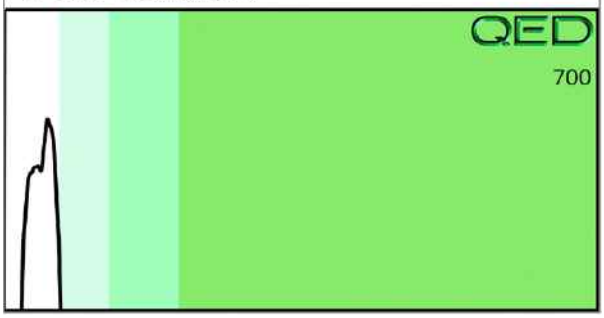
B - 6 (8 - 10') : PHC not detected,(BO)

B - 7 (8 - 10') : PHC not detected,(BO)

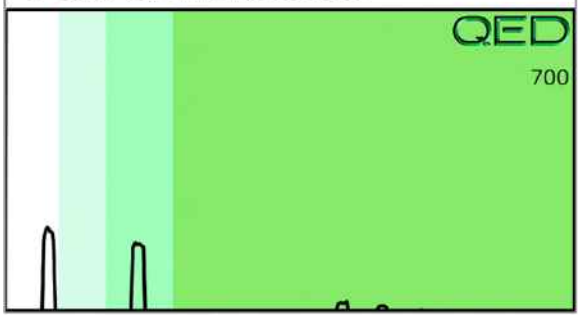


B - 8 (8 - 10') : PHC not detected

B - 9 (8 - 10') : ,(FCM)



B - 10 (6 - 8') : PHC not detected



DUNN, NC

Address:	3201 Spring Forest Rd Raleigh NC
Contact:	Jamie T Honeycutt
Project Ref.:	NCDOT: I-5878 Parcel 49
Email:	jhoneycutt@smcinc.com
Phone #:	910 977-7614
Collected by:	Jamie T Honeycutt

REDLAB™
RAPID ENVIRONMENTAL DIAGNOSTICS

MARBIONC Bldg, Suite 2003
Wilmington, NC 28409

Each UVF sample will be analyzed for total BTEX, GRO, DRO, TPH, PAH total aromatics and BaP. Standard GC Analyses are for BTEX and Chlorinated Solvents: VC, 1,1 DCE, 1,2 cis DCE, 1,2 trans DCE, TCE, and PCE. Specify target analytes in the space provided below.

CHAIN OF CUSTODY AND ANALYTICAL REQUEST FORM

Sample Collection Date/Time	TAT Requested 24 Hour	TAT Requested 48 Hour	Analysis Type UVF	Analysis Type GC	Initials	Sample ID	Total Wt.	Tare Wt.	Sample Wt.
10/21-19/0945		✓	✓		JTH	B-1 6-8'	56.9	44.8	12.1
/1000						B-2 6-8'	57.8	44.8	13.0
/1030						B-3 2-4'	57.3	45.0	12.3
/1115						B-4 4-6'	57.4	45.2	12.2
/1130						B-5 4-6'	57.2	45.1	12.1
/1200						B-6 8-10'	57.4	44.0	13.4
/1340						B-7 8-10'	57.5	44.6	12.9
/1400						B-8 8-10'	56.5	44.6	11.9
/1415						B-9 8-10'	57.3	45.1	12.2
/1445						B-10 6-8'	57.7	44.9	12.8

COMMENTS/REQUESTS:

TARGET GC/UVF ANALYTES:

Relinquished by		Accepted by	Date/Time
[signature]	10-21-19/1900	MM 1220	10/22/19
Relinquished by		Accepted by	Date/Time

RED Lab USE ONLY

Ref. No 10

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 49B-Allen Walker Former Texaco
Vacant Lot SE Corner of Pope Road and Bud Hawkins Road
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
49B	Jessie Anna Walker	(Allen Walker Former Texaco) Vacant Lot SE Corner of Pope Rd (aka Spring Branch Road) and Bud Hawkins Rd, Dunn, NC

The property was previously developed with a gasoline/service station identified as Allen Walker Former Texaco. At the time of our field activities, the majority of the property was an agricultural field. The area of the property previously occupied by the gasoline/service station was a gravel vacant lot. The former gasoline/service station building had been razed. The petroleum underground storage tanks (USTs) that the Allen Walker Former Texaco operated were previously removed. Information regarding the former UST system listed for this site is provided in the following table:

UST Facility ID No. Not Provided

Number of Tanks	Contents	Capacity (gallons)	Date Installed	Date Removed
1	Heating Oil	1,000	Not Provided	1/8/2001
Additional USTs were located on the site. Information regarding their numbers, sizes, installation/removal dates and previous contents were not provided.				

The property is listed with one North Carolina Department of Environmental Quality (NCDEQ) Incident (Incident #22976) associated with petroleum releases from USTs previously located on the property. According to the *Subsurface Investigation Report* dated April 27, 2000 prepared by Marshall Miller and Associates and the *1,000-Gallon Heating Oil Tank Closure* dated February 26, 2001 prepared by EMS, groundwater was measured in a temporary monitor well installed within the former UST basin area in August 2000 at a depth of 8.00 feet below ground surface (ft.-bgs). Naphthalene was reported in groundwater samples collected from the temporary well in 2000 at a concentration exceeding its 15A NCAC 2L Groundwater Quality Standards (2L Standard). In August 2000, soil samples collected from the former UST basin at a depth of four feet below ground surface (ft.-bgs) reported Total Petroleum Hydrocarbons-Diesel Range Organics and Gasoline Range Organics (TPH-DRO and TPH-GRO) at concentrations exceeding their North Carolina TPH Action Levels. In 2001, TPH-DRO was also reported in soil samples collected at a depth of 6.75 ft.-bgs during the removal of a 1,000-gallon heating oil tank located on the property but outside the ROW/easement. Copies of pertinent information obtained from the above referenced reports are included in **Appendix I.**

The PSA included a geophysical survey and subsequent limited soil sampling (13 soil borings up to 10 ft.-bgs), 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 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 49B. 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 presence of thick vegetation/crops and heavy construction equipment within the survey area, however, prevented TDEM data collection in a significant portion of the site. 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 26 GPR profiles (Lines 1 through 26) 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. Five anomalous features unrelated to known surficial targets were identified in the geophysical data sets (Anomalies A through E; **Figures 6 and 7**). Anomalies A, B, C, and D are characterized by relatively small high amplitude GPR responses located within the upper two ft.-bgs while Anomaly E is characterized by two, vertically aligned, relatively small high amplitude GPR responses located at about 0.5 ft.-bgs and 4.5 ft.-bgs, respectively. Each of the identified anomalies may be related to isolated buried metallic objects. The anomalies were marked in the field using white spray paint. Example GPR profiles are presented in **Figures 8 through 12.**

♦ Soil Sampling

On October 18, 2019, Troxler Geologic, Inc. (Troxler's) drill crew utilized a track mounted Geoprobe® rig to advance 13 soil borings (B-1 through B-13) and to collect soil samples within accessible areas of the proposed ROW/easement at Parcel 49B. The approximate location of the soil borings are shown in **Figure 2**. A photographic log is included in **Appendix II.** 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 not encountered. 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 III.**

Petroleum odors and elevated PID readings were noted at boring B-8, which was located within the former UST basin area, starting at a depth of approximately six ft.-bgs and extending to boring termination at 10 ft-bgs. An elevated PID reading but no petroleum odor was noted at boring B-13 located near the former UST basin at a depth of eight to ten ft.-bgs. Petroleum odors and elevated PID readings were not noted at the other borings on the site. Therefore, soil samples were selected from boring B-8 and B-13 at the eight to ten 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 13 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.

Upon completion of the soil sampling, the soil borings were backfilled with bentonite pellets and soil cuttings. Investigative derived wastes (IDW), such as additional 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, re-sealable bags and acetate sleeves were bagged and disposed off-site.

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-8 at the eight to ten foot depth interval, at concentrations of 293.3 milligrams per kilograms (mg/kg) and 713.9 mg/kg, respectively, which exceed their North Carolina TPH Action Levels of 50 mg/kg and 100 mg/kg, respectively. TPH-GRO and TPH-DRO were also reported in borings B-13 at the eight to ten foot depth interval, at concentrations slightly above the laboratory reporting limits but well below their respective North Carolina TPH Action Levels. TPH-DRO was reported in borings B-4 at the two to four foot depth interval and boring B-7 at the eight to ten foot depth interval, at concentrations slightly above the laboratory reporting limits but well 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 IV.**

♦ Conclusion and Recommendations

The geophysical survey identified five anomalies (Anomalies A through E) which may be related to isolated buried metallic objects. Responses indicative of a potential UST were not identified in the geophysical data sets collected at the site.

S&ME advanced 13 soil borings (B-1 through B-13) to a depth of up to approximately 10 ft.-bgs at the site. Petroleum odors and elevated PID readings were noted at boring B-8, which was located within the former UST basin area, starting at a depth of approximately six ft.-bgs and extending to boring termination at 10 ft-bgs. Elevated PID readings but no petroleum odors were also noted at boring B-13, which was located outside the former UST basin area, at the eight to ten ft.-bgs interval. 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 boring B-8 at the eight to ten foot depth interval at concentrations exceeding their North Carolina TPH Action Levels. TPH-GRO and TPH-DRO were also reported in borings B-13 at the eight to ten foot depth interval, at concentrations slightly above the laboratory reporting limits but well below their respective North Carolina TPH Action Levels. TPH-DRO was reported in borings B-4 at the two to four foot depth interval and boring B-7 at the eight to ten foot depth interval, at concentrations slightly above the laboratory reporting limits but well 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 not encountered. Therefore, groundwater sampling was not performed.

However, in 2000 groundwater was reported within the former UST excavation area at a depth of 8.00 ft.-bgs with naphthalene reported in the groundwater above its 2L Standard. In 2000, TPH-GRO and TPH-DRO were reported in soil samples collected within the UST basin at a depth of four ft.-bgs at concentrations exceeding their North Carolina TPH Action Levels. In 2001, TPH-DRO was also reported at concentrations exceeding its North Carolina TPH Action Level in soil samples collected at a depth of 6.75 ft.-bgs during the removal of a 1,000-gallon heating oil UST. However, the heating oil tank was located outside the ROW/easement.

Based on the findings of the geophysical survey, analytical results of soil samples and analytical results of previous soil and groundwater samples, it is likely that during construction, NCDOT may encounter 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 boring B-8 located within the former UST basin. Assuming that a section of petroleum impacted soil approximately four feet thick, 40 feet in diameter at a depth of six to ten ft.-bgs; up to 190 cubic yards of soil near boring B-8 may be impacted. According to previous sampling, petroleum impacted soil may be encountered within the UST basin area at a shallower depth (four ft.-bgs), but our field observations and laboratory data did not identify petroleum impacted soil within this area at a shallower depth.

If construction excavations extend deeper than 10 ft.-bgs, petroleum impacted groundwater may also be encountered within boring B-8.

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., surficial debris, 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 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:
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4C890EA5C25F488...

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1/27/2020

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

Attachments:
Table 1: Summary of Soil Sampling Results

Figure 1: Vicinity Map
Figure 2: Site Map
Figure 3: Soil 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 8 and 9
Figure 9: Example GPR Data – Lines 18 and 19
Figure 10: Example GPR Data – Lines 6 and 7
Figure 11: Example GPR Data – Lines 3 and 4
Figure 12: Example GPR Data – Lines 1 and 2

Appendix I: NCDEQ File Review
Appendix II: Photographs
Appendix III: Boring Logs
Appendix IV: Laboratory Analytical Reports and Chain of Custody

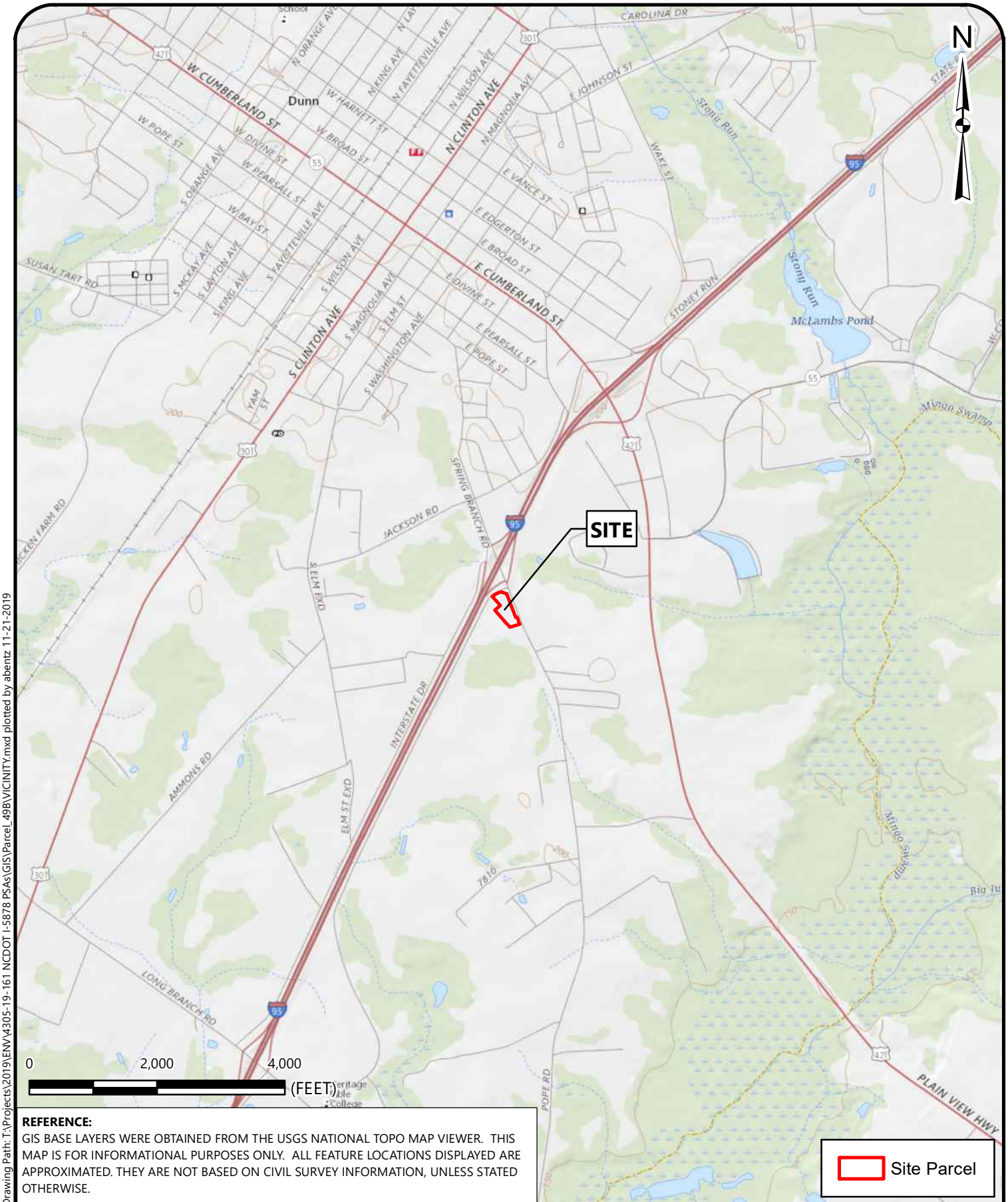
Tables

TABLE 1
SUMMARY OF SOIL SAMPLING RESULTS
NCDOT Project I-5878
Parcel 49B - (Allen Walker Former Texaco)
Vacant Lot SE Corner Pope Rd. and Bud Hawkins Rd.
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→ / Sample Depth (ft.-bgs)	TPH-GRO	TPH-DRO
B-1	10/18/2019	6 to 8	<0.48	<0.48
B-2	10/18/2019	8 to 10	<0.52	<0.52
B-3	10/18/2019	8 to 10	<0.61	<0.61
B-4	10/18/2019	2 to 4	<0.5	**0.5**
B-5	10/18/2019	8 to 10	<0.48	<0.48
B-6	10/18/2019	8 to 10	<0.28	<0.28
B-7	10/18/2019	8 to 10	<0.51	**0.51**
B-8	10/18/2019	8 to 10	**293.3**	**713.9**
B-9	10/18/2019	8 to 10	<0.5	<0.5
B-10	10/18/2019	6 to 8	<0.5	<0.5
B-11	10/18/2019	8 to 10	<0.49	<0.49
B-12	10/18/2019	8 to 10	<0.5	<0.5
B-13	10/18/2019	8 to 10	**12.7**	**3**
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.

Figures



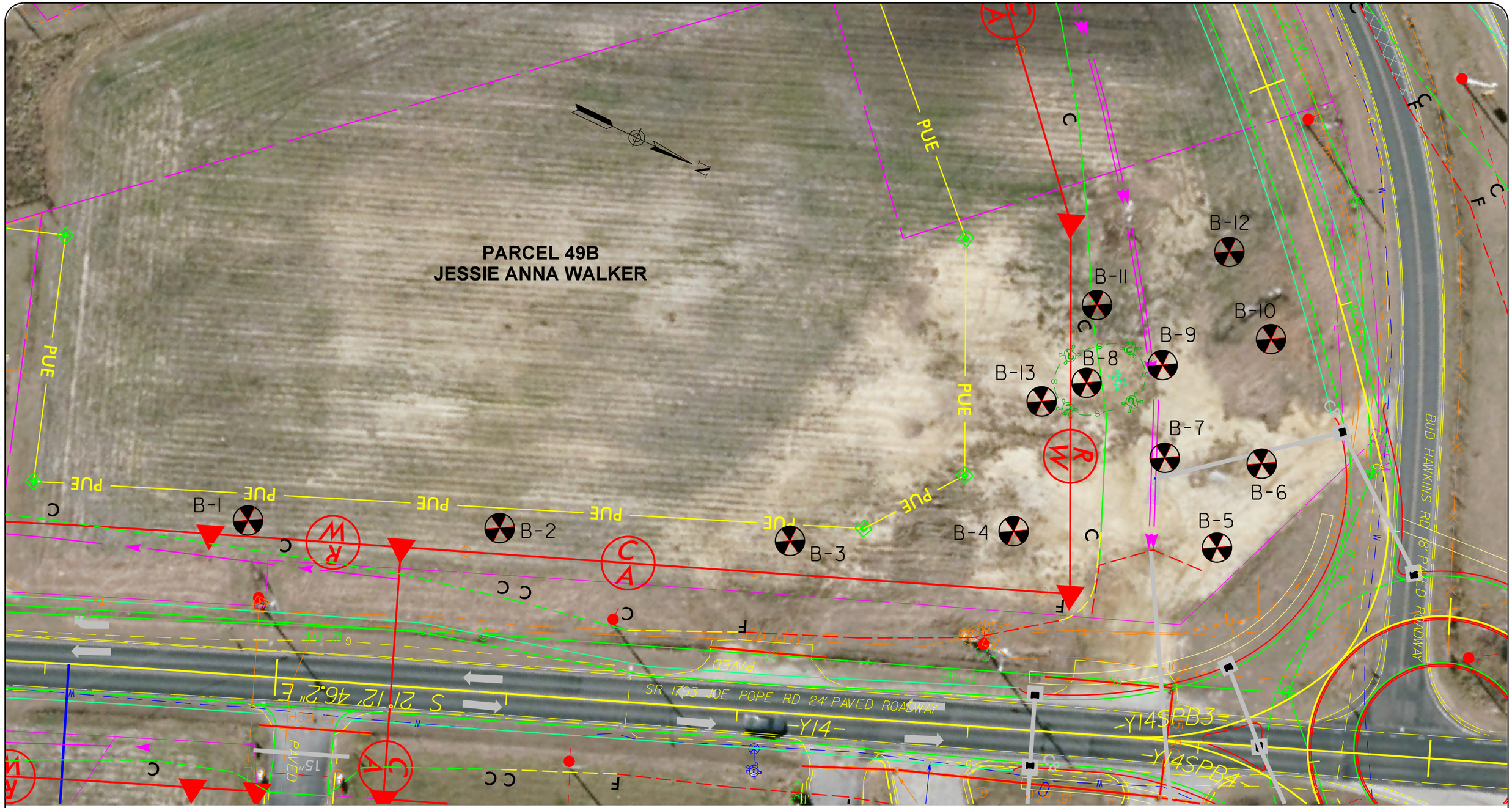
REFERENCE:
GIS BASE LAYERS WERE OBTAINED FROM THE USGS NATIONAL TOPO MAP VIEWER. THIS MAP IS FOR INFORMATIONAL PURPOSES ONLY. ALL FEATURE LOCATIONS DISPLAYED ARE APPROXIMATED. THEY ARE NOT BASED ON CIVIL SURVEY INFORMATION, UNLESS STATED OTHERWISE.

Drawing Path: T:\Projects\2019\ENV\4305-19-161 NCDOT I-5878 PSAs\GIS\Parcel_49B\VICINITY.mxd plotted by abentz 11-21-2019

VICINITY MAP

NCDOT PROJECT I-5878
PARCEL NO. 49B (ALLEN WALKER FORMER TEXACO)
VACANT LOT SE CORNER POPE RD AND BUD HAWKINS RD
DUNN, HARNETT COUNTY, NORTH CAROLINA

SCALE: 1 " = 2,000 '
DATE: 11-21-19
PROJECT NUMBER 4305-19-161
FIGURE NO. 1



LEGEND

Geoenvironmental Boring:

Underground Storage Tank (UST): UST

Map Source: NCDOT Project I-5986B
Image Source: NC ONEMAP, Dated 2016

Known Soil Contamination:

Possible Soil Contamination: — S —

Existing Contamination Known - Water: — W —

0 40 80
GRAPHIC SCALE (IN FEET)

SITE MAP

NCDOT Project: I-5878
PARCEL 49B - (ALLEN WALKER FORMER TEXACO)
Vacant Lot SE Corner Pope Rd. & Bud Hawkins Rd., Dunn, Harnett County, North Carolina

SCALE:	FIGURE NO.
1" = 40'	2
DATE:	
JAN. 2020	
PROJECT NUMBER	
4305-19-161	

Notes:
mg/kg: Milligrams per Kilogram
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
ft-bgs : Feet Below Ground Surface

Samples Collected 10-18-2019.

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

PARCEL 49B
JESSIE ANNA WALKER

B-1		
(ft-bgs) Sample Depth	(mg/kg) GRO	DRO
6-8	<0.48	<0.48

B-2		
(ft-bgs) Sample Depth	(mg/kg) GRO	DRO
8-10	<0.52	<0.52

B-3		
(ft-bgs) Sample Depth	(mg/kg) GRO	DRO
8-10	<0.61	<0.61

B-4		
(ft-bgs) Sample Depth	(mg/kg) GRO	DRO
2-4	<0.5	0.5

B-5		
(ft-bgs) Sample Depth	(mg/kg) GRO	DRO
8-10	<0.48	<0.48

B-6		
(ft-bgs) Sample Depth	(mg/kg) GRO	DRO
8-10	<0.28	<0.28

B-7		
(ft-bgs) Sample Depth	(mg/kg) GRO	DRO
8-10	<0.51	0.51

B-8		
(ft-bgs) Sample Depth	(mg/kg) GRO	DRO
8-10	**293.3***	**713.9***

B-9		
(ft-bgs) Sample Depth	(mg/kg) GRO	DRO
8-10	<0.5	<0.5

B-10		
(ft-bgs) ample Depth	(mg/kg) GRO	DRO
6-8	<0.5	<0.5

B-11		
(ft-bgs) Sample Depth	(mg/kg) GRO	DRO
8-10	<0.49	<0.49

B-12		
(ft-bgs) Sample Depth	(mg/kg) GRO	DRO
8-10	<0.5	0.5

B-13		
(ft-bgs) Sample Depth	(mg/kg) GRO	DRO
8-10	12.7	3

LEGEND

Geoenvironmental Boring:
Underground Storage Tank (UST): UST

Known Soil Contamination:
Possible Soil Contamination: — s —
Existing Contamination Known - Water: — w —

Map Source: NCDOT Project I-5986B
Image Source: NC ONEMAP, Dated 2016

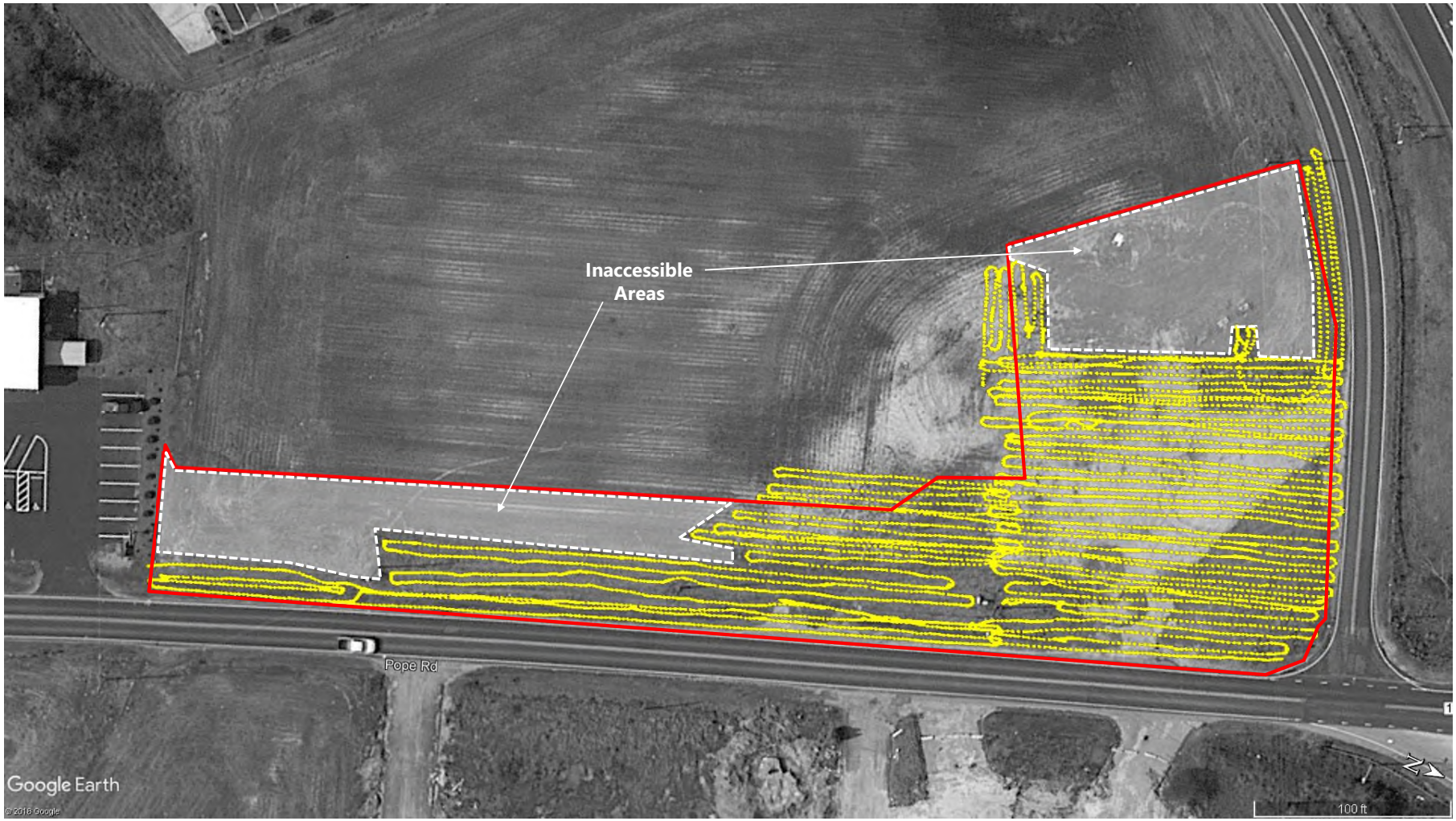
0 40 80
GRAPHIC SCALE (IN FEET)

SOIL CONSTITUENT MAP

NCDOT Project: I-5878
PARCEL 49B - (ALLEN WALKER FORMER TEXACO)
Vacant Lot SE Corner Pope Rd. & Bud Hawkins Rd., Dunn, Harnett County, North Carolina

SCALE:	FIGURE NO.
1" = 40'	3
DATE:	
NOV. 2019	
PROJECT NUMBER	
4305-19-161	

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



LEGEND

Approximate TDEM Path

Approximate Requested Survey Area

TDEM PATH LOCATION PLAN

NCDOT PROJECT: I-5878
PARCEL #49B - (ALLEN WALKER FORMER TEXACO)
VACANT LOT SE CORNER POPE ROAD & BUD HAWKINS ROAD, DUNN, HARNETT COUNTY, NORTH CAROLINA

SCALE: AS SHOWN

DATE: 1/7/2020

PROJECT NUMBER 4305-19-161

FIGURE NO. **4**

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

TDEM DATA PLOT A

NCDOT PROJECT: I-5878
PARCEL #49B - (ALLEN WALKER FORMER TEXACO)
VACANT LOT SE CORNER POPE ROAD & BUD HAWKINS ROAD, DUNN, HARNETT COUNTY, NORTH CAROLINA

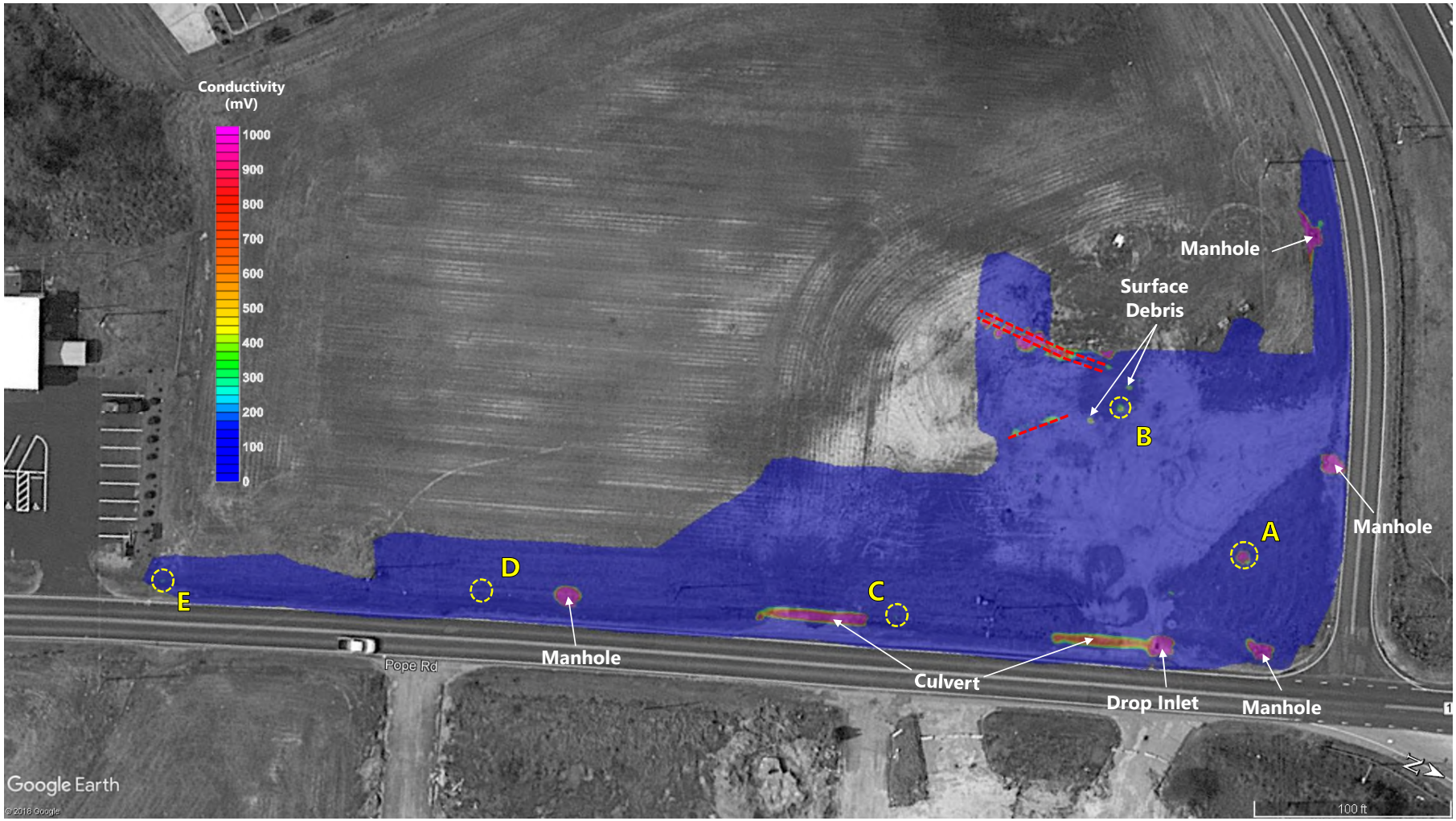
SCALE:
AS SHOWN

DATE:
1/7/2020

PROJECT NUMBER
4305-19-161

FIGURE NO.
5

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



LEGEND

Approximate Location of Geophysical Anomaly

Approximate Location of Possible Utility

TDEM DATA PLOT B

NCDOT PROJECT: I-5878
PARCEL #49B - (ALLEN WALKER FORMER TEXACO)
VACANT LOT SE CORNER POPE ROAD & BUD HAWKINS ROAD, DUNN, HARNETT COUNTY, NORTH CAROLINA

SCALE:
AS SHOWN

DATE:
1/7/2020

PROJECT NUMBER
4305-19-161

FIGURE NO.
6

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

LEGEND

Approximate Location of Geophysical Anomaly

Approximate Location of GPR Profile

Approximate Location of Possible Utility

GEOPHYSICAL ANOMALY LOCATION PLAN

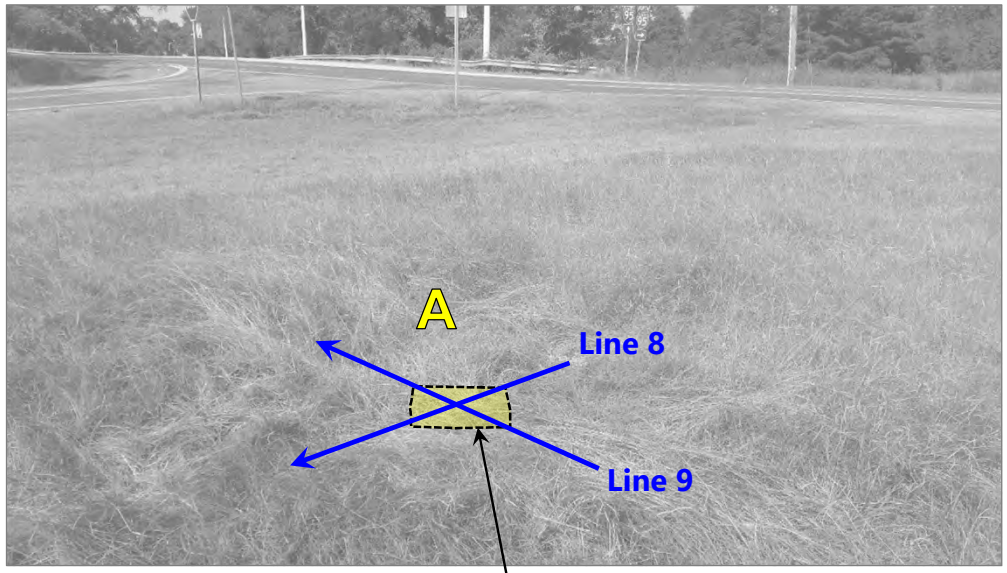
NCDOT PROJECT: I-5878
PARCEL #49B - (ALLEN WALKER FORMER TEXACO)
VACANT LOT SE CORNER POPE ROAD & BUD HAWKINS ROAD, DUNN, HARNETT COUNTY, NORTH CAROLINA

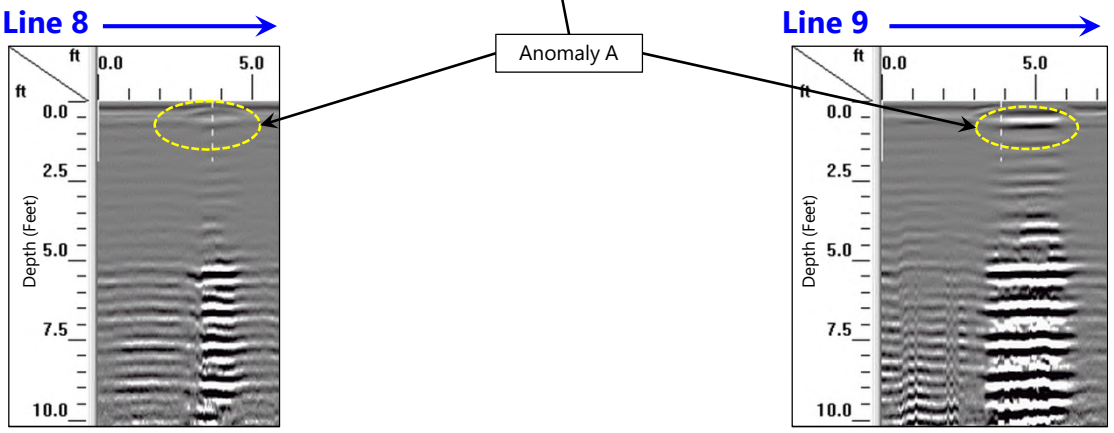
SCALE:
AS SHOWN

DATE:
1/7/2020

PROJECT NUMBER
4305-19-161

FIGURE NO.
7





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

EXAMPLE GPR DATA – LINES 8 AND 9

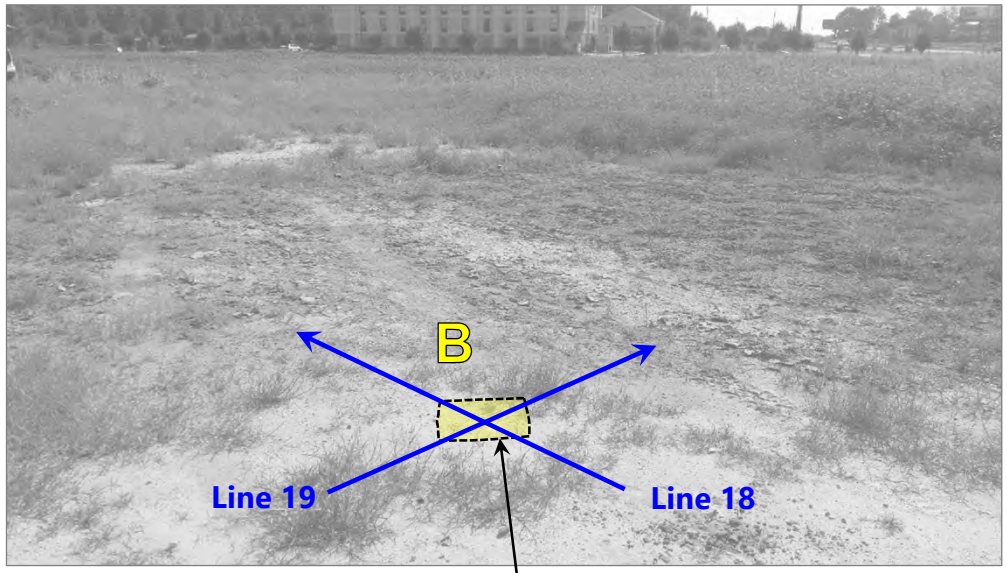
NCDOT PROJECT: I-5878
PARCEL #49B - (ALLEN WALKER FORMER TEXACO)
VACANT LOT SE CORNER POPE ROAD & BUD HAWKINS ROAD, DUNN, HARNETT COUNTY, NORTH CAROLINA

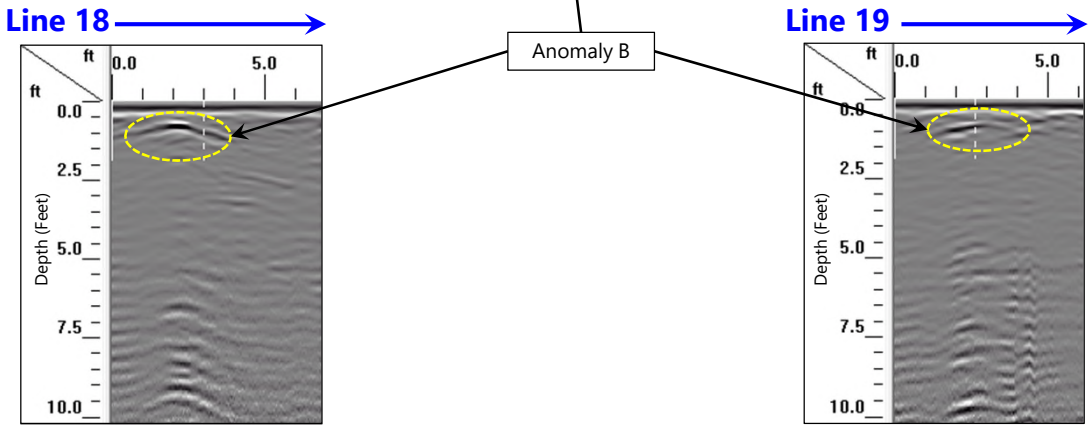
SCALE: AS SHOWN

DATE: 1/7/2020

PROJECT NUMBER 4305-19-161

FIGURE NO. **8**





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

EXAMPLE GPR DATA – LINES 18 AND 19

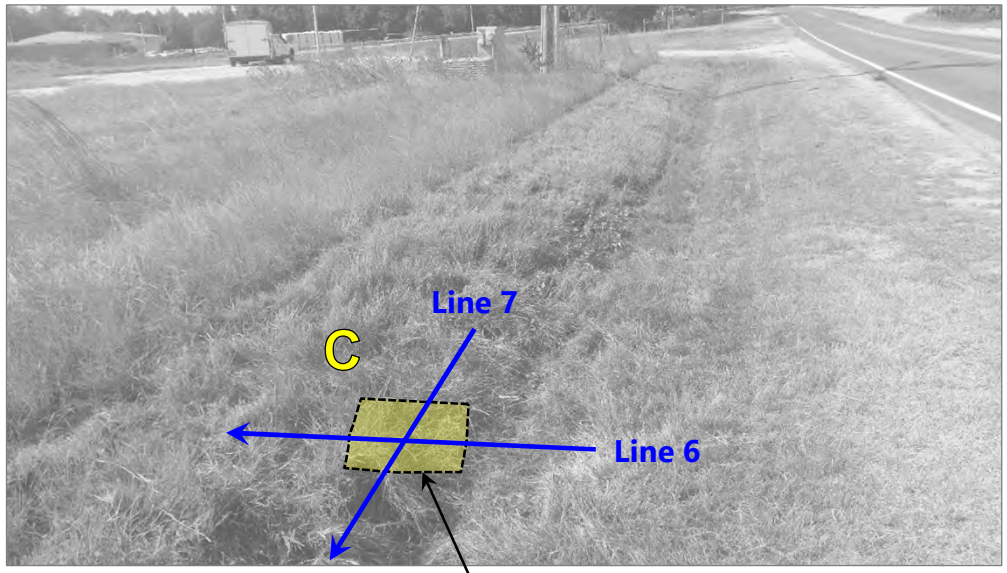
NCDOT PROJECT: I-5878
PARCEL #49B - (ALLEN WALKER FORMER TEXACO)
VACANT LOT SE CORNER POPE ROAD & BUD HAWKINS ROAD, DUNN, HARNETT COUNTY, NORTH CAROLINA

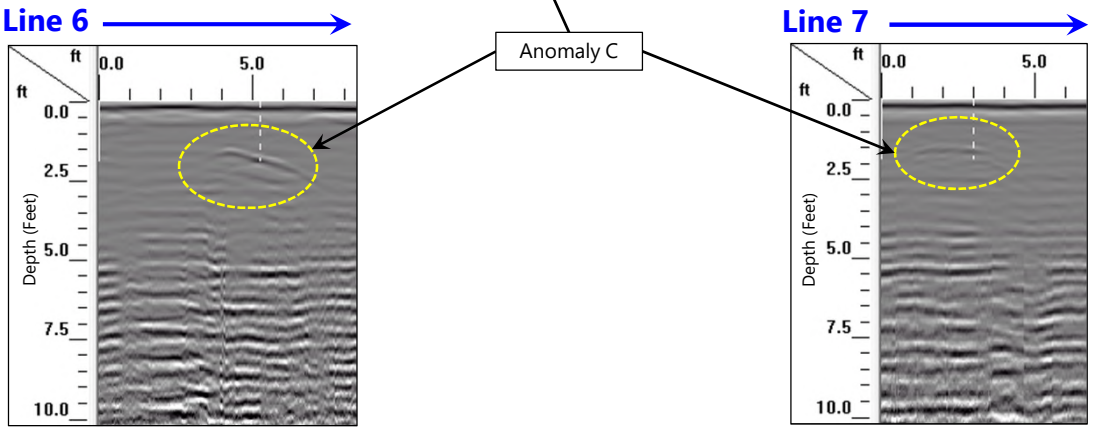
SCALE: AS SHOWN

DATE: 1/7/2020

PROJECT NUMBER 4305-19-161

FIGURE NO. **9**





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

EXAMPLE GPR DATA – LINES 6 AND 7

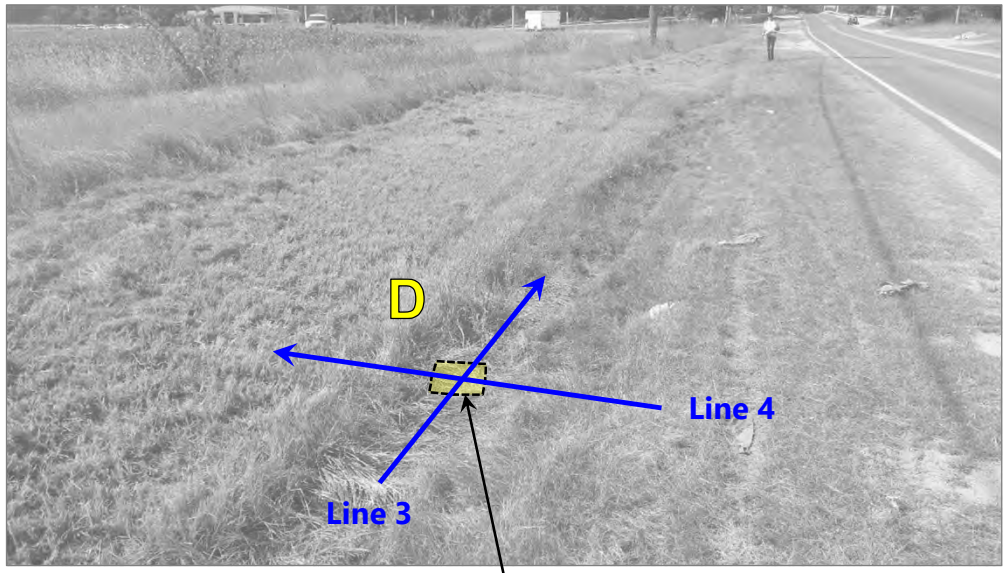
NCDOT PROJECT: I-5878
PARCEL #49B - (ALLEN WALKER FORMER TEXACO)
VACANT LOT SE CORNER POPE ROAD & BUD HAWKINS ROAD, DUNN, HARNETT COUNTY, NORTH CAROLINA

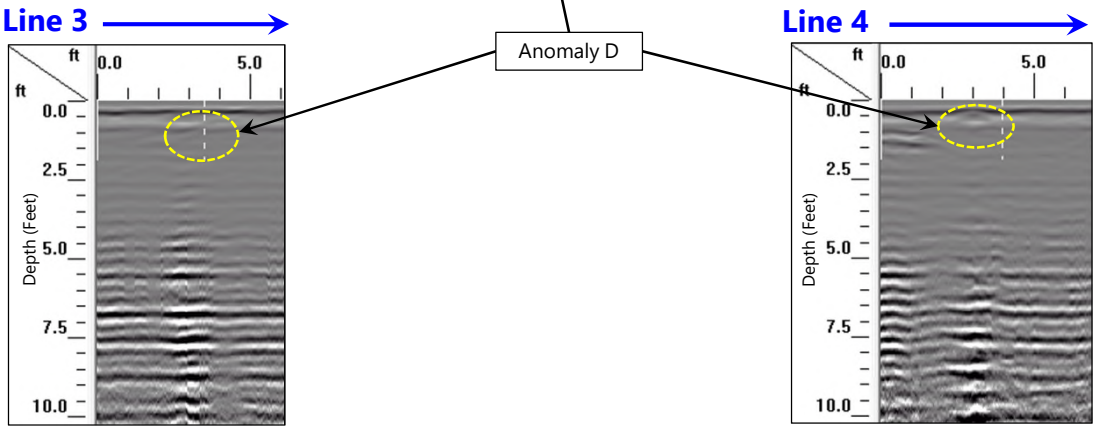
SCALE: AS SHOWN

DATE: 1/7/2020

PROJECT NUMBER 4305-19-161

FIGURE NO. **10**





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

EXAMPLE GPR DATA – LINES 3 AND 4

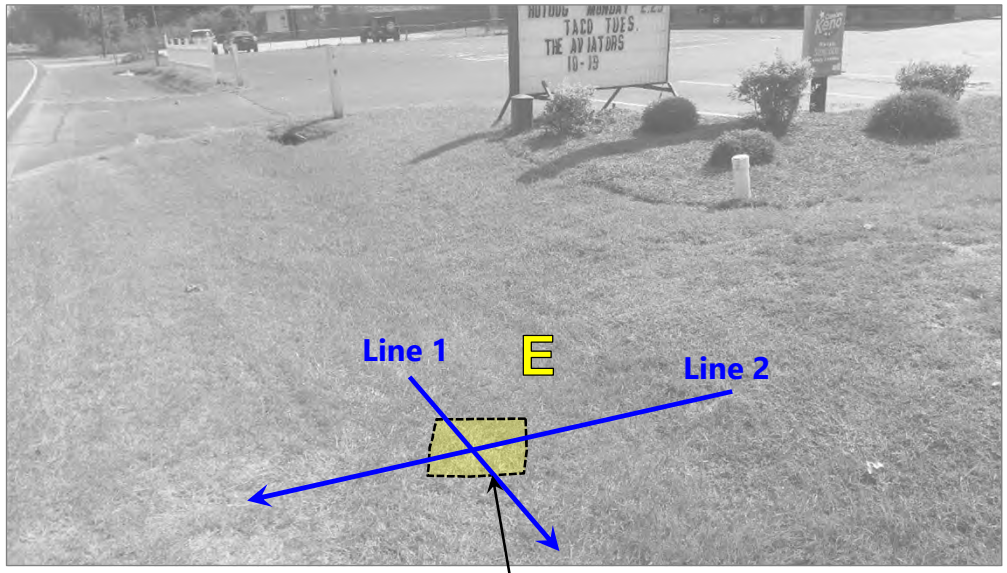
NCDOT PROJECT: I-5878
PARCEL #49B - (ALLEN WALKER FORMER TEXACO)
VACANT LOT SE CORNER POPE ROAD & BUD HAWKINS ROAD, DUNN, HARNETT COUNTY, NORTH CAROLINA

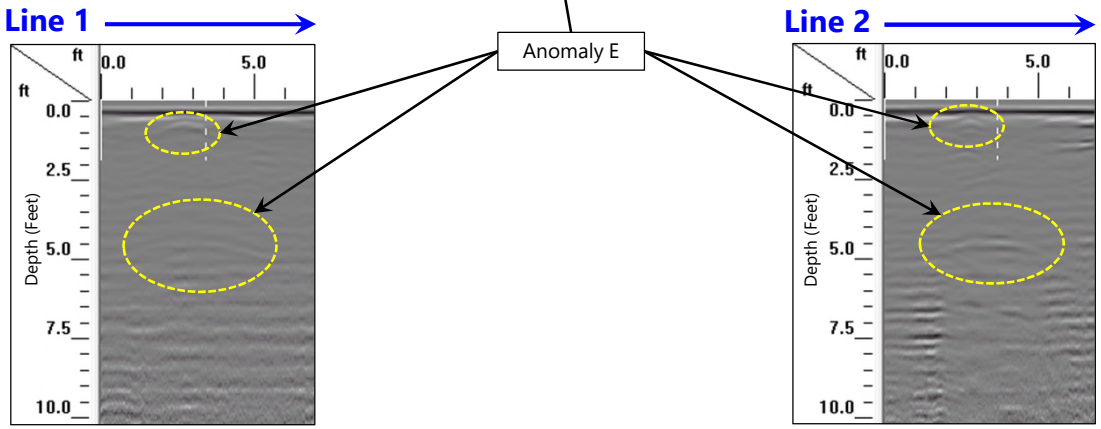
SCALE: AS SHOWN

DATE: 1/7/2020

PROJECT NUMBER 4305-19-161

FIGURE NO. **11**





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

EXAMPLE GPR DATA – LINES 1 AND 2

NCDOT PROJECT: I-5878
PARCEL #49B - (ALLEN WALKER FORMER TEXACO)
VACANT LOT SE CORNER POPE ROAD & BUD HAWKINS ROAD, DUNN, HARNETT COUNTY, NORTH CAROLINA

SCALE: AS SHOWN

DATE: 1/7/2020

PROJECT NUMBER 4305-19-161

FIGURE NO. **12**

Appendix I – NCDEQ File Review

SUBSURFACE INVESTIGATION REPORT
Allen Walker
Former Texaco
Pope Road and Bud Hawkins Road
Dunn, Harnett County, North Carolina 28334

April 27, 2000

Prepared For:

ALLEN WALKER
PO Box 102
Leesburg, Virginia 20178-0102
(703) 771-4259

Prepared By:

MARSHALL MILLER & ASSOCIATES, INC.
5900 Triangle Drive
Raleigh, North Carolina 27613
(919) 786-1414
MM&A Project No. E70100

Prepared By:

Robert Marble
Staff Scientist

Reviewed By:

NORTH CAROLINA LICENSED SEAL 1163 GEOLOGIST LAWRENCE M. GEORGE

Lawrence M. George, P.G.
Technical Director/Senior Scientist

MARSHALL MILLER & ASSOCIATES

TABLE 1

SOIL ANALYTICAL DATA
FORMER TEXACO

Constituent	B2 0–4'	B4 0–4'	Reportable Concentration (parts per million)
TPH 3550	**283**	**16**	10 ppm
TPH 5030	**190**	9	10 ppm

Results reported in milligrams per kilogram (µg/kg).
BOLD: Exceeds reportable concentration.

TABLE 2

GROUNDWATER ANALYTICAL DATA
FORMER TEXACO

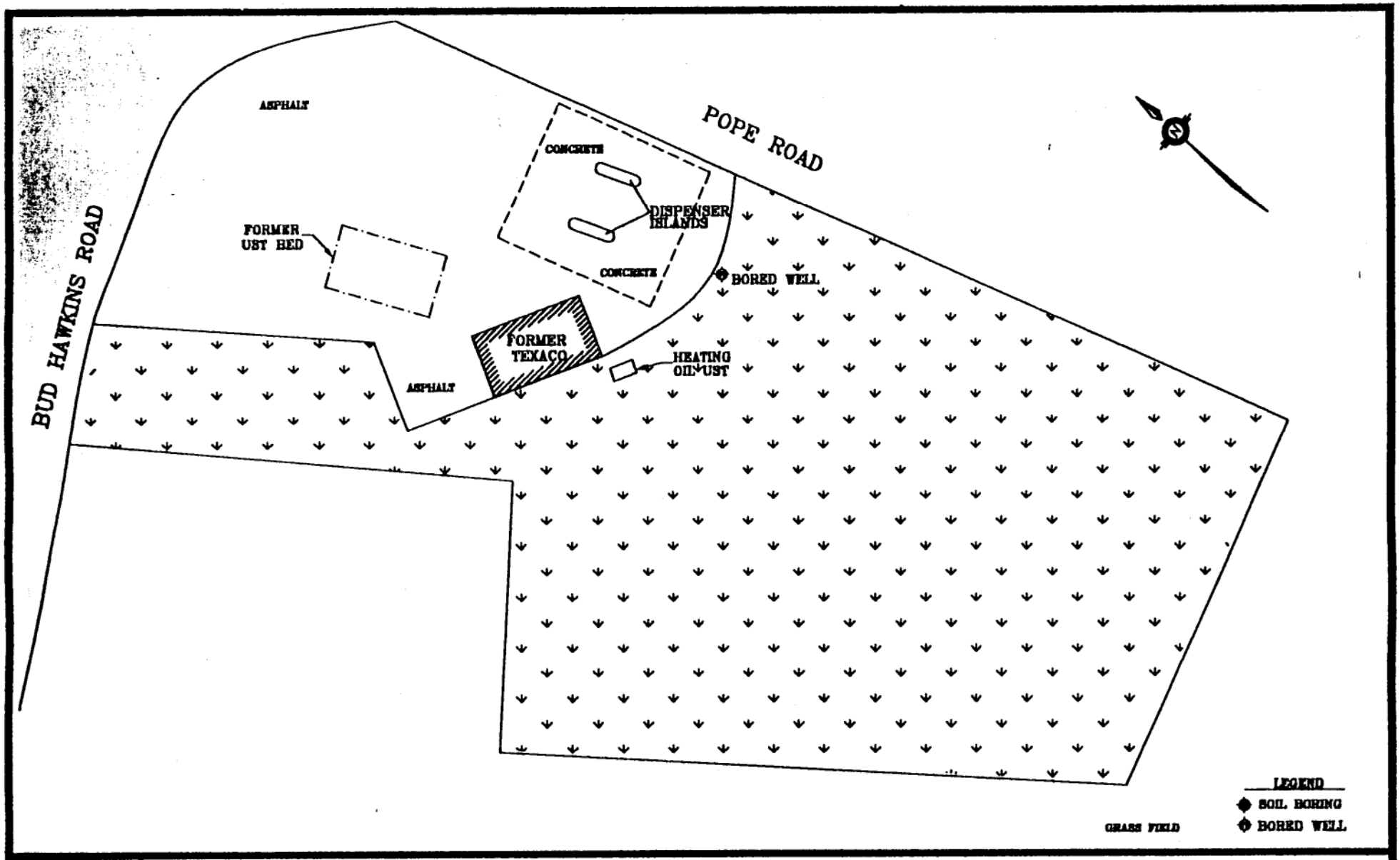
Constituent	B2	B5	2L Standard	GCL
Volatile Organic Compounds (VOCs)				
Ethylbenzene	19	BQL(0.5)	29	29,000
Isopropylbenzene	7	BQL(0.5)	70	25,000
Naphthalene	**110**	BQL(0.5)	21	15,500
n-Propylbenzene	22	BQL(0.5)	70	30,000
1,2,4-Trimethylbenzene	26	0.6	350	28,500
1,3,5-Trimethylbenzene	8	BQL(0.5)	350	25,000
Xylenes	11	BQL(1.5)	530	87,500
Polynuclear Aromatic Hydrocarbons (PAHs)				
1-Methylnaphthalene	30	BQL(10)	NA	NA
2-Methylnaphthalene	48	BQL(10)	NA	12,500
Naphthalene	**44**	BQL(10)	21	15,500

Results reported in micrograms per liter (µg/L).

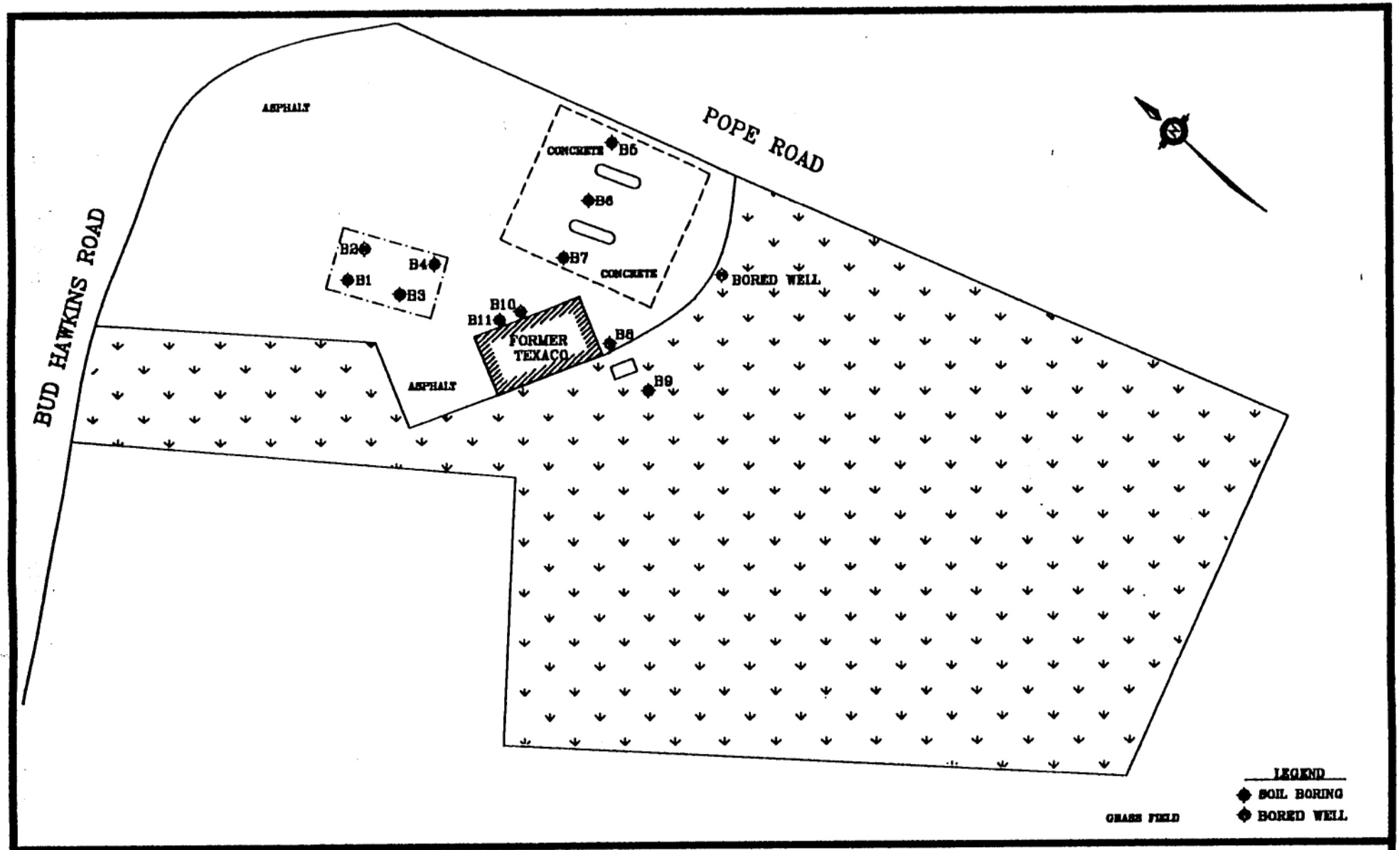
BOLD: Exceeds 2L standards.

NA: Not Applicable

Note: Only detected parameters are shown in this table.



SITE MAP	ALLEN WALKER FORMER TEXACO DUNN, NORTH CAROLINA	DATE: 04/19/00 SCALE: 1" = 60' FIGURE NO: 2 DRAWN: TEC	Prepared by FRMRTEXACO.DWG	1' 60' 120' 1" = 60'



SOIL BORING LOCATIONS

ALLEN WALKER
FORMER TEXACO
DUNN, NORTH CAROLINA

DATE: 04/19/00
SCALE: 1" = 60'
FIGURE NO: 3
DRAWN: TEC

Prepared by:

FRMRTEXACO.DWG

1' 60' 120'

1" = 60'

February 26, 2001

North Carolina Department of Environment and Natural Resources
Division of Waste Management - UST Section
Fayetteville Regional Office
Systel Building, Suite 714
Fayetteville, NC 28301

Re: 1-1000 Gallon Heating Oil Underground Storage Tank Removal
Former Allen Walker Texaco
Interstate 95 and Pope Road, Dunn, Harnett County, North Carolina

Dear Sir/Madam:

On behalf of Equiva Services, LLC, EMS Environmental, Inc., (EMS) has prepared the attac
Underground Storage Tank Closure Report. This report documents the removal of a 1000 gal
UST used for non-commercial purposes.

The UST was removed on January 8, 2001.

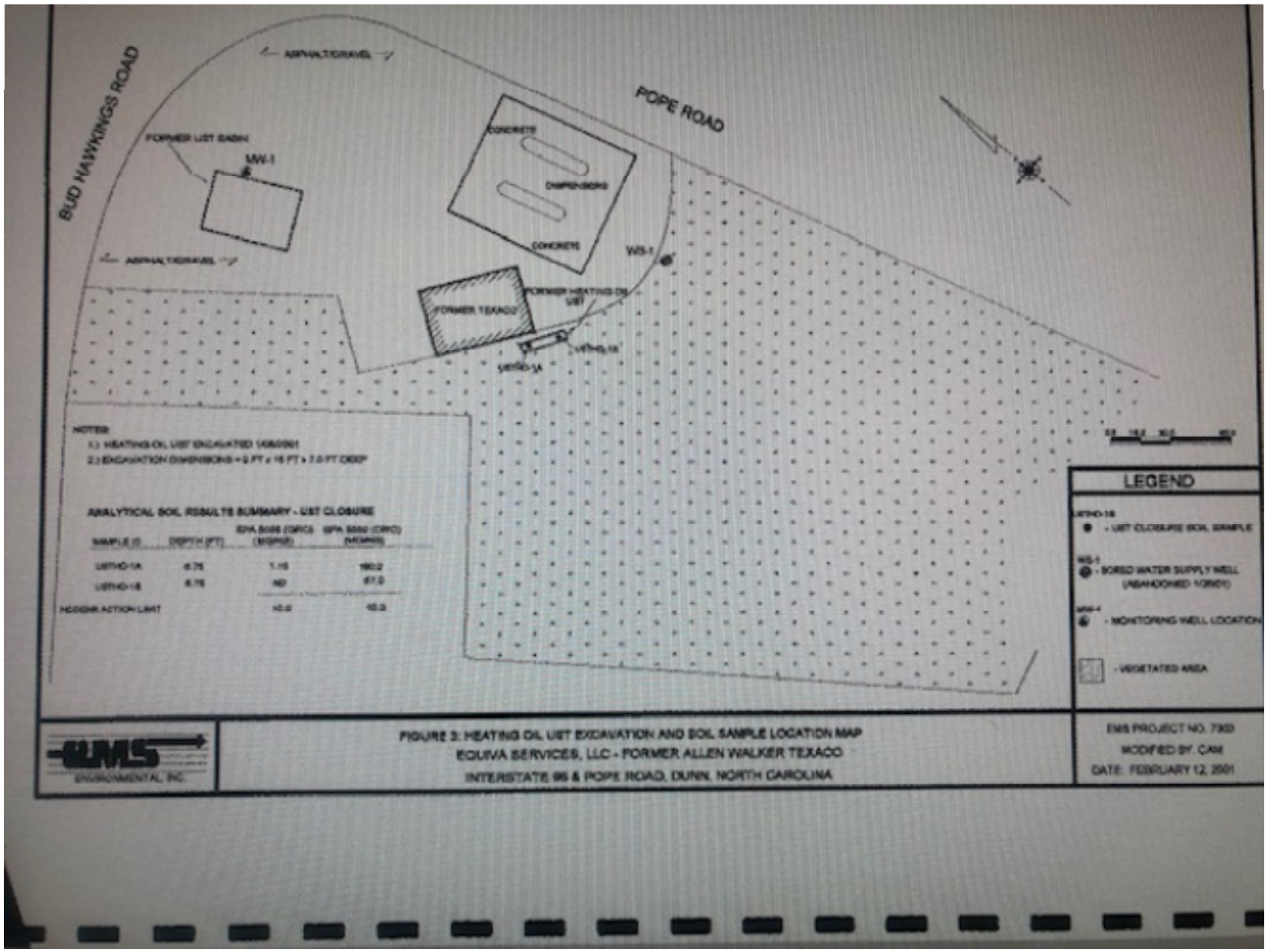
Please review this report and contact the undersigned if you have any questions or comments.

Sincerely,
EMS Environmental, Inc.

James J. Dodson, L.G.
Project Manager

Cc: Ms. Anna Tillman, Equiva Services, 1691 Arrowhead Trail NE, Atlanta, GA 30345
Ms. Cindy Split, ESS

File: c:\7200-7300jobs\7303\wp\7303ustrcs.doc


BUD HAWKINS ROAD
POPE ROAD
ASPHALT/GRAVEL
FORMER UST BASIN
MW-1
CONCRETE
DISPENSERS
CONCRETE
WS-1
FORMER TEXACO
FORMER HEATING OIL UST
LISTHO-1A
LISTHO-1B
NOTES:
1.) HEATING OIL UST EXCAVATED 1/08/2001
2.) EXCAVATION DIMENSIONS = 9 FT x 16 FT x 7.0 FT DEEP
ANALYTICAL SOIL RSULTS SUMMARY - UST CLOSURE
SAMPLE ID
DEPTH (FT)
EPA 8260 (GRO) (MG/KG)
EPA 8260 (DRO) (MG/KG)
LISTHO-1A
6.75
1.10
180.2
LISTHO-1B
6.75
ND
67.0
NCDENR ACTION LIMIT
10.0
10.0
LEGEND
LISTHO-1B
- UST CLOSURE SOIL SAMPLE
WS-1
- BORED WATER SUPPLY WELL (ABANDONED 1/2001)
MW-4
- MONITORING WELL LOCATION
- VEGETATED AREA
EMS ENVIRONMENTAL, INC.
FIGURE 3: HEATING OIL UST EXCAVATION AND SOIL SAMPLE LOCATION MAP
EQUIVA SERVICES, LLC - FORMER ALLEN WALKER TEXACO
INTERSTATE 95 & POPE ROAD, DUNN, NORTH CAROLINA
EMS PROJECT NO. 7303
MODIFIED BY: CAM
DATE: FEBRUARY 12, 2001

Appendix II – Photographs

Date: 10/18/2019

Photographer: JTH

1	**Location / Orientation**	View of site looking west from Spring Branch Road.
	Remarks	View is of former gasoline/service station area.

Date: 10/18/2019

Photographer: JTH

2	**Location / Orientation**	View looking south. Standing water is within former UST basin area.
	Remarks	None

Appendix III – Boring Logs

PROJECT:	**NCDOT I-5878** Parcel 49B- SE Corner Pope Rd/Bud Hawkins Rd (Allen Walker Texaco), Dunn, NC S&ME Project No. 4305-19-161		**BORING LOG: B-1**
DATE DRILLED:	Friday, October 18, 2019	BORING DEPTH (FT):	10
DRILL RIG:	Geoprobe 54DT	WATER LEVEL:	
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
		Topsoil,								
		Sandy Clay, Orange, Red, Gray,			7.9	No				
					5.6	No				
5					7.8	No				
					14.0	Yes	1145			
10					11.3	No				
		Boring Terminated at 10 Ft-BGS								
15										
20										
25										
30										

PROJECT:	**NCDOT I-5878** Parcel 49B-SE Corner Pope Rd/Bud Hawkins Rd (Allen Walker Texaco), Dunn, NC S&ME Project No. 4305-19-161		**BORING LOG: B-2**
DATE DRILLED:	Friday, October 18, 2019	BORING DEPTH (FT):	10
DRILL RIG:	Geoprobe 54DT	WATER LEVEL:	
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
		Topsoil,								
		Sandy Clay, Orange, Red, Gray,			26.7	No				
					30.5	No				
5					27.3	No				
					25.3	No				
10		Boring Terminated at 10 Ft-BGS			30.4	Yes	1200			
15										
20										
25										
30										

PROJECT:	**NCDOT I-5878** Parcel 49B-SE Corner Pope Rd/Bud Hawkins Rd (Allen Walker Texaco), Dunn, NC S&ME Project No. 4305-19-161		**BORING LOG: B-3**
DATE DRILLED:	Friday, October 18, 2019	BORING DEPTH (FT):	10
DRILL RIG:	Geoprobe 54DT	WATER LEVEL:	
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
		Topsoil,								
		Sandy Clay, Orange, Red, Gray,			6.8	No				
					9.5	No				
5					7.4	No				
					10.1	No				
10		Boring Terminated at 10 Ft-BGS			10.2	Yes	1215			
15										
20										
25										
30										

PROJECT:	**NCDOT I-5878** Parcel 49B- SE Corner Pope Rd/Bud Hawkins Rd (Allen Walker Texaco), Dunn, NC S&ME Project No. 4305-19-161		**BORING LOG: B-4**
DATE DRILLED:	Friday, October 18, 2019	BORING DEPTH (FT):	10
DRILL RIG:	Geoprobe 54DT	WATER LEVEL:	
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
		Sandy Clay, Tan, Orange,								
		Sandy Clay, Brown, Tan,			9.0	No				
					20.2	Yes	1230			
5		Sandy Clay, Red, Orange, Gray,			13.5	No				
					17.4	No				
10		Boring Terminated at 10 Ft-BGS			20.9	No				
15										
20										
25										
30										

PROJECT:	**NCDOT I-5878** Parcel 49B- SE Corner Pope Rd/Bud Hawkins Rd (Allen Walker Texaco), Dunn, NC S&ME Project No. 4305-19-161		**BORING LOG: B-5**
DATE DRILLED:	Friday, October 18, 2019	BORING DEPTH (FT):	10
DRILL RIG:	Geoprobe 54DT	WATER LEVEL:	
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
		Clayey Sand, Orange,								
		Clayey Sand, Tan, Orange,			13.9	No				
					16.5	No				
5					14.8	No				
					15.3	No				
					23.2	Yes	1415			
10		Boring Terminated at 10 Ft-BGS								
15										
20										
25										
30										

PROJECT:	**NCDOT I-5878** Parcel 49B-SE Corner Pope Rd/Bud Hawkins Rd (Allen Walker Texaco), Dunn, NC S&ME Project No. 4305-19-161		**BORING LOG: B-6**
DATE DRILLED:	Friday, October 18, 2019	BORING DEPTH (FT):	10
DRILL RIG:	Geoprobe 54DT	WATER LEVEL:	
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		Clayey Sand, Orange,								
		Clayey Sand, Tan, Orange, Red,			6.6	No				
					6.0	No				
5					4.0	No				
					2.8	No				
10					3.2	Yes	1430			
		Boring Terminated at 10 Ft-BGS								
15										
20										
25										
30										

PROJECT:	**NCDOT I-5878** Parcel 49B- SE Corner Pope Rd/Bud Hawkins Rd (Allen Walker Texaco), Dunn, NC S&ME Project No. 4305-19-161		**BORING LOG: B-7**
DATE DRILLED:	Friday, October 18, 2019	BORING DEPTH (FT):	10
DRILL RIG:	Geoprobe 54DT	WATER LEVEL:	
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
		Clayey Sand, Orange,								
		Clayey Sand, Tan, Orange, Red,			2.0	No				
					2.7	No				
5					1.7	No				
					1.8	No				
10					1.1	Yes	1445			
		Boring Terminated at 10 Ft-BGS								
15										
20										
25										
30										

PROJECT:	**NCDOT I-5878** Parcel 49B-SE Corner Pope Rd/Bud Hawkins Rd (Allen Walker Texaco), Dunn, NC S&ME Project No. 4305-19-161		**BORING LOG: B-8**
DATE DRILLED:	Friday, October 18, 2019	BORING DEPTH (FT):	10
DRILL RIG:	Geoprobe 54DT	WATER LEVEL:	
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		Fill, Clayey Sand, Orange,			16.0	No				
					12.3	No				
5					14.2	No				
		Fill, Sand, White, Tan, Petroleum Odors			296.0	No				
		Clayey Sand, Tan, Orange, Red, Slight Petroleum Odors			924.0	Yes	1500			
10		Boring Terminated at 10 Ft-BGS								
15										
20										
25										
30										

PROJECT:	**NCDOT I-5878** Parcel 49B-SE Corner Pope Rd/Bud Hawkins Rd (Allen Walker Texaco), Dunn, NC S&ME Project No. 4305-19-161		**BORING LOG: B-9**
DATE DRILLED:	Friday, October 18, 2019	BORING DEPTH (FT):	10
DRILL RIG:	Geoprobe 54DT	WATER LEVEL:	
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		Clayey Sand, Orange, Tan,			10.1	No				
					10.5	No				
5					11.5	No				
		Clayey Sand, Tan, Orange, Red,			7.1	No				
10		Boring Terminated at 10 Ft-BGS			10.9	Yes	1515			
15										
20										
25										
30										

PROJECT:	**NCDOT I-5878** Parcel 49B-SE Corner Pope Rd/Bud Hawkins Rd (Allen Walker Texaco), Dunn, NC S&ME Project No. 4305-19-161		**BORING LOG: B-10**
DATE DRILLED:	Friday, October 18, 2019	BORING DEPTH (FT):	10
DRILL RIG:	Geoprobe 54DT	WATER LEVEL:	
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		Clayey Sand, Orange, Tan,			0.0	No				
					6.5	No				
5					6.7	No				
		Clayey Sand, Tan, Orange, Red,			8.6	Yes	1530			
10		Boring Terminated at 10 Ft-BGS			4.3	No				
15										
20										
25										
30										

PROJECT:	**NCDOT I-5878** Parcel 49B-SE Corner Pope Rd/Bud Hawkins Rd (Allen Walker Texaco), Dunn, NC S&ME Project No. 4305-19-161		**BORING LOG: B-11**
DATE DRILLED:	Friday, October 18, 2019	BORING DEPTH (FT):	10
DRILL RIG:	Geoprobe 54DT	WATER LEVEL:	
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
		Clayey Sand, Brown,			4.1	No				
					5.0	No				
5		Clayey Sand, Tan, Orange, Red,			6.0	No				
					7.3	No				
10		Boring Terminated at 10 Ft-BGS			7.2	Yes	1600			
15										
20										
25										
30										

PROJECT:	**NCDOT I-5878** Parcel 49B-SE Corner Pope Rd/Bud Hawkins Rd (Allen Walker Texaco), Dunn, NC S&ME Project No. 4305-19-161		**BORING LOG: B-12**
DATE DRILLED:	Friday, October 18, 2019	BORING DEPTH (FT):	10
DRILL RIG:	Geoprobe 54DT	WATER LEVEL:	
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
		Clayey Sand, Brown,			4.3	No				
					5.3	No				
5		Clayey Sand, Tan, Orange, Red,			5.0	No				
					4.9	No				
10		Boring Terminated at 10 Ft-BGS			4.4	Yes	1545			
15										
20										
25										
30										

PROJECT:	**NCDOT I-5878** Parcel 49B-SE Corner Pope Rd/Bud Hawkins Rd (Allen Walker Texaco), Dunn, NC S&ME Project No. 4305-19-161		**BORING LOG: B-13**
DATE DRILLED:	Friday, October 18, 2019	BORING DEPTH (FT):	10
DRILL RIG:	Geoprobe 54DT	WATER LEVEL:	
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		Clayey Sand, Tan, Orange,			4.7	No				
5					4.9	No				
					5.7	No				
		Clayey Sand, Gray,			12.8	No				
10		Boring Terminated at 10 Ft-BGS			103.0	Yes	1630			
15										
20										
25										
30										

Appendix IV – Laboratory Analytical Reports and Chain of Custody

QED

REDLAB
RAPID ENVIRONMENTAL DIAGNOSTICS

QROS

Hydrocarbon Analysis Results

Client: S&ME
Address: 3201 SPRING FOREST RD
RALEIGH NC

Samples taken Monday, October 21, 2019
Samples extracted Monday, October 21, 2019
Samples analysed Wednesday, October 23, 2019

Contact: JAMIE HONEYCUTT

Operator JENN RYAN

Project: NCDOT I-5878 PARCEL 49B

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 (6 - 8')	19.1	<0.48	<0.48	<0.48	<0.48	<0.1	<0.15	<0.019	0	0	0	PHC not detected,(BO)
s	B - 2 (8 - 10')	20.6	<0.52	<0.52	<0.52	<0.52	<0.1	<0.17	<0.021	0	0	100	PHC not detected,(BO)
s	B - 3 (8 - 10')	24.5	<0.61	<0.61	<0.61	<0.61	<0.12	<0.2	<0.025	0	0	0	PHC not detected,(BO)
s	B - 4 (2 - 4')	19.8	<0.5	<0.5	0.5	0.5	0.25	<0.16	<0.02	0	81.1	18.9	Residual HC
s	B - 5 (8 - 10')	19.3	<0.48	<0.48	<0.48	<0.48	<0.1	<0.15	<0.019	0	0	0	PHC not detected,(BO)
s	B - 6 (8 - 10')	11.2	<0.28	<0.28	<0.28	<0.28	<0.06	<0.09	<0.011	0	0	0	,(FCM)
s	B - 7 (8 - 10')	20.3	<0.51	<0.51	0.51	0.51	0.26	<0.16	<0.02	0	40.9	59.1	Residual HC,(BO)
s	B - 8 (8 - 10')	61.2	135.3	293.3	713.9	1007.2	12.6	<0.49	<0.061	99.8	0.2	0	Deg.Gas 90.7%,(FCM)
s	B - 9 (8 - 10')	20.0	<0.5	<0.5	<0.5	<0.5	<0.1	<0.16	<0.02	0	0	0	PHC not detected,(BO)
s	B - 10 (6 - 8')	20.0	<0.5	<0.5	<0.5	<0.5	<0.1	<0.16	<0.02	0	0	100	PHC not detected,(BO)

Initial Calibrator QC check OK

Final FCM QC Check OK 95.1 %

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

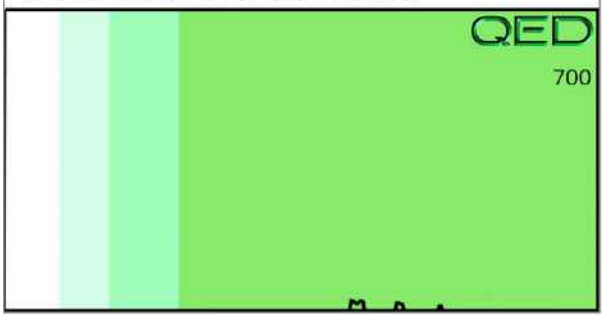
Fingerprints provide a tentative hydrocarbon identification. The abbreviations are:- FCM = Results calculated using Fundamental Calibration Mode : % = confidence for sample fingerprint match to library

(SBS) or (LBS) = Site Specific or Library Background Subtraction applied to result : (PFM) = Poor Fingerprint Match : (T) = Turbid : (P) = Particulate present

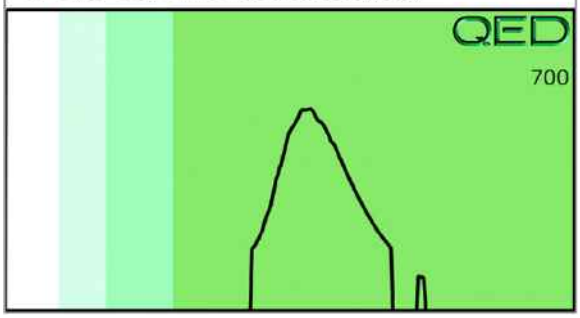
QED Hydrocarbon Fingerprints

Project: NCDOT I-5878 PARCEL 49B ##################

B - 1 (6 - 8') : PHC not detected,(BO)

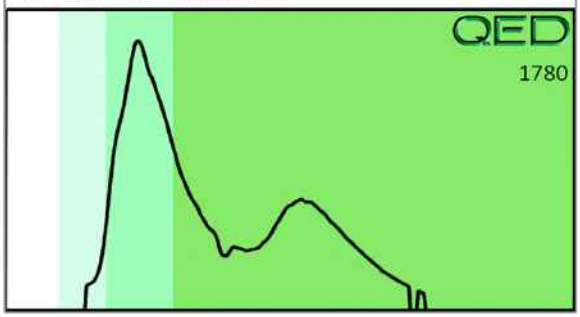


B - 2 (8 - 10') : PHC not detected,(BO)

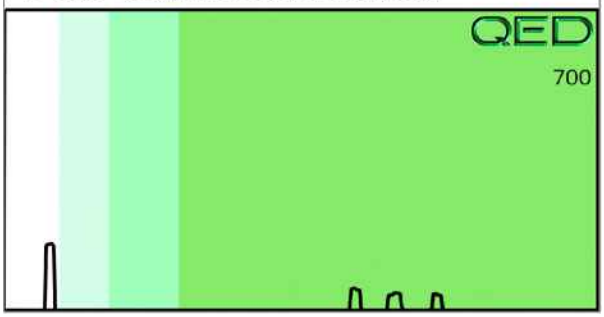


B - 3 (8 - 10') : PHC not detected,(BO)

B - 4 (2 - 4') : Residual HC

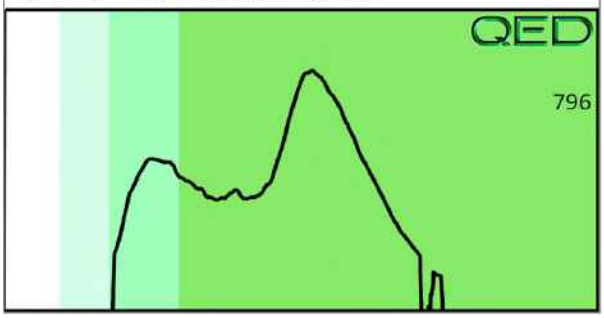


B - 5 (8 - 10') : PHC not detected,(BO)

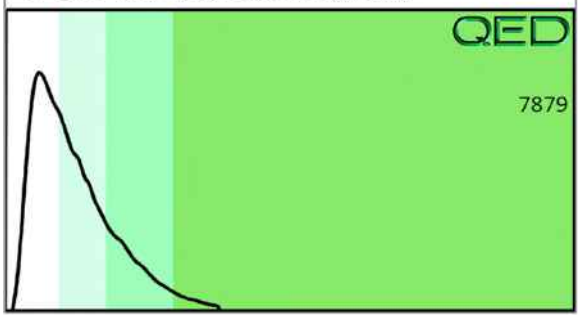


B - 6 (8 - 10') : ,(FCM)

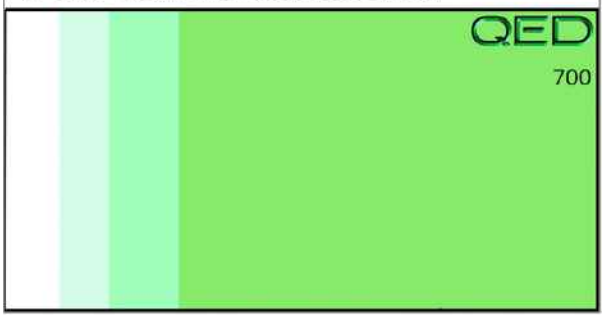
B - 7 (8 - 10') : Residual HC,(BO)



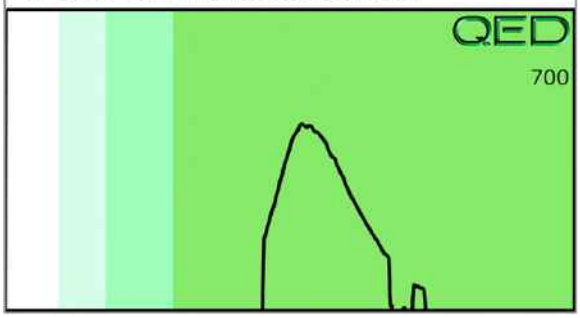
B - 8 (8 - 10') : Deg.Gas 90.7%,(FCM)



B - 9 (8 - 10') : PHC not detected,(BO)



B - 10 (6 - 8') : PHC not detected,(BO)



QED

REDLAB
RAPID ENVIRONMENTAL DIAGNOSTICS

QROS

Hydrocarbon Analysis Results

Client: S&ME
Address: 3201 SPRING FOREST RD
RALEIGH NC

Samples taken Monday, October 21, 2019
Samples extracted Monday, October 21, 2019
Samples analysed Wednesday, October 23, 2019

Contact: JAMIE HONEYCUTT

Operator JENN RYAN

Project: NCDOT I-5878 PARCEL 49B

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 - 11 (8 - 10')	19.7	<0.49	<0.49	<0.49	<0.49	<0.1	<0.16	<0.02	0	0	0	PHC not detected,(BO)
s	B - 12 (8 - 10')	20.0	<0.5	<0.5	<0.5	<0.5	<0.1	<0.16	<0.02	0	0	100	PHC not detected,(BO)
s	B - 13 (8 - 10')	20.2	<0.5	12.7	3	15.7	<0.1	<0.16	<0.02	99.5	0.4	0.1	84.7%,(FCM),(P)

Initial Calibrator QC check OK

Final FCM QC Check OK 98 %

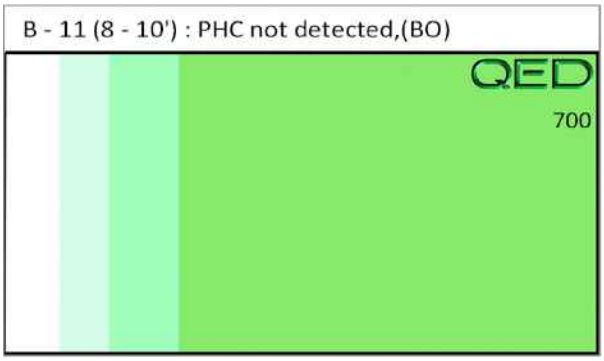
Results generated by a QED HC-1 analyser. Concentration values in mg/kg for soil samples and mg/L for water samples. Soil values are not corrected for moisture or stone content

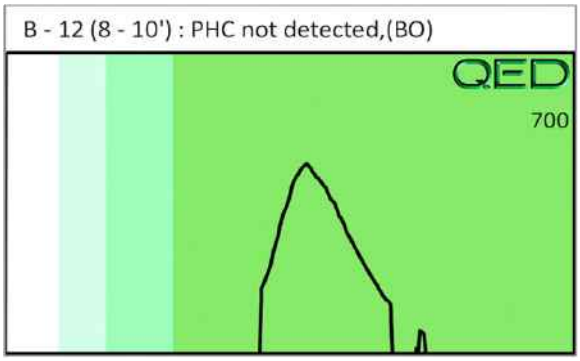
Fingerprints provide a tentative hydrocarbon identification. The abbreviations are:- FCM = Results calculated using Fundamental Calibration Mode : % = confidence for sample fingerprint match to library

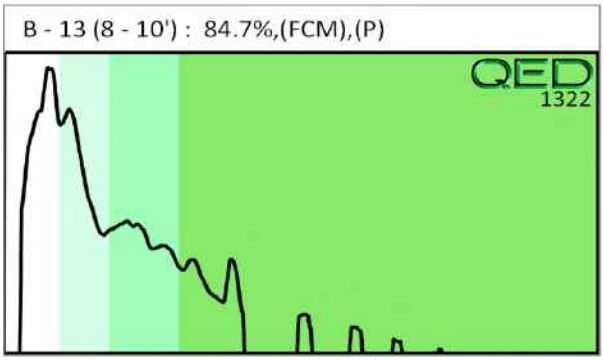
(SBS) or (LBS) = Site Specific or Library Background Subtraction applied to result : (PFM) = Poor Fingerprint Match : (T) = Turbid : (P) = Particulate present

QED Hydrocarbon Fingerprints

Project: NCDOT I-5878 PARCEL 49B ##################







B140 NCDOT - I 5878 Parcel 49B Dunn, NC

Client Name:	S+ME
Address:	3201 Spring Forest Rd Raleigh, NC
Contact:	Jamie T Honeycutt
Project Ref.:	NCDOT - I 5878 Parcel 49B
Email:	jhoneycutt@smeinc.com
Phone #:	910 577-7614
Collected by:	Jamie T Honeycutt

REDLAB™
RAPID ENVIRONMENTAL DIAGNOSTICS

CHAIN OF CUSTODY AND ANALYTICAL REQUEST FORM

RED Lab, LLC
5598 Marvin K Moss Lane
MARBIONC Bldg, Suite 2003
Wilmington, NC 28409

Each sample will be analyzed for BTEX, GRO, DRO, TPH, PAH total aromatics and BaP

Sample Collection Date/Time	TAT Requested 24 Hour	TAT Requested 48 Hour	Initials	Sample ID	Total Wt.	Tare Wt.	Sample Wt.
10-18-19/ 1145		✓	JTH	B-1 6-8'	58.1	44.5	13.6
1200				B2 8-10'	56.7	44.1	12.6
1215				B3 8-10'	56.7	46.1	10.6
1230				B4 2-4'	57.0	43.9	13.1
1415				B5 8-10'	57.7	44.2	13.5
1430				B6 8-10'	56.8	44.3	12.5
1445				B7 8-10	57.2	44.4	12.8
1500				B8 8-10'	58.0	44.6	13.4
1515				B9 8-10'	57.4	44.4	13.0
1530				B-10 6-8'	57.9	44.9	13.0
1545				B-12 8-10'	57.4	44.4	13.0
1600				B-11 8-10'	57.9	44.7	13.2
1630				B-13 8-10'	57.6	44.7	12.9

Comments: GRO/DRO - UVF

Relinquished by	Date/Time	Accepted by	Date/Time
Jamie T Honeycutt	10-21-19/ 1900	MM 1220	10/22/19
Relinquished by	Date/Time	Accepted by	Date/Time

RED Lab USE ONLY

13

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 50-Former Double T Restaurant
508 Spring Branch Road
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
50	Munshiree, LLC	(Former Double T Restaurant) 508 Spring Branch (aka Pope Road), Dunn, NC

The property is developed with a vacant commercial building that was previously occupied by Double T Restaurant. A concrete area, which appears to have been a former pump island, is located in front of the building. The property is not listed with registered petroleum underground storage tanks (USTs) (active or closed). The property is not listed with North Carolina Department of Environmental Quality (NCDEQ) Incidents associated with petroleum releases from USTs or aboveground storage tanks. A groundwater monitoring well identified as MW-6 is located on the property. The monitor well is associated with a previous UST release that occurred at the Former T-Mart (NCDEQ Incident #18955), currently Word A Fire Ministries, located across Spring Branch Road from the site. Historically, groundwater samples collected from MW-6 have been below the laboratory method detection limits.

The PSA included a geophysical survey, subsequent limited soil sampling (14 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 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 50. 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 nine GPR profiles (Lines 1 through 9) 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. Two anomalous features unrelated to known surficial targets were identified in the geophysical data sets (Anomalies A and B; **Figures 6 and 7**). Anomaly A is characterized by two, vertically aligned, high amplitude GPR responses located about one foot and four ft.-bgs, respectively and Anomaly B is characterized by high amplitude GPR responses located within the upper two feet. Each of the anomalies may be related to relatively small isolated buried metallic object. The anomalies were marked in the field using white spray paint. Example GPR profiles are presented in **Figures 8 and 9.**

♦ Soil Sampling

On October 21 and 23, 2019, Troxler Geologic, Inc. (Troxler's) drill crew utilized a track mounted Geoprobe® rig to advance 14 soil borings (B-1 through B-14) and to collect soil samples within accessible areas of the proposed ROW/easement at Parcel 50. 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 six to nine 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 boring B-9, which was located within the former pump island area, starting at a depth of approximately six ft.-bgs and extending to boring termination at eight ft-bgs where groundwater was encountered. Therefore, a soil sample was selected from boring B-9 at the six to eight 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 14 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-9 at the six to eight foot depth interval, at concentrations of 150.5 milligrams per kilograms (mg/kg) and 713.9 mg/kg, respectively, which exceed their North Carolina TPH Action Levels of 50 mg/kg and 362.7 mg/kg, respectively. TPH-DRO was also reported in borings B-10 at the six to eight foot depth interval and boring B-13 at the six to eight foot depth interval, at concentrations slightly above the laboratory reporting limits but well below its respective 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 depths ranging from approximately six to nine 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 and elevated PID readings, boring B-9 located near the former pump island, was selected for collection of a groundwater sample. Groundwater within boring B-9 was measured at 8.0 ft.-bgs, which corresponds with the groundwater depth measured in the existing monitor well MW-6 located within the ROW, near the former pump island. A groundwater sample was collected at boring B-9 by advancing the Geoprobe® groundwater sampling screen into the borehole and extending the screen from a depth of approximately eight to 12 ft.-bgs. Groundwater was purged from the screen until relatively clear using disposable tubing attached to a peristaltic pump. The flow rate was reduced and laboratory supplied containers 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 and polycyclic aromatic compounds (PAHs) by EPA Method 8270.

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 15A NCAC 2L Groundwater Quality Standard (2L Standard). Naphthalene was the highest constituent reported above its 2L Standard at a concentration of 110 micrograms per liter (µg/L), which exceeds its 2L Standard of 6 µg/L. 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

An existing groundwater monitoring well identified as MW-6 is located on the property within the ROW. MW-6 is associated with the Former T-Mart (NCDEQ Incident # 18955), currently Word A Fire Ministries, located across Spring Branch Road from the site. Historically, groundwater samples collected from MW-6 have been below the laboratory method detection limits.

The geophysical survey identified two anomalies (Anomalies A and B) which may be related to isolated buried metallic objects. Responses indicative of a potential UST were not identified in the geophysical data sets collected at the site.

S&ME advanced 14 soil borings (B-1 through B-14) to a depth of up to approximately 10 ft.-bgs at the site. Petroleum odors and elevated PID readings were noted at boring B-9, which was located within the former pump island area, starting at a depth of approximately six 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 boring B-9 at the six to eight foot depth interval at concentrations exceeding their North Carolina TPH Action Levels. TPH-DRO was also reported in borings B-10 and B-13 at the six to eight foot depth interval, at concentrations slightly above the laboratory reporting limits but well below their respective North Carolina TPH Action Levels. 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 depths ranging from six to nine ft.-bgs. A groundwater sample (TW-1) was collected at boring B-9 using the Geoprobe® groundwater sampling screen and analyzed by Con-Test for VOCs by EPA Method 8260 and PAHs by EPA Method 8270. 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 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 boring B-9 located within the former pump island. Assuming that a section of petroleum impacted soil approximately two feet thick, 24 feet in diameter at a depth of six to eight ft.-bgs (groundwater was encountered at a depth of eight ft.-bgs near boring B-9); up to 34 cubic yards of soil at boring B-9 may be impacted. It should also be assumed that saturated petroleum impacted soil will be encountered if construction excavations extend deeper than eight ft.-bgs within the vicinity of the former pump island.

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., surficial debris, 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, 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:
Jamie Honeycutt
4C890EAEC25F488...

Jamie T Honeycutt
Environmental Professional
jhoneycutt@smeinc.com

DocuSigned by:
Michael Pfeifer
861E52DDEFAF4C7...

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Tom Raymond
D4B9FB5F636F4BB...

1/27/2020

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

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 – Line 4
Figure 9: Example GPR Data – Lines 6 and 7

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 50 - (Former Double T Restaurant)
508 Spring Branch Road
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→ / Sample Depth (ft.-bgs)	TPH-GRO	TPH-DRO
B-1	10/21/2019	6 to 8	<0.28	<0.28
B-2	10/21/2019	4 to 6	<0.51	<0.51
B-3	10/21/2019	4 to 6	<0.49	<0.49
B-4	10/21/2019	4 to 6	<0.59	<0.59
B-5	10/21/2019	4 to 6	<0.51	<0.51
B-6	10/21/2019	6 to 8	<0.5	<0.5
B-7	10/23/2019	6 to 8	<0.58	<0.58
B-8	10/23/2019	6 to 8	<0.56	<0.56
B-9	10/23/2019	6 to 8	**150.5**	**362.7**
B-10	10/23/2019	6 to 8	<0.61	**1.3**
B-11	10/23/2019	6 to 8	<0.62	<0.62
B-12	10/23/2019	6 to 8	<0.62	<0.62
B-13	10/23/2019	6 to 8	<0.6	**1.1**
B-14	10/23/2019	6 to 8	<0.66	<0.66
North Carolina TPH Action Levels			**50**	**100**

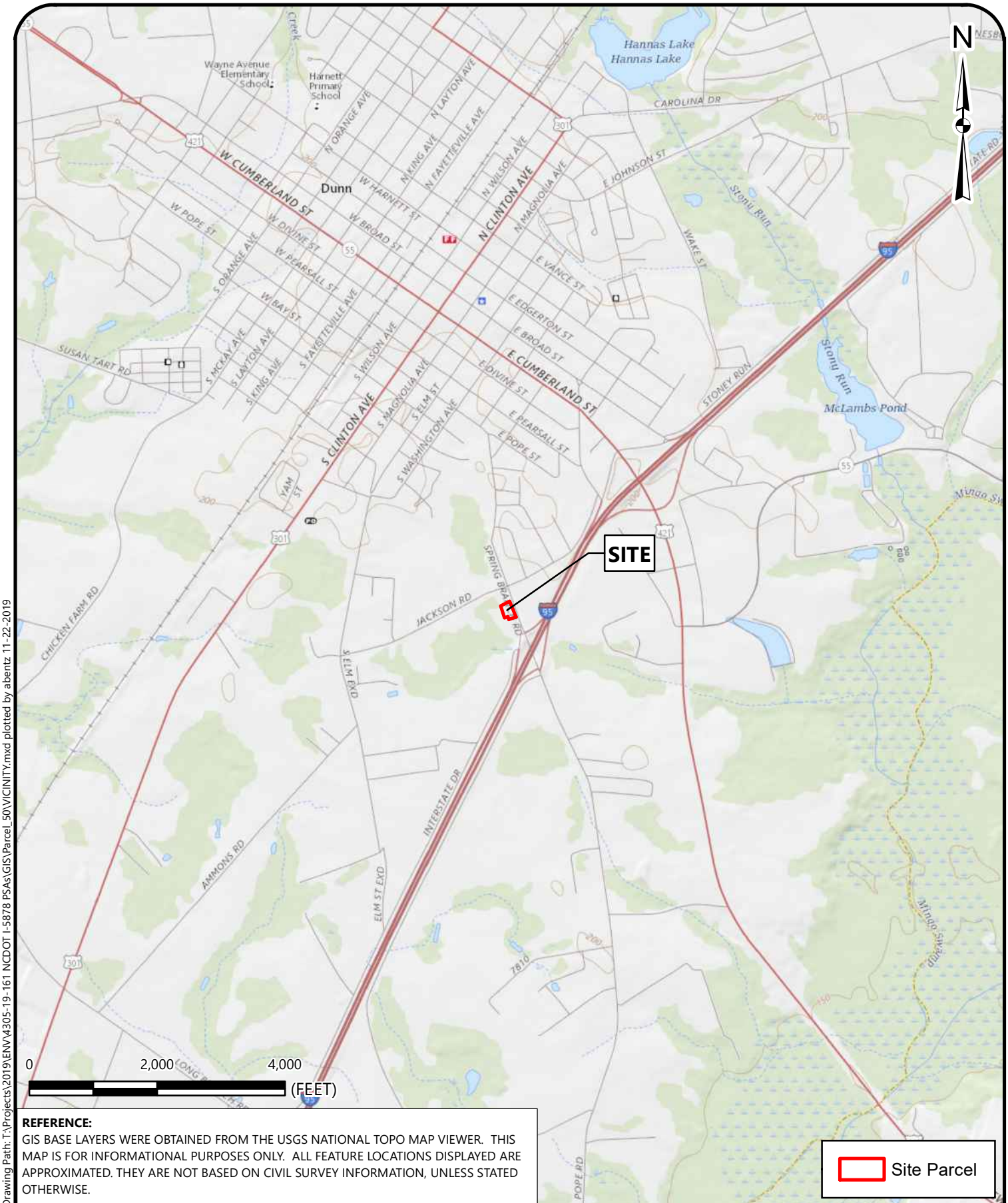
Notes:
1. UVF analysis performed by RED Lab, LLC
2. Concentrations are reported in milligrams per kilogram (mg/Kg).
3. ft.-bgs:- feet below ground surface.
4. Concentrations exceeding the laboratory's reporting limits are shown in **BOLD** fields.
5. Concentrations exceeding the North Carolina TPH Action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

TABLE 2
SUMMARY OF GROUNDWATER SAMPLING RESULTS
NCDOT Project I-5878
Parcel 50 - (Former Double T Restaurant)
508 Spring Branch Road
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→ / Date	Benzene	Ethylbenzene	Isopropylbenzene	Naphthalene	n-Butylbenzene	sec-Butylbenzene	Styrene	n-Propylbenzene	p-Isopropyltoluene	Toluene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Total Xylenes	Acenaphthene	Acenaphthylene	Fluorene	Naphthalene	Phenanthrene	2-Methylnaphthalene
B-9/TW-1	10/23/2019	**5.3 J**	**320**	**28**	**110**	**23**	**8.4 J**	**5.8 J**	**100**	**5.0 J**	**290**	**580**	**180**	**1,430**	**0.063 J**	**0.052 J**	**0.078 J**	**100**	**0.082**	**49**
2L Standard (µg/L)		**1**	**600**	**70**	**6**	**70**	**70**	**70**	**70**	**25**	**600**	**400**	**400**	**500**	**80**	**200**	**300**	**6**	**200**	**30**
GCL (µg/L)		**5,000**	**84,500**	**25,000**	**6,000**	**6,900**	**8,500**	**70,000**	**30,000**	**11,700**	**260,000**	**28,500**	**25,000**	**85,500**	**2,120**	**1,965**	**990**	**6,000**	**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



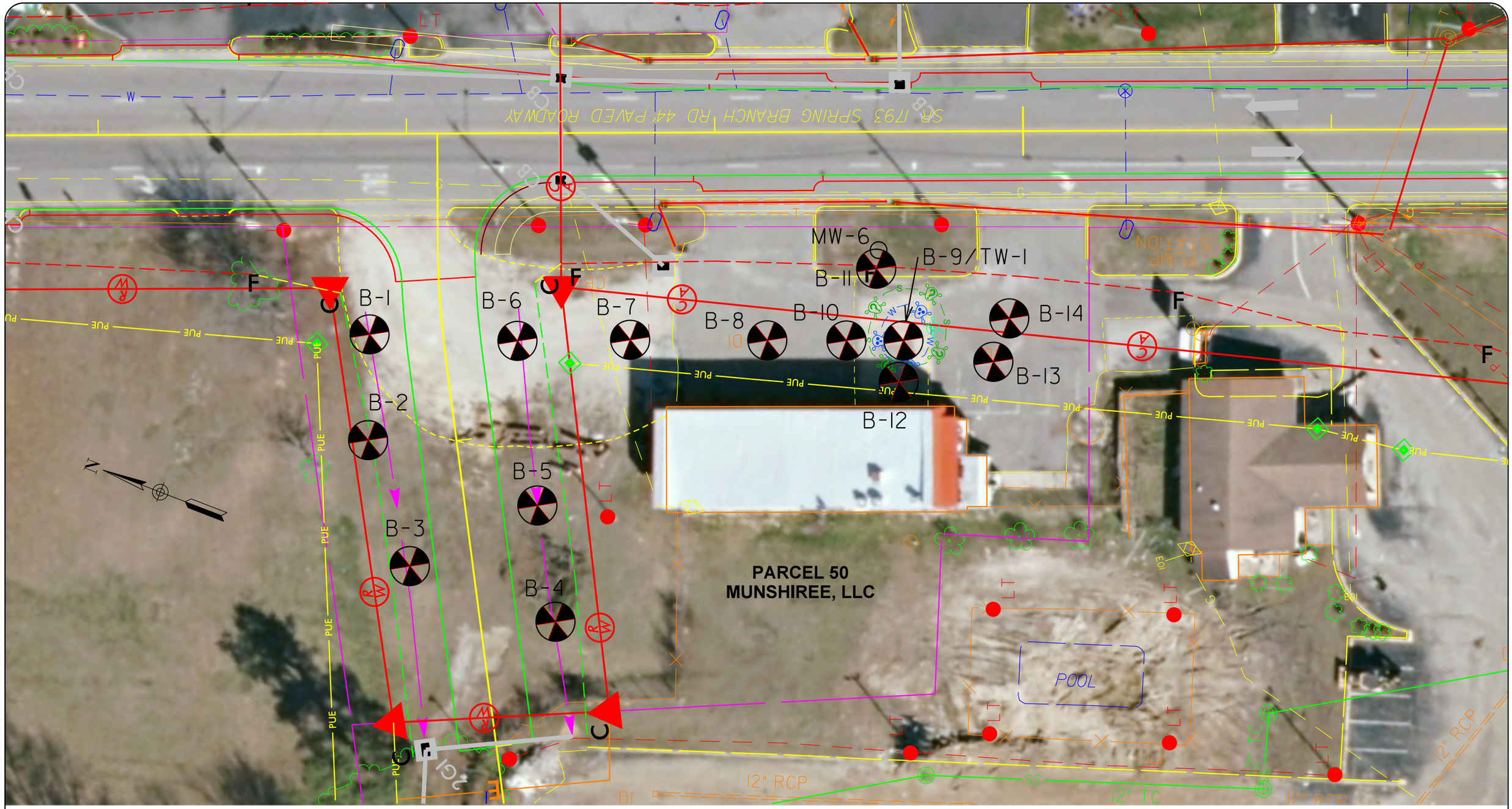
REFERENCE:
GIS BASE LAYERS WERE OBTAINED FROM THE USGS NATIONAL TOPO MAP VIEWER. THIS MAP IS FOR INFORMATIONAL PURPOSES ONLY. ALL FEATURE LOCATIONS DISPLAYED ARE APPROXIMATED. THEY ARE NOT BASED ON CIVIL SURVEY INFORMATION, UNLESS STATED OTHERWISE.

Drawing Path: T:\Projects\2019\ENV\4305-19-161 NCDOT I-5878 PSAs\GIS\Parcel_50\VICINITY.mxd plotted by abentz 11-22-2019

VICINITY MAP

NCDOT PROJECT I-5878
PARCEL NO. 50 (FORMER DOUBLE T RESTAURANT)
508 SPRING BRANCH ROAD, DUNN, HARNETT COUNTY, NORTH CAROLINA

SCALE:	FIGURE NO.
1 " = 2,000 '	1
DATE: 11-22-19	
PROJECT NUMBER 4305-19-161	



LEGEND

Geoenvironmental Boring:

Underground Storage Tank (UST): UST

Map Source: NCDOT Project I-5986B
Image Source: NC ONEMAP, Dated 2016

Known Soil Contamination:

Possible Soil Contamination: — S —

Existing Contamination Known - Water: — W —

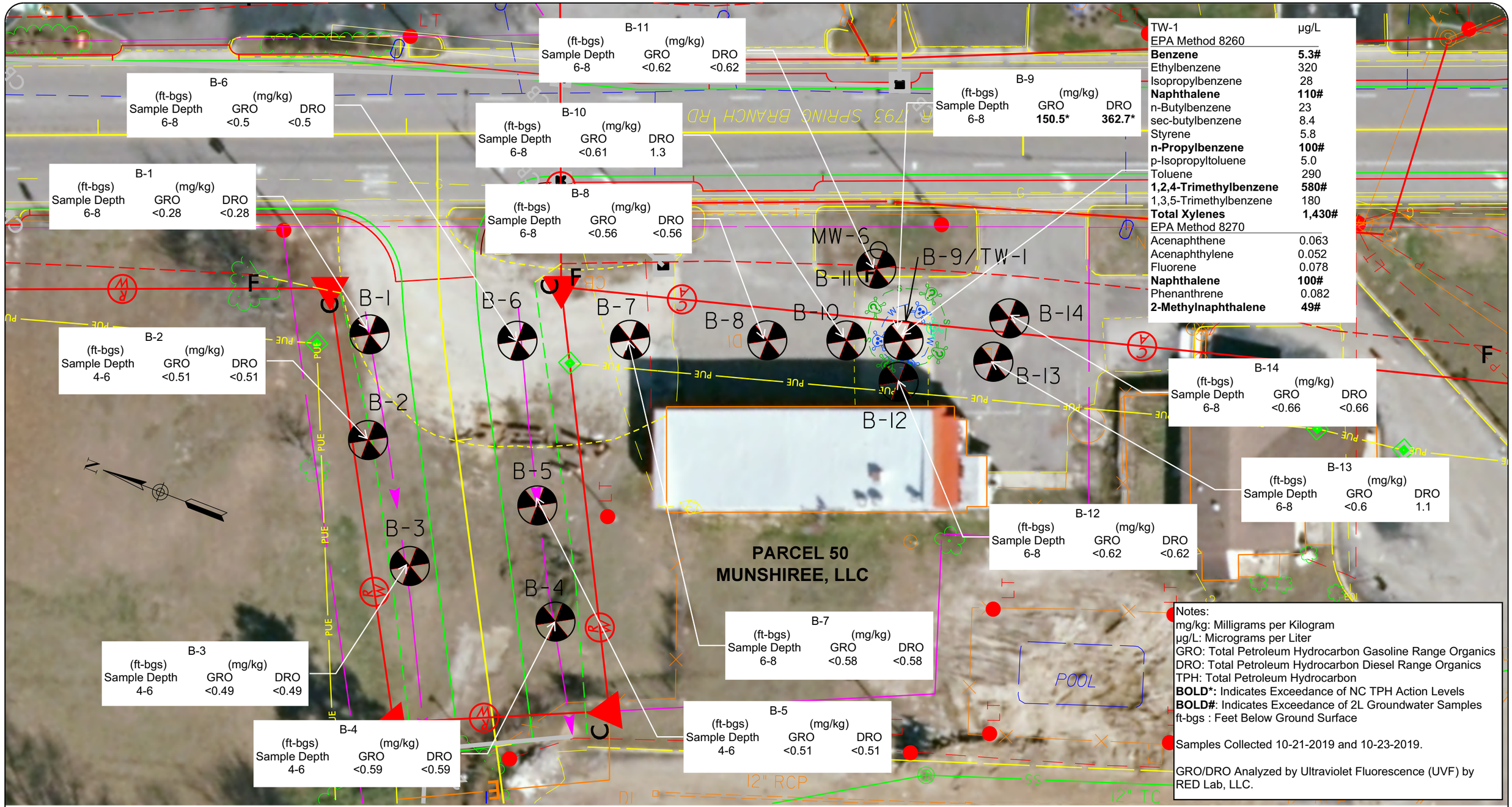
Existing Monitoring Well:

0 30 60
GRAPHIC SCALE (IN FEET)

SITE MAP

NCDOT Project: I-5878
PARCEL 50 - (FORMER DOUBLE T RESTAURANT)
508 Spring Branch Road, Dunn, Harnett County, North Carolina

SCALE:	FIGURE NO.
1" = 30'	2
DATE:	
JAN. 2020	
PROJECT NUMBER	
4305-19-161	



LEGEND

Geoenvironmental Boring:
Underground Storage Tank (UST): UST
Known Soil Contamination:
Possible Soil Contamination: — S —
Existing Contamination Known - Water: — W —
Existing Monitoring Well:

Map Source: NCDOT Project I-5986B
Image Source: NC ONEMAP, Dated 2016

0 30 60
GRAPHIC SCALE (IN FEET)

SOIL AND GROUNDWATER CONSTITUENT MAP

NCDOT Project: I-5878
PARCEL 50 - (FORMER DOUBLE T RESTAURANT)
508 Spring Branch Road, 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)

LEGEND

Approximate TDEM Path

Approximate Requested Survey Area

TDEM PATH LOCATION PLAN

NCDOT PROJECT: I-5878
PARCEL #50 - (FORMER DOUBLE T RESTAURANT)
508 SPRING BRANCH ROAD, DUNN, HARNETT COUNTY, NORTH CAROLINA

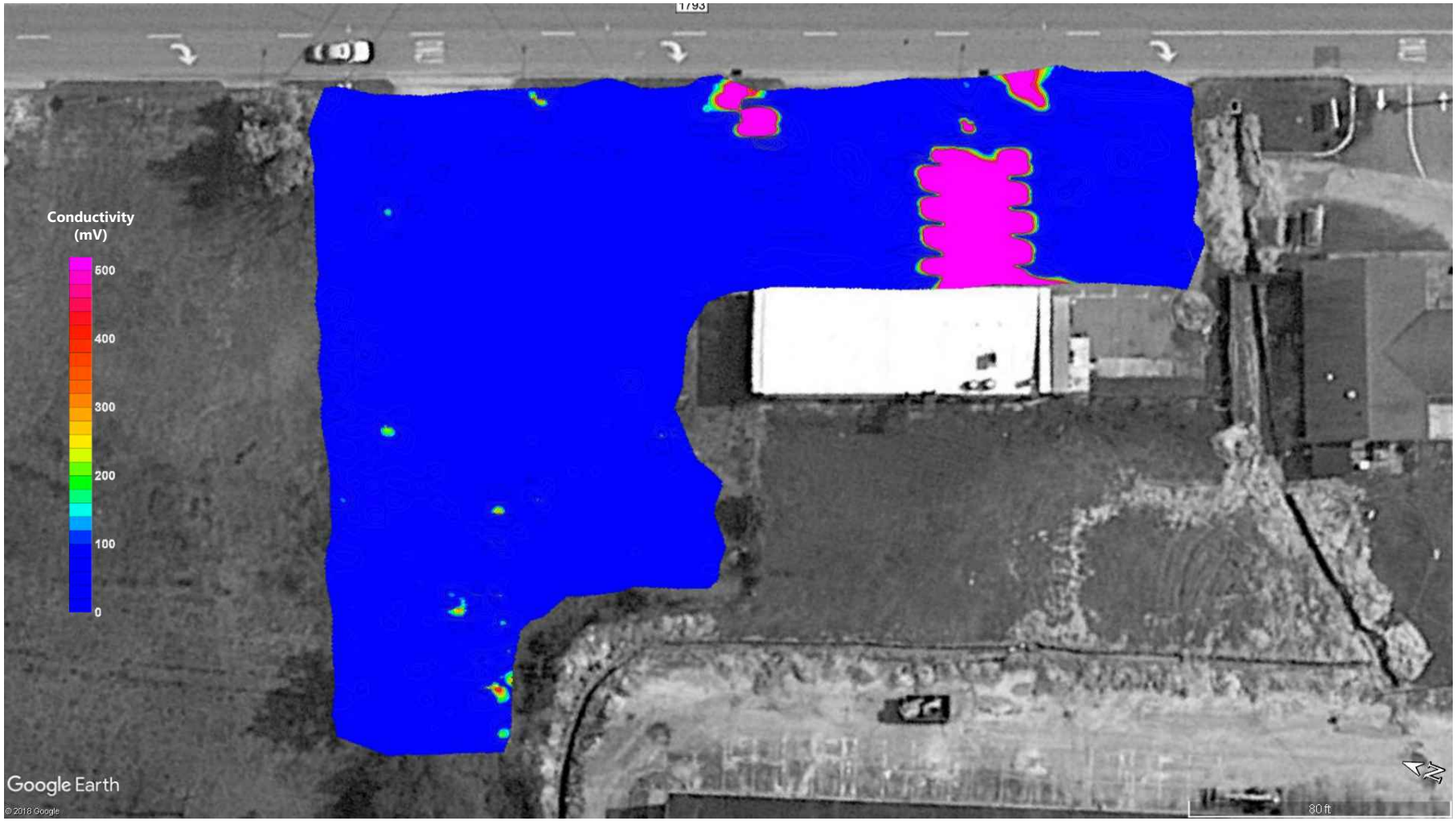
SCALE:
AS SHOWN

DATE:
11/20/2019

PROJECT NUMBER
4305-19-161

FIGURE NO.
4

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

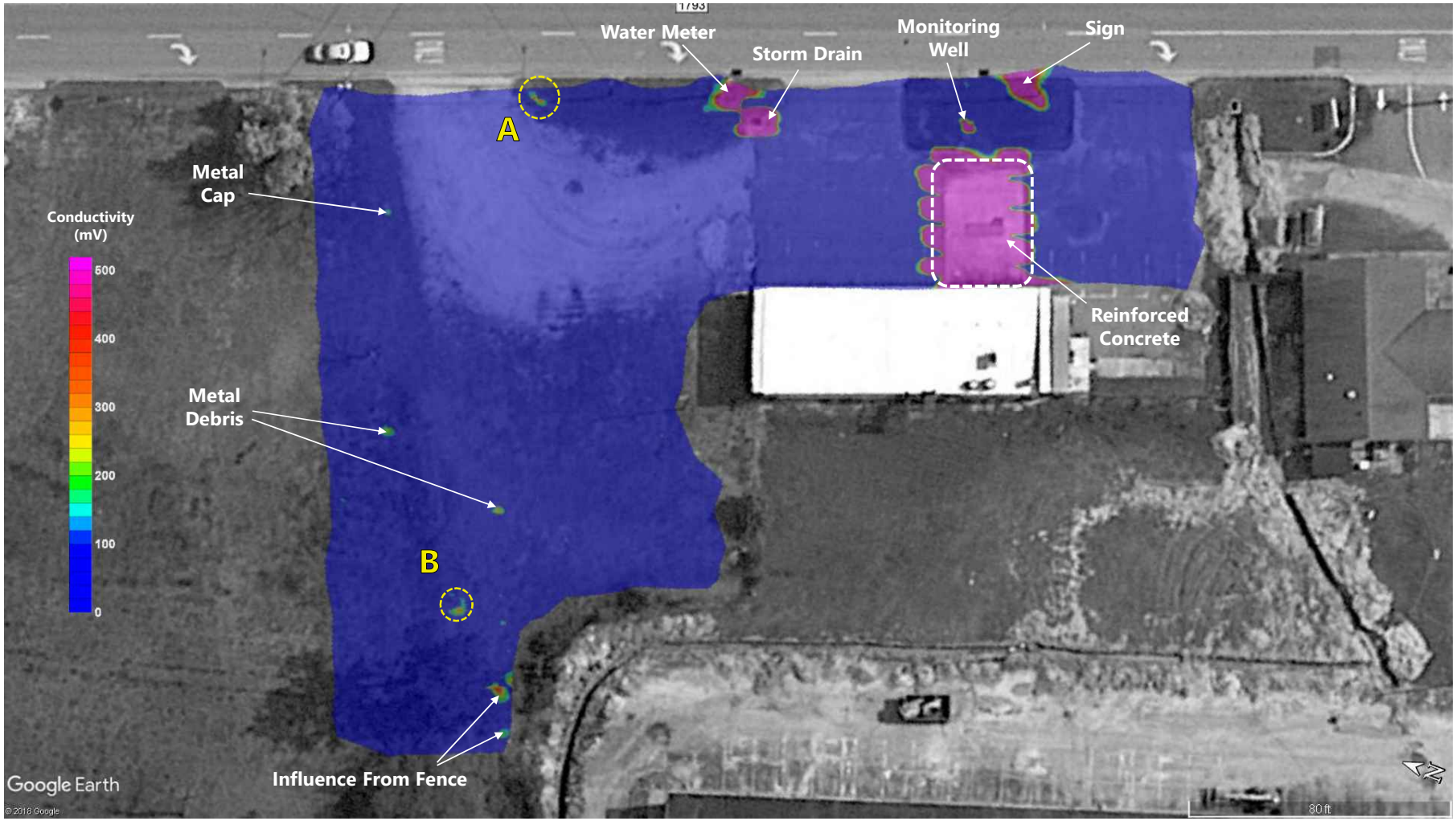


TDEM DATA PLOT A

NCDOT PROJECT: I-5878
PARCEL #50 - (FORMER DOUBLE T RESTAURANT)
508 SPRING BRANCH ROAD, DUNN, HARNETT COUNTY, NORTH CAROLINA

SCALE:	AS SHOWN
DATE:	11/20/2019
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

NCDOT PROJECT: I-5878
PARCEL #50 - (FORMER DOUBLE T RESTAURANT)
508 SPRING BRANCH ROAD, DUNN, HARNETT COUNTY, NORTH CAROLINA

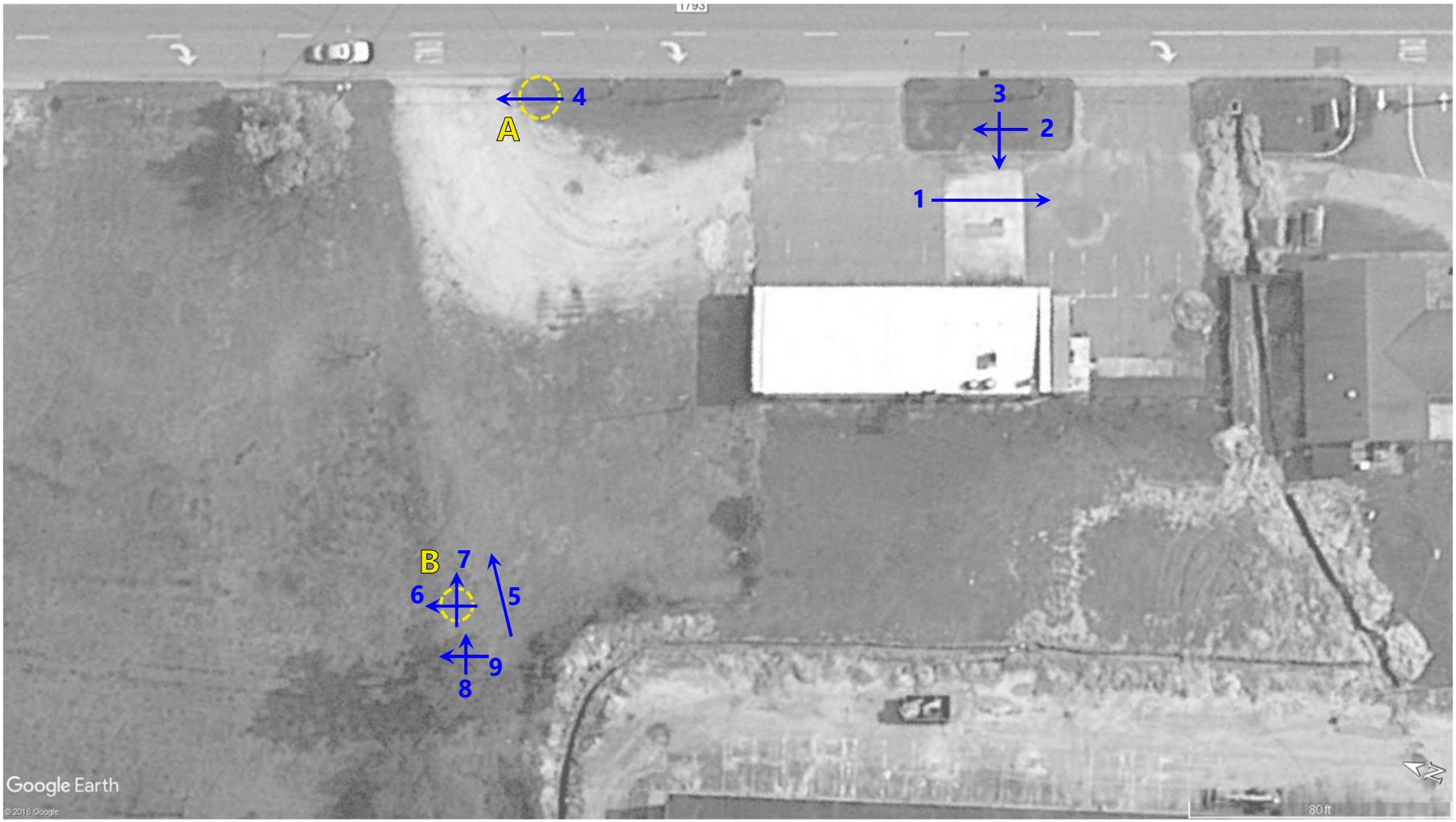
SCALE: AS SHOWN

DATE: 11/20/2019

PROJECT NUMBER 4305-19-161

FIGURE NO. **6**

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



LEGEND

Approximate Location of Geophysical Anomaly

Approximate Location of GPR Profile

GEOPHYSICAL ANOMALY LOCATION PLAN

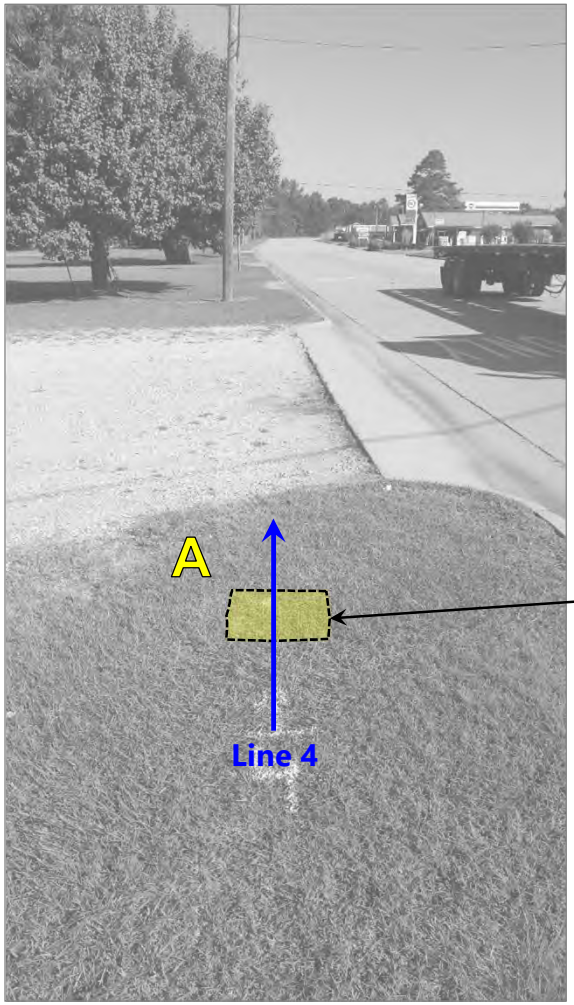
NCDOT PROJECT: I-5878
PARCEL #50 - (FORMER DOUBLE T RESTAURANT)
508 SPRING BRANCH ROAD, DUNN, HARNETT COUNTY, NORTH CAROLINA

SCALE:
AS SHOWN

DATE:
11/20/2019

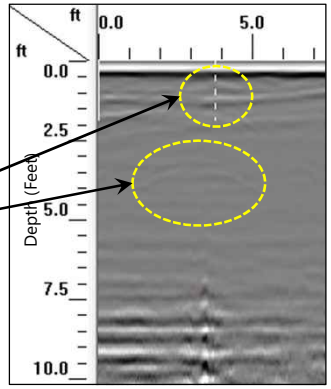
PROJECT NUMBER
4305-19-161

FIGURE NO.
7



Anomaly A

Line 4



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

EXAMPLE GPR DATA – LINE 4

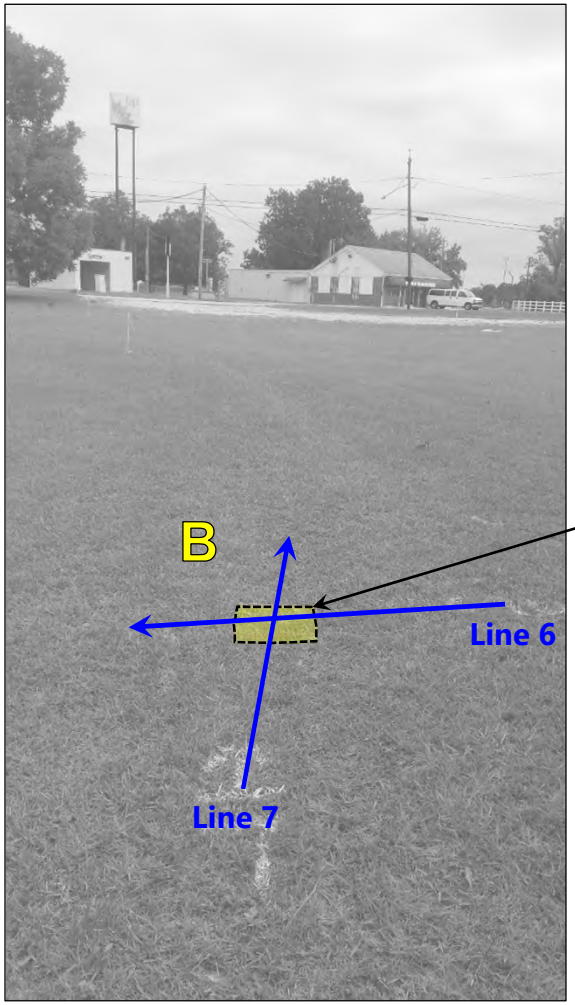
NCDOT PROJECT: I-5878
PARCEL #50 - (FORMER DOUBLE T RESTAURANT)
508 SPRING BRANCH ROAD, DUNN, HARNETT COUNTY, NORTH CAROLINA

SCALE: AS SHOWN

DATE: 11/20/2019

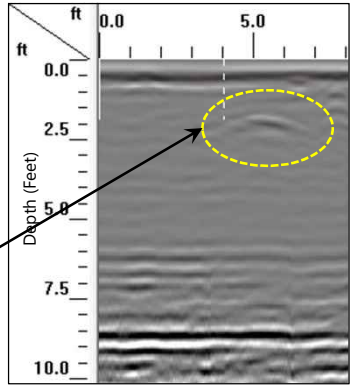
PROJECT NUMBER 4305-19-161

FIGURE NO. **8**

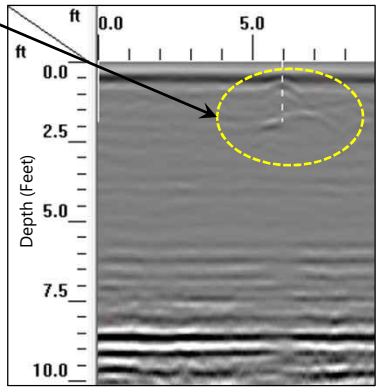


Anomaly B

Line 6



Line 7



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

EXAMPLE GPR DATA – LINES 6 AND 7

NCDOT PROJECT: I-5878
PARCEL #50 - (FORMER DOUBLE T RESTAURANT)
508 SPRING BRANCH ROAD, DUNN, HARNETT COUNTY, NORTH CAROLINA

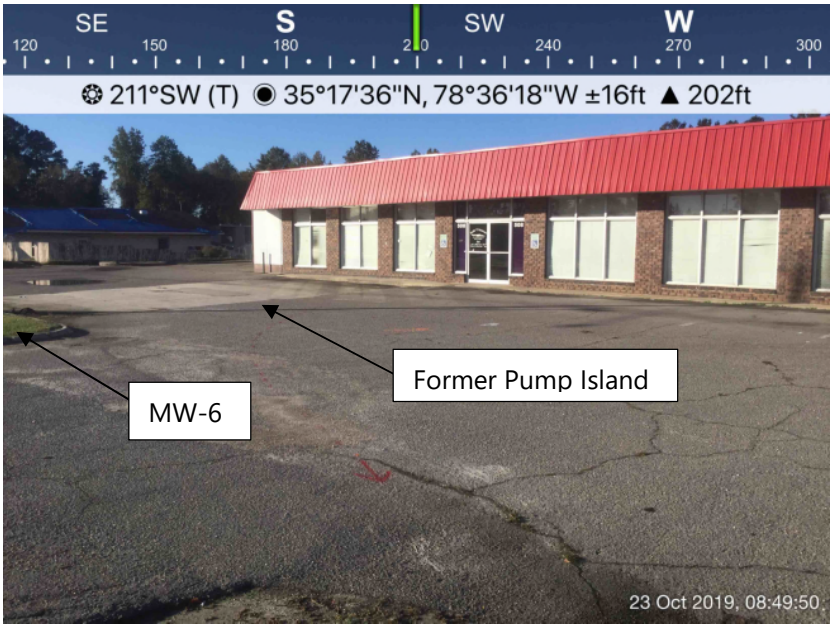
SCALE: AS SHOWN

DATE: 11/20/2019

PROJECT NUMBER 4305-19-161

FIGURE NO. 9

Appendix I – Photographs



Date: 10/23/2019

Photographer: JTH

1	**Location / Orientation**	View of site looking south-southwest.
	Remarks	Concrete area is a former pump island. MW-6 is located within grassy area.

Date: 10/23/2019

Photographer: JTH

2	**Location / Orientation**	View looking south-southeast at former pump island.
	Remarks	Probing of boring B-9/TW-1.

Appendix II – Boring Logs

PROJECT:	**NCDOT I-5878** Parcel 50-508 Spring Branch Rd (Former Double T Restaurant), Dunn, NC S&ME Project No. 4305-19-161		**BORING LOG: B-1**
DATE DRILLED:	Monday, October 21, 2019	BORING DEPTH (FT):	10
DRILL RIG:	Geoprobe 54DT	WATER LEVEL:	9
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		Clayey Sand, Tan, Brown,			3.1	No				
					4.6	No				
5		Sandy Clay, Orange, Gray,			2.9	No				
					5.1	Yes	1545			
		Silty Sand, Orange,	▼							
10		Boring Terminated at 10 Ft-BGS								
15										
20										
25										
30										

PROJECT:	**NCDOT I-5878** Parcel 50-508 Spring Branch Rd (Former Double T Restaurant), Dunn, NC S&ME Project No. 4305-19-161		**BORING LOG: B-2**
DATE DRILLED:	Monday, October 21, 2019	BORING DEPTH (FT):	8
DRILL RIG:	Geoprobe 54DT	WATER LEVEL:	7
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
		Topsoil,								
		Clayey Sand, Orange,			5.6	No				
					6.6	No				
5					1.0	Yes	1600			
		Sand, Tan, Orange,								
		Sandy Silt, Gray,	▼		6.5	No				
		Boring Terminated at 8 Ft-BGS								
10										
15										
20										
25										
30										

PROJECT:	**NCDOT I-5878** Parcel 50-508 Spring Branch Rd (Former Double T Restaurant), Dunn, NC S&ME Project No. 4305-19-161		**BORING LOG: B-3**
DATE DRILLED:	Monday, October 21, 2019	BORING DEPTH (FT):	8
DRILL RIG:	Geoprobe 54DT	WATER LEVEL:	6
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
		Topsoil,								
		Clayey Sand, Tan, Orange,			4.9	No				
					7.1	No				
5		Silty Sand, Tan, Orange,	▼		7.9	Yes	1615			
		Boring Terminated at 8 Ft-BGS								
10										
15										
20										
25										
30										

PROJECT:	**NCDOT I-5878** Parcel 50-508 Spring Branch Rd (Former Double T Restaurant), Dunn, NC S&ME Project No. 4305-19-161		**BORING LOG: B-4**
DATE DRILLED:	Monday, October 21, 2019	BORING DEPTH (FT):	8
DRILL RIG:	Geoprobe 54DT	WATER LEVEL:	6
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
		Topsoil,								
		Silty Sand, Orange, Brown,			3.7	No				
		Silty Sand, Black,			4.3	No				
5		Silty Sand, Orange, Gray,	▼		5.9	Yes	1630			
		Boring Terminated at 8 Ft-BGS								
10										
15										
20										
25										
30										

PROJECT:	**NCDOT I-5878** Parcel 50-508 Spring Branch Rd (Former Double T Restaurant), Dunn, NC S&ME Project No. 4305-19-161		**BORING LOG: B-5**
DATE DRILLED:	Monday, October 21, 2019	BORING DEPTH (FT):	8
DRILL RIG:	Geoprobe 54DT	WATER LEVEL:	7
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
		Topsoil,								
		Clayey Sand, Orange, Brown,			4.5	No				
		Silty Sand, Tan, Orange,			2.2	No				
5			▼		3.4	Yes	1645			
		Boring Terminated at 8 Ft-BGS								
10										
15										
20										
25										
30										

PROJECT:	**NCDOT I-5878** Parcel 50-508 Spring Branch Rd (Former Double T Restaurant), Dunn, NC S&ME Project No. 4305-19-161		**BORING LOG: B-6**
DATE DRILLED:	Monday, October 21, 2019	BORING DEPTH (FT):	8
DRILL RIG:	Geoprobe 54DT	WATER LEVEL:	8
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
		Topsoil,								
		Clayey Sand, Orange,			3.2	No				
					4.6	No				
5		Clayey Sand, Tan, Orange,			4.8	No				
			▼		4.0	Yes	1700			
		Boring Terminated at 8 Ft-BGS								
10										
15										
20										
25										
30										

PROJECT:	**NCDOT I-5878** Parcel 50-508 Spring Branch Rd (Former Double T Restaurant), Dunn, NC S&ME Project No. 4305-19-161		**BORING LOG: B-7**
DATE DRILLED:	Wednesday, October 23, 2019	BORING DEPTH (FT):	8
DRILL RIG:	Geoprobe 54DT	WATER LEVEL:	8
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
		Gravel,								
		Silty Sand, Tan,			3.1	No				
		Clayey Sand, Tan, Orange,			5.1	No				
5					3.2	No				
		Sand, Tan,								
		Silty Sand, Red, Gray,			4.2	Yes	950			
		Boring Terminated at 8 Ft-BGS	▼							
10										
15										
20										
25										
30										

PROJECT:	**NCDOT I-5878** Parcel 50-508 Spring Branch Rd (Former Double T Restaurant), Dunn, NC S&ME Project No. 4305-19-161		**BORING LOG: B-8**
DATE DRILLED:	Wednesday, October 23, 2019	BORING DEPTH (FT):	8
DRILL RIG:	Geoprobe 54DT	WATER LEVEL:	8
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
		Asphalt, Gravel,								
		Clayey Sand, Orange,			4.3	No				
					2.9	No				
5					7.3	No				
		Silty Sand, Tan, Orange,			7.4	Yes	1000			
		Boring Terminated at 8 Ft-BGS	▼							
10										
15										
20										
25										
30										

PROJECT:	**NCDOT I-5878** Parcel 50-508 Spring Branch Rd (Former Double T Restaurant), Dunn, NC S&ME Project No. 4305-19-161		**BORING LOG: B-9/TW-1**
DATE DRILLED:	Wednesday, October 23, 2019	BORING DEPTH (FT):	12
DRILL RIG:	Geoprobe 54DT	WATER LEVEL:	8
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		Asphalt, Gravel,								
		Clayey Sand, Orange,			3.8	No				
					4.1	No				
5										
					7.9	No				
		Clayey Sand, Orange, Petroleum Odors								
		Silty Sand, Tan, Orange, Petroleum Odors	▼		1468	Yes	1015			
10										
		Boring Terminated at 12 Ft-BGS								
15										
20										
25										
30										

PROJECT:	**NCDOT I-5878** Parcel 50-508 Spring Branch Rd (Former Double T Restaurant), Dunn, NC S&ME Project No. 4305-19-161		**BORING LOG: B-10**
DATE DRILLED:	Wednesday, October 23, 2019	BORING DEPTH (FT):	8
DRILL RIG:	Geoprobe 54DT	WATER LEVEL:	8
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
		Asphalt, Gravel,								
		Clayey Sand, Orange,			2.0	No				
		Silty Sand, Tan, Orange,			4.6	No				
5					7.4	No				
					7.2	Yes	1045			
		Boring Terminated at 8 Ft-BGS	▼							
10										
15										
20										
25										
30										

PROJECT:	NCDOT I-5878 Parcel 50-508 Spring Branch Rd (Former Double T Restaurant), Dunn, NC S&ME Project No. 4305-19-161		**BORING LOG: B-11**
DATE DRILLED:	Wednesday, October 23, 2019	BORING DEPTH (FT):	8
DRILL RIG:	Geoprobe 54DT	WATER LEVEL:	8
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
		Topsoil,								
		Clayey Sand, Orange,			3.3	No				
		Silty Sand, Tan, Orange,			5.9	No				
5					5.2	No				
					6.1	Yes	1100			
		Boring Terminated at 8 Ft-BGS	▼							
10										
15										
20										
25										
30										

PROJECT:	**NCDOT I-5878** Parcel 50-508 Spring Branch Rd (Former Double T Restaurant), Dunn, NC S&ME Project No. 4305-19-161		**BORING LOG: B-12**
DATE DRILLED:	Wednesday, October 23, 2019	BORING DEPTH (FT):	8
DRILL RIG:	Geoprobe 54DT	WATER LEVEL:	8
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
		Concrete, Gravel,								
		Clayey Sand, Orange,			5.2	No				
					6.8	No				
5					6.7	No				
		Silty Sand, Tan, Gray,			6.4	Yes	1115			
		Boring Terminated at 8 Ft-BGS	▼							
10										
15										
20										
25										
30										

PROJECT:	**NCDOT I-5878** Parcel 50-508 Spring Branch Rd (Former Double T Restaurant), Dunn, NC S&ME Project No. 4305-19-161		**BORING LOG: B-13**
DATE DRILLED:	Wednesday, October 23, 2019	BORING DEPTH (FT):	10
DRILL RIG:	Geoprobe 54DT	WATER LEVEL:	8
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
		Asphalt, Gravel,								
		Sand, Gray,			4.3	No				
					7.6	No				
5					7.1	No				
		Silty Sand, Tan, Gray,			6.7	Yes	1200			
		Clayey Sand, Orange,	▼							
10		Boring Terminated at 10 Ft-BGS								
15										
20										
25										
30										

PROJECT:	**NCDOT I-5878** Parcel 50-508 Spring Branch Rd (Former Double T Restaurant), Dunn, NC S&ME Project No. 4305-19-161		**BORING LOG: B-14**
DATE DRILLED:	Wednesday, October 23, 2019	BORING DEPTH (FT):	8
DRILL RIG:	Geoprobe 54DT	WATER LEVEL:	8
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
		Asphalt, Gravel,								
		Clayey Sand, Orange,			5.0	No				
					11.2	No				
5					8.6	No				
		Sand, White,			9.6	Yes	1215			
		Boring Terminated at 8 Ft-BGS	▼							
10										
15										
20										
25										
30										

Appendix III – Laboratory Analytical Reports and Chain of Custody

QED

REDLAB RAPID ENVIRONMENTAL DIAGNOSTICS

QROS

Hydrocarbon Analysis Results

Client: S&ME
Address: 3201 SPRING FOREST RD
RALEIGH NC

Samples taken Monday, October 21, 2019
Samples extracted Monday, October 21, 2019
Samples analysed Wednesday, October 23, 2019

Contact: JAMIE HONEYCUTT

Operator JENN RYAN

Project: NCDOT I-5878

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 (6 - 8')	11.0	<0.28	<0.28	<0.28	<0.28	<0.06	<0.09	<0.011	0	0	0	,(FCM)
s	B - 2 (4 - 6')	20.5	<0.51	<0.51	<0.51	<0.51	<0.1	<0.16	<0.02	0	0	0	PHC not detected
s	B - 3 (4 - 6')	19.5	<0.49	<0.49	<0.49	<0.49	<0.1	<0.16	<0.02	0	0	0	PHC not detected
s	B - 4 (4 - 6')	23.6	<0.59	<0.59	<0.59	<0.59	<0.12	<0.19	<0.024	0	0	0	PHC not detected
s	B - 5 (4 - 6')	20.3	<0.51	<0.51	<0.51	<0.51	<0.1	<0.16	<0.02	0	0	0	PHC not detected
s	B - 6 (6 - 8')	20.2	<0.5	<0.5	<0.5	<0.5	<0.1	<0.16	<0.02	0	0	0	PHC not detected

Initial Calibrator QC check OK

Final FCM QC Check OK 99.6 %

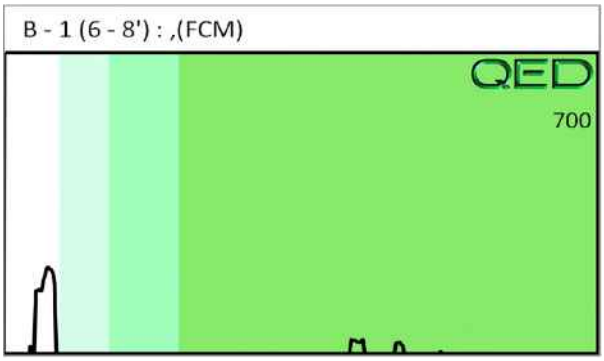
Results generated by a QED HC-1 analyser. Concentration values in mg/kg for soil samples and mg/L for water samples. Soil values are not corrected for moisture or stone content

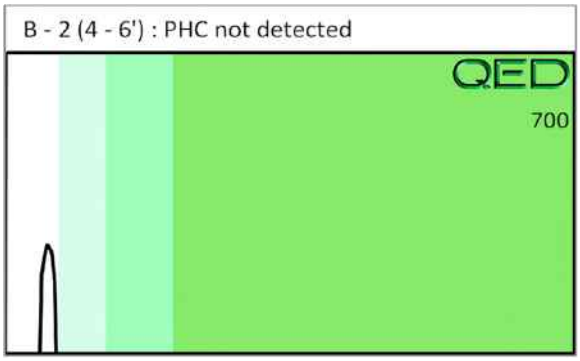
Fingerprints provide a tentative hydrocarbon identification. The abbreviations are:- FCM = Results calculated using Fundamental Calibration Mode : % = confidence for sample fingerprint match to library

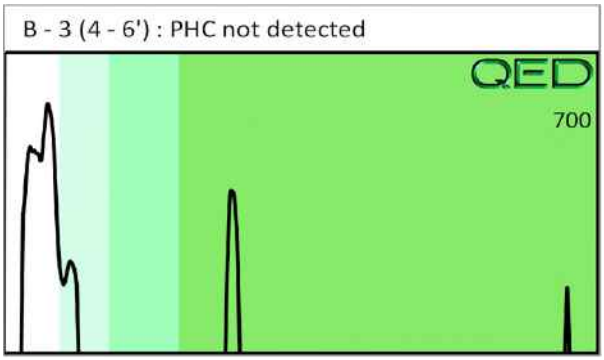
(SBS) or (LBS) = Site Specific or Library Background Subtraction applied to result : (PFM) = Poor Fingerprint Match : (T) = Turbid : (P) = Particulate present

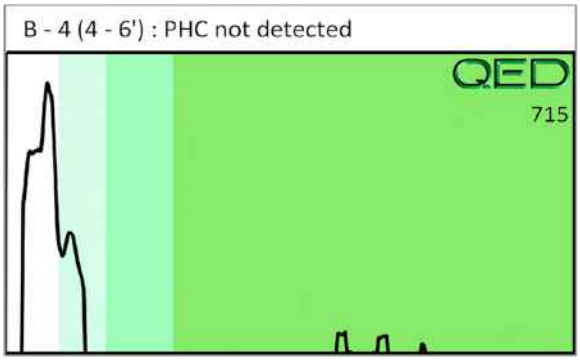
QED Hydrocarbon Fingerprints

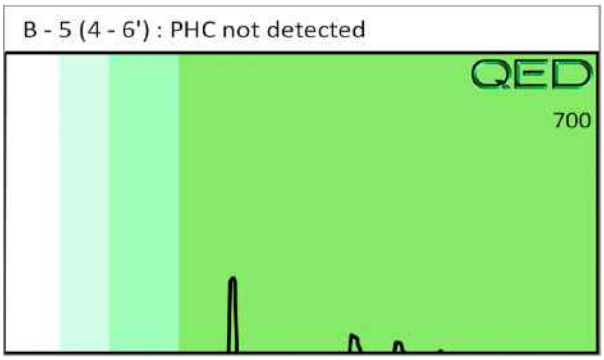
Project: NCDOT I-5878 ##################

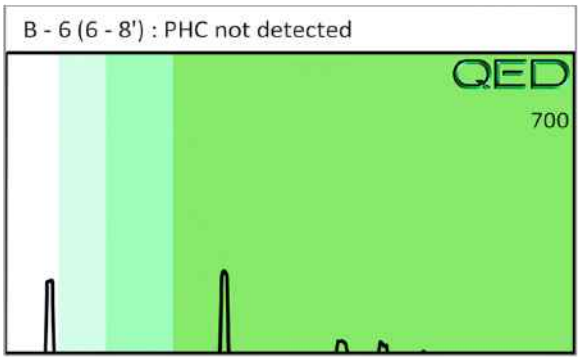












QED REDLAB RAPID ENVIRONMENTAL DIAGNOSTICS QROS

Hydrocarbon Analysis Results

Client: S & ME
Address: RALEIGH, NC

Samples taken Wednesday, October 23, 2019
Samples extracted Wednesday, October 23, 2019
Samples analysed Friday, October 25, 2019

Contact: JAMIE HONEYCUTT

Operator CAROLINE STEVENS

Project: NCDOT I-5878 PARCEL 50

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-7 (6-8')	23.0	<0.58	<0.58	<0.58	<0.58	<0.12	<0.18	<0.023	0	0	0	PHC not detected
s	B-8 (6-8')	22.2	<0.56	<0.56	<0.56	<0.56	<0.11	<0.18	<0.022	0	100	0	PHC not detected,(P)
s	B-9 (6-8')	21.0	<0.52	150.5	362.7	513.2	11.3	0.41	<0.021	99.8	0.2	0	Deg.Kerosene 90.4%,(FCM)
s	B-10 (6-8')	24.3	<0.61	<0.61	1.3	1.3	0.73	<0.19	<0.024	0	88.7	11.3	Deg Fuel 81%,(FCM)
s	B-11 (6-8')	24.8	<0.62	<0.62	<0.62	<0.62	<0.12	<0.2	<0.025	0	0	0	PHC not detected
s	B-12 (6-8')	24.8	<0.62	<0.62	<0.62	<0.62	<0.12	<0.2	<0.025	0	0	0	PHC not detected,(BO)
s	B-13 (6-8')	24.1	<0.6	<0.6	1.1	1.1	<0.12	<0.19	<0.024	0	100	0	Deg Fuel 93.7%,(FCM)
s	B-14 (6-8')	26.3	<0.66	<0.66	<0.66	<0.66	<0.13	<0.21	<0.026	0	0	0	PHC not detected,(BO)

Initial Calibrator QC check OK Final FCM QC Check OK 99.6 %

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

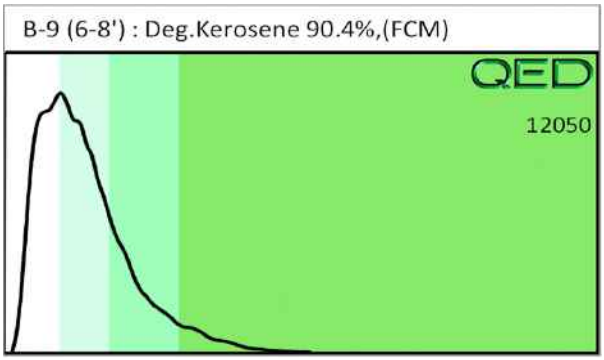
QED Hydrocarbon Fingerprints

Project: NCDOT I-5878 PARCEL 50 ##################

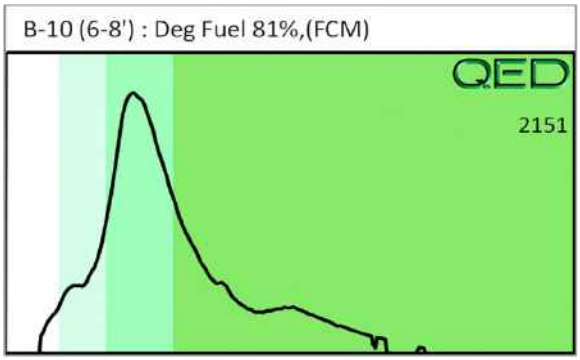
B-7 (6-8') : PHC not detected

B-8 (6-8') : PHC not detected,(P)

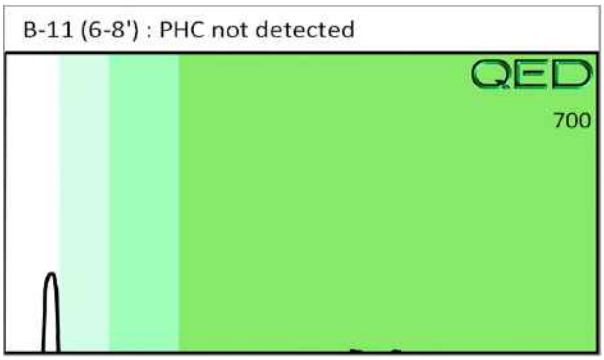
B-9 (6-8') : Deg.Kerosene 90.4%,(FCM)



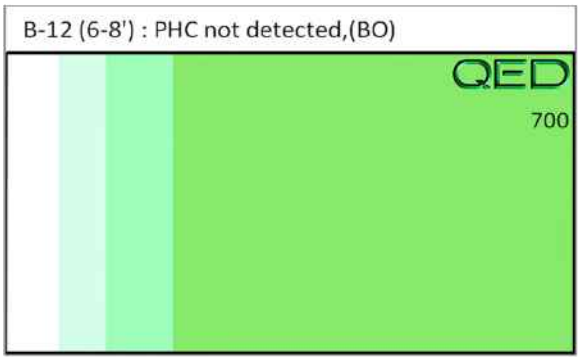
B-10 (6-8') : Deg Fuel 81%,(FCM)



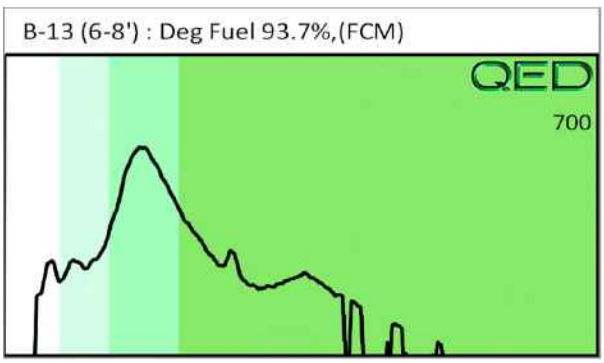
B-11 (6-8') : PHC not detected



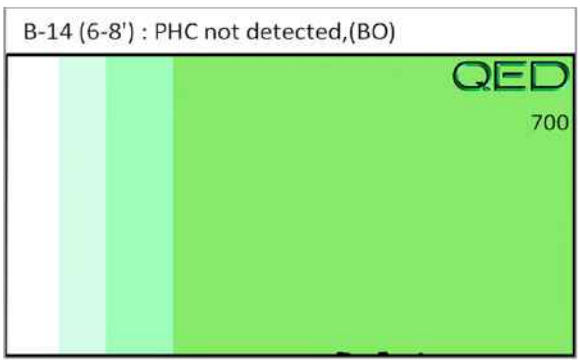
B-12 (6-8') : PHC not detected,(BO)



B-13 (6-8') : Deg Fuel 93.7%,(FCM)



B-14 (6-8') : PHC not detected,(BO)



15140

NCDOT I-5878 - Parcel 50
DUNN, NC

Client Name:	S+ME
Address:	3201 Spring Forest Rd Raleigh NC
Contact:	Jamie T Honeycutt
Project Ref.:	NCDOT I-5878
Email:	jhoneycutt@smeinc.com
Phone #:	919 872-7614
Collected by:	Jamie T Honeycutt

REDLAB™
RAPID ENVIRONMENTAL DIAGNOSTICS

CHAIN OF CUSTODY AND ANALYTICAL REQUEST FORM

RED Lab, LLC
5598 Marvin K Moss Lane
MARBIONC Bldg, Suite 2003
Wilmington, NC 28409

Each UVF sample will be analyzed for total BTEX, GRO, DRO, TPH, PAH total aromatics and BaP. Standard GC Analyses are for BTEX and Chlorinated Solvents: VC, 1,1 DCE, 1,2 cis DCE, 1,2 trans DCE, TCE, and PCE. Specify target analytes in the space provided below.

Sample Collection Date/Time	TAT Requested 24 Hour	TAT Requested 48 Hour	Analysis Type UVF	Analysis Type GC	Initials	Sample ID	Total Wt.	Tare Wt.	Sample Wt.
10-21-19 1545					JTH	B-1 6-8'	57.5	44.8	12.7
1600						B-2 4-6'	56.9	44.2	12.7
1615						B-3 4-6'	58.1	44.8	13.3
1630						B-4 4-6'	55.8	44.8	11.0
1645						B-5 4-6'	57.5	44.7	12.8
1700						B6 6-8'	56.9	44.0	12.9

COMMENTS/REQUESTS:

TARGET GC/UVF ANALYTES:

Relinquished by		Accepted by	Date/Time
Jamie T Honeycutt	10-21-19 1900	NM 1220	10/22/19
Relinquished by		Accepted by	Date/Time

RED Lab USE ONLY

6

Ref. No

NCDOT I-5878 Parcel 50

Client Name:	S&ME
Address:	3201 Spring Forest Rd Raleigh NC
Contact:	Jamie T Honeycutt
Project Ref.:	NCDOT- I-5878 Dunn- Parcel 50
Email:	jhoneycutt@smeinc.com
Phone #:	919 677-7614
Collected by:	Jamie T. Honeycutt

REDLAB™

RAPID ENVIRONMENTAL DIAGNOSTICS

CHAIN OF CUSTODY AND ANALYTICAL REQUEST FORM

Dunn, NC

RED Lab, LLC
5598 Marvin K Moss Lane
MARBIONC Bldg, Suite 2003
Wilmington, NC 28409

Each sample will be analyzed for BTEX, GRO, DRO, TPH, PAH total aromatics and BaP

Sample Collection Date/Time	TAT Requested 24 Hour	TAT Requested 48 Hour	Initials	Sample ID	Total Wt.	Tare Wt.	Sample Wt.
10-23-19 0950		✓	JTH	B-7 6-8'	55.4	44.1	11.3
1000				B-8 6-8'	56.2	44.5	11.7
1015				B-9 6-8'	56.7	44.3	12.4
1095				B-10 6-8'	55.5	44.8	10.7
1100				B-11 6-8'	54.9	44.4	10.5
1115				B-12 6-8'	54.5	45.0	10.5
[redacted]	1200			B-13 6-8'	55.5	44.7	10.8
1215				B-14 6-8'	54.2	44.3	9.9

Comments:

Relinquished by	Date/Time	Accepted by	Date/Time
[signature]	10/24/19 1800		
Relinquished by	Date/Time	Accepted by	Date/Time
		CES	10/25/19 12:00

RED Lab USE ONLY

8

B141

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

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: 19J1774

Enclosed are results of analyses for samples received by the laboratory on October 28, 2019. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kerry K. McGee
Project Manager

Table of Contents

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: 19J1774

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	19J1774-01	Ground Water		SW-846 8260D SW-846 8270E	

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

EXECUTIVE SUMMARY

Client ID: **TW-1** Lab ID: **19J1774-01**

Analyte	Results/Qual		DL	RL	Units	Method
1,2,4-Trimethylbenzene	580		1.8	10	µg/L	SW-846 8260D
1,3,5-Trimethylbenzene	180		1.4	10	µg/L	SW-846 8260D
Benzene	5.3	J	1.8	10	µg/L	SW-846 8260D
Ethylbenzene	320		1.3	10	µg/L	SW-846 8260D
Isopropylbenzene (Cumene)	28		1.7	10	µg/L	SW-846 8260D
m+p Xylene	1000		3.0	20	µg/L	SW-846 8260D
Naphthalene	110		3.1	50	µg/L	SW-846 8260D
n-Butylbenzene	23		2.1	10	µg/L	SW-846 8260D
n-Propylbenzene	100		1.3	10	µg/L	SW-846 8260D
o-Xylene	430		1.7	10	µg/L	SW-846 8260D
p-Isopropyltoluene (p-Cymene)	5.0	J	2.0	10	µg/L	SW-846 8260D
sec-Butylbenzene	8.4	J	1.6	10	µg/L	SW-846 8260D
Styrene	5.8	J	1.1	10	µg/L	SW-846 8260D
Toluene	290		1.4	10	µg/L	SW-846 8260D
2-Methylnaphthalene (SIM)	49		1.3	21	µg/L	SW-846 8270E
Acenaphthene (SIM)	0.063	J	0.034	0.31	µg/L	SW-846 8270E
Acenaphthylene (SIM)	0.052	J	0.036	0.21	µg/L	SW-846 8270E
Fluorene (SIM)	0.078	J	0.035	1.0	µg/L	SW-846 8270E
Naphthalene (SIM)	100		5.3	21	µg/L	SW-846 8270E
Phenanthrene (SIM)	0.082		0.031	0.052	µg/L	SW-846 8270E

con-test® ANALYTICAL LABORATORY

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

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.

SW-846 8260D

Qualifications:

L-02

Laboratory fortified blank/laboratory control sample recovery and duplicate recoveries outside of control limits. Data validation is not affected since all results are "not detected" for associated samples in this batch and bias is on the high side.

Analyte & Samples(s) Qualified:

trans-1,4-Dichloro-2-butene
B244975-BS1, B244975-BSD1, S042201-CCV1

Vinyl Chloride
B244975-BS1, B244975-BSD1, S042201-CCV1

RL-11

Elevated reporting limit due to high concentration of target compounds.

Analyte & Samples(s) Qualified:

19J1774-01[TW-1]

V-05

Continuing calibration verification (CCV) did not meet method specifications and was biased on the low side for this compound.

Analyte & Samples(s) Qualified:

tert-Amyl Methyl Ether (TAME)
19J1774-01[TW-1], B244975-BLK1, B244975-BS1, B244975-BSD1, S042201-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:

2-Hexanone (MBK)
B244975-BS1, B244975-BSD1, S042201-CCV1

4-Methyl-2-pentanone (MIBK)
B244975-BS1, B244975-BSD1, S042201-CCV1

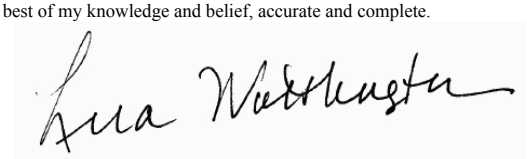
Acetone
B244975-BS1, B244975-BSD1, S042201-CCV1

trans-1,4-Dichloro-2-butene
B244975-BS1, B244975-BSD1, S042201-CCV1

Vinyl Chloride
B244975-BS1, B244975-BSD1, S042201-CCV1

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

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

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Dunn, NC | Sample Description: | Work Order: 19J1774

Date Received: 10/28/2019

Field Sample #: TW-1 | Sampled: 10/23/2019 13:00

Sample ID: 19J1774-01

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	500	38	µg/L	10		SW-846 8260D	11/4/19	11/4/19 16:14	EEH
Acrylonitrile	ND	50	5.2	µg/L	10		SW-846 8260D	11/4/19	11/4/19 16:14	EEH
tert-Amyl Methyl Ether (TAME)	ND	10	1.4	µg/L	10	V-05	SW-846 8260D	11/4/19	11/4/19 16:14	EEH
Benzene	5.3	10	1.8	µg/L	10	J	SW-846 8260D	11/4/19	11/4/19 16:14	EEH
Bromobenzene	ND	10	1.5	µg/L	10		SW-846 8260D	11/4/19	11/4/19 16:14	EEH
Bromochloromethane	ND	10	3.2	µg/L	10		SW-846 8260D	11/4/19	11/4/19 16:14	EEH
Bromodichloromethane	ND	5.0	1.6	µg/L	10		SW-846 8260D	11/4/19	11/4/19 16:14	EEH
Bromoform	ND	10	4.6	µg/L	10		SW-846 8260D	11/4/19	11/4/19 16:14	EEH
Bromomethane	ND	20	7.8	µg/L	10		SW-846 8260D	11/4/19	11/4/19 16:14	EEH
2-Butanone (MEK)	ND	200	19	µg/L	10		SW-846 8260D	11/4/19	11/4/19 16:14	EEH
tert-Butyl Alcohol (TBA)	ND	200	42	µg/L	10		SW-846 8260D	11/4/19	11/4/19 16:14	EEH
n-Butylbenzene	23	10	2.1	µg/L	10		SW-846 8260D	11/4/19	11/4/19 16:14	EEH
sec-Butylbenzene	8.4	10	1.6	µg/L	10	J	SW-846 8260D	11/4/19	11/4/19 16:14	EEH
tert-Butylbenzene	ND	10	1.7	µg/L	10		SW-846 8260D	11/4/19	11/4/19 16:14	EEH
tert-Butyl Ethyl Ether (TBEE)	ND	5.0	1.6	µg/L	10		SW-846 8260D	11/4/19	11/4/19 16:14	EEH
Carbon Disulfide	ND	50	44	µg/L	10		SW-846 8260D	11/4/19	11/4/19 16:14	EEH
Carbon Tetrachloride	ND	10	1.1	µg/L	10		SW-846 8260D	11/4/19	11/4/19 16:14	EEH
Chlorobenzene	ND	10	1.5	µg/L	10		SW-846 8260D	11/4/19	11/4/19 16:14	EEH
Chlorodibromomethane	ND	5.0	2.1	µg/L	10		SW-846 8260D	11/4/19	11/4/19 16:14	EEH
Chloroethane	ND	20	3.5	µg/L	10		SW-846 8260D	11/4/19	11/4/19 16:14	EEH
Chloroform	ND	20	1.7	µg/L	10		SW-846 8260D	11/4/19	11/4/19 16:14	EEH
Chloromethane	ND	20	4.5	µg/L	10		SW-846 8260D	11/4/19	11/4/19 16:14	EEH
2-Chlorotoluene	ND	10	1.2	µg/L	10		SW-846 8260D	11/4/19	11/4/19 16:14	EEH
4-Chlorotoluene	ND	10	1.4	µg/L	10		SW-846 8260D	11/4/19	11/4/19 16:14	EEH
1,2-Dibromo-3-chloropropane (DBCP)	ND	50	5.3	µg/L	10		SW-846 8260D	11/4/19	11/4/19 16:14	EEH
1,2-Dibromoethane (EDB)	ND	5.0	1.9	µg/L	10		SW-846 8260D	11/4/19	11/4/19 16:14	EEH
Dibromomethane	ND	10	3.7	µg/L	10		SW-846 8260D	11/4/19	11/4/19 16:14	EEH
1,2-Dichlorobenzene	ND	10	1.6	µg/L	10		SW-846 8260D	11/4/19	11/4/19 16:14	EEH
1,3-Dichlorobenzene	ND	10	1.2	µg/L	10		SW-846 8260D	11/4/19	11/4/19 16:14	EEH
1,4-Dichlorobenzene	ND	10	1.3	µg/L	10		SW-846 8260D	11/4/19	11/4/19 16:14	EEH
trans-1,4-Dichloro-2-butene	ND	20	3.1	µg/L	10		SW-846 8260D	11/4/19	11/4/19 16:14	EEH
Dichlorodifluoromethane (Freon 12)	ND	20	2.6	µg/L	10		SW-846 8260D	11/4/19	11/4/19 16:14	EEH
1,1-Dichloroethane	ND	10	1.6	µg/L	10		SW-846 8260D	11/4/19	11/4/19 16:14	EEH
1,2-Dichloroethane	ND	10	4.1	µg/L	10		SW-846 8260D	11/4/19	11/4/19 16:14	EEH
1,1-Dichloroethylene	ND	10	3.2	µg/L	10		SW-846 8260D	11/4/19	11/4/19 16:14	EEH
cis-1,2-Dichloroethylene	ND	10	1.3	µg/L	10		SW-846 8260D	11/4/19	11/4/19 16:14	EEH
trans-1,2-Dichloroethylene	ND	10	3.1	µg/L	10		SW-846 8260D	11/4/19	11/4/19 16:14	EEH
1,2-Dichloropropane	ND	10	2.0	µg/L	10		SW-846 8260D	11/4/19	11/4/19 16:14	EEH
1,3-Dichloropropane	ND	5.0	1.1	µg/L	10		SW-846 8260D	11/4/19	11/4/19 16:14	EEH
2,2-Dichloropropane	ND	10	2.0	µg/L	10		SW-846 8260D	11/4/19	11/4/19 16:14	EEH
1,1-Dichloropropene	ND	20	1.6	µg/L	10		SW-846 8260D	11/4/19	11/4/19 16:14	EEH
cis-1,3-Dichloropropene	ND	5.0	1.3	µg/L	10		SW-846 8260D	11/4/19	11/4/19 16:14	EEH
trans-1,3-Dichloropropene	ND	5.0	2.3	µg/L	10		SW-846 8260D	11/4/19	11/4/19 16:14	EEH
Diethyl Ether	ND	20	3.4	µg/L	10		SW-846 8260D	11/4/19	11/4/19 16:14	EEH

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Dunn, NC | Sample Description: | Work Order: 19J1774

Date Received: 10/28/2019

Field Sample #: TW-1 | Sampled: 10/23/2019 13:00

Sample ID: 19J1774-01

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	5.0	1.7	µg/L	10		SW-846 8260D	11/4/19	11/4/19 16:14	EEH
1,4-Dioxane	ND	500	220	µg/L	10		SW-846 8260D	11/4/19	11/4/19 16:14	EEH
Ethylbenzene	320	10	1.3	µg/L	10		SW-846 8260D	11/4/19	11/4/19 16:14	EEH
Hexachlorobutadiene	ND	6.0	4.7	µg/L	10		SW-846 8260D	11/4/19	11/4/19 16:14	EEH
2-Hexanone (MBK)	ND	100	15	µg/L	10		SW-846 8260D	11/4/19	11/4/19 16:14	EEH
Isopropylbenzene (Cumene)	28	10	1.7	µg/L	10		SW-846 8260D	11/4/19	11/4/19 16:14	EEH
p-Isopropyltoluene (p-Cymene)	5.0	10	2.0	µg/L	10	J	SW-846 8260D	11/4/19	11/4/19 16:14	EEH
Methyl tert-Butyl Ether (MTBE)	ND	10	2.5	µg/L	10		SW-846 8260D	11/4/19	11/4/19 16:14	EEH
Methylene Chloride	ND	50	3.4	µg/L	10		SW-846 8260D	11/4/19	11/4/19 16:14	EEH
4-Methyl-2-pentanone (MIBK)	ND	100	17	µg/L	10		SW-846 8260D	11/4/19	11/4/19 16:14	EEH
Naphthalene	110	50	3.1	µg/L	10		SW-846 8260D	11/4/19	11/4/19 16:14	EEH
n-Propylbenzene	100	10	1.3	µg/L	10		SW-846 8260D	11/4/19	11/4/19 16:14	EEH
Styrene	5.8	10	1.1	µg/L	10	J	SW-846 8260D	11/4/19	11/4/19 16:14	EEH
1,1,1,2-Tetrachloroethane	ND	10	2.7	µg/L	10		SW-846 8260D	11/4/19	11/4/19 16:14	EEH
1,1,2,2-Tetrachloroethane	ND	5.0	2.2	µg/L	10		SW-846 8260D	11/4/19	11/4/19 16:14	EEH
Tetrachloroethylene	ND	10	1.8	µg/L	10		SW-846 8260D	11/4/19	11/4/19 16:14	EEH
Tetrahydrofuran	ND	100	5.1	µg/L	10		SW-846 8260D	11/4/19	11/4/19 16:14	EEH
Toluene	290	10	1.4	µg/L	10		SW-846 8260D	11/4/19	11/4/19 16:14	EEH
1,2,3-Trichlorobenzene	ND	50	5.7	µg/L	10		SW-846 8260D	11/4/19	11/4/19 16:14	EEH
1,2,4-Trichlorobenzene	ND	10	4.0	µg/L	10		SW-846 8260D	11/4/19	11/4/19 16:14	EEH
1,3,5-Trichlorobenzene	ND	10	3.0	µg/L	10		SW-846 8260D	11/4/19	11/4/19 16:14	EEH
1,1,1-Trichloroethane	ND	10	2.0	µg/L	10		SW-846 8260D	11/4/19	11/4/19 16:14	EEH
1,1,2-Trichloroethane	ND	10	1.6	µg/L	10		SW-846 8260D	11/4/19	11/4/19 16:14	EEH
Trichloroethylene	ND	10	2.4	µg/L	10		SW-846 8260D	11/4/19	11/4/19 16:14	EEH
Trichlorofluoromethane (Freon 11)	ND	20	3.3	µg/L	10		SW-846 8260D	11/4/19	11/4/19 16:14	EEH
1,2,3-Trichloropropane	ND	20	2.5	µg/L	10		SW-846 8260D	11/4/19	11/4/19 16:14	EEH
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	10	3.2	µg/L	10		SW-846 8260D	11/4/19	11/4/19 16:14	EEH
1,2,4-Trimethylbenzene	580	10	1.8	µg/L	10		SW-846 8260D	11/4/19	11/4/19 16:14	EEH
1,3,5-Trimethylbenzene	180	10	1.4	µg/L	10		SW-846 8260D	11/4/19	11/4/19 16:14	EEH
Vinyl Chloride	ND	20	4.5	µg/L	10		SW-846 8260D	11/4/19	11/4/19 16:14	EEH
m+p Xylene	1000	20	3.0	µg/L	10		SW-846 8260D	11/4/19	11/4/19 16:14	EEH
o-Xylene	430	10	1.7	µg/L	10		SW-846 8260D	11/4/19	11/4/19 16:14	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	103	70-130		11/4/19 16:14
Toluene-d8	98.8	70-130		11/4/19 16:14
4-Bromofluorobenzene	102	70-130		11/4/19 16:14

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Dunn, NC | Sample Description: | Work Order: 19J1774

Date Received: 10/28/2019

Field Sample #: TW-1 | Sampled: 10/23/2019 13:00

Sample ID: 19J1774-01

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)	0.063	0.31	0.034	µg/L	1	J	SW-846 8270E	10/30/19	11/1/19 20:28	IMR
Acenaphthylene (SIM)	0.052	0.21	0.036	µg/L	1	J	SW-846 8270E	10/30/19	11/1/19 20:28	IMR
Anthracene (SIM)	ND	0.21	0.033	µg/L	1		SW-846 8270E	10/30/19	11/1/19 20:28	IMR
Benzo(a)anthracene (SIM)	ND	0.052	0.016	µg/L	1		SW-846 8270E	10/30/19	11/1/19 20:28	IMR
Benzo(a)pyrene (SIM)	ND	0.10	0.012	µg/L	1		SW-846 8270E	10/30/19	11/1/19 20:28	IMR
Benzo(b)fluoranthene (SIM)	ND	0.052	0.015	µg/L	1		SW-846 8270E	10/30/19	11/1/19 20:28	IMR
Benzo(g,h,i)perylene (SIM)	ND	0.52	0.019	µg/L	1		SW-846 8270E	10/30/19	11/1/19 20:28	IMR
Benzo(k)fluoranthene (SIM)	ND	0.21	0.012	µg/L	1		SW-846 8270E	10/30/19	11/1/19 20:28	IMR
Chrysene (SIM)	ND	0.21	0.015	µg/L	1		SW-846 8270E	10/30/19	11/1/19 20:28	IMR
Dibenz(a,h)anthracene (SIM)	ND	0.10	0.018	µg/L	1		SW-846 8270E	10/30/19	11/1/19 20:28	IMR
Fluoranthene (SIM)	ND	0.52	0.026	µg/L	1		SW-846 8270E	10/30/19	11/1/19 20:28	IMR
Fluorene (SIM)	0.078	1.0	0.035	µg/L	1	J	SW-846 8270E	10/30/19	11/1/19 20:28	IMR
Indeno(1,2,3-cd)pyrene (SIM)	ND	0.10	0.019	µg/L	1		SW-846 8270E	10/30/19	11/1/19 20:28	IMR
2-Methylnaphthalene (SIM)	49	21	1.3	µg/L	20		SW-846 8270E	10/30/19	11/4/19 10:11	IMR
Naphthalene (SIM)	100	21	5.3	µg/L	20		SW-846 8270E	10/30/19	11/4/19 10:11	IMR
Phenanthrene (SIM)	0.082	0.052	0.031	µg/L	1		SW-846 8270E	10/30/19	11/1/19 20:28	IMR
Pyrene (SIM)	ND	1.0	0.024	µg/L	1		SW-846 8270E	10/30/19	11/1/19 20:28	IMR

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Nitrobenzene-d5	72.4	30-130		11/1/19 20:28
Nitrobenzene-d5	75.1	30-130		11/4/19 10:11
2-Fluorobiphenyl	47.1	30-130		11/1/19 20:28
2-Fluorobiphenyl	54.9	30-130		11/4/19 10:11
p-Terphenyl-d14	56.9	30-130		11/1/19 20:28
p-Terphenyl-d14	52.3	30-130		11/4/19 10:11

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
19J1774-01 [TW-1]	B244975	0.5	5.00	11/04/19

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

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19J1774-01 [TW-1]	B244837	970	1.00	10/30/19
19J1774-01RE1 [TW-1]	B244837	970	1.00	10/30/19

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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 B244975 - SW-846 5030B										
Blank (B244975-BLK1)				Prepared & Analyzed: 11/04/19						
Acetone	ND	50	µg/L							
Acrylonitrile	ND	5.0	µg/L							
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L							V-05
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							

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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 B244975 - SW-846 5030B											
Blank (B244975-BLK1)				Prepared & Analyzed: 11/04/19							
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	*25.8*		µg/L	25.0		103	70-130				
Surrogate: Toluene-d8	*25.2*		µg/L	25.0		101	70-130				
Surrogate: 4-Bromofluorobenzene	*24.3*		µg/L	25.0		97.4	70-130				
LCS (B244975-BS1)				Prepared & Analyzed: 11/04/19							
Acetone	140	50	µg/L	100		140	70-160			V-20	†
Acrylonitrile	12.3	5.0	µg/L	10.0		123	70-130				
tert-Amyl Methyl Ether (TAME)	7.90	0.50	µg/L	10.0		79.0	70-130			V-05	
Benzene	9.60	1.0	µg/L	10.0		96.0	70-130				
Bromobenzene	11.0	1.0	µg/L	10.0		110	70-130				
Bromochloromethane	11.3	1.0	µg/L	10.0		113	70-130				
Bromodichloromethane	11.2	0.50	µg/L	10.0		112	70-130				
Bromoform	10.0	1.0	µg/L	10.0		100	70-130				
Bromomethane	5.87	2.0	µg/L	10.0		58.7	40-160				†
2-Butanone (MEK)	114	20	µg/L	100		114	40-160				†
tert-Butyl Alcohol (TBA)	96.7	20	µg/L	100		96.7	40-160				†
n-Butylbenzene	11.6	1.0	µg/L	10.0		116	70-130				
sec-Butylbenzene	11.3	1.0	µg/L	10.0		113	70-130				
tert-Butylbenzene	10.8	1.0	µg/L	10.0		108	70-130				
tert-Butyl Ethyl Ether (TBEE)	7.42	0.50	µg/L	10.0		74.2	70-130				
Carbon Disulfide	11.2	5.0	µg/L	10.0		112	70-130				
Carbon Tetrachloride	11.2	1.0	µg/L	10.0		112	70-130				
Chlorobenzene	10.6	1.0	µg/L	10.0		106	70-130				
Chlorodibromomethane	10.8	0.50	µg/L	10.0		108	70-130				
Chloroethane	9.65	2.0	µg/L	10.0		96.5	70-130				
Chloroform	9.93	2.0	µg/L	10.0		99.3	70-130				
Chloromethane	7.98	2.0	µg/L	10.0		79.8	40-160				†
2-Chlorotoluene	10.4	1.0	µg/L	10.0		104	70-130				

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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 B244975 - SW-846 5030B												
LCS (B244975-BS1)				Prepared & Analyzed: 11/04/19								
4-Chlorotoluene	11.3	1.0	µg/L	10.0		113		70-130				
1,2-Dibromo-3-chloropropane (DBCP)	10.4	5.0	µg/L	10.0		104		70-130				
1,2-Dibromoethane (EDB)	10.7	0.50	µg/L	10.0		107		70-130				
Dibromomethane	10.5	1.0	µg/L	10.0		105		70-130				
1,2-Dichlorobenzene	10.8	1.0	µg/L	10.0		108		70-130				
1,3-Dichlorobenzene	11.0	1.0	µg/L	10.0		110		70-130				
1,4-Dichlorobenzene	10.7	1.0	µg/L	10.0		107		70-130				
trans-1,4-Dichloro-2-butene	13.2	2.0	µg/L	10.0		**132**	*	70-130			L-02, V-20	
Dichlorodifluoromethane (Freon 12)	6.19	2.0	µg/L	10.0		61.9		40-160				†
1,1-Dichloroethane	10.6	1.0	µg/L	10.0		106		70-130				
1,2-Dichloroethane	11.7	1.0	µg/L	10.0		117		70-130				
1,1-Dichloroethylene	11.7	1.0	µg/L	10.0		117		70-130				
cis-1,2-Dichloroethylene	10.8	1.0	µg/L	10.0		108		70-130				
trans-1,2-Dichloroethylene	11.4	1.0	µg/L	10.0		114		70-130				
1,2-Dichloropropane	10.9	1.0	µg/L	10.0		109		70-130				
1,3-Dichloropropane	10.5	0.50	µg/L	10.0		105		70-130				
2,2-Dichloropropane	11.8	1.0	µg/L	10.0		118		40-130				†
1,1-Dichloropropene	10.5	2.0	µg/L	10.0		105		70-130				
cis-1,3-Dichloropropene	11.3	0.50	µg/L	10.0		113		70-130				
trans-1,3-Dichloropropene	10.9	0.50	µg/L	10.0		109		70-130				
Diethyl Ether	10.8	2.0	µg/L	10.0		108		70-130				
Diisopropyl Ether (DIPE)	12.1	0.50	µg/L	10.0		121		70-130				
1,4-Dioxane	116	50	µg/L	100		116		40-130				†
Ethylbenzene	10.7	1.0	µg/L	10.0		107		70-130				
Hexachlorobutadiene	11.8	0.60	µg/L	10.0		118		70-130				
2-Hexanone (MBK)	132	10	µg/L	100		132		70-160			V-20	†
Isopropylbenzene (Cumene)	11.0	1.0	µg/L	10.0		110		70-130				
p-Isopropyltoluene (p-Cymene)	10.5	1.0	µg/L	10.0		105		70-130				
Methyl tert-Butyl Ether (MTBE)	9.41	1.0	µg/L	10.0		94.1		70-130				
Methylene Chloride	11.6	5.0	µg/L	10.0		116		70-130				
4-Methyl-2-pentanone (MIBK)	137	10	µg/L	100		137		70-160			V-20	†
Naphthalene	9.20	2.0	µg/L	10.0		92.0		40-130				†
n-Propylbenzene	11.3	1.0	µg/L	10.0		113		70-130				
Styrene	9.10	1.0	µg/L	10.0		91.0		70-130				
1,1,1,2-Tetrachloroethane	11.2	1.0	µg/L	10.0		112		70-130				
1,1,2,2-Tetrachloroethane	11.4	0.50	µg/L	10.0		114		70-130				
Tetrachloroethylene	11.4	1.0	µg/L	10.0		114		70-130				
Tetrahydrofuran	10.3	10	µg/L	10.0		103		70-130				
Toluene	10.7	1.0	µg/L	10.0		107		70-130				
1,2,3-Trichlorobenzene	8.52	5.0	µg/L	10.0		85.2		70-130				
1,2,4-Trichlorobenzene	10.4	1.0	µg/L	10.0		104		70-130				
1,3,5-Trichlorobenzene	10.5	1.0	µg/L	10.0		105		70-130				
1,1,1-Trichloroethane	11.1	1.0	µg/L	10.0		111		70-130				
1,1,2-Trichloroethane	10.6	1.0	µg/L	10.0		106		70-130				
Trichloroethylene	10.7	1.0	µg/L	10.0		107		70-130				
Trichlorofluoromethane (Freon 11)	10.0	2.0	µg/L	10.0		100		70-130				
1,2,3-Trichloropropane	11.1	2.0	µg/L	10.0		111		70-130				
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	10.9	1.0	µg/L	10.0		109		70-130				
1,2,4-Trimethylbenzene	9.65	1.0	µg/L	10.0		96.5		70-130				
1,3,5-Trimethylbenzene	10.7	1.0	µg/L	10.0		107		70-130				
Vinyl Chloride	26.4	2.0	µg/L	10.0		**264**	*	40-160			L-02, V-20	†

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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 B244975 - SW-846 5030B												
LCS (B244975-BS1)				Prepared & Analyzed: 11/04/19								
m+p Xylene	21.6	2.0	µg/L	20.0		108		70-130				
o-Xylene	11.1	1.0	µg/L	10.0		111		70-130				
Surrogate: 1,2-Dichloroethane-d4	*26.2*		µg/L	25.0		105		70-130				
Surrogate: Toluene-d8	*24.7*		µg/L	25.0		98.8		70-130				
Surrogate: 4-Bromofluorobenzene	*25.5*		µg/L	25.0		102		70-130				
LCS Dup (B244975-BSD1)				Prepared & Analyzed: 11/04/19								
Acetone	145	50	µg/L	100		145		70-160	3.73	25	V-20	†
Acrylonitrile	12.0	5.0	µg/L	10.0		120		70-130	3.21	25		
tert-Amyl Methyl Ether (TAME)	7.77	0.50	µg/L	10.0		77.7		70-130	1.66	25	V-05	
Benzene	9.68	1.0	µg/L	10.0		96.8		70-130	0.830	25		
Bromobenzene	10.6	1.0	µg/L	10.0		106		70-130	3.90	25		
Bromochloromethane	11.1	1.0	µg/L	10.0		111		70-130	1.43	25		
Bromodichloromethane	10.6	0.50	µg/L	10.0		106		70-130	4.86	25		
Bromoform	10.3	1.0	µg/L	10.0		103		70-130	2.46	25		
Bromomethane	6.68	2.0	µg/L	10.0		66.8		40-160	12.9	25		†
2-Butanone (MEK)	117	20	µg/L	100		117		40-160	2.32	25		†
tert-Butyl Alcohol (TBA)	90.2	20	µg/L	100		90.2		40-160	7.03	25		†
n-Butylbenzene	11.6	1.0	µg/L	10.0		116		70-130	0.172	25		
sec-Butylbenzene	11.4	1.0	µg/L	10.0		114		70-130	0.440	25		
tert-Butylbenzene	10.9	1.0	µg/L	10.0		109		70-130	0.368	25		
tert-Butyl Ethyl Ether (TBEE)	7.38	0.50	µg/L	10.0		73.8		70-130	0.541	25		
Carbon Disulfide	10.4	5.0	µg/L	10.0		104		70-130	6.66	25		
Carbon Tetrachloride	11.1	1.0	µg/L	10.0		111		70-130	0.809	25		
Chlorobenzene	10.1	1.0	µg/L	10.0		101		70-130	5.02	25		
Chlorodibromomethane	10.5	0.50	µg/L	10.0		105		70-130	2.73	25		
Chloroethane	9.87	2.0	µg/L	10.0		98.7		70-130	2.25	25		
Chloroform	9.64	2.0	µg/L	10.0		96.4		70-130	2.96	25		
Chloromethane	7.89	2.0	µg/L	10.0		78.9		40-160	1.13	25		†
2-Chlorotoluene	10.2	1.0	µg/L	10.0		102		70-130	1.17	25		
4-Chlorotoluene	10.8	1.0	µg/L	10.0		108		70-130	4.70	25		
1,2-Dibromo-3-chloropropane (DBCP)	10.5	5.0	µg/L	10.0		105		70-130	0.573	25		
1,2-Dibromoethane (EDB)	10.6	0.50	µg/L	10.0		106		70-130	1.31	25		
Dibromomethane	10.7	1.0	µg/L	10.0		107		70-130	1.60	25		
1,2-Dichlorobenzene	10.5	1.0	µg/L	10.0		105		70-130	2.54	25		
1,3-Dichlorobenzene	11.1	1.0	µg/L	10.0		111		70-130	0.542	25		
1,4-Dichlorobenzene	10.5	1.0	µg/L	10.0		105		70-130	1.60	25		
trans-1,4-Dichloro-2-butene	13.4	2.0	µg/L	10.0		**134**	*	70-130	1.13	25	L-02, V-20	
Dichlorodifluoromethane (Freon 12)	6.16	2.0	µg/L	10.0		61.6		40-160	0.486	25		†
1,1-Dichloroethane	10.6	1.0	µg/L	10.0		106		70-130	0.00	25		
1,2-Dichloroethane	11.7	1.0	µg/L	10.0		117		70-130	0.0856	25		
1,1-Dichloroethylene	11.7	1.0	µg/L	10.0		117		70-130	0.428	25		
cis-1,2-Dichloroethylene	10.6	1.0	µg/L	10.0		106		70-130	1.68	25		
trans-1,2-Dichloroethylene	11.2	1.0	µg/L	10.0		112		70-130	1.95	25		
1,2-Dichloropropane	11.0	1.0	µg/L	10.0		110		70-130	0.183	25		
1,3-Dichloropropane	10.7	0.50	µg/L	10.0		107		70-130	1.70	25		
2,2-Dichloropropane	11.3	1.0	µg/L	10.0		113		40-130	4.17	25		†
1,1-Dichloropropene	10.4	2.0	µg/L	10.0		104		70-130	1.24	25		
cis-1,3-Dichloropropene	10.8	0.50	µg/L	10.0		108		70-130	4.34	25		
trans-1,3-Dichloropropene	11.0	0.50	µg/L	10.0		110		70-130	0.915	25		
Diethyl Ether	10.7	2.0	µg/L	10.0		107		70-130	1.39	25		
Diisopropyl Ether (DIPE)	11.6	0.50	µg/L	10.0		116		70-130	3.96	25		

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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 B244975 - SW-846 5030B												
LCS Dup (B244975-BSD1)				Prepared & Analyzed: 11/04/19								
1,4-Dioxane	122	50	µg/L	100		122		40-130	4.65	50		† ‡
Ethylbenzene	10.7	1.0	µg/L	10.0		107		70-130	0.561	25		
Hexachlorobutadiene	11.8	0.60	µg/L	10.0		118		70-130	0.508	25		
2-Hexanone (MBK)	132	10	µg/L	100		132		70-160	0.137	25	V-20	†
Isopropylbenzene (Cumene)	10.8	1.0	µg/L	10.0		108		70-130	2.57	25		
p-Isopropyltoluene (p-Cymene)	10.6	1.0	µg/L	10.0		106		70-130	0.190	25		
Methyl tert-Butyl Ether (MTBE)	9.24	1.0	µg/L	10.0		92.4		70-130	1.82	25		
Methylene Chloride	11.1	5.0	µg/L	10.0		111		70-130	4.22	25		
4-Methyl-2-pentanone (MIBK)	140	10	µg/L	100		140		70-160	2.14	25	V-20	†
Naphthalene	9.12	2.0	µg/L	10.0		91.2		40-130	0.873	25		†
n-Propylbenzene	10.8	1.0	µg/L	10.0		108		70-130	4.24	25		
Styrene	9.13	1.0	µg/L	10.0		91.3		70-130	0.329	25		
1,1,1,2-Tetrachloroethane	11.2	1.0	µg/L	10.0		112		70-130	0.0890	25		
1,1,2,2-Tetrachloroethane	11.2	0.50	µg/L	10.0		112		70-130	1.41	25		
Tetrachloroethylene	10.9	1.0	µg/L	10.0		109		70-130	3.94	25		
Tetrahydrofuran	10.7	10	µg/L	10.0		107		70-130	4.28	25		
Toluene	10.5	1.0	µg/L	10.0		105		70-130	2.45	25		
1,2,3-Trichlorobenzene	8.47	5.0	µg/L	10.0		84.7		70-130	0.589	25		
1,2,4-Trichlorobenzene	10.1	1.0	µg/L	10.0		101		70-130	3.42	25		
1,3,5-Trichlorobenzene	10.5	1.0	µg/L	10.0		105		70-130	0.0954	25		
1,1,1-Trichloroethane	11.0	1.0	µg/L	10.0		110		70-130	1.63	25		
1,1,2-Trichloroethane	10.6	1.0	µg/L	10.0		106		70-130	0.661	25		
Trichloroethylene	10.3	1.0	µg/L	10.0		103		70-130	4.29	25		
Trichlorofluoromethane (Freon 11)	10.0	2.0	µg/L	10.0		100		70-130	0.399	25		
1,2,3-Trichloropropane	11.3	2.0	µg/L	10.0		113		70-130	1.16	25		
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	10.7	1.0	µg/L	10.0		107		70-130	1.86	25		
1,2,4-Trimethylbenzene	9.50	1.0	µg/L	10.0		95.0		70-130	1.57	25		
1,3,5-Trimethylbenzene	10.4	1.0	µg/L	10.0		104		70-130	2.93	25		
Vinyl Chloride	25.0	2.0	µg/L	10.0		**250**	*	40-160	5.64	25	L-02, V-20	†
m+p Xylene	21.3	2.0	µg/L	20.0		107		70-130	1.44	25		
o-Xylene	10.9	1.0	µg/L	10.0		109		70-130	1.82	25		
Surrogate: 1,2-Dichloroethane-d4	*25.2*		µg/L	25.0		101		70-130				
Surrogate: Toluene-d8	*25.1*		µg/L	25.0		100		70-130				
Surrogate: 4-Bromofluorobenzene	*25.1*		µg/L	25.0		100		70-130				

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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 B244837 - SW-846 3510C										
Blank (B244837-BLK1)				Prepared: 10/30/19 Analyzed: 11/01/19						
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	*83.8*		µg/L	100		83.8	30-130			
Surrogate: 2-Fluorobiphenyl	*54.8*		µg/L	100		54.8	30-130			
Surrogate: p-Terphenyl-d14	*73.4*		µg/L	100		73.4	30-130			
LCS (B244837-BS1)				Prepared: 10/30/19 Analyzed: 11/01/19						
Acenaphthene (SIM)	37.1	6.0	µg/L	50.0		74.1	40-140			
Acenaphthylene (SIM)	38.1	4.0	µg/L	50.0		76.2	40-140			
Anthracene (SIM)	41.5	4.0	µg/L	50.0		83.1	40-140			
Benzo(a)anthracene (SIM)	42.4	1.0	µg/L	50.0		84.9	40-140			
Benzo(a)pyrene (SIM)	40.2	2.0	µg/L	50.0		80.4	40-140			
Benzo(b)fluoranthene (SIM)	44.2	1.0	µg/L	50.0		88.4	40-140			
Benzo(g,h,i)perylene (SIM)	41.9	10	µg/L	50.0		83.9	40-140			
Benzo(k)fluoranthene (SIM)	43.5	4.0	µg/L	50.0		87.0	40-140			
Chrysene (SIM)	32.8	4.0	µg/L	50.0		65.5	40-140			
Dibenz(a,h)anthracene (SIM)	46.1	2.0	µg/L	50.0		92.1	40-140			
Fluoranthene (SIM)	40.0	10	µg/L	50.0		80.0	40-140			
Fluorene (SIM)	38.6	20	µg/L	50.0		77.3	40-140			
Indeno(1,2,3-cd)pyrene (SIM)	52.7	2.0	µg/L	50.0		105	40-140			
2-Methylnaphthalene (SIM)	37.6	20	µg/L	50.0		75.2	40-140			
Naphthalene (SIM)	34.8	20	µg/L	50.0		69.6	40-140			
Phenanthrene (SIM)	38.1	1.0	µg/L	50.0		76.2	40-140			
Pyrene (SIM)	35.8	20	µg/L	50.0		71.6	40-140			
Surrogate: Nitrobenzene-d5	*84.0*		µg/L	100		84.0	30-130			
Surrogate: 2-Fluorobiphenyl	*58.3*		µg/L	100		58.3	30-130			
Surrogate: p-Terphenyl-d14	*56.1*		µg/L	100		56.1	30-130			

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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 B244837 - SW-846 3510C										
LCS Dup (B244837-BSD1)				Prepared: 10/30/19 Analyzed: 11/01/19						
Acenaphthene (SIM)	36.6	6.0	µg/L	50.0		73.3	40-140	1.14	20	
Acenaphthylene (SIM)	37.7	4.0	µg/L	50.0		75.4	40-140	1.16	20	
Anthracene (SIM)	40.8	4.0	µg/L	50.0		81.6	40-140	1.85	20	
Benzo(a)anthracene (SIM)	41.9	1.0	µg/L	50.0		83.7	40-140	1.38	20	
Benzo(a)pyrene (SIM)	38.8	2.0	µg/L	50.0		77.5	40-140	3.65	20	
Benzo(b)fluoranthene (SIM)	43.3	1.0	µg/L	50.0		86.5	40-140	2.15	20	
Benzo(g,h,i)perylene (SIM)	41.4	10	µg/L	50.0		82.8	40-140	1.34	20	
Benzo(k)fluoranthene (SIM)	43.9	4.0	µg/L	50.0		87.9	40-140	1.05	20	
Chrysene (SIM)	32.3	4.0	µg/L	50.0		64.5	40-140	1.54	20	
Dibenz(a,h)anthracene (SIM)	45.7	2.0	µg/L	50.0		91.3	40-140	0.872	20	
Fluoranthene (SIM)	38.8	10	µg/L	50.0		77.6	40-140	3.04	20	
Fluorene (SIM)	38.3	20	µg/L	50.0		76.6	40-140	0.884	20	
Indeno(1,2,3-cd)pyrene (SIM)	51.0	2.0	µg/L	50.0		102	40-140	3.28	20	‡
2-Methylnaphthalene (SIM)	37.3	20	µg/L	50.0		74.6	40-140	0.854	20	
Naphthalene (SIM)	34.4	20	µg/L	50.0		68.8	40-140	1.21	20	
Phenanthrene (SIM)	37.5	1.0	µg/L	50.0		74.9	40-140	1.69	20	
Pyrene (SIM)	34.9	20	µg/L	50.0		69.8	40-140	2.55	20	
Surrogate: Nitrobenzene-d5	*78.5*		µg/L	100		78.5	30-130			
Surrogate: 2-Fluorobiphenyl	*55.7*		µg/L	100		55.7	30-130			
Surrogate: p-Terphenyl-d14	*58.0*		µg/L	100		58.0	30-130			

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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).
L-02	Laboratory fortified blank/laboratory control sample recovery and duplicate recoveries outside of control limits. Data validation is not affected since all results are "not detected" for associated samples in this batch and bias is on the high side.
RL-11	Elevated reporting limit due to high concentration of target compounds.
V-05	Continuing calibration verification (CCV) did not meet method specifications and was biased on the low side for this compound.
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.

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 8260D in Water	
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

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 8260D in Water	
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

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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 Publilc 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

1451774

con-test ANALYTICAL LABORATORY

Phone: 413-525-2332
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Email: info@contestlabs.com

http://www.contestlabs.com

CHAIN OF CUSTODY RECORD (North Carolina)

Doc # 379 Rev 1_03242017

39 Spruce Street
East Longmeadow, MA 01028

Page 1 of 1

Company Name: SYME
Address: 3201 Spring Forest RD Raleigh NC
Phone: 919 977-7614
Project Name: NCDOT - I 5878 Dunn Parcel 50
Project Location: Dunn NC
Project Number: 4305-19-161
Project Manager: Jamie T Honeycutt
Con-Test Quote Name/Number:
Invoice Recipient: Jamie T Honeycutt
Sampled By: Jamie T Honeycutt

Requested Turnaround Time
7-Day ☐ 10-Day ☑
Due Date:

Rush-Approval Required
1-Day ☐ 3-Day ☐
2-Day ☐ 4-Day ☐

Data Delivery
Format: PDF ☑ EXCEL ☑
Other:
CLP Like Data Pkg Required: ☐
Email To: jhoneycutt@smeinc.com
Fax To #:

ANALYSIS REQUESTED

Con-Test Work Order#	Client Sample ID / Description	Beginning Date/~~Time~~	Ending ~~Date~~/Time	Composite	Grab	[1]Matrix Code	Conc Code	8260	PAHs by 8270
1	TW-1	10-23-19	1300		/	GW		✓	✓

# 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)

Comments:

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

Relinquished by: (signature) [signature]	Date/Time: 10/28/19 / 1900
Received by: (signature) [signature] 3.4 10/29	Date/Time: 10/29/19 906
Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time:
Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time:

North Carolina Detection Limit Requirements
☐ 2L
☐ GWPC
☐ SWSL
☐ IHSB
☐ MSCC
Other:

Program Information
☐ DSCA ☐ UST/Trust Fund
☐ SWS Landfill ☐ REC
☐ IHSB Orphaned Landfill
☐ State Lead
☐ Other:

NELAC and AIHA-LAP, LLC Accredited

Project Entity
☐ Government ☐ Municipality
☐ Federal ☐ Brownfield
☐ City ☐ School

Other
☐ Chromatogram
☐ *AIHA-LAP, LLC*

PCB ONLY
☐ Soxhlet
☐ Non Soxhlet

IMPORTANT!
The wildfires are causing hazardous conditions in California. Learn More

411359783313

Delivered
Tuesday 10/29/2019 at 9:06 am

DELIVERED

Signed for by: B.BECCA

GET STATUS UPDATES

OBTAIN PROOF OF DELIVERY

TO

EAST LONGMEADOW, MA US

Shipment Facts

TRACKING NUMBER
411359783313

SERVICE
FedEx Priority Overnight

WEIGHT
34.8 lbs / 15.79 kgs

DELIVERED TO
Shipping/Receiving

TOTAL PIECES
1

TOTAL SHIPMENT WEIGHT
34.8 lbs / 15.79 kgs

PACKAGING
Your Packaging

SPECIAL HANDLING SECTION
Deliver Weekday

STANDARD TRANSIT
10/29/2019 by 10:30 am

SHIP DATE
Mon 10/28/2019

ACTUAL DELIVERY
Tue 10/29/2019 9:06 am

Travel History

Local Scan Time

Tuesday , 10/29/2019

9:06 am		Delivered
7:46 am	WINDSOR LOCKS, CT	On FedEx vehicle for delivery
7:35 am	WINDSOR LOCKS, CT	At local FedEx facility
6:23 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 S+ME

Received By MP Date 10/24/19 Time 906

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 - 3.4

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 Project T Analysis T ID's T Sampler Name 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.	2	1 Liter Plastic		16 oz Amb.	
HCL-	3	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: