

## **Preliminary Site Assessment Report**

**November 16, 2018**  
**WBS Element: 44625.1.1**  
**State Project: U-5888**  
**Haywood County**

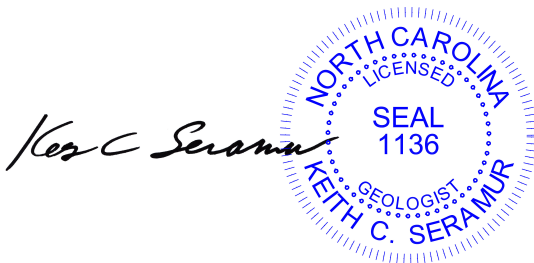
**at**  
**Gerald Egelus Property**  
**Parcel #007**  
**751 N Main Street, Waynesville, NC 28786**  
**PIN #: 8615-59-5487**  
**Facility ID No.: N/A**  
**Groundwater Incident No.: N/A**

**Prepared For:**

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Keith C. Seramur, P.G.

**TABLE OF CONTENTS**

**SECTION** **PAGE**

---

**1.0 INTRODUCTION..... 3**

    1.1 General Site Background Information..... 3

**2.0 SCOPE OF WORK..... 3**

    2.1 Background Research..... 3

    2.2 Plate 1 – Photos of Parcel #007..... 4

    2.3 Geophysical Surveys..... 5

    2.4 Soil Sampling and Analyses ..... 5

**3.0 RESULTS OF INVESTIGATION ..... 6**

    3.1 Geophysical Surveys..... 6

    3.2 Soil Borings, Sampling and Laboratory Results..... 7

    3.3 Volume and Extent of Soil Contamination..... 7

    3.4 Conclusions..... 8

    3.5 Recommendations..... 8

**Appendix A – Tables and Figures**

- Table 1 – Soil Boring Data
- Table B-3a – Summary of Soil Sampling Results
- Table B-3b – Summary of Soil Sampling Results
- Figure 1 – Site Location Map
- Figure 2 – Site Plan
- Figure 3 – Site Plan with Soil Boring Locations and Approx. Cross-Section Locations
- Figure 4 – Magnetometer Survey Results
- Figure 5 – Shallow GPR Depth Slice
- Figure 6 – Intermediate GPR Depth Slice
- Figure 7 – Deep GPR Depth Slice
- Figure 8 – Soil Analytical Results
- Figure 9 – Cross-Sections A-A` and B-B`

**Appendix B – Laboratory Reports and Chain of Custody Records**

## **1.0 Introduction**

### **1.1 General Site Background Information**

Seramur & Associates, PC was contracted to complete a Preliminary Site Assessment (PSA) at:

Gerald Egelus Property  
Parcel #007  
PIN #: 8615-59-5487  
751 N Main Street, Waynesville, NC 28786  
Facility ID No.: N/A  
Groundwater Incident No.: N/A

This property is located in Downtown Waynesville and is bounded to the south by Maple Street, to the north by Marshall Street and to the east by North Main Street (Figure 1). The property is currently developed with one building. It operates as an auto-body shop out of the west half of the building. The eastern half appears to be used as storage. There are old vehicles stored on the southwest portion of the property that could not be moved during our survey work. There are no proposed easements or Right-of-Way (R/W) on the property (Figure 2). It is our understanding that the entire property is being obtained as part of a traffic circle being built to replace the current intersection.

## **2.0 Scope of Work**

The PSA scope of work included completing a geophysical survey at the property to investigate the potential for underground storage tanks. Following the geophysical survey, soil sampling and analyses were performed to assess soil quality and estimate the volume of potentially contaminated soil at the site (Figure 3).

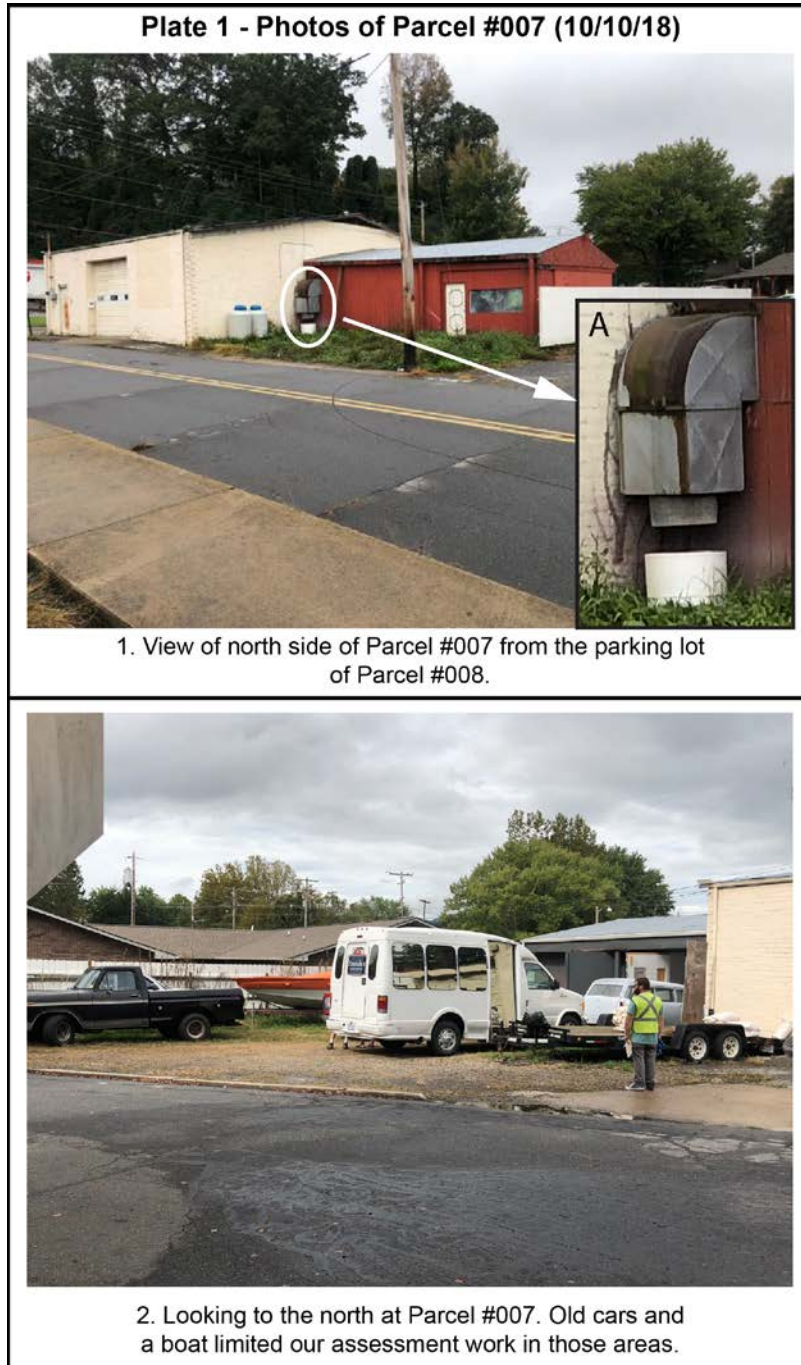
### **2.1 Background Research**

According to Haywood County Tax Administration records, the property is currently owned by Gerald Egelus. A review of historic aerial photographs showed that the property was developed in the 1950's. Haywood County Tax Administration records indicate that the building was built in 1945. There is no incident number or facility number associated with this property in any of the NCDEQ Databases.

During the initial site visit and the geophysical survey work, Seramur & Associates personnel spoke with the current property occupant about his knowledge of the property. He currently operates an auto-body shop and works on old cars. He stated that most of the vehicles and the boat stored on the property belong to the owner. He has spoken with many locals over the years who have indicated that the building was used as a carwash when it was built in the 1940's. The occupant was not aware that the property had ever been used as a gas station and said he would be surprised to find out that a UST is, or had ever been on the property.

Seramur and Associates personnel made a pedestrian reconnaissance of the property during the initial site visit on September 25, 2018. At that time, the proposed work area was marked with white paint for utility locating purposes. A utility locate request was initiated with the North Carolina 811 system on October 14, 2018, approximately one week before commencing with drilling.

## 2.2 Plate 1 – Photos of Parcel #007



## **2.3 Geophysical Surveys**

Seramur & Associates set up one grid for a geophysical survey at Parcel #007 (Figures 4 through 7). Grid 1 extended from the southwest side of the building towards Maple Street. Geophysical data was collected along transects with a 2-foot line spacing. The magnetometer was used to survey areas outside of Grid 1 (Figure 4). The area north of the building was surveyed along transects that were spaced approximately 2 feet apart. There was tall and thick vegetation in this area that prevented running a grid with the GPR. The southeast portion of the parcel was surveyed with the magnetometer at an approximate 2 foot transect spacing. The narrow strip of land between the west side of the building and the fence along the property boundary was also surveyed with the magnetometer in tight transects. GPR data was not collected outside of Grid 1 as magnetic anomalies were not detected and these areas were impractical to run GPR.

The Magnetometer survey was completed with a MF-1 Fluxgate magnetometer. The MF-1 Fluxgate magnetometer is designed to measure changes in the Earth's magnetic field associated with larger ferrous objects. It does not respond to smaller objects such as nails or wire, but responds well to variations in the Earth's magnetic field produced by manholes, steel pipe, buried drums and tanks. The sensitivity level is well suited for detecting buried USTs at commercial and industrial facilities. Magnetometer data was compiled in an Excel spreadsheet and a contour map with hill shade was drafted using Golden Software's Surfer® modeling program (Figure 4).

A Ground Penetrating Radar (GPR) survey was completed across the grids using Geophysical Survey Systems, Inc. 400 MHz antenna and a SIR-3000 Single Channel Data Acquisition System with a calibrated survey wheel. The GPR data was downloaded and saved onto a computer. The GPR grid data has been processed and modeled using GPR Slice® software. The GPR data processing included adjusting time zero, completing a background removal and adjusting the time variable gain to enhance deep reflections.

Three-dimensional models of the GPR grid data were produced with the GPR Slice® software. Three time slices (or depth slices) were imaged in the grid at depths of 0.3 to 0.8 feet, 1.6 to 2.1 feet and 2.9 to 3.5 feet (Figures 5 through 7). Each depth slice is a horizontal slice or plan view of the reflections across an approximate 0.5-foot thickness of the subsurface. For example, the shallow GPR depth slices for Grid 1 shows reflections in the radar data between depths of 0.3 and 0.8 feet.

## **2.4 Soil Sampling and Analyses**

Carolina Soil Investigations, LLC mobilized to the site October 23<sup>rd</sup>, 2018 to drill Geoprobe borings and collect soil samples. Our project design called for collecting a shallow and deep soil sample from each boring (Figure 3). The purpose of collecting samples at a depth of ~3.0 feet is to test for petroleum releases related to surface spills and releases from product lines. The purpose of collecting samples at a depth of ~9.0 feet is to test for petroleum releases related to underground storage tanks. Soil samples were collected at other depths within the Geoprobe

cores if soil staining or petroleum vapors were observed or if limited core recovery occurred. Soil borings were drilled in accessible areas of the property (Figure 3).

A track-mounted Geoprobe rig was used to drill a total of eight soil borings. A new pair of Nitrile gloves was worn while collecting each soil sample. A representative portion of each soil sample was placed in a zip lock bag and allowed to rest for a period of time to allow volatile vapors to accumulate in the headspace of the bag. A calibrated Photoionization detector (PID) was used to screen the headspace in each bag and the concentration of volatile petroleum vapors was measured and recorded (Table 1). The texture and type of soil material in the Geoprobe cores was described and recorded. Table 1 lists the soil boring data including sample number, depth, PID reading, lithology and type of soil material.

Samples were collected and shipped on ice to REDLab, LLC, in Wilmington, NC for laboratory analyses. REDLab analyzed the soil samples for petroleum constituents by Ultra-Violet Fluorescence using a QED HC-1 analyzer. The analytical results are reported as Gasoline Range Organics (GRO) and Diesel Range Organics (DRO) and Total Petroleum as Hydrocarbons (TPH). REDLab provides a hydrocarbon spectrum with each of the sample results. This spectrum is used for a tentative identification of the type of hydrocarbon detected by the analytical method. A hydrocarbon fingerprint is interpreted by REDLab for each sample using a library search of spectra for known hydrocarbon types and concentrations. The laboratory reports and fingerprint spectra are included in Appendix B.

The vapors from a paint booth discharges through a vent on the north side of the building (see Inset A on Photo 1 of Plate 1). The property occupant reported that the vent has been used for many years and discharged fumes from the paint booth into this area long before there were any regulations requiring proper filters. Boring B-25 was drilled at an angle towards this vent in order to access the tight corner and test soil quality in this area. Soil sample S-49 was collected from Boring B-25 at a depth of 2.0 feet. Sample S-49 was shipped on ice to Prism Labs in Charlotte, NC for laboratory analyses. Prism analyzed this sample for volatiles (8260B) and lead (6010D). The laboratory reports are included in Appendix B.

### **3.0 Results of Investigation**

Parcel #007 contains one building that is currently used as storage and as an auto-body shop. The property previously operated as a carwash many years ago. There are no NCDEQ incidents associated with this property.

#### **3.1 Geophysical Surveys**

##### **Magnetometer Survey**

Magnetic anomalies were not detected on the property during the geophysical surveys (Figure 4).

##### **GPR Depth Slices**

The GPR depth slices are used to look for evidence of remnant infrastructure and features associated with UST systems (e.g. product lines, tanks and excavations). The shallow GPR

depth slice shows an area of lower amplitude reflections on the north end of the grid near the building (Figure 5). The intermediate depth slice shows some high amplitude reflections along the southeast edge of the grid (Figure 6). These appear linear but they are too close to the edge of the grid to interpret them as a buried utility. The deep GPR depth slice shows an interesting rectangular area of lower amplitude reflections, but its origin is uncertain (Figure 7). The south side of the property has fill material to a depth of 5-7 feet.

No evidence of USTs or a UST system was recorded at Parcel #007 by the geophysical surveys.

### **3.2 Soil Borings, Sampling and Laboratory Results**

The soil type at Parcel #007 consisted of a sandy silt fill material and a silty sand and gravel alluvium (Table 1). Some of the borings were moist, but groundwater was not encountered in any of the soil borings.

Borings B-18 through B-22 were drilled on the southwest side of the building where the vehicles are currently parked. Borings B-23 through B-25 were drilled on the north side of the building in the area of thick vegetation. Boring B-25 was drilled at a slight angle to sample soil beneath the paint booth vent.

Petroleum constituents were detected at low concentrations in many of the soil samples collected from Parcel #007. None of the soil samples contained DRO concentrations above 5.7 ppm. The sites history of having many vehicles park on the property since the 1940's indicates that the low petroleum constituent concentrations in soil is likely a result of leaks from vehicles over the years.

Soil sample S-49 from Boring B-25 was analyzed for Total Lead by Method 6010D and for volatiles by Method 8260B. Lead was detected by Method 6010D and Acetone was detected by Method 8260B. Acetone was detected at 0.11 mg/kg which is well below the Soil-to-Groundwater MSCC of 24 mg/kg. Lead was detected at a concentration of 1,100 mg/kg. This is well above all three MSCCs (Soil-to-Groundwater-270 mg/kg, Residential-400 mg/kg and Industrial/Commercial-400 mg/kg). The high concentration of lead in the soil around the paint fume hood could be attributed to lead paint being discharged from the paint booth vent for many years.

### **3.3 Volume and Extent of Soil Contamination**

Contaminated soil defined as GRO concentrations above 50 ppm and DRO concentrations above 100 ppm was not detected in soil samples collected at Parcel #007.

Lead was detected in a soil sample below the paint booth vent at concentration of 1,100 ppm, which is well above all three of the NCDEQ MSCCs. If the lead is from paint fumes, then this soil contamination is likely limited to the vicinity of the paint booth vent. We estimated this area to be about 100 feet<sup>2</sup> and the depth of soil contamination to be 5 feet. The estimated volume of contaminated soil in the vicinity of the paint booth vent is calculated as follows:

$$\begin{aligned}5 \text{ ft.} \times 10 \text{ ft}^2 &= 500 \text{ ft}^3 \\500 \text{ ft}^3 / 27 \text{ ft}^3/\text{yd}^3 &= 18.5 \text{ yd}^3 \\18.5 \text{ yd}^3 \times 1.5 \text{ tons}/\text{yd}^3 &= 27.8 \text{ tons}\end{aligned}$$

### **3.4 Conclusions**

No evidence of a UST system was found at Parcel #007 during this PSA.

Laboratory analyses of soil samples collected at Parcel #007 did not detect concentrations of GRO and DRO constituents above their respective action levels.

Laboratory analysis of soil sample S-49 detected lead at a concentration of 1,100 mg/kg, which is well above the NCDEQ MSCCs.

### **3.5 Recommendations**

A licensed geologist or engineer should supervise the excavation and removal of contaminated soil in the vicinity of the paint booth vent. Confirmation soil samples should be collected and analyzed for lead. Contaminated soil removed from Parcel #007 should be sent to a suitable remediation facility.



## Appendix A

### Tables and Figures

Boring No.	Depth (ft)	Lithology	Soil type	Soil Sample	PID ppm	Comments
B-18	0.0 to 5.0	Sandy Silt	Fill	S-35	0.1	Sample at 2.0 feet.
B-18	5.0 to 10.0	Silty Sand	Alluvium	S-36	0.1	Sample at 9.0 feet.
B-19	0.0 to 5.0	Sandy Silt	Fill	S-37	0.3	Sample at 1.5 feet.
B-19	5.0 to 10.0	Sand and Gravel	Alluvium	S-38	0.1	Sample at 9.0 feet.
B-20	0.0 to 5.0	Sandy Silt	Fill	S-39	0.1	Sample at 3.0 feet.
B-20	5.0 to 10.0	Sand	Alluvium	S-40	0.1	Sample at 8.0 feet.
B-21	0.0 to 5.0	Sandy Silt	Fill	S-41	0.1	Sample at 2.5 feet.
B-21	5.0 to 7.5	Sandy Silt	Fill	S-42	0.0	Sample at 8.5 feet.
	7.5 to 10.0	Sand and Gravel	Alluvium			
B-22	0.0 to 5.0	Sandy Silt	Fill	S-43	0.1	Sample at 3.0 feet.
B-22	5.0 to 10.0	Sand and Gravel	Alluvium	S-44	0.0	Sample at 7.5 feet.
B-23	0.0 to 5.0	Sandy Silt	Fill	S-45	0.0	Sample at 2.5 feet.
B-23	5.0 to 10.0	Silty Sand	Alluvium	S-46	0.1	Sample at 9.0 feet.
B-24	0.0 to 5.0	Sandy Silt	Fill	S-47	0.0	Sample at 2.5 feet.
B-24	5.0 to 10.0	Silty Sand and Gravel	Alluvium	S-48	0.0	Sample at 8.0 feet.
B-25	0.0 to 5.0	Sandy Silt	Fill	S-49	0.0	Sample at 2.0 feet. Drilled under paint hood vent. Terminated at 5.0 feet.

**Table B-3a: Summary of Soil Sampling Results**

Revision Date: 10/25/18

Incident Number and Name: Gerald Egelus Property

Parcel ID#: 007

Analytical Method (e.g., VOC by EPA 8260) →					UVF	UVF
Contaminant of Concern →					TPH GRO (mg/kg)	TPH DRO (mg/kg)
Sample ID	Date Collected (mm/dd/yy)	Source Area	Sample Depth (ft. BGS)	Incident Phase		
S-35	10/23/18	B-18	3.0	PSA	<0.56	5.7
S-36	10/23/18	B-18	9.0	PSA	<0.56	2.6
S-37	10/23/18	B-19	3.0	PSA	<0.52	0.49
S-38	10/23/18	B-19	9.0	PSA	<0.61	<0.24
S-39	10/23/18	B-20	3.0	PSA	<0.58	2.3
S-40	10/23/18	B-20	9.0	PSA	<0.27	0.03
S-41	10/23/18	B-21	3.0	PSA	<0.55	5.0
S-42	10/23/18	B-21	9.0	PSA	<0.58	<0.23
S-43	10/23/18	B-22	3.0	PSA	<0.54	1.4
S-44	10/23/18	B-22	9.0	PSA	<0.54	<0.21
S-45	10/23/18	B-23	3.0	PSA	<0.52	0.31
S-46	10/23/18	B-23	9.0	PSA	<0.53	<0.21
S-47	10/23/18	B-24	3.0	PSA	<0.29	4.5
S-48	10/23/18	B-24	9.0	PSA	<0.59	<0.23
<b>NC DEQ Action Level (mg/kg)</b>					50	100

ft. BGS = feet below ground surface

mg/kg = milligrams per kilogram

**Table B-3b: Summary of Soil Sampling Results**

Revision Date: 11/5/18

Incident Name: Gerald Egelus Property

Parcel ID#: 007

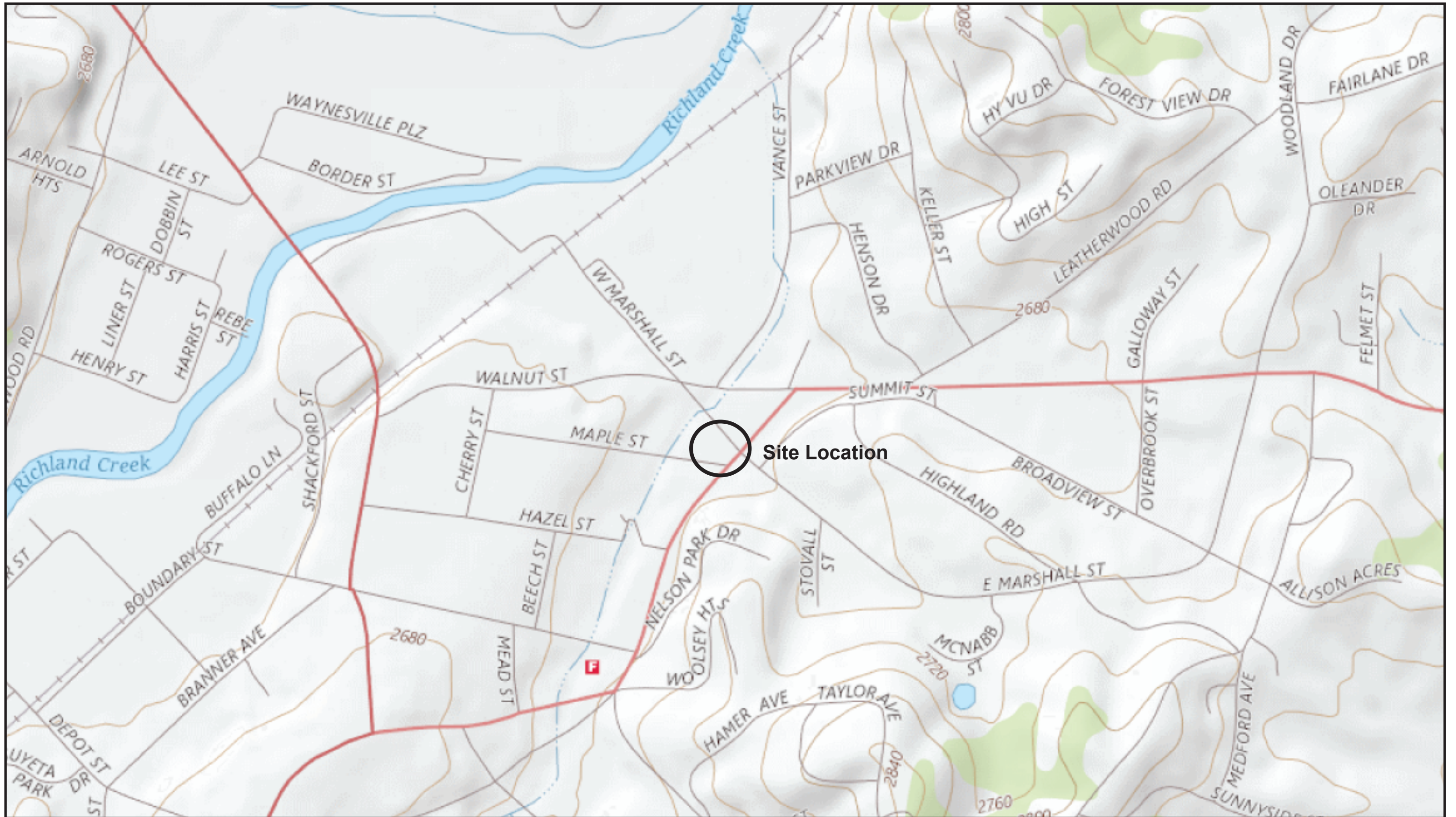
Analytical Method (e.g., VOC by EPA 8260) →					6010D	8260B
Contaminant of Concern →					Lead (mg/kg)	Acetone (mg/kg)
Sample ID	Date Collected (mm/dd/yy)	Source Area	Sample Depth (ft. BGS)	Incident Phase		
S-49	10/23/18	B-25	2.0	PSA	<b>1,100</b>	0.11
<b>Minimum Reporting Limit (mg/kg)</b>					1.4	0.0023
<b>Soil to Groundwater MSCC (mg/kg)</b>					270	24
<b>Residential MSCC (mg/kg)</b>					400	14,000
<b>Industrial/Commercial MSCC (mg/kg)</b>					400	360,000

MSCC = maximum soil contaminant concentration

ft. BGS = feet below ground surface

Results must be reported in mg/kg.

mg/kg =milligrams per kilogram



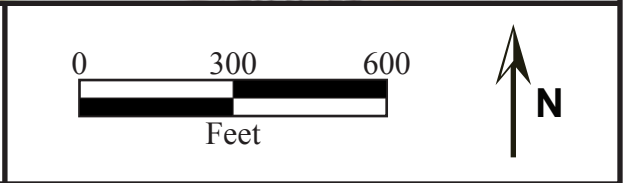
**Figure 1**  
 Site Location Map  
 Source: U.S.G.S.  
 The National Map

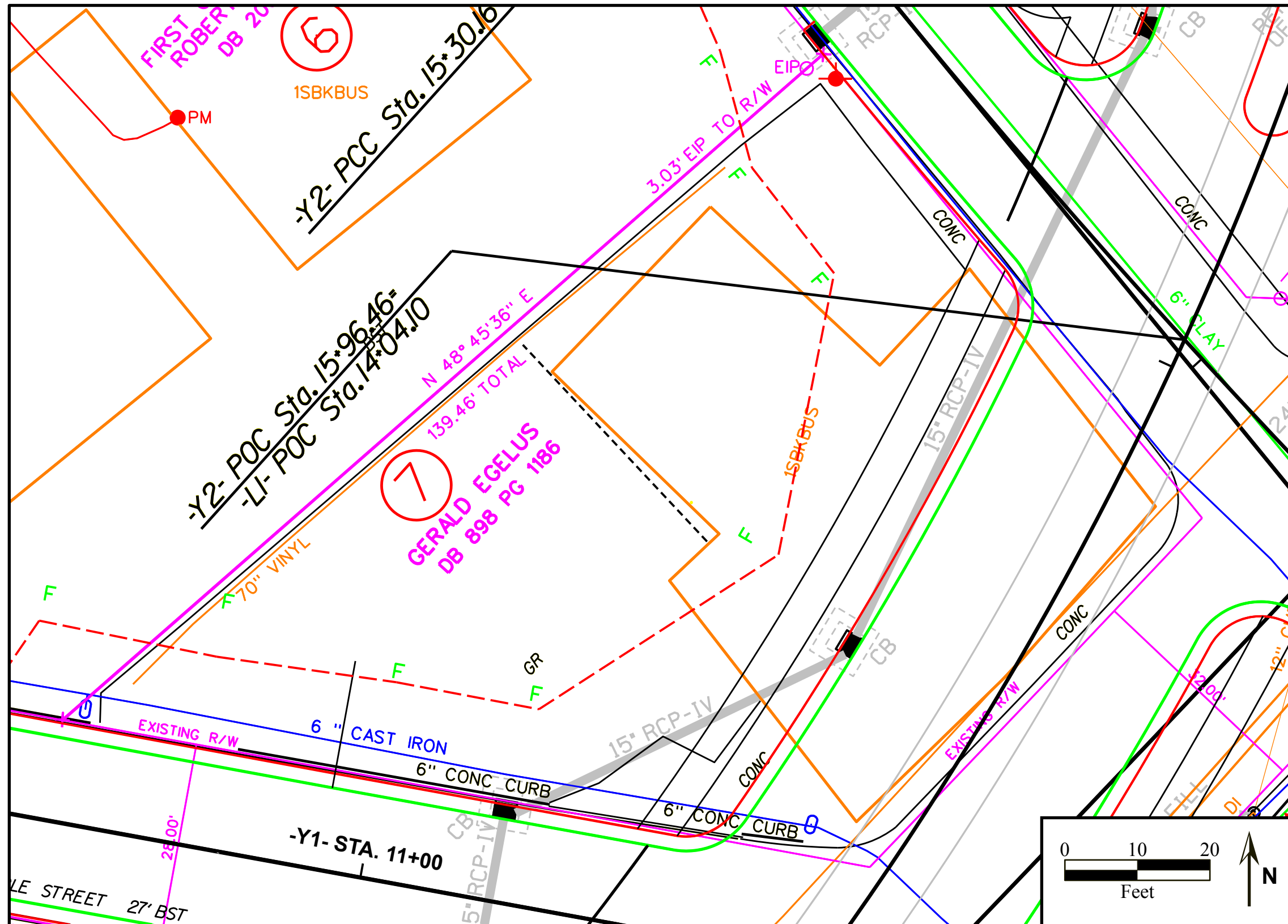
State Project: U-5888  
 Haywood County, NC

Gerald Egulus Property  
 751 N Main Street  
 Waynesville, NC

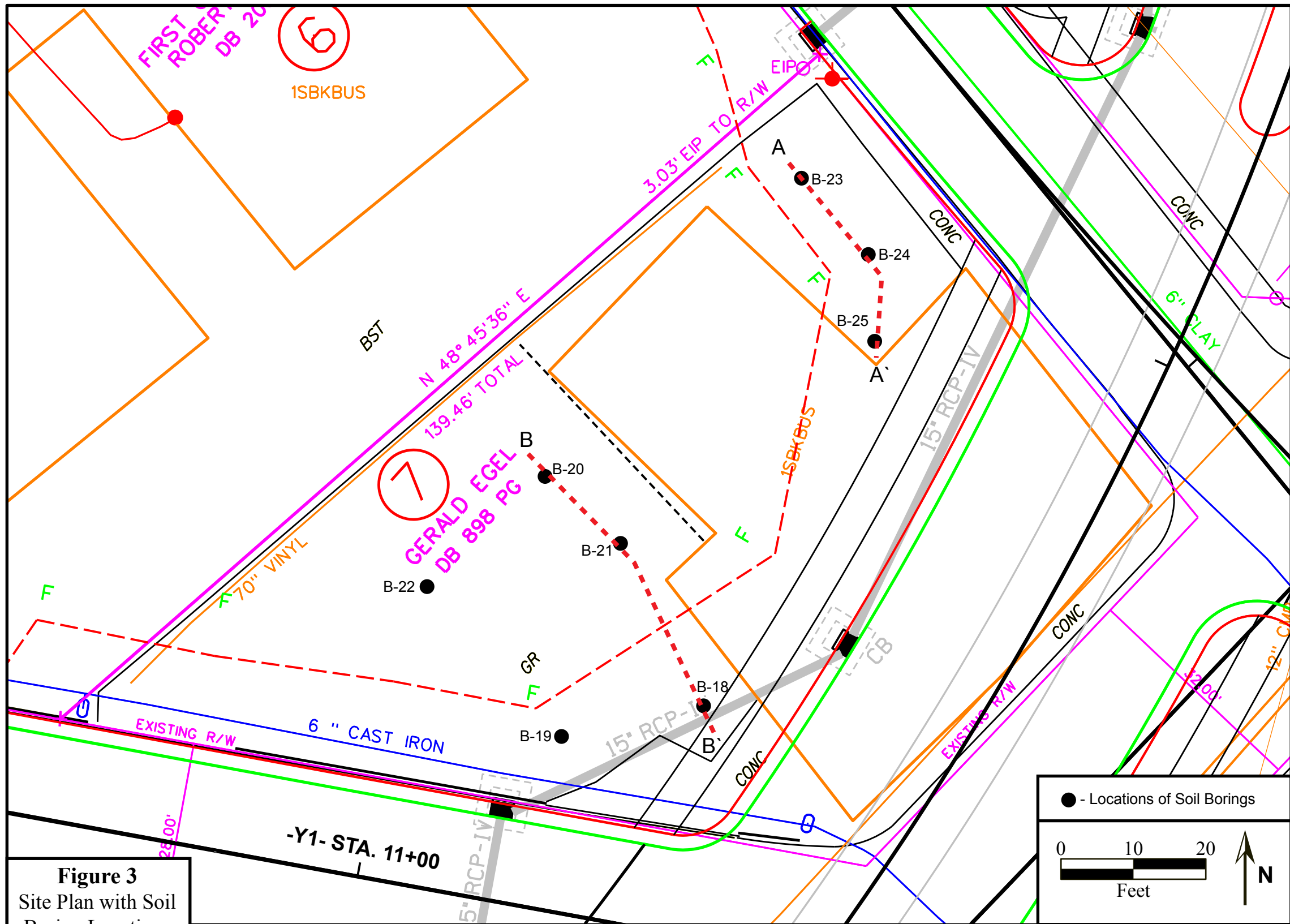
Parcel #007  
 Facility I.D.: N/A

Seramur & Associates, PC  
 Boone, NC





<p><b>Figure 2</b> Site Plan</p>	<p>State Project: U-5888 Haywood County, NC</p>	<p>Gerald Egulus Property 751 N Main Street Waynesville, NC</p>	<p>Parcel #007 Facility I.D.: N/A</p>	<p>Seramur &amp; Associates, PC Boone, NC</p>
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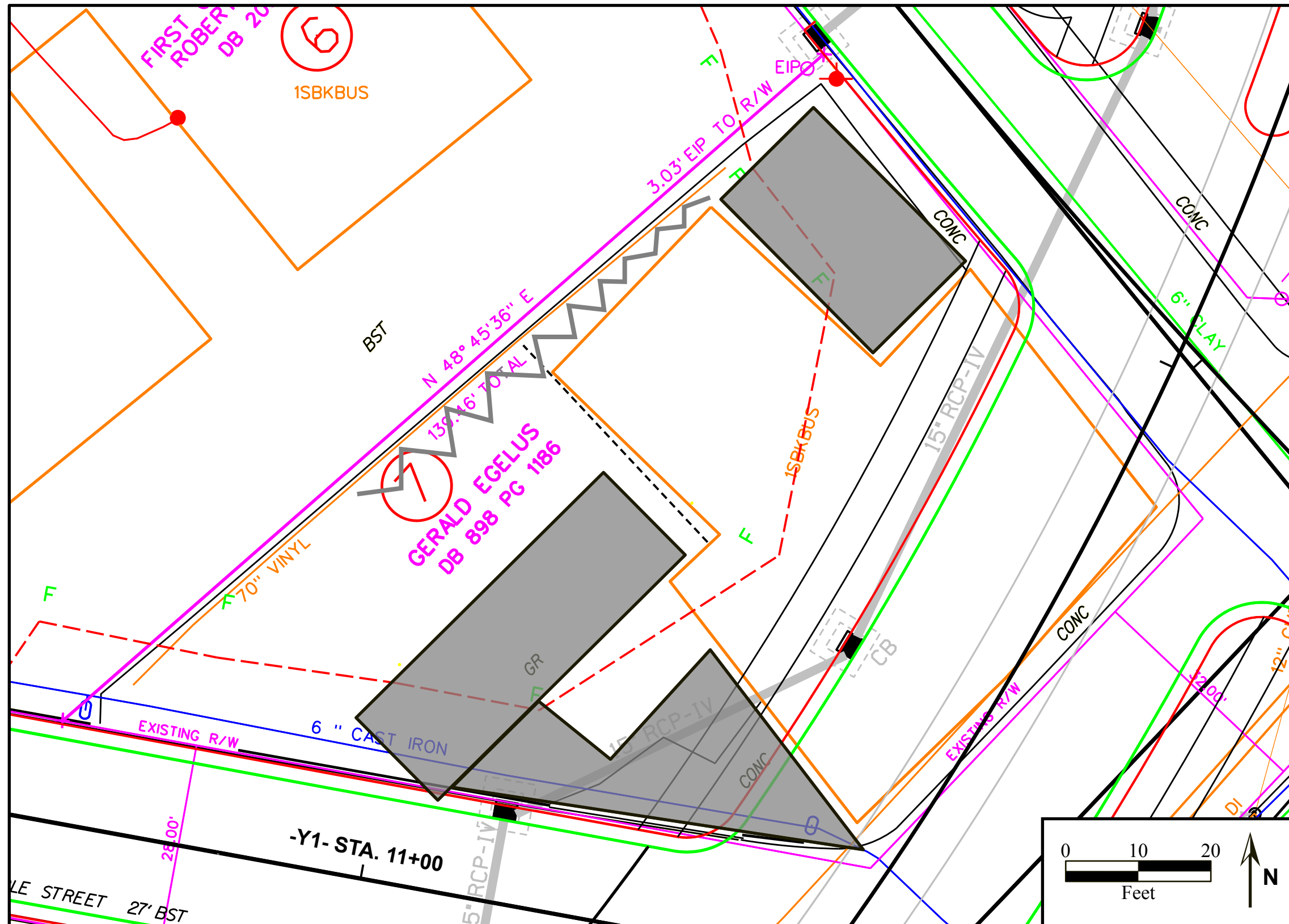
**Figure 3**  
 Site Plan with Soil Boring Locations and Approximate Cross-Section Locations

State Project: U-5888  
 Haywood County, NC

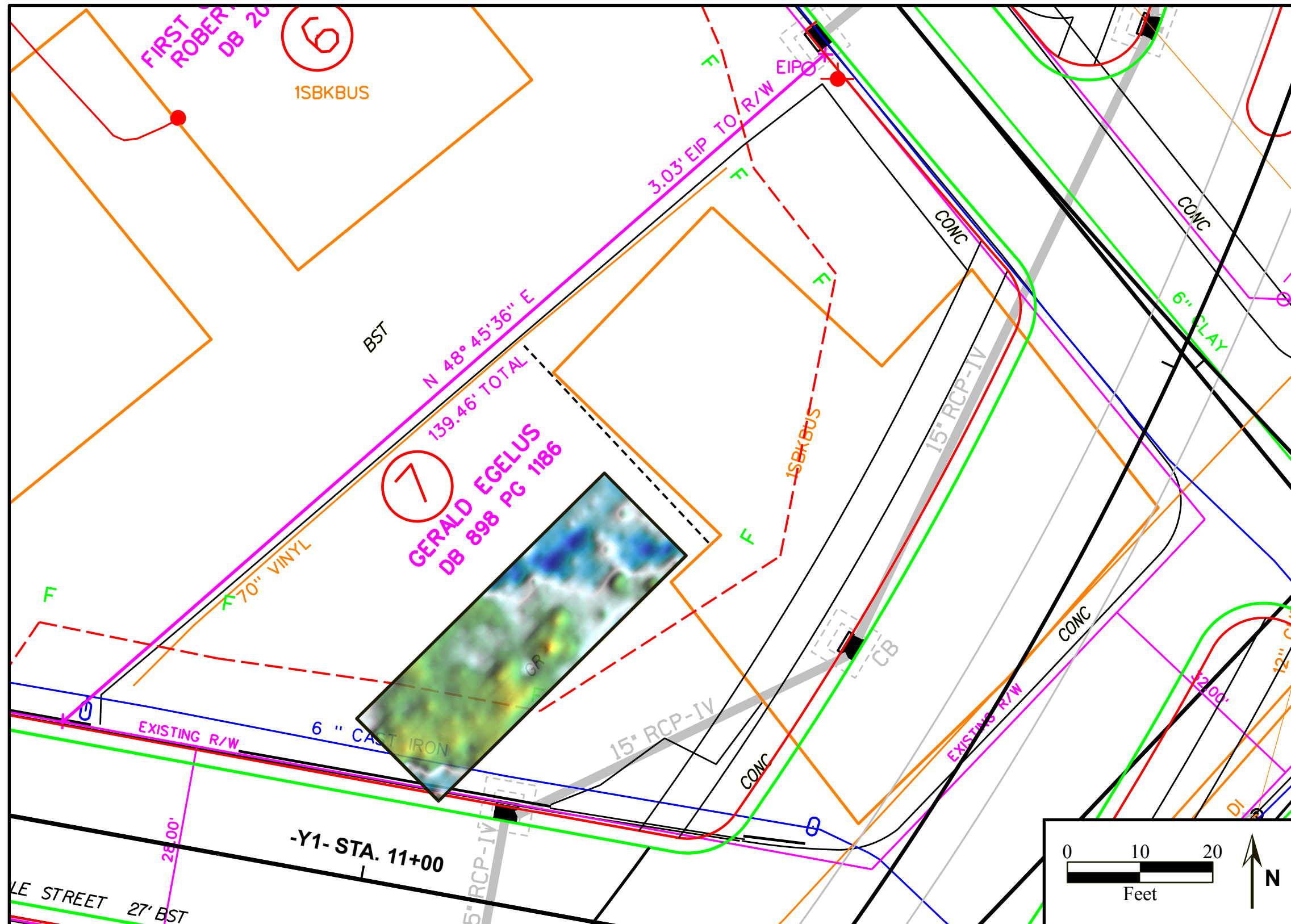
Gerald Egulus Property  
 751 N Main Street  
 Waynesville, NC

Parcel #007  
 Facility I.D.: N/A

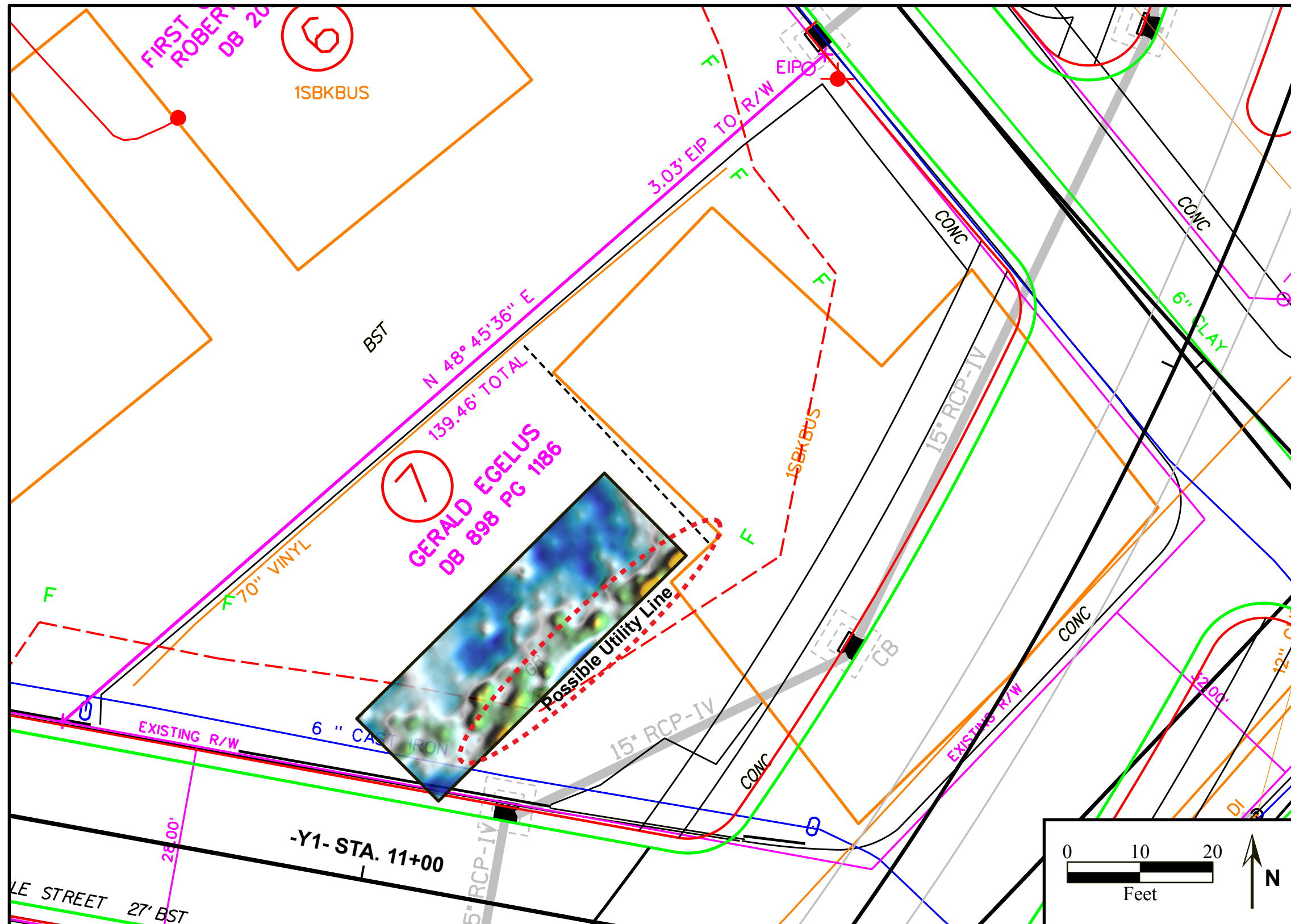
Seramur & Associates, PC  
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<p><b>Figure 4</b> Magnetometer Survey Results</p>	<p>State Project: U-5888 Haywood County, NC</p>	<p>Gerald Egulus Property 751 N Main Street Waynesville, NC</p>	<p>Parcel #007 Facility I.D.: N/A</p>	<p>Seramur &amp; Associates, PC Boone, NC</p>
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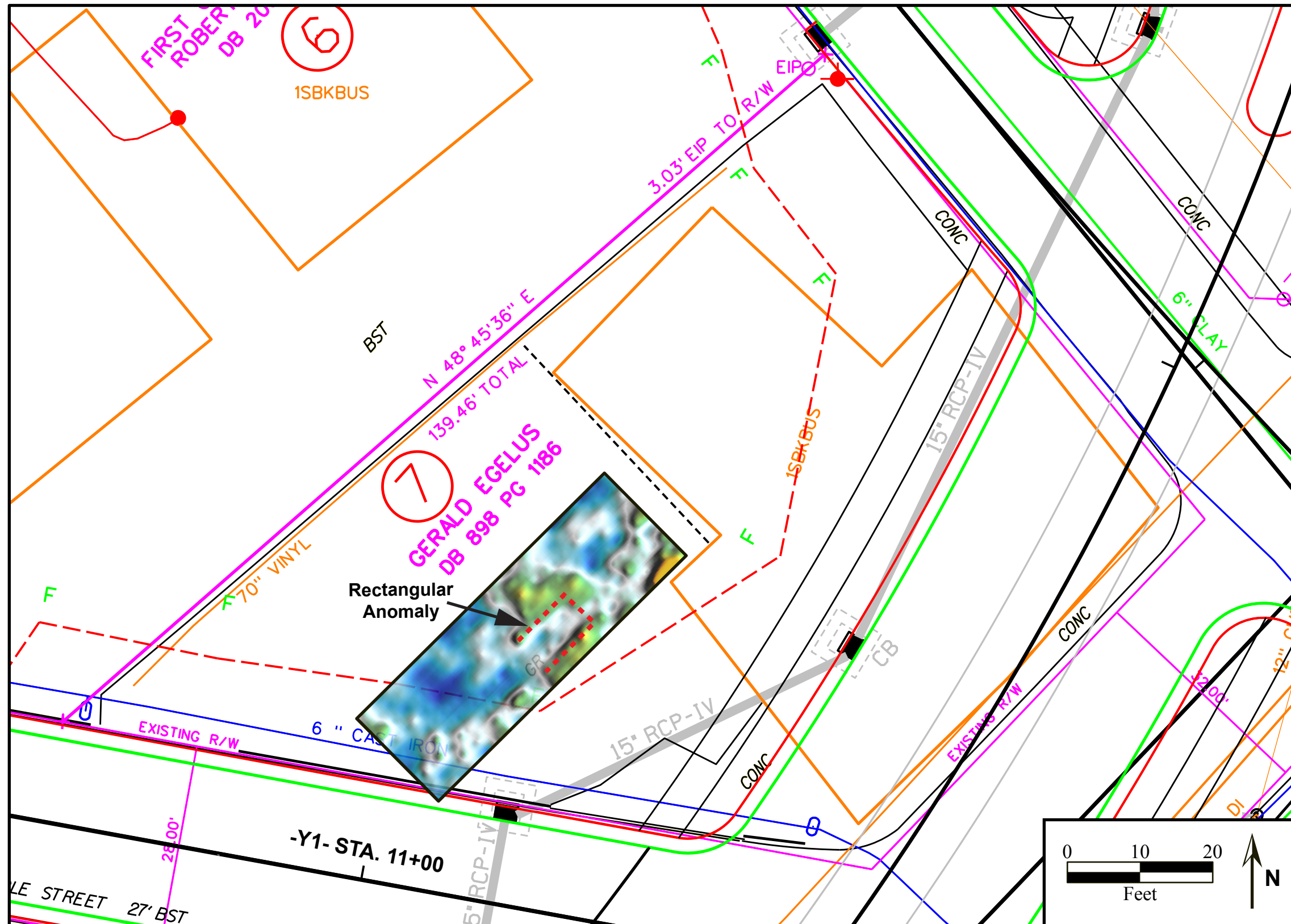


<p><b>Figure 5</b> Shallow GPR Depth Slice (0.3 - 0.8 ft.)</p>	<p>State Project: U-5888 Haywood County, NC</p>	<p>Gerald Egulus Property 751 N Main Street Waynesville, NC</p>	<p>Parcel #007 Facility I.D.: N/A</p>	<p>Seramur &amp; Associates, PC Boone, NC</p>
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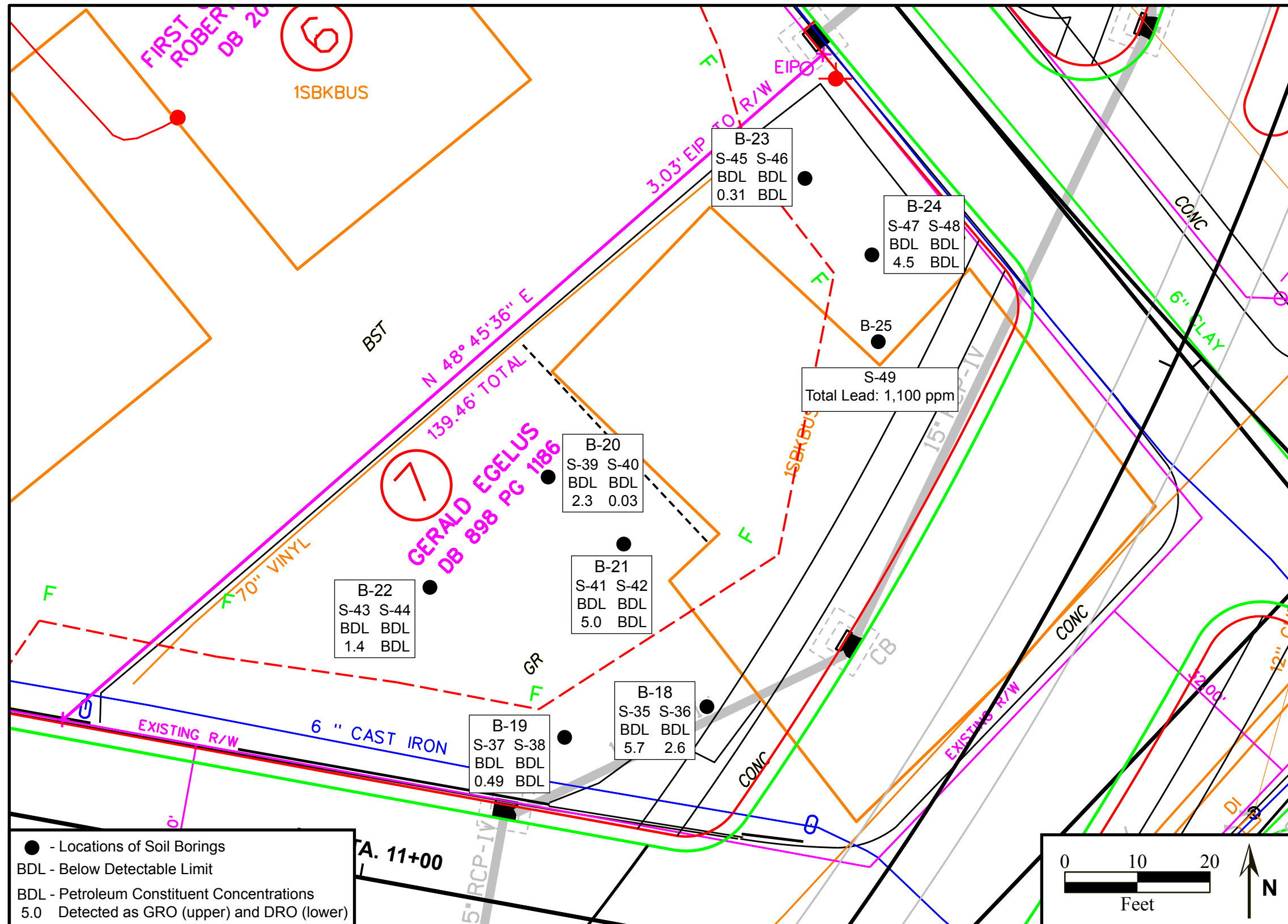


<p><b>Figure 6</b> Intermediate GPR Depth Slice (1.6 - 2.1 ft.)</p>	<p>State Project: U-5888 Haywood County, NC</p>	<p>Gerald Egulus Property 751 N Main Street Waynesville, NC</p>	<p>Parcel #007 Facility I.D.: N/A</p>	<p>Seramur &amp; Associates, PC Boone, NC</p>
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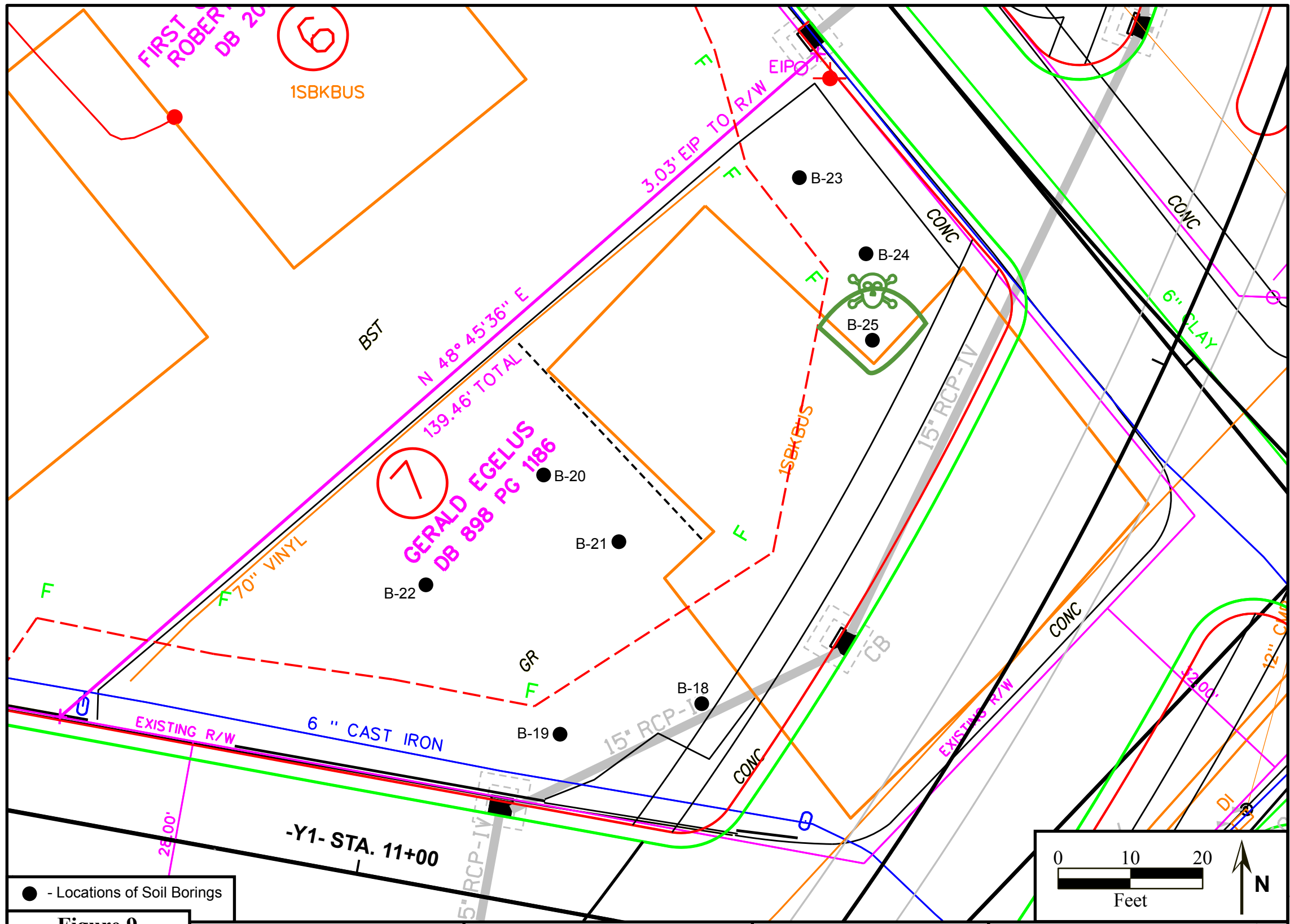




<p><b>Figure 7</b> Deep GPR Depth Slice (2.9 - 3.5 ft.)</p>	<p>State Project: U-5888 Haywood County, NC</p>	<p>Gerald Egulus Property 751 N Main Street Waynesville, NC</p>	<p>Parcel #007 Facility I.D.: N/A</p>	<p>Seramur &amp; Associates, PC Boone, NC</p>
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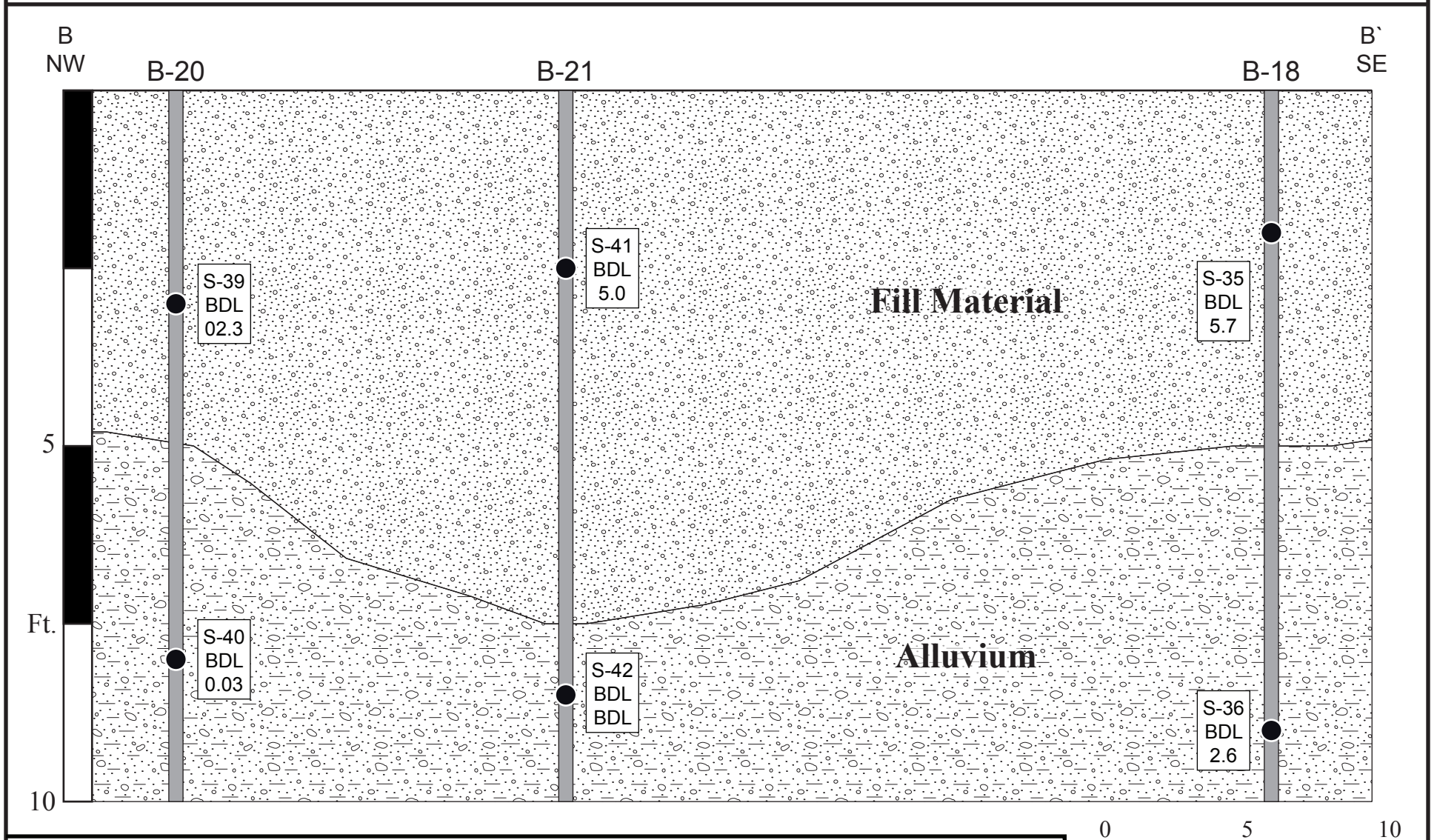
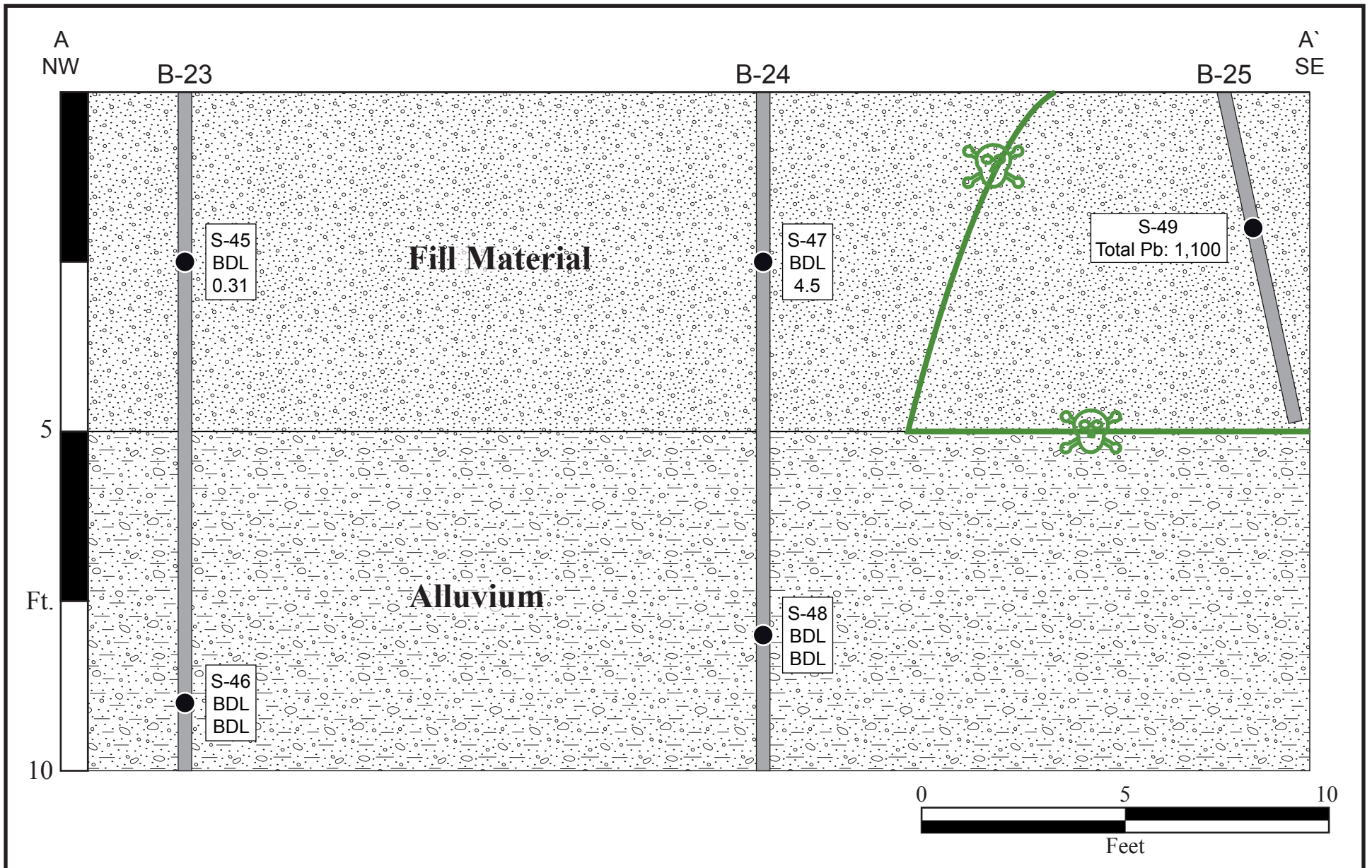


<b>Figure 8</b> Soil Analytical Results	State Project: U-5888 Haywood County, NC	Gerald Egulus Property 751 N Main Street Waynesville, NC	Parcel #007 Facility I.D.: N/A	Seramur & Associates, PC Boone, NC
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● - Locations of Soil Borings

<p><b>Figure 9</b> Approximate Extent of Soil Contamination</p>	<p>State Project: U-5888 Haywood County, NC</p>	<p>Gerald Egulus Property 751 N Main Street Waynesville, NC</p>	<p>Parcel #007 Facility I.D.: N/A</p>	<p>Seramur &amp; Associates, PC Boone, NC</p>
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● - Locations of Soil Samples    BDL - Below Detectable Limit    BDL - Petroleum Constituent Concentrations  
 1.2 Detected as GRO (upper) and DRO (lower)

<b>Figure 10</b> Cross-Sections A-A' and B-B'	State Project: U-5888 Haywood County, NC	Gerald Egulus Property 751 N Main Street Waynesville, NC	Parcel #007 Facility I.D.: N/A	Seramur & Associates, PC Boone, NC
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## **Appendix B**

### **Laboratory Reports and Chain of Custody Records**



### Hydrocarbon Analysis Results

**Client:** SERAMUR & ASSOCIATES PC  
**Address:** 165 KNOLL DRIVE  
 BOONE NC 28607

**Samples taken** Tuesday, October 23, 2018  
**Samples extracted** Tuesday, October 23, 2018  
**Samples analysed** Thursday, October 25, 2018

**Contact:** KEITH SERAMUR  
 COLLECTED BY JA  
**Project:** NCDOT U-5888 P007

**Operator** NICK HENDRIX

U04049

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
										C5 - C10	C10 - C18	C18	
Soil	S-35	22.4	<0.56	<0.56	5.7	5.7	2.3	0.12	0.003	0	90.8	9.2	Deg Fuel 75.2%,(FCM)
Soil	S-36	22.2	<0.56	<0.56	2.6	2.6	1.4	0.08	0.004	0	65.1	34.9	V.Deg.PHC 50.9%,(FCM)
Soil	S-37	21.0	<0.52	<0.52	0.49	0.49	0.49	0.008	<0.006	0	81	19	V.Deg.PHC 90.1%,(FCM)
Soil	S-38	24.3	<0.61	<0.61	<0.24	<0.61	<0.01	<0.01	<0.007	0	0	0	PHC ND,(FCM)
Soil	S-39	23.2	<0.58	<0.58	2.3	2.3	1.2	0.05	0.001	0	86.6	13.4	V.Deg.PHC 92.5%,(FCM)
Soil	S-40	10.8	<0.27	<0.27	0.03	0.03	0.03	0.003	<0.003	0	63.8	36.2	Residual HC
Soil	S-41	21.8	<0.55	<0.55	5	5	2.6	0.11	0.001	0	90.1	9.9	Deg.PHC 71.8%,(FCM)
Soil	S-42	23.2	<0.58	<0.58	<0.23	0.02	0.02	<0.0	<0.007	0	34	66	Residual HC,(P)
Soil	S-43	21.7	<0.54	<0.54	1.4	1.4	0.55	0.03	0.001	0	79.3	20.7	V.Deg.PHC 76.4%,(FCM)
Soil	S-44	21.5	<0.54	<0.54	<0.21	<0.54	<0.01	<0.01	<0.006	0	0	0	PHC ND,(FCM)

Initial Calibrator QC check **OK**

Final FCM QC Check **OK**

**90.9%**

Concentration values in mg/kg for soil samples and mg/L for water samples. Soil values uncorrected for moisture or stone content. Fingerprints provide a tentative hydrocarbon identification.

Abbreviations :- FCM = Results calculated using Fundamental Calibration Mode : % = confidence of hydrocarbon identification : (PFM) = Poor Fingerprint Match : (T) = Turbid : (P) = Particulate detected

B = Blank Drift : (SBS)/(LBS) = Site Specific or Library Background Subtraction applied to result : (BO) = Background Organics detected : (OCR) = Outside cal range : (M) = Modified Result.

% Ratios estimated aromatic carbon number proportions : HC = Hydrocarbon : PHC = Petroleum HC : FP = Fingerprint only.

**Data generated by HC-1 Analyser**



### Hydrocarbon Analysis Results

**Client:** SERAMUR & ASSOCIATES PC  
**Address:** 165 KNOLL DRIVE  
 BOONE NC 28607

**Samples taken** Tuesday, October 23, 2018  
**Samples extracted** Tuesday, October 23, 2018  
**Samples analysed** Thursday, October 25, 2018

**Contact:** KEITH SERAMUR  
 COLLECTED BY JA  
**Project:** NCDOT U-5888 P007

**Operator** NICK HENDRIX

U04049

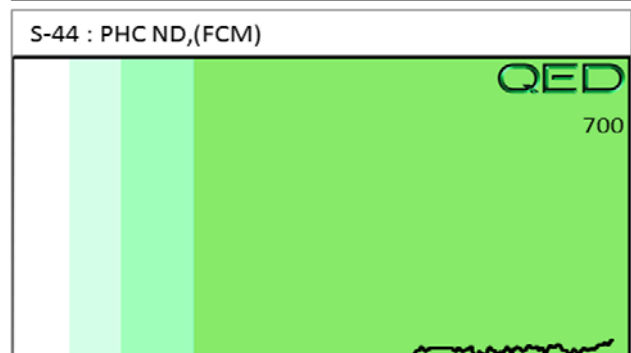
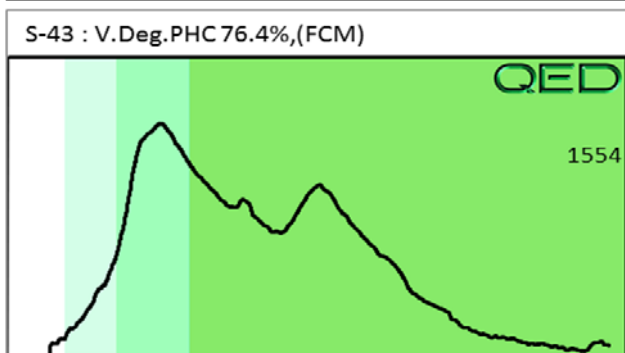
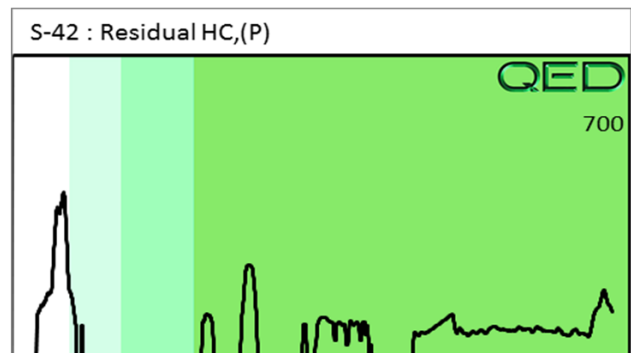
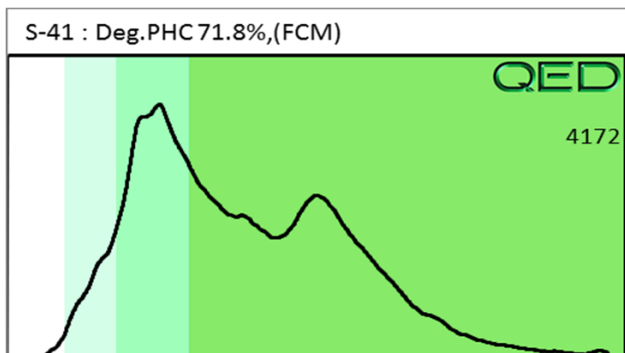
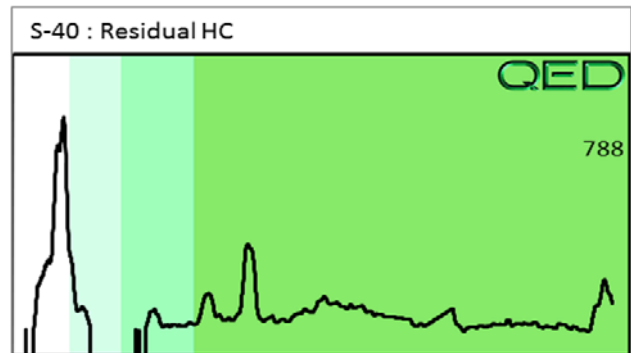
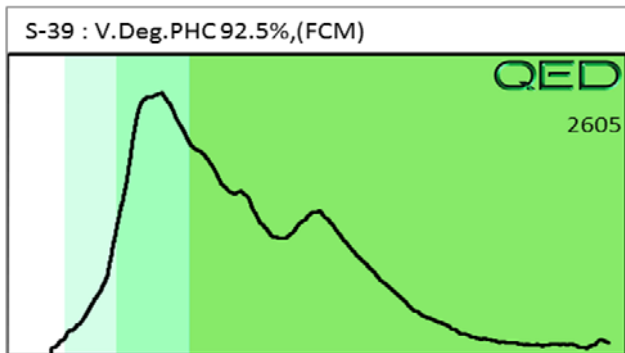
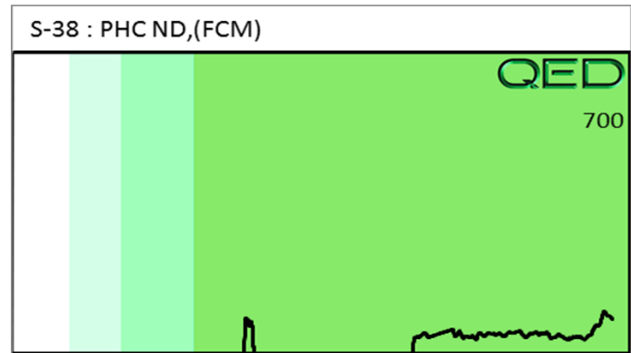
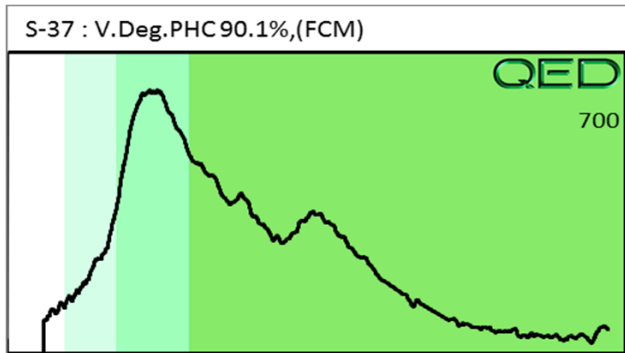
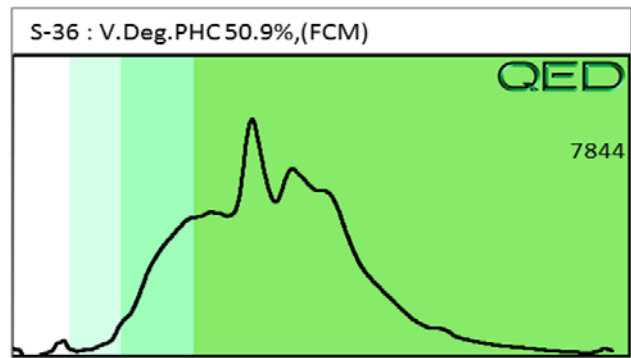
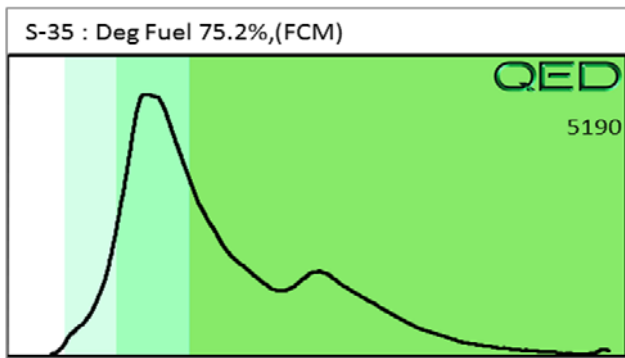
Matrix	Sample ID	Dilution used	BTEX (C6 - C9)	GRO (C5 - C10)	DRO (C10 - C35)	TPH (C5 - C35)	Total Aromatics (C10-C35)	16 EPA PAHs	BaP	% Ratios			HC Fingerprint Match
										C5 - C10	C10 - C18	C18	
Soil	S-45	21.0	<0.52	<0.52	0.31	0.31	0.37	0.006	<0.006	0	81.6	18.4	V.Deg.PHC 92.6%,(FCM)
Soil	S-46	21.3	<0.53	<0.53	<0.21	<0.53	<0.01	<0.01	<0.006	0	0	0	PHC ND,(FCM)
Soil	S-47	11.8	<0.29	<0.29	4.5	4.5	2.2	0.1	0.002	0	87.6	12.4	Deg.PHC 76.3%,(FCM)
Soil	S-48	23.4	<0.59	<0.59	<0.23	<0.59	<0.01	<0.01	<0.007	0	0	0	PHC ND,(FCM)

Initial Calibrator QC check **OK**

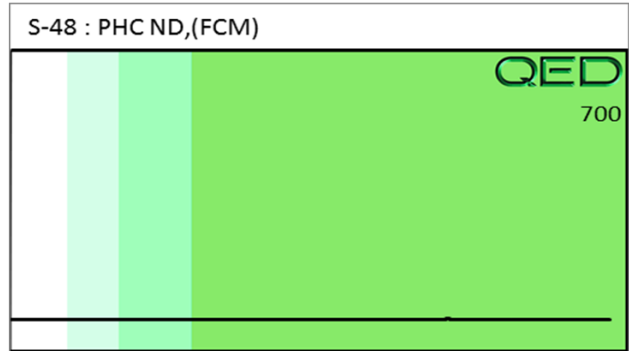
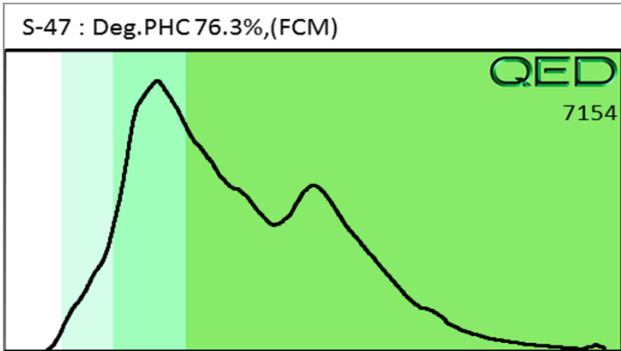
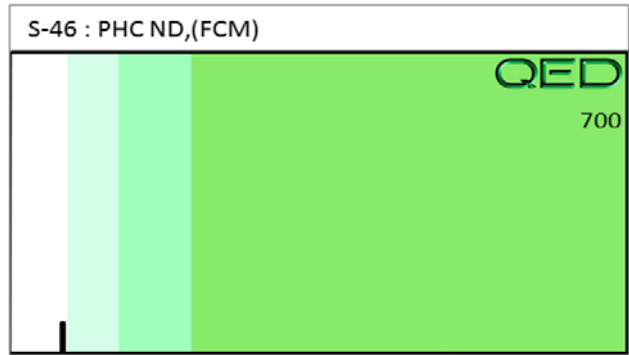
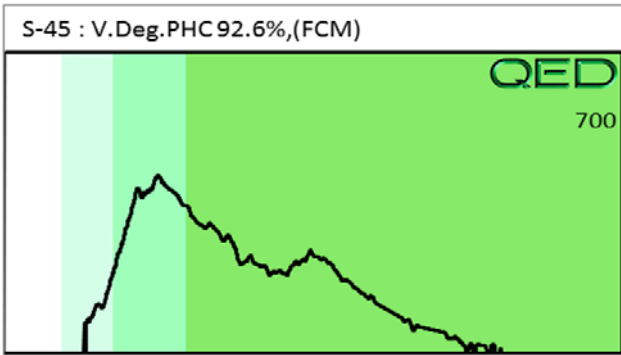
Final FCM QC Check **OK**

108.5%

Concentration values in mg/kg for soil samples and mg/L for water samples. Soil values uncorrected for moisture or stone content. Fingerprints provide a tentative hydrocarbon identification.  
 Abbreviations :- FCM = Results calculated using Fundamental Calibration Mode : % = confidence of hydrocarbon identification : (PFM) = Poor Fingerprint Match : (T) = Turbid : (P) = Particulate detected  
 B = Blank Drift : (SBS)/(LBS) = Site Specific or Library Background Subtraction applied to result : (BO) = Background Organics detected : (OCR) = Outside cal range : (M) = Modified Result.  
 % Ratios estimated aromatic carbon number proportions : HC = Hydrocarbon : PHC = Petroleum HC : FP = Fingerprint only. **Data generated by HC-1 Analyser**







Client Name:	Seramur & Associates PC
Address:	165 Knoll Drive Boone, NC 28607
Contact:	Keith Seramur
Project Ref.:	NC DOT U-5888 P007
Email:	seramur@icbnd.com
Phone #:	(828) 264-0289
Collected by:	Joey Anderson



**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		Initials	Sample ID	Total Wt.	Tare Wt.	Sample Wt.
	24 Hour	48 Hour					
10/23/18 14:46		X	JBA	S-35	55.1	43.5	11.6
10/23/18 14:47		X	JBA	S-36	55.5	43.8	11.7
10/23/18 14:52		X	JBA	S-37	55.9	43.5	12.4
10/23/18 14:55		X	JBA	S-38	54.8	44.1	10.7
10/23/18 14:58		X	JBA	S-39	55.0	43.8	11.2
10/23/18 15:00		X	JBA	S-40	56.5	43.5	13.0
10/23/18 15:04		X	JBA	S-41	55.7	43.8	11.9
10/23/18 15:08		X	JBA	S-42	55.1	43.9	11.2
10/23/18 15:14		X	JBA	S-43	55.8	43.8	12.0
10/23/18 15:17		X	JBA	S-44	56.0	43.9	12.1
10/23/18 15:34		X	JBA	S-45	56.4	44.0	12.4
10/23/18 15:36		X	JBA	S-46	55.4	43.2	12.2
10/23/18 15:45		X	JBA	S-47	55.8	43.9	11.9
10/23/18 15:50		X	JBA	S-48	54.9	43.7	11.1

Comments:

**RED Lab USE ONLY**

10/24/18 12:30  
 10/25 12:00

Relinquished by	Date/Time	Accepted by	Date/Time
	10/24/18 12:30	FedEx	10/24/18 12:30
Relinquished by	Date/Time	Accepted by	Date/Time
		UH	10/25 12:00



Keith C. Seramur PGPC  
Keith Seramur  
165 Knoll Dr.  
Boone, NC 28607

Project: NCDOT U-5888

Lab Submittal Date: 10/27/2018  
Prism Work Order: 8100467

This data package contains the analytical results for the project identified above and includes a Case Narrative, Sample Results and Chain of Custody. Unless otherwise noted, all samples were received in acceptable condition and processed according to the referenced methods.

Data qualifiers are flagged individually on each sample. A key reference for the data qualifiers appears at the end of this case narrative.

Please call if you have any questions relating to this analytical report.

Respectfully,

**PRISM LABORATORIES, INC.**

Angela D. Overcash  
VP Laboratory Services

Reviewed By Terri W. Cole For Angela D. Overcash  
Project Manager

**Data Qualifiers Key Reference:**

- BH MB greater than one half of the RL, but the sample concentrations are greater than 10x the MB.
- D RPD value outside of the control limits.
- J Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag).
- M Matrix spike outside of the control limits.
- MI Matrix spike outside of the control limits. Matrix interference suspected.
- PS Post Spike recovery is outside of the control limits.
- BRL Below Reporting Limit
- MDL Method Detection Limit
- RPD Relative Percent Difference
- \* Results reported to the reporting limit. All other results are reported to the MDL with values between MDL and reporting limit indicated with a J.

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Client Sample ID	Lab Sample ID	Matrix	Date/Time Sampled	Date/Time Received
S-49	8100467-01	Solid	10/23/18 15:50	10/27/18 13:25

Samples were received in good condition at 2.0 degrees C unless otherwise noted.

Prism ID	Client ID	Parameter	Method	Result	Units
8100467-01	S-49	Lead	*6010D	1100	mg/kg dry
8100467-01	S-49	Acetone	8260B	0.11	mg/kg dry

Keith C. Seramur PGPC  
 Attn: Keith Seramur  
 165 Knoll Dr.  
 Boone, NC 28607

Project: NCDOT U-5888

Sample Matrix: Solid

Client Sample ID: S-49  
 Prism Sample ID: 8100467-01  
 Prism Work Order: 8100467  
 Time Collected: 10/23/18 15:50  
 Time Submitted: 10/27/18 13:25

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>General Chemistry Parameters</b>									
% Solids	68.0	% by Weight	0.100	0.100	1	*SM2540 G	11/2/18 13:05	TJY	P8K0052
<b>Total Metals</b>									
Lead	1100	mg/kg dry	7.4	1.4	20	*6010D	11/2/18 12:13	JAB	P8J0607
<b>Volatile Organic Compounds by GC/MS</b>									
1,1,1,2-Tetrachloroethane	BRL	mg/kg dry	0.0093	0.00077	1	8260B	10/29/18 22:31	JLB	P8J0573
1,1,1-Trichloroethane	BRL	mg/kg dry	0.0093	0.00045	1	8260B	10/29/18 22:31	JLB	P8J0573
1,1,2,2-Tetrachloroethane	BRL	mg/kg dry	0.0093	0.00063	1	8260B	10/29/18 22:31	JLB	P8J0573
1,1,2-Trichloroethane	BRL	mg/kg dry	0.0093	0.00082	1	8260B	10/29/18 22:31	JLB	P8J0573
1,1-Dichloroethane	BRL	mg/kg dry	0.0093	0.00026	1	8260B	10/29/18 22:31	JLB	P8J0573
1,1-Dichloroethylene	BRL	mg/kg dry	0.0093	0.00041	1	8260B	10/29/18 22:31	JLB	P8J0573
1,1-Dichloropropylene	BRL	mg/kg dry	0.0093	0.00051	1	8260B	10/29/18 22:31	JLB	P8J0573
1,2,3-Trichlorobenzene	BRL	mg/kg dry	0.0093	0.00053	1	8260B	10/29/18 22:31	JLB	P8J0573
1,2,3-Trichloropropane	BRL	mg/kg dry	0.0093	0.0012	1	8260B	10/29/18 22:31	JLB	P8J0573
1,2,4-Trichlorobenzene	BRL	mg/kg dry	0.0093	0.00069	1	8260B	10/29/18 22:31	JLB	P8J0573
1,2,4-Trimethylbenzene	BRL	mg/kg dry	0.0093	0.00071	1	8260B	10/29/18 22:31	JLB	P8J0573
1,2-Dibromoethane	BRL	mg/kg dry	0.0093	0.00037	1	8260B	10/29/18 22:31	JLB	P8J0573
1,2-Dichlorobenzene	BRL	mg/kg dry	0.0093	0.00044	1	8260B	10/29/18 22:31	JLB	P8J0573
1,2-Dichloroethane	BRL	mg/kg dry	0.0093	0.00055	1	8260B	10/29/18 22:31	JLB	P8J0573
1,2-Dichloropropane	BRL	mg/kg dry	0.0093	0.00058	1	8260B	10/29/18 22:31	JLB	P8J0573
1,3,5-Trimethylbenzene	BRL	mg/kg dry	0.0093	0.00070	1	8260B	10/29/18 22:31	JLB	P8J0573
1,3-Dichlorobenzene	BRL	mg/kg dry	0.0093	0.00062	1	8260B	10/29/18 22:31	JLB	P8J0573
1,3-Dichloropropane	BRL	mg/kg dry	0.0093	0.00047	1	8260B	10/29/18 22:31	JLB	P8J0573
1,4-Dichlorobenzene	BRL	mg/kg dry	0.0093	0.00037	1	8260B	10/29/18 22:31	JLB	P8J0573
2,2-Dichloropropane	BRL	mg/kg dry	0.0093	0.00044	1	8260B	10/29/18 22:31	JLB	P8J0573
2-Chlorotoluene	BRL	mg/kg dry	0.0093	0.00048	1	8260B	10/29/18 22:31	JLB	P8J0573
4-Chlorotoluene	BRL	mg/kg dry	0.0093	0.00055	1	8260B	10/29/18 22:31	JLB	P8J0573
4-Isopropyltoluene	BRL	mg/kg dry	0.0093	0.00045	1	8260B	10/29/18 22:31	JLB	P8J0573
<b>Acetone</b>	<b>0.11</b>	<b>mg/kg dry</b>	<b>0.093</b>	<b>0.0023</b>	<b>1</b>	<b>8260B</b>	<b>10/29/18 22:31</b>	<b>JLB</b>	<b>P8J0573</b>
Benzene	BRL	mg/kg dry	0.0056	0.00054	1	8260B	10/29/18 22:31	JLB	P8J0573
Bromobenzene	BRL	mg/kg dry	0.0093	0.00078	1	8260B	10/29/18 22:31	JLB	P8J0573
Bromochloromethane	BRL	mg/kg dry	0.0093	0.00051	1	8260B	10/29/18 22:31	JLB	P8J0573
Bromodichloromethane	BRL	mg/kg dry	0.0093	0.00052	1	8260B	10/29/18 22:31	JLB	P8J0573
Bromoform	BRL	mg/kg dry	0.0093	0.0011	1	8260B	10/29/18 22:31	JLB	P8J0573
Bromomethane	BRL	mg/kg dry	0.019	0.0011	1	8260B	10/29/18 22:31	JLB	P8J0573
Carbon Tetrachloride	BRL	mg/kg dry	0.0093	0.00046	1	8260B	10/29/18 22:31	JLB	P8J0573
Chlorobenzene	BRL	mg/kg dry	0.0093	0.00049	1	8260B	10/29/18 22:31	JLB	P8J0573
Chloroethane	BRL	mg/kg dry	0.019	0.00078	1	8260B	10/29/18 22:31	JLB	P8J0573
Chloroform	BRL	mg/kg dry	0.0093	0.00067	1	8260B	10/29/18 22:31	JLB	P8J0573
Chloromethane	BRL	mg/kg dry	0.0093	0.00063	1	8260B	10/29/18 22:31	JLB	P8J0573
cis-1,2-Dichloroethylene	BRL	mg/kg dry	0.0093	0.00040	1	8260B	10/29/18 22:31	JLB	P8J0573
cis-1,3-Dichloropropylene	BRL	mg/kg dry	0.0093	0.00031	1	8260B	10/29/18 22:31	JLB	P8J0573

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Keith C. Seramur PGPC  
 Attn: Keith Seramur  
 165 Knoll Dr.  
 Boone, NC 28607

Project: NCDOT U-5888

Sample Matrix: Solid

Client Sample ID: S-49  
 Prism Sample ID: 8100467-01  
 Prism Work Order: 8100467  
 Time Collected: 10/23/18 15:50  
 Time Submitted: 10/27/18 13:25

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Dibromochloromethane	BRL	mg/kg dry	0.0093	0.00038	1	8260B	10/29/18 22:31	JLB	P8J0573
Dichlorodifluoromethane	BRL	mg/kg dry	0.0093	0.00042	1	8260B	10/29/18 22:31	JLB	P8J0573
Ethylbenzene	BRL	mg/kg dry	0.0093	0.00036	1	8260B	10/29/18 22:31	JLB	P8J0573
Isopropyl Ether	BRL	mg/kg dry	0.0093	0.00038	1	8260B	10/29/18 22:31	JLB	P8J0573
Isopropylbenzene (Cumene)	BRL	mg/kg dry	0.0093	0.00055	1	8260B	10/29/18 22:31	JLB	P8J0573
m,p-Xylenes	BRL	mg/kg dry	0.019	0.00086	1	8260B	10/29/18 22:31	JLB	P8J0573
Methyl Butyl Ketone (2-Hexanone)	BRL	mg/kg dry	0.093	0.00084	1	8260B	10/29/18 22:31	JLB	P8J0573
Methyl Ethyl Ketone (2-Butanone)	BRL	mg/kg dry	0.19	0.00084	1	8260B	10/29/18 22:31	JLB	P8J0573
Methyl Isobutyl Ketone	BRL	mg/kg dry	0.093	0.00079	1	8260B	10/29/18 22:31	JLB	P8J0573
Methylene Chloride	BRL	mg/kg dry	0.019	0.00052	1	8260B	10/29/18 22:31	JLB	P8J0573
Methyl-tert-Butyl Ether	BRL	mg/kg dry	0.019	0.00030	1	8260B	10/29/18 22:31	JLB	P8J0573
Naphthalene	BRL	mg/kg dry	0.019	0.00029	1	8260B	10/29/18 22:31	JLB	P8J0573
n-Butylbenzene	BRL	mg/kg dry	0.0093	0.00047	1	8260B	10/29/18 22:31	JLB	P8J0573
n-Propylbenzene	BRL	mg/kg dry	0.0093	0.00055	1	8260B	10/29/18 22:31	JLB	P8J0573
o-Xylene	BRL	mg/kg dry	0.0093	0.00038	1	8260B	10/29/18 22:31	JLB	P8J0573
sec-Butylbenzene	BRL	mg/kg dry	0.0093	0.00045	1	8260B	10/29/18 22:31	JLB	P8J0573
Styrene	BRL	mg/kg dry	0.0093	0.00056	1	8260B	10/29/18 22:31	JLB	P8J0573
tert-Butylbenzene	BRL	mg/kg dry	0.0093	0.00031	1	8260B	10/29/18 22:31	JLB	P8J0573
Tetrachloroethylene	BRL	mg/kg dry	0.0093	0.00044	1	8260B	10/29/18 22:31	JLB	P8J0573
Toluene	BRL	mg/kg dry	0.0093	0.00053	1	8260B	10/29/18 22:31	JLB	P8J0573
trans-1,2-Dichloroethylene	BRL	mg/kg dry	0.0093	0.00056	1	8260B	10/29/18 22:31	JLB	P8J0573
trans-1,3-Dichloropropylene	BRL	mg/kg dry	0.0093	0.00049	1	8260B	10/29/18 22:31	JLB	P8J0573
Trichloroethylene	BRL	mg/kg dry	0.0093	0.00060	1	8260B	10/29/18 22:31	JLB	P8J0573
Trichlorofluoromethane	BRL	mg/kg dry	0.0093	0.00060	1	8260B	10/29/18 22:31	JLB	P8J0573
Vinyl acetate	BRL	mg/kg dry	0.047	0.0013	1	8260B	10/29/18 22:31	JLB	P8J0573
Vinyl chloride	BRL	mg/kg dry	0.0093	0.00045	1	8260B	10/29/18 22:31	JLB	P8J0573
Xylenes, total	BRL	mg/kg dry	0.028	0.0017	1	8260B	10/29/18 22:31	JLB	P8J0573

Surrogate	Recovery	Control Limits
4-Bromofluorobenzene	106 %	70-130
Dibromofluoromethane	106 %	84-123
Toluene-d8	107 %	76-129

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Keith C. Seramur PGPC  
Attn: Keith Seramur  
165 Knoll Dr.  
Boone, NC 28607

Project: NCDOT U-5888

Prism Work Order: 8100467  
Time Submitted: 10/27/2018 1:25:00PM

**Volatile Organic Compounds by GC/MS - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch P8J0573 - 5035</b>										
<b>Blank (P8J0573-BLK1)</b>										
Prepared & Analyzed: 10/29/18										
1,1,1,2-Tetrachloroethane	BRL	0.0050	mg/kg wet							
1,1,1-Trichloroethane	BRL	0.0050	mg/kg wet							
1,1,1,2-Tetrachloroethane	BRL	0.0050	mg/kg wet							
1,1,2-Trichloroethane	BRL	0.0050	mg/kg wet							
1,1-Dichloroethane	BRL	0.0050	mg/kg wet							
1,1-Dichloroethylene	BRL	0.0050	mg/kg wet							
1,1-Dichloropropylene	BRL	0.0050	mg/kg wet							
1,2,3-Trichlorobenzene	BRL	0.0050	mg/kg wet							
1,2,3-Trichloropropane	BRL	0.0050	mg/kg wet							
1,2,4-Trichlorobenzene	BRL	0.0050	mg/kg wet							
1,2,4-Trimethylbenzene	BRL	0.0050	mg/kg wet							
1,2-Dibromoethane	BRL	0.0050	mg/kg wet							
1,2-Dichlorobenzene	BRL	0.0050	mg/kg wet							
1,2-Dichloroethane	BRL	0.0050	mg/kg wet							
1,2-Dichloropropane	BRL	0.0050	mg/kg wet							
1,3,5-Trimethylbenzene	BRL	0.0050	mg/kg wet							
1,3-Dichlorobenzene	BRL	0.0050	mg/kg wet							
1,3-Dichloropropane	BRL	0.0050	mg/kg wet							
1,4-Dichlorobenzene	BRL	0.0050	mg/kg wet							
2,2-Dichloropropane	BRL	0.0050	mg/kg wet							
2-Chlorotoluene	BRL	0.0050	mg/kg wet							
4-Chlorotoluene	BRL	0.0050	mg/kg wet							
4-Isopropyltoluene	BRL	0.0050	mg/kg wet							
Acetone	BRL	0.050	mg/kg wet							
Benzene	BRL	0.0030	mg/kg wet							
Bromobenzene	BRL	0.0050	mg/kg wet							
Bromochloromethane	BRL	0.0050	mg/kg wet							
Bromodichloromethane	BRL	0.0050	mg/kg wet							
Bromoform	BRL	0.0050	mg/kg wet							
Bromomethane	BRL	0.010	mg/kg wet							
Carbon Tetrachloride	BRL	0.0050	mg/kg wet							
Chlorobenzene	BRL	0.0050	mg/kg wet							
Chloroethane	BRL	0.010	mg/kg wet							
Chloroform	BRL	0.0050	mg/kg wet							
Chloromethane	BRL	0.0050	mg/kg wet							
cis-1,2-Dichloroethylene	BRL	0.0050	mg/kg wet							
cis-1,3-Dichloropropylene	BRL	0.0050	mg/kg wet							
Dibromochloromethane	BRL	0.0050	mg/kg wet							
Dichlorodifluoromethane	BRL	0.0050	mg/kg wet							
Ethylbenzene	BRL	0.0050	mg/kg wet							
Isopropyl Ether	BRL	0.0050	mg/kg wet							
Isopropylbenzene (Cumene)	BRL	0.0050	mg/kg wet							
m,p-Xylenes	BRL	0.010	mg/kg wet							
Methyl Butyl Ketone (2-Hexanone)	BRL	0.050	mg/kg wet							
Methyl Ethyl Ketone (2-Butanone)	BRL	0.10	mg/kg wet							
Methyl Isobutyl Ketone	BRL	0.050	mg/kg wet							

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 Boone, NC 28607

Project: NCDOT U-5888

Prism Work Order: 8100467  
 Time Submitted: 10/27/2018 1:25:00PM

**Volatile Organic Compounds by GC/MS - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch P8J0573 - 5035</b>										
<b>Blank (P8J0573-BLK1)</b>										
Prepared & Analyzed: 10/29/18										
Methylene Chloride	BRL	0.010	mg/kg wet							
Methyl-tert-Butyl Ether	BRL	0.010	mg/kg wet							
Naphthalene	BRL	0.010	mg/kg wet							
n-Butylbenzene	BRL	0.0050	mg/kg wet							
n-Propylbenzene	BRL	0.0050	mg/kg wet							
o-Xylene	BRL	0.0050	mg/kg wet							
sec-Butylbenzene	BRL	0.0050	mg/kg wet							
Styrene	BRL	0.0050	mg/kg wet							
tert-Butylbenzene	BRL	0.0050	mg/kg wet							
Tetrachloroethylene	BRL	0.0050	mg/kg wet							
Toluene	BRL	0.0050	mg/kg wet							
trans-1,2-Dichloroethylene	BRL	0.0050	mg/kg wet							
trans-1,3-Dichloropropylene	BRL	0.0050	mg/kg wet							
Trichloroethylene	BRL	0.0050	mg/kg wet							
Trichlorofluoromethane	BRL	0.0050	mg/kg wet							
Vinyl acetate	BRL	0.025	mg/kg wet							
Vinyl chloride	BRL	0.0050	mg/kg wet							
Xylenes, total	BRL	0.015	mg/kg wet							
Surrogate: 4-Bromofluorobenzene	52.1		ug/L	50.00		104	70-130			
Surrogate: Dibromofluoromethane	51.3		ug/L	50.00		103	84-123			
Surrogate: Toluene-d8	53.3		ug/L	50.00		107	76-129			
<b>LCS (P8J0573-BS1)</b>										
Prepared & Analyzed: 10/29/18										
1,1,1,2-Tetrachloroethane	0.0458	0.0050	mg/kg wet	0.05000		92	72-115			
1,1,1-Trichloroethane	0.0406	0.0050	mg/kg wet	0.05000		81	67-131			
1,1,2,2-Tetrachloroethane	0.0515	0.0050	mg/kg wet	0.05000		103	56-126			
1,1,2-Trichloroethane	0.0460	0.0050	mg/kg wet	0.05000		92	70-133			
1,1-Dichloroethane	0.0389	0.0050	mg/kg wet	0.05000		78	74-127			
1,1-Dichloroethylene	0.0406	0.0050	mg/kg wet	0.05000		81	67-149			
1,1-Dichloropropylene	0.0438	0.0050	mg/kg wet	0.05000		88	71-130			
1,2,3-Trichlorobenzene	0.0509	0.0050	mg/kg wet	0.05000		102	68-130			
1,2,3-Trichloropropane	0.0500	0.0050	mg/kg wet	0.05000		100	60-137			
1,2,4-Trichlorobenzene	0.0515	0.0050	mg/kg wet	0.05000		103	66-125			
1,2,4-Trimethylbenzene	0.0510	0.0050	mg/kg wet	0.05000		102	69-129			
1,2-Dibromoethane	0.0457	0.0050	mg/kg wet	0.05000		91	70-132			
1,2-Dichlorobenzene	0.0488	0.0050	mg/kg wet	0.05000		98	72-123			
1,2-Dichloroethane	0.0424	0.0050	mg/kg wet	0.05000		85	68-128			
1,2-Dichloropropane	0.0431	0.0050	mg/kg wet	0.05000		86	73-130			
1,3,5-Trimethylbenzene	0.0500	0.0050	mg/kg wet	0.05000		100	69-128			
1,3-Dichlorobenzene	0.0484	0.0050	mg/kg wet	0.05000		97	71-120			
1,3-Dichloropropane	0.0463	0.0050	mg/kg wet	0.05000		93	75-124			
1,4-Dichlorobenzene	0.0477	0.0050	mg/kg wet	0.05000		95	71-123			
2,2-Dichloropropane	0.0420	0.0050	mg/kg wet	0.05000		84	50-142			
2-Chlorotoluene	0.0486	0.0050	mg/kg wet	0.05000		97	67-124			
4-Chlorotoluene	0.0502	0.0050	mg/kg wet	0.05000		100	71-126			
4-Isopropyltoluene	0.0503	0.0050	mg/kg wet	0.05000		101	68-129			
Acetone	0.0813	0.050	mg/kg wet	0.1000		81	29-198			

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Project: NCDOT U-5888

Prism Work Order: 8100467  
Time Submitted: 10/27/2018 1:25:00PM

**Volatile Organic Compounds by GC/MS - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch P8J0573 - 5035</b>										
<b>LCS (P8J0573-BS1)</b>										
Prepared & Analyzed: 10/29/18										
Benzene	0.0431	0.0030	mg/kg wet	0.05000		86	74-127			
Bromobenzene	0.0482	0.0050	mg/kg wet	0.05000		96	73-125			
Bromochloromethane	0.0435	0.0050	mg/kg wet	0.05000		87	72-134			
Bromodichloromethane	0.0441	0.0050	mg/kg wet	0.05000		88	75-122			
Bromoform	0.0465	0.0050	mg/kg wet	0.05000		93	66-135			
Bromomethane	0.0368	0.010	mg/kg wet	0.05000		74	20-180			
Carbon Tetrachloride	0.0427	0.0050	mg/kg wet	0.05000		85	64-143			
Chlorobenzene	0.0447	0.0050	mg/kg wet	0.05000		89	74-118			
Chloroethane	0.0354	0.010	mg/kg wet	0.05000		71	33-149			
Chloroform	0.0421	0.0050	mg/kg wet	0.05000		84	73-127			
Chloromethane	0.0359	0.0050	mg/kg wet	0.05000		72	45-143			
cis-1,2-Dichloroethylene	0.0410	0.0050	mg/kg wet	0.05000		82	76-134			
cis-1,3-Dichloropropylene	0.0446	0.0050	mg/kg wet	0.05000		89	71-125			
Dibromochloromethane	0.0471	0.0050	mg/kg wet	0.05000		94	73-122			
Dichlorodifluoromethane	0.0315	0.0050	mg/kg wet	0.05000		63	26-146			
Ethylbenzene	0.0461	0.0050	mg/kg wet	0.05000		92	74-128			
Isopropyl Ether	0.0425	0.0050	mg/kg wet	0.05000		85	59-159			
Isopropylbenzene (Cumene)	0.0512	0.0050	mg/kg wet	0.05000		102	68-126			
m,p-Xylenes	0.0947	0.010	mg/kg wet	0.1000		95	75-124			
Methyl Butyl Ketone (2-Hexanone)	0.0497	0.050	mg/kg wet	0.05000		99	61-157			J
Methyl Ethyl Ketone (2-Butanone)	0.0424	0.10	mg/kg wet	0.05000		85	63-149			J
Methyl Isobutyl Ketone	0.0454	0.050	mg/kg wet	0.05000		91	57-162			J
Methylene Chloride	0.0412	0.010	mg/kg wet	0.05000		82	74-129			
Methyl-tert-Butyl Ether	0.0443	0.010	mg/kg wet	0.05000		89	70-130			
Naphthalene	0.0535	0.010	mg/kg wet	0.05000		107	57-157			
n-Butylbenzene	0.0520	0.0050	mg/kg wet	0.05000		104	65-135			
n-Propylbenzene	0.0514	0.0050	mg/kg wet	0.05000		103	67-130			
o-Xylene	0.0467	0.0050	mg/kg wet	0.05000		93	74-126			
sec-Butylbenzene	0.0515	0.0050	mg/kg wet	0.05000		103	66-131			
Styrene	0.0466	0.0050	mg/kg wet	0.05000		93	77-121			
tert-Butylbenzene	0.0507	0.0050	mg/kg wet	0.05000		101	67-132			
Tetrachloroethylene	0.0403	0.0050	mg/kg wet	0.05000		81	68-130			
Toluene	0.0423	0.0050	mg/kg wet	0.05000		85	71-129			
trans-1,2-Dichloroethylene	0.0418	0.0050	mg/kg wet	0.05000		84	73-132			
trans-1,3-Dichloropropylene	0.0441	0.0050	mg/kg wet	0.05000		88	68-123			
Trichloroethylene	0.0431	0.0050	mg/kg wet	0.05000		86	75-133			
Trichlorofluoromethane	0.0387	0.0050	mg/kg wet	0.05000		77	44-146			
Vinyl acetate	0.0477	0.025	mg/kg wet	0.05000		95	85-161			
Vinyl chloride	0.0405	0.0050	mg/kg wet	0.05000		81	48-147			
Xylenes, total	0.141	0.015	mg/kg wet	0.1500		94	74-126			
Surrogate: 4-Bromofluorobenzene	50.8		ug/L	50.00		102	70-130			
Surrogate: Dibromofluoromethane	50.6		ug/L	50.00		101	84-123			
Surrogate: Toluene-d8	52.4		ug/L	50.00		105	76-129			

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Project: NCDOT U-5888

Prism Work Order: 8100467  
Time Submitted: 10/27/2018 1:25:00PM

**Volatile Organic Compounds by GC/MS - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch P8J0573 - 5035</b>										
<b>LCS Dup (P8J0573-BSD1)</b>										
				Prepared & Analyzed: 10/29/18						
1,1,1,2-Tetrachloroethane	0.0481	0.0050	mg/kg wet	0.05000		96	72-115	5	20	
1,1,1-Trichloroethane	0.0410	0.0050	mg/kg wet	0.05000		82	67-131	1	20	
1,1,2,2-Tetrachloroethane	0.0546	0.0050	mg/kg wet	0.05000		109	56-126	6	20	
1,1,2-Trichloroethane	0.0493	0.0050	mg/kg wet	0.05000		99	70-133	7	20	
1,1-Dichloroethane	0.0392	0.0050	mg/kg wet	0.05000		78	74-127	0.6	20	
1,1-Dichloroethylene	0.0400	0.0050	mg/kg wet	0.05000		80	67-149	1	20	
1,1-Dichloropropylene	0.0440	0.0050	mg/kg wet	0.05000		88	71-130	0.5	20	
1,2,3-Trichlorobenzene	0.0534	0.0050	mg/kg wet	0.05000		107	68-130	5	20	
1,2,3-Trichloropropane	0.0536	0.0050	mg/kg wet	0.05000		107	60-137	7	20	
1,2,4-Trichlorobenzene	0.0534	0.0050	mg/kg wet	0.05000		107	66-125	4	20	
1,2,4-Trimethylbenzene	0.0514	0.0050	mg/kg wet	0.05000		103	69-129	0.8	20	
1,2-Dibromoethane	0.0497	0.0050	mg/kg wet	0.05000		99	70-132	8	20	
1,2-Dichlorobenzene	0.0502	0.0050	mg/kg wet	0.05000		100	72-123	3	20	
1,2-Dichloroethane	0.0439	0.0050	mg/kg wet	0.05000		88	68-128	4	20	
1,2-Dichloropropane	0.0446	0.0050	mg/kg wet	0.05000		89	73-130	3	20	
1,3,5-Trimethylbenzene	0.0505	0.0050	mg/kg wet	0.05000		101	69-128	0.9	20	
1,3-Dichlorobenzene	0.0495	0.0050	mg/kg wet	0.05000		99	71-120	2	20	
1,3-Dichloropropane	0.0494	0.0050	mg/kg wet	0.05000		99	75-124	6	20	
1,4-Dichlorobenzene	0.0489	0.0050	mg/kg wet	0.05000		98	71-123	2	20	
2,2-Dichloropropane	0.0422	0.0050	mg/kg wet	0.05000		84	50-142	0.5	20	
2-Chlorotoluene	0.0495	0.0050	mg/kg wet	0.05000		99	67-124	2	20	
4-Chlorotoluene	0.0512	0.0050	mg/kg wet	0.05000		102	71-126	2	20	
4-Isopropyltoluene	0.0504	0.0050	mg/kg wet	0.05000		101	68-129	0.1	20	
Acetone	0.0872	0.050	mg/kg wet	0.1000		87	29-198	7	20	
Benzene	0.0438	0.0030	mg/kg wet	0.05000		88	74-127	2	20	
Bromobenzene	0.0493	0.0050	mg/kg wet	0.05000		99	73-125	2	20	
Bromochloromethane	0.0442	0.0050	mg/kg wet	0.05000		88	72-134	2	20	
Bromodichloromethane	0.0454	0.0050	mg/kg wet	0.05000		91	75-122	3	20	
Bromoform	0.0502	0.0050	mg/kg wet	0.05000		100	66-135	8	20	
Bromomethane	0.0356	0.010	mg/kg wet	0.05000		71	20-180	3	20	
Carbon Tetrachloride	0.0434	0.0050	mg/kg wet	0.05000		87	64-143	1	20	
Chlorobenzene	0.0459	0.0050	mg/kg wet	0.05000		92	74-118	3	20	
Chloroethane	0.0379	0.010	mg/kg wet	0.05000		76	33-149	7	20	
Chloroform	0.0429	0.0050	mg/kg wet	0.05000		86	73-127	2	20	
Chloromethane	0.0353	0.0050	mg/kg wet	0.05000		71	45-143	2	20	
cis-1,2-Dichloroethylene	0.0422	0.0050	mg/kg wet	0.05000		84	76-134	3	20	
cis-1,3-Dichloropropylene	0.0462	0.0050	mg/kg wet	0.05000		92	71-125	3	20	
Dibromochloromethane	0.0495	0.0050	mg/kg wet	0.05000		99	73-122	5	20	
Dichlorodifluoromethane	0.0309	0.0050	mg/kg wet	0.05000		62	26-146	2	20	
Ethylbenzene	0.0469	0.0050	mg/kg wet	0.05000		94	74-128	2	20	
Isopropyl Ether	0.0439	0.0050	mg/kg wet	0.05000		88	59-159	3	20	
Isopropylbenzene (Cumene)	0.0512	0.0050	mg/kg wet	0.05000		102	68-126	0.1	20	
m,p-Xylenes	0.0965	0.010	mg/kg wet	0.1000		96	75-124	2	20	
Methyl Butyl Ketone (2-Hexanone)	0.0556	0.050	mg/kg wet	0.05000		111	61-157	11	20	
Methyl Ethyl Ketone (2-Butanone)	0.0459	0.10	mg/kg wet	0.05000		92	63-149	8	20	J
Methyl Isobutyl Ketone	0.0505	0.050	mg/kg wet	0.05000		101	57-162	11	20	

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Project: NCDOT U-5888

Prism Work Order: 8100467  
Time Submitted: 10/27/2018 1:25:00PM

**Volatile Organic Compounds by GC/MS - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch P8J0573 - 5035</b>										
<b>LCS Dup (P8J0573-BSD1)</b>										
Prepared & Analyzed: 10/29/18										
Methylene Chloride	0.0428	0.010	mg/kg wet	0.05000		86	74-129	4	20	
Methyl-tert-Butyl Ether	0.0469	0.010	mg/kg wet	0.05000		94	70-130	6	20	
Naphthalene	0.0572	0.010	mg/kg wet	0.05000		114	57-157	7	20	
n-Butylbenzene	0.0519	0.0050	mg/kg wet	0.05000		104	65-135	0.3	20	
n-Propylbenzene	0.0517	0.0050	mg/kg wet	0.05000		103	67-130	0.5	20	
o-Xylene	0.0481	0.0050	mg/kg wet	0.05000		96	74-126	3	20	
sec-Butylbenzene	0.0515	0.0050	mg/kg wet	0.05000		103	66-131	0.06	20	
Styrene	0.0482	0.0050	mg/kg wet	0.05000		96	77-121	3	20	
tert-Butylbenzene	0.0508	0.0050	mg/kg wet	0.05000		102	67-132	0.3	20	
Tetrachloroethylene	0.0408	0.0050	mg/kg wet	0.05000		82	68-130	1	20	
Toluene	0.0428	0.0050	mg/kg wet	0.05000		86	71-129	1	20	
trans-1,2-Dichloroethylene	0.0423	0.0050	mg/kg wet	0.05000		85	73-132	1	20	
trans-1,3-Dichloropropylene	0.0465	0.0050	mg/kg wet	0.05000		93	68-123	5	20	
Trichloroethylene	0.0431	0.0050	mg/kg wet	0.05000		86	75-133	0.02	20	
Trichlorofluoromethane	0.0385	0.0050	mg/kg wet	0.05000		77	44-146	0.5	20	
Vinyl acetate	0.0514	0.025	mg/kg wet	0.05000		103	85-161	7	20	
Vinyl chloride	0.0403	0.0050	mg/kg wet	0.05000		81	48-147	0.5	20	
Xylenes, total	0.145	0.015	mg/kg wet	0.1500		96	74-126	2	20	
Surrogate: 4-Bromofluorobenzene	51.0		ug/L	50.00		102	70-130			
Surrogate: Dibromofluoromethane	50.8		ug/L	50.00		102	84-123			
Surrogate: Toluene-d8	53.2		ug/L	50.00		106	76-129			
<b>Matrix Spike (P8J0573-MS1)</b>										
Source: 8100467-01 Prepared: 10/29/18 Analyzed: 10/30/18										
1,1,1,2-Tetrachloroethane	0.0362	0.0073	mg/kg dry	0.07309	BRL	50	60-120			M
1,1,1-Trichloroethane	0.0381	0.0073	mg/kg dry	0.07309	BRL	52	52-139			
1,1,2,2-Tetrachloroethane	0.0346	0.0073	mg/kg dry	0.07309	BRL	47	39-135			
1,1,2-Trichloroethane	0.0364	0.0073	mg/kg dry	0.07309	BRL	50	44-140			
1,1-Dichloroethane	0.0359	0.0073	mg/kg dry	0.07309	BRL	49	59-137			M
1,1-Dichloroethylene	0.0389	0.0073	mg/kg dry	0.07309	BRL	53	54-162			M
1,1-Dichloropropylene	0.0371	0.0073	mg/kg dry	0.07309	BRL	51	55-137			M
1,2,3-Trichlorobenzene	0.0130	0.0073	mg/kg dry	0.07309	BRL	18	34-120			M
1,2,3-Trichloropropane	0.0354	0.0073	mg/kg dry	0.07309	BRL	48	45-139			
1,2,4-Trichlorobenzene	0.0136	0.0073	mg/kg dry	0.07309	BRL	19	35-116			M
1,2,4-Trimethylbenzene	0.0289	0.0073	mg/kg dry	0.07309	BRL	40	38-142			
1,2-Dibromoethane	0.0338	0.0073	mg/kg dry	0.07309	BRL	46	49-132			M
1,2-Dichlorobenzene	0.0215	0.0073	mg/kg dry	0.07309	BRL	29	42-130			M
1,2-Dichloroethane	0.0367	0.0073	mg/kg dry	0.07309	BRL	50	51-131			M
1,2-Dichloropropane	0.0371	0.0073	mg/kg dry	0.07309	BRL	51	55-138			M
1,3,5-Trimethylbenzene	0.0302	0.0073	mg/kg dry	0.07309	BRL	41	44-140			M
1,3-Dichlorobenzene	0.0217	0.0073	mg/kg dry	0.07309	BRL	30	41-129			M
1,3-Dichloropropane	0.0363	0.0073	mg/kg dry	0.07309	BRL	50	53-129			M
1,4-Dichlorobenzene	0.0204	0.0073	mg/kg dry	0.07309	BRL	28	44-134			M
2,2-Dichloropropane	0.0381	0.0073	mg/kg dry	0.07309	BRL	52	30-147			
2-Chlorotoluene	0.0282	0.0073	mg/kg dry	0.07309	BRL	39	46-132			M
4-Chlorotoluene	0.0262	0.0073	mg/kg dry	0.07309	BRL	36	44-135			M
4-Isopropyltoluene	0.0275	0.0073	mg/kg dry	0.07309	BRL	38	32-144			
Acetone	0.0679	0.073	mg/kg dry	0.1462	0.114	NR	34-143			M, J

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Keith C. Seramur PGPC  
Attn: Keith Seramur  
165 Knoll Dr.  
Boone, NC 28607

Project: NCDOT U-5888

Prism Work Order: 8100467  
Time Submitted: 10/27/2018 1:25:00PM

**Volatile Organic Compounds by GC/MS - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch P8J0573 - 5035</b>										
<b>Matrix Spike (P8J0573-MS1)</b>	<b>Source: 8100467-01</b>			<b>Prepared: 10/29/18</b>		<b>Analyzed: 10/30/18</b>				
Benzene	0.0369	0.0044	mg/kg dry	0.07309	BRL	51	60-135			M
Bromobenzene	0.0263	0.0073	mg/kg dry	0.07309	BRL	36	45-135			M
Bromochloromethane	0.0373	0.0073	mg/kg dry	0.07309	BRL	51	55-136			M
Bromodichloromethane	0.0368	0.0073	mg/kg dry	0.07309	BRL	50	55-127			M
Bromoform	0.0319	0.0073	mg/kg dry	0.07309	BRL	44	40-136			
Bromomethane	0.00699	0.015	mg/kg dry	0.07309	BRL	10	30-137			M, J
Carbon Tetrachloride	0.0388	0.0073	mg/kg dry	0.07309	BRL	53	48-153			
Chlorobenzene	0.0288	0.0073	mg/kg dry	0.07309	BRL	39	57-125			M
Chloroethane	0.0414	0.015	mg/kg dry	0.07309	BRL	57	16-177			
Chloroform	0.0375	0.0073	mg/kg dry	0.07309	BRL	51	56-137			M
Chloromethane	0.0217	0.0073	mg/kg dry	0.07309	BRL	30	40-145			M
cis-1,2-Dichloroethylene	0.0350	0.0073	mg/kg dry	0.07309	BRL	48	58-140			M
cis-1,3-Dichloropropylene	0.0333	0.0073	mg/kg dry	0.07309	BRL	46	42-135			
Dibromochloromethane	0.0365	0.0073	mg/kg dry	0.07309	BRL	50	49-127			
Dichlorodifluoromethane	0.0312	0.0073	mg/kg dry	0.07309	BRL	43	25-151			
Ethylbenzene	0.0335	0.0073	mg/kg dry	0.07309	BRL	46	44-144			
Isopropyl Ether	0.0370	0.0073	mg/kg dry	0.07309	BRL	51	51-155			
Isopropylbenzene (Cumene)	0.0341	0.0073	mg/kg dry	0.07309	BRL	47	41-140			
m,p-Xylenes	0.0660	0.015	mg/kg dry	0.1462	BRL	45	36-148			
Methyl Butyl Ketone (2-Hexanone)	0.0318	0.073	mg/kg dry	0.07309	BRL	44	30-147			J
Methyl Ethyl Ketone (2-Butanone)	0.0339	0.15	mg/kg dry	0.07309	BRL	46	24-160			J
Methyl Isobutyl Ketone	0.0348	0.073	mg/kg dry	0.07309	BRL	48	25-163			J
Methylene Chloride	0.0379	0.015	mg/kg dry	0.07309	BRL	52	53-144			M
Methyl-tert-Butyl Ether	0.0369	0.015	mg/kg dry	0.07309	BRL	50	49-135			
Naphthalene	0.0119	0.015	mg/kg dry	0.07309	BRL	16	32-127			M, J
n-Butylbenzene	0.0240	0.0073	mg/kg dry	0.07309	BRL	33	23-148			
n-Propylbenzene	0.0312	0.0073	mg/kg dry	0.07309	BRL	43	35-144			
o-Xylene	0.0322	0.0073	mg/kg dry	0.07309	BRL	44	43-143			
sec-Butylbenzene	0.0291	0.0073	mg/kg dry	0.07309	BRL	40	34-144			
Styrene	0.0250	0.0073	mg/kg dry	0.07309	BRL	34	42-132			M
tert-Butylbenzene	0.0313	0.0073	mg/kg dry	0.07309	BRL	43	36-150			
Tetrachloroethylene	0.0305	0.0073	mg/kg dry	0.07309	BRL	42	47-142			M
Toluene	0.0330	0.0073	mg/kg dry	0.07309	BRL	45	57-135			M
trans-1,2-Dichloroethylene	0.0362	0.0073	mg/kg dry	0.07309	BRL	49	58-141			M
trans-1,3-Dichloropropylene	0.0305	0.0073	mg/kg dry	0.07309	BRL	42	41-124			
Trichloroethylene	0.0349	0.0073	mg/kg dry	0.07309	BRL	48	38-164			
Trichlorofluoromethane	0.0398	0.0073	mg/kg dry	0.07309	BRL	54	30-157			
Vinyl acetate	BRL	0.037	mg/kg dry	0.07309	BRL		61-154			M
Vinyl chloride	0.0352	0.0073	mg/kg dry	0.07309	BRL	48	40-156			
Xylenes, total	0.0982	0.022	mg/kg dry	0.2193	BRL	45	36-148			
Surrogate: 4-Bromofluorobenzene	51.2		ug/L	50.00		102	70-130			
Surrogate: Dibromofluoromethane	52.4		ug/L	50.00		105	84-123			
Surrogate: Toluene-d8	53.3		ug/L	50.00		107	76-129			

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Keith C. Seramur PGPC  
Attn: Keith Seramur  
165 Knoll Dr.  
Boone, NC 28607

Project: NCDOT U-5888

Prism Work Order: 8100467  
Time Submitted: 10/27/2018 1:25:00PM

**Volatile Organic Compounds by GC/MS - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch P8J0573 - 5035</b>										
<b>Matrix Spike Dup (P8J0573-MSD1)</b>										
		<b>Source: 8100467-01</b>			<b>Prepared: 10/29/18</b>		<b>Analyzed: 10/30/18</b>			
1,1,1,2-Tetrachloroethane	0.0481	0.0074	mg/kg dry	0.07397	BRL	65	60-120	28	15	D
1,1,1-Trichloroethane	0.0601	0.0074	mg/kg dry	0.07397	BRL	81	52-139	45	21	D
1,1,2,2-Tetrachloroethane	0.0433	0.0074	mg/kg dry	0.07397	BRL	59	39-135	22	22	
1,1,2-Trichloroethane	0.0433	0.0074	mg/kg dry	0.07397	BRL	59	44-140	17	21	
1,1-Dichloroethane	0.0500	0.0074	mg/kg dry	0.07397	BRL	68	59-137	33	21	D
1,1-Dichloroethylene	0.0620	0.0074	mg/kg dry	0.07397	BRL	84	54-162	46	22	D
1,1-Dichloropropylene	0.0621	0.0074	mg/kg dry	0.07397	BRL	84	55-137	50	19	D
1,2,3-Trichlorobenzene	0.0192	0.0074	mg/kg dry	0.07397	BRL	26	34-120	39	41	M
1,2,3-Trichloropropane	0.0436	0.0074	mg/kg dry	0.07397	BRL	59	45-139	21	25	
1,2,4-Trichlorobenzene	0.0213	0.0074	mg/kg dry	0.07397	BRL	29	35-116	44	62	M
1,2,4-Trimethylbenzene	0.0474	0.0074	mg/kg dry	0.07397	BRL	64	38-142	49	24	D
1,2-Dibromoethane	0.0399	0.0074	mg/kg dry	0.07397	BRL	54	49-132	17	15	D
1,2-Dichlorobenzene	0.0297	0.0074	mg/kg dry	0.07397	BRL	40	42-130	32	21	D, M
1,2-Dichloroethane	0.0427	0.0074	mg/kg dry	0.07397	BRL	58	51-131	15	13	D
1,2-Dichloropropane	0.0478	0.0074	mg/kg dry	0.07397	BRL	65	55-138	25	16	D
1,3,5-Trimethylbenzene	0.0520	0.0074	mg/kg dry	0.07397	BRL	70	44-140	53	29	D
1,3-Dichlorobenzene	0.0319	0.0074	mg/kg dry	0.07397	BRL	43	41-129	38	24	D
1,3-Dichloropropane	0.0433	0.0074	mg/kg dry	0.07397	BRL	58	53-129	17	15	D
1,4-Dichlorobenzene	0.0292	0.0074	mg/kg dry	0.07397	BRL	40	44-134	36	21	D, M
2,2-Dichloropropane	0.0614	0.0074	mg/kg dry	0.07397	BRL	83	30-147	47	20	D
2-Chlorotoluene	0.0448	0.0074	mg/kg dry	0.07397	BRL	61	46-132	45	29	D
4-Chlorotoluene	0.0401	0.0074	mg/kg dry	0.07397	BRL	54	44-135	42	23	D
4-Isopropyltoluene	0.0529	0.0074	mg/kg dry	0.07397	BRL	71	32-144	63	22	D
Acetone	0.0864	0.074	mg/kg dry	0.1479	0.114	NR	34-143	24	49	M
Benzene	0.0516	0.0044	mg/kg dry	0.07397	BRL	70	60-135	33	20	D
Bromobenzene	0.0372	0.0074	mg/kg dry	0.07397	BRL	50	45-135	34	25	D
Bromochloromethane	0.0440	0.0074	mg/kg dry	0.07397	BRL	60	55-136	16	18	
Bromodichloromethane	0.0453	0.0074	mg/kg dry	0.07397	BRL	61	55-127	21	17	D
Bromoform	0.0375	0.0074	mg/kg dry	0.07397	BRL	51	40-136	16	35	
Bromomethane	0.0217	0.015	mg/kg dry	0.07397	BRL	29	30-137	103	30	D, M
Carbon Tetrachloride	0.0645	0.0074	mg/kg dry	0.07397	BRL	87	48-153	50	23	D
Chlorobenzene	0.0393	0.0074	mg/kg dry	0.07397	BRL	53	57-125	31	14	D, M
Chloroethane	0.0676	0.015	mg/kg dry	0.07397	BRL	91	16-177	48	47	D
Chloroform	0.0508	0.0074	mg/kg dry	0.07397	BRL	69	56-137	30	18	D
Chloromethane	0.0329	0.0074	mg/kg dry	0.07397	BRL	45	40-145	41	26	D
cis-1,2-Dichloroethylene	0.0473	0.0074	mg/kg dry	0.07397	BRL	64	58-140	30	28	D
cis-1,3-Dichloropropylene	0.0418	0.0074	mg/kg dry	0.07397	BRL	56	42-135	23	32	
Dibromochloromethane	0.0433	0.0074	mg/kg dry	0.07397	BRL	59	49-127	17	24	
Dichlorodifluoromethane	0.0515	0.0074	mg/kg dry	0.07397	BRL	70	25-151	49	37	D
Ethylbenzene	0.0527	0.0074	mg/kg dry	0.07397	BRL	71	44-144	44	19	D
Isopropyl Ether	0.0456	0.0074	mg/kg dry	0.07397	BRL	62	51-155	21	13	D
Isopropylbenzene (Cumene)	0.0626	0.0074	mg/kg dry	0.07397	BRL	85	41-140	59	27	D
m,p-Xylenes	0.104	0.015	mg/kg dry	0.1479	BRL	70	36-148	45	20	D
Methyl Butyl Ketone (2-Hexanone)	0.0403	0.074	mg/kg dry	0.07397	BRL	55	30-147	24	42	J
Methyl Ethyl Ketone (2-Butanone)	0.0391	0.15	mg/kg dry	0.07397	BRL	53	24-160	14	42	J
Methyl Isobutyl Ketone	0.0387	0.074	mg/kg dry	0.07397	BRL	52	25-163	11	44	J

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Keith C. Seramur PGPC  
Attn: Keith Seramur  
165 Knoll Dr.  
Boone, NC 28607

Project: NCDOT U-5888

Prism Work Order: 8100467  
Time Submitted: 10/27/2018 1:25:00PM

**Volatiles Organic Compounds by GC/MS - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch P8J0573 - 5035</b>										
<b>Matrix Spike Dup (P8J0573-MSD1)</b>										
		<b>Source: 8100467-01</b>			Prepared: 10/29/18		Analyzed: 10/30/18			
Methylene Chloride	0.0470	0.015	mg/kg dry	0.07397	BRL	64	53-144	21	14	D
Methyl-tert-Butyl Ether	0.0416	0.015	mg/kg dry	0.07397	BRL	56	49-135	12	22	
Naphthalene	0.0144	0.015	mg/kg dry	0.07397	BRL	20	32-127	20	44	M, J
n-Butylbenzene	0.0487	0.0074	mg/kg dry	0.07397	BRL	66	23-148	68	39	D
n-Propylbenzene	0.0573	0.0074	mg/kg dry	0.07397	BRL	77	35-144	59	27	D
o-Xylene	0.0470	0.0074	mg/kg dry	0.07397	BRL	64	43-143	37	17	D
sec-Butylbenzene	0.0576	0.0074	mg/kg dry	0.07397	BRL	78	34-144	66	28	D
Styrene	0.0331	0.0074	mg/kg dry	0.07397	BRL	45	42-132	28	28	
tert-Butylbenzene	0.0590	0.0074	mg/kg dry	0.07397	BRL	80	36-150	61	29	D
Tetrachloroethylene	0.0506	0.0074	mg/kg dry	0.07397	BRL	68	47-142	50	26	D
Toluene	0.0476	0.0074	mg/kg dry	0.07397	BRL	64	57-135	36	22	D
trans-1,2-Dichloroethylene	0.0555	0.0074	mg/kg dry	0.07397	BRL	75	58-141	42	18	D
trans-1,3-Dichloropropylene	0.0369	0.0074	mg/kg dry	0.07397	BRL	50	41-124	19	20	
Trichloroethylene	0.0535	0.0074	mg/kg dry	0.07397	BRL	72	38-164	42	18	D
Trichlorofluoromethane	0.0669	0.0074	mg/kg dry	0.07397	BRL	90	30-157	51	27	D
Vinyl acetate	BRL	0.037	mg/kg dry	0.07397	BRL		61-154		35	M
Vinyl chloride	0.0572	0.0074	mg/kg dry	0.07397	BRL	77	40-156	48	35	D
Xylenes, total	0.151	0.022	mg/kg dry	0.2219	BRL	68	36-148	42	20	D
Surrogate: 4-Bromofluorobenzene	53.6		ug/L	50.00		107	70-130			
Surrogate: Dibromofluoromethane	54.0		ug/L	50.00		108	84-123			
Surrogate: Toluene-d8	53.0		ug/L	50.00		106	76-129			



Keith C. Seramur PGPC  
Attn: Keith Seramur  
165 Knoll Dr.  
Boone, NC 28607

Project: NCDOT U-5888

Prism Work Order: 8100467  
Time Submitted: 10/27/2018 1:25:00PM

**Total Metals - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch P8J0607 - 3050B</b>										
<b>Blank (P8J0607-BLK1)</b>				Prepared & Analyzed: 10/31/18						
Lead	BRL	0.25	mg/kg wet							BH
<b>LCS (P8J0607-BS1)</b>				Prepared & Analyzed: 10/31/18						
Lead	11.1	0.25	mg/kg wet	12.50		89	80-120			
<b>Matrix Spike (P8J0607-MS1)</b>				Source: 8100467-01		Prepared: 10/31/18 Analyzed: 11/02/18				
Lead	658	0.37	mg/kg dry	18.29	1090	NR	75-125			MI
<b>Matrix Spike Dup (P8J0607-MSD1)</b>				Source: 8100467-01		Prepared: 10/31/18 Analyzed: 11/02/18				
Lead	607	0.37	mg/kg dry	18.38	1090	NR	75-125	8	20	MI
<b>Post Spike (P8J0607-PS1)</b>				Source: 8100467-01		Prepared & Analyzed: 10/31/18				
Lead	17.6		mg/L	0.5000	29.7	NR	80-120			PS

**Sample Extraction Data**

**Prep Method: Solids, Dry Weight**

Lab Number	Batch	Initial	Final	Date/Time
8100467-01	P8K0052	30 g	30 g	11/02/18 13:05

**Prep Method: 3050B**

Lab Number	Batch	Initial	Final	Date/Time
8100467-01	P8J0607	2 g	50 mL	10/31/18 8:20

**Prep Method: 5035**

Lab Number	Batch	Initial	Final	Date/Time
8100467-01	P8J0573	3.95 g	5 mL	10/29/18 10:23





Full-Service Analytical & Environmental Solutions

449 Springbrook Road • Charlotte, NC 28217  
Phone 704/529-6364 • Fax: 704/525-0409

Client Company Name: Serramar Associates AC  
Report To/Contact Name: Keith Serramar  
Reporting Address: 165 Knoll Drive  
Roane, NC 28607  
Phone: (828)264-0281 Fax (Yes)/(No): (828)264-0487  
Email Address: Serramar@icloud.com  
EDD Type: PDF  Excel  Other  
Site Location Name: NC DOT 4-5888 A007  
Site Location Physical Address: 251 N Main St.  
Wannecville, NC

# CHAIN OF CUSTODY RECORD

PAGE 1 OF 1 QUOTE # TO ENSURE PROPER BILLING: \_\_\_\_\_

Project Name: NC DOT 4-5888  
Short Hold Analysis: (Yes)  (No)  UST Project: (Yes)  (No)   
\*Please ATTACH any project specific reporting (QC LEVEL I II III IV) provisions and/or QC Requirements  
Invoice To: Keith Serramar  
Address: 165 Knoll Drive  
Roane, NC 28607

Purchase Order No./Billing Reference \_\_\_\_\_  
Requested Due Date  1 Day  2 Days  3 Days  4 Days  5 Days  
"Working Days"  6-9 Days  Standard 10 days  Rush Work Must Be Pre-Approved  
Samples received after 14:00 will be processed next business day.  
Turnaround time is based on business days, excluding weekends and holidays.  
(SEE REVERSE FOR TERMS & CONDITIONS REGARDING SERVICES RENDERED BY PRISM LABORATORIES, INC. TO CLIENT)

LAB USE ONLY			
	YES	NO	N/A
Samples INTACT upon arrival?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Received ON WET ICE?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PROPER PRESERVATIVES indicated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Received WITHIN HOLDING TIMES?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CUSTODY SEALS INTACT?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
VOLATILES rec'd W/OUT HEADSPACE?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PROPER CONTAINERS used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TEMP: Therm ID: <u>127-9</u>	Observed: <u>72.1°C</u>	Corr: <u>72.0°C</u>	

Page 15 of 15

**TO BE FILLED IN BY CLIENT/SAMPLING PERSONNEL**  
Certification: NELAC \_\_\_ DoD \_\_\_ FL \_\_\_ NC   
SC \_\_\_ OTHER \_\_\_ N/A \_\_\_  
Water Chlorinated: YES \_\_\_ NO   
Sample Iced Upon Collection: YES  NO \_\_\_

CLIENT SAMPLE DESCRIPTION	DATE COLLECTED	TIME COLLECTED MILITARY HOURS	MATRIX (SOIL, WATER OR SLUDGE)	SAMPLE CONTAINER			PRESERVATIVES	ANALYSIS REQUESTED				REMARKS	PRISM LAB ID NO.		
				*TYPE SEE BELOW	NO.	SIZE									
S-49	10/23/18	15:50	soil	CGTL	4	40ml	Na Bisulfate Methanol	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					Please let us know if not enough soil for Ab sample. Contact Keith if there are issues.	01

Sampler's Signature: [Signature] Sampled By (Print Name) Joey Anderson Affiliation SAPC

**PRESS DOWN FIRMLY - 3 COPIES**

Upon relinquishing, this Chain of Custody is your authorization for Prism to proceed with the analyses as requested above. Any changes must be submitted in writing to the Prism Project Manager. There will be charges for any changes after analyses have been initialized.

Relinquished By: (Signature) <u>[Signature]</u>	Received By: (Signature) <u>[Signature]</u>	Date	Military/Hours
Relinquished By: (Signature)	Received By: (Signature)	Date	
Relinquished By: (Signature)	Received For Prism Laboratories By: <u>[Signature]</u>	Date	10-27-18 13:25
Method of Shipment: <input checked="" type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Hand-delivered <input type="checkbox"/> Prism Field Service <input type="checkbox"/> Other		NOTE: ALL SAMPLE COOLERS SHOULD BE TAPED SHUT WITH CUSTODY SEALS FOR TRANSPORTATION TO THE LABORATORY. SAMPLES ARE NOT ACCEPTED AND VERIFIED AGAINST COC UNTIL RECEIVED AT THE LABORATORY.	
		COC Group No. <u>8100467</u>	

Additional Comments:

PRISM USE ONLY
Site Arrival Time:
Site Departure Time:
Field Tech Fee:
Mileage:

**SEE REVERSE FOR TERMS & CONDITIONS**

NPDES:  NC  SC  GROUNDWATER:  NC  SC  DRINKING WATER:  NC  SC  SOLID WASTE:  NC  SC  RCRA:  NC  SC  CERCLA:  NC  SC  LANDFILL:  NC  SC  OTHER:  NC  SC

\*CONTAINER TYPE CODES: A = Amber C = Clear G = Glass P = Plastic; TL = Teflon-Lined Cap VOA = Volatile Organics Analysis (Zero Head Space)

**ORIGINAL**