Transportation

PAT McCRORY
Governor

NICHOLAS J. TENNYSON
Secretary

May 20, 2016

MEMORANDUM TO: John Williams, PE
Project Development Engineer
Project Development and Environmental Analysis Branch

FROM: Terry W. Fox, LG
GeoEnvironmental Project Manager
GeoEnvironmental Section
Geotechnical Engineering Unit

TIP NO: B-5895
WBS: 48088.1.1
COUNTY: Madison
DIVISION 13
DESCRIPTION: Replace Bridge 67 over French Broad River on US 25/ US 70 in Hot Springs

SUBJECT: **GeoEnvironmental Report for Planning**

The GeoEnvironmental Section has completed the GeoEnvironmental Report for Planning. This report has the following components and is transmitted as:

__X__ Hazardous Materials Report (6) pages

Please contact me if you have any questions concerning this project.

Hazardous Materials Report

The GeoEnvironmental Section of the Geotechnical Engineering Unit has investigated the above referenced project to identify hazardous material sites for inclusion in the environmental document.

HAZARDOUS MATERIALS EVALUATION

Purpose

This section presents the results of a hazardous material evaluation conducted along the above referenced project. The main purpose of this investigation is to identify properties within the project study area that are or may be contaminated and therefore result in increased project costs and future liability if acquired by the Department. Hazardous material impacts may include, but are not limited to, active and abandoned underground storage tank (UST) sites, hazardous waste sites, regulated landfills and unregulated dumpsites.

Techniques/Methodologies

The Geographical Information System (GIS) was consulted to identify known sites of concern in relation to the proposed intersection improvements. GeoEnvironmental Section staff conducted a field reconnaissance within the project limits on May 18, 2016. A search of appropriate environmental agencies' databases was performed to assist in evaluating sites identified during this study.

Findings

UST Facilities

Based on our study, two (2) sites may contain petroleum USTs within the project limits.

Hazardous Waste Sites

No Hazardous Waste Site was identified within the project limits.

Landfills

No apparent landfills were identified within the project limits.

Other GeoEnvironmental Concerns

No geoenvironmental concerns were identified within the project limits.

Anticipated Impacts

Two (2) possible UST facilities were identified within the proposed project limits. We anticipate low monetary and scheduling impacts resulting from these sites. (See the following table and appendices for details)

Known and Potential Hazardous Material Sites

1)

Property Name
Hot Springs Resort & Spa Convenience Store
300 Bridge Street
Hot Springs, NC 28743

Property Owner:
Eugene Glenn Hicks
PO Box 428
Hot Springs, NC 28743

Facility ID #: 0-002082
Incident #: AS-2720

UST Owner:
J.K. Holding Co.
PO Box 311
Statesville, NC

This convenience store is located on the south side of US 25/ US 70 (Bridge Street) and 200 feet west from Bridge 67 in Hot Springs. According to the UST Section Registry five (5) tanks were removed in 2001 from the former Roy Whitson 66. Groundwater Incident AS-2720 was assigned to this site, but closed out the same year. **This site is anticipated to present low geoenvironmental impacts to the project.**

2) **Property Name**
Vacant Office
260 Bridge Street
Hot Springs, NC 28743

Property Owner:
Eugene Glenn Hicks
PO Box 428
Hot Springs, NC 28743

This office is located on the south side of US 25/ US 70 (Bridge Street) and 375 feet west from Bridge 67 in Hot Springs. A gas station may have operated at this location in the past. This property does not appear on the UST Section Registry nor on the Groundwater Incident database. **This site is anticipated to present low geoenvironmental impacts to the project.**

Please note that discovery of additional sites not recorded by regulatory agencies and not reasonably discernible during the project reconnaissance may occur. The GeoEnvironmental Section should be notified immediately after discovery of such sites so their potential impact(s) may be assessed.

If there are questions regarding the geoenvironmental issues, please contact me, at 919-707-6870.

Terry W. Fox, LG
GeoEnvironmental Project Manager
GeoEnvironmental Section
Geotechnical Engineering Unit

cc:
John Pilipchuk, LG, PE, State Geotechnical Engineer
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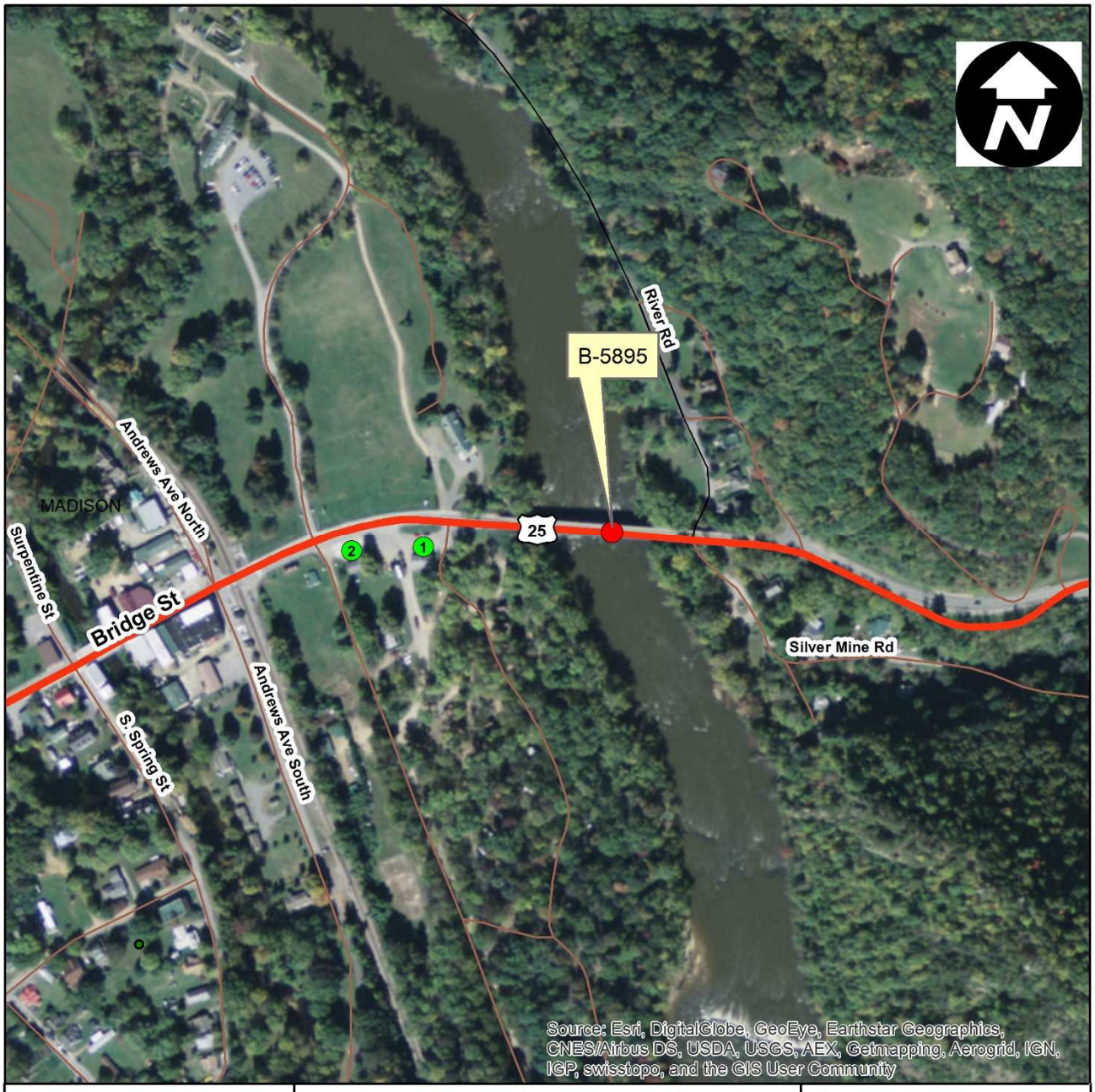
Ronald Wilkins, PE, State Utilities Manager
Cameron Cochran, PE, Bridge Construction Engineer
Robert Haskett. Division 13 Right of Way Agent
Eric Williams, PE, Geotechnical Regional Manager
Jody Kuhne, LG, PE, Regional Geological Engineer
Steve Grimes, ROW Unit, Negotiations, State Negotiator
row-notify@ncdot.gov
File

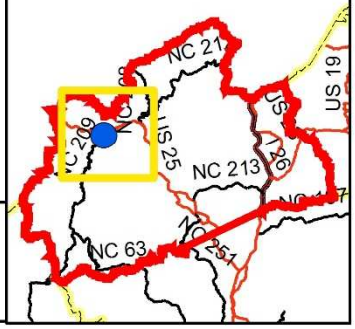
Appendix A
Location of GeoEnvironmental Sites of Concern



Project 48088.1.1 (TIP # B-5895)
Bridge # 67 over French Broad River
on US 25/70 in Hot Springs
Madison County

500 250 0 500 Feet

NC Department of Transportation
Geotechnical Engineering Unit
GeoEnvironmental Section



Bridge 67 on US 25/ US 70. View to the east.

Bridge 67 on US 25/ US 70. View to the west.

Downstream view of French Broad River. View to the northwest.

Upstream view of French Broad River. View to the southeast.

Phase II Site Assessment Report
November 30, 2022
WBS Element: 48088.1.1
State Project: B-5895
Madison County

At

Parcel #: 001
Eugene Glen Hicks, et. al. Property
300 Bridge Street, Hot Springs, NC 28743
PIN #: 8860-63-1420
Facility ID #: N/A
Groundwater Incident #: N/A

Prepared For:

Mr. Craig Haden
NCDOT, Geotechnical Engineering Unit
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Keith C. Seramur, P.G. 12/05/2022

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1.0 Introduction

1.1 General Site Background Information

Seramur & Associates, PC was contracted to complete a Phase II Environmental Site Assessment at:

Eugene Glen Hicks, et. al. Property
Parcel #: 001
300 Bridge Street; Hot Springs, NC, 28743
PIN #: 8860-63-1420
Facility ID #: N/A
Groundwater Incident #: N/A

Parcel #001 is located on either side of Bridge Street east of its intersection with Andrews Avenue. Our study area was limited to the area between the structures and Bridge Street on the southern portion of the property. (Figure 1). The property is in a campground area west of the French Broad River. Bedrock in the area is mapped as the Shady Dolomite; a bluish-gray, fine- to medium-grained, laminated to massive dolostone (Merschat, C.E., and Cattanach, B.L.. Bedrock geologic map of the western half of the Asheville 1:100,000-scale quadrangle, North Carolina and Tennessee, North Carolina Geologic Survey. Geologic Map Series GMS-13, 2008).

A Notice to Proceed was obtained on October 24, 2022. Our area of investigation focused on the proposed and existing Right-of-Way (R/W) along the southern side of Bridge Street. The Phase II Site Assessment scope of work included completing a geophysical survey, soil sample collection, and laboratory analysis. The geophysical survey evaluated the potential for underground storage tanks and remnant UST system infrastructure. The purpose of soil sampling and laboratory analysis is to assess soil quality across the proposed and existing R/W (Figure 3). Background research for this project included reviewing historic aerial photographs and NCDEQ databases.

2.0 Scope of Work

2.1 Background Research

According to the Madison County Tax Administration records, the property owner is listed as Hot Springs Properties, LLC (A NC Limited Liability Company). It is our understanding that Eugene Hicks, the listed owner in NCDOT documents, passed away within the last couple of years. Available historic aerial photographs from the USGS EarthExplorer website and Google Earth Pro were reviewed.

The following NCDEQ databases were queried for incidents at Parcel #001:

- Dry Cleaners
- Active USTs
- UST Incident Map
- UST Database
- Hazardous Waste Sites

2.2 Geophysical Surveys

Seramur & Associates used the Pythagorean Theorem to establish four rectangular grids covering the proposed and existing R/W along Bridge Street (Figure 4). Geophysical grid data was collected

along transects at a two-foot spacing. Many transects were extended past the established rectangular grid corners in the GPR survey.

The magnetometer data was collected with a GEM Systems GSM-19W Walking Overhauser magnetometer. A Schonstedt GA-72Cd Magnetic Locator was also used over the grids to search for magnetic anomalies that could be related to a former UST System such as tanks, dispenser islands and product lines. The Magnetic Locator responds to significant magnetic anomalies by setting off an alarm and showing maximum or minimum readings on its display screen. Significant anomalies were considered to be ±18.0 – 36.0 mG Δ. Anomalies were marked with spray paint on the ground surface and were surveyed using a Nikon Total Station. The anomalies are marked as red-outlined shapes on the site plan (Figure 5). Ferrous objects in the subsurface have a magnetic field distinct from the surrounding soil and produce magnetic anomalies shown on the map.

The Ground Penetrating Radar (GPR) data was collected with a Geophysical Survey Systems, Inc. UtilityScan GPR System with a 350 MHz hyperstacking antenna. This GPR system is equipped with a calibrated survey wheel. The GPR data was downloaded and saved onto a computer. The GPR grid and transect 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 GPR Slice® software. Three time slices (or depth slices) were imaged in each 3D model at depths of 0.2 to 0.5 feet, 1.9 to 2.2 feet and 3.7 to 4.0 feet (Figures 6, 7, & 8). Each depth slice is a horizontal slice or plan view of the reflections across a 0.3-foot thickness of the subsurface. For example, the deep GPR depth slices show reflections in the radar data between depths of 3.7 and 4.0 feet.

2.3 Soil Sampling and Analyses

Carolina Soil Investigations, LLC mobilized to the site on November 8, 2022, to drill Geoprobe borings and collect soil samples. Our project design typically calls 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 borings were drilled within the proposed and existing R/W along Bridge Street with a focus on the area around a proposed drainage feature.

A track-mounted Geoprobe rig was used to drill fourteen soil borings. The texture and type of soil material in the Geoprobe cores was described and recorded. 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 PhoCheck Tiger 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). Table 1 lists the boring data including sample number, depth, PID reading, lithology, and type of soil material.

REDLab, LLC provided onsite laboratory analyses for the soil samples collected from the Geoprobe cores. 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), Diesel Range Organics (DRO) and Total Petroleum Hydrocarbons (TPH). REDLab provided 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.

2.4 Plate 1 – Photographs of Parcel #001

Photo 1. Collecting GPR data in Grid 1 at Parcel #001.

Photo 2. Checking magnetic anomalies with the Schonstedt to mark the perimeter.

Photo 3. Carolina Soil Investigations drilling boring B-2 & REDLab standing by for samples.

Photo 4. Using asphalt patch to fill in the boring holes at Parcel #001.

3.0 Results of Investigation

Both of the buildings near the study area at Parcel #001 are currently used as storage and maintenance buildings for the Hot Springs Resort and Spa. One of the managers of the Hot Springs Resort and Spa, Mr. Ron West, stated that the eastern building once operated as a gas station. He had knowledge that the facility had used tanks that were "mostly aboveground" (i.e. partially buried) and that they were beside or behind the building. However, this was before the time that Mr. West had worked at the resort and he could not be sure of the exact details of the AST system. Historic aerial photographs show possible gas station infrastructure outside of the area of investigation. A 1976 aerial shows what appears to be three aboveground tanks east of the eastern building, a possible fourth AST to the west of the eastern building and a canopy between the two buildings. The photographs from the 1980's were not taken at a large enough scale to determine whether the tanks remained on the property at the time of the photograph.

The NCDEQ UST Registered Tanks and Underground Storage Tank Incidents databases do not list any records of USTs or previous release incidents at this property.

SAPC personnel made a pedestrian reconnaissance of the property during the initial site visit on October 26, 2022. No evidence of a UST system was observed on the property within the existing or proposed R/W.

3.1 Geophysical Surveys

The map of the magnetometer survey anomalies (Figure 5) shows numerous small magnetic anomalies that are not likely to be related to UST system infrastructure. One anomaly in Grid 1 (MA3) is related to a storm drain cover. In Grid 2, MA6 could be related to infrastructure left over from a fuel dispenser island. This anomaly is quite large and amorphous in shape and appears to be near an area where a possible dispenser island was observed in a historic aerial photograph. A couple of larger magnetic anomalies (MA8 and MA11) are present in Grid 3 but are not likely to be related to UST infrastructure and one long narrow anomaly (MA15) in Grid 4 is not likely to be related to UST infrastructure. Magnetic anomalies were not detected near the southern side of Grids 3 and 4 where a possible canopy was observed on a historic aerial.

The shallow GPR depth slices (0.2-0.5 feet) show many medium-to-high amplitude reflections across the grids (Figure 6). A likely sewer line extends from the north side of Grid 1 into Grid 2 before the reflection ends near the eastern side of that grid. Deeper slices show this sewer line continuing to the south of the grass island (Figure 7). A small linear anomaly in the southwest corner of Grid 2 could be related to a former fuel dispenser island. Other anomalies dispersed throughout the grids do not form any recognizable patterns. Some of these reflections appear to be related to differences in subsurface materials (e.g. grass versus asphalt in the southwest corner of Grid 3).

The intermediate GPR depth slices (1.9-2.2 feet) have far fewer reflections than the shallow depth slices (Figure 7). A large medium-to-high amplitude anomaly is present in Grids 1 and 2 near the location of the drain cover. This anomaly could be related to wetter soil surrounding the pipe that

extends south from the cover. Reflections from the possible sewer line are visible in Grid 4. Other reflections dispersed throughout the grids do not form any recognizable patterns related to a UST system.

The deep GPR depth slices (3.7-4.0 feet) are primarily reflection free (Figure 8). A few small medium-to-high amplitude reflections are scattered across the four grids, but these are too small to be related to a UST system or other UST system infrastructure.

3.2 Soil Borings, Sampling and Laboratory Analysis

The soil at Parcel #001 consists of fill material over alluvium (Table 1). The fill material is primarily sandy silt with gravel and the alluvium is sand with gravel and silty sand. Groundwater was not encountered at this site.

Fourteen borings were drilled, and twenty-six soil samples were collected. Two 5-foot cores were collected from each boring and one sample was collected from each core. The exception to this is that two deep cores had no recovery (borings B-10 and B-13). The soil samples collected from the cores were analyzed for GRO and DRO by REDLab, LLC using their onsite laboratory services (Table B-3).

Soil borings B-1, B-3 and B-10 through B-14 were drilled within the existing R/W along Bridge Street (Figure 3). Borings B-3 and B-10 through B-13 were drilled along the proposed drainage feature. Boring B-1 was drilled as close to the drainage feature as possible, but a fence had been constructed blocking access. Boring B-14 was drilled near magnetic anomalies west of the drainage feature. The remaining borings (B-2 and B-4 through B-9) were drilled in the proposed R/W along Bridge Street. These borings were drilled along the proposed drainage feature except for borings B-5 and B-8, which were drilled closer to the building near where former fuel dispensers could have been located. Petroleum constituents were not detected above the NCDEQ Action Levels in any of the soil samples collected at Parcel #001 (Table B-3, Figure 9 and Laboratory Results in Appendix B). Slightly elevated petroleum constituent concentrations (>10.0 ppm) were detected in the deep sample from B-1 (18.8 ppm) and the deep sample from B-12 (10.6 ppm).

3.3 Conclusions

The eastern building near the study area at Parcel #001 has operated as a gas station in the past but is currently used as a storage building. The western building is used by the property maintenance staff. The geophysical surveys did not image an existing UST system or evidence of a previous UST excavation. One set of high amplitude reflections in Grid 2 could be related to a former dispenser island. Evidence from local informants and historic aerial photographs indicate that an AST system was located south of the study area and fuel dispensers were possibly located within the proposed R/W north of the eastern building. Petroleum constituents were not detected above the NCDEQ Action Levels in any of the soil samples collected at Parcel #001.

4.0 Recommendations

Seramur & Associates does not recommend any further assessment work for Parcel #001.

Appendix A

Tables and Figures

Table 1. Soil Boring Data - Parcel #001 - Eugene Glen Hicks, et. al. Property						
Boring No.	**Depth (ft)**	**Lithology**	**Soil type**	**Soil Sample**	**PID ppm**	**Comments**
B-1	0.0 to 4.0	Sandy silt w/ gravel	Fill	S-1	0.0	Sample at 3.0 feet.
B-1	4.0 to 5.0	N/A	N/A	N/A	N/A	No recovery.
B-1	5.0 to 8.0	Sand w/ gravel	Alluvium	S-2	0.0	Sample at 8.0 feet.
B-1	8.0 to 10.0	N/A	N/A	N/A	N/A	No recovery.
B-2	0.0 to 3.5	Sandy silt w/ gravel	Fill	S-3	0.0	Sample at 3.0 feet.
B-2	3.5 to 5.0	N/A	N/A	N/A	N/A	No recovery.
B-2	5.0 to 8.5	Sand w/ gravel	Alluvium	S-4	0.0	Sample at 8.0 feet.
B-2	8.5 to 10.0	N/A	N/A	N/A	N/A	No recovery.
B-3	0.0 to 3.5	Sandy silt w/ gravel	Fill	S-5	0.0	Sample at 3.0 feet.
B-3	3.5 to 4.25	Sand w/ gravel	Alluvium	N/A	N/A	
B-3	4.25 to 5.0	N/A	N/A	N/A	N/A	No recovery.
B-3	5.0 to 7.0	Sand w/ gravel	Alluvium	S-6	0.0	Refusal at 7.0 feet.
B-4	0.0 to 3.0	Sandy silt w/ gravel	Fill	S-7	0.1	Sample at 3.0 feet.
B-4	3.0 to 4.0	Sand w/ gravel	Alluvium	N/A	N/A	
B-4	4.0 to 5.0	N/A	N/A	N/A	N/A	No recovery.
B-4	5.0 to 9.0	Sand w/ gravel	Alluvium	S-8	0.0	Sample at 9.0 feet.
B-4	9.0 to 10.0	N/A	N/A	N/A	N/A	No recovery.
B-5	0.0 to 3.0	Sandy silt w/ gravel	Fill	S-9	0.0	Sample at 3.0 feet.
B-5	3.0 to 3.5	Sand w/ gravel	Alluvium	N/A	N/A	
B-5	3.5 to 5.0	N/A	N/A	N/A	N/A	No recovery.
B-5	5.0 to 6.5	Sand w/ gravel	Alluvium	N/A	N/A	
B-5	6.5 to 8.0	Silty sand	Alluvium	S-10	0.0	Sample at 8.0 feet.
B-5	8.0 to 10.0	N/A	N/A	N/A	N/A	No recovery.
B-6	0.0 to 2.0	Sandy silt w/ gravel	Fill	N/A	N/A	
B-6	2.0 to 3.0	Sand w/ gravel	Alluvium	S-11	0.0	Sample at 3.0 feet.
B-6	3.0 to 5.0	N/A	N/A	N/A	N/A	No recovery.
B-6	5.0 to 6.0	Sand w/ gravel	Alluvium	N/A	N/A	
B-6	6.0 to 7.0	Silty sand	Alluvium	S-12	0.0	Sample at 7.0 feet.
B-6	7.0 to 10.0	N/A	N/A	N/A	N/A	No recovery.
B-7	0.0 to 2.0	Sandy silt w/ gravel	Fill	N/A	N/A	
B-7	2.0 to 3.0	Sand w/ gravel	Alluvium	S-13	0.0	Sample at 3.0 feet.
B-7	3.0 to 5.0	N/A	N/A	N/A	N/A	No recovery.
B-7	5.0 to 7.0	Sand w/ gravel	Alluvium	N/A	N/A	
B-7	7.0 to 8.0	Silty sand	Alluvium	S-14	0.0	Sample at 8.0 feet.
B-7	8.0 to 10.0	N/A	N/A	N/A	N/A	No recovery.
B-8	0.0 to 1.0	Sandy silt w/ gravel	Fill	S-15	0.3	Sample at 0.75 feet. Slight petroleum odor.
B-8	1.0 to 1.5	Concrete	Fill	N/A	N/A	
B-8	1.5 to 3.0	Sand	Alluvium	N/A	N/A	
B-8	3.0 to 5.0	N/A	N/A	N/A	N/A	No recovery.
B-8	5.0 to 7.0	Sand	Alluvium	N/A	N/A	
B-8	7.0 to 7.5	Silty sand	Alluvium	S-16	0.0	Sample at 7.5 feet.
B-8	7.5 to 10.0	N/A	N/A	N/A	N/A	No recovery.
B-9	0.0 to 2.5	Sandy silt w/ gravel	Fill	N/A	N/A	
B-9	2.5 to 3.5	Sand	Alluvium	S-17	0.0	Sample at 2.75 feet. Slighty stained soil.
B-9	3.5 to 5.0	N/A	N/A	N/A	N/A	No recovery.
B-9	5.0 to 6.5	Sand	Alluvium	N/A	N/A	
B-9	6.5 to 7.5	Silty sand	Alluvium	S-18	0.0	Sample at 7.5 feet.
B-9	7.5 to 10.0	N/A	N/A	N/A	N/A	No recovery.
B-10	0.0 to 2.75	Sandy silt w/ gravel	Fill	S-19	0.0	Sample at 2.75 feet.
B-10	2.75 to 3.25	Sand	Alluvium	N/A	N/A	
B-10	3.25 to 5.0	N/A	N/A	N/A	N/A	No recovery.
B-10	5.0 to 10.0	N/A	N/A	N/A	N/A	No recovery.

Table 1 continued. Soil Boring Data - Parcel #001 - Eugene Glen Hicks, et. al. Property						
Boring No.	**Depth (ft)**	**Lithology**	**Soil type**	**Soil Sample**	**PID ppm**	**Comments**
B-11	0.0 to 2.0	Sandy silt w/ gravel	Fill	N/A	N/A	
B-11	2.0 to 3.25	Sand	Alluvium	S-20	0.0	Sample at 3.0 feet.
B-11	3.25 to 5.0	N/A	N/A	N/A	N/A	No recovery.
B-11	5.0 to 6.25	Sand	Alluvium	N/A	N/A	
B-11	6.25 to 9.25	Silty sand	Alluvium	S-21	0.0	Sample at 9.0 feet.
B-11	9.25 to 10.0	N/A	N/A	N/A	N/A	No recovery.
B-12	0.0 to 1.0	Sandy silt w/ gravel	Fill	N/A	N/A	
B-12	1.0 to 1.25	Sand	Alluvium	N/A	N/A	
B-12	1.25 to 2.5	Sandy silt w/ gravel	Fill	N/A	N/A	
B-12	2.5 to 3.0	Sand	Alluvium	S-22	0.0	Sample at 3.0 feet.
B-12	3.0 to 5.0	N/A	N/A	N/A	N/A	No recovery.
B-12	5.0 to 6.5	Sand	Alluvium	N/A	N/A	
B-12	6.5 to 7.5	Silty sand	Alluvium	N/A	N/A	
B-12	7.5 to 8.5	Sand	Alluvium	S-23	0.0	Sample at 8.5 feet.
B-12	8.5 to 10.0	N/A	N/A	N/A	N/A	No recovery.
B-13	0.0 to 1.0	Sand w/ gravel	Alluvium	S-24	0.0	Sample at 1.0 feet.
B-13	1.0 to 5.0	N/A	N/A	N/A	N/A	No recovery.
B-13	5.0 to 10.0	N/A	N/A	N/A	N/A	No recovery.
B-14	0.0 to 2.25	Sandy silt w/ gravel	Fill	N/A	N/A	
B-14	2.25 to 3.25	Sand	Alluvium	S-25	0.0	Sample at 3.0 feet.
B-14	3.25 to 5.0	N/A	N/A	N/A	N/A	No recovery.
B-14	5.0 to 5.25	Sand	Alluvium	N/A	N/A	
B-14	5.25 to 7.0	Silty sand	Alluvium	N/A	N/A	
B-14	7.0 to 7.5	Sand	Alluvium	N/A	N/A	
B-14	7.5 to 8.5	Silty sand	Alluvium	S-26	0.0	Sample at 8.5 feet.
B-14	8.5 to 10.0	N/A	N/A	N/A	N/A	No recovery.

Table B-3: Summary of Soil Sampling Results
Revision Date: 04/07/22
Site Name: Parcel #023

Analytical Method (e.g., VOC by EPA 8260) →					UVF		
Contaminant of Concern →					GRO (mg/kg)	DRO (mg/kg)	TPH (mg/kg)
Sample ID	**Date Collected** (mm/dd/yy)	**Source Area**	**Sample Depth** (ft. BGS)	**Incident Phase**			
S-1	11/08/22	B-1	3.0	Phase II	<0.53	<0.53	<0.53
S-2	11/08/22	B-1	8.0	Phase II	<0.49	18.8	18.8
S-3	11/08/22	B-2	3.0	Phase II	<0.56	<0.56	<0.56
S-4	11/08/22	B-2	8.0	Phase II	<0.46	<0.46	<0.46
S-5	11/08/22	B-3	3.0	Phase II	2.9	0.53	3.43
S-6	11/08/22	B-3	7.0	Phase II	<0.45	<0.45	<0.45
S-7	11/08/22	B-4	3.0	Phase II	<0.63	2.4	2.4
S-8	11/08/22	B-4	9.0	Phase II	1.9	6.4	8.3
S-9	11/08/22	B-5	3.0	Phase II	<0.5	<0.5	<0.5
S-10	11/08/22	B-5	8.0	Phase II	<0.3	<0.3	<0.3
S-11	11/08/22	B-6	3.0	Phase II	<0.3	<0.3	<0.3
S-12	11/08/22	B-6	7.0	Phase II	<0.62	<0.62	<0.62
S-13	11/08/22	B-7	3.0	Phase II	<0.61	<0.61	<0.61
S-14	11/08/22	B-7	8.0	Phase II	<0.21	<0.21	<0.21
S-15	11/08/22	B-8	0.75	Phase II	<0.43	7.7	7.7
S-16	11/08/22	B-8	7.5	Phase II	<0.47	<0.47	<0.47
S-17	11/08/22	B-9	2.75	Phase II	<0.44	1.1	1.1
S-18	11/08/22	B-9	7.5	Phase II	<0.5	<0.5	<0.5
S-19	11/08/22	B-10	2.75	Phase II	<0.57	<0.57	<0.57
S-20	11/08/22	B-11	3.0	Phase II	<0.54	<0.54	<0.54
S-21	11/08/22	B-11	9.0	Phase II	<0.49	1.6	1.6
S-22	11/08/22	B-12	3.0	Phase II	<0.58	1.0	1.0
S-23	11/08/22	B-12	8.5	Phase II	<0.42	10.6	10.6
S-24	11/08/22	B-13	1.0	Phase II	<0.59	2.2	2.2
S-25	11/08/22	B-14	3.0	Phase II	<0.49	<0.49	<0.49
S-26	11/08/22	B-14	8.5	Phase II	<0.59	<0.59	<0.59
NC DEQ Action Level (mg/kg)					50	100	N/A

ft. BGS = feet below ground surface
mg/kg =milligrams per kilogram

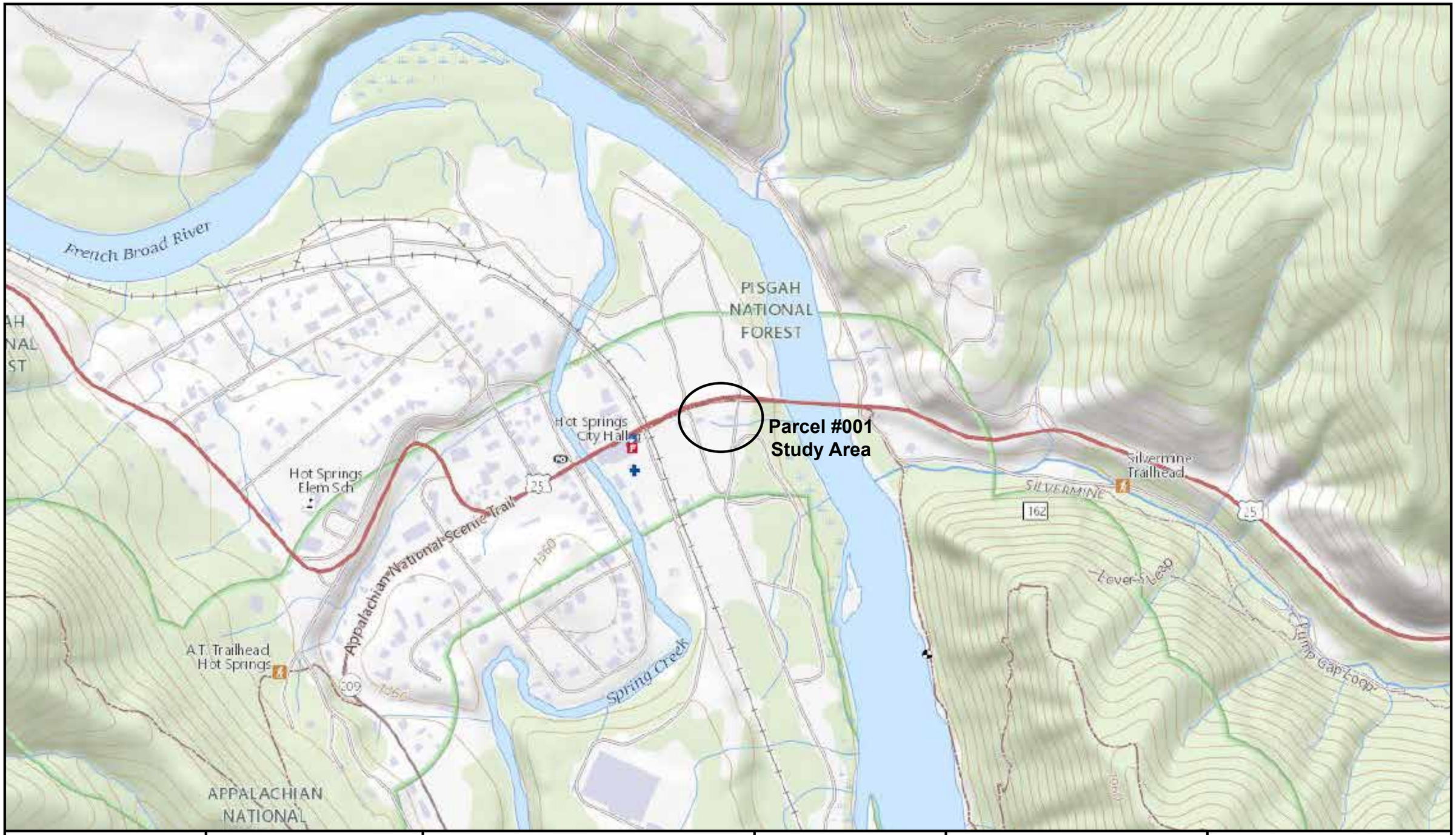


Figure 1 Site Location Map Source: U.S.G.S. The National Map	State Project: B-5895 Madison County, NC	Eugene Glen Hicks, et. al. Property 300 Bridge Street, Hot Springs, NC	Parcel #001 Facility I.D. #: N/A	Seramur & Associates, PC Boone, NC	0 400 800 Feet

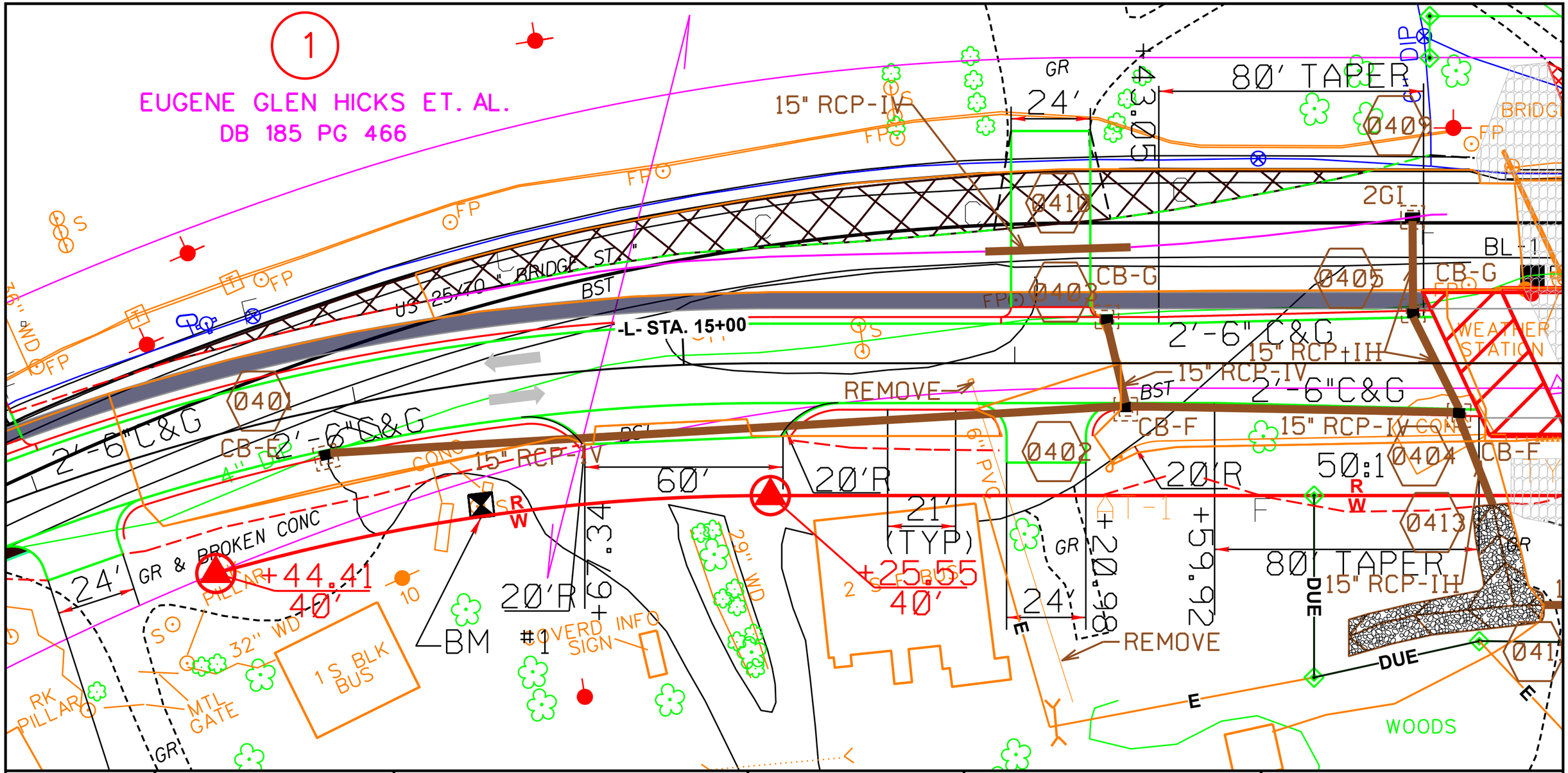


Figure 2 Site Plan	State Project: B-5895 Madison County, NC	Eugene Glen Hicks, et. al. Property 300 Bridge Street, Hot Springs, NC	Parcel #001 Facility I.D. #: N/A	Seramur & Associates, PC Boone, NC	0 25 50 Feet N

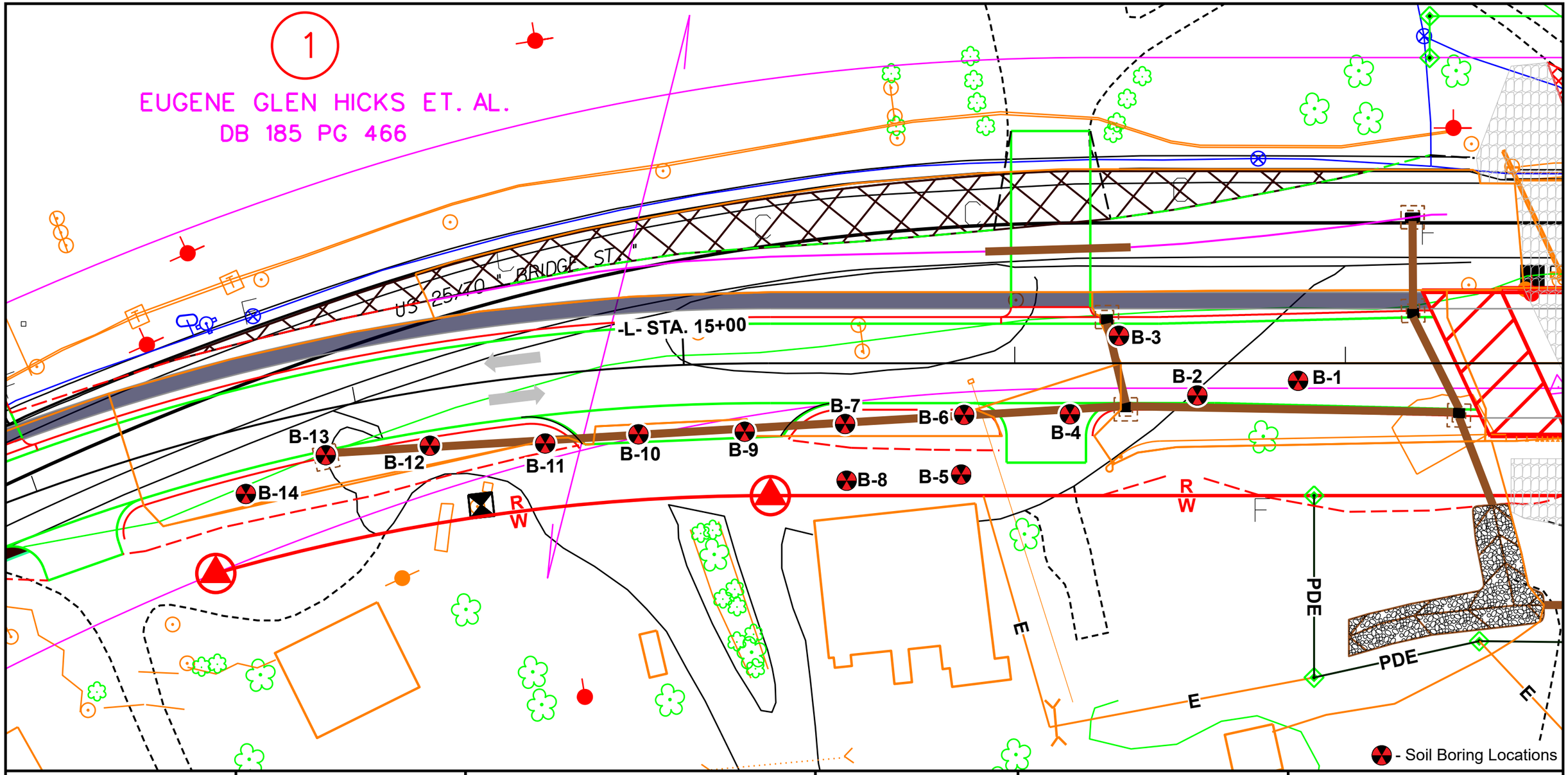


Figure 3 Site Plan with Soil Boring Locations	State Project: B-5895 Madison County, NC	Eugene Glen Hicks, et. al. Property 300 Bridge Street, Hot Springs, NC	Parcel #001 Facility I.D. #: N/A	Seramur & Associates, PC Boone, NC	0 25 50 Feet N

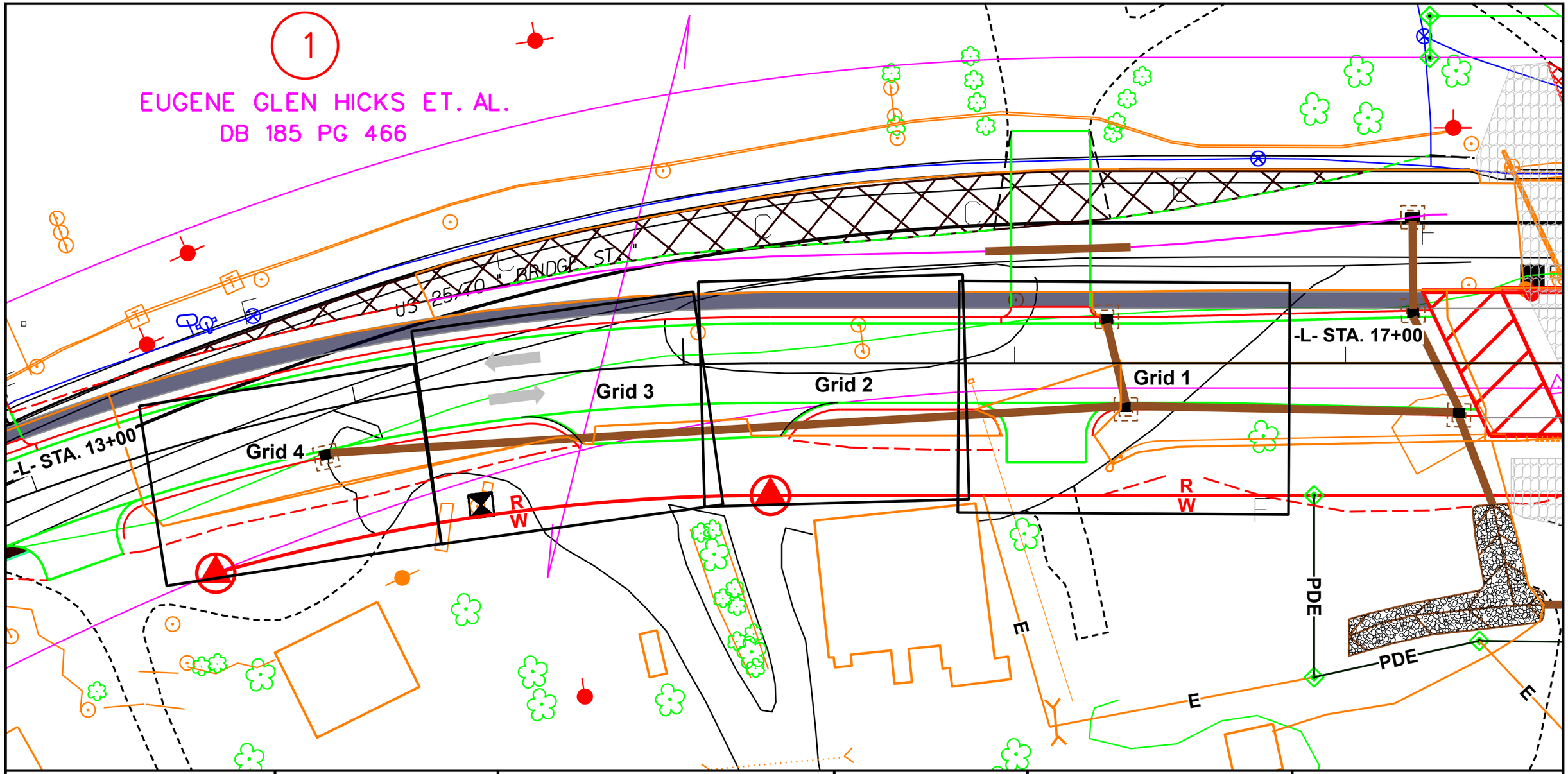


Figure 4 Site Plan with Geophysical Grid Locations	State Project: B-5895 Madison County, NC	Eugene Glen Hicks, et. al. Property 300 Bridge Street, Hot Springs, NC	Parcel #001 Facility I.D. #: N/A	Seramur & Associates, PC Boone, NC	0 25 50 Feet N

1

EUGENE GLEN HICKS ET. AL.
DB 185 PG 466

US 25/70 "BRIDGE ST."

-L- STA. 13+00

-L- STA. 17+00

Grid 2

Grid 3

Grid 4

Grid 1

MA1

MA2

MA3
(Storm Drain)

MA4

MA5

MA6
(Possible
Dispenser
Island)

MA7

MA8

MA9

MA10

MA11

MA12

MA13

MA14

MA15

R
W

E

PDE

Figure 5 Magnetometer Survey Anomaly Map	State Project: B-5895 Madison County, NC	Eugene Glen Hicks, et. al. Property 300 Bridge Street, Hot Springs, NC	Parcel #001 Facility I.D. #: N/A	Seramur & Associates, PC Boone, NC	0 25 50 Feet N

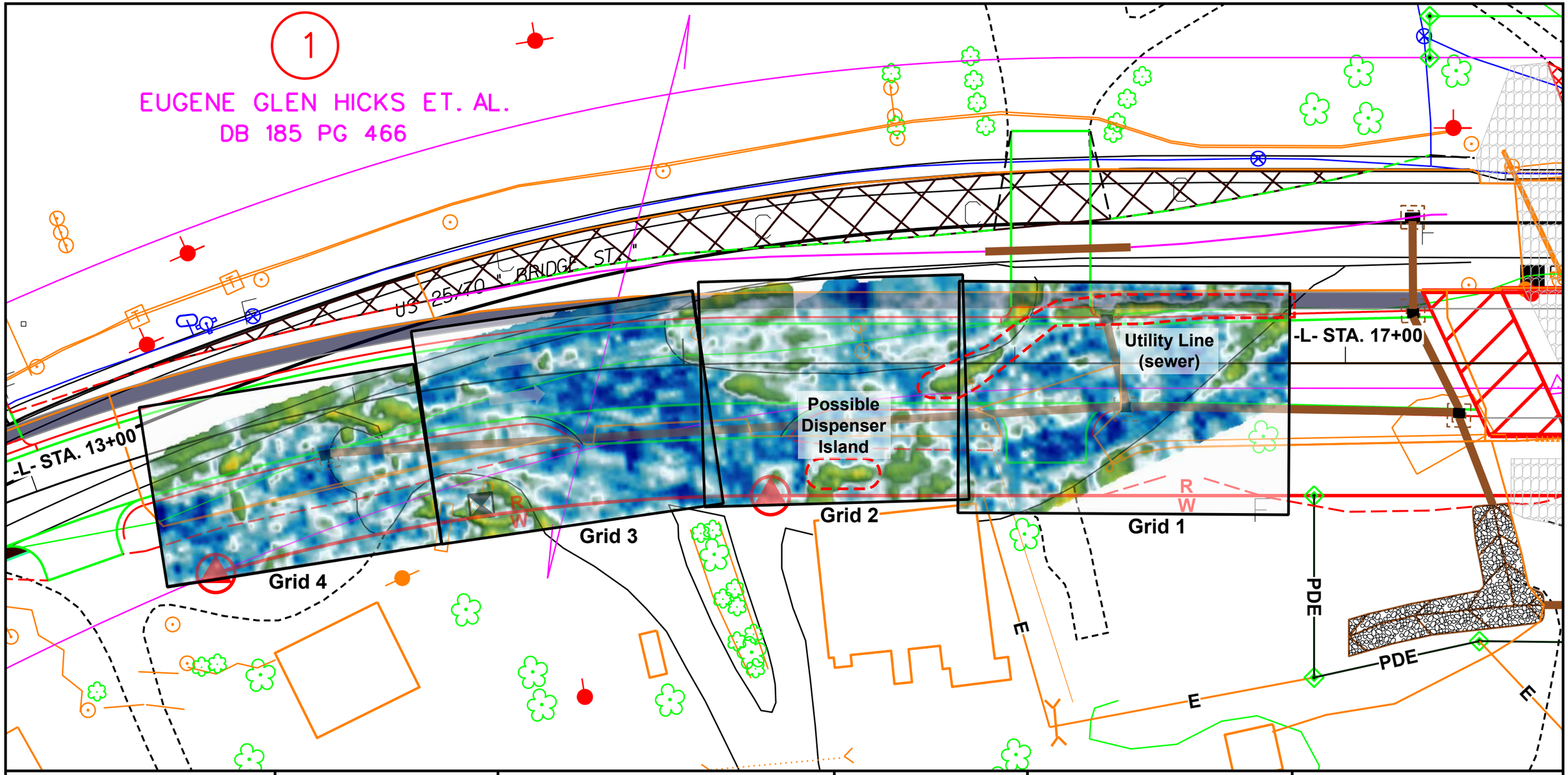


Figure 6 Shallow GPR Depth Slices (0.2 - 0.5 feet)	State Project: B-5895 Madison County, NC	Eugene Glen Hicks, et. al. Property 300 Bridge Street, Hot Springs, NC	Parcel #001 Facility I.D. #: N/A	Seramur & Associates, PC Boone, NC	

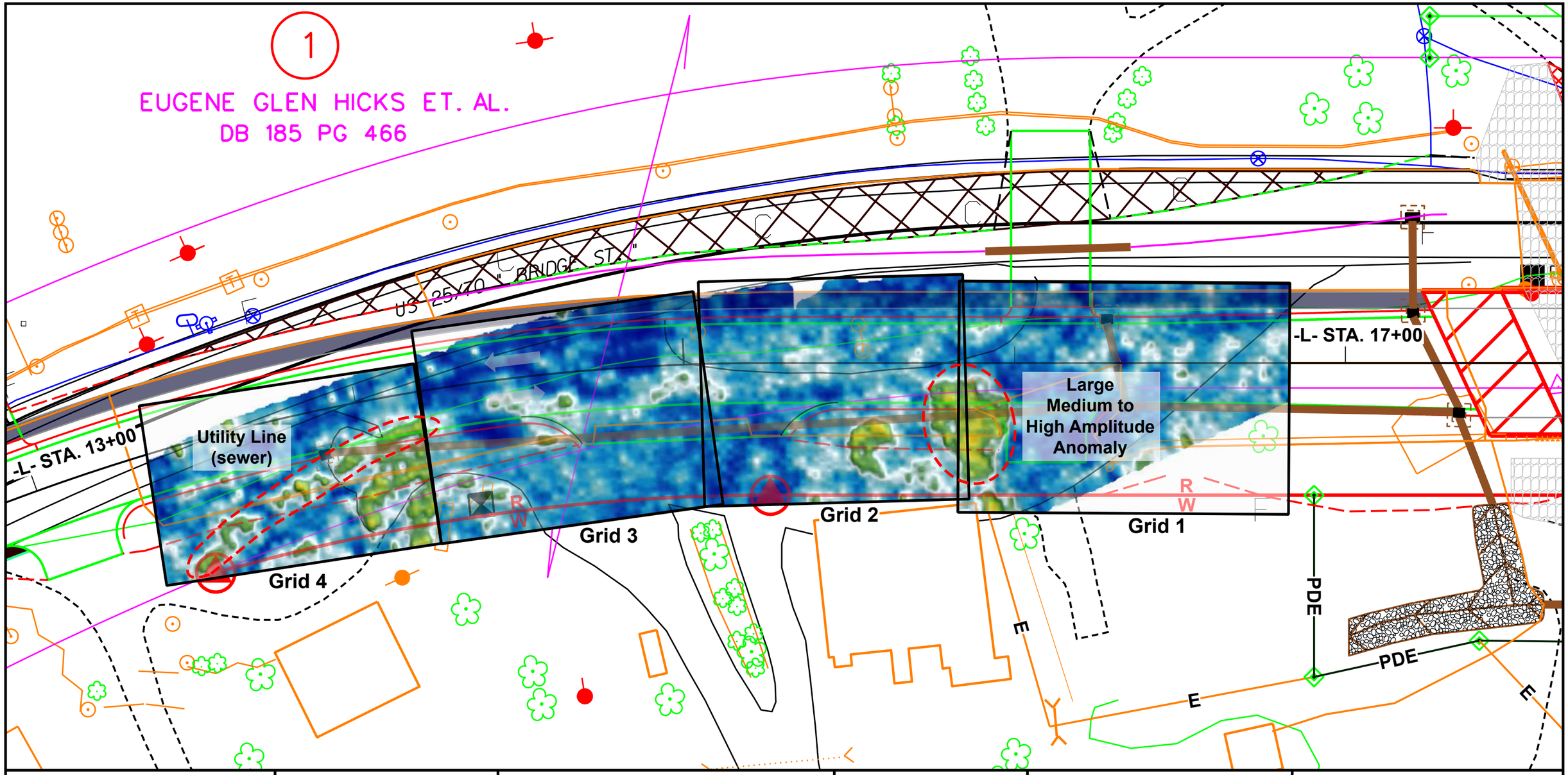


Figure 7 Intermediate GPR Depth Slices (1.9 - 2.2 feet)	State Project: B-5895 Madison County, NC	Eugene Glen Hicks, et. al. Property 300 Bridge Street, Hot Springs, NC	Parcel #001 Facility I.D. #: N/A	Seramur & Associates, PC Boone, NC	0 25 50 Feet N

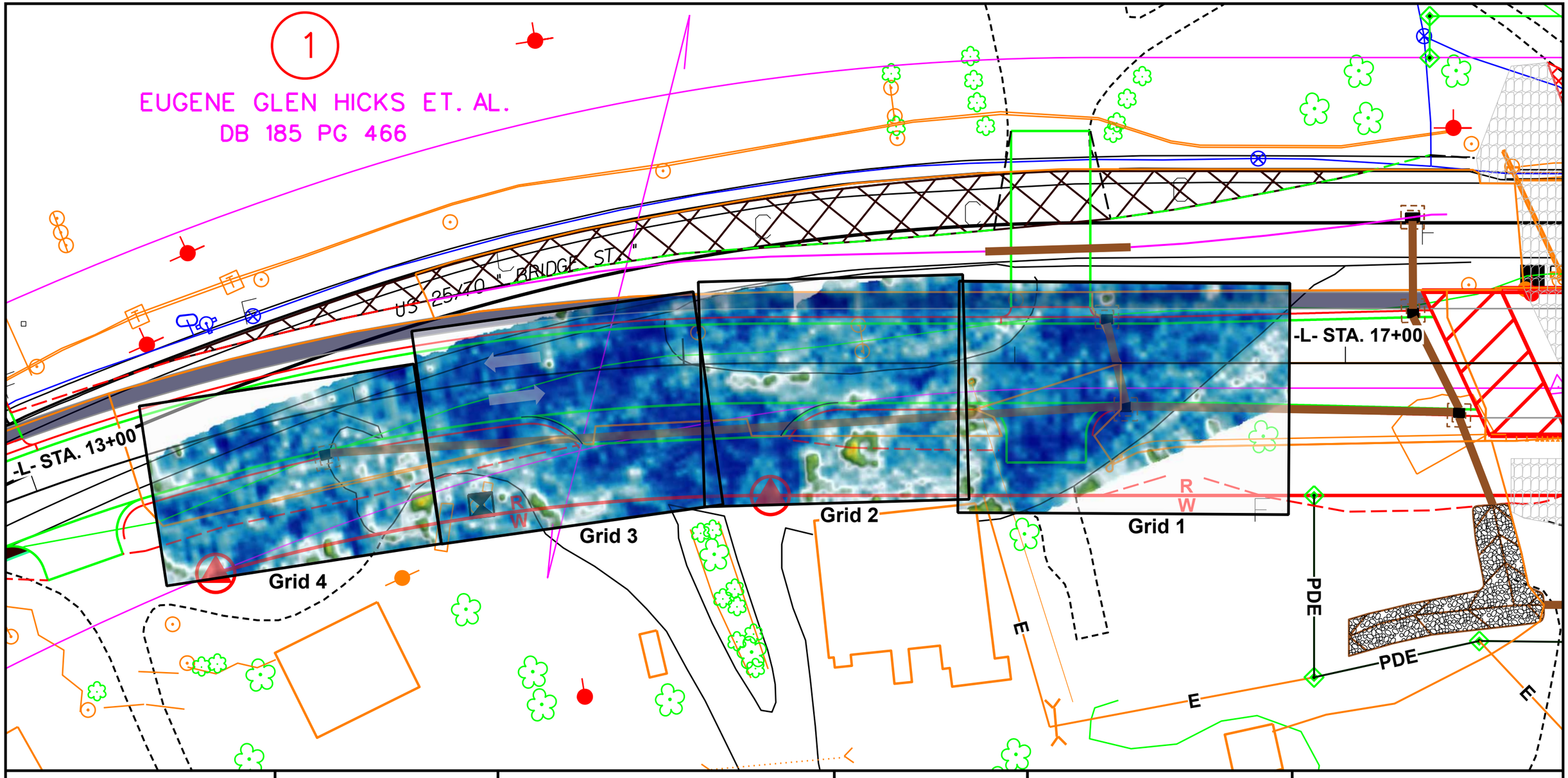


Figure 8 Deep GPR Depth Slices (3.7 - 4.0 feet)	State Project: B-5895 Madison County, NC	Eugene Glen Hicks, et. al. Property 300 Bridge Street, Hot Springs, NC	Parcel #001 Facility I.D. #: N/A	Seramur & Associates, PC Boone, NC	0 25 50 Feet N

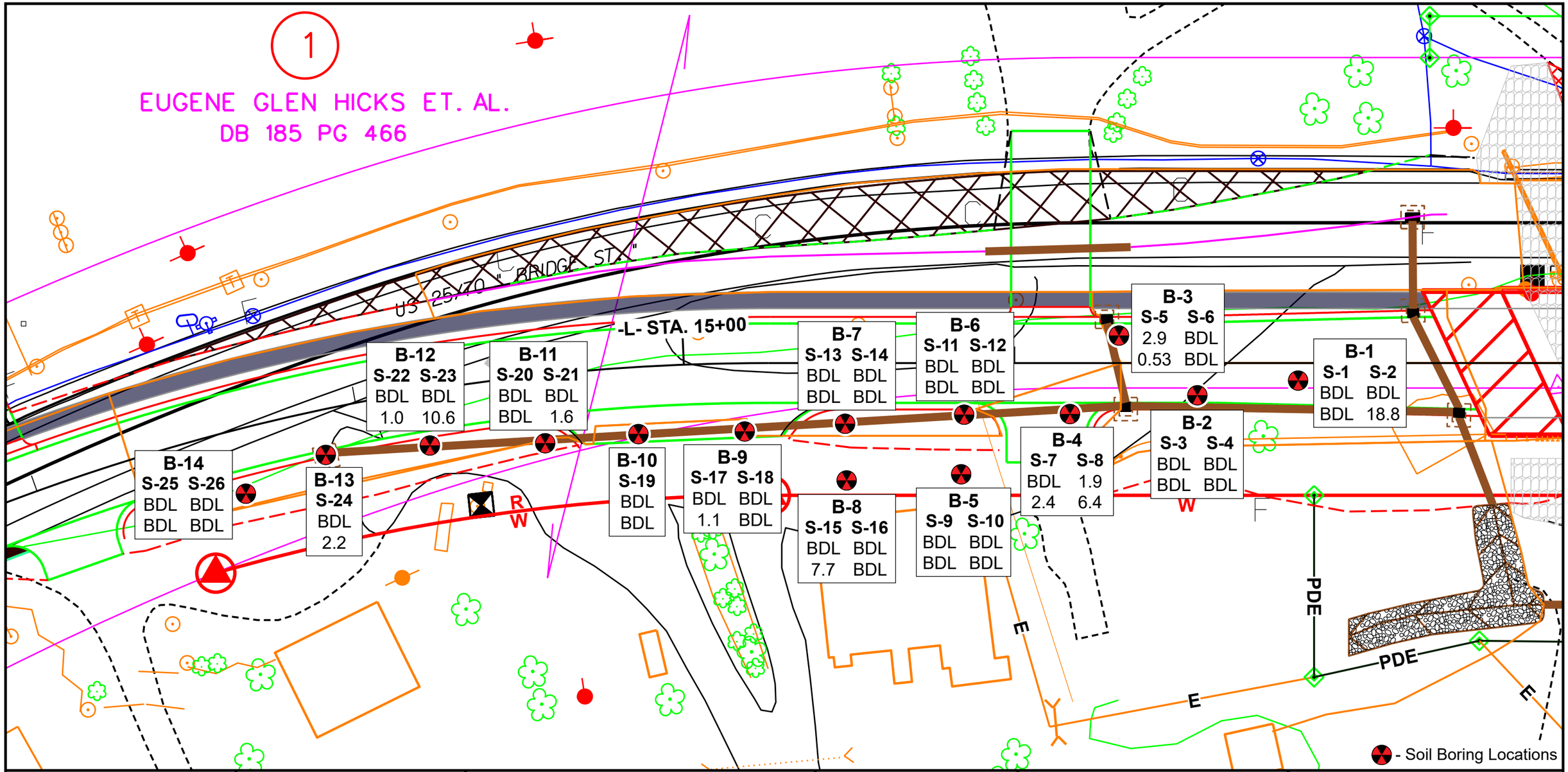


Figure 9 Soil Analytical Results	State Project: B-5895 Madison County, NC	Eugene Glen Hicks, et. al. Property 300 Bridge Street, Hot Springs, NC	Parcel #001 Facility I.D. #: N/A	Seramur & Associates, PC Boone, NC	0 25 50 Feet N

Appendix B

Laboratory Reports

QED REDLAB RAPID ENVIRONMENTAL DIAGNOSTICS QROS

Hydrocarbon Analysis Results

Client: SERAMUR
Address: 300 BRIDGE STEET
HOT SPRINGS, NC

Samples taken Tuesday, November 8, 2022
Samples extracted Tuesday, November 8, 2022
Samples analysed Tuesday, November 8, 2022

Contact: JOEY ANDERSON

Operator TORI KELLY

Project: NCDOT B-5895 - PARCEL 001

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
										% light	% mid	% heavy	
s	S-1	21.3	<0.53	<0.53	<0.53	<0.53	<0.11	<0.17	<0.021	0	100	0	PHC not detected
s	S-2	19.4	<0.49	<0.49	18.8	18.8	1	<0.16	<0.019	0	100	0	Deg.Hydr.Oil 62.8%,(FCM)
s	S-3	22.2	<0.56	<0.56	<0.56	<0.56	<0.11	<0.18	<0.022	0	87.6	12.4	Residual HC
s	S-4	18.4	<0.46	<0.46	<0.46	<0.46	<0.09	<0.15	<0.018	0	90.5	9.5	PHC not detected,(BO)
s	S-5	21.3	<0.53	2.9	0.53	3.43	0.56	<0.17	<0.021	93.3	1.3	5.4	Deg.Gas,(FCM),(BO)
s	S-6	18.1	<0.45	<0.45	<0.45	<0.45	<0.09	<0.14	<0.018	0	80.9	19.1	PHC not detected,(P)
s	S-7	25.0	<0.63	<0.63	2.4	2.4	1.1	<0.2	<0.025	0	72.8	27.2	Deg.PHC 78.5%,(FCM),(BO)
s	S-8	25.5	<0.64	1.9	6.4	8.3	3	<0.2	<0.025	47.1	42.4	10.5	Deg Fuel 88.7%,(FCM)
s	S-9	20.0	<0.5	<0.5	<0.5	<0.5	<0.1	<0.16	<0.02	0	86.4	13.6	Residual HC
s	S-10	12.0	<0.3	<0.3	<0.3	<0.3	<0.06	<0.1	<0.012	0	0	0	,(FCM)

Initial Calibrator QC check OK Final FCM QC Check OK 98.2 %

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 REDLAB RAPID ENVIRONMENTAL DIAGNOSTICS QROS

Hydrocarbon Analysis Results

Client: SERAMUR
Address: 300 BRIDGE STEET
HOT SPRINGS, NC

Samples taken Tuesday, November 8, 2022
Samples extracted Tuesday, November 8, 2022
Samples analysed Tuesday, November 8, 2022

Contact: JOEY ANDERSON

Operator TORI KELLY

Project: NCDOT B-5895 - PARCEL 001

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
										% light	% mid	% heavy	
s	S-11	11.9	<0.3	<0.3	<0.3	<0.3	<0.06	<0.09	<0.012	0	0	0	,(FCM)
s	S-12	24.8	<0.62	<0.62	<0.62	<0.62	<0.12	<0.2	<0.025	0	0	0	PHC not detected
s	S-13	24.3	<0.61	<0.61	<0.61	<0.61	<0.12	<0.19	<0.024	0	0	0	PHC not detected
s	S-14	8.5	<0.21	<0.21	<0.21	<0.21	<0.04	<0.07	<0.008	0	0	0	,(FCM)
s	S-15	17.2	<0.43	<0.43	7.7	7.7	3.7	0.41	<0.017	0	79	21	Road Tar 78.2%,(FCM),(BO)
s	S-16	18.8	<0.47	<0.47	<0.47	<0.47	<0.09	<0.15	<0.019	0	0	100	Residual HC,(BO)
s	S-17	17.4	<0.44	<0.44	1.1	1.1	0.53	<0.14	<0.017	0	84.4	15.6	Road Tar 68.8%,(FCM)
s	S-18	20.0	<0.5	<0.5	<0.5	<0.5	<0.1	<0.16	<0.02	0	0	0	PHC not detected
s	S-19	22.6	<0.57	<0.57	<0.57	<0.57	<0.11	<0.18	<0.023	0	68	32	Residual HC
s	S-20	21.7	<0.54	<0.54	<0.54	<0.54	<0.11	<0.17	<0.022	0	100	0	PHC not detected

Initial Calibrator QC check OK Final FCM QC Check OK 101 %

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 REDLAB RAPID ENVIRONMENTAL DIAGNOSTICS QROS

Hydrocarbon Analysis Results

Client: SERAMUR
Address: 300 BRIDGE STEET
HOT SPRINGS, NC

Samples taken Tuesday, November 8, 2022
Samples extracted Tuesday, November 8, 2022
Samples analysed Tuesday, November 8, 2022

Contact: JOEY ANDERSON

Operator TORI KELLY

Project: NCDOT B-5895 - PARCEL 001

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
										% light	% mid	% heavy	
s	S-21	19.4	<0.49	<0.49	1.6	1.6	0.56	<0.16	<0.019	0	78.7	21.3	Deg Fuel 90.2%,(FCM)
s	S-22	23.0	<0.58	<0.58	1	1	0.5	<0.18	<0.023	0	57.5	42.5	Deg.PHC 55.6%,(FCM),(BO)
s	S-23	16.9	<0.42	<0.42	10.6	10.6	5.1	0.56	<0.017	0	79.6	20.4	Road Tar 77.5%,(FCM)
s	S-24	23.6	<0.59	<0.59	2.2	2.2	2.2	<0.19	<0.024	0	57.1	42.9	V.Deg.PHC 72.4%,(FCM),(BO),(P)
s	S-25	19.4	<0.49	<0.49	<0.49	<0.49	<0.1	<0.16	<0.019	0	0	0	PHC not detected
s	S-26	23.6	<0.59	<0.59	<0.59	<0.59	<0.12	<0.19	<0.024	0	0	0	PHC not detected

Initial Calibrator QC check OK Final FCM QC Check OK 99.4 %

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

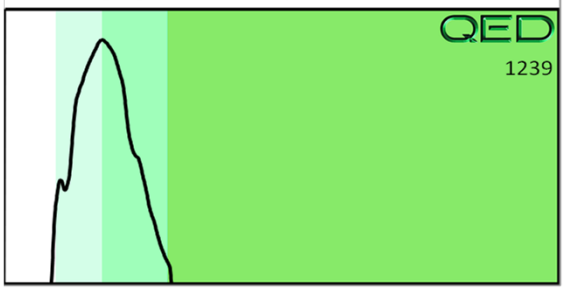
(SBS) or (LBS) = Site Specific or Library Background Subtraction applied to result : (PFM) = Poor Fingerprint Match : (T) = Turbid : (P) = Particulate present

QED Hydrocarbon Fingerprints

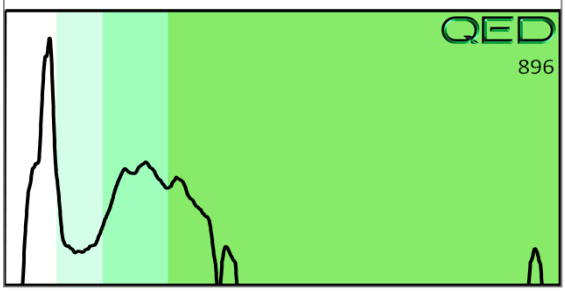
Project: NCDOT B-5895 - PARCEL 001 Tuesday, November 8, 2022

S-1 : PHC not detected

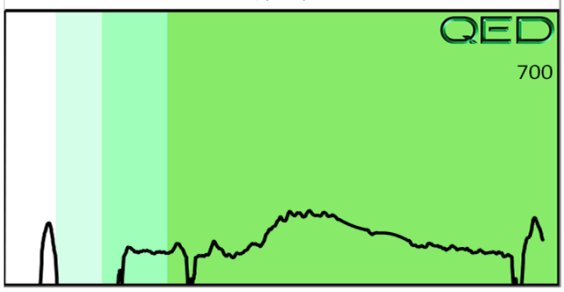
S-2 : Deg.Hydr.Oil 62.8%,(FCM)



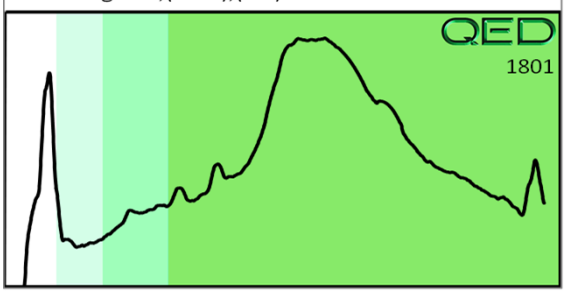
S-3 : Residual HC



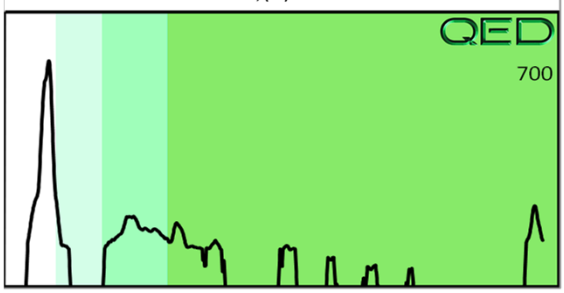
S-4 : PHC not detected,(BO)



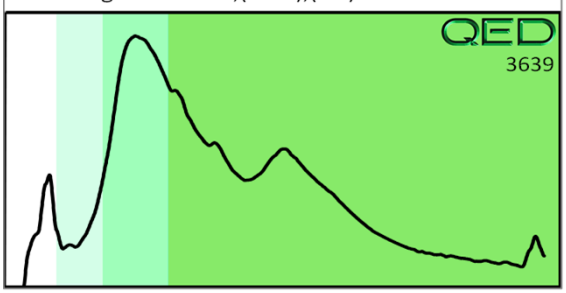
S-5 : Deg.Gas,(FCM),(BO)



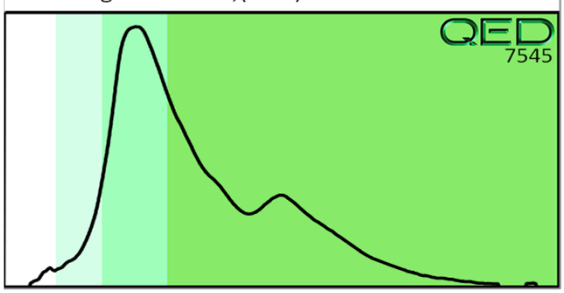
S-6 : PHC not detected,(P)



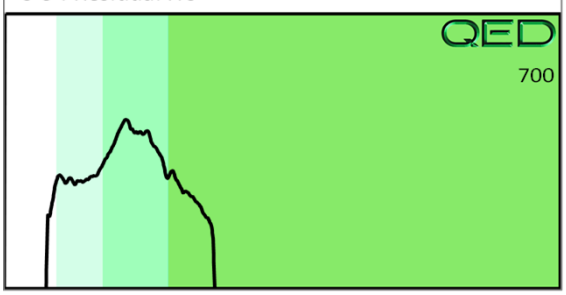
S-7 : Deg.PHC 78.5%,(FCM),(BO)



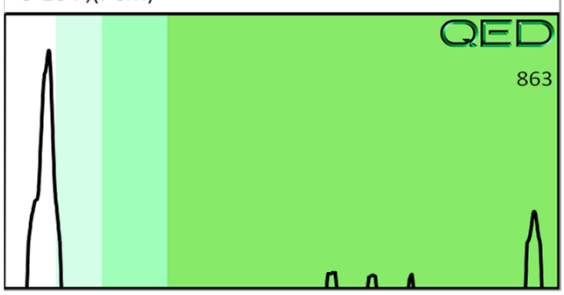
S-8 : Deg Fuel 88.7%,(FCM)



S-9 : Residual HC



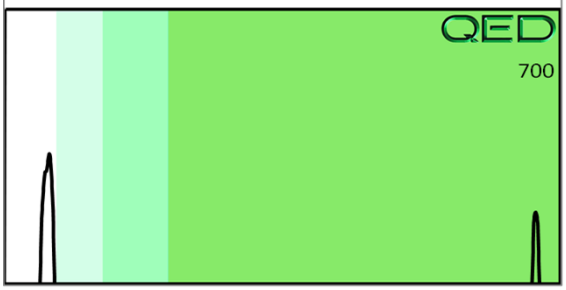
S-10 : ,(FCM)



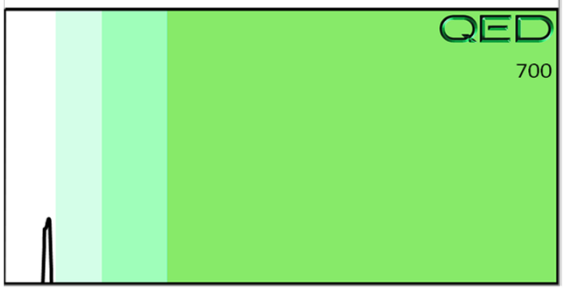
QED Hydrocarbon Fingerprints

Project: NCDOT B-5895 - PARCEL 001 Tuesday, November 8, 2022

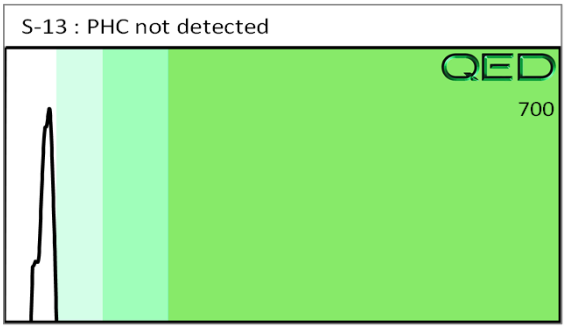
S-11 : ,(FCM)



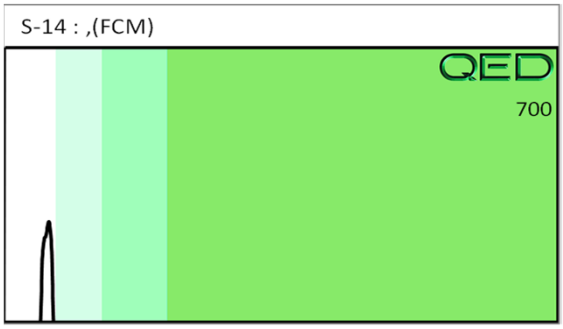
S-12 : PHC not detected



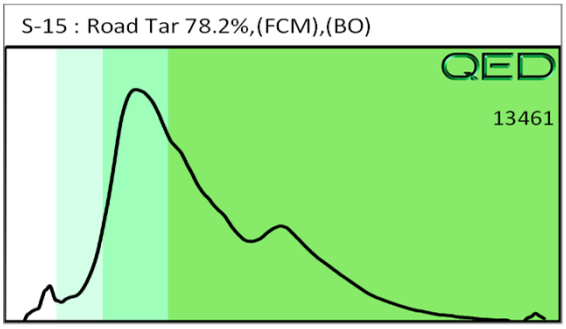
S-13 : PHC not detected



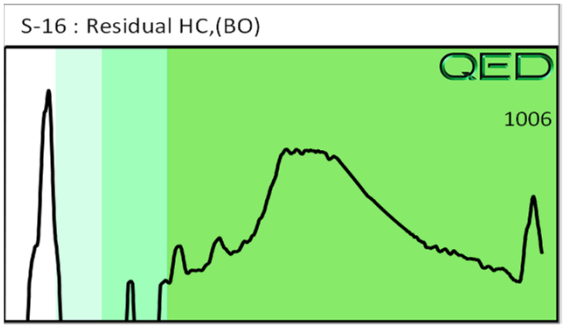
S-14 : ,(FCM)



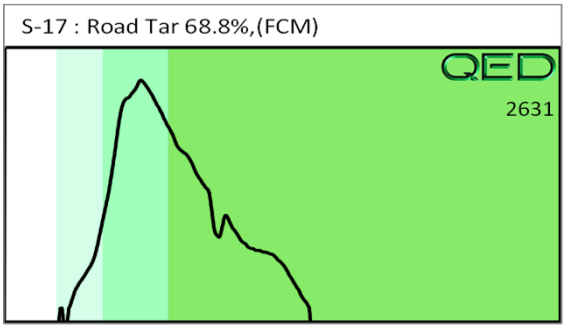
S-15 : Road Tar 78.2%,(FCM),(BO)



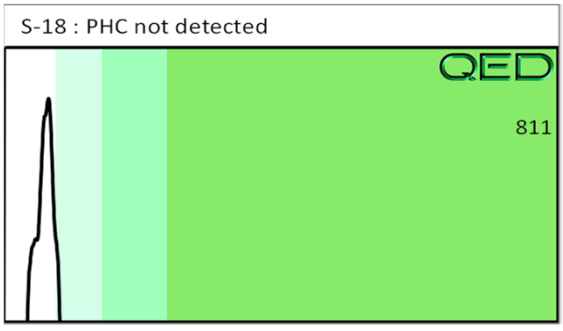
S-16 : Residual HC,(BO)



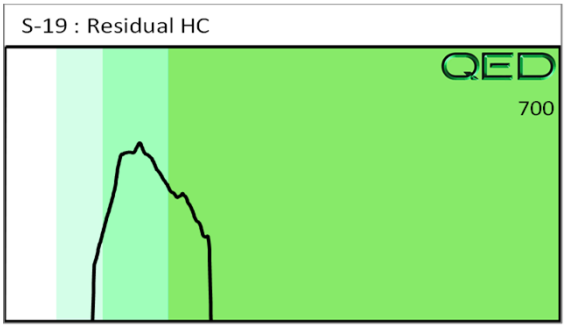
S-17 : Road Tar 68.8%,(FCM)



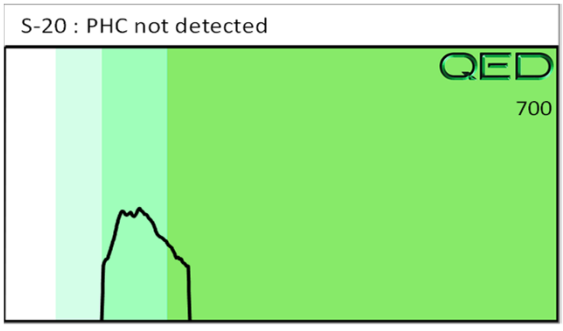
S-18 : PHC not detected



S-19 : Residual HC



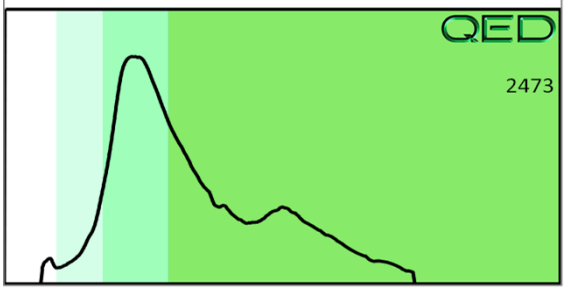
S-20 : PHC not detected



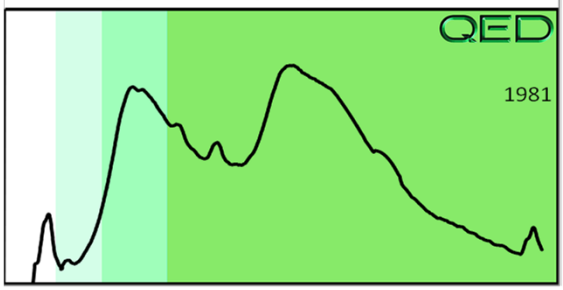
QED Hydrocarbon Fingerprints

Project: NCDOT B-5895 - PARCEL 001 Tuesday, November 8, 2022

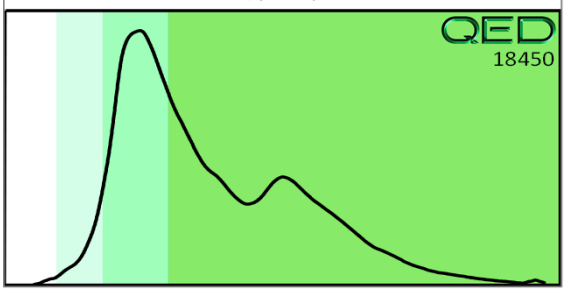
S-21 : Deg Fuel 90.2%,(FCM)



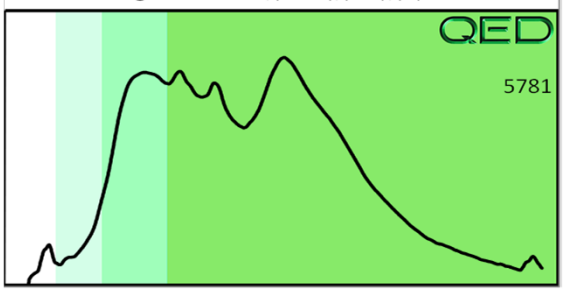
S-22 : Deg.PHC 55.6%,(FCM),(BO)



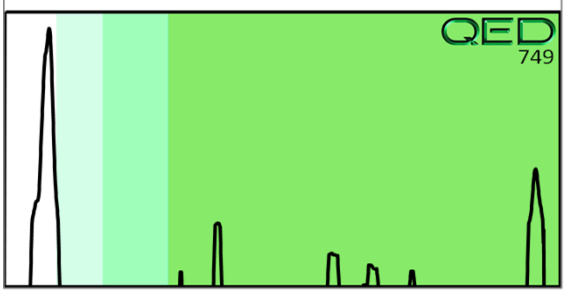
S-23 : Road Tar 77.5%,(FCM)



S-24 : V.Deg.PHC 72.4%,(FCM),(BO),(P)



S-25 : PHC not detected



S-26 : PHC not detected