

Phase II Site Assessment Report

August 16, 2021

WBS Element: 44691.1.1

State Project: R-5759

Wilkes County

at

Redmond Real Estate, LLC

Parcel #: 026

2633 Statesville Road; North Wilkesboro, NC, 28659

PIN #: 3877-86-9731

Facility ID No.: 00-0-0000006263

Groundwater Incident #: N/A

Prepared For:

Mr. Gordon Box

NCDOT, Geotechnical Engineering Unit

GeoEnvironmental Section

1589 Mail Service Center

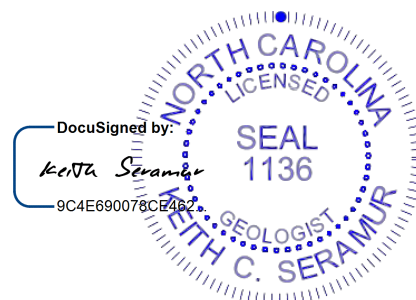
Raleigh, NC 27699-1589

Prepared By:

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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:

Parcel #: 026
Redmond Real Estate, LLC Property
2633 Statesville Road; North Wilkesboro, NC, 28659
PIN #: 3877-86-9731
Facility ID No.: 00-0-0000006263
Groundwater Incident #: N/A

Parcel #026 is located along the eastern side of Statesville Rd approximately 750 feet south of the intersection with Speedway Road. The property is situated at the top of the southwestern slope of the Fishing Creek stream valley, approximately 425 feet west of the stream. Bedrock in the area is mapped as Henderson Gneiss, a biotitic augen gneiss (Rankin, D.W., Espenshade, G.H., Shaw, K.W., and Neumann, R.B.. Geologic map of the west half of the Winston-Salem quadrangle, North Carolina-Virginia, U.S. Geologic Survey Misc. Inv. Series Map I-709-B, 1975).

A Notice to Proceed was obtained on June 25, 2021. Our area of investigation included the proposed Permanent Utility Easement (PUE) and proposed and existing Right-of-Way (R/W) along the eastern side of Statesville Rd. (Figure 2). The Phase II Site Assessment scope of work included completing a geophysical survey, soil sample collection and soil laboratory analysis. Geophysical investigations evaluate the potential for underground storage tanks and remnant UST system infrastructure. The purpose of soil analysis is to assess soil quality across the R/W and PUE (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 Wilkes County Tax Administration records, this property is owned by Redmond Real Estate, LLC. 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 #026:

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

2.2 Geophysical Surveys

Seramur & Associates collected eleven transects of geophysical data. All eleven of these were within the proposed R/W and Permanent Utility Easement (PUE) in the paved area parallel to Statesville Road (Figure 6). It was not possible to collect geophysical grid data because of the high traffic volume coming in and out of the station. There is a constant flow of automobile traffic with vehicles entering and leaving across the entire road frontage. Vehicles are usually parked along the R/W and PUE blocking access to the road frontage. GPR profiles were collected strategically across the R/W and PUE when an opening in the traffic allowed. It was not practical to collect magnetometer data at this property because of the high volume of traffic that would have skewed the magnetic readings. The Schonstedt magnetic detector was used to scan areas of interest.

A Ground Penetrating Radar (GPR) survey was completed across the transects using 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 transect data has been processed and modeled using Radan® software. The GPR data processing included adjusting time zero, completing a background removal and adjusting the time variable gain to enhance deep reflections. The profiles of the GPR transects are shown in Figures 7a through 7e. Significant anomalies are notated on the profile images.

2.3 Soil Sampling and Analyses

On July 15, 2021 Carolina Soil Investigations, LLC mobilized to the site 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 ~8.0 feet is to test for petroleum releases related to underground storage tanks. Soil borings were drilled within the proposed R/W and PUE along Statesville Road.

A track mounted Geoprobe rig was used to drill fourteen soil borings. A new pair of Nitrile gloves was worn while collecting each soil sample. Twenty-nine soil samples in total were collected. 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). The texture and type of soil material in the Geoprobe cores was described and recorded. 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) and 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 #026 (taken on July 15, 2021)



Photos 1 & 2. Images of the current fuel pumps, both gasoline (left) and diesel (right).
Transect starting points (left) and Boring B-14 (right) are also visible.

Photo 3. Using the GPR to clear locations for potential borings



Photo 4. Location of probable product lines from former likely UST system
originating from Parcel #027.



Photo 5. Additional fuel oil UST on the south side
of the gas station. Tank is outside of the R/W and PUE.

3.0 Results of Investigation

Parcel #026 currently operates as a Valero Gas Station and convenience store. A 1963 aerial photograph shows that the east side of Statesville Road had been developed and Parcel #026 was a gas station at that time. The NCDEQ Registered Tanks Database details the UST system on the site (Table 2). The Underground Storage Tank Incident database does not show any

record of previous release incidents at this property. According to the Registered Tanks Database, the old tank system was supposedly installed in 1973 and removed in 1989. The new tanks are located off the southwest corner of the store and have been in the ground since 1989.

SAPC personnel made a pedestrian reconnaissance of the property during the initial site visit on June 29, 2021. The existing UST system was observed west of the store and the fill and vent pipes for an apparent heating oil UST were observed on the south side of the building (Photo 5 on Plate 1).

3.1 Geophysical Surveys

The only anomalies of interest imaged in Transects 1, 2 and 11 were utility lines (Figure 7a, 7b and 7e). The four existing USTs were imaged on Transect 4 and remnant product lines from the former UST system were imaged on Transects 3 and 5 (Figure 7c). The former product lines extend to the north onto Parcel 27 (Figure 6). The diesel dispenser is south of the existing USTs. The diesel product lines and a sewer line were imaged on Transects 7, 8 and 9 (Figure 7d). Utility lines and the sewer line were imaged on Transect 10 (Figure 7e). The Schonstedt magnetic locator did not produce readings indicative of an unknown UST within the PUE or R/W.

The geophysical survey did not find evidence of unknown USTs within the PUE or R/W.

3.2 Soil Borings, Sampling and Laboratory Analysis

The soil at Parcel #026 consists of fill material over residuum (saprolite) (Table 1). The fill material and the residuum are primarily sandy silt and silt loam. Some shallow samples had small amounts of gravel within sandy silt. Groundwater was not encountered at this site. A soil sample was collected from the shallow and deep portions of the Geoprobe cores at each boring. Fourteen borings were drilled, and twenty-nine soil samples were collected. Twenty seven of these soil samples were analyzed for TPH-GRO and DRO (Table B-3).

Borings B-1 through B-14 were drilled within the proposed R/W and existing PUE. The PUE stretches across the center of the parcel along the west side of the pumps. Soil borings were distributed in a manner that avoided the utility lines and UST system components (Figure 5). Although all the Geoprobe cores smelled strongly of petroleum, petroleum constituents were only detected above NCDEQ UST Action Levels in the 8 foot soil sample collected from boring B-12 (Table B-3 and Figure 4). Soil contamination defined as TPH-GRO over 50 ppm and TPH-DRO over 100 ppm is thought to extend around the existing pumps along the eastern side of Statesville Road. The area of contaminated soil is approximately 1,053.2 square feet (Figure 5). A thickness of five feet will be used to estimate the volume of contaminated soil in the PUE and R/W. The estimated volume of contaminated soil is calculated as follows:

$$\begin{aligned} 5.0 \text{ ft.} \times 1053.2 \text{ ft}^2 &= 5,266 \text{ ft}^3 \\ 5,266 \text{ ft}^3 / 27.0 \text{ ft}^3/\text{yd}^3 &= 195.0 \text{ yd}^3 \\ 195.0 \text{ yd}^3 \times 1.5 \text{ tons}/\text{yd}^3 &= 292.5 \text{ tons} \end{aligned}$$

The total volume of contaminated soil detected at Parcel #026 is estimated to be 195.0 yd³ or 292.5 tons.

3.3 Conclusions

Parcel #026 is currently a Valero Gas Station. The geophysical surveys did not image anomalies consistent with unknown USTs. Petroleum constituents were detected above the UST Action Levels in one of the soil samples analyzed at Parcel #026. There was no observed evidence of existing or previous UST systems at this property.

4.0 Recommendations

Contaminated soil is present in the PUE around the gasoline dispenser island. Seramur & Associates does not recommend any further assessment work for Parcel #026. Per a note on the CAD Files for Parcel #026, the UST system is not to be disturbed. It is our understanding that this would include the fuel dispensers as well. If soil disturbance occurs within the PUE where there is known contamination, Seramur & Associates recommends that a licensed geologist or engineer supervise the removal of any soil associated with excavation work in the vicinity of boring B-12 and the gasoline fuel dispensers. Contaminated soil removed from Parcel #026 should be transported to a remediation facility.

Appendix A

Tables and Figures

Table 1. Soil Boring Data - Parcel #026						
Boring No.	Depth (ft)	Lithology	Soil Type	Soil Sample	PID ppm	Comments
B-1	0.0 to 2.5	Sandy silt	Fill	N/A	N/A	
B-1	2.5 to 5.0	Silt loam	Residuum	S-1	1.8	Sample at 3.0 feet.
B-1	5.0 to 10.0	Silt loam	Residuum	S-2	3.4	Sample at 9.0 feet.
B-2	0.0 to 1.0	Sand w/ gravel	Fill	N/A	N/A	
B-2	1.0 to 5.0	Silt loam	Residuum	S-3	3.7	Sample at 3.0 feet.
B-2	5.0 to 10.0	Silt loam	Residuum	S-4	5.5	Sample at 9.0 feet.
B-3	0.0 to 1.0	Sandy silt w/ gravel	Fill	N/A	N/A	
B-3	1.0 to 5.0	Silt loam	Residuum	S-5	7.2	Sample at 3.0 feet.
B-3	5.0 to 10.0	Silt loam	Residuum	S-6	3.5	Sample at 8.0 feet.
B-4	0.0 to 1.0	Sandy silt w/ gravel	Fill	N/A	N/A	
B-4	1.0 to 5.0	Silt loam	Residuum	S-7	5.2	Sample at 3.0 feet.
B-4	5.0 to 10.0	Silt loam	Residuum	S-8	4.0	Sample at 8.0 feet.
B-5	0.0 to 5.0	Sandy silt	Fill	S-9	3.6	Sample at 3.0 feet.
B-5	5.0 to 7.5	Sandy silt	Fill	N/A	N/A	
B-5	7.5 to 10.0	Silt loam	Residuum	S-10	2.9	Sample at 8.0 feet.
B-6	0.0 to 5.0	Sandy silt	Fill	S-11 / S-12	1.5 / 1.5	Samples at 0.5 and 3.0 feet. Shallow stained soil.
B-6	5.0 to 10.0	Sandy silt	Fill	S-13	0.0	Sample at 8.0 feet.
B-7	0.0 to 5.0	Sandy silt	Fill	S-14	0.8	Sample at 3.0 feet.
B-7	5.0 to 10.0	Sandy silt	Fill	S-15	0.5	Sample at 8.0 feet.
B-8	0.0 to 5.0	Sandy silt	Fill	S-16	0.4	Sample at 3.0 feet.
B-8	5.0 to 10.0	Sandy silt	Fill	S-17	0.4	Sample at 8.0 feet.
B-9	0.0 to 5.0	Sandy silt	Fill	S-18	2.3	Sample at 3.5 feet.
B-9	5.0 to 7.0	Sandy silt	Fill	N/A	N/A	
B-9	7.0 to 10.0	Silt loam	Residuum	S-19	3.2	Sample at 8.5 feet.
B-10	0.0 to 3.0	Sandy silt	Fill	N/A	N/A	
B-10	3.0 to 5.0	Silt loam	Residuum	S-20	5.6	Sample at 3.5 feet.
B-10	5.0 to 10.0	Silt loam	Residuum	S-21	5.9	Sample at 9.0 feet.
B-11	0.0 to 3.0	Sandy silt	Fill	N/A	N/A	
B-11	3.0 to 5.0	Silt loam	Residuum	S-22	14.4	Sample at 3.5 feet.
B-11	5.0 to 10.0	Silt loam	Residuum	S-23	23.1	Sample at 7.5 feet.
B-12	0.0 to 1.5	Sandy silt	Fill	N/A	N/A	
B-12	1.5 to 5.0	Silt loam	Residuum	S-24	29.3	Sample at 2.5 feet.
B-12	5.0 to 10.0	Silt loam	Residuum	S-25	18.6	Sample at 8.0 feet.
B-13	0.0 to 1.5	Sandy silt	Fill	N/A	N/A	
B-13	1.5 to 5.0	Silt loam	Residuum	S-26	14.8	Sample at 2.5 feet.
B-13	5.0 to 10.0	Silt loam	Residuum	S-27	4.4	Sample at 8.0 feet.
B-14	0.0 to 5.0	Sandy silt	Fill	S-28	3.9	Sample at 1.0 feet. Shallow stained soil.
B-14	5.0 to 9.0	Sandy silt	Fill	S-29	0.2	Sample at 8.0 feet.
B-14	9.0 to 10.0	Silt loam	Residuum	N/A	N/A	

Table 2. UST Information						
Facility ID	Facility Name	Address1	City	Zip	Contact	Contact City
00-0-0000006263	RUN-IN 804	2633 STATESVILLE RD	N. WILKESBORO	28659	RAYMER OIL COMPANY	STATESVILLE
Tank ID	Installation Date	Perm Close Date	Capacity	Commercial	Product Name	Tank Status
1	4/25/1973	12/1/1989	3000	Y	Gasoline, Gas Mix	Removed
2	4/25/1973	12/1/1989	3000	Y	Gasoline, Gas Mix	Removed
3	4/25/1973	12/1/1989	2000	Y	Gasoline, Gas Mix	Removed
4	4/25/1973	12/1/1989	560	Y	Kerosene, Kero Mix	Removed
A1	12/1/1989	N/A	6000	Y	Gasoline, Gas Mix	Current
A2	12/1/1989	N/A	6000	Y	Gasoline, Gas Mix	Current
A3	12/1/1989	N/A	6000	Y	Gasoline, Gas Mix	Current
A4	12/1/1989	N/A	1000	Y	Diesel	Current
A5	12/1/1989	N/A	560	Y	Kerosene, Kero Mix	Current

Table B-3: Summary of Soil Sampling Results

Revision Date: 07/15/21

Incident Name: Parcel #026

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-1	07/15/21	B-1	3.0	Phase II	<0.4	3.1
S-2	07/15/21	B-1	9.0	Phase II	14	8.2
S-3	07/15/21	B-2	3.0	Phase II	3.2	2.7
S-4	07/15/21	B-2	9.0	Phase II	<0.5	0.5
S-5	07/15/21	B-3	3.0	Phase II	<0.5	2.9
S-6	07/15/21	B-3	8.0	Phase II	7.7	4.0
S-7	07/15/21	B-4	3.0	Phase II	<0.6	1.6
S-8	07/15/21	B-4	8.0	Phase II	<0.4	<0.19
S-9	07/15/21	B-5	3.0	Phase II	<0.5	1.0
S-10	07/15/21	B-5	8.0	Phase II	<0.5	<0.21
S-11	07/15/21	B-6	0.5	Phase II	<0.5	3.5
S-12	07/15/21	B-6	3.0	Phase II	0.9	1.2
S-13	07/15/21	B-6	8.0	Phase II	<0.5	0.3
S-14	07/15/21	B-7	3.0	Phase II	<0.5	0.3
S-15	07/15/21	B-7	8.0	Phase II	<0.5	<0.23
S-16	07/15/21	B-8	3.0	Phase II	<0.5	0.3
S-17	07/15/21	B-8	8.0	Phase II	<0.5	1.2
S-18	07/15/21	B-9	3.5	Phase II	5.8	2.5
S-19	07/15/21	B-9	8.5	Phase II	<0.5	6.6
S-20	07/15/21	B-10	3.5	Phase II	<0.4	12.3
S-21	07/15/21	B-10	9.0	Phase II	2.2	2.5
S-22	07/15/21	B-11	3.5	Phase II	13.1	5.1
S-23	07/15/21	B-11	7.5	Phase II	25.2	3.7
S-24	07/15/21	B-12	2.5	Phase II	8.6	3.6
S-25	07/15/21	B-12	8.0	Phase II	1,339	104.5
S-27	07/15/21	B-13	8.0	Phase II	<0.5	0.22
S-28	07/15/21	B-14	1.0	Phase II	1.7	2.9
NC DEQ Action Level (mg/kg)					50	100

ft. BGS = feet below ground surface

mg/kg = milligrams per kilogram

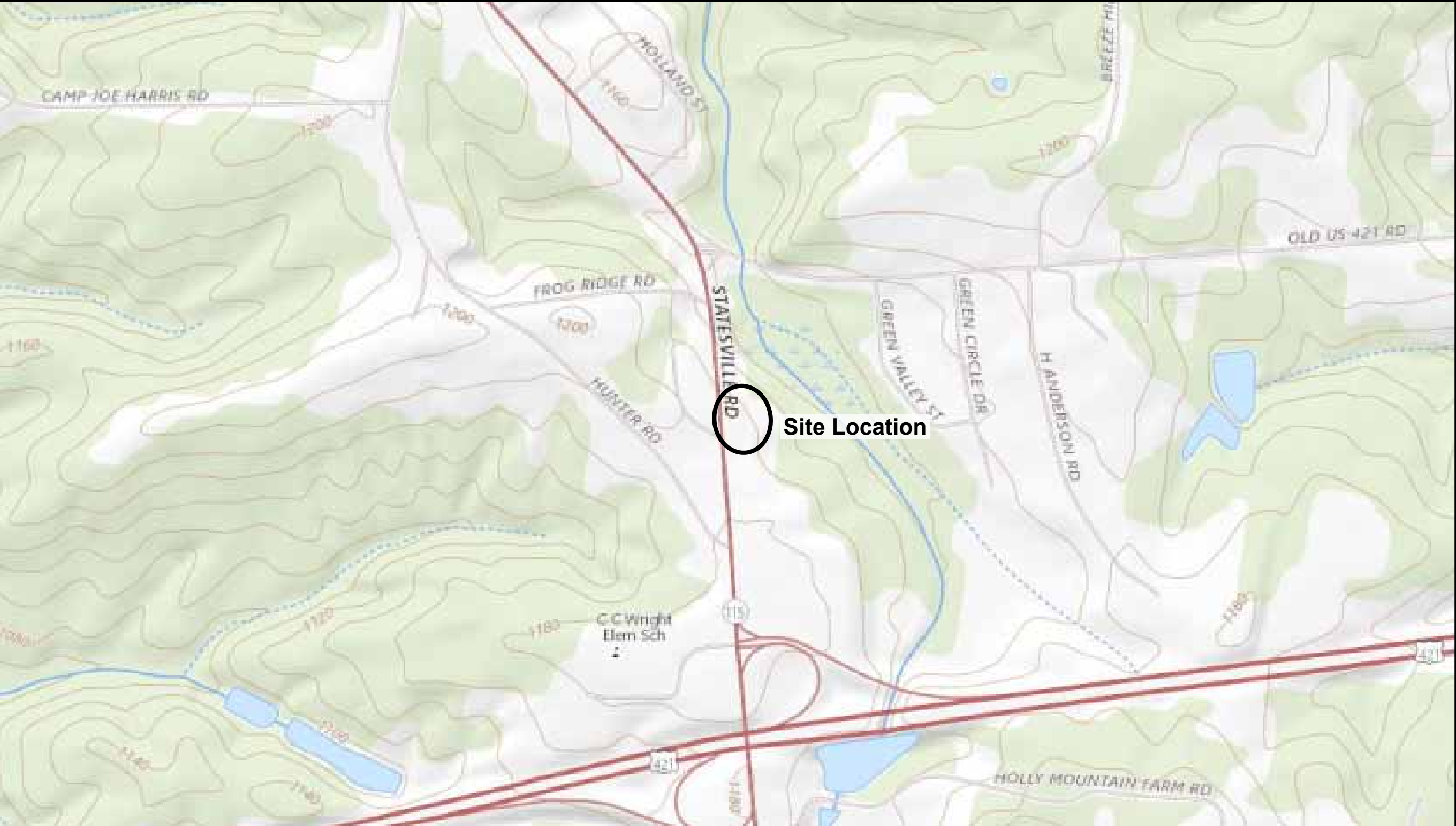
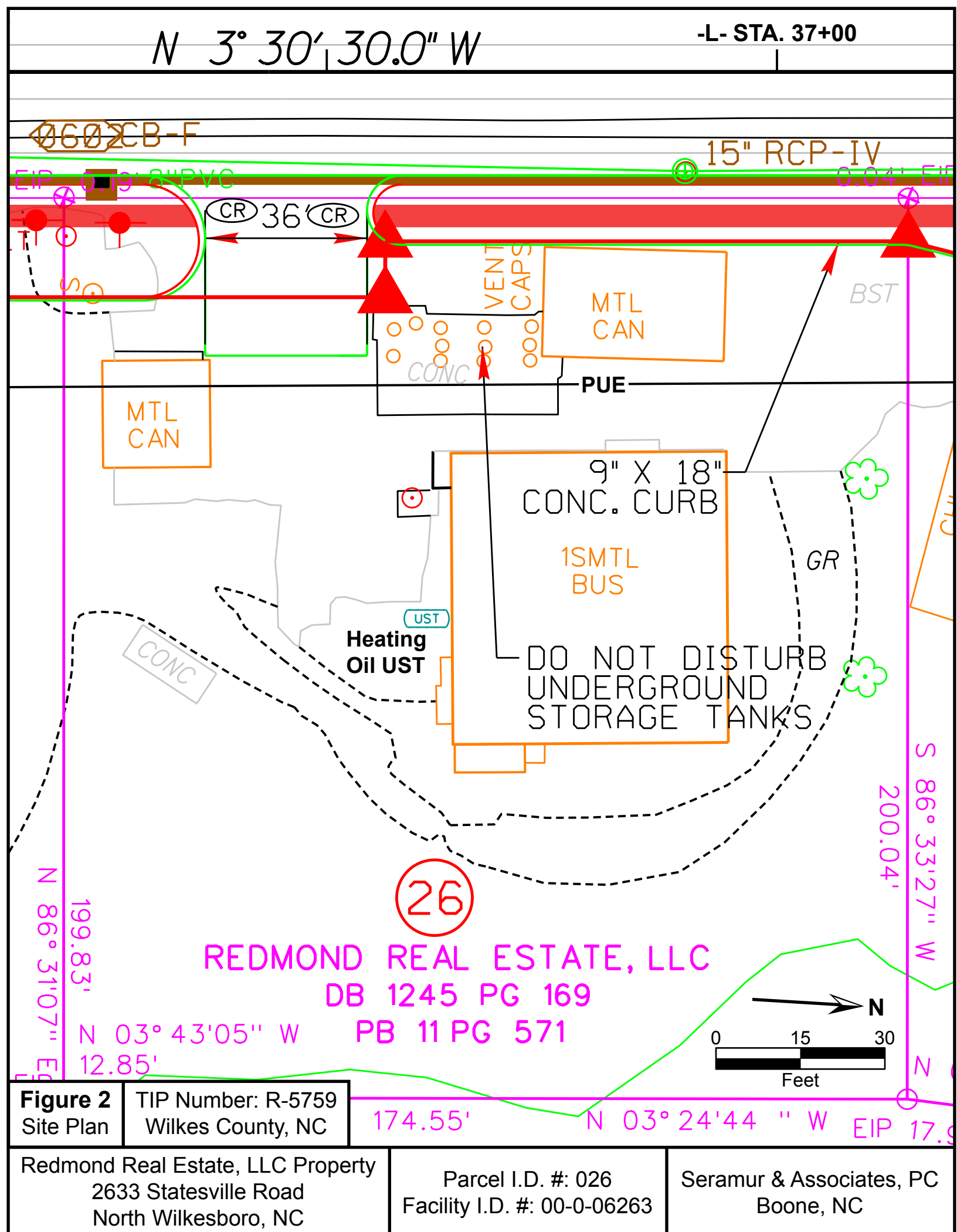


Figure 1 Site Location Map Source: U.S.G.S. The National Map	TIP Number: R-5759 Wilkes County, NC	Redmond Real Estate, LLC Property 2633 Statesville Road North Wilkesboro, NC	Parcel I.D. #: 026 Facility I.D. #: 00-0-06263	Seramur & Associates, PC Boone, NC	0 400 800 Feet N
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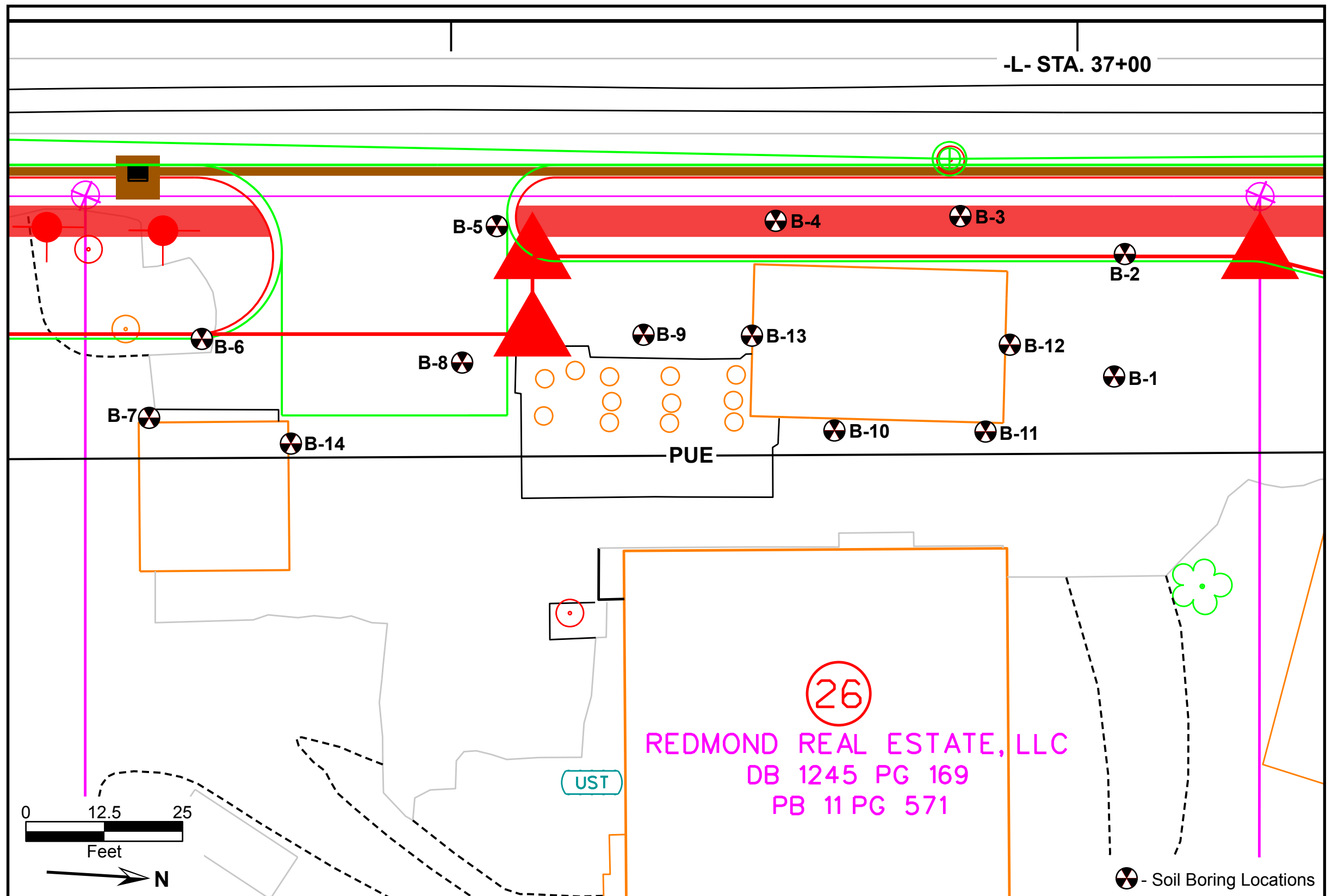


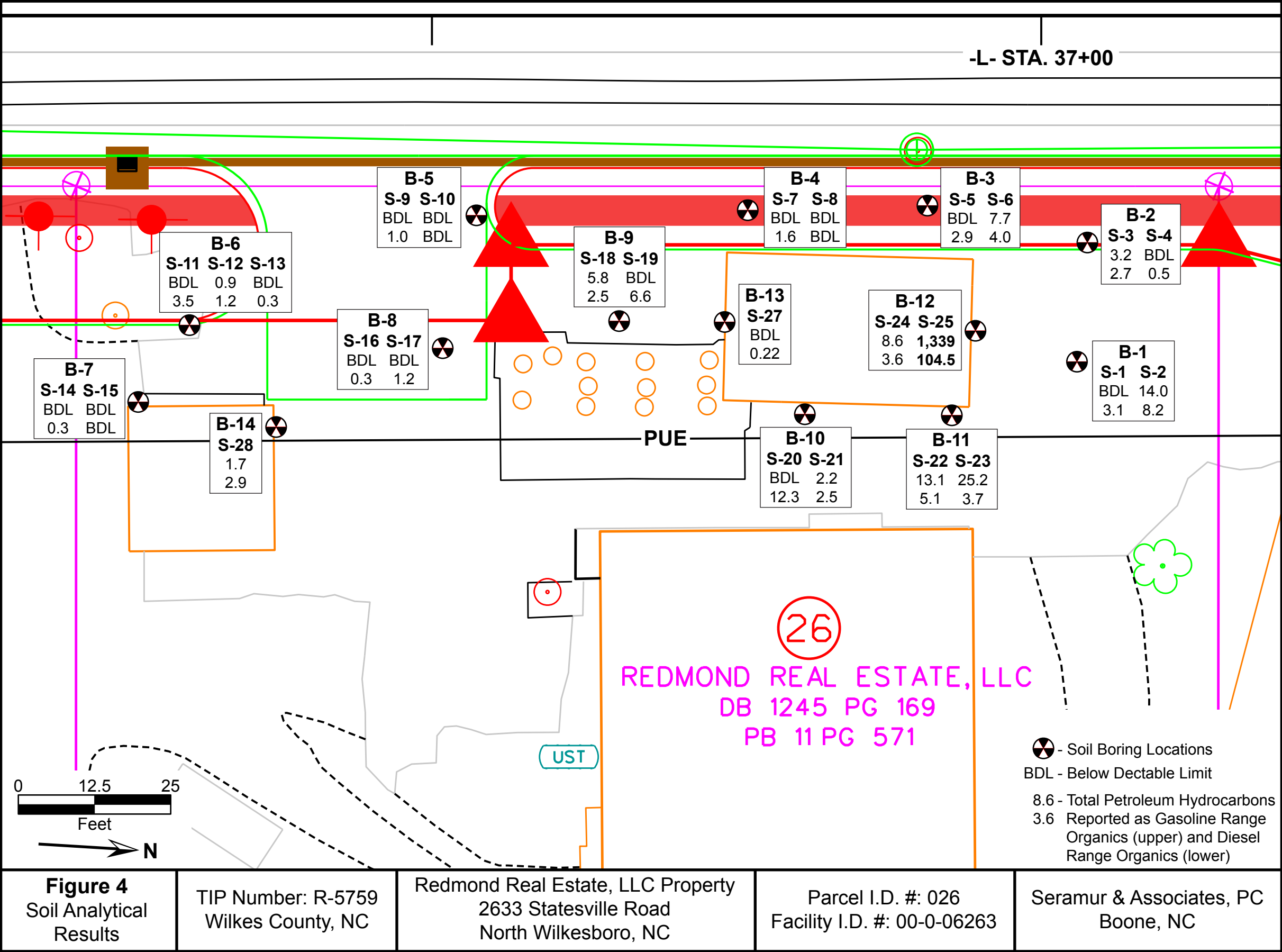
Figure 3
Site Plan with Soil
Boring Locations

TIP Number: R-5759
Wilkes County, NC

Redmond Real Estate, LLC Property
2633 Statesville Road
North Wilkesboro, NC

Parcel I.D. #: 026
Facility I.D. #: 00-0-06263

Seramur & Associates, PC
Boone, NC



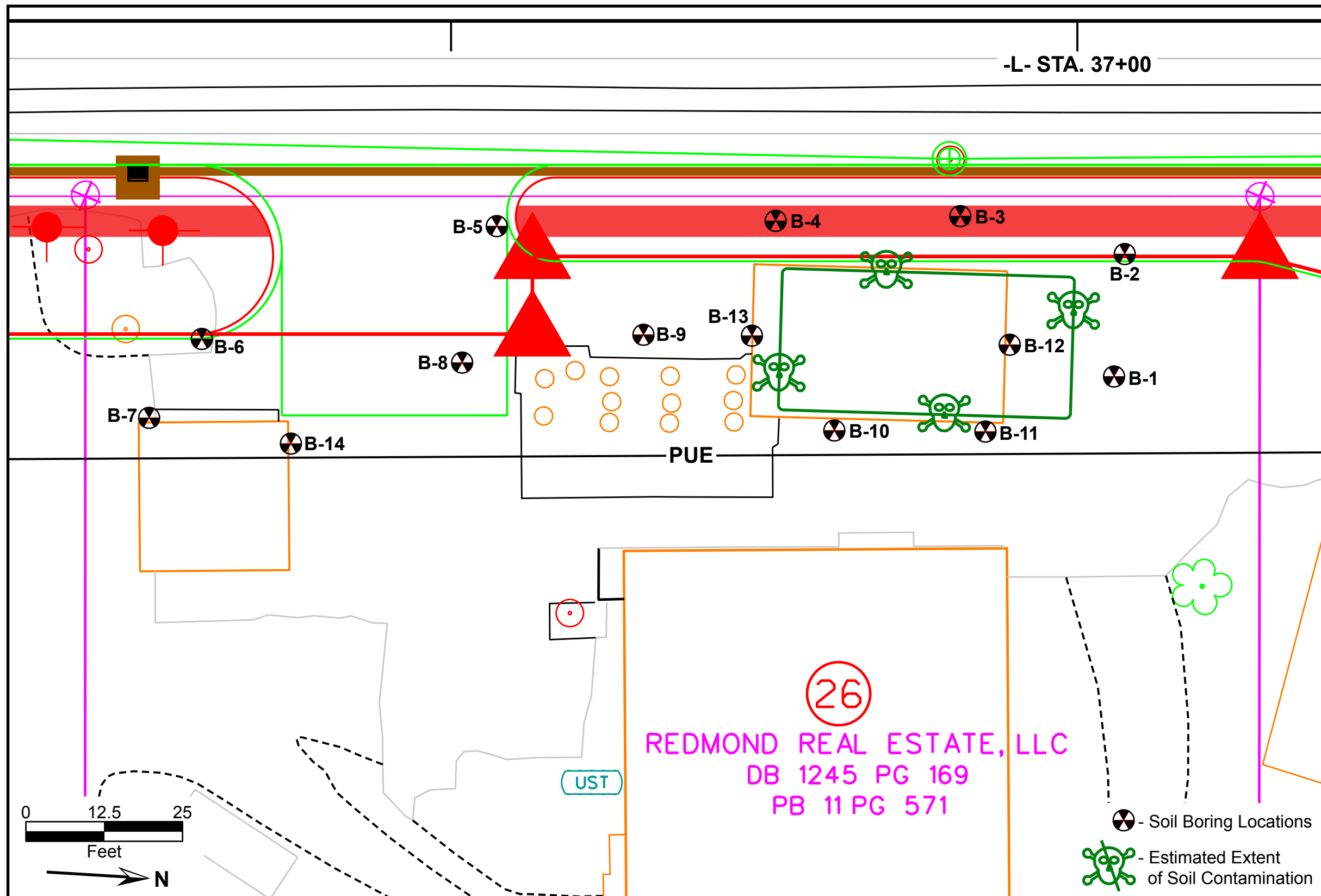
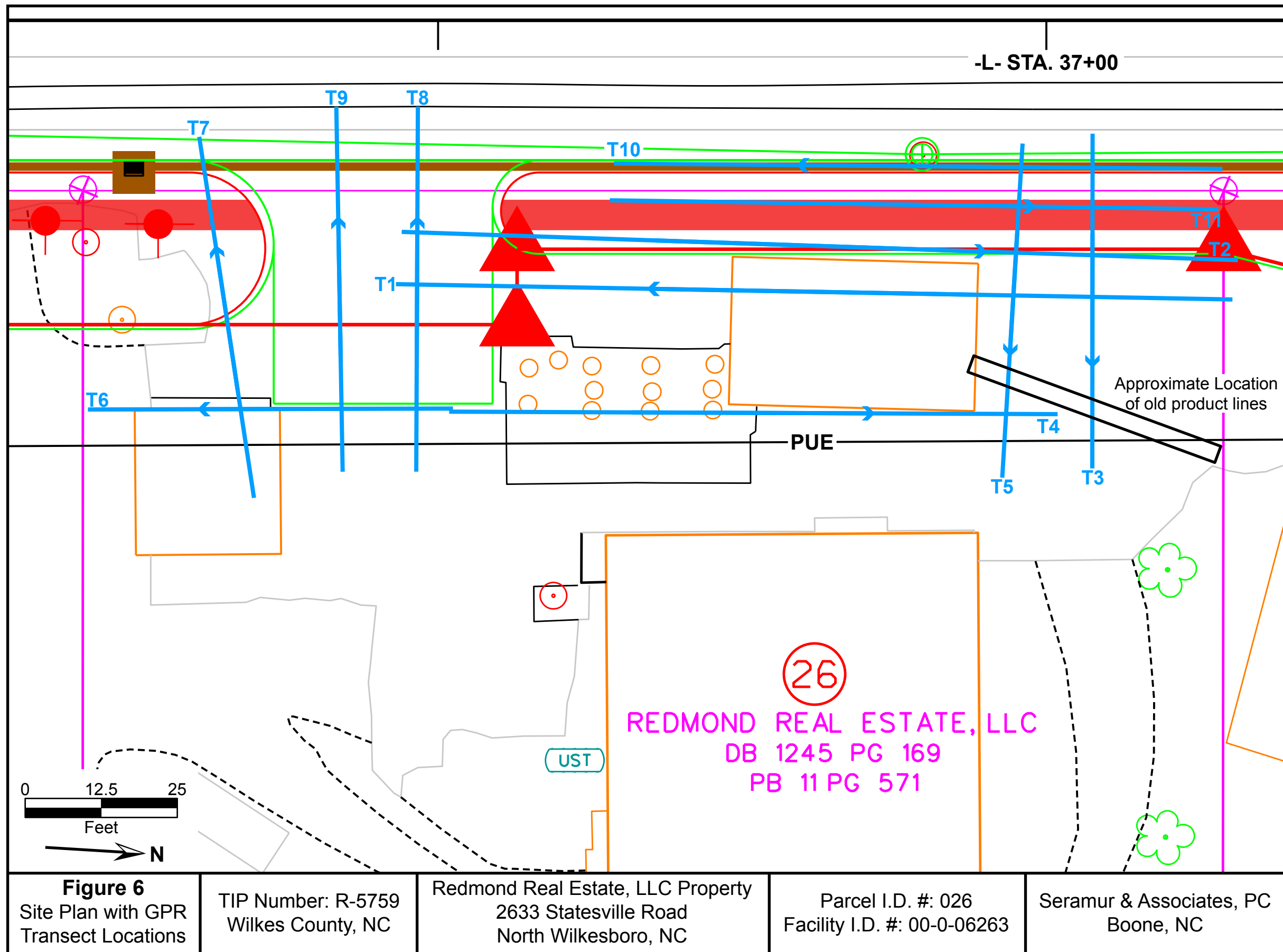


Figure 5 Estimated Extent of Contaminated Soil	TIP Number: R-5759 Wilkes County, NC	Redmond Real Estate, LLC Property 2633 Statesville Road North Wilkesboro, NC	Parcel I.D. #: 026 Facility I.D. #: 00-0-06263	Seramur & Associates, PC Boone, NC
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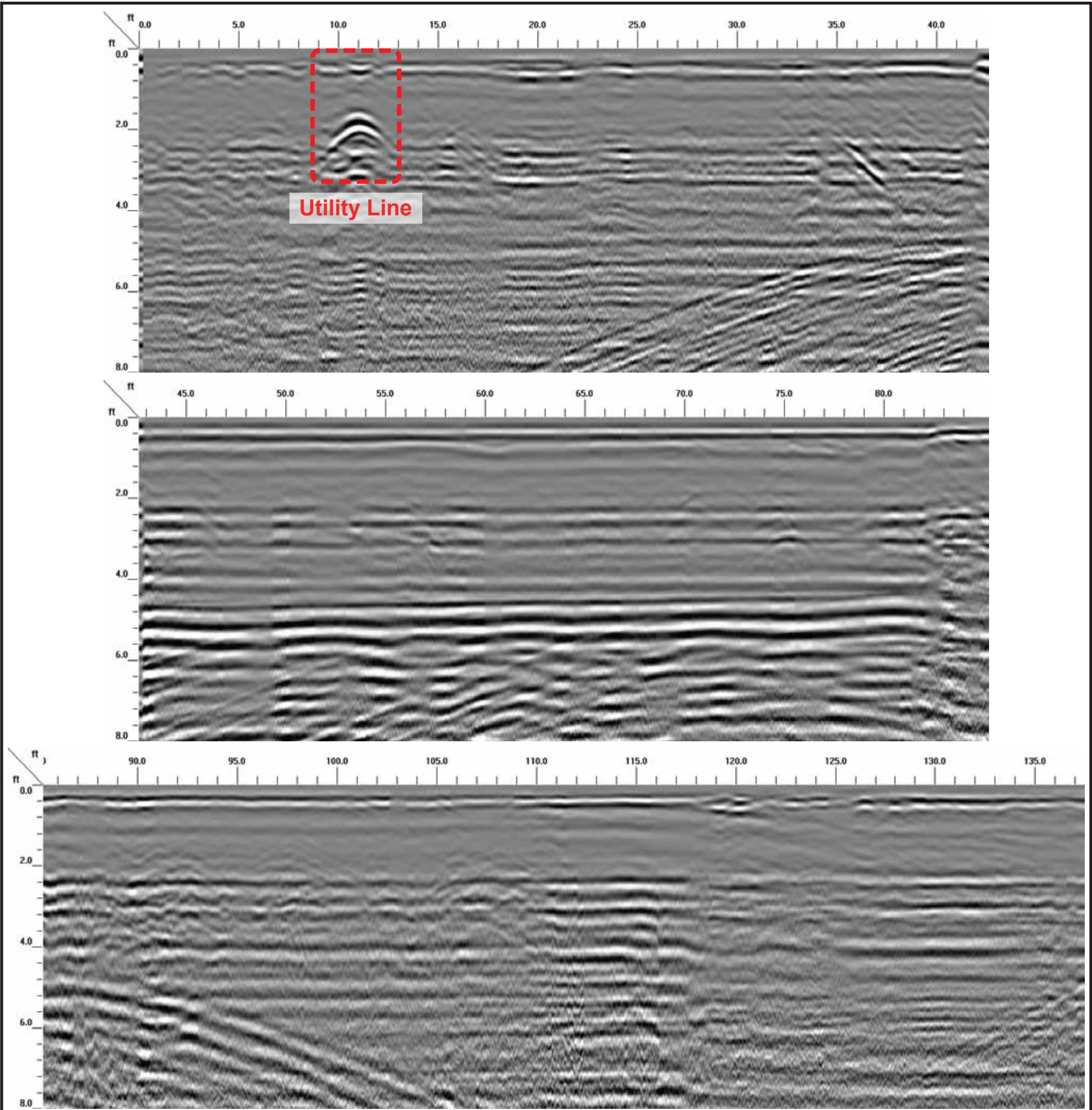


Figure 7a GPR Transect 1	TIP Number: R-5759 Wilkes County, NC	Redmond Real Estate, LLC Property 2633 Statesville Road North Wilkesboro, NC	Parcel I.D. #: 026 Facility I.D. #: 00-0-06263	Seramur & Associates, PC Boone, NC
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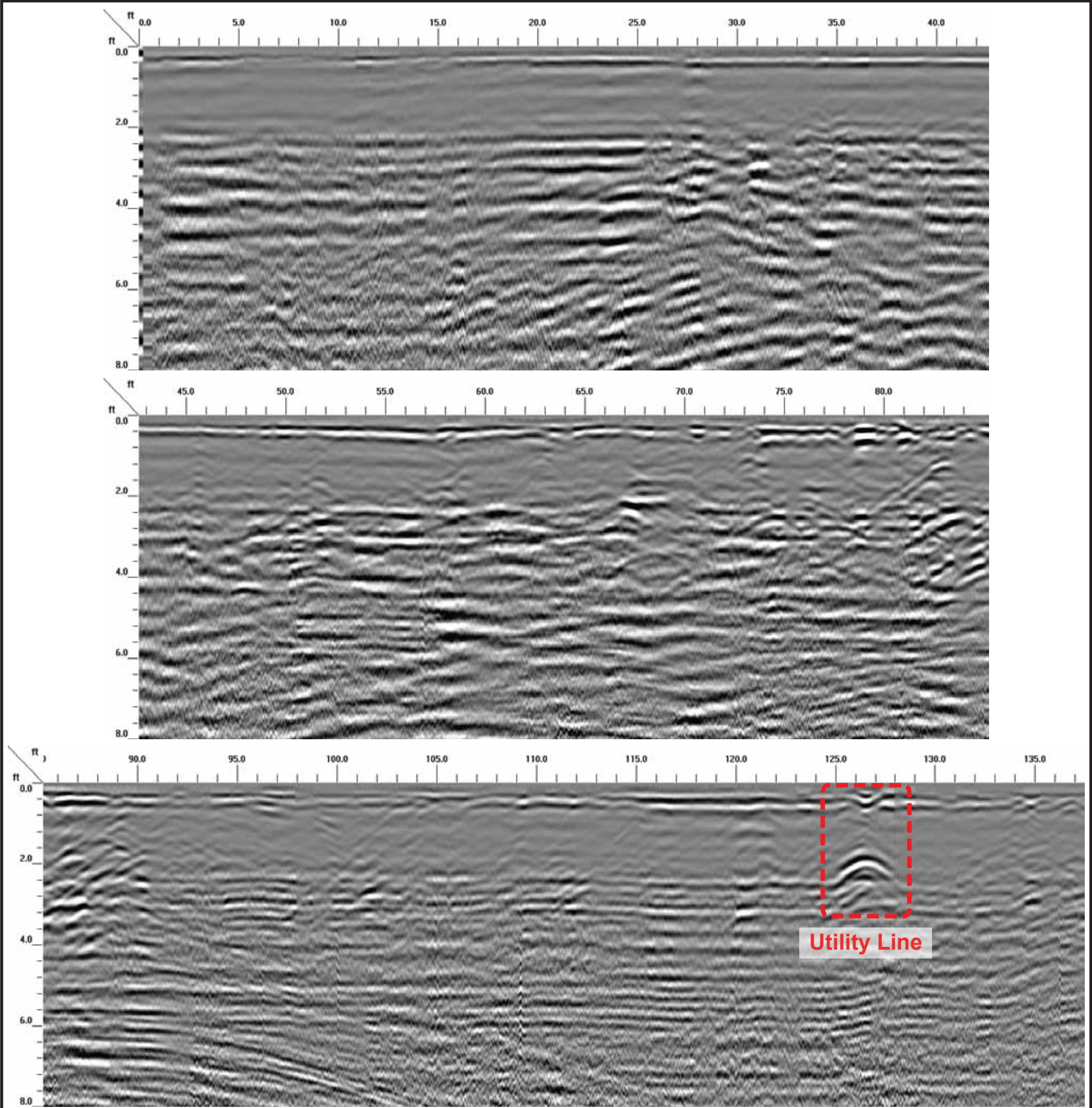
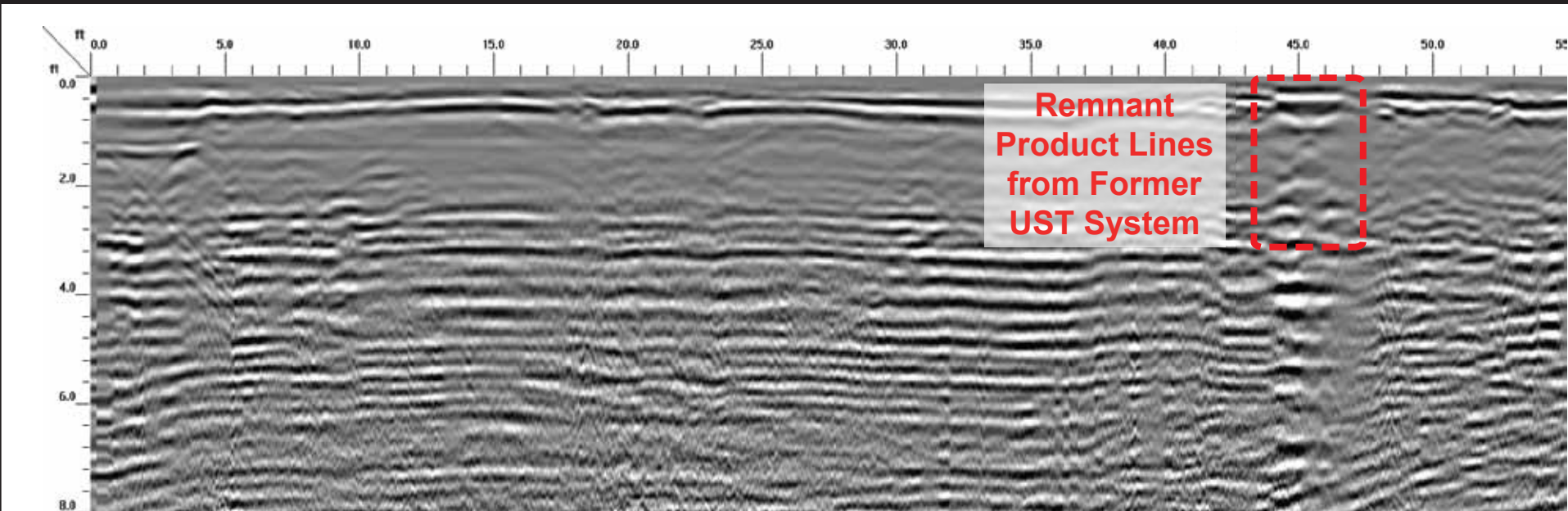
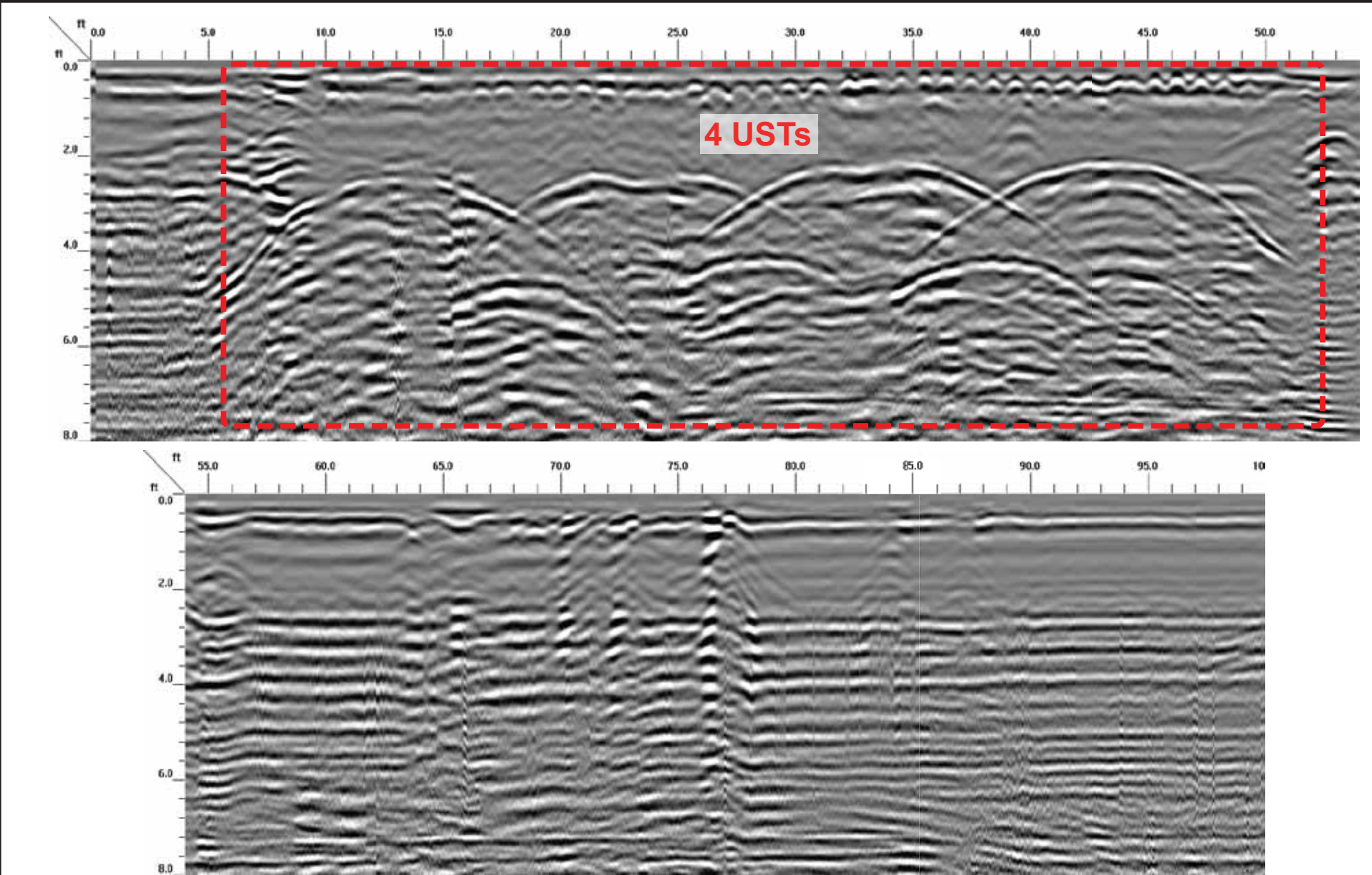


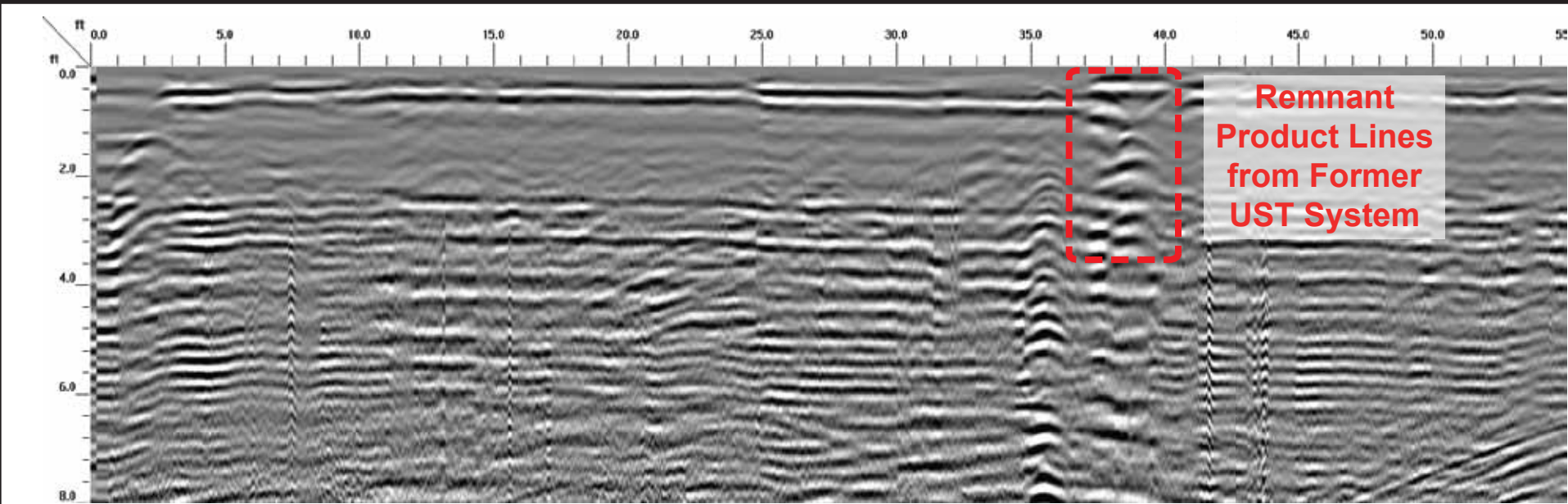
Figure 7b GPR Transect 2	TIP Number: R-5759 Wilkes County, NC	Redmond Real Estate, LLC Property 2633 Statesville Road North Wilkesboro, NC	Parcel I.D. #: 026 Facility I.D. #: 00-0-06263	Seramur & Associates, PC Boone, NC
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Transect 3

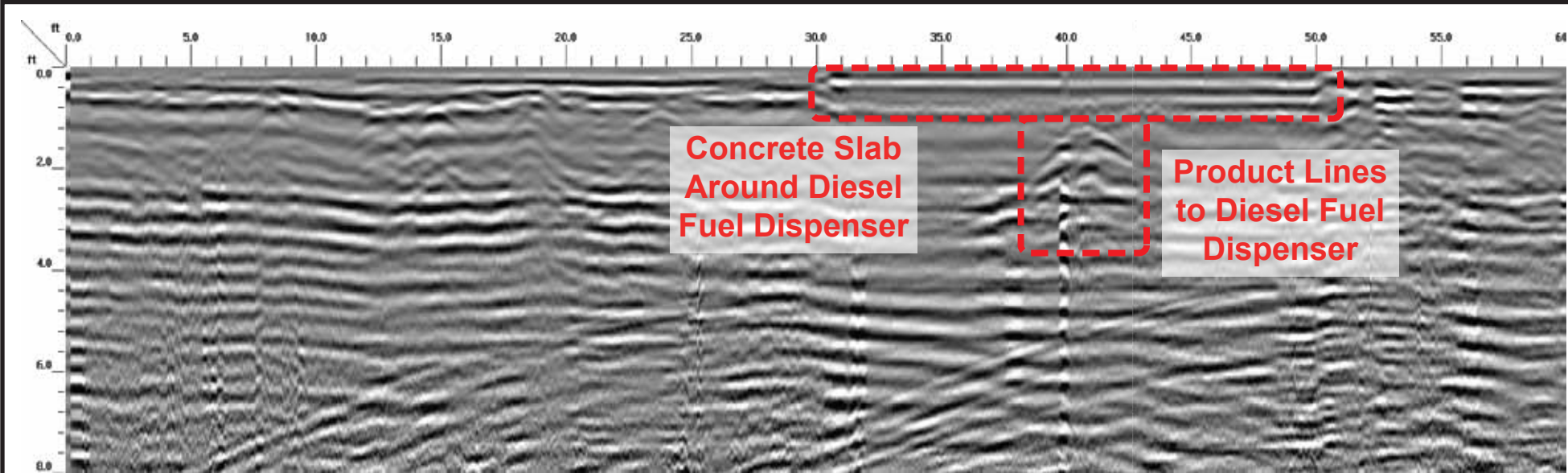


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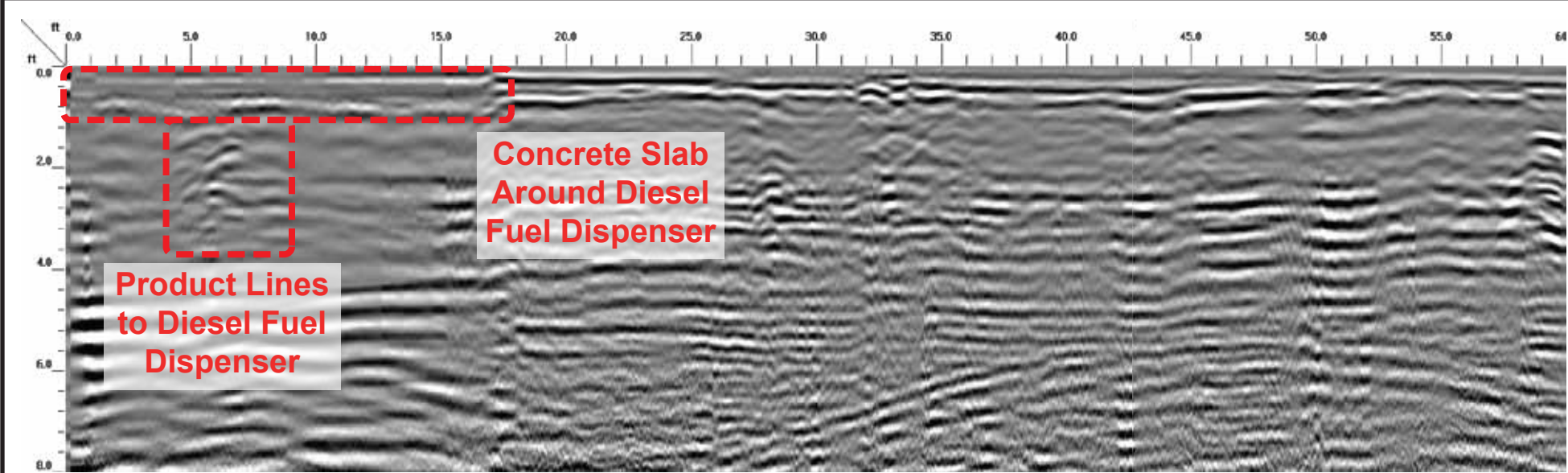


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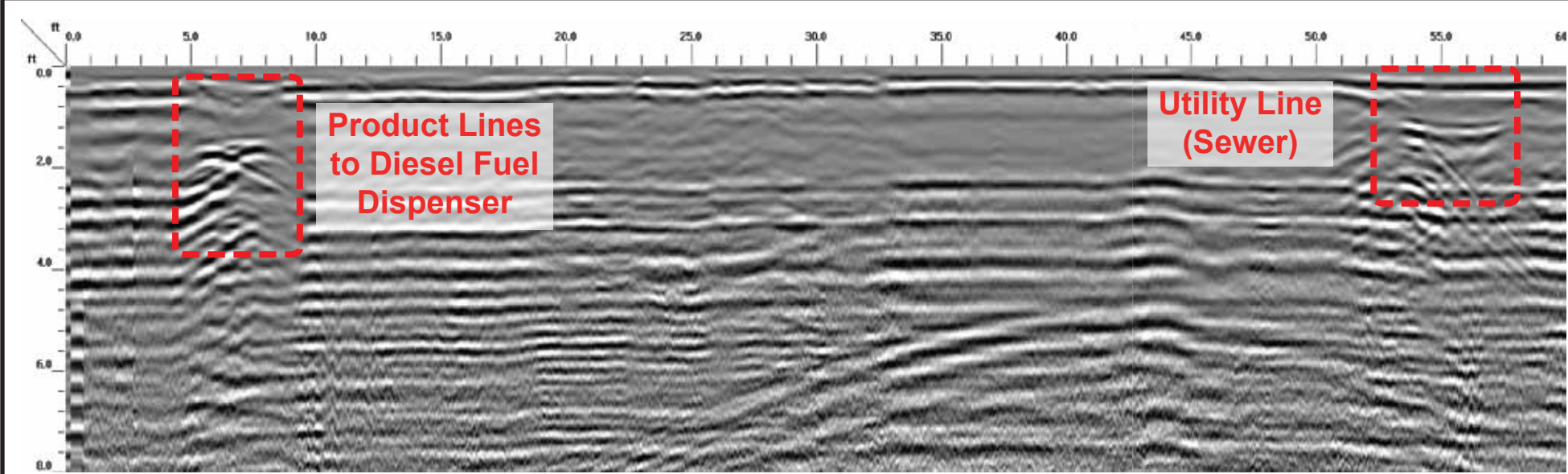
Figure 7c GPR Transects 3 through 5	TIP Number: R-5759 Wilkes County, NC	Redmond Real Estate, LLC Property 2633 Statesville Road North Wilkesboro, NC	Parcel I.D. #: 026 Facility I.D. #: 00-0-06263	Seramur & Associates, PC Boone, NC
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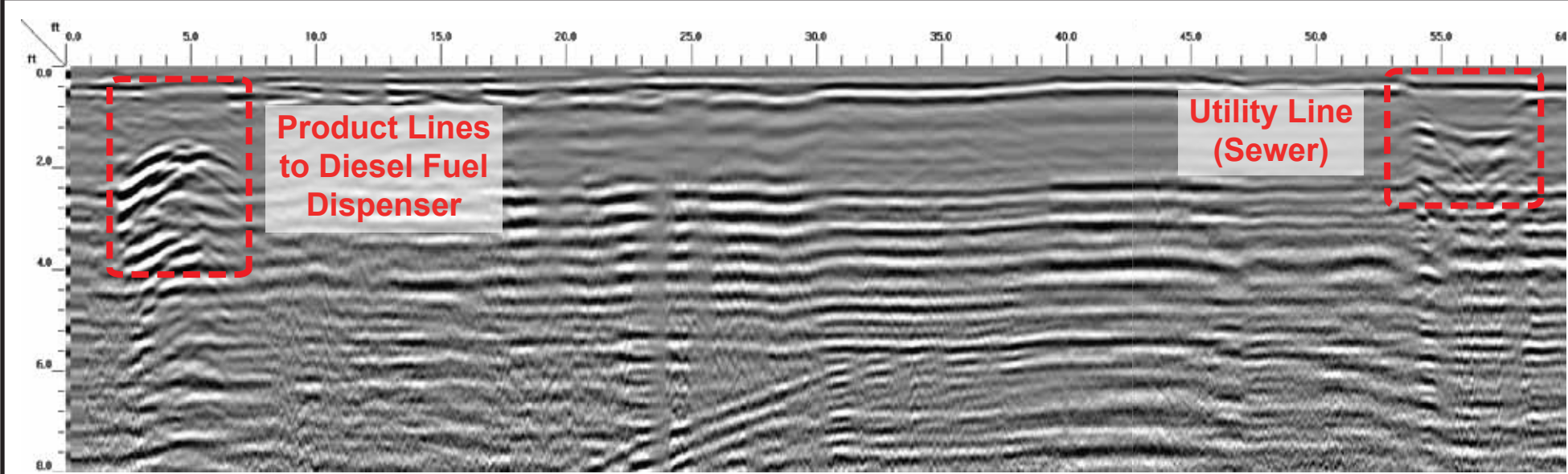
Transect 6



Transect 7

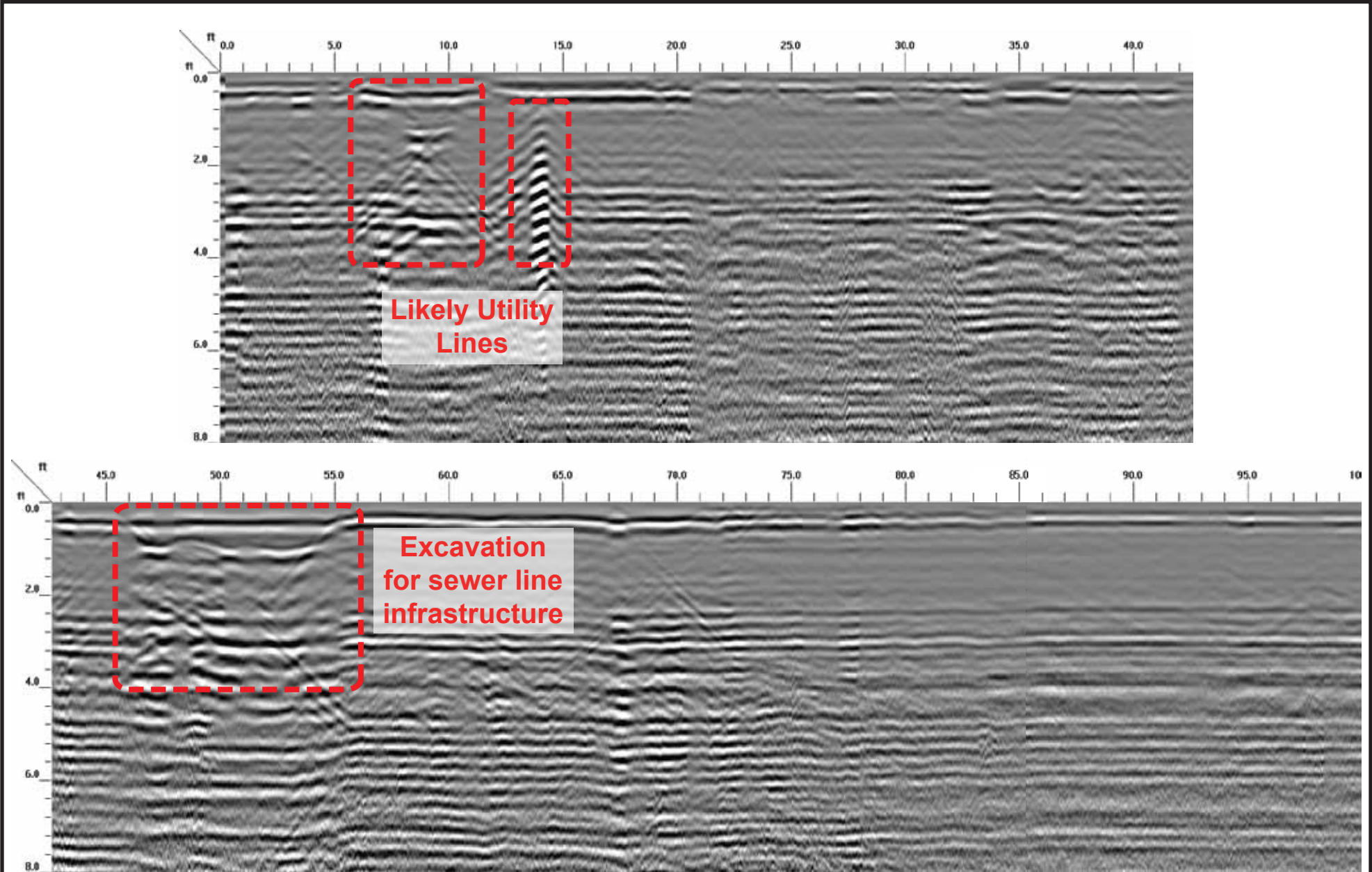


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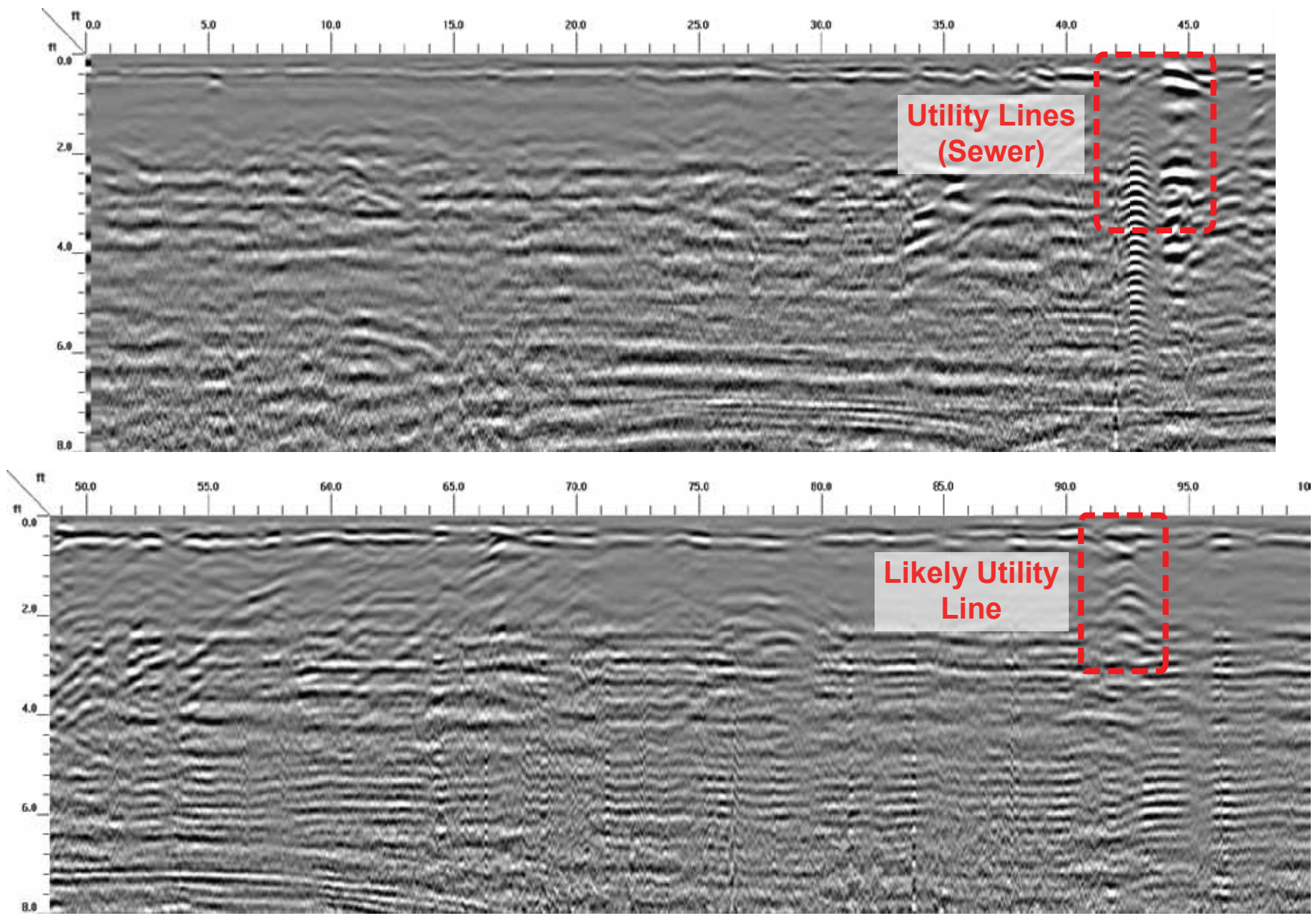


Transect 9

Figure 7d GPR Transects 6 through 9	TIP Number: R-5759 Wilkes County, NC	Redmond Real Estate, LLC Property 2633 Statesville Road North Wilkesboro, NC	Parcel I.D. #: 026 Facility I.D. #: 00-0-06263	Seramur & Associates, PC Boone, NC
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Transect 10



Transect 11

Figure 7e GPR Transects 10 and 11	TIP Number: R-5759 Wilkes County, NC	Redmond Real Estate, LLC Property 2633 Statesville Road North Wilkesboro, NC	Parcel I.D. #: 026 Facility I.D. #: 00-0-06263	Seramur & Associates, PC Boone, NC
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Appendix B
Laboratory Reports

Hydrocarbon Analysis Results



Client: SERAMUR & ASSOCIATES

Address:



Samples taken
Samples extracted
Samples analysed

Thursday, July 15, 2021
Thursday, July 15, 2021
Thursday, July 15, 2021

Contact: KEITH SERAMUR

Operator

MAX MOYER

Project: NCDOT R-5759 ; PARCEL 26

													T03308
Matrix	Sample ID	Dilution used	BTEX	GRO	DRO	TPH	Total Aromatics	16 EPA PAHs	BaP	% Ratios			HC Fingerprint Match
			C6-C9	C5-C10	C10-C35	C5-C35	C10-C35			C5:10	C10:C18	C18+	
Soil	S-1	18.0	<0.4	<0.4	3.1	3.1	3.1	0.16	0.001	0	95.6	4.4	Deg.Light Fuel 93.7%,(FCM)
Soil	S-2	20.0	<0.5	14	8.2	22.2	1	0.06	<0.008	94.4	5.3	0.4	Deg.Light Fuel 95.3%,(FCM)
Soil	S-3	20.0	<0.5	3.2	2.7	5.91	1.3	0.04	<0.001	74.6	23	2.5	V.Deg.PHC 87.9%,(FCM)
Soil	S-4	21.0	<0.5	<0.5	0.5	0.5	0.26	0.007	<0.006	0	89.2	10.8	V.Deg.PHC 85.9%,(FCM)
Soil	S-5	23.0	<0.5	<0.5	2.9	2.9	2.7	0.16	0.001	0	94.3	5.7	Deg Fuel 98.8%,(FCM)
Soil	S-6	18.0	<0.4	7.7	4	11.7	1.2	0.04	<0.005	87.9	12	0.1	Deg.Diesel 64.6%,(FCM)
Soil	S-7	24.0	<0.6	<0.6	1.6	1.6	0.9	0.028	<0.001	0	88.9	11.1	V.Deg.PHC 91.1%,(FCM)
Soil	S-8	19.0	<0.4	<0.4	<0.19	<0.4	<0.01	<0.01	<0.006	0	0	0	PHC ND,(FCM)
Soil	S-9	21.0	<0.5	<0.5	1	1	0.4	0.013	<0.003	0	91.4	8.6	Bit.Road Binder 96.3%,(FCM)
Soil	S-10	21.0	<0.5	<0.5	<0.21	0.014	0.014	0.002	<0.006	0	0	100	Residual HC
Initial Calibrator QC check			OK			Final FCM QC Check			OK			103.1%	

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

Address:



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			C6-C9	C5-C10	C10-C35	C5-C35	C10-C35			C5:10	C10:C18	C18+	
Soil	S-11	21.0	<0.5	<0.5	3.5	3.5	1.6	0.09	0.001	0	87.6	12.4	V.Deg.Light Fuel 99%,(FCM)
Soil	S-12	19.0	<0.4	0.9	1.2	2.22	0.6	0.017	<0.001	66.2	29.6	4.2	V.Deg.PHC 82.6%,(FCM)
Soil	S-13	20.0	<0.5	<0.5	0.3	0.3	0.22	0.006	<0.006	0	87.9	12.1	V.Deg.PHC 90.5%,(FCM)
Soil	S-14	21.0	<0.5	<0.5	0.3	0.3	0.13	0.007	<0.006	0	82.4	17.6	V.Deg.PHC 89.3%,(FCM)
Soil	S-15	23.0	<0.5	<0.5	<0.23	<0.5	<0.012	<0.012	<0.007	0	100	0	Residual HC
Soil	S-16	21.0	<0.5	<0.5	0.3	0.3	0.19	0.011	0.001	0	88.3	11.7	V.Deg.PHC 69.2%,(FCM)
Soil	S-17	21.0	<0.5	<0.5	1.2	1.2	0.7	0.022	<0.001	0	89.4	10.6	V.Deg.PHC 90.3%,(FCM)
Soil	S-18	21.0	<0.5	5.8	2.5	8.36	1.1	0.03	<0.001	86.3	12.3	1.4	V.Deg.PHC 90.8%,(FCM)
Soil	S-19	21.0	<0.5	<0.5	6.6	6.6	1.5	0.09	<0.011	0	94.1	5.9	V.Deg.Diesel 92.5%,(FCM)
Soil	S-20	19.0	<0.4	<0.4	12.3	12.3	5.3	0.29	0.008	0	87.1	12.9	V.Deg.Light Fuel 98%,(FCM)

Initial Calibrator QC check **OK**

Final FCM QC Check **OK**

96.1%

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.

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

Data generated by HC-1 Analyser

Hydrocarbon Analysis Results



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Address:



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			C6-C9	C5-C10	C10-C35	C5-C35	C10-C35			C5:10	C10:C18	C18+	
Soil	S-21	18.0	<0.4	2.2	2.5	4.77	1.4	0.04	<0.001	64.6	32.3	3.1	V.Deg.PHC 83%,(FCM)
Soil	S-22	26.0	<0.6	13.1	5.1	18.2	2.6	0.12	0.001	85.6	13.8	0.6	No Match found
Soil	S-23	19.0	<0.4	25.2	3.7	28.9	1.1	0.07	<0.0	96.3	3.4	0.2	Deg.Light Fuel 94.8%,(FCM),(BO)
Soil	S-24	23.0	<0.5	8.6	3.6	12.2	1.4	0.05	0.001	87.8	11	1.2	No Match found
Soil	S-25	319.0	396	1339	104.5	1443.5	86.6	3.4	<0.09	94.9	5.1	0	Deg Gas 78.1%,(FCM)
Soil	S-27	23.0	<0.5	<0.5	0.22	0.22	0.11	0.006	<0.007	0	82	18	Residual HC
Soil	S-28	25.0	<0.6	1.7	2.9	4.62	1.1	0.06	0.001	63.5	31.1	5.4	V.Deg.PHC 88.4%,(FCM)
Initial Calibrator QC check			OK		Final FCM QC Check					OK		94.6%	

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.

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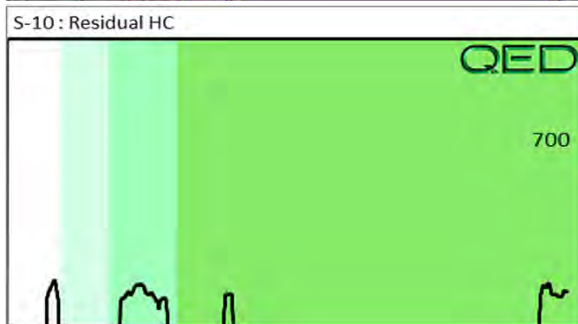
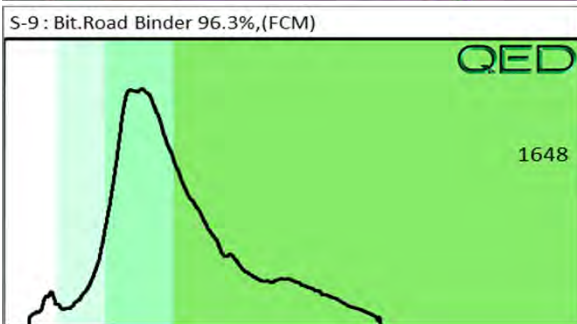
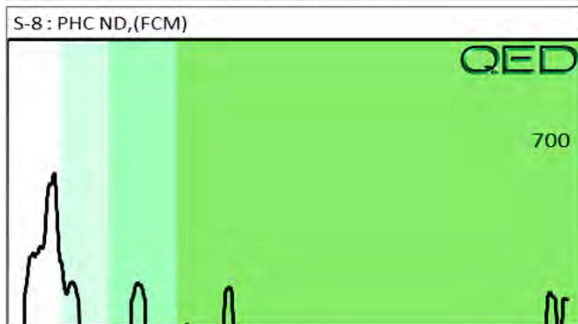
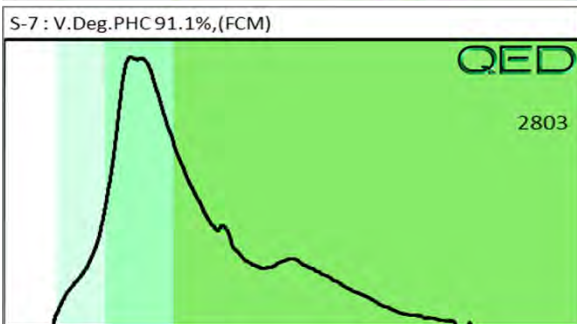
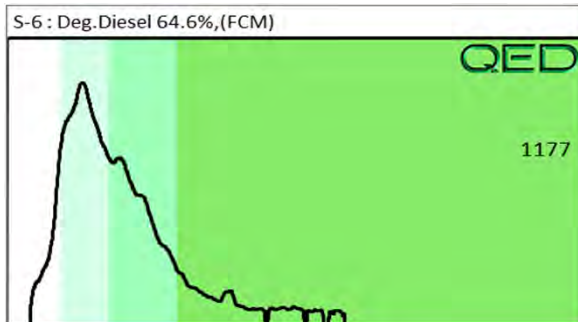
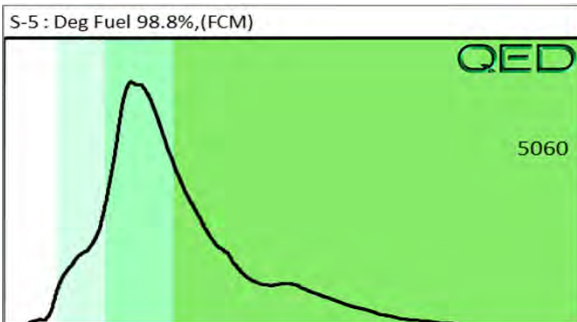
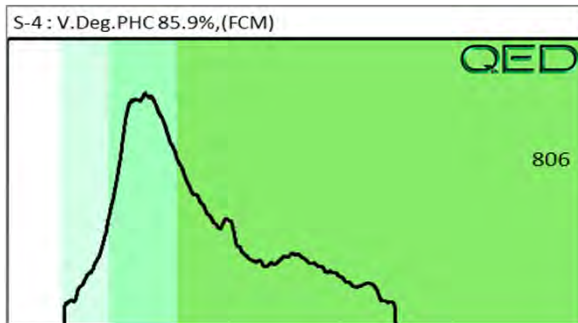
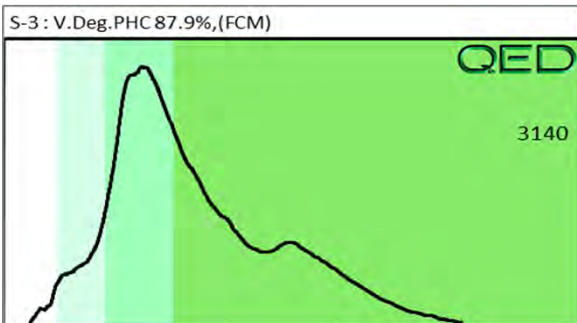
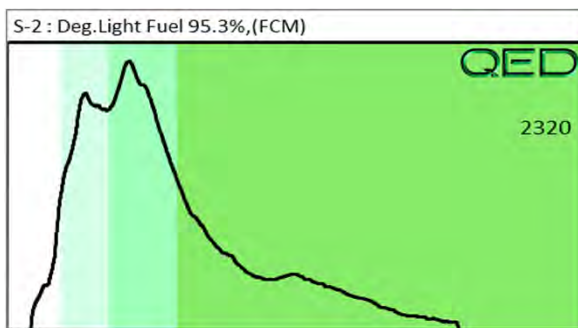
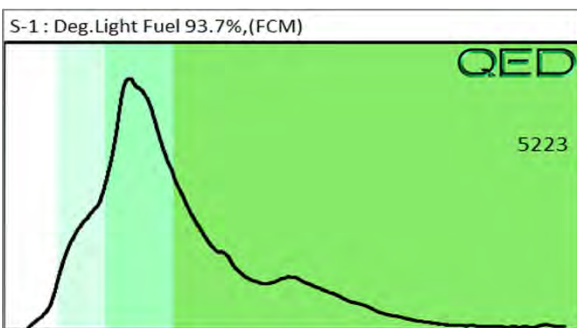
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QED Hydrocarbon Fingerprints

Project: NCDOT R-5759 ; PARCEL 26

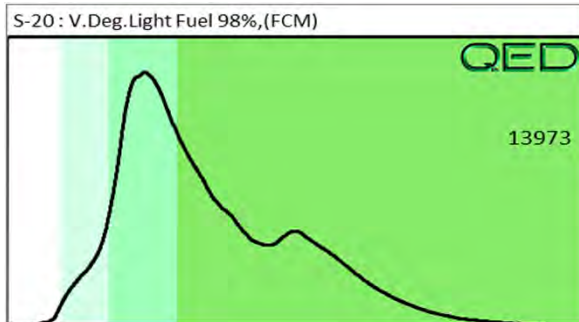
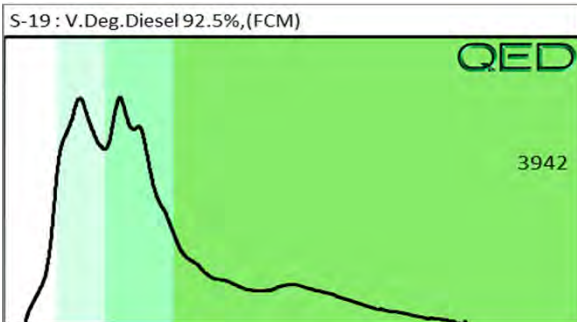
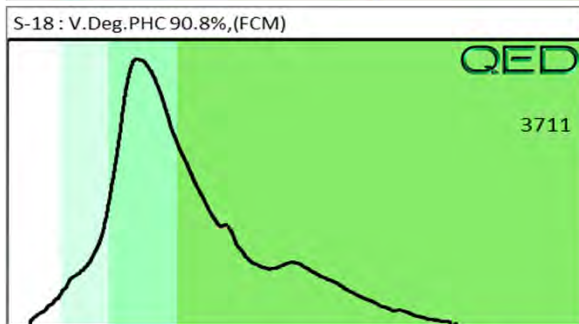
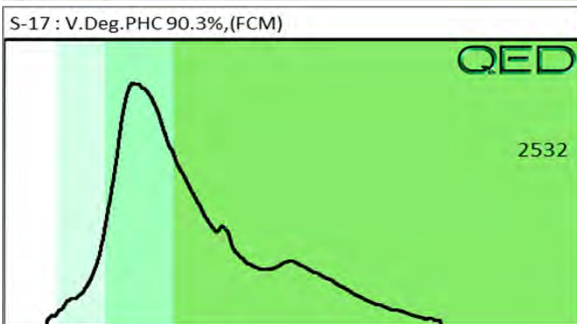
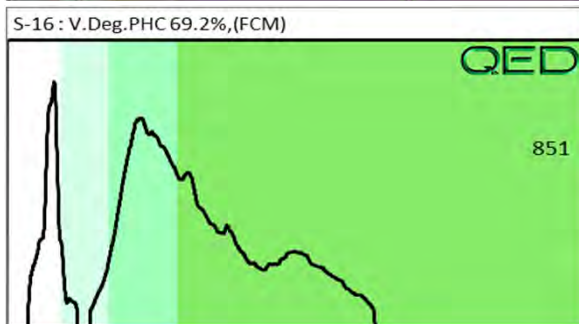
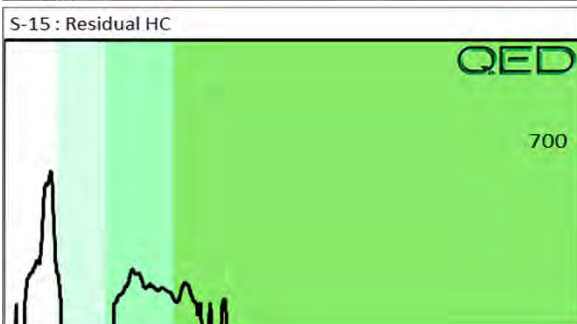
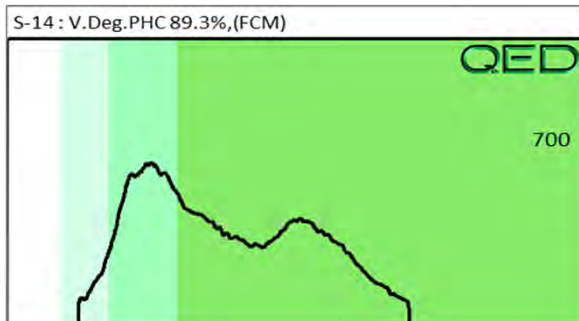
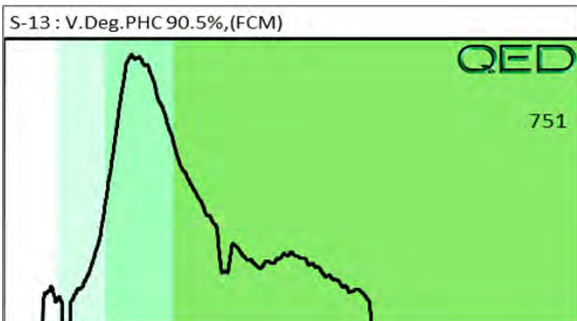
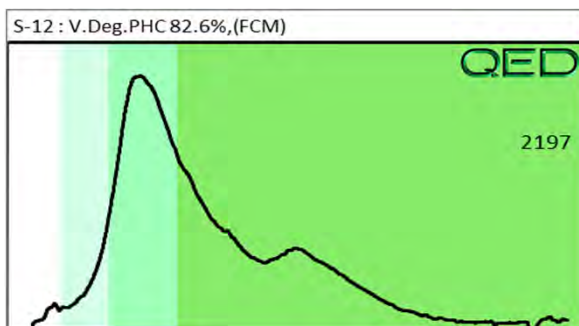
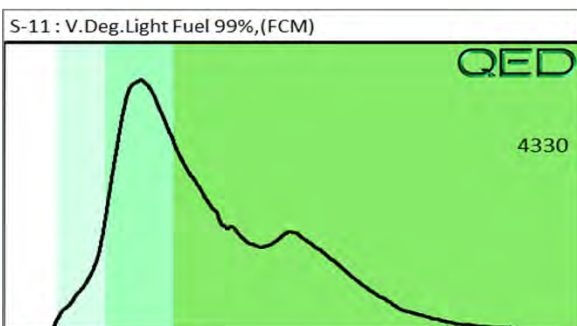
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