November 5, 2018



Mr. Cyrus Parker, L.G., P.E. Geotechnical Engineering Unit State of N.C. Department of Transportation – Division of Highways P.O. Box 25201 Raleigh, NC 27611-5201

#### RE: PRELIMINARY SITE ASSESSMENT OF PARCEL 352 – Revision 1 ESP Project No. CS34.366

WBS:	34839.1.8
TIP:	U-2579AB
<b>County:</b>	Forsyth
Description	Winston-Salem - Northern Beltway Eastern Section (Future I-74) From I-40 to I-40
	Business/US 421
Parcel No.:	352
<b>Owner:</b>	Don M. Berrier
Address:	4400 Kernersville Road, Winston-Salem, NC

Dear Mr. Parker:

ESP Associates, Inc. (ESP) is pleased to submit this report on our Preliminary Site Assessment of the subject parcel. This work was performed in accordance with your Request for Proposal dated April 17, 2018 and our Cost Proposal dated May 3, 2018.

We appreciate the opportunity to assist you during this phase of the project. If you should have any questions concerning this report, or if we may be of further assistance, please contact us.

Sincerely,

ESP Associates, Inc.

Edward D. Billington, PG Senior Geologist/Geophysicist DMN/EDB/CJW



not considered Final unless all signatures are completed

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#### 1.0 INTRODUCTION

The North Carolina Department of Transportation (NCDOT) is planning to construct the Winston-Salem - Northern Beltway Eastern Section (Future I-74) From I-40 to I-40 Business/US 421 (Figure 1). The NCDOT requested that ESP Associates, Inc. (ESP) perform a Preliminary Site Assessment (PSA) of Parcel 352 within the proposed Right of Way (ROW) and/or easement to locate possible underground storage tanks (USTs), sample soil, and delineate potential contaminated soil.

#### 2.0 HISTORY

This parcel is owned by Don M. Berrier and is currently occupied by an active business. The facility is listed in the North Carolina Department of Environmental Quality's (NCDEQ's) UST Section Registry with UST No. WS-612. No other information is available for this site.

#### 3.0 SITE OBSERVATIONS

During our May 2018 field work, the site was operating as an active florist shop (Figure 2). The ground in the study area was covered by asphalt, concrete, and grass.

#### 4.0 METHODS

ESP performed a geophysical study of the area designated by the NCDOT on May 23, 2018. We performed direct-push drilling and sampling of subsurface soils within the proposed easement on September 6, 2018. A photoionization detector (PID) was used to screen subsurface soils in the field and select soil samples to send for laboratory analysis.

#### 4.1 Geophysics

ESP performed a metal detector study over the accessible areas of the site using a Geonics EM61 MK2 with a line spacing of about three feet (Figures 3 and 4). Location control was provided in real-time using a differential global positioning system (DGPS). We collected ground-penetrating radar (GPR) data over selected EM61 anomalies and reinforced concrete areas using our Sensors and Software Noggin 250 GPR system. The GPR data were collected using a line spacing of one to two feet.

#### 4.2 Borings

ESP performed direct-push drilling activities within the easement of Parcel 352 using a subcontractor, SAEDACCO of Fort Mill, South Carolina. Three borings were drilled, designated B352-1 through B352-3 (Figure 3). The soil borings were advanced using a GeoProbe 7822DT drill rig. Continuous soil samples were obtained to a depth of approximately ten feet using five-foot long Macro Cores®. Soil cores had a recovery of four to five feet. The sampling equipment

was decontaminated prior to drilling and between borings by the driller using a Liquinox® detergent solution.

#### 4.3 Soil Sample Protocol

Representative soil samples were taken from the Macro-Core tubes at approximate one-foot intervals by the ESP field geologist while wearing nitrile disposable gloves. Each sample was placed in a sealed plastic bag and then kept in a sunny area for at least 5 minutes prior to measuring volatile organic compound (VOC) levels in the head space with the PID. All of the soil samples obtained had a PID reading of less than 10 parts per million (ppm).

Soil samples selected for laboratory analysis were Sample S-9 (corresponding depth of 9.0-9.5 feet) from each of Borings B352-1, and B352-3; Sample S-8 (8.0-8.5 feet) from Boring B352-2. For each selected sample, an approximate 10-gram soil sample was collected from the Macro-Core tube using a Terra Core Sampler and placed into a laboratory-supplied 40-milliliter volatile organic analysis (VOA) vial containing methanol. Once sealed, the vial was labeled with the sample identification number and then shaken vigorously for about one minute. The samples were packed on ice and sent via overnight delivery to RED Lab, LLC (RED Lab), located in Wilmington, North Carolina, following proper chain-of-custody procedures (Appendix C).

RED Lab used a QED Hydrocarbon Analyzer to quantitatively analyze the soil samples using the ultraviolet fluorescence (UVF) method for benzene, toluene, ethylbenzene, and xylene (BTEX); gasoline range organics (GRO); diesel range organics (DRO); total petroleum hydrocarbons (TPH); total aromatics; polycyclic aromatic hydrocarbons (PAHs); and benzo(a)pyrene (BaP).

#### 4.4 Groundwater

Groundwater was not encountered in the three borings drilled on the site.

#### 5.0 RESULTS

#### 5.1 Geophysics

The EM61 early time gate data show the response from both shallow and deeper metallic objects (Figure 3). The differential response reduces the effect of shallow anomalies and emphasizes anomalies from larger and more deeply buried metallic objects, such as USTs (Figure 4). The EM61 differential results indicated several anomalies (response above background) that did not correspond to known site features.

GPR data were collected over the EM61 anomalies. The GPR data collected did not indicate the presence of unknown USTs within the study area.

The EM61 early time gate response and differential response are shown on the plan sheet on Figures 5 and 6, respectively.

#### 5.2 Sample Data

The soil sample UVF hydrocarbon analysis results for BTEX, GRO, DRO, and PAHs are presented in Table 2. The RED Lab laboratory report, which includes results for TPH, total aromatics, and BaP, is provided in Appendix B. Values are provided in milligrams per kilogram (mg/kg or ppm).

#### 5.3 Sample Observations

The results of the laboratory testing indicated that BTEX and PAHs were below the detection limits for all samples. GRO was detected in 1 of the 3 soil samples tested but below the NCDEQ action level of 50 ppm. The highest GRO reading was 1.7 ppm in Sample S-9 (9.0-9.5 feet) from Boring B352-1. DRO was detected in 1 of the 3 soil samples tested but below the NCDEQ action level of 100 ppm. The highest DRO reading was 1.6 ppm in Sample S-8 (8.0-8.5 feet) from Boring B352-2.

#### 6.0 CONCLUSIONS

#### 6.1 Interpretation of Results

The results of the PSA for Parcel 352 of NCDOT Project U-2579AB do not indicate the presence of abandoned USTs. No petroleum hydrocarbon soil contamination at or above NCDEQ action levels was detected within the proposed construction easement on Parcel 352.

#### 6.2 Geophysics

The geophysical data do not indicate the presence of abandoned USTs.

#### 6.3 Soil

The results of the PID field screening readings and off-site UVF hydrocarbon analyses do not indicate the presence of contaminated soil at or above the NCDEQ action levels within the proposed construction easement on Parcel 352 (Figure 7).

#### 7.0 **RECOMMENDATIONS**

No limitations on construction activities or special handling of excavated soil are recommended for Parcel 352.

#### 8.0 LIMITATIONS

ESP's professional services have been performed, findings obtained, and recommendations prepared in accordance with customary principles and practices in the fields of environmental science and engineering. ESP is not responsible for the independent conclusions, opinions, or recommendations made by others based on the data presented in this report.

The passage of time may result in a change in the environmental characteristics at this site and surrounding properties. ESP does not warrant against future operations or conditions, or against operations or conditions present of a type or at a location not investigated. ESP does not assume responsibility for other environmental issues that may be associated with the subject site.

TABLES

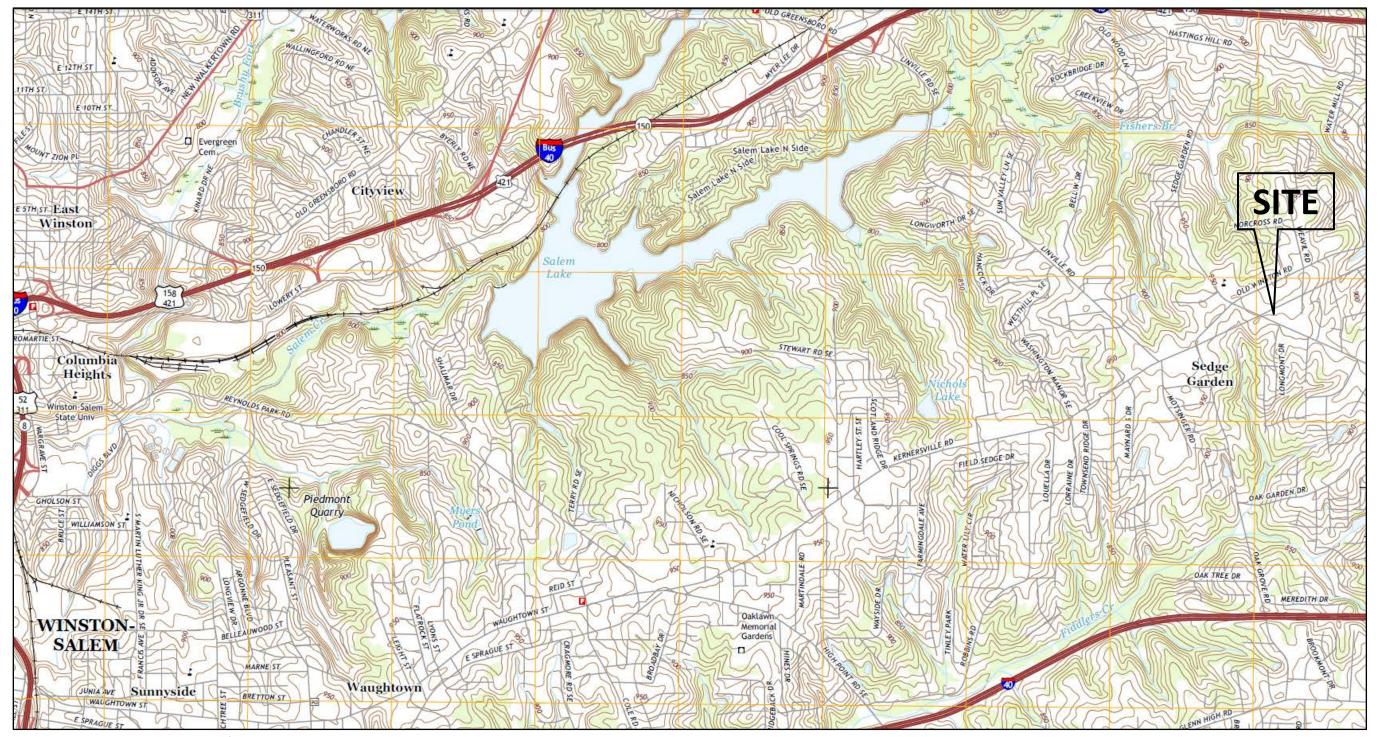
# TABLE 1SOIL SAMPLE PID READINGS

Boring	Sample Depth Range with PID > 10 ppm (feet bgs)	Maximum PID Reading (ppm) and Sample Depth (feet bgs)
B352-1	none	3.2 (7.0-7.5)
B352-2 none		4.6 (5.0-5.5)
B352-3	none	4.4 (6.0-6.5)

Boring	Sample ID (depth in feet bgs)	Date Collected	BTEX (C6-C9) (mg/kg)	GRO (C5-C10) (mg/kg)	DRO (C10-C35) (mg/kg)	PAHs (mg/kg)
B352-1	S-9 (9.0-9.5)	9/10/18	< 0.43	1.7	<0.43	<0.14
B352-2	S-8 (8.0-8.5)	9/10/18	<0.38	<0.38	1.6	< 0.12
B352-3	S-9 (9.0-9.5)	9/10/18	<0.95	<0.95	<0.95	<0.3

# TABLE 2SOIL SAMPLE UVF RESULTS SUMMARY

### FIGURES



From: USGS US Topo 7.5 - minute map for WINSTON-SALEM EAST, NC Date: 2016, Scale: 1:24,000

FIGURE 1 – PARCEL 352, L SITE VICINITY
U-2579AB, WINSTON SALEM – NORTHERI
(FUTURE I-74) FROM I-40 TO I-4 FORSYTH COUNTY, NOR1

DON M. BERRIER Y MAP

RN BELTWAY EASTERN SECTION -40 BUSINESS/US421 RTH CAROLINA



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a. Photo from north side of site looking south.



c. Photo from southeast side of site looking northwest.



b. Photo from west side of site looking east.



d. Photo from south side of site looking north.

CS34.366 SCALE AS SHOWN		FIGURE 2 – PARCEL 352, SITE PHOTOGI
DATE		
9/XX/18		U-2579AB, WINSTON SALEM – NORTHER
<sup>BY</sup> D	MN	(FUTURE I-74) FROM I-40 TO I-4 FORSYTH COUNTY, NOR

, DON M. BERRIER GRAPHS

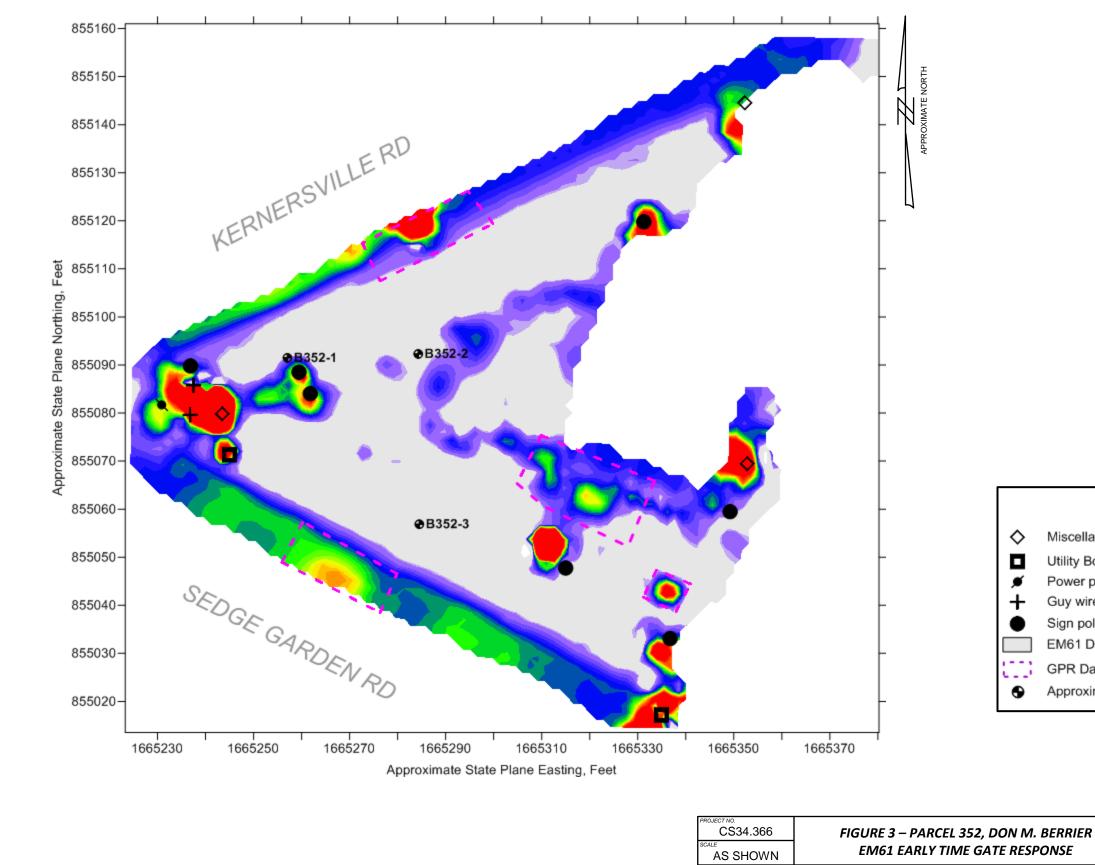
RN BELTWAY EASTERN SECTION I-40 BUSINESS/US421 RTH CAROLINA



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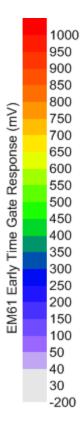
336.334.7724

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Note: Locations of data and features are approximate and were collected using a DGPS instrument. ESP makes no guarantees as to the accuracy of these locations. Coordinates on the axes of the maps are approximate and provided for general reference only.

EM61 EARLY TIME GATE RESPONSE U-2579AB, WINSTON SALEM – NORTHERN BELTWAY EASTERN SECTION 9/XX/18 (FUTURE I-74) FROM I-40 TO I-40 BUSINESS/US421 DMN FORSYTH COUNTY, NORTH CAROLINA



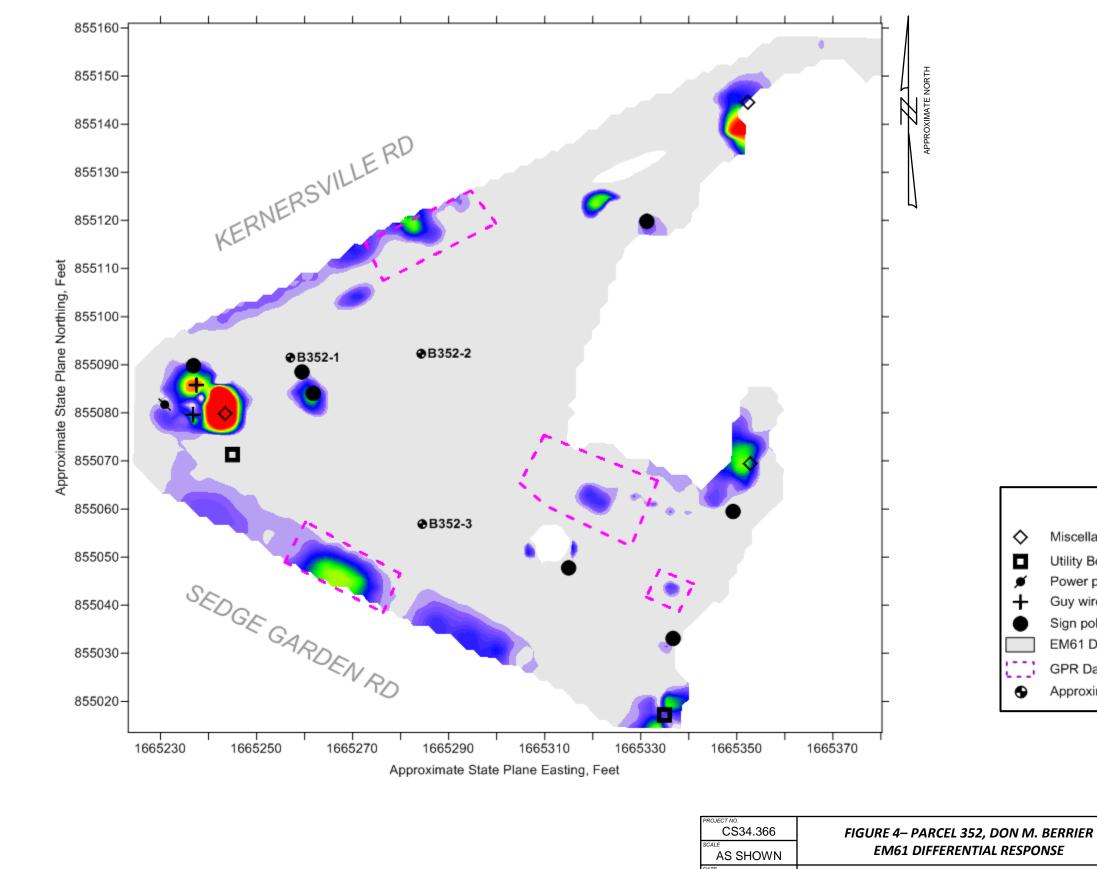
#### **EXPLANATION**

Miscellaneous metal object (pipe, debris, etc.)  $\diamond$ Utility Box (water meter, electrical outlet, etc.) Power pole + Guy wire anchor Sign pole, other pole EM61 Data Collection Areas . - - -GPR Data Collection Areas C - - - 1 • Approximate soil boring location



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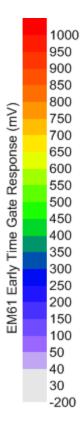
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Note: Locations of data and features are approximate and were collected using a DGPS instrument. ESP makes no guarantees as to the accuracy of these locations. Coordinates on the axes of the maps are approximate and provided for general reference only.

9/XX/18 U-2579AB, WINSTON SALEM - NORTHERN BELTWAY EASTERN SECTION (FUTURE I-74) FROM I-40 TO I-40 BUSINESS/US421 FORSYTH COUNTY, NORTH CAROLINA

DMN



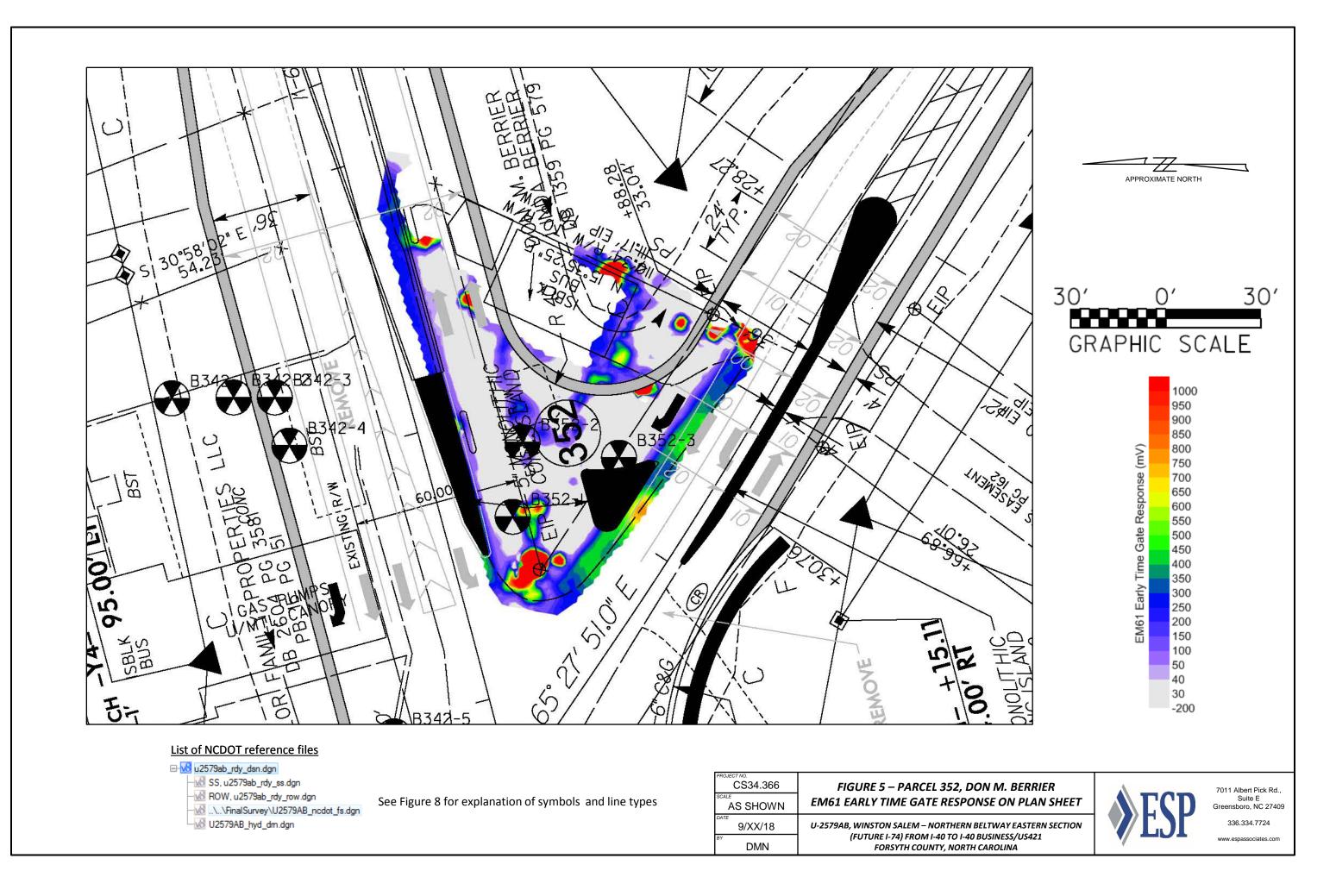
#### **EXPLANATION**

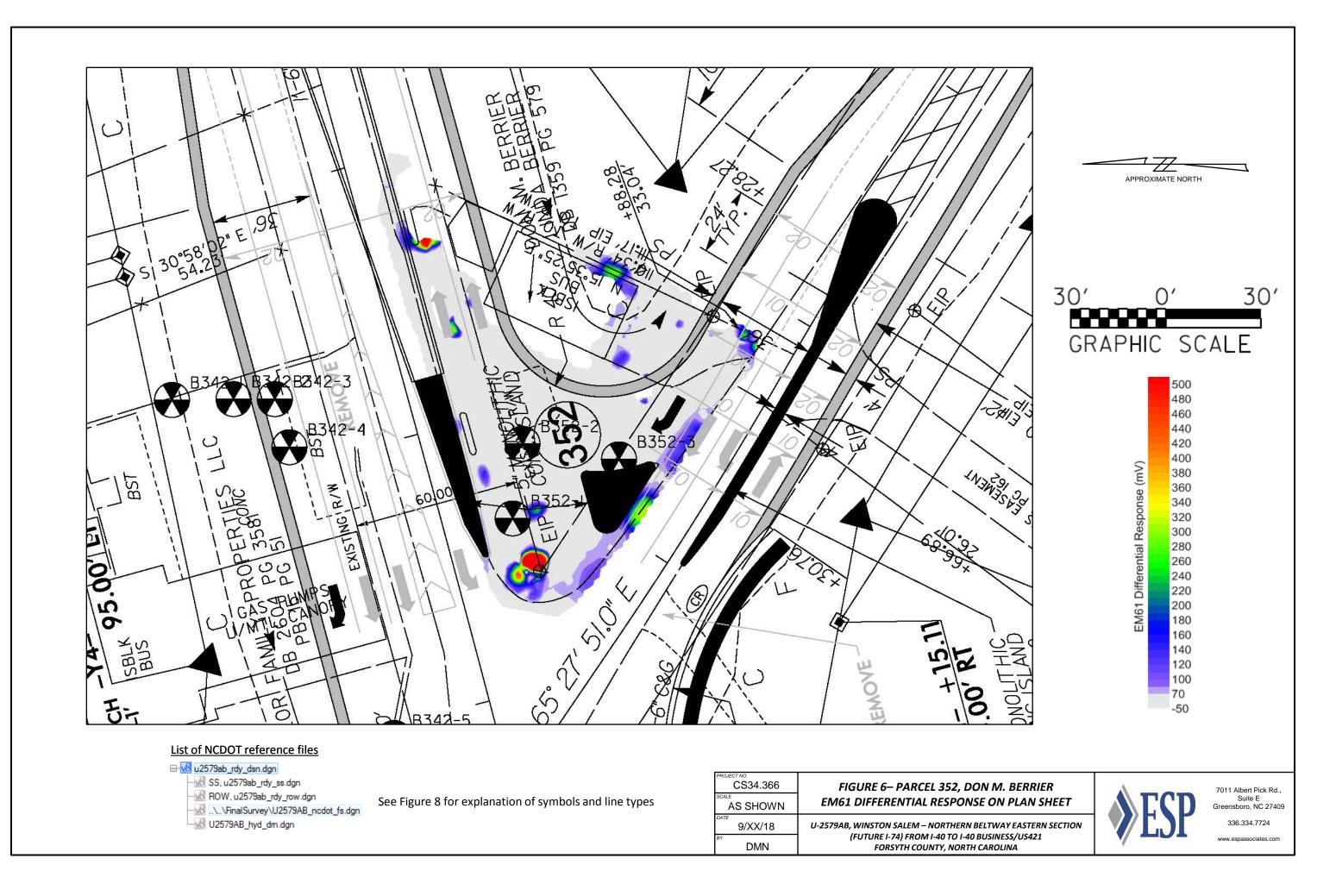
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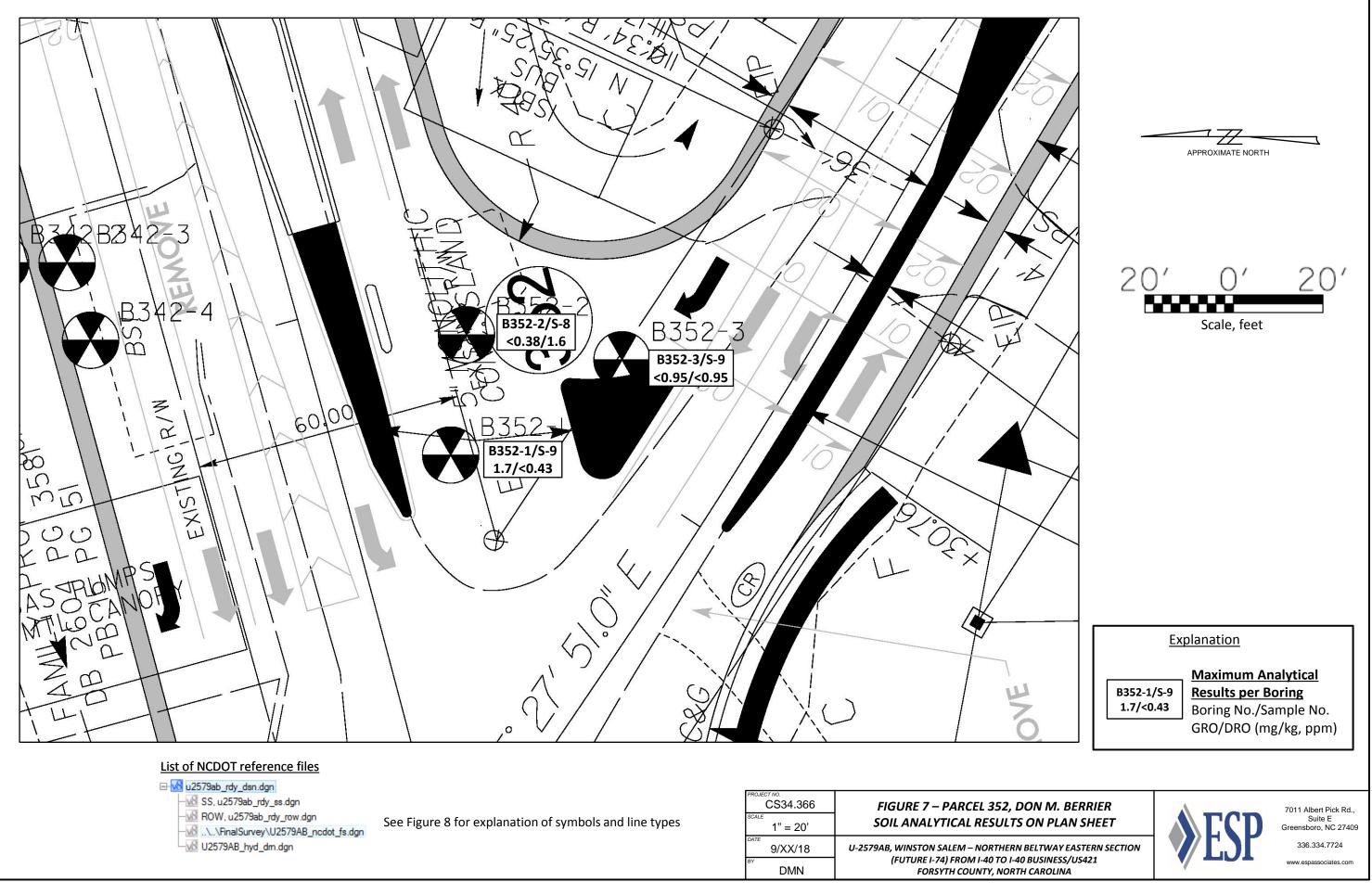


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PROJECT NO. CS34.366	FIGURE 7 – PARCEL 352,
scale 1" = 20'	SOIL ANALYTICAL RESULT
<sup>DATE</sup> 9/XX/18	U-2579AB, WINSTON SALEM – NORTHER
DMN	(FUTURE I-74) FROM I-40 TO I-4 FORSYTH COUNTY, NOR

Existing Historic Property Boundary       Proposed Control of Access       Proposed Control of Access       Proposed Property Boundary       GAS:         Known Contamination Area: Solil       Rever Proposed Temporary Construction Easement - true       Proposed Temporary Construction Easement - true       Proposed Prover Pole       Gas Valve       Gas Valve         Proposed Temporary Construction Easement - true       Proposed Permanent Drainage Formanent Drainage Formanent Drainage Formanent Drainage / Lillity Easement - true       Proposed Permanent Drainage Formanent Drainage / Lillity Easement - true       Proposed Permanent Drainage Formanent Drainage Formanent Drainage Formanent Drainage / Lillity Easement - true       Proposed Permanent Drainage Formanent Drainage Formanent Drainage Formanent Drainage / Lillity Easement - true       Proposed Permanent Drainage Formanent Drainage Formanent Proposed Permanent Drainage Formanent Dra		STATE OF NORTH	CAROLII	NA, DIVISION OF HIGHWA	AYS	
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Small Aine       *       iron Pin and Cap Marker       *       UG Power Line LOS B (S.U.E.*)       UG Sanitary Sew         Foundation       *       ROADS AND RELATED FEATURES:       UG Power Line LOS B (S.U.E.*)       UG Sanitary Sew         Cemetery       *       *       *       WG Power Line LOS B (S.U.E.*)       WG Sanitary Sew         Building       *       *       *       *       WG Power Line LOS B (S.U.E.*)       WG Sanitary Sew         School       *       *       *       *       *       *       Above Ground Sc         Church       *       *       *       *       *       *       *       SS Forced Main I         Church       *       *       *       *       *       *       *       *       SS Forced Main I         Church       *       *       *       *       *       *       *       *       SS Forced Main I         Dam       *       *       *       *       *       *       *       *       SS Forced Main I         HYDROLOGY:       *       *       *       *       *       *       *       *       *       *       *       *       *        *       *		Proposed Permanent Easement with				,
Area Outline       Existing Edge of Pavement       UG Power Line LOS D (S.U.E.*)       Above Ground Sc         Cemetery       Existing Edge of Pavement       SS Forced Main I       SS Forced Main I         Building       Froposed Slope Stakes Fill       Froposed Slope Stakes Fill       SS Forced Main I         Church       Proposed Slope Stakes Fill       Froposed Guardrail       Existing Edgehone Pole       O         HYDROLOGY:       Proposed Guardrail       Froposed Guardrail       IIIIII Pole with E         Stream or Body of Water       Existing Cable Guiderail       IIIIII Pole with E         Hydro, Pool or Reservoir       Froposed Caube Guiderail       IIIIIII Pole with E         Building       Froposed Cable Guiderail       IIIIIIII Pole with E         Building       Froposed Cable Guiderail       IIIIIIIII Pole with E         Proposed Cable Guiderail       IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII			<b>&gt;</b>			
Cemetery       SS Forced Main I         Building       Fraposed Slope Stakes Cut       SS Forced Main I         School       Fraposed Slope Stakes Cut       SS Forced Main I         Church       Proposed Slope Stakes Cut       SS Forced Main I         Proposed Slope Stakes Fill       Proposed Curb Ramp       Existing Telephone Pole       O         MINDROLOGY:       Stream or Body of Water       Proposed Guardrail       Telephone Cable Note       MISCELLANEOUS:         Stream or Body of Water       Existing Cable Guiderail       Telephone Cable LOS B (S.U.E.*)       Utility Located OF         Jurisdictional Stream       ISE I       Proposed Cable Guiderail       Utility Traffic Sign         Buffer Zone 1       Existing Cable Guiderail       Force       Utility Traffic Sign         Buffer Zone 2       Existing Tree       Single Tree       Utility Traffic Sign         Spring       VEGETATION:       Single Shrub       G       G Telephone Conduit LOS D (S.U.E.*)       Utility Conduct Actor         Wetland       *       Woods Line       *       G       Genenvironmenter       AG Tank; Water,         Buffer Optics Cable LOS C (S.U.E.*)       *       *       AG Tank; Water,       Genenvironmenter       Genenvironmenter       Genenvironmenter         Buffer Zone 1						
Camery       Existing Curb       Fisting Curb       SS Forced Main I         Building       Proposed Slope Stakes Cut       Image: State S		Existing Edge of Pavement		U/G Power Line LOS D (S.U.E.*)	·•	
Building       Proposed Slope Stokes Cut       Fishing Telephone Pole       SS Forced Main I         School       Proposed Slope Stokes Fill       Proposed Slope Stokes Fill       Proposed Telephone Pole       MISCELLANEOUS:         HYDROLOGY:       Proposed Guiderail       Proposed Guiderail       II       Utility Pole       II         Hydro, Pool or Reservoir       Proposed Cub B Guiderail       Froposed Cub B Guiderail       II       Utility Coated Oc         Jurisdictional Stream       II       Proposed Cub B Guiderail       III       Utility Coated Oc         Buffer Zone 1       Froposed Cub B Guiderail       III       Utility Unknown U       UG Telephone Cable LOS B (S.U.E.*)       Utility Unknown U         Buffer Zone 2       Fiz 2       VEGETATION:       Single Tree       III       Ud Telephone Codult LOS B (S.U.E.*)       Ud G Telephone Codult LOS B (S.U.E.*)       Ud G Telephone Codult LOS D (S.U.E.*)       III du data Guadraid         Wetland       Hedge       Woods Line       III       Woods Line       IIII du data Guadraid       IIII du data Guadraid       IIII du data Guadraid       IIIIIIII du data Guadraid       IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII		Entering Cone		TELEPHONE:		
School       Proposed Slope Stakes Fill       Proposed Slope Stakes Fill       Proposed Telephone Pole       O         Church       Proposed Curb Ramp       III       Proposed Curb Ramp       III       Utility Pole         Dam       HYDROLOGY:       Proposed Guardrail       III       Utility Pole       III         Stream or Body of Water       Proposed Guardrail       IIII       Utility Pole       IIII       Utility Pole         Jurisdictional Stream       Jurisdictional Stream       Jurisdictional Stream       Jurisdictional Stream       IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII		Proposed Slope Stakes Cut	£	Existing Telephone Pole	. <b></b>	
Church       Proposed Curb Ramp       Image: Construction of the construction		Proposed Slope Stakes Fill	Ľ			55 Forcea Main I
Dam       Existing Metal Guardrail       Image: Construction of Body of Water       Image: Construction of Body of Body of Water       Image: Construction of Body of B	Church	Proposed Curb Ramp	CR		. n	MISCELLANEOUS:
AmpRoducts:       Proposed Guardrail       Image: Construction of the serve in the ser		Existing Metal Guardrail	<u> </u>		. m	Utility Pole —
Sheath of Body of Water       Existing Cable Guiderail       Image: Cable Guiderail <t< td=""><td></td><td>Proposed Guardrail</td><td></td><td></td><td></td><td>Utility Pole with B</td></t<>		Proposed Guardrail				Utility Pole with B
Hydro, Pool or Keservoir       Proposed Cable Guiderail       Image: Cable Guiderail       <	-	Existing Cable Guiderail	<u> </u>			Utility Located Ob
Jurisdictional Stream       _js       Equality Symbol       Image: Construction of the		Proposed Cable Guiderail				Utility Traffic Sian
Buffer Zone 1       Buffer Zone 2       Pavement Removal       Pavem		Equality Symbol	•			
Flow Arrow       VEGETATION:       U/G Telephone Conduit LOS B (S.U.E.*)       U/G Telephone Conduit LOS B (S.U.E.*)         Disappearing Stream       Single Tree       I/G Telephone Conduit LOS C (S.U.E.*)       A/G Tank; Water,         Spring       I/G Telephone Conduit LOS D (S.U.E.*)       I/G Te		Pavement Removal				
Flow Arrow       Single Tree       Single Tree       UG Telephone Conduit LOS D (S.U.E.*)       AG Tank; Water,         Disappearing Stream       Single Shrub       o       UG Telephone Conduit LOS D (S.U.E.*)       AG Tank; Water,         Vetland       Hedge       Woods Line       Woods Line       UG Fiber Optics Cable LOS D (S.U.E.*)       Image: Conduit LOS D (S.U.E.*)		VEGETATION:				Underground Stor
Spring       Single Shrub       Image: Single Shrub       Image		Single Tree	÷			5
Wetland       +         Proposed Lateral, Tail, Head Ditch       Woods Line         Woods Line       -         W						
Proposed Lateral, Tail, Head Ditch       Woods Line       Image: Contraction of the contrest of the contraction of the contraction of the contraction of t			~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~			
Proposed Lateral, Tail, Head Ditch Fiber Optics Cable LOS C (S.U.E.*) Fider of Information		-	- <u></u>			
	raise sump —					

PROJECT NO. CS34.366	FIGURE 8
scale N/A	LEGEND FOR PLAN SHE
9/XX/18	U-2579AB, WINSTON SALEM – NORTHERN B
DMN	(FUTURE I-74) FROM I-40 TO I-40 F FORSYTH COUNTY, NORTH

PRD.#CT	REFERENCE NO. SHEET NO.
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Vater, Gas, Oil	
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e LOS A (S.U.E.*)	Θ
According to Utility Records —	AATUR
nation	E.O.I.

#### 8 HEET FIGURES

RN BELTWAY EASTERN SECTION -40 BUSINESS/US421 RTH CAROLINA



7011 Albert Pick Rd., Suite E Greensboro, NC 27409

336.334.7724

www.espassociates.com

## APPENDIX A SOIL BORING LOGS

	FSP			FIF	LD BORIN	GLOG		BORING NO.
	IECT NAME:		DOT U-2579/ ar Kernersvi	AB PSA		PROJ. NO.: <u>CS34.366</u>		B352-1
TYPE OF BORING: DRILLING FIRM:		:	Direct Pus		DATE STARTED: DATE FINISHED:		SHEET TOTAL DEPTH	
DRILLER: DRILL RIG:					SAMPLE METHOD: LOGGED BY:	5' Macro Core	DEPTH TO GW COMMENT	Dry ft
				.2 01		D. Marice		
DEPTH (ft)	SAMPLE NO.	SAMPLE DEPTH (ft)	PID READING (ppm)		PHYSICA	ASSIFICATION AND AL DESCRIPTION		REMARKS
				0.0-0.3	Asphalt			Core 1 Rec 5.0'/5.0'
1	S-1	1.0-1.5	0.7	0.3-2.0	Orange-brown sar	ndy silt		
•								
2	S-2	2.0-2.5	1.5	2.0-7.9	Orange-brown sar	ndy, silty clay		
•								
_3	S-3	3.0-3.5	1.1					
•								
4	S-4	4.0-4.5	1.4					Core 2 Rec 5.0'/5.0'
•								
5	S-5	5.0-5.5	2.4					
6	S-6	6.0-6.5	2.4					
•								
7	S-7	7.0-7.5	3.2	7.9-10.0	Orange-red sandy	silt		
•								
8	S-8	8.0-8.5	1.4					-
·								
9 (	S-9	9.0-9.5	1.2					-
·								
10		Sam	ple selected	for laborato	ry analysis			
•								
11								
- <u> </u>								
12								
13								
14								
- -								
15								

	FSP			FIF	LD BORING LOG		BORING NO.
PROJECT NAME: LOCATION: TYPE OF BORING: DRILLING FIRM: DRILLER: DRILL RIG:			DOT U-2579, ear concrete	AB PSA	PROJ. NO.: <u>CS34.366</u>		B352-2
		: Direct Push SAEDACCO Brian Ewing Geoprobe 7822 DT			DATE STARTED: 9/6/18 DATE FINISHED: 9/6/18 SAMPLE METHOD: 5' Macro Core LOGGED BY: D. Nance	SHEET TOTAL DEPTH DEPTH TO GW COMMENT	: 10.0 ft Dry ft
DEPTH (ft)	SAMPLE NO.	SAMPLE DEPTH (ft)	PID READING (ppm)		FIELD CLASSIFICATION AND PHYSICAL DESCRIPTION		REMARKS
				0.0-0.3	Asphalt		Core 1 Rec 4.5'/5.0'
1	S-1	1.0-1.5	2.5	0.3-3.0	Orange-red silty clay		
2	S-2	2.0-2.5	3.3				
3	S-3	3.0-3.5	2.0	3.0-3.7	Asphalt		
4	S-4	No Rec	2.4	3.7-7.0	Orange-red silty clay		Core 2 Rec 4.0'/5.0'
5	S-5	5.0-5.5	4.6				
6	S-6	6.0-6.5	3.4				
7	S-7	7.0-7.5	4.1	7.0-9.0	Orange-tan silty sand		
8 (	S-8	8.0-8.5	4.5				
9			ple selected	Cara la la cara t			
•		Sam	pie selected				
<u>10</u>							
<u>11</u>							
12							
13							
 14							
15							

Boring Logs B352-2 11/6/2018

	FSP			FIFI	LD BORING LOG		BORING NO.			
		ME: NCDOT U-2579A		AB PSA	B PSA PROJ. NO.: <u>CS34.366</u>					
	TION: OF BORING		Direct Pus		DATE STARTED: 9/6/18	SHEET:	1 of 1			
DRILLING FIRM: SAEDACCO			DATE FINISHED: 9/6/18	TOTAL DEPTH:						
		Brian Ewir		SAMPLE METHOD: 5' Macro Core	DEPTH TO GW:					
DRILL		G	Geoprobe 782	22 DT	LOGGED BY: D. Nance	COMMENT:				
DEPTH (ft)	SAMPLE NO.	SAMPLE DEPTH (ft)	PID READING (ppm)		FIELD CLASSIFICATION AND PHYSICAL DESCRIPTION		REMARKS			
				0.0-0.4 0.4-0.7	Asphalt Gravel		Core 1 Rec 4.0'/5.0'			
1	S-1	1.0-1.5	2.5	0.7-5.2	Orange-red silty, sandy clay					
	3-1	1.0-1.5	2.5	0.7-5.2	Grange-red sity, sandy day					
_2	S-2	2.0-2.5	2.4							
a										
3	S-3	3.0-3.5	2.7							
4	S-4	No Rec	N/A				Core 2 Rec 5.0'/5.0'			
a										
5	S-5	5.0-5.5	3.7	5.2-10.0	Orande-brown sandy, silty clay					
		0.0-0.0	-		orande brown sandy; siny day					
6	S-6	6.0-6.5	4.4							
-										
7	S-7	7.0-7.5	4.3							
·	_									
8	S-8	8.0-8.5	4.1	8.3-10.0	Tan-gray sandy silt					
				0.0 10.0						
	S-9	0005	2.4							
9 (	3-9	9.0-9.5	2.4							
_10				for laborato	ny analysis					
		Laun	ime selected							
11										
12										
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14										
15				+						

## **APPENDIX B**

### **RED LAB LABORATORY TESTING REPORT**

				Hydroes	arbon An	alveie D	oculte							
				пушоса	arbon An	alysis Re	esuits							
	ESP ASSOCIATES, INC 7011 ALBERT PICK ROAD SUITE E GREENSBORO NC 27409								Sar Sample Sampl		acted		Monday, September 10, 2 Monday, September 10, 2 Wednesday, September 12	2018
Contact:	DILLON NANCE									Ор	erator		NICK HENDRIX	
Project:	U-2579 AB													
														U0090
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		
S	B331-5 (S-9)	15.1	<0.38	<0.38	<0.38	<0.38	<0.08	<0.12	<0.015	0	100	0	,(FCM),(P)	
S	B331-4 (S-9)	12.3	<0.31	<0.31	<0.31	<0.31	<0.06	<0.1	<0.012	0	0	0	,(FCM)	
S	B331-3 (S-9)	18.7	<0.47	<0.47	<0.47	<0.47	<0.09	<0.15	<0.019	0	0	0	,(FCM),(P)	
S	B331-2 (S-9)	19.4	<0.49		<0.49	<0.49	_	<0.16	<0.019	0	0	-	,(FCM)	
S	B331-1 (S-9)	21.2	<0.53		<0.53	<0.53		<0.17	<0.021	0	0		,(FCM)	
S	B352-3 (S-9)	37.8	<0.95			<0.95		<0.3	<0.038	0	100	0	,(FCM),(P)	
S	B352-2 (S-8)	15.4	<0.38		1.6	1.6		<0.12	<0.015	0	56.6		Deg.PHC 53.1%,(FCM),(BO)	
S	B352-1 (S-9)	17.3	<0.43	1.7	<0.43	1.7	0.43	<0.14	<0.017	91.4	4.9	3.7	V.Deg.PHC 60.6%,(FCM),(BO)	
									Einel EC					400.01
	Ir	nitial Calibrator	цс спеск	OK					Final FC		Спеск	UK		100.8 9
Concontrati	on values in mg/kg for soil samples a	nd mall for water of	mplac Sail	values upeer	racted for mai	ctura or ctopo	contont Fina	vinite prov	ido o tontativ	o bydro	oarbon is	lontificat	tion	
JUNCEIIII ali	on values in my/ky for soil samples a	nu my/L ior water s	ampies. Soli	values uncon		Sture of Storie	e content. Finge	ipints prov		/e nyulu		lentincai	uon.	

## APPENDIX C CHAIN-OF-CUSTODY FORM

Client Name:	ESP Agosciates, Inc.	
Address:	ESP Agysciates, Inc. 7011 Albert Pick Rd. Ste E Greensborg, NE 27409	D
Contact:	Dillon Nonce	
Project Ref.:	U-2579 AB	RAPIDEN
Email:	d. nance Despressociates	cim
Phone #:	336-404-3117	CHAIN
Collected by:	P. Nance	



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		quested	Matrix	Sample ID	UVF	GC BTEX	Total Wt.	Tare Wt.	Sample Wt.
Date/Time	24 Hour	48 Hour	(S/W)	·					-
9/10/18		V	5	B331-5 5-9	V		49.2	43.9	\$ 5.3
+				6331-4 5-9	,		\$52.7	45.6	8.1
				B331-3 5-9			51.6	44.1	8.1 7.5
				B331-2 5-9			53.0	45.8	7.2
				B331-1 5-9			52.0	45.4	6.6
				B352-3 5-9		47,4		43.7	3.7
				B352-2 5-3			52.8	43.7	9.1
				B352-1 5-9			519	43.8	8.1
				B342-6 5-3		1	49.8	44.4	5.4
				B342-5 5-4			52.2	44.1	. 8.1
				B342-4 5-5			51.8	QR 691.9	6.9
				B342-4 5-9		5	2.0 44		8.0
				B342-3 5-9			52.1	44.4	7.7
				B342-2 5-9			50.7	43.7	7.0
				B342-1 5-9			50.1	43.9	6.2
				B54-1 5-9			51.0	44.1	6.9
				B54-2 5-3			51.2	43.5	7.7
				B54-3 5-9			51.9	44.0	7.9
				B54-4 5-7			49.8	44.3	5.5
V		Y	V	B54-5 5-9	V		51.2	44.3	
Comments: <b>X MOS</b>	+ Sampl	es un-	rewite	larachy unafficided. WH	alle)			D Lab USE	ONLY
Relingu	uished by		Date	/Time Accepted by		Date/Time		5	
	ance		9/1		9/11.	(:)?	(	101	
	uished by			/Time Accepted by	, ,110	Date/Time		<u> </u>	