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 054 – Revision 1 ESP Project No. CS34.366

WBS:	34839.1.8
TIP:	U-2579AB
<b>County:</b>	Forsyth
<b>Description:</b>	Winston-Salem - Northern Beltway Eastern Section (Future I-74) From I-40 to I-40
	Business/US 421
Parcel No.:	054
<b>Owner:</b>	George Nick Angle
Address:	4341-53 Kernersville Road Winston-Salem, NC

Dear Mr. Parker:

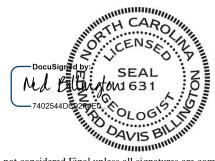
ESP Associates, Inc. (ESP) is pleased to submit this report on our Preliminary Site Assessment of the subject parcel. This work was performed in accordance with your Request for Proposal dated April 17, 2018 and our Cost Proposal dated May 3, 2018.

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

7011 Albert Pick Road, Suite E, Greensboro, NC 27409 1.800.960.7317 · NC: 336.334.7724 www.espassociates.com

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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 054 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 George Nick Angle and is currently occupied by several active businesses. The facility is listed in the North Carolina Department of Environmental Quality's (NCDEQ's) UST Section Registry with Facility ID #: 0-016068 and was assigned Ground Water Incident #: 14721. Three USTs were removed from the parcel in 1994 and the site's UST release incident was reportedly closed out in 2006. Two monitoring wells are on site and appear to be active but are locked with padlocks; therefore, ESP was unable to sample these wells (Figure 3).

#### 3.0 SITE OBSERVATIONS

During our May 2018 field work, the site was operating as several active businesses (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 24, 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).

#### 4.2 Borings

ESP performed direct-push drilling activities within the easement of Parcel 054 using a subcontractor, SAEDACCO of Fort Mill, South Carolina. Five borings were drilled, designated B54-1 through B54-5 (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 three 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 B54-1, B54-3, and B54-5; Sample S-8 (8.0-8.5 feet) from Boring B54-2; Sample S-7 (7.0-7.5 feet) from Boring B54-4. 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 five 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 did not indicate any anomalies (response above background) that did not correspond to known site features.

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, PAHs, and GRO were below the detection limits for all samples. DRO was detected in 2 of the 5 soil samples tested but below the NCDEQ action level of 100 ppm. The highest DRO reading was 10 ppm in Sample S-9 (9.0-9.5 feet) from Boring B54-3.

#### 6.0 CONCLUSIONS

#### 6.1 Interpretation of Results

The results of the PSA for Parcel 054 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 054.

#### 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 054 (Figure 7).

#### 7.0 **RECOMMENDATIONS**

No limitations on construction activities or special handling of excavated soil are recommended for Parcel 054.

#### 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

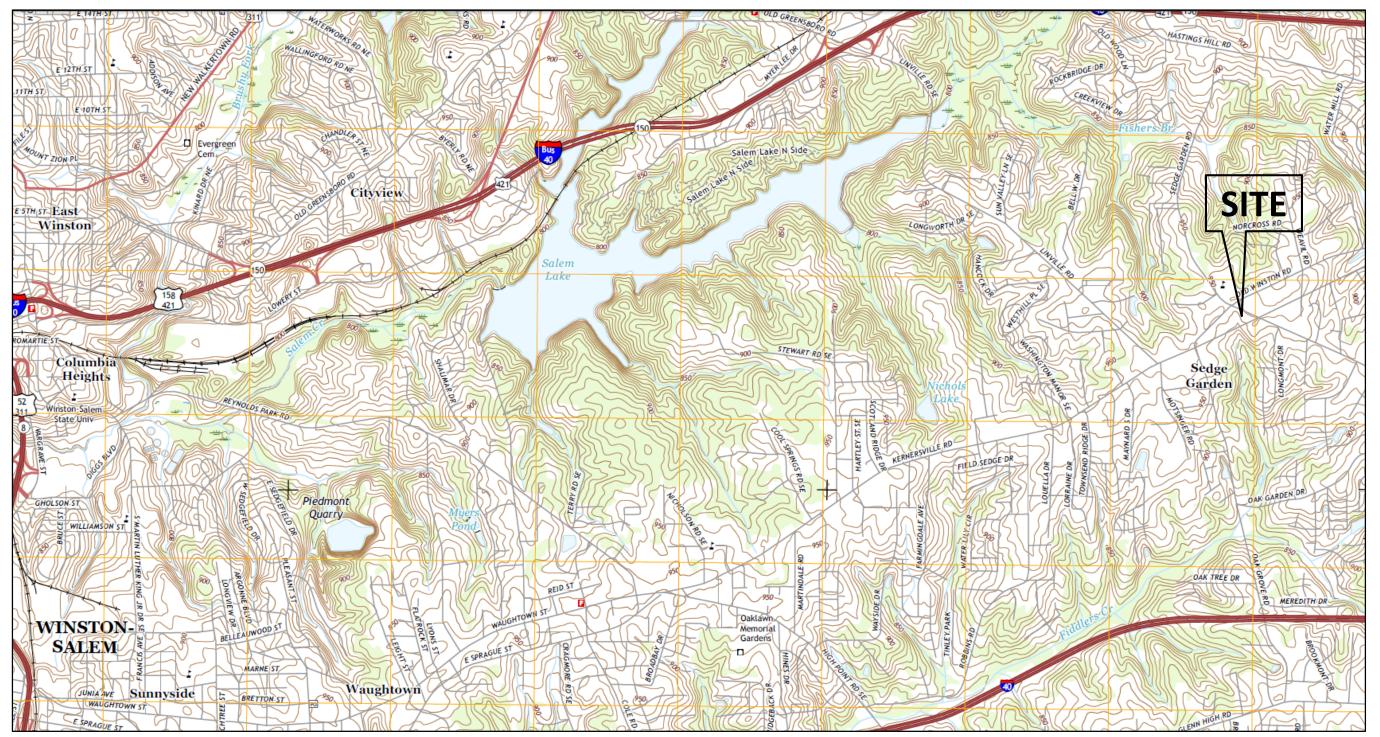
# TABLE 1SOIL SAMPLE PID READINGS

Boring	Sample Depth Range with PID > 10 ppm (feet bgs)	Maximum PID Reading (ppm) and Sample Depth (feet bgs)
B54-1	none	1.3 (5.0-5.5)
B54-2	none	1.0 (8.0-8.5)
B54-3	none	2.1 (9.0-9.5)
B54-4	none	1.1 (5.0-5.5)
B54-5	none	1.6 (1.0-1.5)

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)
B54-1	S-9 (9.0-9.5)	9/10/18	< 0.51	<0.51	< 0.51	<0.16
B54-2	S-8 (8.0-8.5)	9/10/18	<0.45	<0.45	1.3	< 0.15
B54-3	S-9 (9.0-9.5)	9/10/18	< 0.82	< 0.82	10	<0.26
B54-4	S-7 (7.0-7.5)	9/10/18	<0.64	<0.64	<0.64	<0.2
B54-5	S-9 (9.0-9.5)	9/10/18	<0.29	<0.29	<0.29	<0.09

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

PROJECT NO. CS34.366 SCALE AS SHOWN	FIGURE 1 – PARCEL 054, GE SITE VICINITY
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DMN	FORSYTH COUNTY, NORT

EORGE NICK ANGLE Y MAP

RN BELTWAY EASTERN SECTION -40 BUSINESS/US421 RTH CAROLINA



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a. Photo from northeast side of site looking southwest.



c. Photo from northwest side of site looking southeast.



b. Photo from east side of site looking west.



d. Photo from southwest side of site looking northeast.

PROJECT NO. CS34.366 SCALE	FIGURE 2 – PARCEL 054, GE
AS SHOWN	SITE PHOTOGI
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BY DMN	(FUTURE I-74) FROM I-40 TO I-4 FORSYTH COUNTY, NOR

GEORGE NICK ANGLE GRAPHS

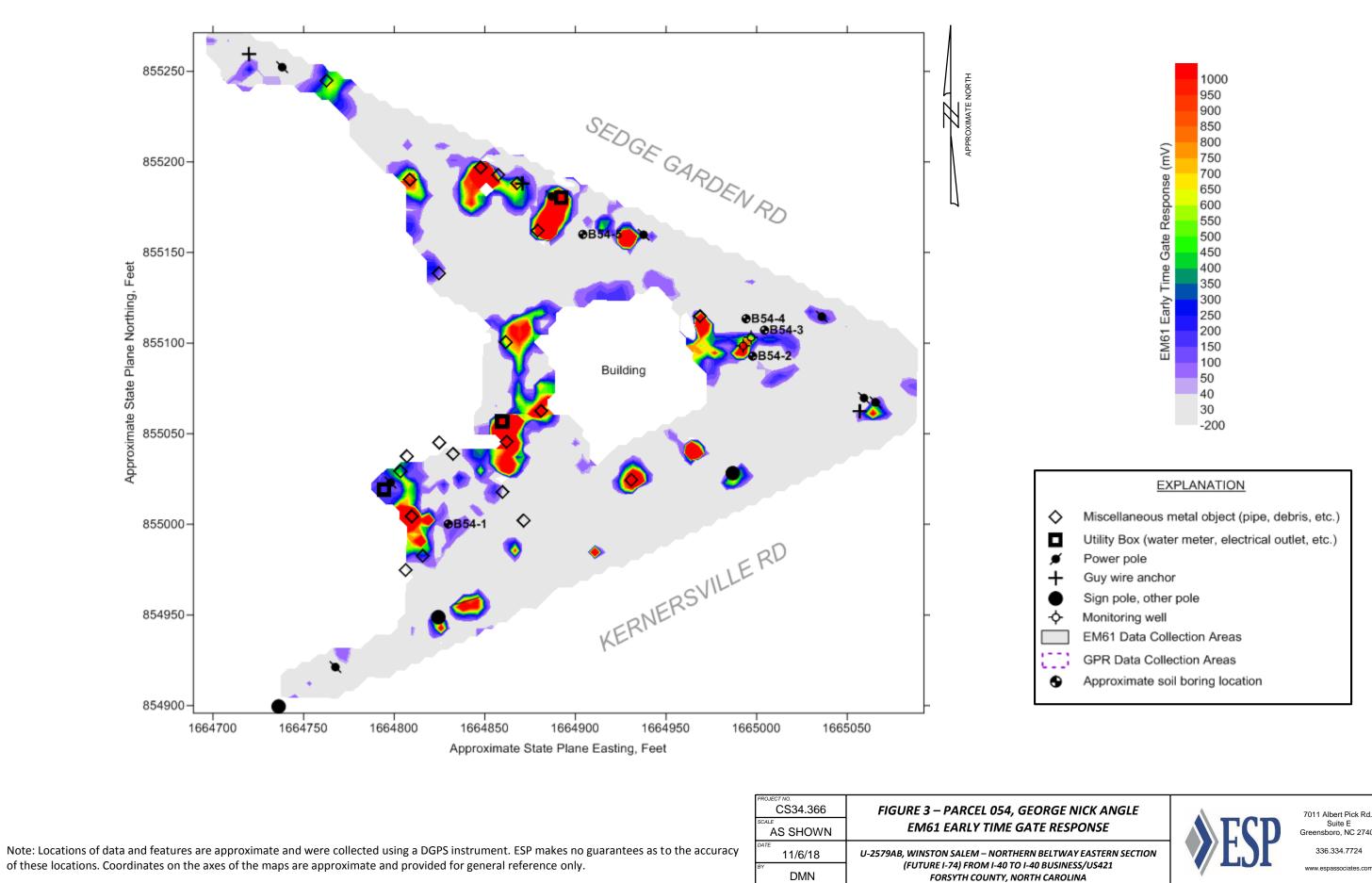
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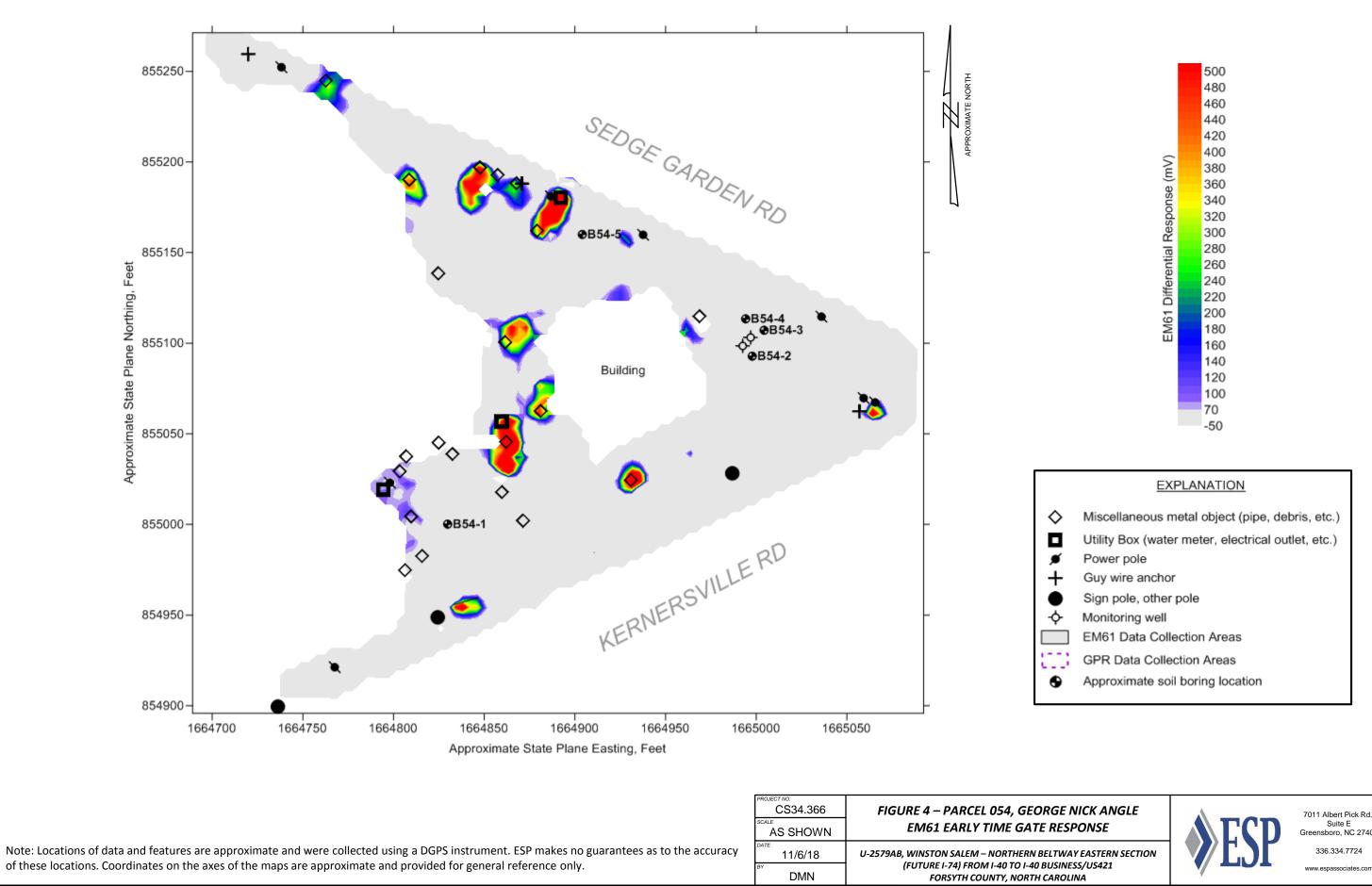
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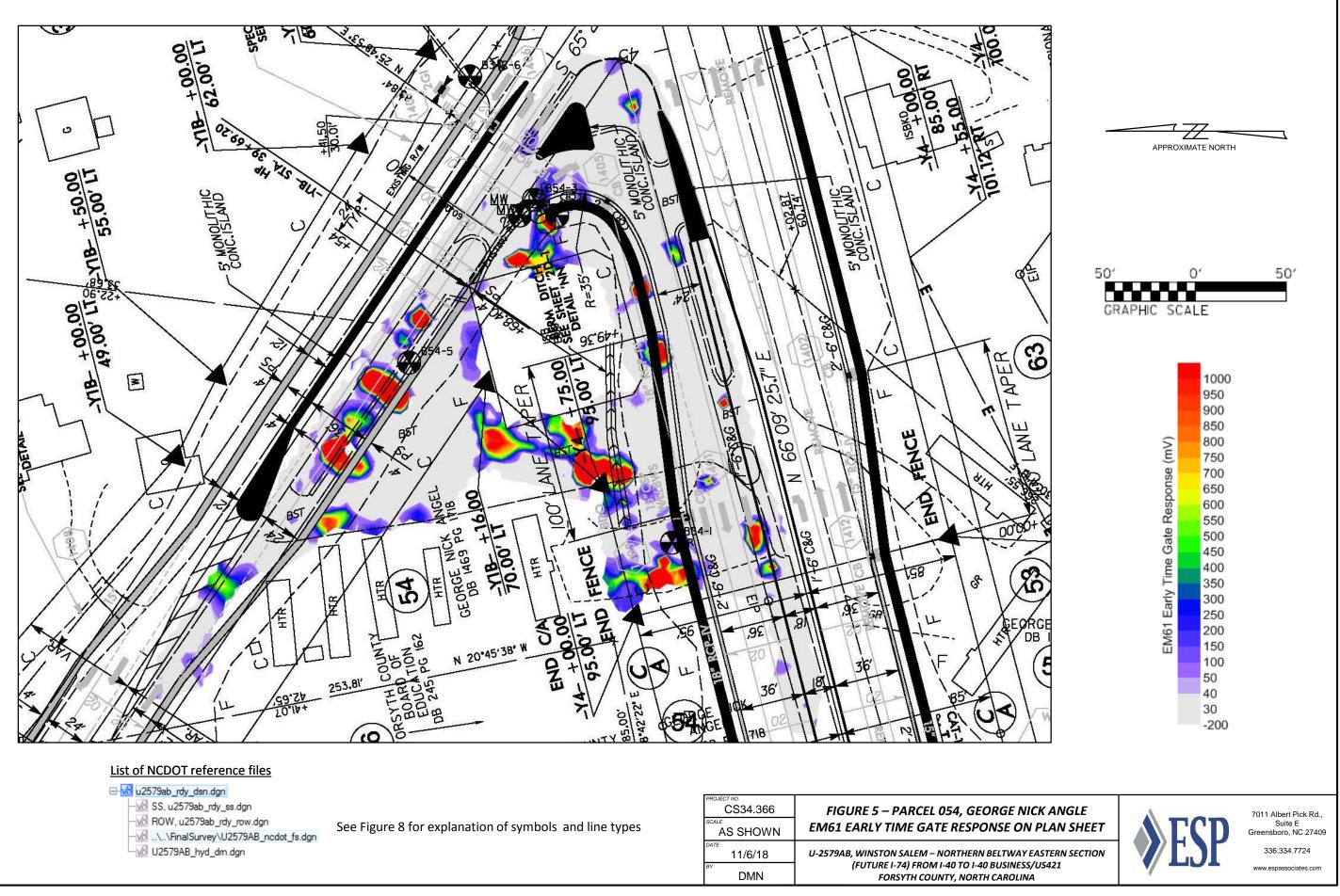
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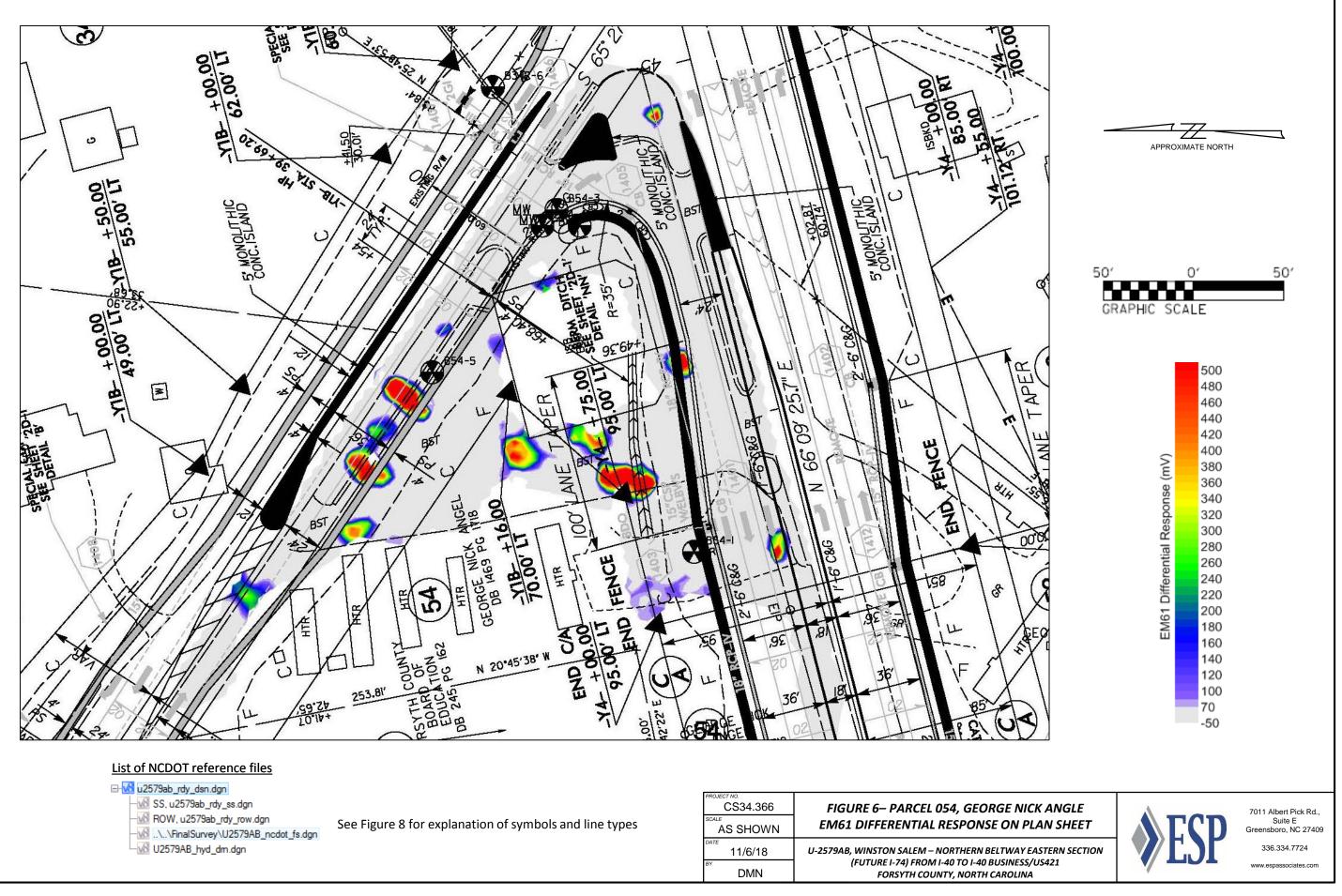
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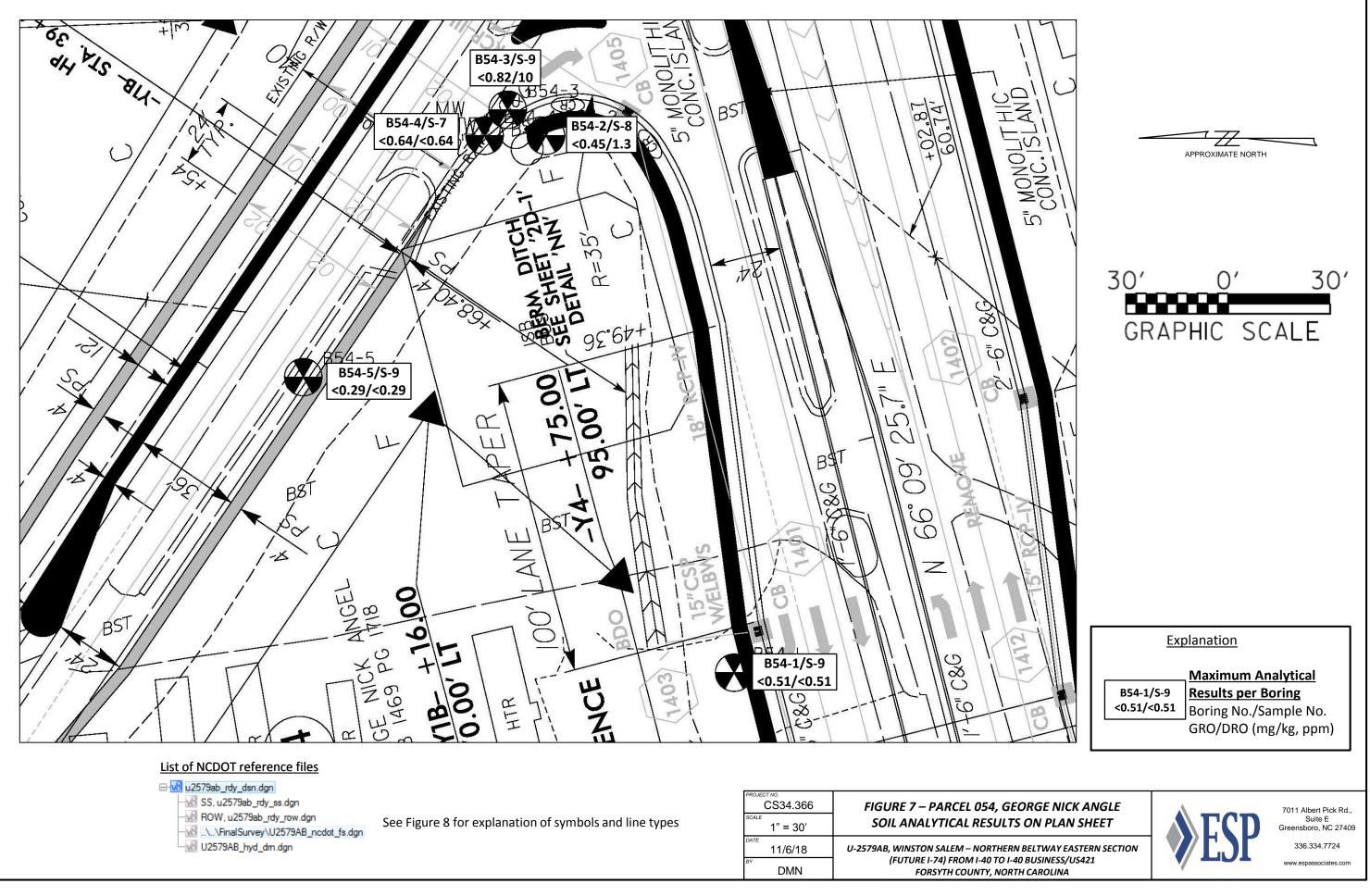
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CS34.366	FIGURE 5 – PARCEL 054, C EM61 EARLY TIME GATE RES	
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PROJECT NO. CS34.366	FIGURE 6– PARCEL 054, G EM61 DIFFERENTIAL RESPO	
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DATE 11/6/18	U-2579AB, WINSTON SALEM – NORTHER	
BY DMN	(FUTURE I-74) FROM I-40 TO I- FORSYTH COUNTY, NOR	



PROJECT NO. CS34.366 SCALE 1" = 30'	FIGURE 7 – PARCEL 054, GI SOIL ANALYTICAL RESULT
DATE 11/6/18	U-2579AB, WINSTON SALEM – NORTHER
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Contaminated Site: Known or Potential       Indiade Handlend Durling's Lossment       Out       Power Manhole       0       UG Gas Line LO         BUILDINGS AND OTHER CULTURE:       Proposed Fermanent Unitigs Lossment       Proposed Fermanent Unitigs Lossment       Prover Transformer       Id       Above Ground G         Sing       Proposed Fermanent Unitigs Lossment       Proposed Fermanent Unitigs Lossment       Prover Transformer       Id       Above Ground G         Small Mine       Proposed Fermanent Easement with       VIII       Proposed Fermanent Easement with       VIII       Sanitary Sever Al         Small Mine       Proposed Fermanent Easement with       VIII       Proposed Fermanent Easement with       VIIII Proposed Fermanent Easement with       VIIIII Proposed Fermanent Easement with       VIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII		Proposed Temporary Drainage Easement	TDE			U/G Gas Line LO
BUILDINGS AND OTHER CULTURE:       Proposed Permanent Uniting Soment		Proposed Permanent Drainage Easement —	PDE			U/G Gas Line LO
Gas Pump Vent or UG Tank Cap       O       Proposed Fermanent Onling Easement       Tute       Power Transformer       E       SANITARY SEWER:         Sign       Proposed Aerial Utility Easement       Tute       UG Power Cable Hand Hole       SANITARY SEWER:         Well       Proposed Permanent Easement with Inon Pin and Cap Marker       WG Power Line LOS B (S.U.E.*)       UG Power Line LOS D (S.U.E.*)       UG Sonitary Sever Above Ground Sc         Cametery       Existing Edge of Povement       Existing Edge of Povement       SS Forced Main I         Building       Proposed Stope Stakes Cut       Proposed Telephone Pole       O         Proposed Guardrail       Proposed Guardrail       SS Forced Main I         Proposed Guardrail       Proposed Cuble Guiderail       III       IIII Pole         Proposed Cuble Guiderail       III       IIII Pole       IIII Pole       IIII Pole         Proposed Cable Guiderail       III       IIII Pole       IIII Pole       IIIII Pole       IIIII Pole         Proposed Lateral, Tail, Head Ditch       Single Struck       Single Struck       Single Struck       IIII Pole       IIIIII Pole       IIIIIII Pole       IIIIIIIIII Pole       IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII		Proposed Permanent Drainage / Utility Easement	DUE			U/G Gas Line LO
Sign		Proposed Permanent Utility Easement	PUE			Above Ground G
Well       Proposed Annu Omity Edsement       Aut       H_Frame Pole       Sanitary Sever Mills         Small Mine       Proposed Permanent Easement with for Pin and Cap Marker       W       UG Power Line LOS B (S.U.E.*)       Sanitary Sever Mills         Foundation       Proposed Permanent Easement with for Pin and Cap Marker       WG Power Line LOS D (S.U.E.*)       UG Sonitary Sever Mills         Cemetery       Existing Edge of Povement       FELEPHONE:       SS Forced Main I         Building       Proposed Slope Stakes Cut       FELEPHONE:       SS Forced Main I         School       Proposed Curb Ramp       GB       Felephone Pole       C         Dam       Existing Telephone Pole       C       MILL       MISCELLANEOUS:         Dam       Existing Cable Guiderail       Froposed Guardrail       Existing Cable Guiderail       MILL       MILL       MILL       MILL         Proposed Curb Ramp       GB       Froposed Curb Ramp       GB       Telephone Pole       C       MILL       SS Forced Main I		Proposed Temporary Utility Easement ———	TUE			CANITARY COMED.
Small Mine       *       Proposed Permanent Ecsement with       *       WG Power Line LOS B (S.U.E.*)       Sanitary Sewer CI         Foundation       *       ROADS AND RELATED FEATURES:       UG Power Line LOS D (S.U.E.*)       UG Sanitary Sewer CI         Cemetery       *       *       WG Power Line LOS D (S.U.E.*)       UG Power Line LOS D (S.U.E.*)       UG Sanitary Sewer CI         School       *       *       *       WG Power Line LOS D (S.U.E.*)       SS Forced Main I         Church       *       *       *       *       SS Forced Main I         Church       *       *       *       *       SS Forced Main I         Church       *       *       *       *       *       SS Forced Main I         Church       *       *       *       *       *       *       SS Forced Main I         Church       *       *       *       *       *       *       *       *       SS Forced Main I         Dam       *       *       *       *       *       *       *       *       SS Forced Main I         Mitry Color Reservoir       *       *       *       *       *       *       *        SS Forced Main I       *       <		Proposed Aerial Utility Easement	AUE			
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 contrel of the contraction of the contraction of the contraction of th						
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
DATE 11/6/18	U-2579AB, WINSTON SALEM – NORTHERN B
DMN	(FUTURE I-74) FROM I-40 TO I-40 E FORSYTH COUNTY, NORTH

PROJECT	REFERENCE NO. SHEET NO.
ole	Ø
Sie	0
	8
nt	•
Line LOS B (S.U.E*)	
Line LOS C (S.U.E*)	
Line LOS D (S.U.E*)	
nd Water Line	A/G Water
	8
ble Hand Hole	E
ole LOS B (S.U.E.*)	n
ole LOS C (S.U.E.*)	n
ble LOS D (S.U.E.*)	Tr
Optic Cable LOS B (S.U.E.*)	
Optic Cable LOS C (S.U.E.*)	
Optic Cable LOS D (S.U.E.*)	N N NO
	♦
	¢
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ne LOS C (S.U.E.*)	
ne LOS D (S.U.E.*)	A/G Gos
nd Gas Line	A70 005
WER:	
ver Manhole	
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	۲
y Sewer Line	
nd Sanitary Sewer	
Nain Line LOS B (S.U.E.*)	
Nain Line LOS C (S.U.E.*)	
Nain Line LOS D (S.U.E.*)	
DUS:	
	•
with Base	
ed Object	0
Signal Box	5
	_
own U/G Line LOS B (S.U.E.*)	
Vater, Gas, Oil	
d Storage Tank, Approx. Loc. ——	
Vater, Gas, Oil	
nental Boring	
e LOS A (S.U.E.*)	Θ
According to Utility Records —	-
mation	E.O.I.
	2.0.1.

#### 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			FIFI	DR	ORING LO	G		BORING NO.
	IECT NAME: ATION:		OT U-2579	/ area near ma	ilhoves	PROJ. NO	.: CS34.366		B54-1
	OF BORING		Direct Pus			STARTED: 9/6/18		SHEET	1 of 1
	_ING FIRM:		SAEDACC		-	FINISHED: 9/6/18		TOTAL DEPTH	
DRILI	_ER:		Brian Ewin			E METHOD: 5' Macro C		DEPTH TO GW	Dry ft
DRILI	_ RIG:		eoprobe 782	2 DT	L	OGGED BY: D. Nanc	е	COMMENT	
DEPTH (ft)	SAMPLE NO.	SAMPLE DEPTH (ft)	PID READING (ppm)			FIELD CLASSIFICATIO PHYSICAL DESCRIF			REMARKS
DE	S	S B	R	0.0.0.0	Topool				Core 1 Rec 5.0'/5.0'
•				0.0-0.2 0.2-10.0	Topsoil Orange	-brown sandy, clayey	silt		Cole 1 Rec 5.075.0
4	S-1	4045	0.6						
1	5-1	1.0-1.5	0.6						
2	S-2	2.0-2.5	0.2						
3	S-3	3.0-3.5	0.4						
a									
4	S-4	4.0-4.5	0.4						Core 2 Rec 5.0'/5.0'
5	S-5	5.0-5.5	1.3						
		5.0-5.5							
6	S-6	6.0-6.5	0.4						
-									
7	S-7	7.0-7.5	0.6						
	<b>C</b> 0	0005	0.2						
_8	S-8	8.0-8.5	0.3						
9 (	S-9	9.0-9.5	0.4						
- · · ·									
						1			
10		Sam	ole selected	for laboratory	analysis				
_11									
[									
12									
13									
14									
15									
10	1	1	1	1					

	FSP			FIEL	DΒ	ORING	LOG		BORING NO.
	ECT NAME:		OOT U-2579	AB PSA			ROJ. NO.: <u>CS34.36</u>	66	B54-2
DRILL DRILL	OF BORING LING FIRM: LER: LRIG:	):	Direct Pus SAEDACC Brian Ewin eoprobe 782	h O Ig	DATE SAMPL	E STARTED: <u>9/0</u> E FINISHED: <u>9/0</u> E METHOD: <u>5'</u> OGGED BY:	6/18 Macro Core	SHEET: TOTAL DEPTH: DEPTH TO GW: COMMENT:	10.0         ft           Dry         ft
		1			- L		D. Marice		
DEPTH (ft)	SAMPLE NO.	SAMPLE DEPTH (ft)	PID READING (ppm)				IFICATION AND DESCRIPTION		REMARKS
				0.0-0.3 0.3-8.6	Asphal Orange	t e-brown sandy	silt		Core 1 Rec 5.0'/5.0'
1	S-1	1.0-1.5	0.6						
2	S-2	2.0-2.5	0.6						
3	S-3	3.0-3.5	0.5						
4	S-4	4.0-4.5	0.6						Core 2 Rec 4.0'/5.0'
5	S-5	5.0-5.5	0.7						
6	S-6	6.0-6.5	0.5						
•									
7	S-7	7.0-7.5	0.5						
a									
8	S-8	8.0-8.5	1.0	8.6-9.0	White-1	an silty sand			
•									
9		Samp	le selected	for laboratory	analysis				
10									
•									
11									
12									
•									
13									
14									
15									

	FSP			FIEL	DB	ORIN	g log		BORING NO.
	IECT NAME:		DOT U-2579/	AB PSA			PROJ. NO.: <u>CS</u>		B54-3
	TION: OF BORING		f building in p Direct Pus		DATE	STARTED: §	9/6/18	SHEE	Г: 1 of 1
	LING FIRM:		SAEDACC		-	FINISHED:		TOTAL DEPTH	
DRILI			Brian Ewin				5' Macro Core	DEPTH TO GW	
DRILI	_ RIG:		eoprobe 782	2 DT	L(	OGGED BY:	D. Nance		Г:
DEPTH (ft)	SAMPLE NO.	SAMPLE DEPTH (ft)	PID READING (ppm)				SSIFICATION A		REMARKS
•				0.0-0.3 0.3-10.0	Asphalt Brown t	o gray silty s	sand		Core 1 Rec 5.0'/5.0'
	<b>0</b> /								
_1	S-1	1.0-1.5	0.7						
2	S-2	2.0-2.5	0.7						
		210 210							
3	S-3	3.0-3.5	0.9						
·	0.4		0.7						
4	S-4	4.0-4.5	0.7						Core 2 Rec 4.0'/5.0'
-									
5	S-5	5.0-5.5	0.5						
- Ŭ									
6	S-6	6.0-6.5	0.5						
	0 7								
_7	S-7	7.0-7.5	0.3						
8	S-8	8.0-8.5	0.5						
9 (	S-9	9.0-9.5	2.1						
40		Sam	ple selected	for laboratory	analysis				
10						J			
							·		
11								 	
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ŀ									
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	ESP			FIELD BORING LOG	BORING NO.
PROJ	IECT NAME:		OOT U-2579	AB PSA PROJ. NO.: CS34.366	B54-4
TYPE	OF BORING		Direct Pus SAEDACC	h DATE STARTED: <u>9/6/18</u> SHEET	
DRILL	ER:		Brian Ewin	g SAMPLE METHOD: 5' Macro Core DEPTH TO GW	Dry ft
DRILL			eoprobe 782	2 DT LOGGED BY: D. Nance COMMENT	
DEPTH (ft)	SAMPLE NO.	SAMPLE DEPTH (ft)	PID READING (ppm)	FIELD CLASSIFICATION AND PHYSICAL DESCRIPTION	REMARKS
				0.0-0.3         Asphalt           0.3-10.0         Brown to gray silty sand w/ rock frags	Core 1 Rec 5.0'/5.0'
1	S-1	1.0-1.5	0.6		
2	S-2	2.0-2.5	0.7		
3	S-3	3.0-3.5	0.9		
4	S-4	4.0-4.5	0.7		Core 2 Rec 3.0'/5.0'
•					
5	S-5	5.0-5.5	1.1		
•					
_6	S-6	6.0-6.5	1.0		
•					
7 (	S-7	7.0-7.5	0.6		Refusal at 8.0'
•					
8		Samp	le selected	for laboratory analysis	
a					
9					
10					
11					
12					
13					
14					
15					

	FSP			FIFI	DR	ORING L	OG		BORING NO.
			OOT U-2579/		.00				
	IECT NAME:			len Rd. north d	of building	PROJ.	NO.: CS34.366		B54-5
	OF BORING		Direct Pus			STARTED: 9/6/18		SHEET	1 of 1
DRILI	_ING FIRM:		SAEDACC			FINISHED: 9/6/18		TOTAL DEPTH:	10.0 ft
DRILI			Brian Ewin			E METHOD: 5' Macro		DEPTH TO GW	
DRILI	_ RIG:		eoprobe 782	22 DT	_ L	OGGED BY: D. Na	ance		
DEPTH (ft)	SAMPLE NO.	SAMPLE DEPTH (ft)	PID READING (ppm)			FIELD CLASSIFICA PHYSICAL DESC	-		REMARKS
				0.0-0.1 0.3-10.0	Topsoil Brown	to gray silty sand			Core 1 Rec 3.5'/5.0'
	S-1	4045	1.6	0.1-7.5		to gray sandy silt			
_1	5-1	1.0-1.5	1.0	0.1-7.5	DIOWII	to gray saridy sill			
-									
2	S-2	2.0-2.5	1.1						
<b>.</b>									
:									
3	S-3	3.0-3.5	1.2						
4	S-4	No Rec	N/A						Core 2 Rec 5.0'/5.0'
_4	0 T	NOREC							0010 2 1100 0.070.0
5	S-5	5.0-5.5	1.0						
6	S-6	6.0-6.5	0.6						
-									
7	S-7	7.0-7.5	0.5	7.5-10.0	Brown	to white-gray silty s	and		
-									
8	S-8	8.0-8.5	0.7						
-									
9 (	S-9	9.0-9.5	0.7						
_9 \		9.0-9.5	0.7						
						1			
10		Sam	le selected	for laboratory	y analysis				
ŀ									
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<u> </u>									
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14									
15									

# **APPENDIX B**

# **RED LAB LABORATORY TESTING REPORT**

Q	ED										_	ſ	<u>QROS</u>
				Hydroca	arbon An	alysis Re	esults						
Address:	ESP ASSOCIATES, INC. 7011 ALBERT PICK ROAD SUITE E GREENSBORO NC 27409								Sa Sample Sampl		acted		Monday, September 10, 2018 Monday, September 10, 2018 Wednesday, September 12, 201
Contact:	DILLON NANCE									Op	erator		NICK HENDRIX
										-			
'roject:	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	B54-1 (S-9)	20.3	<0.51	<0.51	<0.51	<0.51	<0.1	<0.16	<0.02	0	0	0	PHC not detected
S	B54-2 (S-8)	18.2	<0.45	<0.45	1.3	1.3	1.2	<0.15	<0.018	0	62.8	37.2	V.Deg.PHC 71.2%,(FCM),(BO)
S	B54-3 (S-9)	32.9	<0.82	<0.82	10	10	5.1	<0.26	<0.033	9.9	71.1	19	Deg.PHC 73.6%,(FCM)
S	B54-4 (S-7)	25.5	<0.64	<0.64	<0.64	<0.64	<0.13	<0.2	<0.025	0	0	0	PHC not detected
S	B54-5 (S-9)	11.6	<0.29	<0.29	<0.29	<0.29	<0.06	<0.09	<0.012	0	0	0	,(FCM)
S	B36-5 (S-7)	22.2	<0.56	<0.56	<0.56	<0.56	<0.11	<0.18	<0.022	0	73.3	26.7	Residual HC,(BO),(P)
S	B36-4 (S-9)	21.9	<0.55	<0.55	0.75	0.75	0.72	<0.18	<0.022	0	74.1	25.9	Residual HC,(BO),(P)
S	B36-3 (S-9)	47.2	<1.2	<1.2	2.5	2.5	<0.24	<0.38	<0.047	0	100	0	Deg.Diesel 45.3%,(FCM)
S	B36-2 (S-9)	35.0	<0.88	1.9	5.2	7.1	3	<0.28	<0.035	49.8	43.9	6.2	Deg.Fuel 74.3%,(FCM)
S	B36-1 (S-9)	23.0	<0.57	<0.57	<0.57	<0.57	<0.11	<0.18	<0.023	0	27.9	72.1	Residual HC,(BO)
	Initial	Calibrator	QC check	OK					Final F	CM QC	Check	OK	101.1
obreviation	on values in mg/kg for soil samples and m ns :- FCM = Results calculated using Func rift : (SBS)/(LBS) = Site Specific or Library	damental Calib	ration Mode	: % = confide	nce of hydroc	arbon identific	cation : (PFM) =	= Poor Finge	erprint Match	י ר = (T) = 1	Turbid : (	P) = Par	ticulate detected

# APPENDIX C CHAIN-OF-CUSTODY FORM

Client Name:	ESP Agisciates, Inc.	
Address:	ESP Acysciates, Inc. Feil Albert Pick Rd. Ste E Greensborg, NK 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	TAT Ree	quested	Matrix	Samula ID	10/5	CORTEN		_	
Date/Time	24 Hour	48 Hour	(S/W)	Sample ID	UVF	GC BTEX	Total Wt.	Tare Wt.	Sample Wt
9/10/18		V	5	B331-5 5-9	V		49.2	43.9	\$ 5.2
				B331-4 5-9	}		\$52.7	45.6	8.1 7.5
				B331-3 5-9			51.6	44.1	7.5
	· · · · · · · · · · · · · · · · · · ·			B331-2 5-9			53.0	45.8	7.2
				B331-1 5-9			52.0	45.4	6.6
				B352-3 9-9		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		<u> </u>	49.8	44.4	5.4
				B342-5 5-4			52.2	44.1	, 8.1
				B342-4 5-5			51.8	WAR 91.9	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			510	44.1	6.9
				<u>B54-2 5-3</u>			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
	the Paral		No Del	B54-5 5-9			51.2	44.3	
Comments: <b>Kno</b>	fected	- data	result	largely unaffected.	alle		RI	ED Lab USE	ONLY
Relinq	uished by		Date	/Time Accepted by		Date/Time		5	
DN	ance		9/1	0/18 16:00 N	+ 9/11.	(:00	(	1~1	
	uished by			/Time Accepted by	, 10	Date/Time	```		