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 060 – Revision 1 ESP Project No. CS34.366

WBS:	34839.1.8
TIP:	U-2579AB
County:	Forsyth
Description:	Winston-Salem - Northern Beltway Eastern Section (Future I-74) From I-40 to I-40
	Business/US 421
Parcel No.:	060
Owner:	Michael & Kristina Tozer
Address:	4260 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 060 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 Michael & Kristina Tozer and is currently occupied by an auto repair shop. The facility is listed in the North Carolina Department of Environmental Quality's (NCDEQ's) UST Section Registry with Facility ID #: 0-015981 and was assigned Ground Water Incident #: 16461. Four USTs were removed from the parcel in 1996 and the site's UST release incident was closed out in 1998.

3.0 SITE OBSERVATIONS

During our May 2018 field work, the site was operating as an active auto repair shop (Figure 2). The ground in the study area was covered by asphalt, gravel, concrete, and grass. Used oil drums were stored on the ground on the west side of the building and there were some dark stains on the ground by the drums (Figure 2.c). There were many non-functioning automobiles parked within the parcel that the owner was unwilling to move, limiting our study area. The auto repair shop building did not appear to contain a hydraulic lift.

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 5, 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 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 060 using a subcontractor, SAEDACCO of Fort Mill, South Carolina. Four borings were drilled, designated B60-1 through B60-4 (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) (Table 1).

Soil samples selected for laboratory analysis were Sample S-10 (corresponding depth of 9.0-10.0 feet) from Boring B60-1; Sample S-8 (7.0-8.0 feet) from Boring B60-2; Sample S-7 (6.0-7.0 feet) from Boring B60-3; Sample S-18 (18.0-18.5 feet) from Boring B60-4. 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 four 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 was below the detection limits for all samples. GRO was detected in 1 of the 4 soil samples tested but below the NCDEQ action level of 50 ppm. The highest GRO reading was 0.55 ppm in Sample S-18 (18.0-18.5 feet) from Boring B60-4. DRO was detected in 3 of the 4 soil samples tested but below the NCDEQ action level of 100 ppm. The highest DRO reading was 5.3 ppm in Sample S-7 (6.0-7.0 feet) from Boring B60-3. PAHs were detected in 1 of the 4 soil samples tested. The highest PAH reading was 0.2 ppm in sample S-18 (18.0-18.5).

6.0 CONCLUSIONS

6.1 Interpretation of Results

The results of the PSA for Parcel 060 of NCDOT Project U-2579AB do not indicate the presence of abandoned USTs. However, some areas of the site could not be investigated due to the many parked cars that could not be moved. No petroleum hydrocarbon soil contamination at or above NCDEQ action levels was detected within the proposed construction easement on Parcel 060.

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 study area on Parcel 060 (Figure 7).

7.0 **RECOMMENDATIONS**

No limitations on construction activities or special handling of excavated soil are recommended for Parcel 060.

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

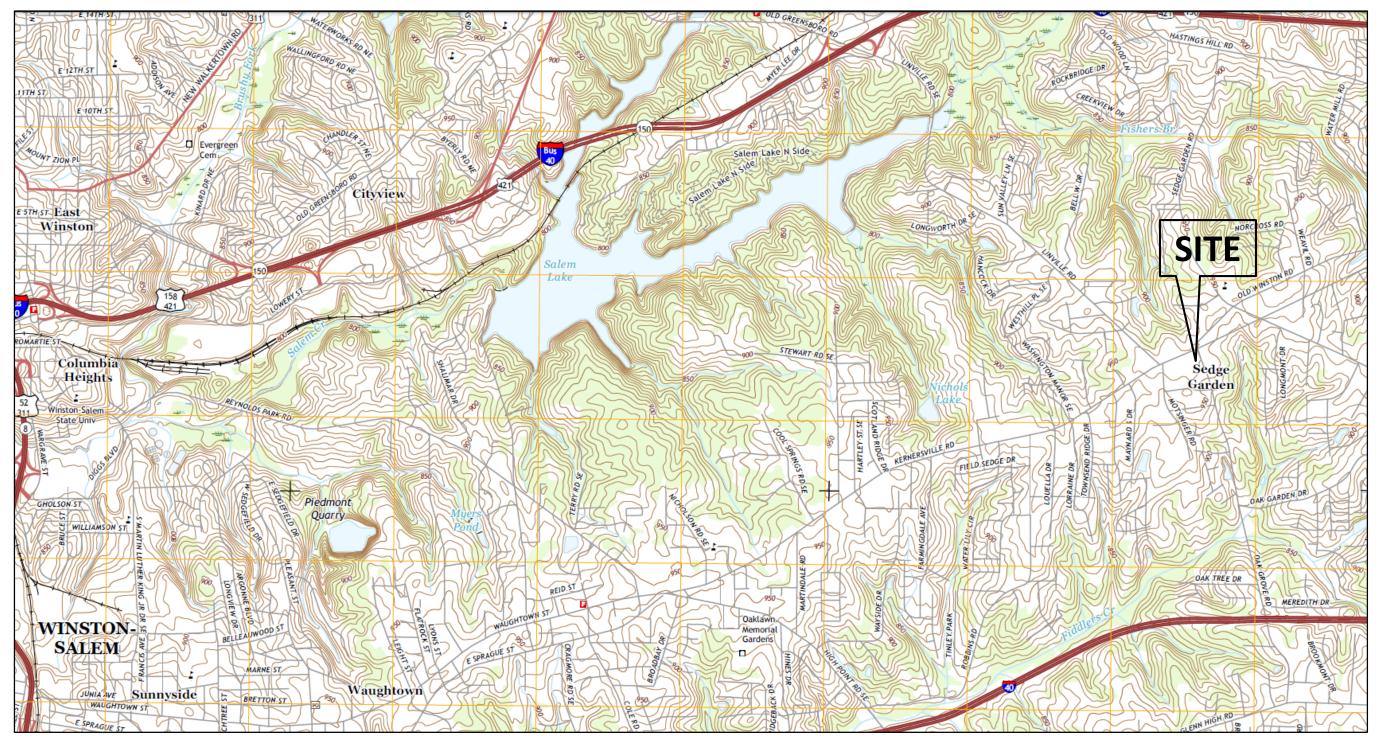
TABLE 1SOIL SAMPLE PID READINGS

Boring	Sample Depth Range with PID > 10 ppm (feet bgs)	Maximum PID Reading (ppm) and Sample Depth (feet bgs)			
B60-1	none	1.1 (8.0-9.0)			
B60-2	none	1.0 (0.0-1.0)			
B60-3	none	0.5 (5.0-6.0)			
B60-4	none	2.1 (18.0-18.5)			

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)
B60-1	S-10 (9.0-10.0)	9/10/18	<0.3	<0.3	0.76	< 0.1
B60-2	S-8 (7.0-8.0)	9/10/18	<0.66	<0.66	4.2	<0.21
B60-3	S-7 (6.0-7.0)	9/10/18	<0.48	<0.48	5.3	0.2
B60-4	S-18 (18.0-18.5)	9/10/18	<0.29	0.55	<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

CS34.366 SCALE AS SHOWN	FIGURE 1 – PARCEL 060, MICHA SITE VICINITY
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BY DMN	(FUTURE I-74) FROM I-40 TO I-4 FORSYTH COUNTY, NOR1

IAEL & KRISTINA TOZER Y MAP

RN BELTWAY EASTERN SECTION -40 BUSINESS/US421 RTH CAROLINA



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

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a. Photo from northeast side of site looking southwest.



c. Photo of used oil barrels.





d. Photo of ASTs.

PROJECT NO. CS34.366 SCALE	FIGURE 2 – PARCEL 060, MICH
AS SHOWN	SITE PHOTOGI
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by DMN	(FUTURE I-74) FROM I-40 TO I- FORSYTH COUNTY, NOR

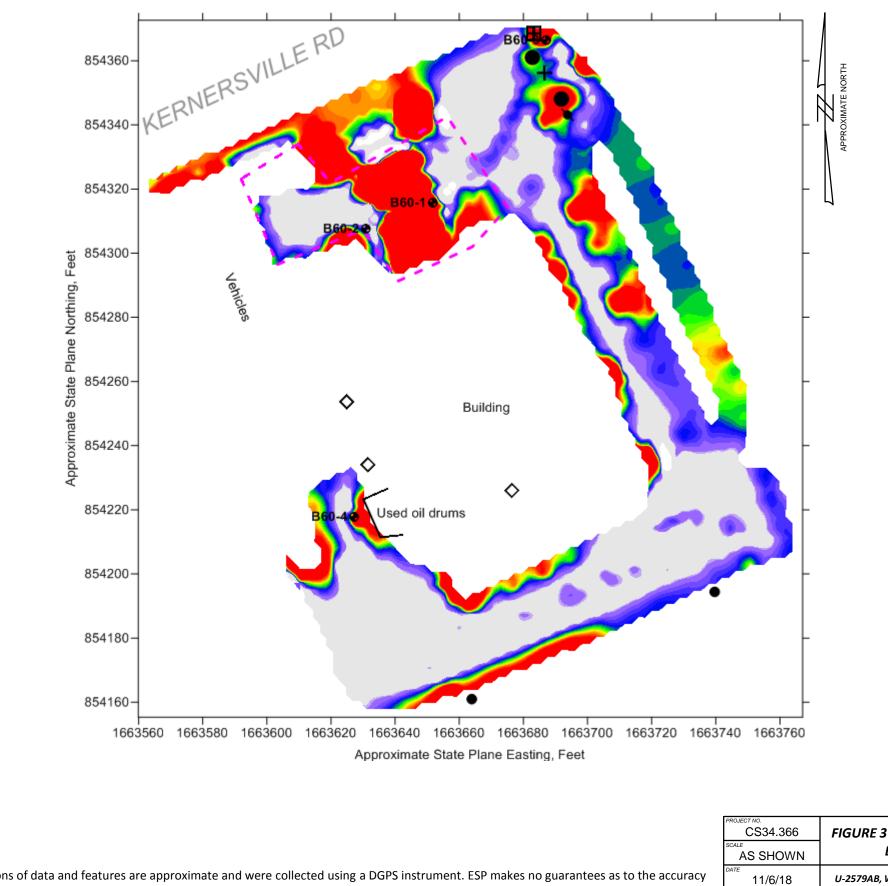
HAEL & KRISTINA TOZER GRAPHS

ERN BELTWAY EASTERN SECTION I-40 BUSINESS/US421 DRTH CAROLINA



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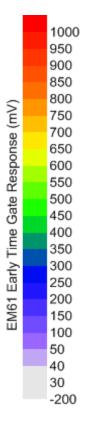
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Note: Locations of data and features are approximate and were collected using a DGPS instrument. ESP makes no guarantees as to the accuracy of these locations. Coordinates on the axes of the maps are approximate and provided for general reference only.

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DMN



EXPLANATION

- Miscellaneous metal object (pipe, debris, etc.)
- Drop Inlet or Catch Basin
- Power pole
- Guy wire anchor
- Sign pole, other pole
- EM61 Data Collection Areas
- GPR Data Collection Areas
- Approximate soil boring location

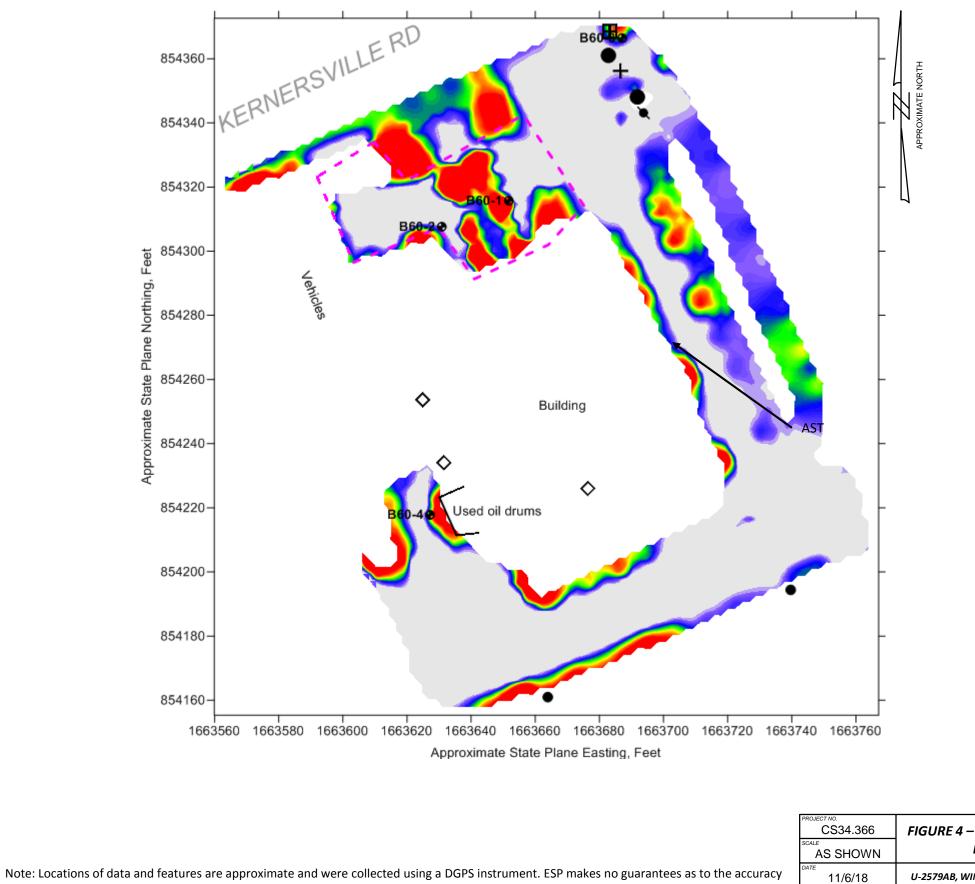
FIGURE 3 – PARCEL 060, MICHAEL & KRISTINA TOZER EM61 EARLY TIME GATE RESPONSE

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



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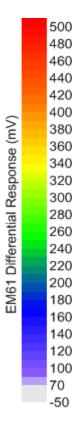
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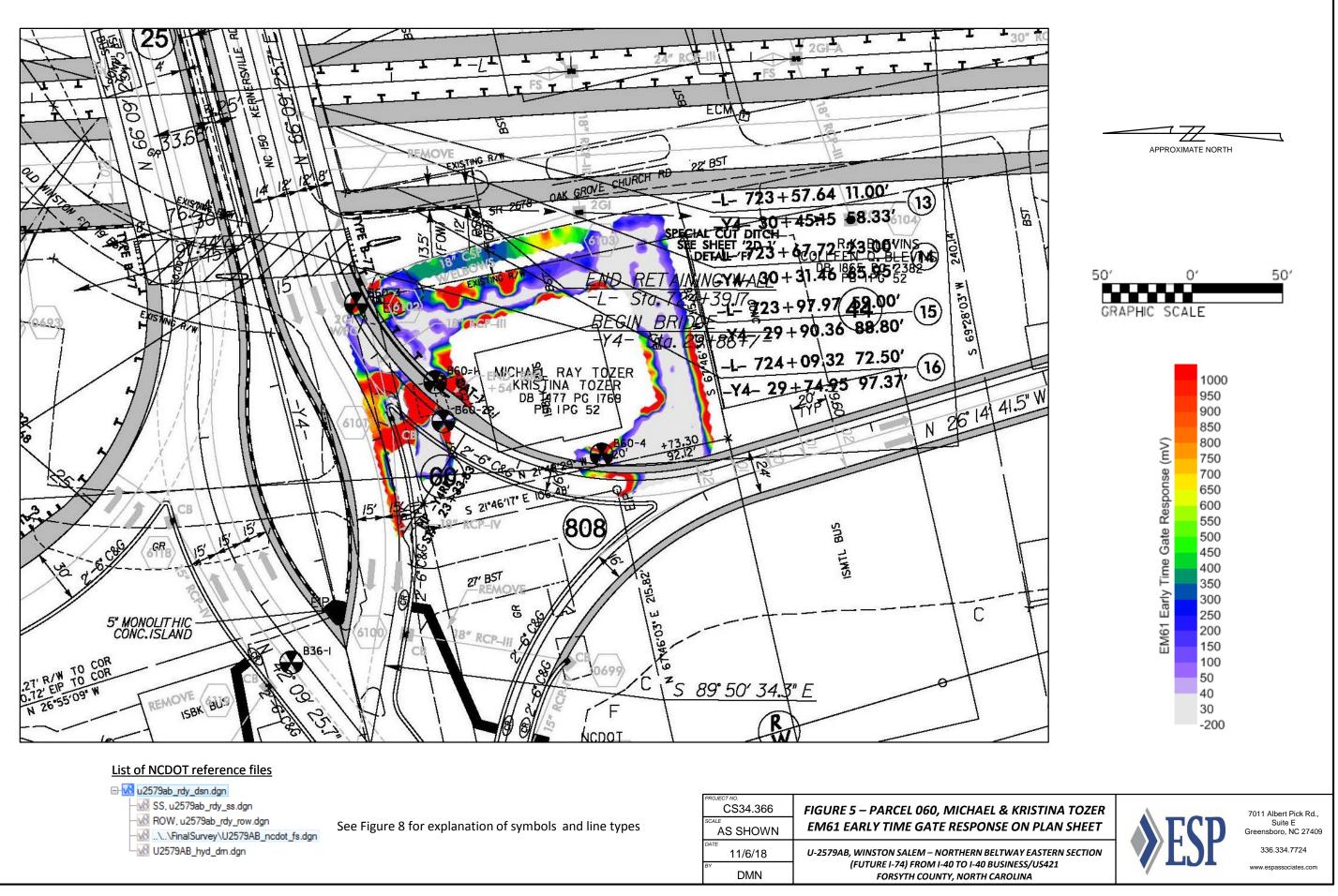
FIGURE 4 – PARCEL 060, MICHAEL & KRISTINA TOZER EM61 DIFFERENTIAL RESPONSE

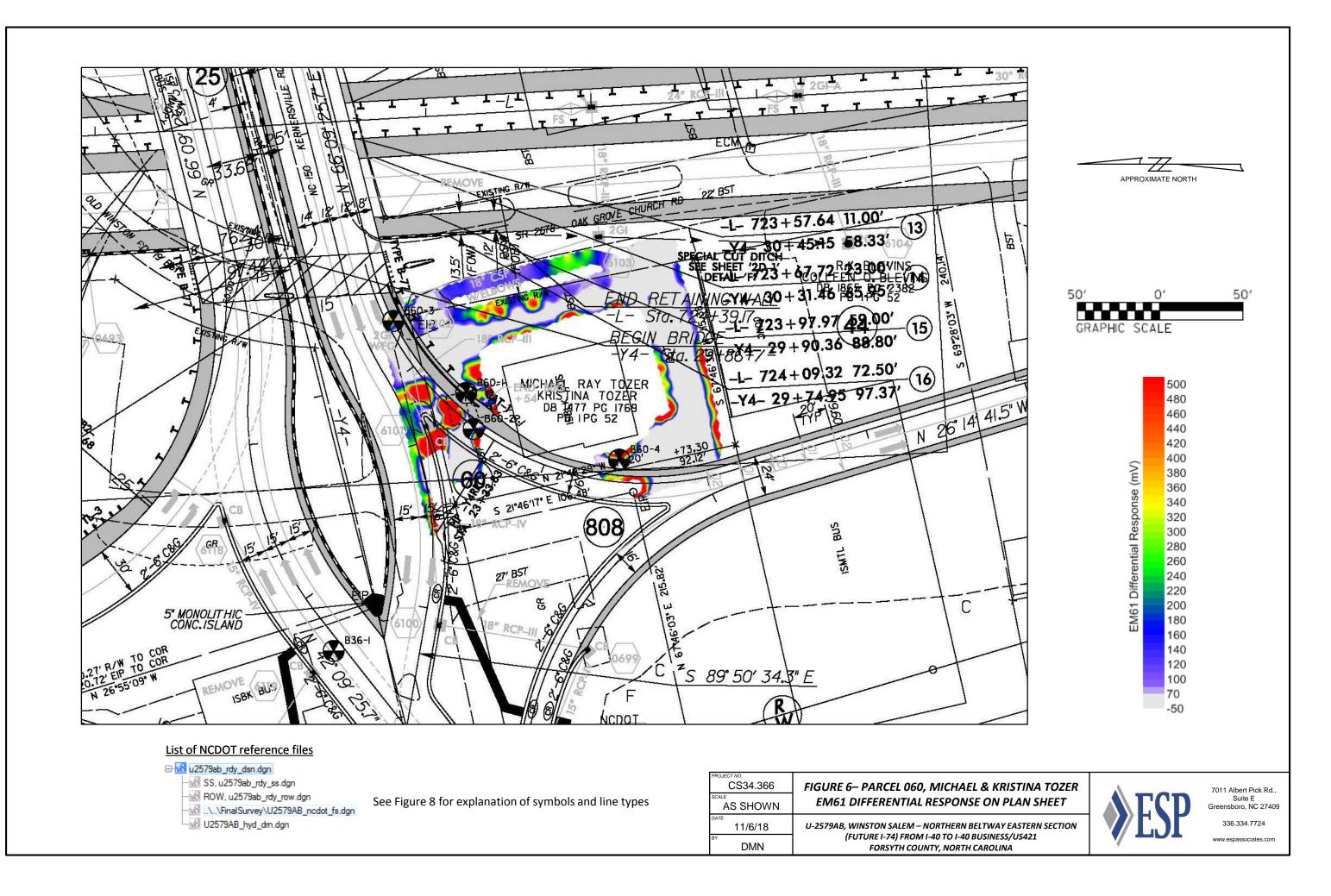
U-2579AB, WINSTON SALEM – NORTHERN BELTWAY EASTERN SECTION (FUTURE I-74) FROM I-40 TO I-40 BUSINESS/US421 FORSYTH COUNTY, NORTH CAROLINA

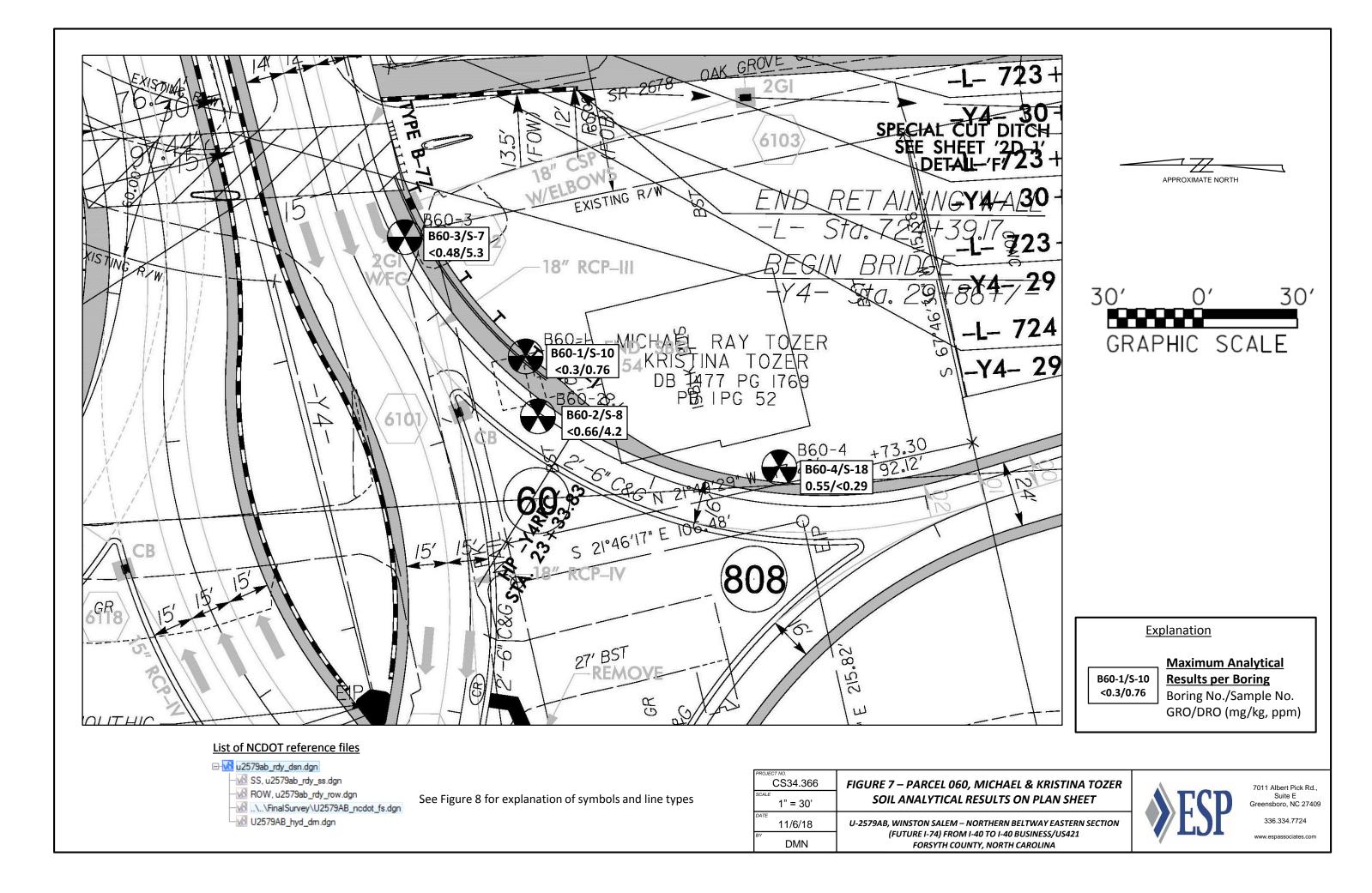


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Cemetery SS Forced Main I Building Fraposed Slope Stakes Cut SS Forced Main I School Fraposed Slope Stakes Cut SS Forced Main I Church Proposed Slope Stakes Cut SS Forced Main I Proposed Slope Stakes Fill Proposed Curb Ramp Existing Telephone Pole 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	. 	
Church Proposed Curb Ramp Image: Construction of the construction		Proposed Slope Stakes Fill				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 contraction o						
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*)	
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Line LOS D (S.U.E*)	
nd Water Line	A/G Water
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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
	♦
	¢
ne LOS B (S.U.E.*)	•
ne LOS C (S.U.E.*)	
ne LOS D (S.U.E.*)	A/G Gos
nd Gas Line	A70 005
WER:	
ver Manhole	
ver Cleanout	-
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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

APPENDIX A SOIL BORING LOGS

	FSP			FIFI	D B		G LOG			BORING NO.
PRO	ECT NAME:	NCE	OT U-2579/				PROJ. NO.: CS	34 366		B60-1
	TION:	E side of for				· · ·	100. 10. <u>00</u>	04.000		500 1
	OF BORING	:	Direct Pus			STARTED: 9			SHEET	
DRILI DRILI	LING FIRM:		SAEDACC Brian Ewin			FINISHED: 9	/5/18 ' Macro Core		TOTAL DEPTH DEPTH TO GW	
	_ RIG:	G	eoprobe 782			GGED BY: N			COMMENT	
(ft)	щ	ц. (1	ŋ							
DEPTH (ft)	SAMPLE NO.	SAMPLE DEPTH (ft)	PID READING (ppm)				SIFICATION A DESCRIPTIOI			REMARKS
-				0.0-0.3 0.3-4.5	Asphalt Orange-	brown sand	y clay to silty	clay w/sand		Core 1 Rec 5.0'/5.0'
-	S-1	0.0.4.0	0.2		3-		, ,	,, .		
_1	5-1	0.0-1.0	0.2							
·										
2	S-2	1.0-2.0	0.2							
•										
3	S-3	2.0-3.0	0.3							
		2.0 0.0								
•										
4	S-4	3.0-4.0	0.4							Core 2 Rec 5.0'/5.0'
•				4.5-10.0	Orange-	brown sand	y silt			
5	S-5	4.0-5.0	0.3							
-	S 6	5000	0.3							
6	S-6	5.0-6.0	0.3							
7	S-7	6.0-7.0	0.4							
·										
8	S-8	7.0-8.0	0.4							
•										
·	0.0									
9	S-9	8.0-9.0	1.1							
10	S-10	9.0-10.0	0.8							
·										
11		Sam	ple selected	for laborato	ory analysis					
•						•				
l										
12										
ŀ										
13										·
•										
14					<u></u>	<u></u>		<u></u>		
·										
15			L							

	FSP			FIF	I D B	ORING LOC	3		BORING NO.
	IECT NAME:		DOT U-2579/ prmer pump i	AB PSA		PROJ. NO.: (B60-2
TYPE DRILI DRILI	OF BORING LING FIRM: LER:):	Direct Pus SAEDACC Brian Ewin eoprobe 782	sh CO ng	DATE SAMPL	E STARTED: <u>9/5/18</u> E FINISHED: <u>9/5/18</u> E METHOD: <u>5' Macro Core</u>	9	SHEET: TOTAL DEPTH: DEPTH TO GW:	9.0 ft Dry ft
	_ RIG:	1			L	OGGED BY: N. Billington		COMMENT	
DEPTH (ft)	SAMPLE NO.	SAMPLE DEPTH (ft)	PID READING (ppm)			FIELD CLASSIFICATION PHYSICAL DESCRIPTI			REMARKS
				0.0-0.5 0.5-8.0	Asphal Orange	t e-brown silty clay			Core 1 Rec 3.0'/5.0'
1	S-1	0.0-1.0	1.0						
2	S-2	1.0-2.0	0.5						
	S-3	0.0.0.0	0.1						
3	5-5	2.0-3.0	0.1						
4	S-4	No Rec	N/A						Core 2 Rec 5.0'/5.0'
5	S-5	4.0-5.0	0.1						
·	0.0	5.0.0.0	0.0						
6	S-6	5.0-6.0	0.3						
7	S-7	6.0-7.0	0.2	8.0-9.0	Orange	e-brown sandy silt			
8 (S-8	7.0-8.0	0.0						
•						1			
9		Sam	le selected	for laborato	ry analysis				
 10									
11									
12									
40	ļ								
13									
14									
<u> </u>									
ŀ ——									
15				1					

	FCP			FIFI	D BORING LOG		BORING NO.
	LJI		07.1.0570				
	IECT NAME: ATION:		OT U-2579	AB PSA corner by inter	PROJ. NO.: CS34.366		B60-3
	OF BORING		Direct Pus		DATE STARTED: 9/5/18	SHEET	
	_ING FIRM:		SAEDACC		DATE FINISHED: 9/5/18	TOTAL DEPTH	
DRILI			Brian Ewin		SAMPLE METHOD: 5' Macro Core	DEPTH TO GW	
	_ RIG:		eoprobe 782	22 DT	LOGGED BY: D. Nance	COMMENT	[
DEPTH (ft)	SAMPLE NO.	SAMPLE DEPTH (ft)	PID READING (ppm)		FIELD CLASSIFICATION AND PHYSICAL DESCRIPTION		REMARKS
				0.0-0.1 0.1-1.0	Asphalt Orange-brown silty clay w/sand		Core 1 Rec 4.0'/5.0'
·	S-1		0.2	1.0-7.0	Orange-brown sandy silt		
_1	5-1	0.0-1.0	0.2	1.0-7.0	Orange-brown sandy sin		
-							
2	S-2	1.0-2.0	0.2				
3	S-3	2.0-3.0	0.3				
<u> </u>	5-5	2.0-3.0	0.5				
4	S-4	3.0-4.0	0.3				Core 2 Rec 3.0'/5.0'
5	S-5	4.0-5.0	0.3				
_5	•••	4.0-5.0	0.0				
6	S-6	5.0-6.0	0.5				
7 (S-7	6.0-7.0	0.4	7.0-8.0	Orange to tan and gray silty sand		
_′ \		0.0-7.0	0.4	1.0 0.0			
·							
8		Samp	le selected	for laboratory	analysis		
-							
9							
10							
k							
11							
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12							
13							
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							······································
14							
•							
15							

	FCD			FIFI			G LOG			BORING NO.
					ים ס					
	IECT NAME:		OT U-2579/				PROJ. NO.: <u>CS</u>	34.366		B60-4
	TION: OF BORING		Direct Pus	ms on SW side		g STARTED:	0/5/19		SHEE	T: 1 of 1
		<u>.</u>	SAEDACC			FINISHED:			TOTAL DEPTI	
DRILL			Brian Ewin				5' Macro Core		DEPTH TO GV	
	RIG:	G	eoprobe 782	22 DT			D. Nance		COMMEN	
(ft)	щ	ц; (ff)	ŋ		-				-	
DEPTH (ft)	SAMPLE NO.	SAMPLE DEPTH (ft)	PID READING (ppm)			-	SSIFICATION AN			REMARKS
OEP	SAI	SAI	REA (p			PHISICA	L DESCRIPTION	N		
				0.0-0.3	Gravel					Core 1 Rec 4.0'/5.0'
•	S-1	1.0-1.5	0.3	0.3-7.2	Orange-	red silty cl	ау			
2	S-2	2.0-2.5	0.4							
	S-3	3.0-3.5	0.2							
! <u> </u>										
_4	S-4	4.0-4.5	0.1							
t	S-5	5.0-5.5	0.8							Core 2 Rec 5.0'/5.0'
6	S-6	6.0-6.5	1.3							
	S-7	7.0-7.5	1.5	7.2-19.0	Orange	brown san	dy, clayey silt			
8	S-8	8.0-8.5	0.4	1.2 10.0	Orange	brown san				
	S-9	9.0-9.5	0.4							
10	S-10	10.0-10.5	0.1							Core 3 Rec 5.075.0
	S-11	11.0-11.5	0.2							
12	S-12	12.0-12.5	0.2							
	S-13	13.0-13.5	0.3							
14	S-14	14.0-14.5	0.3							
	S-15	15.0-15.5	0.4							Core 4 Rec 4.0'/5.0'
16	S-16	16.0-16.5	0.6							
	S-17	17.0-17.5	1.1							
18	S-18	18.0-18.5	2.1							
[<u> </u>	_``\									
20		Sam	ple selected	for laboratory	y analysis					
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APPENDIX B

RED LAB LABORATORY TESTING REPORT

Q	ED										_	\int	<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, 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		i	HC Fingerprint Match
										C5 - C10	C10 - C18	C18	
S	B60-4 (S-18)	11.6	<0.29	0.55	<0.29	0.55	<0.06	<0.09	<0.012	99.4	0.6	0	,(FCM),(P)
S	B60-3 (S-7)	19.2	<0.48	<0.48	5.3	5.3	3.7	0.2	<0.019	0	82.4	17.6	Deg Fuel 72.5%,(FCM)
S	B60-2 (S-8)	26.4	<0.66	<0.66	4.2	4.2	1.8	<0.21	<0.026	0	74.1	25.9	Deg.Fuel 78.6%,(FCM),(P)
S	B60-1 (S-10)	11.9	<0.3	<0.3	0.76	0.76	0.25	<0.1	<0.012	0	85.6	14.4	V.Deg.Diesel 74.8%,(FCM)
S	B50-5 (S-9)	12.9	<0.32	<0.32		<0.32	<0.06	<0.1	<0.013	0	79.3	20.7	,(FCM),(BO)
S	B50-4 (S-10)	12.8	<0.32	0.58		0.58	<0.06	<0.1	<0.013	94.3	5.7	0	Deg.PHC 71.8%,(FCM)
	B50-3 (S-9)	13.8	<0.35	0.7		1.18	<0.07	<0.11	<0.014	95.9	4.1	0	Deg.Fuel 68.3%,(FCM)
S	B50-2 (S-9)	21.5	<0.54	<0.54		<0.54	<0.11	<0.17	<0.022	0	100	-	PHC not detected
S	B50-1 (S-9)	23.3	<0.58	<0.58	<0.58	<0.58	<0.12	<0.19	<0.023	0	0	0	PHC not detected,(BO)
	Initial	Calibrator	QC check	OK					Final F	CM QC	Check	OK	103.3
bbreviation = Blank D	on values in mg/kg for soil samples and mg ns :- FCM = Results calculated using Fund rift : (SBS)/(LBS) = Site Specific or Library timated aromatic carbon number proportio	amental Calib Background S	ration Mode	: % = confide pplied to resu	nce of hydroca Ilt : (BO) = Bad	arbon identific ckground Orga	ation : (PFM) =	Poor Finge	erprint Match	n : (T) = ⁻	Furbid : (P) = Par	ticulate detected

APPENDIX C CHAIN-OF-CUSTODY FORM

Client Name:	ESP Associates, FAC
Address:	7011 Albert Pick Rd. Ste E Greenslere, NC 27409
Contact:	Dillon Nonce
Project Ref.:	11-2579AB
Email:	d.nance@espassociates.com
Phone #:	336-404-3117
Collected by:	D. 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

ample Collection	TAT Rec	quested	Matrix	Samp	D	UVF	GC BTEX	Total Wt.	Tare Wt.	Sample Wt.
Date/Time	24 Hour 48 Hour		(S/W)							
9/10/18		V	5	B36-5 5-	7	V		50.5	44.2	6.3
1)	1	B36-4 5-	9	1		50.5	44.1	6.4
				B36-3 5-1				530	44.1	8.9
				B36-2 5-0				48.4	44.0	4.4
				B36-1 5-9				50,4	44.3	61
				B60-4 5-1				51.2	44.3	6.9
				B60-3 5-7				51.7	44.4	7.3
				B60-2 5-8				49.6	44.3	5.3
				B60-1 5-1				51.2	44.5	6.7
				B50-5 G-	8			50,5	44.3	6.2
				B50-4 5-10				49.3	44.0	5.3
				B50-3 5-9				46.0	44.0	2.6
				850-2 5-0				50.7	44.2	2.6
				B50-1 5-9				49.9	43.9	6.0
				B51-5 5-9				49.5	44.0	5.5
				B51-4 5-9	,			50.3	44.0	6.3
				351-3 5-9				47.1	44.3	2.8
				B61-2 5-9		1		48.2	44.2	40
		V		BET-1 5-9		V		53.7	44.0	97
omments:	ost sa	nples u	nderwa	largely shaffe		(scatati	2)	R	ED Lab USE	ONLY
	uished by		Date	e/Time	Accepted by	1	Date/Time	1	\sum	
DiNa			9/10/	<i>j</i>	N	1 9/1	Date/Time	1	(1α)	
	uished by		/ /	e/Time	Accepted by	1.2	Date/Time	1	(17)	
								1	\smile	