PRELIMINARY SITE ASSESSMENT
PARCEL 012, REX OIL CO. STATE PROJECT U-3109A
WBS ELEMENT 34900.1.2, ALAMANCE COUNTY

MEBANE-NC 119 RELOCATION FROM I-40/85 TO MEBANE ROGERS RD, MEBANE, NORTH CAROLINA

Schnabel Project 14821010.11
January 12, 2016
Revised January 15, 2016

DocuSigned by:
Gregory Kuntz
A0815E39A1E94A2...
1/28/2016

Not Considered Final unless all signatures are completed

Schnabel ENGINEERING

Schnabel ENGINEERING

January 12, 2016
Revised January 15, 2016

Mr. Mohammed A. Mulla, P.E., CPM, MCE
NCDOT, Geotechnical Engineering Unit
1020 Birch Ridge Drive
Raleigh, NC 27610

RE: State Project: U-3109A
WBS Element: 34900.1.2
County: Alamance
Description: Mebane-NC 119 Relocation from I-40/85 to Mebane Rogers Rd

Subject: **Preliminary Site Assessment for Parcel 012, Mebane, NC**
Schnabel Engineering Project 14821010.11

Dear Mr. Mulla:

SCHNABEL ENGINEERING SOUTH, P.C. (Schnabel) is pleased to submit our revised report for this project. This study was performed in accordance with our proposal dated October 19, 2015 as authorized by the Notice to Proceed on November 13, 2015 and was conducted under our May 16, 2014 Agreement with the NCDOT.

We appreciate the opportunity to be of service for this project. Please call us if you have any questions regarding this report.

Sincerely,

SCHNABEL ENGINEERING SOUTH, PC

Benjamin L. Bradley, GIT
Project Scientist
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1/28/2016

Gregory B. Kuntz, LG
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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

PRELIMINARY SITE ASSESSMENT FOR PARCEL 012, REX OIL CO.

STATE PROJECT U-3109A, WBS ELEMENT 39400.1.2

MEBANE-NC 119 RELOCATION FROM I-40/85 TO MEBANE ROGERS RD
MEBANE, ALAMANCE COUNTY, NORTH CAROLINA

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APPENDICES

1.0 INTRODUCTION

The North Carolina Department of Transportation (NCDOT) is planning to relocate NC 119 from I-40/85 to Mebane Rogers Road in the Town of Mebane, located in Alamance County, North Carolina. Acquisition of properties within the right-of-way (ROW) is necessary prior to road construction. Schnabel Engineering conducted a Preliminary Site Assessment (PSA) on Parcel 012 located within the proposed ROW that are of concern to the NCDOT.

This report summarizes the results of field activities conducted during the PSA for the proposed Parcel 012 property acquisition area (Study Area) identified by NCDOT. The property is located on S. Fifth Street and is a vacant lot, currently owned by Rex Oil, Co. (Figure 1). The property line and topography are shown on Figure 2. The approximate NCDOT project limits that delineate the property acquisition area are shown on Figure 4.

The scope of work executed at the site was performed in general accordance with our cost proposal dated October 19, 2015 and was initiated based on a Notice to Proceed issued by the NCDOT Geotechnical Engineering Unit on November 13, 2015 under contract 7000015371, dated May 16, 2014.

2.0 BACKGROUND AND SITE DESCRIPTION

Buildings were not present on Parcel 012, however a large concrete pad was observed on the east central part of the property. A billboard is located on the southwestern part of the property. The remainder of the property is covered with grass or shrub vegetation. The information regarding prior site use provided to Schnabel Engineering by NCDOT was that this parcel formerly operated as a gas station, and that underground storage tanks (USTs) were reportedly removed in 1994. This PSA is for the investigation of the entire parcel. Photographs of the Study Area are presented in Appendix A.

3.0 FIELD METHODOLOGY

Prior to mobilizing to the site to conduct the field investigation, Schnabel Engineering contacted North Carolina One Call to locate underground utilities in the Study Area of the site. Schnabel Engineering mobilized a geophysical crew to the site on November 20, 2015 and performed an electromagnetic survey of the subsurface in the proposed ROW area within the parcel. The Schnabel geophysical crew returned to the Study Area on December 4, 2015 to perform ground penetrating radar (GPR) survey with a Geophysical Survey Systems SIR 3000 equipped with a 400 MHz antenna. The geophysical reported in presented in Appendix B.

After reviewing the background information and geophysical data, Schnabel returned to Parcel 012 to conduct field screening of soils from within the Study Area. Fourteen soil borings designated B-12-01 through B-12-14 were advanced by Geologic Exploration of Statesville, NC along S. Fifth Street on December 18, 2015. Two borings were advanced on adjacent sides of the concrete pad, one boring was advanced near the concrete island and another near the elevated concrete pad, one hand auger was advanced through Anomaly 1 (B-12-14), three borings were advanced along S. Fifth Street and/or the I-40 entrance ramp, and six borings were advanced at various other locations on the property. The location of the soil borings are shown on Figure 2. The borings were advanced to a total depth of 10 feet below ground surface (bgs). The borings drilled within the Study Area were advanced utilizing a track-mounted Geoprobe® (Model 8040-DT) with direct push probe technology. The hand auger boring was advanced to a depth of six feet bgs. At the completion of the sampling activities, the borings were backfilled with soil removed from the boring during sampling and/or bentonite chips.

Soils for field screening were obtained from the borings using a MacroCore® sampler fitted with a new, single-use, five foot long disposable polyvinyl chloride (PVC) liner. A portion of soil from each 3-foot interval was placed in a separate re-sealable plastic bag. These bags were sealed and placed aside to equilibrate to ambient temperature for 15 minutes. The head space in each bag was field screened with a MiniRAE Plus photo ionization detector (PID) for total volatile organic compounds. Headspace screening of the soil samples was zero parts per million (ppm) at each boring location at intervals of 0-3 feet, 3-6 feet, and 6-10 feet bgs (Table 1, Sampling Intervals and Field Volatile Measurements). The PID was calibrated on December 17 and 18, 2015 in general accordance with the manufacturer's recommended calibration procedures. The PID readings were recorded with the soil descriptions and indications of staining or odors, if present on the logs for each boring presented in Appendix C.

Ultra Violet Fluorescence (UVF) was performed at Parcel 012 because of the historical usage of the property as a former gas station with reported USTs. A portion of soil from each boring at intervals of 0-3 feet, 3-6 feet, and 6-10 feet bgs were field analyzed for total benzene, toluene, ethylbenzene, and xylenes (BTEX), total petroleum hydrocarbons (TPH), TPH gasoline range organics (GRO), TPH diesel range organics (DRO), total Aromatics, Sum 16 EPA polyaromatic hydrocarbons (PAHs), and Benzo(a)pyrene (BaP) by UVF using a QED Hydrocarbon Analyzer from QROS, LLC. Groundwater was not encountered in the borings so a groundwater sample was not collected. The UVF results are presented in Appendix E.

Soils collected from borings within the Study Area generally consisted of orangish brown Elastic Silt (MH). GPS coordinates for each boring were obtained using a Trimble Pro-XRS DGPS system (Appendix D) with coordinates reported in US State Plane 1983 system, North Carolina 3200 zone, using the NAD 83 datum, with units in US survey feet.

4.0 GROUNDWATER MONITORING WELLS OR REMEDIATION WELLS

Groundwater monitoring wells or remediation wells were not observed within the proposed ROW or easement on this parcel.

5.0 DISCUSSION OF RESULTS

The EM data obtained during the geophysical survey contained multiple anomalies that were investigated with GPR which appear to be the result of reinforced concrete or metal objects at the ground surface or at shallow depths. There are large EM anomalies on the northeastern portion of the parcel that are attributed to reinforced concrete. These areas were surveyed with GPR, and the data did not show responses interpreted to be related to USTs. The geophysical data collected at the site do not indicate the presence of metallic USTs within the areas surveyed. One anomaly was noted near the center of the survey area and is designated as Anomaly 1. The GPR data that was collected over the EM anomaly shows high amplitude reflections that lack the hyperbolic signature of a UST.

Table 2, listed below, shows the results of the UVF analyses conducted at Parcel 012. Results greater than 10 mg/Kg exceed the TPH Action Level for DRO and GRO *(Guidelines for Site Checks, Tank Closure, and Initial Response and Abatement for UST Releases, Division of Waste Management, UST Section, December 1, 2013).*

Table 2, UVF Results

Matrix	Sample ID	Dilution used	BTEX (C6 - C9)	GRO (C5 - C10)	DRO (C10 - C35)	TPH (C5 - C35)	Total Aromatics (C10-C35)	16 EPA PAHs	BaP	Ratios			HC Fingerprint Match
										% light	% mid	% heavy	
s	B-12-01 0-3'	20.3	<1	<0.51	<0.2	<0.51	<0.1	<0.02	<0.002	0	0	0	PHC not detected
s	B-12-01 3-6'	19.5	<0.98	<0.49	1	1	<0.1	<0.02	<0.002	0	10.3	89.7	Residual.PHC (FCM) (P) 6%
s	B-12-02 0-3'	18.4	<0.92	<0.46	<0.18	<0.46	<0.09	<0.01	<0.002	0	0	0	PHC not Detected + BO
s	B-12-02 3-6'	21.7	<1.1	<0.54	<0.22	<0.54	<0.11	<0.02	<0.002	0	0	0	PHC not Detected + BO
s	B-12-02 6-10'	20.8	<1	5.3	0.39	5.69	0.33	<0.02	<0.002	94.6	5.4	0	Deg Gas + BO (FCM) 40.6%
s	B-12-03 0-3'	18.3	<0.92	<0.46	0.34	0.34	0.33	0.04	<0.002	0	80.6	19.4	PHC Traces (FCM)
s	B-12-03 3-6'	18.6	<0.93	<0.46	0.43	0.43	<0.09	<0.01	<0.002	0	82.8	17.2	V.Deg.PHC (FCM) 45.7%
s	B-12-03 6-10'	13.7	<0.68	<0.34	0.33	0.33	<0.07	<0.01	<0.001	0	0	100	PHC not detected (FCM) 31.4%
s	B-12-04 0-3'	7.5	<0.37	<0.19	<0.07	<0.19	<0.04	<0.006	<0.001	0	0	0	PHC not Detected + BO
s	B-12-04 3-6'	18.7	<0.94	<0.47	2	2	1.5	0.16	0.004	0	83.6	16.4	Road Tar (FCM) 77.3%
s	B-12-04 6-10'	19.7	<0.98	<0.49	3.2	3.2	2.4	0.26	0.008	0	82.4	17.6	Deg.PHC (FCM) 74.5%
s	B-12-05 0-3'	23.4	<1.2	<0.59	1.4	1.4	0.97	0.03	<0.002	0	88.7	11.3	V.Deg.Diesel (FCM) 45.7%
s	B-12-05 3-6'	17.3	<0.87	<0.43	0.4	0.4	0.38	0.04	<0.002	0	71.4	28.6	V.Deg.PHC (FCM) (P)
s	B-12-05 6-10'	15.8	<0.79	<0.39	<0.16	<0.39	<0.08	<0.01	<0.002	0	0	0	PHC not Detected + BO
s	B-12-06 0-3	6.9	<0.34	<0.17	<0.07	<0.17	<0.03	<0.006	<0.001	0	0	0	PHC not Detected + BO
s	B-12-06 3-6'	16.8	<0.84	<0.42	<0.17	<0.42	<0.08	<0.01	<0.002	0	0	100	Residual PHC + BO (FCM)
s	B-12-06 6-10'	20.3	<1	<0.51	<0.2	<0.51	<0.1	<0.02	<0.002	0	0	0	PHC not Detected + BO
s	B-12-07 0-3'	17.7	<0.88	<0.44	0.49	0.49	<0.18	<0.01	<0.002	0	51	49	V.Deg.PHC + BO (FCM) (P) 43.5%
s	B-12-07 3-6'	18.3	<0.92	<0.46	<0.18	<0.46	<0.09	<0.01	<0.002	0	59.6	40.4	PHC Traces + BO (FCM) (P)
s	B-12-07 6-10'	19.4	<0.97	<0.49	0.46	0.46	<0.1	<0.02	<0.002	0	33.5	66.5	Residual PHC + BO (P) 47.1%
s	B-12-08 0-3'	20.2	<1	5.8	0.94	6.74	0.58	<0.02	<0.002	92.1	6.3	1.5	Deg.Gas (FCM) (P) 40.7%
s	B-12-08 3-6'	18.6	<0.93	<0.46	<0.19	<0.46	<0.09	<0.01	<0.002	0	0	0	PHC not Detected + BO
s	B-12-08 6-10'	6.7	<0.17	<0.17	<0.07	<0.17	<0.03	<0.005	<0.001	0	0	0	PHC not Detected + BO
s	B-12-09 0-3'	5.6	<0.14	<0.14	<0.06	<0.14	<0.03	<0.004	<0.001	0	0	0	PHC not detected
s	B-12-09 3-6'	21.1	<1.1	<0.53	<0.21	<0.53	<0.11	<0.02	<0.002	0	0	100	PHC Traces (P)
s	B-12-09 6-10'	5.0	<0.25	<0.12	<0.05	<0.12	<0.02	<0.004	<0	0	0	100	PHC not Detected + BO
s	B-12-10 0-3'	23.4	<1.2	<0.59	<0.23	<0.59	<0.12	<0.02	<0.002	0	0	100	PHC Traces (FCM) (P)
s	B-12-10 3-6'	17.0	<0.85	<0.42	<0.17	<0.42	<0.08	<0.01	<0.002	0	0	0	PHC not Detected + BO
s	B-12-10 6-10'	19.5	<0.98	<0.49	<0.2	<0.49	<0.1	<0.02	<0.002	0	0	0	PHC not detected
s	B-12-11 0-3'	17.3	<0.87	<0.43	13.4	13.4	12.8	0.67	0.11	0	75.2	24.8	V.Deg.PHC (FCM) 80.6%
s	B-12-11 3-6'	22.6	<1.1	<0.57	0.55	0.55	<0.11	<0.02	<0.002	0	22.3	77.7	V.Deg.PHC + BO (FCM) (P) 45.3%
s	B-12-11 6-10'	20.5	<1	<0.51	0.52	0.52	<0.22	<0.02	<0.002	0	58.3	41.7	V.Deg.PHC + BO (FCM) 76.1%
s	B-12-12 0-3'	15.0	<0.75	<0.38	1.3	1.3	1.2	0.05	0.002	0	76.4	23.6	V.Deg.PHC + BO (FCM) 78.2%
s	B-12-12 3-6'	13.1	<0.66	<0.33	1.2	1.2	1.1	0.05	0.001	0	79.1	20.9	V.Deg.PHC (FCM) 82.8%
s	B-12-12 6-10'	18.2	<0.91	<0.45	<0.18	<0.45	<0.09	<0.01	<0.002	0	0	0	PHC not Detected + BO
s	B-12-13 0-3'	20.8	<1	<0.52	<0.21	<0.52	<0.1	<0.02	<0.002	0	0	100	PHC not detected
s	B-12-13 3-6'	7.3	<0.36	<0.18	<0.07	<0.18	<0.04	<0.006	<0.001	0	0	100	PHC not Detected
s	B-12-13 6-10'	19.4	<0.97	<0.49	<0.19	<0.49	<0.1	<0.02	<0.002	0	0	0	PHC not detected
s	B-12-14 0-3'	19.4	<0.97	<0.49	<0.19	<0.49	<0.1	<0.02	<0.002	0	0	0	PHC not Detected + BO
s	B-12-14 3-6'	22.0	<1.1	<0.55	<0.22	<0.55	<0.11	<0.02	<0.002	0	0	0	PHC not Detected + BO

S: soil
Results in mg/Kg

UVF analyses showed very degraded petroleum hydrocarbons (PHC) at 13.4 mg/Kg DRO at B-12-11 (0-3 feet). PID readings collected at this location were zero ppm and there was an absence of staining and odor. UVF analyses of the remainder of the borings showed readings below 10 mg/Kg. The potentially contaminated soil is estimated to cover an area of approximately 400 square feet and extends vertically from 0.0 to 3.0 feet bgs in the vicinity of B-12-11. Based on these dimensions Schnabel estimates that there are approximately 45 cubic yards of potentially contaminated soil at the site. UVF analytical results are included in Appendix E.

6.0 CONCLUSIONS

The geophysical survey conducted at the site did not indicate the presence of USTs. Several visible metallic objects at grade (e.g. signs, guy wires, etc.) were present along with a subsurface anomaly in the central portion of the site. A hand auger boring was advance through the anomaly and a thin layer of

weathered concrete was noted, but a UST was not encountered to six feet bgs. Fourteen soil borings B-12-01 through B-12-14 were advanced to evaluate potential petroleum contamination within the Study Area and to document soil conditions. UVF results showed that, except for one minor exceedance at B-12-11 (0-3 feet), impacted soils are not present to 10 feet depth in the areas analyzed. The PID readings and visual/olfactory observations at 0-3 feet in B-12-11 did not indicate contamination.

No existing groundwater or remediation wells were observed within the surveyed area. Groundwater was not encountered to a depth of 10 feet in the soil borings.

7.0 RECOMMENDATIONS

One area of potential soil contamination above the 10 mg/Kg action level is shown at B-12-11 at the 0-3 feet depth. However, no total volatile organic compound headspace detection, soil staining or odor was detected. The UVF results may be a false positive detection of naturally occurring compounds. Schnabel recommends that this soil be retested for TPH-DRO by Method 8015/3546 by a laboratory to confirm the UVF analysis or be removed and disposed of at an approved facility.

8.0 LIMITATIONS

This PSA was prepared for the use of the NCDOT. The scope of work performed at the site is limited to the tasks described in our cost proposal dated October 19, 2015. This report is not intended to represent an exhaustive research of all potential hazards that may exist. Schnabel makes no other declarations, or any express or implied warranty, as to the professional services provided under the terms of the agreement.

TABLES

Table 1, Sampling Intervals and Field Volatile Measurements
Table 2, UVF Results (table included in body of report)

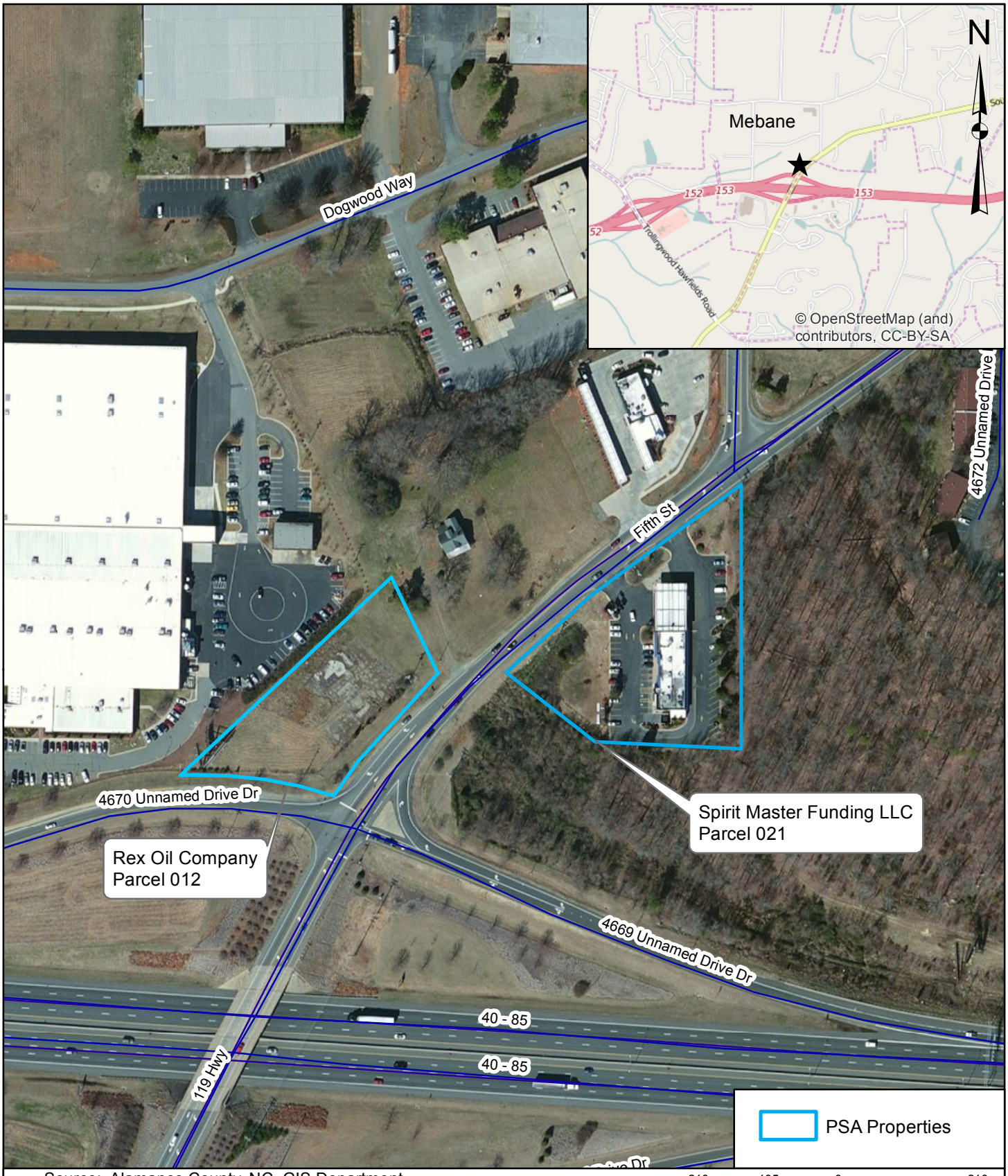
TABLE 1
SAMPLING INTERVALS AND FIELD VOLATILE MEASUREMENTS
PARCEL 012
NCDOT U-3109A, ALAMANCE COUNTY

Sample Depth Below Ground	Soil Borings													
	B-12-01	B-12-02	B-12-03	B-12-04	B-12-05	B-12-06	B-12-07	B-12-08	B-12-09	B-12-10	B-12-11	B-12-12	B-12-13	B-12-14
0 - 3 feet	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*
3 - 6 feet	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*
6 - 10 feet	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	NA

Notes:
*: Ultra Violet Fluorescence (UVF) performed
Field volatile measurements obtained with a MiniRae Photo Ionization Detector
Measurements in parts per million (ppm)

FIGURES

Figure 1, Vicinity Map
Figure 2, Site Map
Figure 3, Potential Soil Contamination Area
Figure 4 and 4A, Boring Locations and Legend



Source: Alamance County, NC, GIS Department

210 105 0 210 Feet

Projection: NAD 1983 State Plane North Carolina FIPS 3200 Feet

Scale: 1:2,400

Schnabel ENGINEERING

SITE PROJECT U-3109A, PSA PARCELS
ALAMANCE COUNTY, NORTH CAROLINA
NC DEPARTMENT OF TRANSPORTATION
PROJECT NO. 14821010.11

VICINITY MAP

FIGURE 1

Source: Alamance County, NC, GIS Department

Projection: NAD 1983 State Plane North Carolina FIPS 3200 Feet

Scale: 1:1,000

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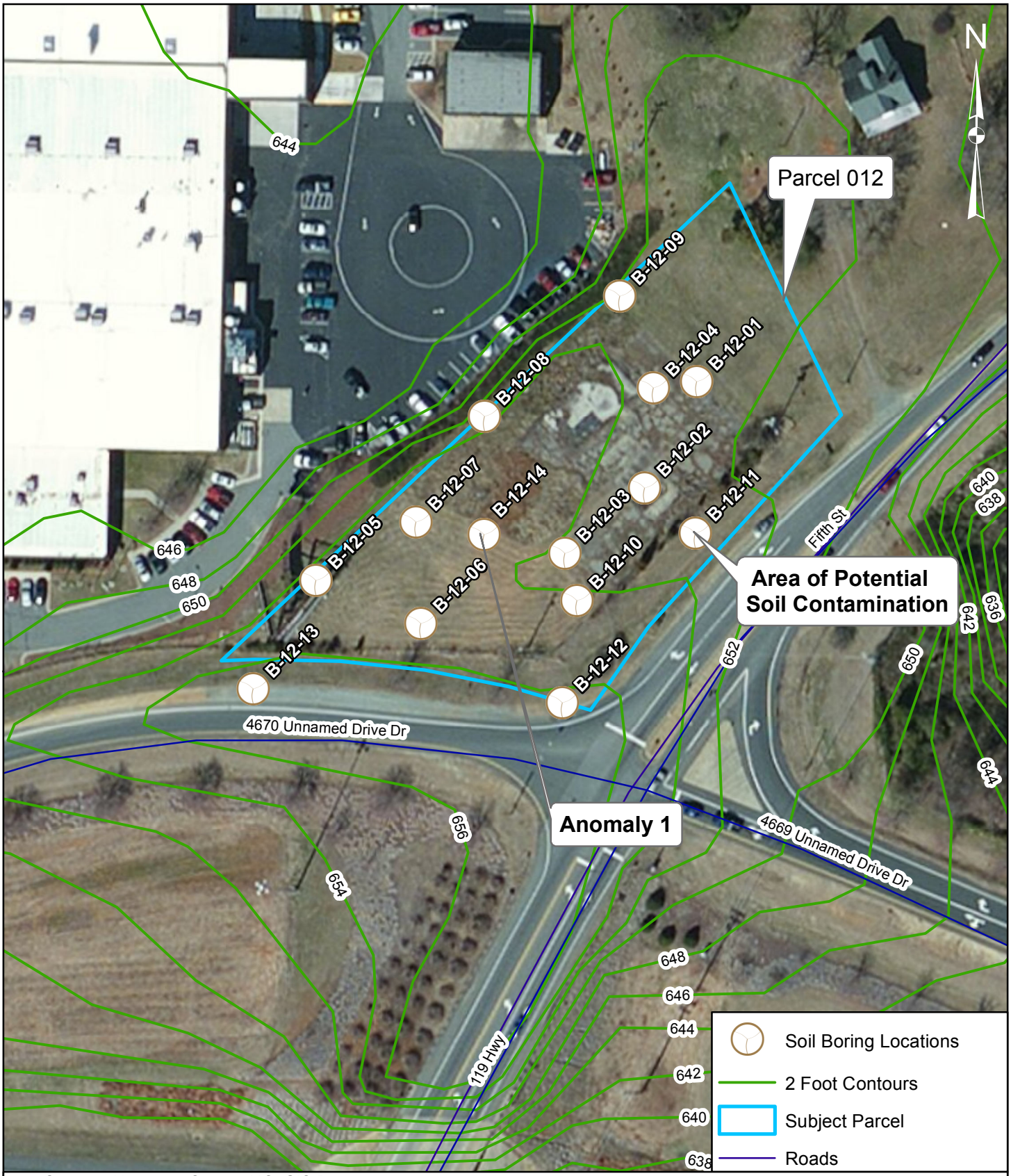
SITE PROJECT U-3109A, PARCEL 012
ALAMANCE COUNTY, NORTH CAROLINA
NC DEPARTMENT OF TRANSPORTATION
PROJECT NO. 14821010.11

SITE MAP
PARCEL 012, REX OIL, CO.

FIGURE 2



Source: Alamance County, NC, GIS Department

Projection: NAD 1983 State Plane North Carolina FIPS 3200 Feet

Scale: 1:1,000

Schnabel ENGINEERING

SITE PROJECT U-3109A, PARCEL 012
ALAMANCE COUNTY, NORTH CAROLINA
NC DEPARTMENT OF TRANSPORTATION
PROJECT NO. 14821010.11

PROBABLE SOIL
IMPACT AREA
PARCEL 012, REX OIL, CO.

FIGURE 3

Schnabel ENGINEERING

NC DEPARTMENT OF TRANSPORTATION
ALAMANCE COUNTY, NORTH CAROLINA
PARCEL 012, REX OIL CO.

PROJECT REFERENCE NO.	SHEET NO.
U-3109A	4

SITE PLAN

0 50 100
FEET

N

140W / 185W ON RAMP
-RPB SPUR-
-RPA SPUR-
-RPB-
-RPA-
-L-
S. FIFTH ST.
10+00.00 =
PC Sta. 20+34.70
TS Sta. 29+61.36
N 73° 10' 00.2" E
W 7° 54' 10.9" E
N 57° 53' 54.9" E
N 34° 36' 47.7" W
PT Sta. 21+69.27
-RPB- POT Sta. 21+94.35 = -SBL- POC Sta. 32+38.31, 15' LT
SC Sta. 32+31.36
-SBL- PT Sta. 34+55.35 = -NBL- PT Sta. 34+50.62 -L- POC Sta. 34+25.07 OFFSET = 27' LT
B-12-01
B-12-02
B-12-03
B-12-04
B-12-05
B-12-06
B-12-07
B-12-08
B-12-09
B-12-10
B-12-11
B-12-12
B-12-13
B-12-14
SANDVIK, INC. DB 947 PG 519 PB 43 PG 51
REX OIL COMPANY DB 437 PG 877
CAROLYN LO... DB 445 P...
ISB BUS
MOVED
CB
RW

04/16/11

PROJECT REFERENCE NO.	SHEET NO.
U-3109A	4A

Note: Not to Scale

****S.U.E. = Subsurface Utility Engineering***

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

- State Line
- County Line
- Township Line
- City Line
- Reservation Line
- Property Line
- Existing Iron Pin — EIP
- Property Corner
- Property Monument — ECM
- Parcel/Sequence Number — 123
- Existing Fence Line
- Proposed Woven Wire Fence
- Proposed Chain Link Fence
- Proposed Barbed Wire Fence
- Existing Wetland Boundary — WLB
- Proposed Wetland Boundary — WLB
- Existing Endangered Animal Boundary — EAB
- Existing Endangered Plant Boundary — EPB
- Known Soil Contamination: Area or Site
- Potential Soil Contamination: Area or Site

BUILDINGS AND OTHER CULTURE:

- Gas Pump Vent or U/G Tank Cap
- Sign — S
- Well — W
- Small Mine
- Foundation
- Area Outline
- Cemetery
- Building
- School
- Church
- Dam

HYDROLOGY:

- Stream or Body of Water
- Hydro, Pool or Reservoir
- Jurisdictional Stream — JS
- Buffer Zone 1 — BZ 1
- Buffer Zone 2 — BZ 2
- Flow Arrow
- Disappearing Stream
- Spring
- Wetland
- Proposed Lateral, Tail, Head Ditch — FLOW
- False Sump

RAILROADS:

- Standard Gauge — CSX TRANSPORTATION
- RR Signal Milepost — MILEPOST 35
- Switch — SWITCH
- RR Abandoned
- RR Dismantled

RIGHT OF WAY:

- Baseline Control Point
- Existing Right of Way Marker
- Existing Right of Way Line
- Proposed Right of Way Line — RW
- Proposed Right of Way Line with Iron Pin and Cap Marker — RW
- Proposed Right of Way Line with Concrete or Granite R/W Marker — RW
- Proposed Control of Access Line with Concrete C/A Marker — CA
- Existing Control of Access — CA
- Proposed Control of Access — CA
- Existing Easement Line — E
- Proposed Temporary Construction Easement — E
- Proposed Temporary Drainage Easement — TDE
- Proposed Permanent Drainage Easement — PDE
- Proposed Permanent Drainage / Utility Easement — DUE
- Proposed Permanent Utility Easement — PUE
- Proposed Temporary Utility Easement — TUE
- Proposed Aerial Utility Easement — AUE
- Proposed Permanent Easement with Iron Pin and Cap Marker

ROADS AND RELATED FEATURES:

- Existing Edge of Pavement
- Existing Curb
- Proposed Slope Stakes Cut — C
- Proposed Slope Stakes Fill — F
- Proposed Curb Ramp — CR
- Existing Metal Guardrail
- Proposed Guardrail
- Existing Cable Guiderail
- Proposed Cable Guiderail
- Equality Symbol
- Pavement Removal

VEGETATION:

- Single Tree
- Single Shrub
- Hedge
- Woods Line

- Orchard
- Vineyard — Vineyard

EXISTING STRUCTURES:

MAJOR:

- Bridge, Tunnel or Box Culvert — CONC
- Bridge Wing Wall, Head Wall and End Wall — CONC WW

MINOR:

- Head and End Wall — CONC HW
- Pipe Culvert
- Footbridge
- Drainage Box: Catch Basin, DI or JB — CB
- Paved Ditch Gutter
- Storm Sewer Manhole — S
- Storm Sewer — S

UTILITIES:

POWER:

- Existing Power Pole
- Proposed Power Pole
- Existing Joint Use Pole
- Proposed Joint Use Pole
- Power Manhole — P
- Power Line Tower
- Power Transformer
- U/G Power Cable Hand Hole
- H-Frame Pole
- Recorded U/G Power Line — P
- Designated U/G Power Line (S.U.E.*) — P

TELEPHONE:

- Existing Telephone Pole
- Proposed Telephone Pole
- Telephone Manhole — T
- Telephone Booth
- Telephone Pedestal — T
- Telephone Cell Tower
- U/G Telephone Cable Hand Hole — HH
- Recorded U/G Telephone Cable — T
- Designated U/G Telephone Cable (S.U.E.*) — T
- Recorded U/G Telephone Conduit — TC
- Designated U/G Telephone Conduit (S.U.E.*) — TC
- Recorded U/G Fiber Optics Cable — T FO
- Designated U/G Fiber Optics Cable (S.U.E.*) — T FO

WATER:

- Water Manhole — W
- Water Meter
- Water Valve
- Water Hydrant
- Recorded U/G Water Line — W
- Designated U/G Water Line (S.U.E.*) — W
- Above Ground Water Line — A/G Water

TV:

- TV Satellite Dish
- TV Pedestal — C
- TV Tower
- U/G TV Cable Hand Hole — HH
- Recorded U/G TV Cable — TV
- Designated U/G TV Cable (S.U.E.*) — TV
- Recorded U/G Fiber Optic Cable — TV FO
- Designated U/G Fiber Optic Cable (S.U.E.*) — TV FO

GAS:

- Gas Valve
- Gas Meter
- Recorded U/G Gas Line — G
- Designated U/G Gas Line (S.U.E.*) — G
- Above Ground Gas Line — A/G Gas

SANITARY SEWER:

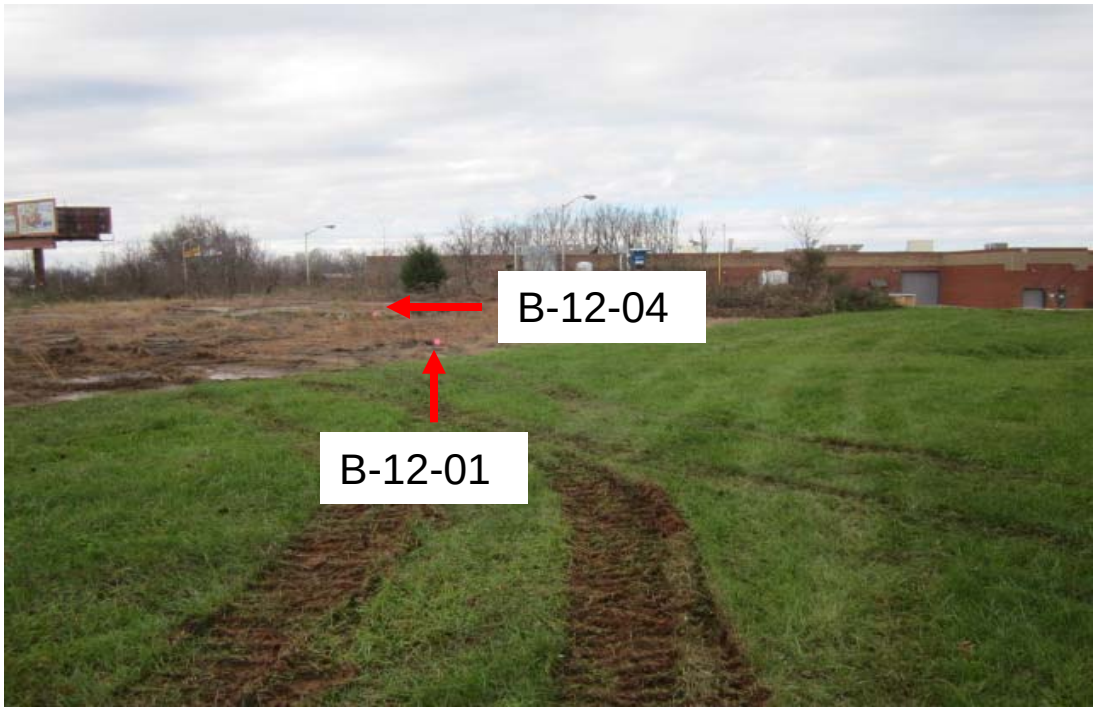
- Sanitary Sewer Manhole
- Sanitary Sewer Cleanout
- U/G Sanitary Sewer Line — SS
- Above Ground Sanitary Sewer — A/G Sanitary Sewer
- Recorded SS Forced Main Line — FSS
- Designated SS Forced Main Line (S.U.E.*) — FSS

MISCELLANEOUS:

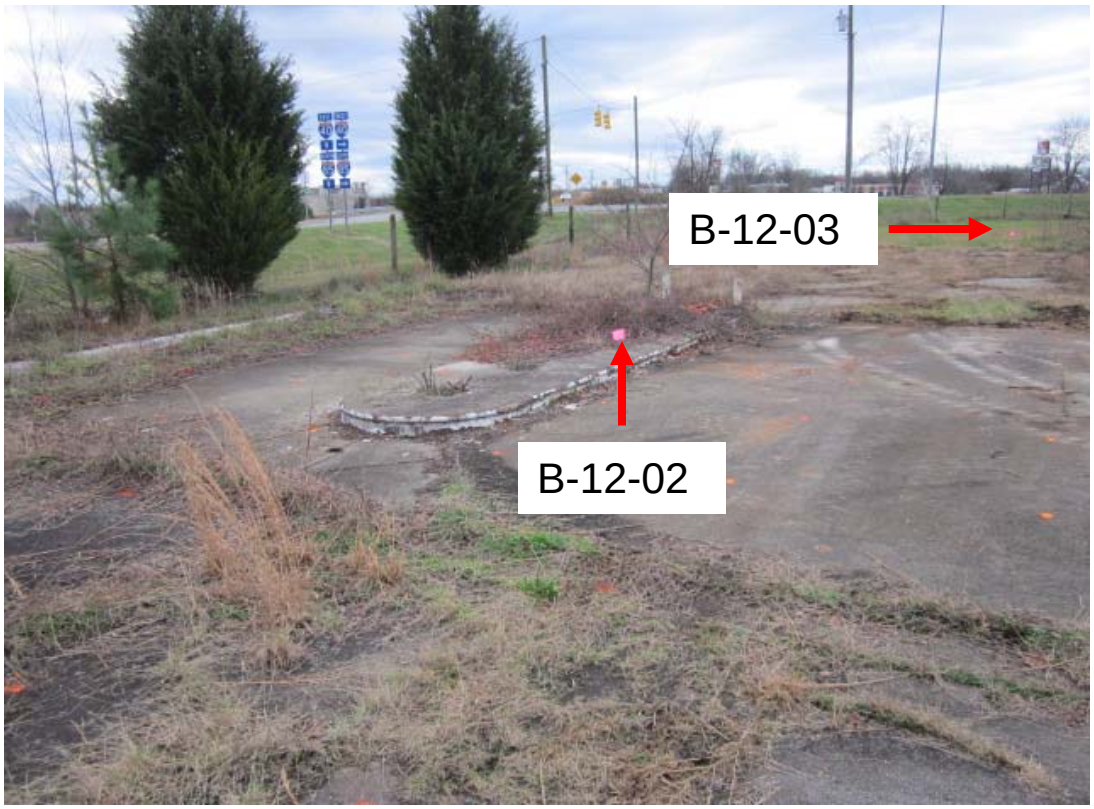
- Utility Pole
- Utility Pole with Base
- Utility Located Object
- Utility Traffic Signal Box — S
- Utility Unknown U/G Line — ?UTL
- U/G Tank; Water, Gas, Oil
- Underground Storage Tank, Approx. Loc. — UST
- A/G Tank; Water, Gas, Oil
- Geoenvironmental Boring
- U/G Test Hole (S.U.E.*)
- Abandoned According to Utility Records — AATUR
- End of Information — E.O.I.

APPENDIX A

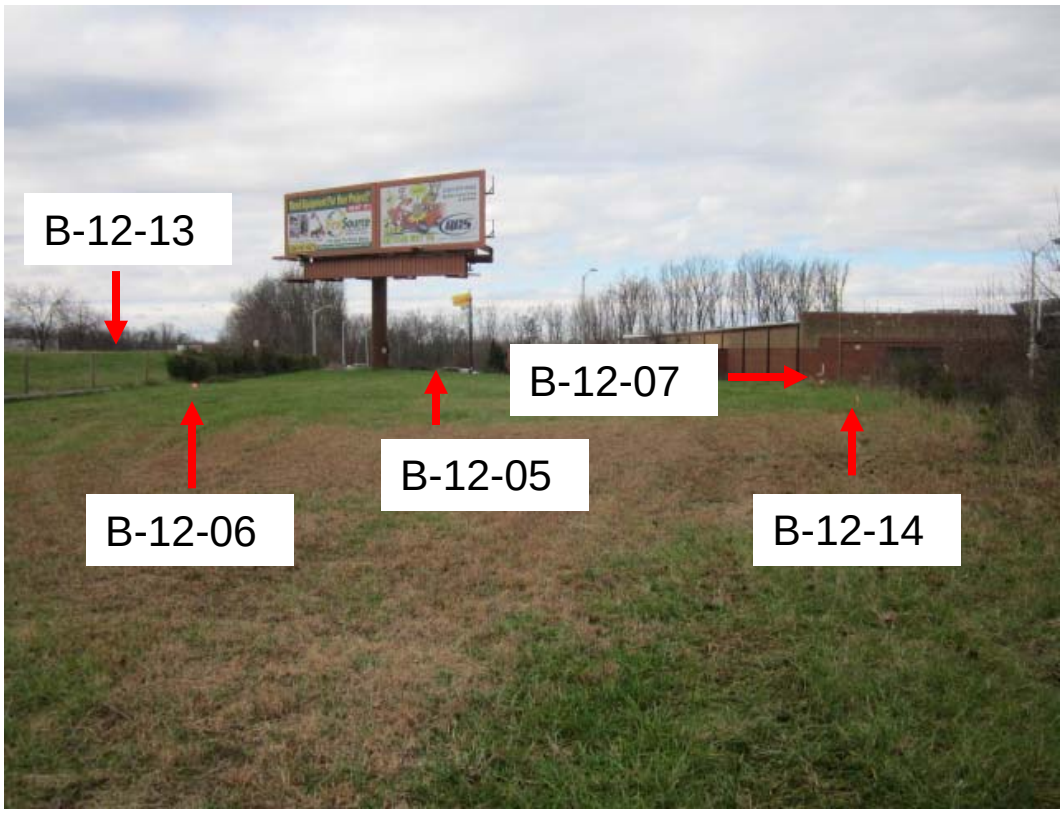
PHOTOGRAPHS



Parcel 012, facing northwest toward B-12-01 and 04.

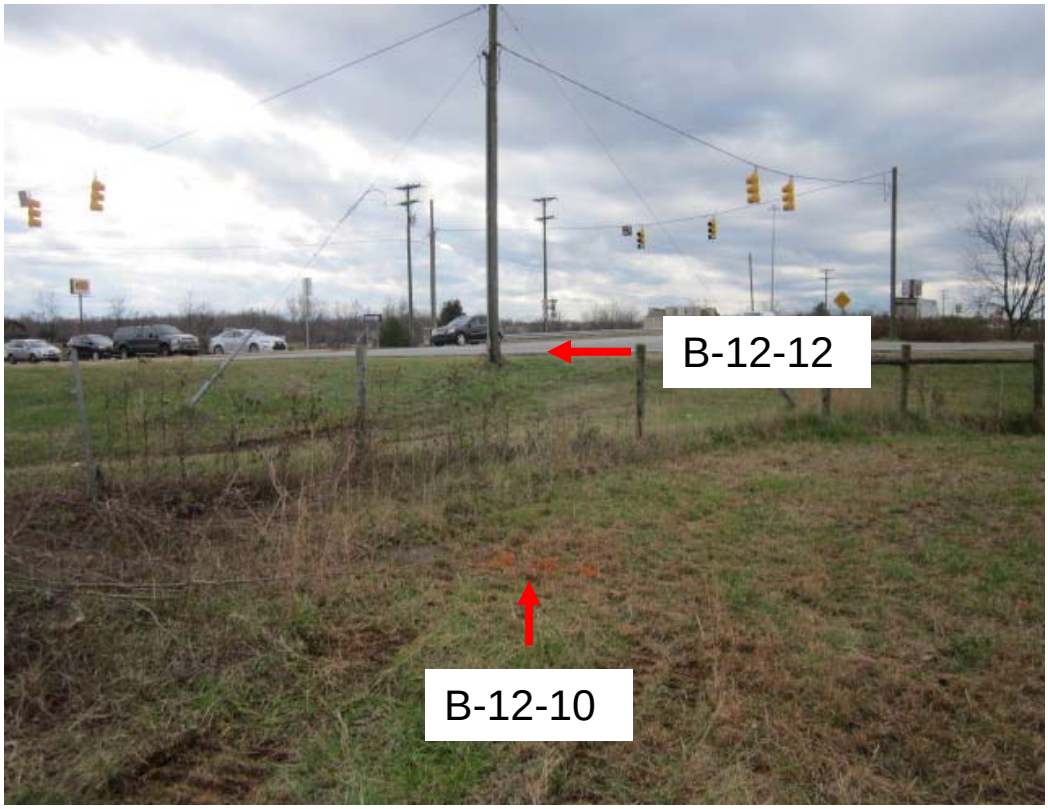


Parcel 012, facing southwest toward B-12-02 and 03.



Parcel 012, facing west toward B-12-05, 06, 07, 13, and 14.

Parcel 012, facing northeast toward B-12-08.



Parcel 012, facing south toward B-12-10 and 12.

Parcel 012, facing southwest toward B-12-11.

APPENDIX B

GEOPHYSICS REPORT

Schnabel ENGINEERING

January 13, 2016
Revised January 15, 2016

Mr. Mohammed A. Mulla, P.E., CPM, MCE
NCDOT, Geotechnical Engineering Unit
1020 Birch Ridge Drive
Raleigh, NC 27610

RE:
State Project: U-3109A
WBS Element: 34900.1.2
County: Alamance
Description: Mebane-NC 119 Relocation from I-40/85 to Mebane Rogers Rd.

Subject: **Project 14821010.11, Report on Geophysical Surveys**
Parcel 12, Rex Oil Co. Property, Mebane, North Carolina

Dear Mr. Mulla:

SCHNABEL ENGINEERING SOUTH, PC (Schnabel) is pleased to present this report on the geophysical surveys we performed on the subject property. The report includes two 11x17 inch color figures and two 8.5x11 inch color figures. This study was performed in accordance with our proposal for Geophysical Surveys to Locate Possible USTs, dated October 19, 2015, as approved by Terry Farr (NCDOT) on November 13, 2015.

INTRODUCTION

The field work described in this report was performed on November 20, 2015 and December 4 and December 14, 2015, by Schnabel. The purpose of the geophysical surveys was to evaluate the potential presence of metal underground storage tanks (USTs) in the accessible areas of the NCDOT right-of-way and/or easement at Parcel 12. Photographs of the property are included on Figure 1. The property is located at the northwestern quadrant of the intersection of I-85/40 and NC 119 Hwy (South Fifth Street) in Mebane, NC.

The geophysical surveys consisted of an electromagnetic (EM) induction survey and a ground penetrating radar (GPR) survey. The EM survey was performed using a Geonics EM61-MK2 (EM61) instrument. The EM61 is a time domain metal detector that stores data digitally for later processing and review. Sensitivity to metallic objects is dependent on the size, depth, and orientation of the buried object and the amount of noise (i.e. response from spurious metallic objects) in the area. The EM61 can generally observe a single

buried 55 gallon drum at a depth of 10 feet or less. The EM61 makes measurements by creating multiple electromagnetic pulses and then measuring the response from metallic objects over time after each pulse is generated. We measure and record the response at several time increments after each pulse to help evaluate relative size and depth of metallic objects in the subsurface.

The GPR survey was performed over selected EM61 anomalies using a Geophysical Survey Systems SIR-3000 system equipped with a 400 MHz antenna to further evaluate EM responses that could indicate a potential UST. The depth penetration of the GPR signal, when using a 400 MHz antenna, is normally limited to 6 feet or less.

Photographs of the equipment used are shown on Figure 2.

FIELD METHODOLOGY

We obtained locations of geophysical data points using a sub-meter Trimble Geo7X differential global positioning system (DGPS). References to direction and location in this report are based on the US State Plane 1983 System, North Carolina 3200 Zone, using the NAD 83 datum, with units in US survey feet. We also recorded the locations of existing site features (signs, other metal objects, etc.) with the DGPS for later correlation with the geophysical data and a digital site plan provided by the NCDOT. The digital site plan for this project appears to show an offset from the GPS positions collected by our DGPS that is somewhat consistent in direction and distance at this site and the other sites (Parcel 10, Parcel 21) where we have collected geophysical data for this project. Based on our communication with Gordon Box about this issue, we did not shift the site plan data in an attempt to overlay it on the geophysical data accurately.

The EM61 data were collected along parallel survey lines spaced approximately 2.5 feet apart. The EM61 and DGPS data were recorded digitally using a field computer and later transferred to a desktop computer for data processing. The GPR data were collected along survey lines spaced approximately one to two feet apart in orthogonal directions over anomalous EM readings not attributed to cultural features. The GPR data were reviewed in the field to evaluate the possible presence of USTs. The GPR data also were recorded digitally and later transferred to a desktop computer for further review.

DISCUSSION OF RESULTS

The contoured EM61 data collected over Parcel 12 and the GPR survey area locations are shown on Figure 3, EM61 Early Time Gate Response, and Figure 4, EM61 Differential Response. We were not able to access some areas throughout the planned survey area due to the presence of thick vegetation, trees, etc. Areas outside the colored, contoured EM61 data were not surveyed. Early time data refer to the response measured at a short time after the initial EM pulse is generated. Early time data typically contain responses from all metal objects, small or large and shallow or deep, within the sensitivity range of the instrument. Differential data represent the difference in response between the top and bottom coils of the EM61 instrument at a later time after the initial pulse than early time data. Differential data naturally tend to filter out the effect of surface and very shallowly buried metallic objects. Typically, the differential response emphasizes anomalies from deeper and larger objects such as USTs.

The EM data contain multiple anomalies that we investigated with GPR (as shown on Figures 3 and 4), all of which appear to be the result of reinforced concrete or metal objects at the ground surface or at

shallow depths. There are large EM anomalies on the northeastern portion of the parcel that are attributed to reinforced concrete. These areas were surveyed with GPR, and the data did not show responses that we interpret to be related to USTs. The geophysical data collected at the site do not indicate the presence of metallic USTs within the areas surveyed. We believe one anomaly is worth noting despite a lack of confidence that it is representative of a UST. The anomalous area is located near the center of the survey area and is designated as Anomaly 1 on Figures 3 and 4. The EM anomaly is a well-defined circular, or oval-shaped, collection of high readings in both the early time gate and differential responses. The GPR data we collected over the EM anomaly show high amplitude reflections that lack the hyperbolic signature of a UST. The horizontal extents of the reflections appear to define an oval shape similar to the EM anomaly from the differential response of the EM61.

CONCLUSIONS

As shown in Figures 3 and 4, the EM data we collected over Parcel 12 did not cover portions of the planned survey area due to the presence of thick vegetation, trees, etc. The EM data include responses from several visible metallic objects at grade (e.g. signs, guy wires, etc.). We did not observe anomalies in the EM or the GPR geophysical data at the subject property that we interpret to be attributable to metallic USTs within about 6 feet of the ground surface.

LIMITATIONS

These services have been performed and this report prepared for the North Carolina Department of Transportation in accordance with generally accepted guidelines for conducting geophysical surveys. It is generally recognized that the results of geophysical surveys are non-unique and may not represent actual subsurface conditions.

We appreciate the opportunity to have provided these services. Please call if you need additional information or have any questions.

Sincerely,

SCHNABEL ENGINEERING SOUTH, PC

James W. Whitt, LG
Project Geophysicist

Joel C. Daniel, LG
Senior Geophysicist

JWW:JCD
Attachments: Figures (4)
CC: Gordon Box - NCDOT

FILE: G:\2014\GREENSBORO\14821010.00_NCDOT_2014_GEOTECHNICAL_UNIT_SERVICES\14821010.11_U-3109A_ALAMANCE_CO\03-SE PRODUCTS\03-REPORTS\02-FINAL\GEOPHYSICS\PARCEL 12\SCHNABEL GEOPHYSICAL REPORT ON PARCEL 12 (U-3109A) FINAL.DOCX

Attachments:

Figure 1 - Parcel 12 Site Photos
Figure 2 - Photos of Geophysical Equipment Used
Figure 3 - EM61 Early Time Gate Response
Figure 4 - EM61 Differential Response

Parcel 12 (Rex Oil Co. Property), looking west

Parcel 12 (Rex Oil Co. Property), looking west

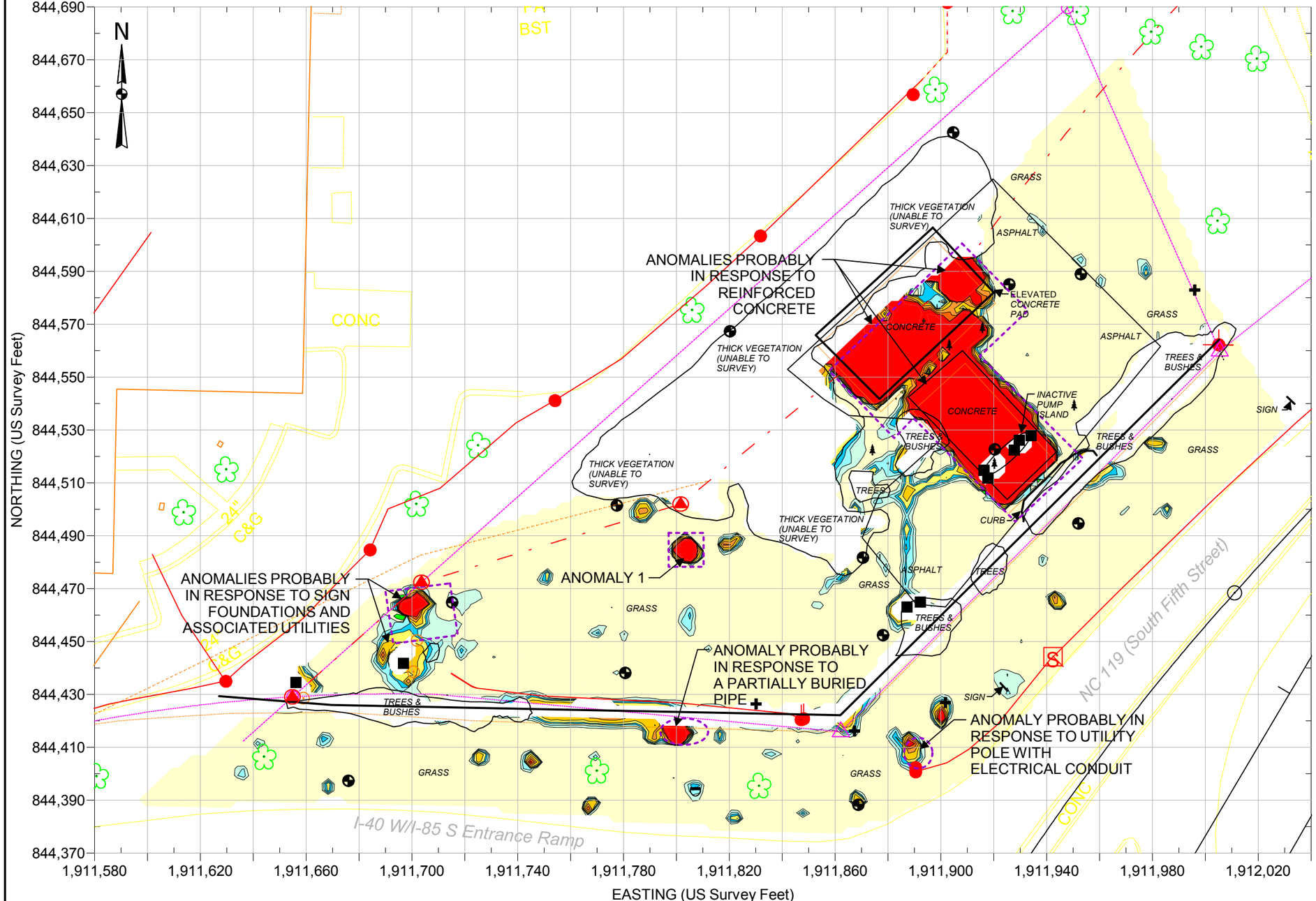
Schnabel ENGINEERING	STATE PROJECT U-3109A NC DEPT. OF TRANSPORTATION ALAMANCE CO., NORTH CAROLINA PROJECT NO. 14821010.11	PARCEL 12 SITE PHOTOS FIGURE 1

Geonics EM61-MK2 Metal Detector with Trimble DGPS Unit

GSSI SIR-3000 Ground-Penetrating Radar with 400 MHz Antenna

Note: Stock photographs – not taken on site.

Schnabel ENGINEERING	STATE PROJECT U-3109A NC DEPT. OF TRANSPORTATION ALAMANCE CO., NORTH CAROLINA PROJECT NO. 14821010.11	PHOTOS OF GEOPHYSICAL EQUIPMENT USED FIGURE 2



PARCEL 12 - Rex Oil, Co. Property

EM61 Early Time Gate Response (mV)

-15000 -100 0 50 100 150 200 300 500 750 1000 2000

Scale in US Survey Feet: 1 in = 60 ft

0 40 80 120

EXPLANATION

- MISCELLANEOUS METALLIC OBJECT
- SIGN
- GUY WIRE
- BORING LOCATION
- EDGE OF NCDOT PROPOSED R/W
- GPR SURVEY AREA

BASE PLAN FROM NCDOT FILE:
U3109a_ncdot_fs.dgn &
U3109A_Rdy_row
(FOR SOME SITE FEATURES)

Note: The contour plot shows the earliest and more sensitive time gate of the EM61 bottom coil/channel in millivolts (mV). The EM data were collected on November 20, 2015, using a Geonics EM61-MK2 instrument. Positioning for the EM61 survey was provided using a submeter Trimble Geo7X DGPS system. Coordinates are in the US State Plane 1983 System, North Carolina Zone 3200, using the NAD 1983 datum. GPR data were acquired on December 4, 2015, using a Geophysical Survey Systems SIR 3000 equipped with a 400 MHz antenna.

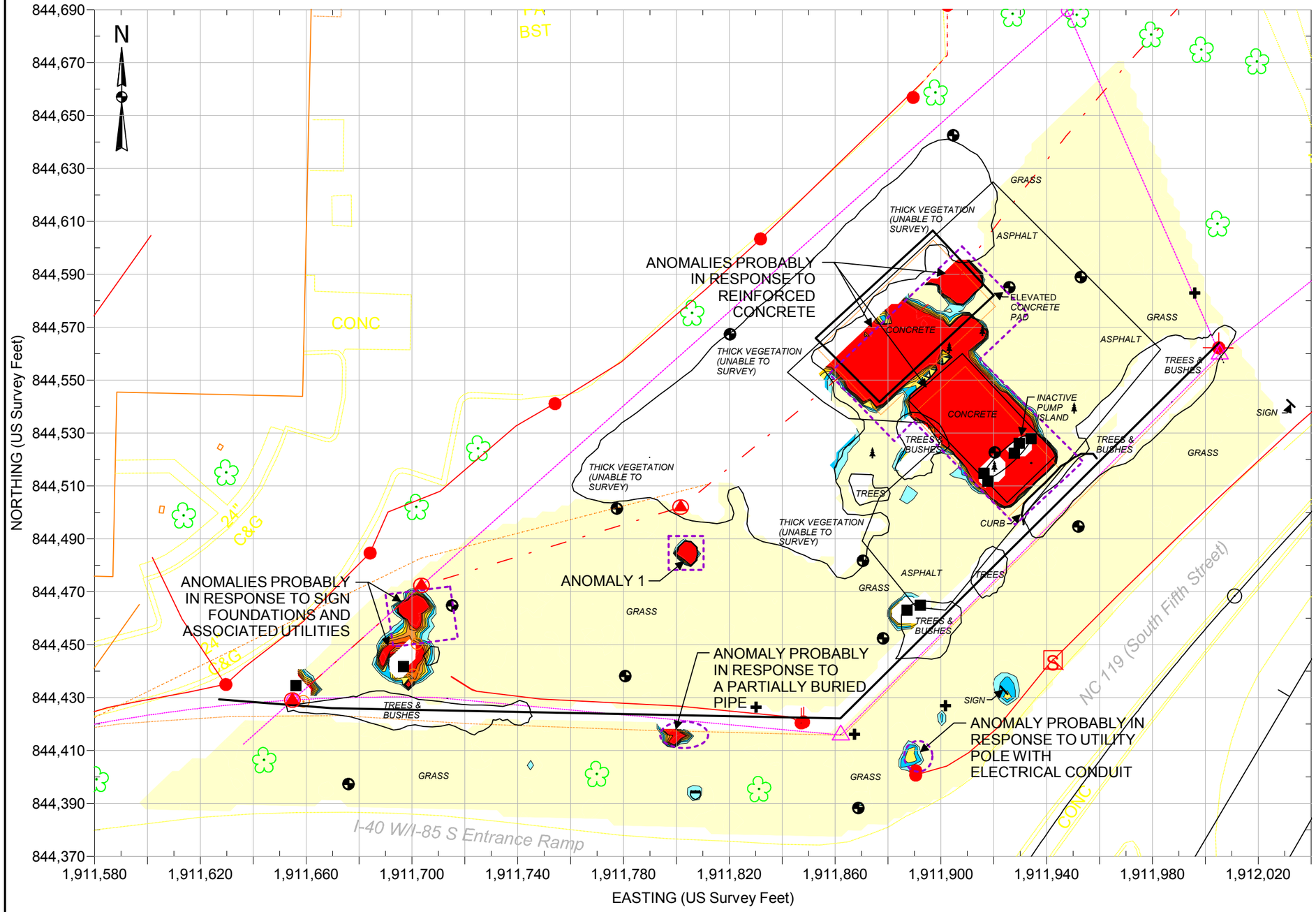
Schnabel ENGINEERING

STATE PROJECT U-3109A
NC DEPARTMENT OF TRANSPORTATION
ALAMANCE COUNTY, NC
PROJECT NO. 14821010.11

EM61
EARLY TIME GATE
RESPONSE

FIGURE 3

PARCEL 12 - Rex Oil, Co. Property



EM61 Differential Response (mV)

-20000 -100 0 40 60 80 100 120 140 160 200

Scale in US Survey Feet: 1 in = 60 ft

0 40 80 120

EXPLANATION

- MISCELLANEOUS METALLIC OBJECT
- SIGN
- GUY WIRE
- BORING LOCATION
- EDGE OF NCDOT PROPOSED R/W
- GPR SURVEY AREA

BASE PLAN FROM NCDOT FILE:
U3109a_ncdot_fs.dgn &
U3109A_Rdy_row
(FOR SOME SITE FEATURES)

Note: The contour plot shows the difference, in millivolts (mV), between the readings from the top and bottom coils of the EM61. The difference is taken to reduce the effect of shallow metal objects and emphasize anomalies caused by deeper metallic objects, such as drums and tanks. The EM data were collected on November 20, 2015, using a Geonics EM61-MK2 instrument. Positioning for the EM61 survey was provided using a submeter Trimble Geo7X DGPS system. Coordinates are in the US State Plane 1983 System, North Carolina 3200 Zone, using the NAD 1983 datum. GPR data were acquired on December 4, 2015, using a Geophysical Survey Systems SIR 3000 equipped with a 400 MHz antenna.

Schnabel ENGINEERING

STATE PROJECT U-3109A
NC DEPARTMENT OF TRANSPORTATION
ALAMANCE COUNTY, NC
PROJECT NO. 14821010.11

EM61
DIFFERENTIAL
RESPONSE

FIGURE 4

APPENDIX C

SOIL BORING LOGS

Schnabel ENGINEERING

GEO PROBE LOG

Project: Parcel 012 PSA
Alamance County
Mebane, North Carolina

Geo Probe Number: **B-12-01**
Contract Number: U-3109A
Sheet: 1 of 1

Contractor: Geologic Exploration, Inc.
Statesville, North Carolina
Contractor Foreman: J. Burr
Schnabel Representative: B. Bradley
Equipment: Geoprobe 8040DT
Method: 3-1/4" Probe Rod,
Macrocore
Hammer Type:
Dates Started: 12/18/15 **Finished:** 12/18/15
X: 844588.916 ft **Y:** 1911952.882 ft
Plunge: **Bearing:**
Ground Surface Elevation: **Total Depth:** 10.0 ft

Water Level Observations

	Date	Time	Depth	Casing	Caved
Not Encountered	12/18/15	12:00 AM	Dry	---	---

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	TESTS	REMARKS
0.2	Topsoil							
	ELASTIC SILT, fine grained sand; moist, orangeish brown, low to medium plasticity, no odor, probable RESIDUAL material	MH				B-12-05 (0-3 ft)	PID = 0 ppm	
						B-12-05 (3-6 ft)	PID = 0 ppm	
					5	B-12-05 (6-10 ft)	PID = 0 ppm	
10.0					10			

Bottom of Geo Probe at 10.0 ft.
Boring terminated at selected depth.
Boring backfilled with bentonite upon completion.

TEST BORING LOG PARCEL 012 LOGS.GPJ SCHNABEL DATA TEMPLATE 2008_07_06.GDT 1/11/16

Schnabel ENGINEERING

GEO PROBE LOG

Project: Parcel 012 PSA
Alamance County
Mebane, North Carolina

Geo Probe Number: **B-12-02**
Contract Number: U-3109A
Sheet: 1 of 1

Contractor: Geologic Exploration, Inc.
Statesville, North Carolina
Contractor Foreman: J. Burr
Schnabel Representative: B. Bradley
Equipment: Geoprobe 8040DT
Method: 3-1/4" Probe Rod,
Macrocore
Hammer Type:
Dates Started: 12/18/15 **Finished:** 12/18/15
X: 844522.613 ft **Y:** 1911920.411 ft
Plunge: **Bearing:**
Ground Surface Elevation: **Total Depth:** 10.0 ft

Water Level Observations

	Date	Time	Depth	Casing	Caved
Not Encountered	12/18/15	12:00 AM	Dry	---	---

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	TESTS	REMARKS
0.3	Concrete							
	ELASTIC SILT, fine grained sand; moist, orangeish brown, low to medium plasticity, no odor, probable RESIDUAL material	MH				B-12-05 (0-3 ft)	PID = 0 ppm	
						B-12-05 (3-6 ft)	PID = 0 ppm	
					5	B-12-05 (6-10 ft)	PID = 0 ppm	
10.0					10			

Bottom of Geo Probe at 10.0 ft.
Boring terminated at selected depth.
Boring backfilled with bentonite upon completion.

Schnabel ENGINEERING

GEO PROBE LOG

Project: Parcel 012 PSA
Alamance County
Mebane, North Carolina

Geo Probe Number: **B-12-03**
Contract Number: U-3109A
Sheet: 1 of 1

Contractor: Geologic Exploration, Inc.
Statesville, North Carolina
Contractor Foreman: J. Burr
Schnabel Representative: B. Bradley
Equipment: Geoprobe 8040DT
Method: 3-1/4" Probe Rod,
Macrocore
Hammer Type:
Dates Started: 12/18/15 **Finished:** 12/18/15
X: 844481.686 ft **Y:** 1911870.606 ft
Plunge: **Bearing:**
Ground Surface Elevation: **Total Depth:** 10.0 ft

Water Level Observations

	Date	Time	Depth	Casing	Caved
Not Encountered	12/18/15	12:00 AM	Dry	---	---

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	TESTS	REMARKS
0.2	Topsoil							
	ELASTIC SILT, fine grained sand; moist, orangeish brown, low to medium plasticity, no odor, probable RESIDUAL material	MH				B-12-05 (0-3 ft)	PID = 0 ppm	
						B-12-05 (3-6 ft)	PID = 0 ppm	
					5	B-12-05 (6-10 ft)	PID = 0 ppm	
10.0					10			

Bottom of Geo Probe at 10.0 ft.
Boring terminated at selected depth.
Boring backfilled with bentonite upon completion.

TEST BORING LOG PARCEL 012 LOGS.GPJ SCHNABEL DATA TEMPLATE 2008_07_06.GDT 1/11/16

Schnabel ENGINEERING

GEO PROBE LOG

Project: Parcel 012 PSA
Alamance County
Mebane, North Carolina

Geo Probe Number: **B-12-04**
Contract Number: U-3109A
Sheet: 1 of 1

Contractor: Geologic Exploration, Inc.
Statesville, North Carolina
Contractor Foreman: J. Burr
Schnabel Representative: B. Bradley
Equipment: Geoprobe 8040DT
Method: 3-1/4" Probe Rod,
Macrocore
Hammer Type:
Dates Started: 12/18/15 **Finished:** 12/18/15
X: 844584.992 ft **Y:** 1911925.842 ft
Plunge: **Bearing:**
Ground Surface Elevation: **Total Depth:** 10.0 ft

Water Level Observations

	Date	Time	Depth	Casing	Caved
Not Encountered	12/18/15	12:00 AM	Dry	---	---

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	TESTS	REMARKS
0.2	Concrete							
	ELASTIC SILT, fine grained sand; moist, orangeish brown, low to medium plasticity, no odor, probable RESIDUAL material	MH				B-12-05 (0-3 ft)	PID = 0 ppm	
						B-12-05 (3-6 ft)	PID = 0 ppm	
					5	B-12-05 (6-10 ft)	PID = 0 ppm	
10.0					10			

Bottom of Geo Probe at 10.0 ft.
Boring terminated at selected depth.
Boring backfilled with bentonite upon completion.

TEST BORING LOG PARCEL 012 LOGS.GPJ SCHNABEL DATA TEMPLATE 2008_07_06.GDT 1/11/16

Schnabel ENGINEERING

GEO PROBE LOG

Project: Parcel 012 PSA
Alamance County
Mebane, North Carolina

Geo Probe Number: **B-12-05**
Contract Number: U-3109A
Sheet: 1 of 1

Contractor: Geologic Exploration, Inc.
Statesville, North Carolina
Contractor Foreman: J. Burr
Schnabel Representative: B. Bradley
Equipment: Geoprobe 8040DT
Method: 3-1/4" Probe Rod,
Macrocore
Hammer Type:
Dates Started: 12/18/15 **Finished:** 12/18/15
X: 844464.742 ft **Y:** 1911715.152 ft

Plunge: **Bearing:**
Ground Surface Elevation: **Total Depth:** 10.0 ft

Water Level Observations

	Date	Time	Depth	Casing	Caved
Not Encountered	12/18/15	12:00 AM	Dry	---	---

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	TESTS	REMARKS
0.2	Topsoil							
	ELASTIC SILT, fine grained sand; moist, orangeish brown, low to medium plasticity, no odor, probable RESIDUAL material	MH				B-12-05 (0-3 ft)	PID = 0 ppm	
						B-12-05 (3-6 ft)	PID = 0 ppm	
					5	B-12-05 (6-10 ft)	PID = 0 ppm	
10.0					10			

Bottom of Geo Probe at 10.0 ft.
Boring terminated at selected depth.
Boring backfilled with bentonite upon completion.

Schnabel ENGINEERING

GEO PROBE LOG

Project: Parcel 012 PSA
Alamance County
Mebane, North Carolina

Geo Probe Number: **B-12-06**
Contract Number: U-3109A
Sheet: 1 of 1

Contractor: Geologic Exploration, Inc.
Statesville, North Carolina
Contractor Foreman: J. Burr
Schnabel Representative: B. Bradley
Equipment: Geoprobe 8040DT
Method: 3-1/4" Probe Rod,
Macrocore
Hammer Type:
Dates Started: 12/18/15 **Finished:** 12/18/15
X: 844438.11 ft **Y:** 1911780.71 ft

Plunge: **Bearing:**
Ground Surface Elevation: **Total Depth:** 10.0 ft

Water Level Observations

	Date	Time	Depth	Casing	Caved
Not Encountered	12/18/15	12:00 AM	Dry	---	---

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	TESTS	REMARKS
0.2	Topsoil							
	ELASTIC SILT, fine grained sand; moist, orangeish brown, low to medium plasticity, no odor, probable RESIDUAL material	MH				B-12-05 (0-3 ft)	PID = 0 ppm	
						B-12-05 (3-6 ft)	PID = 0 ppm	
					5	B-12-05 (6-10 ft)	PID = 0 ppm	
10.0					10			

Bottom of Geo Probe at 10.0 ft.
Boring terminated at selected depth.
Boring backfilled with bentonite upon completion.

TEST BORING LOG PARCEL 012 LOGS.GPJ SCHNABEL DATA TEMPLATE 2008_07_06.GDT 1/11/16

Schnabel ENGINEERING

GEO PROBE LOG

Project: Parcel 012 PSA
Alamance County
Mebane, North Carolina

Geo Probe Number: **B-12-07**
Contract Number: U-3109A
Sheet: 1 of 1

Contractor: Geologic Exploration, Inc.
Statesville, North Carolina
Contractor Foreman: J. Burr
Schnabel Representative: B. Bradley
Equipment: Geoprobe 8040DT
Method: 3-1/4" Probe Rod,
Macrocore
Hammer Type:
Dates Started: 12/18/15 **Finished:** 12/18/15
X: 844501.339 ft **Y:** 1911777.504 ft
Plunge: **Bearing:**
Ground Surface Elevation: **Total Depth:** 10.0 ft

Water Level Observations

	Date	Time	Depth	Casing	Caved
Not Encountered	12/18/15	12:00 AM	Dry	---	---

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	TESTS	REMARKS
0.2	Topsoil							
	ELASTIC SILT, fine grained sand; moist, orangeish brown, low to medium plasticity, no odor, probable RESIDUAL material	MH				B-12-05 (0-3 ft)	PID = 0 ppm	
						B-12-05 (3-6 ft)	PID = 0 ppm	
					5	B-12-05 (6-10 ft)	PID = 0 ppm	
10.0					10			

Bottom of Geo Probe at 10.0 ft.
Boring terminated at selected depth.
Boring backfilled with bentonite upon completion.

TEST BORING LOG PARCEL 012 LOGS.GPJ SCHNABEL DATA TEMPLATE 2008_07_06.GDT 1/11/16

Schnabel ENGINEERING

GEO PROBE LOG

Project: Parcel 012 PSA
Alamance County
Mebane, North Carolina

Geo Probe Number: **B-12-08**
Contract Number: U-3109A
Sheet: 1 of 1

Contractor: Geologic Exploration, Inc.
Statesville, North Carolina
Contractor Foreman: J. Burr
Schnabel Representative: B. Bradley
Equipment: Geoprobe 8040DT
Method: 3-1/4" Probe Rod,
Macrocore
Hammer Type:
Dates Started: 12/18/15 **Finished:** 12/18/15
X: 844567.283 ft **Y:** 1911820.225 ft
Plunge: **Bearing:**
Ground Surface Elevation: **Total Depth:** 10.0 ft

Water Level Observations

	Date	Time	Depth	Casing	Caved
Not Encountered	12/18/15	12:00 AM	Dry	---	---

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	TESTS	REMARKS
0.2	Topsoil							
	ELASTIC SILT, fine grained sand; moist, orangeish brown, low to medium plasticity, no odor, probable RESIDUAL material	MH				B-12-05 (0-3 ft)	PID = 0 ppm	
						B-12-05 (3-6 ft)	PID = 0 ppm	
					5	B-12-05 (6-10 ft)	PID = 0 ppm	
10.0					10			

Bottom of Geo Probe at 10.0 ft.
Boring terminated at selected depth.
Boring backfilled with bentonite upon completion.

TEST BORING LOG PARCEL 012 LOGS.GPJ SCHNABEL DATA TEMPLATE 2008_07_06.GDT 1/11/16

Schnabel ENGINEERING

GEO PROBE LOG

Project: Parcel 012 PSA
Alamance County
Mebane, North Carolina

Geo Probe Number: **B-12-09**
Contract Number: U-3109A
Sheet: 1 of 1

Contractor: Geologic Exploration, Inc.
Statesville, North Carolina
Contractor Foreman: J. Burr
Schnabel Representative: B. Bradley
Equipment: Geoprobe 8040DT
Method: 3-1/4" Probe Rod,
Macrocore
Hammer Type:
Dates Started: 12/18/15 **Finished:** 12/18/15
X: 844642.51 ft **Y:** 1911904.689 ft

Plunge: **Bearing:**
Ground Surface Elevation: **Total Depth:** 10.0 ft

Water Level Observations

	Date	Time	Depth	Casing	Caved
Not Encountered	12/18/15	12:00 AM	Dry	---	---

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	TESTS	REMARKS
0.2	Topsoil							
	ELASTIC SILT, fine grained sand; moist, orangeish brown, low to medium plasticity, no odor, probable RESIDUAL material	MH				B-12-05 (0-3 ft)	PID = 0 ppm	
						B-12-05 (3-6 ft)	PID = 0 ppm	
					5	B-12-05 (6-10 ft)	PID = 0 ppm	
10.0					10			

Bottom of Geo Probe at 10.0 ft.
Boring terminated at selected depth.
Boring backfilled with bentonite upon completion.

TEST BORING LOG PARCEL 012 LOGS.GPJ SCHNABEL DATA TEMPLATE 2008_07_06.GDT 1/11/16

Schnabel ENGINEERING

GEO PROBE LOG

Project: Parcel 012 PSA
Alamance County
Mebane, North Carolina

Geo Probe Number: **B-12-10**
Contract Number: U-3109A
Sheet: 1 of 1

Contractor: Geologic Exploration, Inc.
Statesville, North Carolina
Contractor Foreman: J. Burr
Schnabel Representative: B. Bradley
Equipment: Geoprobe 8040DT
Method: 3-1/4" Probe Rod,
Macrocore
Hammer Type:
Dates Started: 12/18/15 **Finished:** 12/18/15
X: 844452.295 ft **Y:** 1911878.188 ft
Plunge: **Bearing:**
Ground Surface Elevation: **Total Depth:** 10.0 ft

Water Level Observations

	Date	Time	Depth	Casing	Caved
Not Encountered	12/18/15	12:00 AM	Dry	---	---

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	TESTS	REMARKS
0.2	Topsoil							
	ELASTIC SILT, fine grained sand; moist, orangeish brown, low to medium plasticity, no odor, probable RESIDUAL material	MH				B-12-05 (0-3 ft)	PID = 0 ppm	
						B-12-05 (3-6 ft)	PID = 0 ppm	
					5	B-12-05 (6-10 ft)	PID = 0 ppm	
10.0					10			

Bottom of Geo Probe at 10.0 ft.
Boring terminated at selected depth.
Boring backfilled with bentonite upon completion.

TEST BORING LOG PARCEL 012 LOGS.GPJ SCHNABEL DATA TEMPLATE 2008_07_06.GDT 1/11/16

Schnabel ENGINEERING

GEO PROBE LOG

Project: Parcel 012 PSA
Alamance County
Mebane, North Carolina

Geo Probe Number: **B-12-11**
Contract Number: U-3109A
Sheet: 1 of 1

Contractor: Geologic Exploration, Inc.
Statesville, North Carolina
Contractor Foreman: J. Burr
Schnabel Representative: B. Bradley
Equipment: Geoprobe 8040DT
Method: 3-1/4" Probe Rod,
Macrocore
Hammer Type:
Dates Started: 12/18/15 **Finished:** 12/18/15
X: 844494.547 ft **Y:** 1911952.047 ft
Plunge: **Bearing:**
Ground Surface Elevation: **Total Depth:** 10.0 ft

Water Level Observations

	Date	Time	Depth	Casing	Caved
Not Encountered	12/18/15	12:00 AM	Dry	---	---

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	TESTS	REMARKS
0.2	Topsoil							
	ELASTIC SILT, fine grained sand; moist, orangeish brown, low to medium plasticity, no odor, probable RESIDUAL material	MH				B-12-05 (0-3 ft)	PID = 0 ppm	
						B-12-05 (3-6 ft)	PID = 0 ppm	
					5	B-12-05 (6-10 ft)	PID = 0 ppm	
10.0					10			

Bottom of Geo Probe at 10.0 ft.
Boring terminated at selected depth.
Boring backfilled with bentonite upon completion.

TEST BORING LOG PARCEL 012 LOGS.GPJ SCHNABEL DATA TEMPLATE 2008_07_06.GDT 1/11/16

Schnabel ENGINEERING

GEO PROBE LOG

Project: Parcel 012 PSA
Alamance County
Mebane, North Carolina

Geo Probe Number: **B-12-12**
Contract Number: U-3109A
Sheet: 1 of 1

Contractor: Geologic Exploration, Inc.
Statesville, North Carolina
Contractor Foreman: J. Burr
Schnabel Representative: B. Bradley
Equipment: Geoprobe 8040DT
Method: 3-1/4" Probe Rod,
Macrocore
Hammer Type:
Dates Started: 12/18/15 **Finished:** 12/18/15
X: 844388.21 ft **Y:** 1911868.856 ft

Plunge: **Bearing:**
Ground Surface Elevation: **Total Depth:** 10.0 ft

Water Level Observations

	Date	Time	Depth	Casing	Caved
Not Encountered	12/18/15	12:00 AM	Dry	---	---

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	TESTS	REMARKS
0.2	Topsoil							
	ELASTIC SILT, fine grained sand; moist, orangeish brown, low to medium plasticity, no odor, probable RESIDUAL material	MH				B-12-05 (0-3 ft)	PID = 0 ppm	
						B-12-05 (3-6 ft)	PID = 0 ppm	
					5	B-12-05 (6-10 ft)	PID = 0 ppm	
10.0					10			

Bottom of Geo Probe at 10.0 ft.
Boring terminated at selected depth.
Boring backfilled with bentonite upon completion.

TEST BORING LOG PARCEL 012 LOGS.GPJ SCHNABEL DATA TEMPLATE 2008_07_06.GDT 1/11/16

Schnabel ENGINEERING

GEO PROBE LOG

Project: Parcel 012 PSA
Alamance County
Mebane, North Carolina

Geo Probe Number: **B-12-13**
Contract Number: U-3109A
Sheet: 1 of 1

Contractor: Geologic Exploration, Inc.
Statesville, North Carolina
Contractor Foreman: J. Burr
Schnabel Representative: B. Bradley
Equipment: Geoprobe 8040DT
Method: 3-1/4" Probe Rod,
Macrocore
Hammer Type:
Dates Started: 12/18/15 **Finished:** 12/18/15
X: 844397.196 ft **Y:** 1911675.953 ft
Plunge: **Bearing:**
Ground Surface Elevation: **Total Depth:** 10.0 ft

Water Level Observations

	Date	Time	Depth	Casing	Caved
Not Encountered	12/18/15	12:00 AM	Dry	---	---

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	TESTS	REMARKS
0.2	Topsoil							
	ELASTIC SILT, fine grained sand; moist, orangeish brown, low to medium plasticity, no odor, probable RESIDUAL material	MH				B-12-05 (0-3 ft)	PID = 0 ppm	
						B-12-05 (3-6 ft)	PID = 0 ppm	
					5	B-12-05 (6-10 ft)	PID = 0 ppm	
10.0					10			

Bottom of Geo Probe at 10.0 ft.
Boring terminated at selected depth.
Boring backfilled with bentonite upon completion.

TEST BORING LOG PARCEL 012 LOGS.GPJ SCHNABEL DATA TEMPLATE 2008_07_06.GDT 1/11/16

Schnabel ENGINEERING

HAND AUGER LOG

Project: Parcel 012 PSA
Alamance County
Mebane, North Carolina

Hand Auger Number: B-12-14
Contract Number: U-3109A
Sheet: 1 of 1

Contractor: Not Applicable

Contractor Foreman: Not Applicable

Schnabel Representative: B. Bradley

Equipment: AMS Hand Auger

Method: Hand Auger

Dates Started: 12/18/15 **Finished:** 12/18/15

X: 844491.622 ft **Y:** 1911819.777 ft

Plunge: **Bearing:**

Ground Surface Elevation: **Total Depth:** 6.0 ft

Water Level Observations

	Date	Time	Depth	Casing	Caved
Not Encountered	12/18/15	12:00 AM	Dry	---	---

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	TESTS	REMARKS
0.2	Topsoil							
	ELASTIC SILT, fine grained sand; moist, orangeish brown, low to medium plasticity, no odor, probable RESIDUAL material	MH				B-12-05 (0-3 ft)	PID = 0 ppm	
						B-12-05 (3-6 ft)	PID = 0 ppm	
					5			
6.0								

Bottom of Hand Auger at 6.0 ft.
Boring terminated at selected depth.
Boring backfilled with cuttings upon completion.

APPENDIX D

SOIL BORING GPS COORDINATES

SOIL BORING GPS COORDINATES
NCDOT U-3109A, ALAMANCE COUNTY

Soil Boring GPS Coordinates		
Boring Identification	Easting	Northing
	X	Y
B-12-01	1911952.882	844588.916
B-12-02	1911920.411	844522.613
B-12-03	1911870.606	844481.686
B-12-04	1911925.842	844584.992
B-12-05	1911715.152	844464.742
B-12-06	1911780.710	844438.11
B-12-07	1911777.504	844501.339
B-12-08	1911820.225	844567.283
B-12-09	1911904.689	844642.51
B-12-10	1911878.188	844452.295
B-12-11	1911952.047	844494.547
B-12-12	1911868.856	844388.21
B-12-13	1911675.953	844397.196
B-12-14	1911819.777	844491.622

* NC State Plane 1983 System, NC 3200 Zone,
NAD 83 Datum, US Survey Feet

APPENDIX E

UVF RESULTS

Hydrocarbon Analysis Results

Client: Schnabel Engineering
Address: Greensboro, NC

Samples taken Thursday, December 17, 2015
Samples extracted Thursday, December 17, 2015
Samples analysed Thursday, December 17, 2015

Contact: Ben Bradley

Operator Owen

Project: U-3109A

U00903

Matrix	Sample ID	Dilution used	BTEX (C6 - C9)	GRO (C5 - C10)	DRO (C10 - C35)	TPH (C5 - C35)	Total Aromatics (C10-C35)	16 EPA PAHs	BaP	Ratios			HC Fingerprint Match
										% light	% mid	% heavy	
s	B-12-04 6-10'	19.7	<0.98	<0.49	3.2	3.2	2.4	0.26	0.008	0	82.4	17.6	Deg.PHC (FCM) 74.5%
s	B-12-01 0-3'	20.3	<1	<0.51	<0.2	<0.51	<0.1	<0.02	<0.002	0	0	0	PHC not detected
s	B-12-01 3-6'	19.5	<0.98	<0.49	1	1	<0.1	<0.02	<0.002	0	10.3	89.7	Residual.PHC (FCM) (P) 6%

Initial Calibrator QC check OK

Final FCM QC Check OK 98.9 %

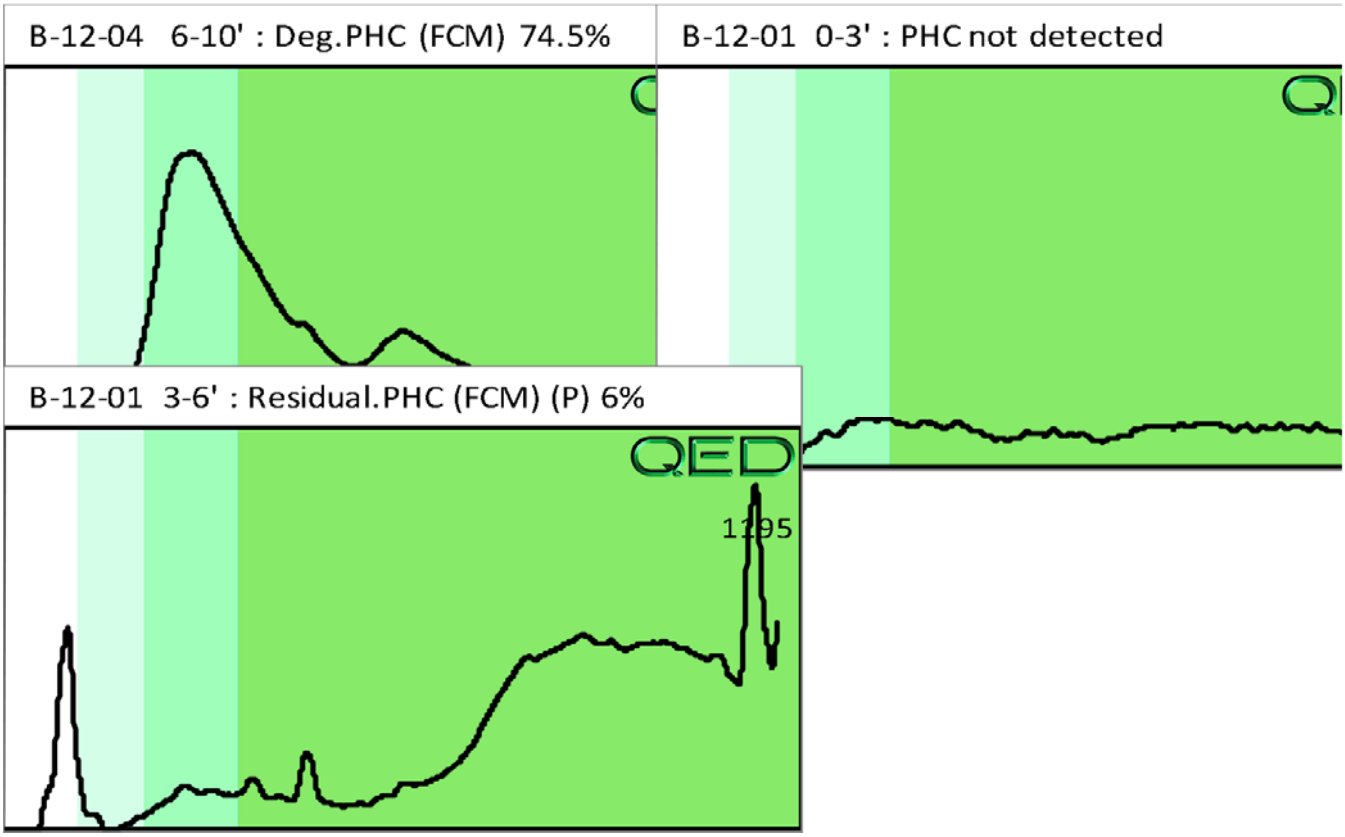
Results generated by a QED HC-1 analyser. Concentration values in mg/kg for soil samples and mg/L for water samples. Soil values are not corrected for moisture or stone content

Fingerprints provide a tentative hydrocarbon identification. The abbreviations are:- FCM = Results calculated using Fundamental Calibration Mode : % = confidence for sample fingerprint match to library

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

QED Hydrocarbon Fingerprints

Project: U-3109A ##################



QED

AQROS

Hydrocarbon Analysis Results

Client: Schnabel Engineering
Address: Greensboro, NC

Samples taken Thursday, December 17, 2015
Samples extracted Thursday, December 17, 2015
Samples analysed Thursday, December 17, 2015

Contact: Ben Bradley

Operator Owen

Project: U-3109A

U00903

Matrix	Sample ID	Dilution used	BTEX (C6 - C9)	GRO (C5 - C10)	DRO (C10 - C35)	TPH (C5 - C35)	Total Aromatics (C10-C35)	16 EPA PAHs	BaP	Ratios			HC Fingerprint Match
										% light	% mid	% heavy	
s	B-21-03 6-9'	16.8	<0.84	<0.42	3.1	3.1	2.4	0.25	0.006	0	86.2	13.8	Road Tar (FCM) 86.3%
s	B-21-03 9-12'	19.5	<0.98	<0.49	12.4	12.4	11.8	0.53	0.012	0	87.1	12.9	Deg Fuel (FCM) 88.8%
s	B-21-05 0-3'	16.7	<0.83	<0.42	1.5	1.5	1.4	0.07	0.002	0	79.5	20.5	V.Deg.PHC + BO (FCM) 84%
s	B-21-05 3-6'	10.4	<0.52	<0.26	0.5	0.5	<0.05	<0.008	<0.001	0	0	0	Residual PHC + BO (FCM) 11.7%
s	B-21-05 6-10'	4.2	<0.21	<0.1	<0.04	<0.1	<0.02	<0.003	<0	0	0	0	PHC not Detected + BO
s	B-12-02 0-3'	18.4	<0.92	<0.46	<0.18	<0.46	<0.09	<0.01	<0.002	0	0	0	PHC not Detected + BO
s	B-12-02 3-6'	21.7	<1.1	<0.54	<0.22	<0.54	<0.11	<0.02	<0.002	0	0	0	PHC not Detected + BO
s	B-12-02 6-10'	20.8	<1	5.3	0.39	5.69	0.33	<0.02	<0.002	94.6	5.4	0	Deg Gas + BO (FCM) 40.6%
s	B-12-04 0-3'	7.5	<0.37	<0.19	<0.07	<0.19	<0.04	<0.006	<0.001	0	0	0	PHC not Detected + BO
s	B-12-04 3-6'	18.7	<0.94	<0.47	2	2	1.5	0.16	0.004	0	83.6	16.4	Road Tar (FCM) 77.3%

Initial Calibrator QC check OK Final FCM QC Check OK 97.7 %

Results generated by a QED HC-1 analyser. Concentration values in mg/kg for soil samples and mg/L for water samples. Soil values are not corrected for moisture or stone content

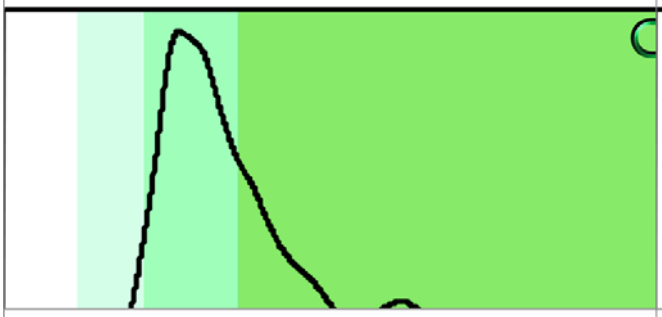
Fingerprints provide a tentative hydrocarbon identification. The abbreviations are:- FCM = Results calculated using Fundamental Calibration Mode : % = confidence for sample fingerprint match to library

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

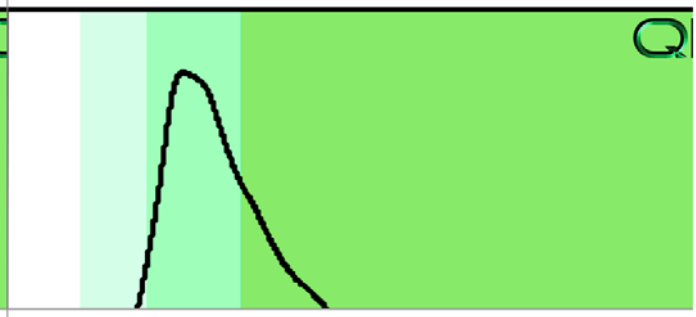
QED Hydrocarbon Fingerprints

Project: U-3109A ##################

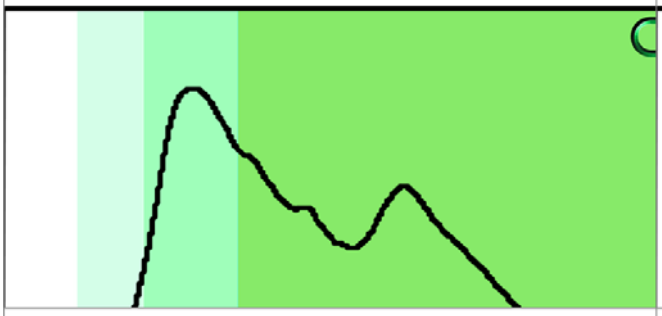
B-21-03 6-9' : Road Tar (FCM) 86.3%



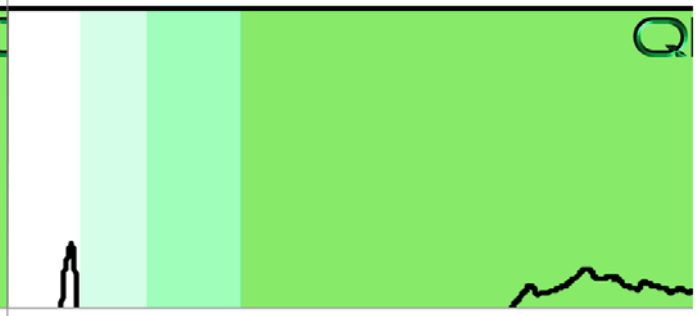
B-21-03 9-12' : Deg Fuel (FCM) 88.8%



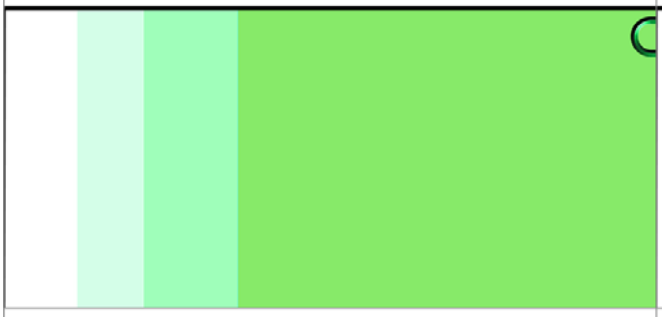
B-21-05 0-3' : V.Deg.PHC + BO (FCM) 84%



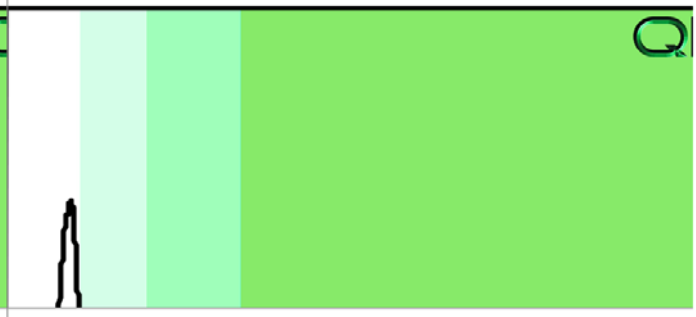
B-21-05 3-6' : Residual PHC + BO (FCM) 11.7



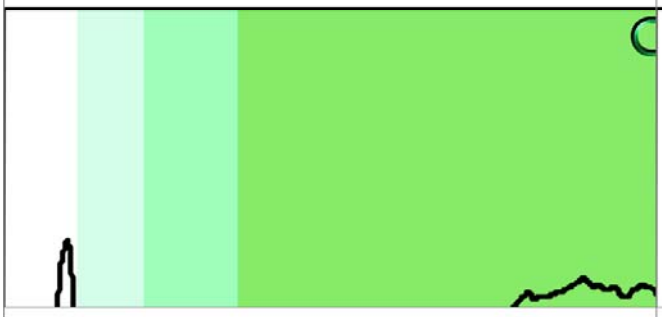
B-21-05 6-10' : PHC not Detected + BO



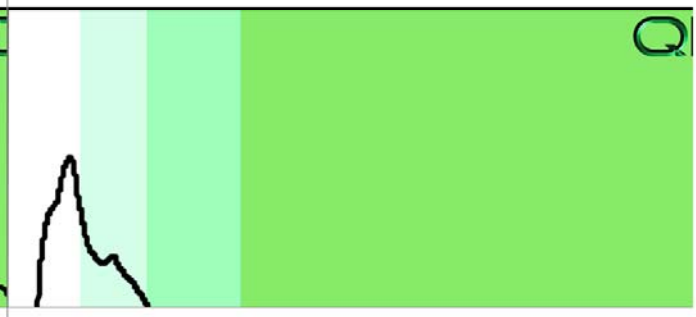
B-12-02 0-3' : PHC not Detected + BO



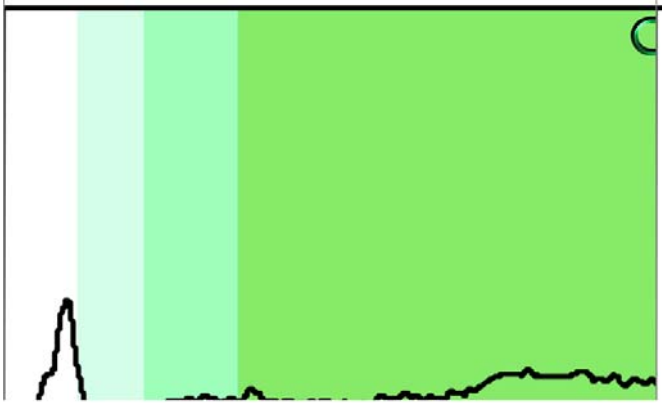
B-12-02 3-6' : PHC not Detected + BO



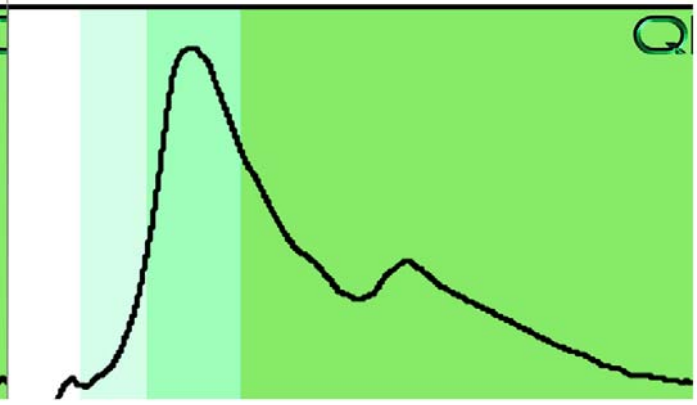
B-12-02 6-10' : Deg Gas + BO (FCM) 40.6%



B-12-04 0-3' : PHC not Detected + BO



B-12-04 3-6' : Road Tar (FCM) 77.3%



Hydrocarbon Analysis Results

Client: Schnabel Engineering
Address: Greensboro, NC

Samples taken Friday, December 18, 2015
Samples extracted Friday, December 18, 2015
Samples analysed Friday, December 18, 2015

Contact: Ben Bradley

Operator Owen

Project: U-3109A

U00903

Matrix	Sample ID	Dilution used	BTEX (C6 - C9)	GRO (C5 - C10)	DRO (C10 - C35)	TPH (C5 - C35)	Total Aromatics (C10-C35)	16 EPA PAHs	BaP	Ratios			HC Fingerprint Match
										% light	% mid	% heavy	
s	B-12-03 0-3'	18.3	<0.92	<0.46	0.34	0.34	0.33	0.04	<0.002	0	80.6	19.4	PHC Traces (FCM)
s	B-12-03 3-6'	18.6	<0.93	<0.46	0.43	0.43	<0.09	<0.01	<0.002	0	82.8	17.2	V.Deg.PHC (FCM) 45.7%
s	B-12-03 6-10'	13.7	<0.68	<0.34	0.33	0.33	<0.07	<0.01	<0.001	0	0	100	PHC not detected (FCM) 31.4%
s	B-12-05 0-3'	23.4	<1.2	<0.59	1.4	1.4	0.97	0.03	<0.002	0	88.7	11.3	V.Deg.Diesel (FCM) 45.7%
s	B-12-05 3-6'	17.3	<0.87	<0.43	0.4	0.4	0.38	0.04	<0.002	0	71.4	28.6	V.Deg.PHC (FCM) (P)
s	B-12-05 6-10'	15.8	<0.79	<0.39	<0.16	<0.39	<0.08	<0.01	<0.002	0	0	0	PHC not Detected + BO
s	B-12-06 0-3	6.9	<0.34	<0.17	<0.07	<0.17	<0.03	<0.006	<0.001	0	0	0	PHC not Detected + BO
s	B-12-06 3-6'	16.8	<0.84	<0.42	<0.17	<0.42	<0.08	<0.01	<0.002	0	0	100	Residual PHC + BO (FCM)
s	B-12-06 6-10'	20.3	<1	<0.51	<0.2	<0.51	<0.1	<0.02	<0.002	0	0	0	PHC not Detected + BO
s	B-12-07 0-3'	17.7	<0.88	<0.44	0.49	0.49	<0.18	<0.01	<0.002	0	51	49	V.Deg.PHC + BO (FCM) (P) 43.5%

Initial Calibrator QC check OK Final FCM QC Check OK 100.9 %

Results generated by a QED HC-1 analyser. Concentration values in mg/kg for soil samples and mg/L for water samples. Soil values are not corrected for moisture or stone content

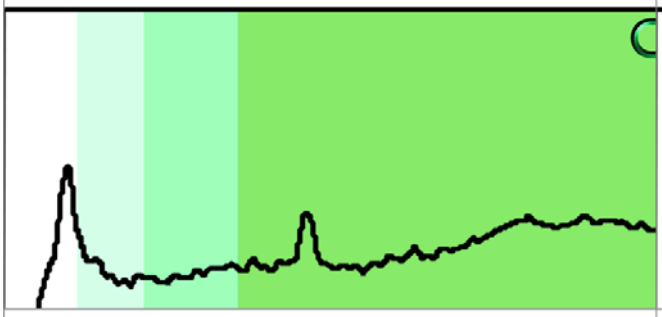
Fingerprints provide a tentative hydrocarbon identification. The abbreviations are:- FCM = Results calculated using Fundamental Calibration Mode : % = confidence for sample fingerprint match to library

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

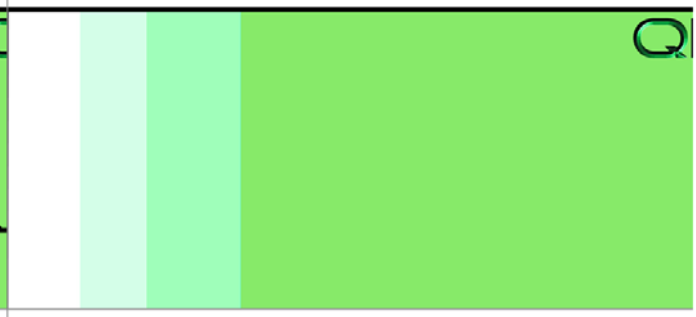
QED Hydrocarbon Fingerprints

Project: U-3109A ##################

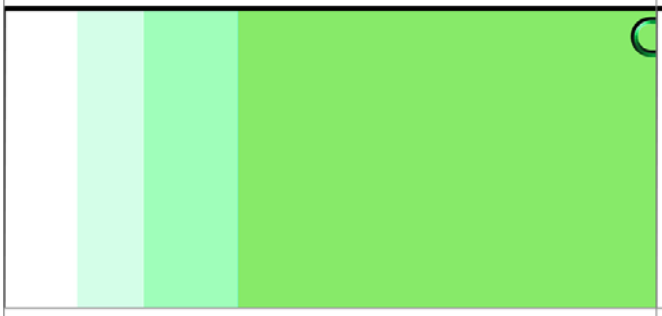
B-12-03 0-3' : PHC Traces (FCM)



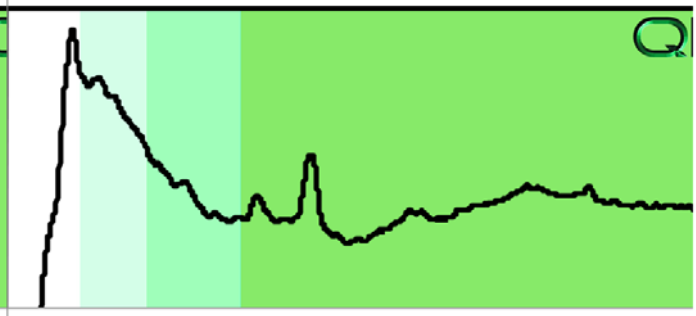
B-12-03 3-6' : V.Deg.PHC (FCM) 45.7%



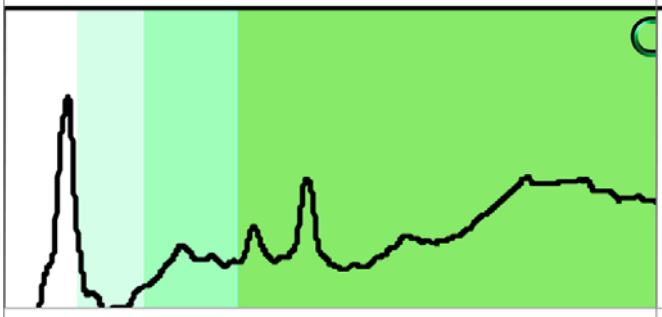
B-12-03 6-10' : PHC not detected (FCM) 3



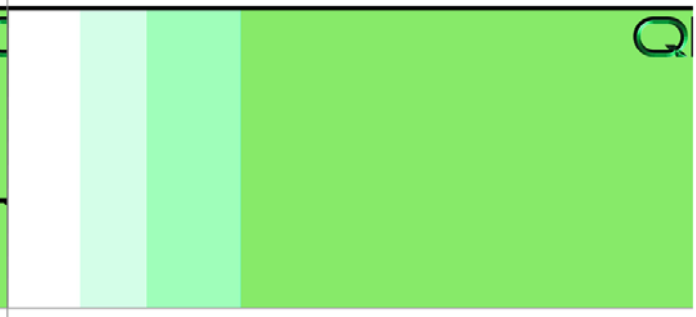
B-12-05 0-3' : V.Deg.Diesel (FCM) 45.7%



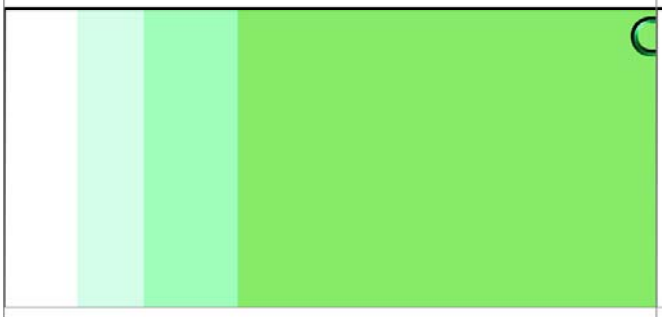
B-12-05 3-6' : V.Deg.PHC (FCM) (P)



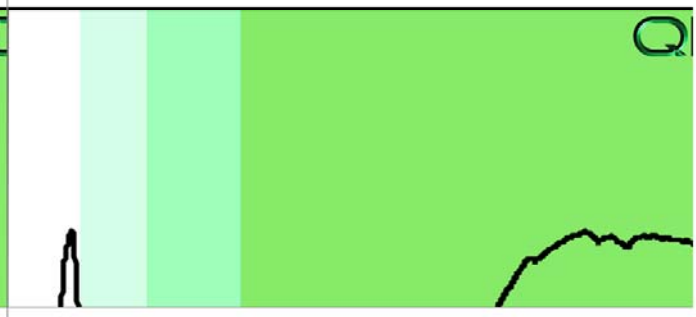
B-12-05 6-10' : PHC not Detected + BO



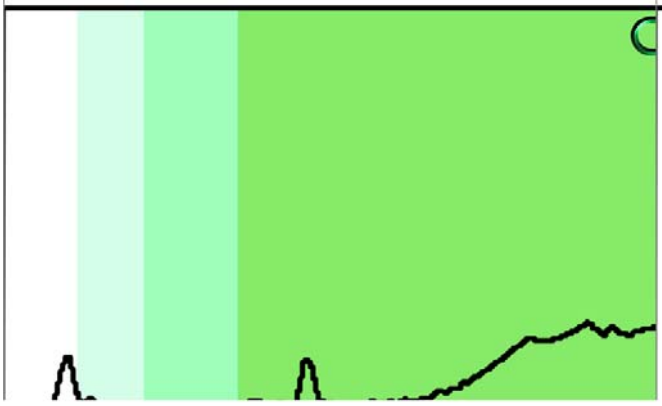
B-12-06 0-3 : PHC not Detected + BO



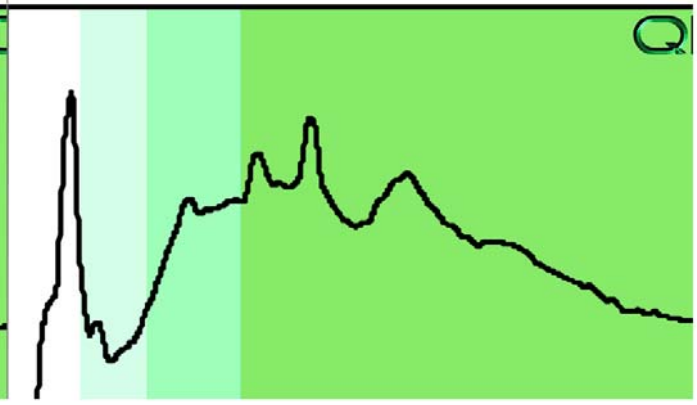
B-12-06 3-6' : Residual PHC + BO (FCM)



B-12-06 6-10' : PHC not Detected + BO



B-12-07 0-3' : V.Deg.PHC + BO (FCM) (P) 43.



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AQROS

Hydrocarbon Analysis Results

Client: Schnabel Engineering
Address: Greensboro, NC

Samples taken Friday, December 18, 2015
Samples extracted Friday, December 18, 2015
Samples analysed Friday, December 18, 2015

Contact: Ben Bradley

Operator Owen

Project: U-3109A

U00903

Matrix	Sample ID	Dilution used	BTEX (C6 - C9)	GRO (C5 - C10)	DRO (C10 - C35)	TPH (C5 - C35)	Total Aromatics (C10-C35)	16 EPA PAHs	BaP	Ratios			HC Fingerprint Match
										% light	% mid	% heavy	
s	B-12-07 3-6'	18.3	<0.92	<0.46	<0.18	<0.46	<0.09	<0.01	<0.002	0	59.6	40.4	PHC Traces + BO (FCM) (P)
s	B-12-07 6-10'	19.4	<0.97	<0.49	0.46	0.46	<0.1	<0.02	<0.002	0	33.5	66.5	Residual PHC + BO (P) 47.1%
s	B-12-08 0-3'	20.2	<1	5.8	0.94	6.74	0.58	<0.02	<0.002	92.1	6.3	1.5	Deg.Gas (FCM) (P) 40.7%
s	B-12-08 3-6'	18.6	<0.93	<0.46	<0.19	<0.46	<0.09	<0.01	<0.002	0	0	0	PHC not Detected + BO
s	B-12-08 6-10'	6.7	<0.17	<0.17	<0.07	<0.17	<0.03	<0.005	<0.001	0	0	0	PHC not Detected + BO
s	B-12-09 0-3'	5.6	<0.14	<0.14	<0.06	<0.14	<0.03	<0.004	<0.001	0	0	0	PHC not detected
s	B-12-09 3-6'	21.1	<1.1	<0.53	<0.21	<0.53	<0.11	<0.02	<0.002	0	0	100	PHC Traces (P)
s	B-12-09 6-10'	5.0	<0.25	<0.12	<0.05	<0.12	<0.02	<0.004	<0	0	0	100	PHC not Detected + BO
s	B-12-10 0-3'	23.4	<1.2	<0.59	<0.23	<0.59	<0.12	<0.02	<0.002	0	0	100	PHC Traces (FCM) (P)
s	B-12-10 3-6'	17.0	<0.85	<0.42	<0.17	<0.42	<0.08	<0.01	<0.002	0	0	0	PHC not Detected + BO

Initial Calibrator QC check OK Final FCM QC Check OK 94.5 %

Results generated by a QED HC-1 analyser. Concentration values in mg/kg for soil samples and mg/L for water samples. Soil values are not corrected for moisture or stone content

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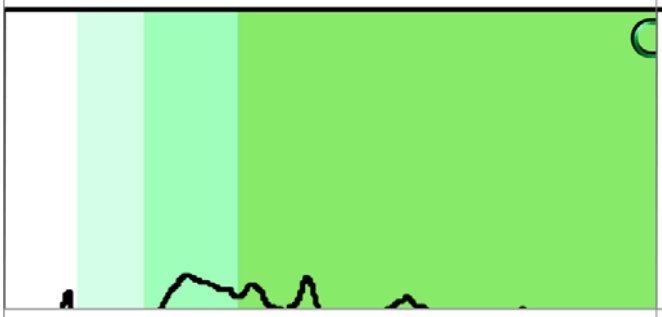
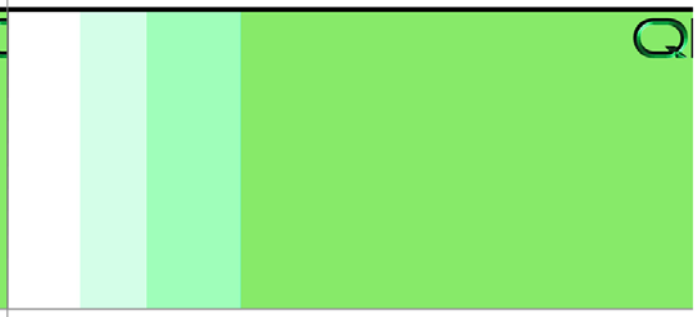
QED Hydrocarbon Fingerprints

Project: U-3109A ##################

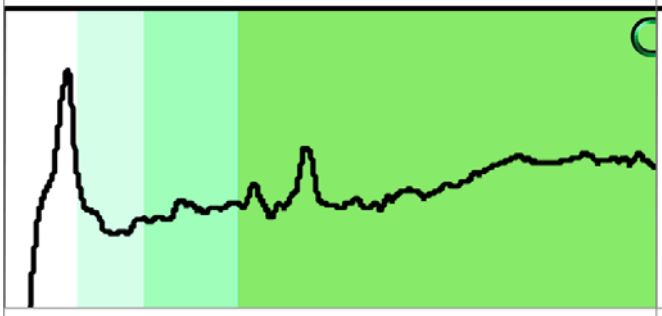
B-12-07 3-6' : PHC Traces + BO (FCM) (P)



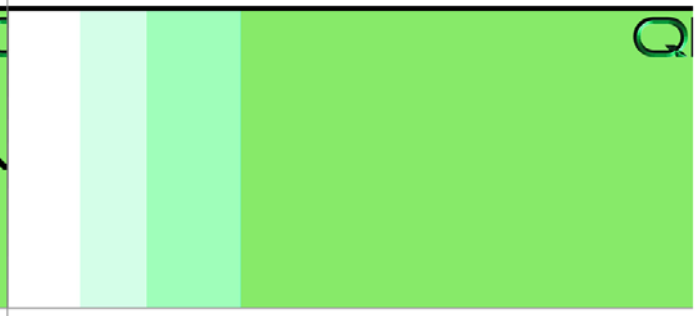
B-12-07 6-10' : Residual PHC + BO (P) 47.1%



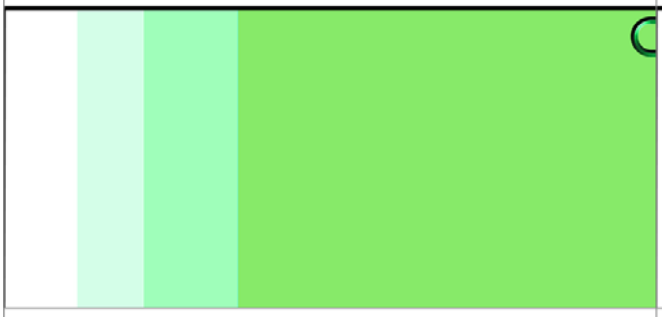
B-12-08 0-3' : Deg.Gas (FCM) (P) 40.7%



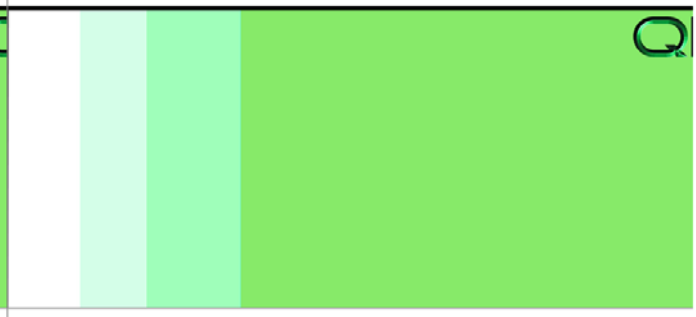
B-12-08 3-6' : PHC not Detected + BO



B-12-08 6-10' : PHC not Detected + BO

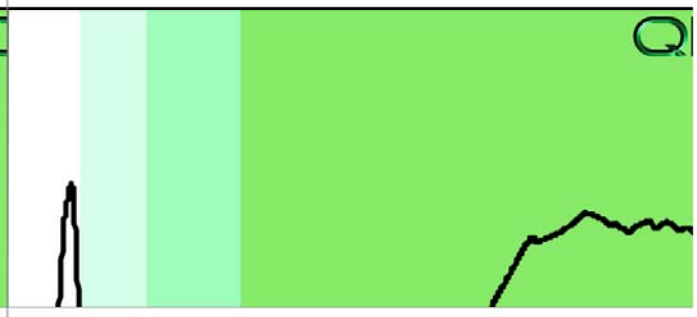


B-12-09 0-3' : PHC not detected

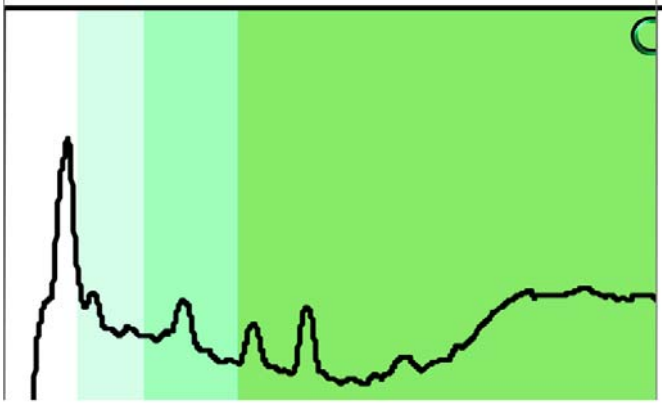


B-12-09 3-6' : PHC Traces (P)

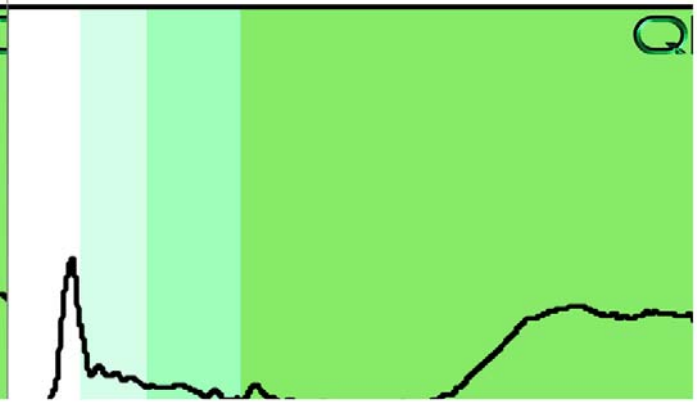
B-12-09 6-10' : PHC not Detected + BO



B-12-10 0-3' : PHC Traces (FCM) (P)



B-12-10 3-6' : PHC not Detected + BO



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AQROS

Hydrocarbon Analysis Results

Client: Schnabel Engineering
Address: Greensboro, NC

Samples taken Friday, December 18, 2015
Samples extracted Friday, December 18, 2015
Samples analysed Friday, December 18, 2015

Contact: Ben Bradley

Operator Owen

Project: U-3109A

U00903

Matrix	Sample ID	Dilution used	BTEX (C6 - C9)	GRO (C5 - C10)	DRO (C10 - C35)	TPH (C5 - C35)	Total Aromatics (C10-C35)	16 EPA PAHs	BaP	Ratios			HC Fingerprint Match
										% light	% mid	% heavy	
s	B-12-10 6-10'	19.5	<0.98	<0.49	<0.2	<0.49	<0.1	<0.02	<0.002	0	0	0	PHC not detected
s	B-12-11 0-3'	17.3	<0.87	<0.43	13.4	13.4	12.8	0.67	0.11	0	75.2	24.8	V.Deg.PHC (FCM) 80.6%
s	B-12-11 3-6'	22.6	<1.1	<0.57	0.55	0.55	<0.11	<0.02	<0.002	0	22.3	77.7	V.Deg.PHC + BO (FCM) (P) 45.3%
s	B-12-11 6-10'	20.5	<1	<0.51	0.52	0.52	<0.22	<0.02	<0.002	0	58.3	41.7	V.Deg.PHC + BO (FCM) 76.1%
s	B-12-12 0-3'	15.0	<0.75	<0.38	1.3	1.3	1.2	0.05	0.002	0	76.4	23.6	V.Deg.PHC + BO (FCM) 78.2%
s	B-12-12 3-6'	13.1	<0.66	<0.33	1.2	1.2	1.1	0.05	0.001	0	79.1	20.9	V.Deg.PHC (FCM) 82.8%
s	B-12-12 6-10'	18.2	<0.91	<0.45	<0.18	<0.45	<0.09	<0.01	<0.002	0	0	0	PHC not Detected + BO
s	B-12-13 0-3'	20.8	<1	<0.52	<0.21	<0.52	<0.1	<0.02	<0.002	0	0	100	PHC not detected
s	B-12-13 3-6'	7.3	<0.36	<0.18	<0.07	<0.18	<0.04	<0.006	<0.001	0	0	100	PHC not Detected
s	B-12-13 6-10'	19.4	<0.97	<0.49	<0.19	<0.49	<0.1	<0.02	<0.002	0	0	0	PHC not detected

Initial Calibrator QC check OK

Final FCM QC Check OK 99.4 %

Results generated by a QED HC-1 analyser. Concentration values in mg/kg for soil samples and mg/L for water samples. Soil values are not corrected for moisture or stone content

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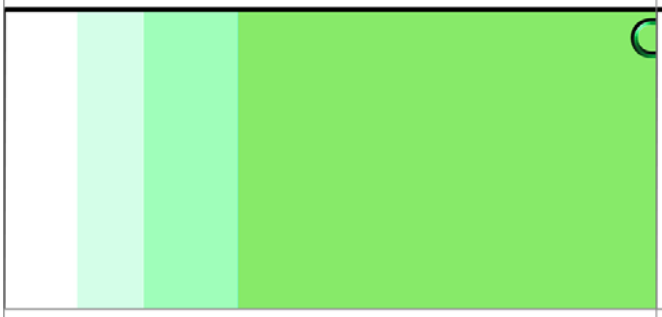
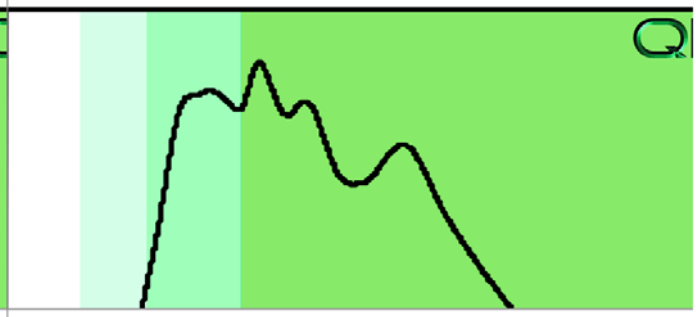
QED Hydrocarbon Fingerprints

Project: U-3109A ##################

B-12-10 6-10' : PHC not detected

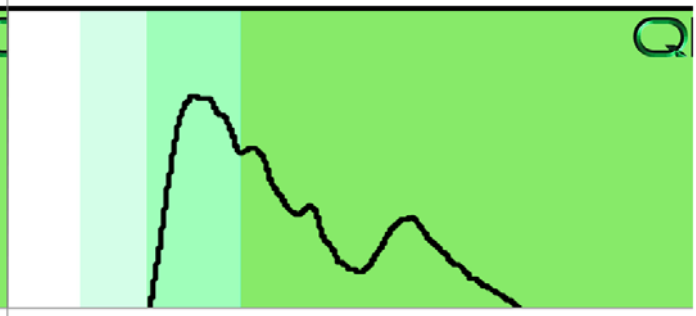


B-12-11 0-3' : V.Deg.PHC (FCM) 80.6%

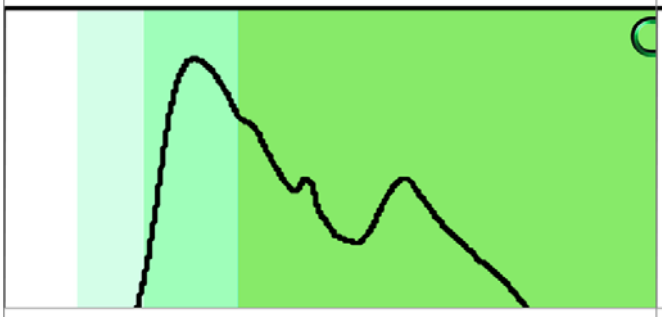


B-12-11 3-6' : V.Deg.PHC + BO (FCM) (P) 4

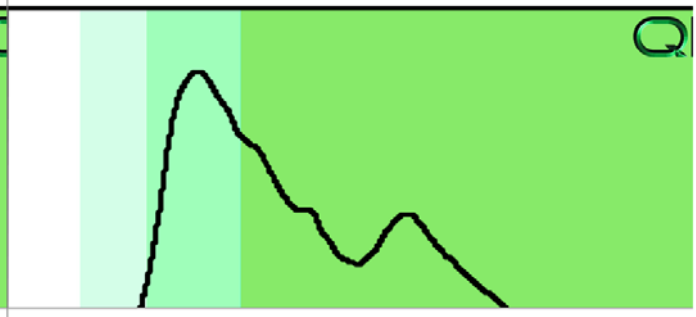
B-12-11 6-10' : V.Deg.PHC + BO (FCM) 76.1%



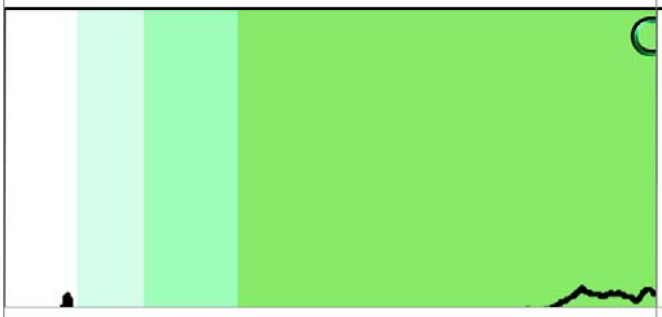
B-12-12 0-3' : V.Deg.PHC + BO (FCM) 78.2



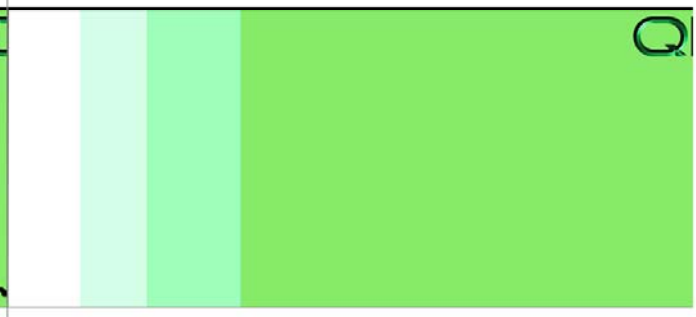
B-12-12 3-6' : V.Deg.PHC (FCM) 82.8%



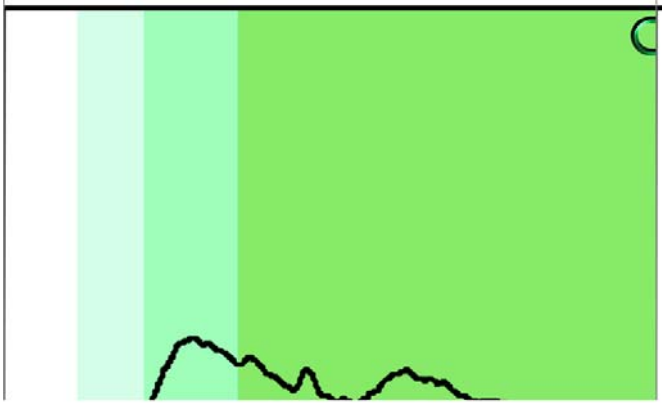
B-12-12 6-10' : PHC not Detected + BO



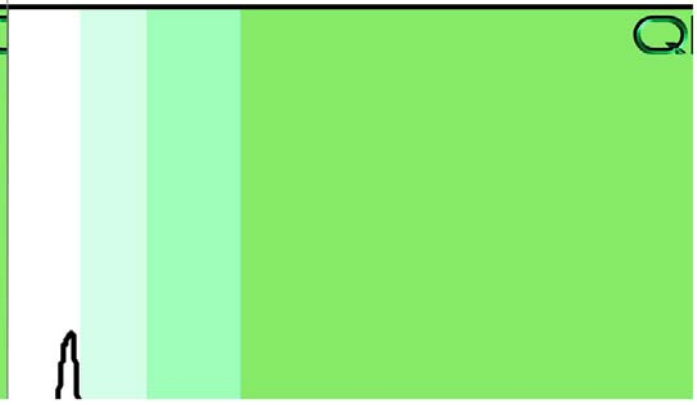
B-12-13 0-3' : PHC not detected



B-12-13 3-6' : PHC not Detected



B-12-13 6-10' : PHC not detected



QED

AQROS

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Samples analysed Friday, December 18, 2015

Contact: Ben Bradley

Operator Owen

Project: U-3109A

U00903

Matrix	Sample ID	Dilution used	BTEX (C6 - C9)	GRO (C5 - C10)	DRO (C10 - C35)	TPH (C5 - C35)	Total Aromatics (C10-C35)	16 EPA PAHs	BaP	Ratios			HC Fingerprint Match
										% light	% mid	% heavy	
s	B-12-14 0-3'	19.4	<0.97	<0.49	<0.19	<0.49	<0.1	<0.02	<0.002	0	0	0	PHC not Detected + BO
s	B-12-14 3-6'	22.0	<1.1	<0.55	<0.22	<0.55	<0.11	<0.02	<0.002	0	0	0	PHC not Detected + BO

Initial Calibrator QC check OK

Final FCM QC Check OK 102 %

Results generated by a QED HC-1 analyser. Concentration values in mg/kg for soil samples and mg/L for water samples. Soil values are not corrected for moisture or stone content

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QED Hydrocarbon Fingerprints

Project: U-3109A ##################