

Pyramid Environmental & Engineering, P.C. Project # 2013-278
Preliminary Site Assessment (PSA) – Parcel 33, Fast Track Properties, Inc.

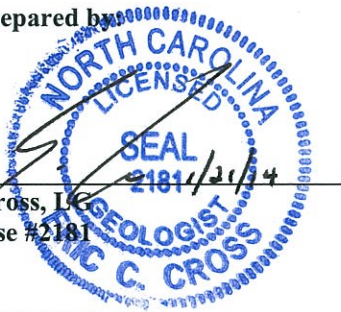
PRELIMINARY SITE ASSESSMENT
PARCEL 33, FAST TRACK PROPERTIES, INC.
2015 U.S. HIGHWAY 1 NORTH
ROCKINGHAM, RICHMOND COUNTY, NORTH CAROLINA
STATE PROJECT: R-2501C
WBS ELEMENT: 34437.1.1
JANUARY 21, 2014

Report prepared for:

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C-257 –Geology
C-1251 - Engineering

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**PRELIMINARY SITE ASSESSMENT
PARCEL 33, FAST TRACK PROPERTIES, INC.
2015 N. US 1
ROCKINGHAM, RICHMOND COUNTY, NORTH CAROLINA**

EXECUTIVE SUMMARY OF RESULTS

Pyramid Environmental & Engineering P.C. (Pyramid) has prepared this Preliminary Site Assessment (PSA) report documenting background information, field activities, assessment activities, findings, conclusions, and recommendations for Parcel 33, Fast Track Properties, Inc. The purpose of this assessment was to determine the presence or absence of underground storage tanks (USTs) and impacted soils at the subject property within the proposed right-of-way (ROW) and/or easement and edge of pavement (State Project R-2501C). The PSA was conducted with particular attention to the areas to be cut as indicated by slope stake lines and cross sections or to be excavated for the installation of drainage features. This preliminary site assessment was conducted on behalf of the North Carolina Department of Transportation (NCDOT) in accordance with Pyramid's October 16, 2013, technical proposal.

The following statements summarize the results of the PSA:

- **Site History:** A review of the North Carolina Department of Environment and Natural Resources (DENR) registered UST database and incident database indicated no environmental incidents were on file for the Fast Track Properties, Inc. property (Parcel 33). On November 26, 2013, Pyramid emailed the Richmond County R-2501C parcel addresses to Mr. Kenneth Currie, the Richmond County Incident Manager for the DENR UST Section, with a request to investigate any environmental incidents associated with the parcels. On December 2, 2013, Mr. Currie responded to the email and stated that site address 2015 N. US 1 (Parcel 33) does not have any environmental incidents in the DENR database.

On November 26, 2013, Pyramid Project Manager Eric Cross performed a site visit at the property. Neither the owner nor any other personnel were present to conduct an interview. The facility appeared to be vacant and no longer active. The October 10, 2013, RFP provided to Pyramid by the NCDOT mentioned the presence of several vehicles and miscellaneous parts at the property. Our site visit indicated that these vehicles and parts had been moved and/or disposed of since that time, and were no longer present. Evidence of a former hydraulic lift was noted near the northwest corner of the building outside of the area of investigation.

- **Geophysical Survey:** The geophysical investigation provided no evidence of metallic USTs within the existing and proposed ROW and/or easement.
- **Limited Soil Assessment:** A total of three borings were performed across the property and at least one soil sample from each boring was analyzed with the QED UVF HC-1 Analyzer system from QROS-US for total petroleum hydrocarbon (TPH) petroleum contamination. If field screening detected an elevated reading, then additional soil samples from each boring were selectively analyzed with the QED UVF HC-1 Analyzer. The QED did not detect TPH gasoline range organic (GRO) or TPH diesel range organic (DRO) concentrations above milligrams per kilogram (10 mg/kg) in any of the soil samples analyzed. The DENR action levels for both TPH-GRO and TPH-DRO are 10 mg/kg. A duplicate of soil sample 33-2(2.5-5) was shipped to Pace Analytical for laboratory analysis. The laboratory results for soil sample 33-2(2.5-5) did not detect GRO or DRO concentrations above detection limits. No odors were detected during the field screening.
- **Limited Groundwater Assessment:** Soil boring 33-2 was converted into a 1-inch diameter temporary monitoring well 33-2(TW) to a total depth of 14 feet BLS. The depth-to-groundwater was measured at 7.3 feet BLS. The laboratory analysis did not detect any volatile organic compounds above laboratory detection limits in the groundwater sample.

Review of the NCDOT engineering plans indicates that depending on groundwater level fluctuations associated with precipitation, the NCDOT may encounter groundwater at the property during construction activities. However, no evidence of contamination was observed in the groundwater sample collected by Pyramid.

- **Contaminated Soil Volumes:** No petroleum-impacted soils above 10 mg/kg were encountered during the PSA investigation at Parcel 33, nor was any evidence of probable or possible USTs recorded within the proposed right of way or easement. Therefore, no recommendations are necessary for the treatment or disposal of such materials. It should be noted that, if impacted soil is encountered during road construction outside of the area analyzed by this investigation, the impacted soil should be managed according to NC DENR Division of Waste Management (DWM) UST Section Guidelines and disposed of at a permitted facility.

1.0 Introduction

Pyramid Environmental & Engineering P.C. (Pyramid) has prepared this Preliminary Site Assessment (PSA) report documenting background information, field activities, assessment activities, findings, conclusions, and recommendations for Parcel 33, Fast Track Properties, Inc. The Fast Track Properties, Inc. property is currently a vacant warehouse building located at 2015 N. US 1 in Rockingham, NC. This preliminary site assessment was conducted on behalf of the North Carolina Department of Transportation (NCDOT) in accordance with Pyramid's October 16, 2013, technical proposal.

The purpose of this assessment was to determine the presence or absence of underground storage tanks (USTs) and the potential for impacted soils at the subject properties within the proposed ROW and/or easement and edge of pavement (State Project R-2501C). The location of the subject site is shown on **Figure 1**.

1.1 Background Information

Based on the NCDOT's October 10, 2013, *Request for Technical and Cost Proposal*, the PSA was conducted in the proposed easement/proposed right of way (ROW) and the area between the existing NCDOT right of way and the edge of pavement, with emphasis on the areas to be cut as indicated by slope stake lines and cross sections or to be excavated for the installation of drainage features and/or other utilities, in accordance with the CADD files provided to Pyramid by the NCDOT. The PSA included the following:

- Research the properties for past uses and possible releases.
- Conduct a preliminary geophysical site assessment and limited soil assessment in the proposed easement and the area between the existing ROW and the edge of pavement with emphasis on the areas to be cut as indicated by slope stake lines and cross sections or to be excavated for the installation of drainage features and/or other utilities.
- Should groundwater be encountered at a depth that might impact the NCDOT construction activities, report the depth to groundwater for that site and attempt to obtain one groundwater sample for laboratory analysis by installing a temporary monitoring well.

1.2 Project Information

Prior to field activities, a Health and Safety Plan was prepared. Prior to drilling activities, the public underground utilities were located and marked by the North Carolina One-Call Service. A private utility locator, Northstate Utility Locating Incorporated of Colfax, North Carolina was used to mark the on-site private, buried utilities.

2.0 Site History

The NCDOT description of the parcel in the RFP provided to Pyramid on October 10, 2013, provided the following background information related to the site:

This is the site of an automotive repair business. The shop building is located approximately 152 feet north of the existing US 1 centerline. Several vehicles and misc. parts are strewn across the property. A Facility ID has not been discovered for this site. Evidence of soil staining and/or USTs or UST removal was not observed during field reconnaissance along the project corridor on November 14, 2007. However, there may be environmental concerns with this site such as USTs, hydraulic lifts, or chemical concerns.

Pyramid completed a records review of the parcel, interviewed DENR personnel, interviewed property owners, and reviewed aerial photographs to assess past uses of the property. Pyramid reviewed historical aerial photographs dating back to 1938 available from the Richmond County Soil and Water Conservation office in Rockingham and on Google Earth for past uses. The 1938, 1956, 1975, 1993, 1999, 2005, 2008, and 2013 aerial photographs are included in **Appendix A**. Historical information reviewed as part of the PSA indicated that the vegetation and trees at the Fast Track Properties, Inc. property were cleared for commercial use between 1993 and 1999 and the building was constructed between 1999 and 2005. The earliest aerial to show the building was the 2005 aerial. The 1938, 1956, 1975 and 1993 aerials show the property to be undeveloped agricultural land, and the 1999 aerial shows the property being partially cleared.

On November 26, 2013, Pyramid emailed the Richmond County R-2501C parcel addresses to Mr. Kenneth Currie, the Richmond County Incident Manager for the DENR UST Section, with a request to investigate any environmental incidents associated with the parcels. On December 2, 2013, Mr. Currie responded to the email and stated that site address 2015 N. US 1 (Parcel 33) does not have any environmental incidents in the DENR database.

On November 26, 2013, Pyramid Project Manager Eric Cross performed a site visit at the property. Neither the owner nor any other personnel were present to conduct an interview. The facility appeared to be vacant and no longer active. The October 10, 2013, RFP provided to Pyramid by the NCDOT mentioned the presence of several vehicles and miscellaneous parts at the property. Our site visit indicated that these vehicles and parts had been moved and/or disposed of since that time, and were no longer present. Evidence of a former hydraulic lift was noted near the northwest corner of the building outside of the area of investigation.

3.0 Geophysical Investigation

Pyramid performed electromagnetic (EM) and ground penetrating radar (GPR) surveys across the accessible portions of the Parcel. The majority of the EM61 anomalies detected could be attributed to visible objects at the ground surface such as signs and other cultural features. One minor anomaly was suspected to be the result of isolated debris, and the GPR investigation confirmed the presence of suspected debris.

The geophysical investigation did not record evidence of metallic USTs within the proposed ROW and/or easement.

The full details of the geophysical investigation are included in the Geophysical Investigation Report as **Appendix B**.

4.0 Soil Sampling Activities & Results

4.1 Soil Assessment Field Activities

On December 16, 2013, Pyramid mobilized to the site and drilled soil borings, installed one temporary monitoring well, and collected the proposed soil samples for the PSA. The soil borings and temporary well (TW) were completed using a track mounted Geoprobe® Direct-Push rig. Three (3) soil borings (33-1, 33-2, and 33-3) were advanced on the subject property between the NCDOT proposed ROW and easements, and edge of pavement. The selected locations were chosen to avoid public utilities along U.S. 1 and private utilities associated with the business while remaining in the proposed right of way. The soil borings were installed parallel to U.S. 1 in area proposed to be cut as indicated by the slope stake line. Borings 33-2 and 33-3 were installed at the location of proposed drainage easements adjacent to proposed drainage piping, as indicated by the NCDOT engineering plans. The locations of the borings are shown on **Figure 2**.

Soil samples were continuously collected in four foot long disposable sleeves from each boring for geologic description, and visual examination for signs of contamination. Soil recovered from each sleeve was screened in the field using a Photo-Ionization Detector (PID) approximately every 2 feet depending on the soil recovery of each sleeve. In general, the soil sample with the highest PID reading was selected from each boring for laboratory analysis. If field screening detected an elevated reading, then additional soil samples from each boring were selectively analyzed with the QED UVF HC-1 Analyzer. The soil boring logs with the soil descriptions, visual examination, and PID screening results are included in **Appendix C**. The PID field screening results are summarized in **Table 1**. To prevent cross contamination, new disposable nitrile gloves were worn by the sampling technician during the sampling activities, and were changed between samples. No odors were detected during the field screening.

The soil samples selected for Total Petroleum Hydrocarbon (TPH) analyses were analyzed utilizing the QED UVF HC-1 Analyzer system from QROS-US. The NCDOT has indicated that this instrument is an acceptable method to provide total petroleum hydrocarbon (TPH) results for soil analysis for the PSA projects. Pyramid's QED-certified technician performed the soil analyses. The soil samples selected for analysis using the QED Analyzer were analyzed for TPH as diesel range organics (DRO) and TPH as gasoline range organics (GRO). The soil samples selected for analysis using the QED were preserved in the field with methanol and were analyzed at the end of each day using the QED. One duplicate soil sample was selected for laboratory analysis from Parcel 33.

The duplicate soil sample selected for laboratory analyses 33-2(2.5-5) was placed in laboratory prepared containers and shipped to Pace Analytical in Huntersville, NC for analysis. The selected soil sample was analyzed for TPH as GRO by EPA Method 8015C and DRO by EPA Method 8015C/3541.

4.2 Soil Sample Analytical Results

The QED results for soil samples 33-1(2.5-5), 33-1(6-7.5), 33-2(2.5-5), and 33-3(5-7.5) did not detect TPH-GRO or TPH-DRO concentrations above 10 mg/kg. The DENR action levels for both TPH-GRO and TPH-DRO are 10 mg/kg. The soil sample QED results are summarized in **Table 2**. A copy of the QED analysis report is included in **Appendix D**.

A duplicate of soil sample 33-2(2.5-5) was shipped to Pace Analytical for laboratory analysis. The laboratory results for soil sample 33-2(2.5-5) did not detect GRO or DRO concentrations above detection limits. A copy of the laboratory report and chain-of-custody is included in **Appendix E**. To maintain consistency, the QED results are utilized in this report to determine the presence and level of potential contamination.

4.3 Temporary Monitoring Well Installation

On December 16, 2013, Pyramid converted soil boring 33-2 into a 1-inch diameter temporary monitoring well (TW). Soil boring 33-2(TW) was completed to a total depth of 14 feet below land surface (BLS). The temporary well was constructed with 4 feet of 1-inch diameter of schedule 80 PVC casing and 10 feet of 1-inch diameter of schedule 80 PVC slotted screen. The temporary well was set in the boring with 10 feet of slotted screen at the bottom of the well.

On December 17, 2013, the temporary monitoring well 33-2(TW) was gauged using a properly decontaminated electric water level probe. The depth-to-groundwater was measured at 7.3 feet BLS. The temporary monitoring well was sampled using a new 0.5-inch diameter disposable bailer. Upon completion of the gauging and sampling, the temporary monitoring well was properly abandoned by the drillers by removing the casing, and filling the borehole with bentonite chips and portland cement.

4.4 Groundwater Analytical Results

The groundwater sample 33-2(TW) was placed in laboratory prepared containers for analysis of volatile organic compounds (VOCs) using EPA Method 6200B, and the sample was shipped to Pace Analytical in Huntersville, NC. The laboratory analysis did not detect any volatile organic compounds above laboratory detection limits in the groundwater sample. The groundwater results for sample 33-2(TW) are summarized in **Table 3**. A copy of the laboratory report and chain-of-custody is included in **Appendix E**.

5.0 Conclusions and Recommendations

As requested by NCDOT, Pyramid has completed a PSA at the Fast Track Properties, Inc. property located 2015 N. US 1, Rockingham, NC (Parcel 33). The following is a summary of the assessment activities and results.

5.1 Geophysical Investigation

The geophysical investigation provided no evidence of metallic USTs within the existing and proposed ROW and/or easement.

5.2 Limited Soil Assessment

The QED did not detect TPH gasoline range organic (GRO) or TPH diesel range organic (DRO) concentrations above 10 mg/kg in any of the soil samples analyzed. The DENR action levels for both TPH-GRO and TPH-DRO are 10 mg/kg. A duplicate of soil sample 33-2(2.5-5) was shipped to Pace Analytical for laboratory analysis. The laboratory results for soil sample 33-2(2.5-5) did not detect GRO or DRO concentrations above detection limits. To maintain consistency, the QED results are utilized in this report to determine the presence and level of potential contamination.

5.3 Limited Groundwater Assessment

Soil boring 33-2 was converted into a 1-inch diameter temporary monitoring well to a total depth of 14 feet BLS. The depth-to-groundwater was measured at 7.3 feet BLS. The laboratory analysis did not detect any volatile organic compounds above laboratory detection limits in the groundwater sample.

Review of the NCDOT engineering plans indicates that depending on groundwater level fluctuations associated with precipitation, the NCDOT may encounter groundwater at the property during construction activities. However, no evidence of contamination was observed in the groundwater sample collected by Pyramid.

5.4 Recommendations

No petroleum-impacted soils above 10 mg/kg were encountered during the PSA investigation at Parcel 33, no odors were detected during the field screening, and there was no evidence of probable or possible USTs recorded within the proposed right of way or easement. Therefore, no recommendations are necessary for the treatment or disposal of such materials.

It should be noted that, if impacted soil is encountered during road construction outside of the area analyzed by this investigation, the impacted soil should be managed according to NC DENR Division of Waste Management (DWM) UST Section Guidelines and disposed of at a permitted facility.

6.0 Limitations

The results of this preliminary investigation are limited to the boring locations completed during this limited assessment and presented in this report. The laboratory results only reflect the current conditions at the locations sampled on the date this PSA was performed.

7.0 Closure

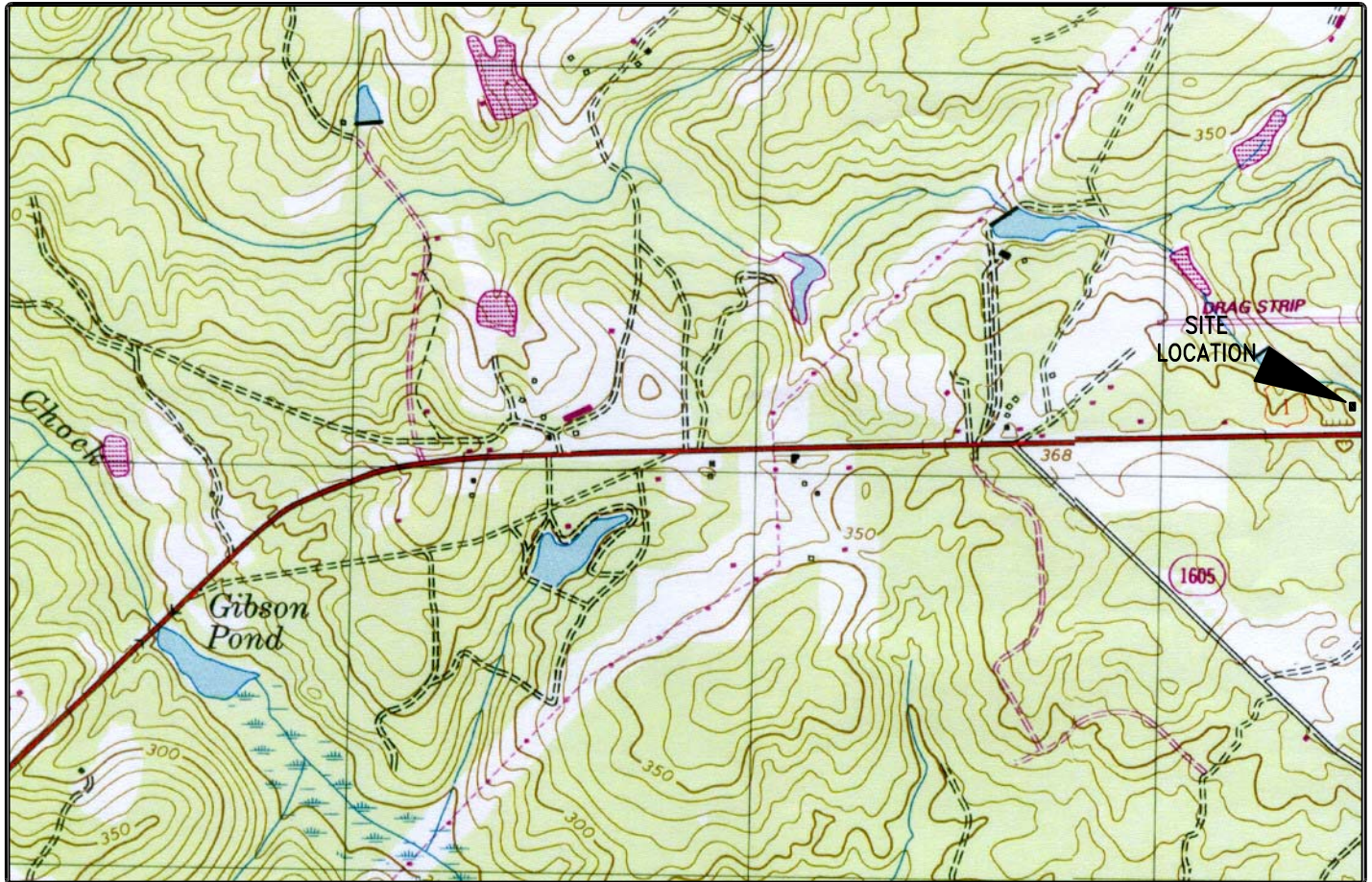
This report was prepared for, and is available solely for use by NCDOT and their designees. The contents thereof may not be used or relied upon by any other person without the express written consent and authorization of Pyramid Environmental & Engineering, P.C. (Pyramid). The observations, conclusions, and recommendations documented in this report are based on site conditions and information reviewed at the time of Pyramid's investigation. Pyramid appreciates the opportunity to provide this environmental service.

FIGURES

USGS TOPOGRAPHIC MAP

SITE: 2015 U.S. HIGHWAY 1 NORTH

LOCATION: ROCKINGHAM, NORTH CAROLINA



USGS IDENTIFICATION

SCALES

USGS 7.5 MINUTE MAP

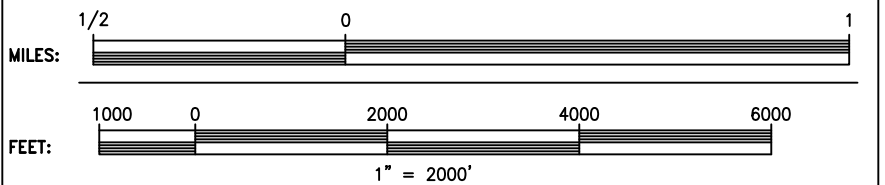
HAMLET, N.C.

ORIGINAL DATE:

2002

PHOTOREVISION DATE:

NA



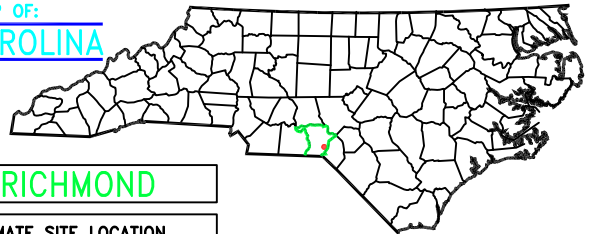
	PRIMARY HIGHWAY, HARD SURFACE
	SECONDARY HIGHWAY, HARD SURFACE
	LIGHT-DUTY ROAD HARD OR IMPROVED SURFACE
	UNIMPROVED ROAD
	STATE ROAD
	U.S. ROUTE
	INTERSTATE ROUTE

NOTES: TOPOGRAPHICAL CONTOUR INTERVAL = 10 FEET
 PHOTOREVISIONS DENOTED IN PURPLE

MAGNETIC NORTH



COUNTY MAP OF:
NORTH CAROLINA



COUNTY: **RICHMOND**

APPROXIMATE SITE LOCATION



CLIENT: NC DOT R-2501C

PROPERTY NAME: PARCEL 033, FAST TRACK PROPERTIES, INC.

CITY: ROCKINGHAM

STATE: NORTH CAROLINA

TITLE: TOPOGRAPHIC MAP

SCALE:
 1" = 2000'

DATE:
 1/7/14

DRAWING NAME:
 USGSTOPO

DRAWN BY: KAM

CHECK BY: TDL

JOB NO.: 2013-278

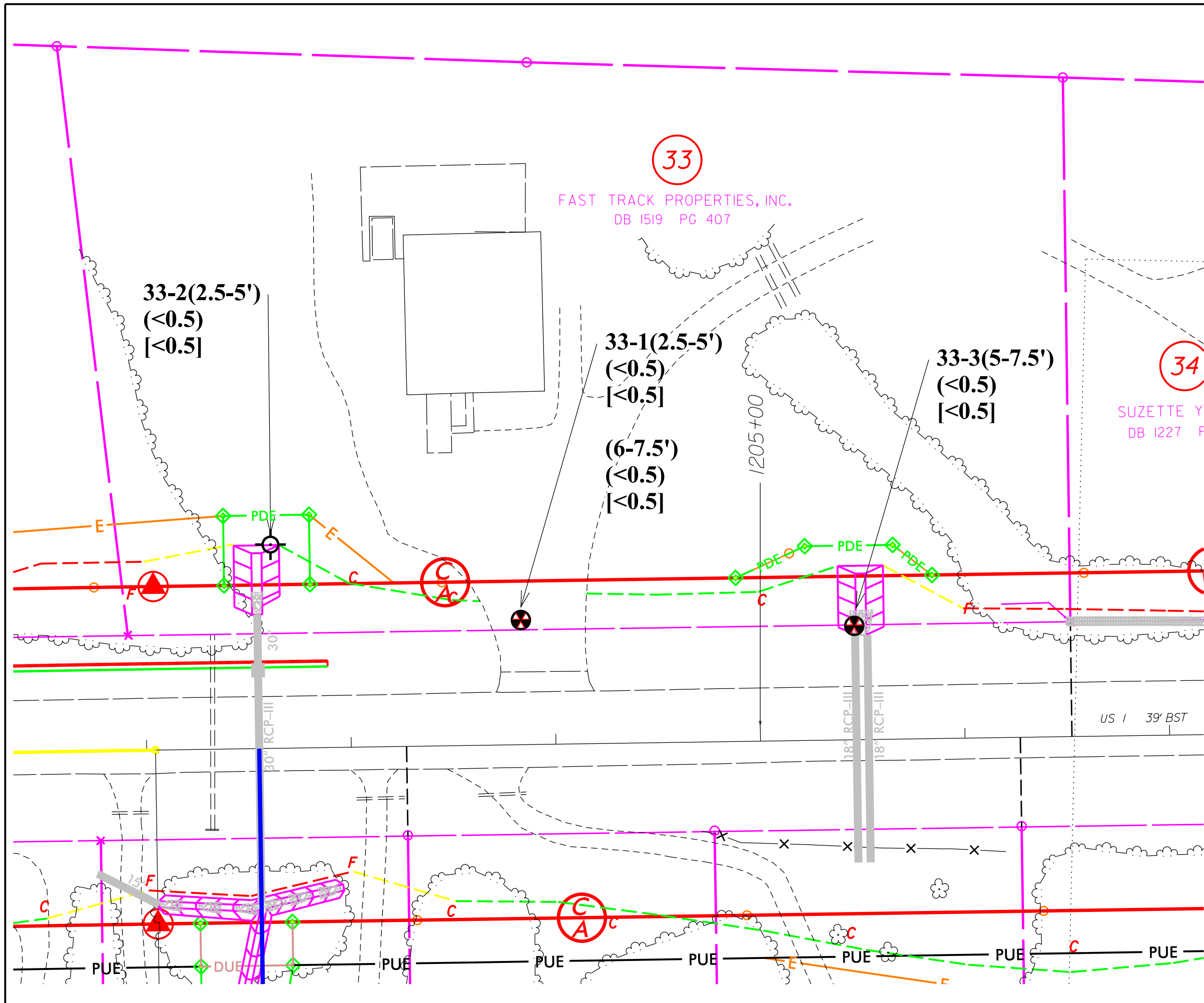
TYPE: PSA

FIGURE NUMBER:
 1

NOTES

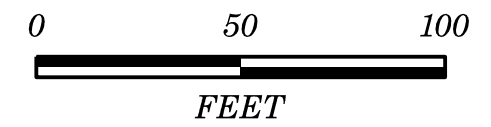
TOPOGRAPHIC MAP USED IN THIS GRAPHIC IS MAPPED, EDITED, AND PUBLISHED BY THE UNITED STATES GEOLOGIC SURVEY, DEPARTMENT OF THE INTERIOR, RESTON VIRGINIA.

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS.



LEGEND

- PUE PROPOSED UTILITY EASEMENT
- EXISTING ROW
- EXISTING PROPERTY BOUNDARY
- PROPOSED ROW
- PROPOSED CONST. EASEMENT
- PROP. DRAINAGE UTIL. EASEMENT
- PROPOSED SS CUT LINE
- PROPOSED SS FILL LINE
- PROPOSED SS TRANSITION LINE
- PROPOSED DRAINAGE PIPING
- PDE PROPOSED DRAINAGE EASEMENT
- SOIL SAMPLE BORING LOCATION
- BORING CONVERTED TO MW
- (<6.1) TPH-DRO concentration (mg/kg)
- [<6.1] TPH-GRO concentration (mg/kg)
- * Analytical data collected by the method of QROS, QED Analyzer



TITLE SOIL BORING LOCATIONS AND QED ANALYTICAL RESULTS	
PROJECT NCDOT ROW PROJECT R-2501C (34437.1.1) FAST TRACK PROPERTIES, INC. - PARCEL 033 U.S. 1, RICHMOND COUNTY, NORTH CAROLINA	
	503 INDUSTRIAL AVENUE GREENSBORO, NC 27406 336.335.3174 (p) 336.691.0648 (f) License # C1251 Eng. / #C257 Geology
DATE: 12-19-13	REVISION NO. 0
PYRAMID PROJECT NO. 2012-278	FIGURE NO. 2

TABLES

TABLE 1
Summary of Soil Field Screening Results
NCDOT Project R-2501C
2015 US Highway 1 North - Parcel 33
Rockingham, Richmond County, North Carolina

SOIL BORING	SAMPLE ID	DEPTH (feet bgs)	PID READINGS (PPM)
33-1	33-1(2-2.5)	2 to 2.5	2.2
	33-1(2.5-5)	2.5 to 5	4.8
	33-1(6-7.5)	6 to 7	7.4
	33-1(7.5-10)	7.5 to 10	4.7
33-2	33-2(1.5-2.5)	1.5 to 2.5	5.1
	33-2(2.5-5)	2.5 to 5	5.4
	33-2(6-7.5)	6 to 7.5	2.2
	33-2(7.5-10)	7.5 to 10	3.9
33-3	33-3(1-2.5)	1 to 2.5	2.2
	33-3(2.5-5)	2.5 to 5	2.6
	33-3(5-7.5)	5 to 7.5	4.6
	33-3(7.5-10)	7.5 to 10	3.0

bgs= below ground surface

PID= photo-ionization detector

PPM= parts-per-million

☐ = sampled for lab analysis &/or QROS-QED analysis

OVA= Organic Vapor Analyzer

TABLE 2
Summary of Soil Sample Analytical Results
 NCDOT State Project R-2501C
 2015 US Highway 1 North - Parcel 033
 Rockingham, Richmond County, North Carolina

SAMPLE ID	DATE	DEPTH (feet)	PID (ppm)	QROS - QED Analysis			Laboratory Analysis (Pace)	
				GRO (mg/kg) (C5-C10)	DRO (mg/kg) (C10-C35)	TPH (mg/kg) (C5-C35)	EPA Method 3550 DRO (mg/kg)	EPA Method 5035 GRO (mg/kg)
33-1 (2.5-5)	12/16/2013	2.5 to 5	4.8	<0.5	<0.5	<0.5	-----	-----
33-1(6-7.5)	12/16/2013	6 to 7.5	7.4	<0.5	<0.5	<0.5	-----	-----
33-2(2.5-5)	12/16/2013	2.5 to 5	5.4	<0.5	<0.5	<0.5	<5.5	<4.6
33-3(5-7.5)	12/16/2013	5 to 7.5	4.6	<0.5	<0.5	<0.5	-----	-----
NC Initial Action Level - UST Section for 5035/5030-GRO; 3550-DRO				10	10	NA	10	10

PID= photo-ionizaton detector
 PPM= parts-per-million

GRO= Gasoline Range Organics
 DRO= Diesel Range Organics
 mg/kg= milligrams-per-kilogram

TPH= Total Petroleum
 Hydrocarbons (GRO + DRO)

NA= Not Applicable
 "-----" = No Laboratory Analysis

* Bold values indicate concentrations above initial action levels

TABLE 3
Summary of Groundwater Analytical Results
NCDOT State Project R-2501C
2015 US Highway 1 North - Parcel 033
Rockingham, Richmond County, North Carolina

PARAMETER	UNITS	SAMPLE ID	NCAC 2L GROUNDWATER STANDARD
		33-2(TW)	
EPA Method 6200B VOCs; Sample Collection Date: 12/17/13			
Benzene	ug/L	ND	1
Chloroform	ug/L	ND	70
Diisopropyl Ether (IPE)	ug/L	ND	70
Ethyl Benzene	ug/L	ND	600
Isopropylbenzene (Cumene)	ug/L	ND	70
Naphthalene	ug/L	ND	6
Styrene	ug/L	ND	70
Toluene	ug/L	ND	600
Total Xylenes	ug/L	ND	500
n-Propylbenzene	ug/L	ND	70
sec-Butylbenzene	ug/L	ND	70
tert-Butyl methyl ether (MTBE)	ug/L	ND	20
tert-Butylbenzene	ug/L	ND	70
1,2,4-Trimethylbenzene	ug/L	ND	400
1,2-Dichloroethane	ug/L	ND	0.4
1,3,5-Trimethylbenzene	ug/L	ND	400
4-Isopropyltoluene	ug/L	ND	25
All Other Parameters	ug/L	ND	NA

ug/L= micrograms-per-liter

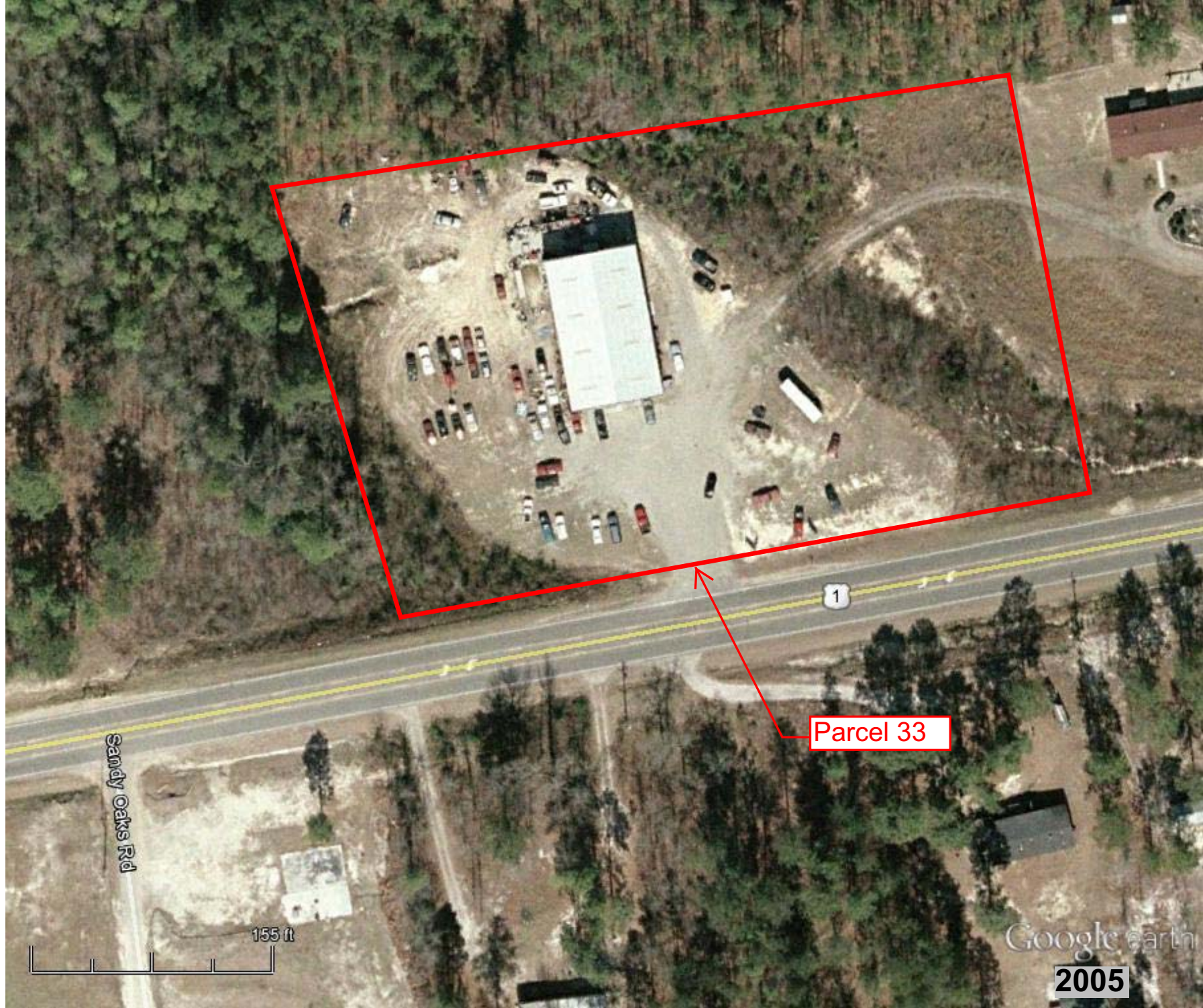
ND= Not Detected at or above adjusted reporting limit.

NA= Not Applicable

APPENDIX A







Parcel 33

Sandy Oaks Rd

1

155 ft

Google earth
2005

Google earth

feet
meters





Google earth

feet 400
meters 100





Google earth

feet 400
meters 100





Parcel 33

1975



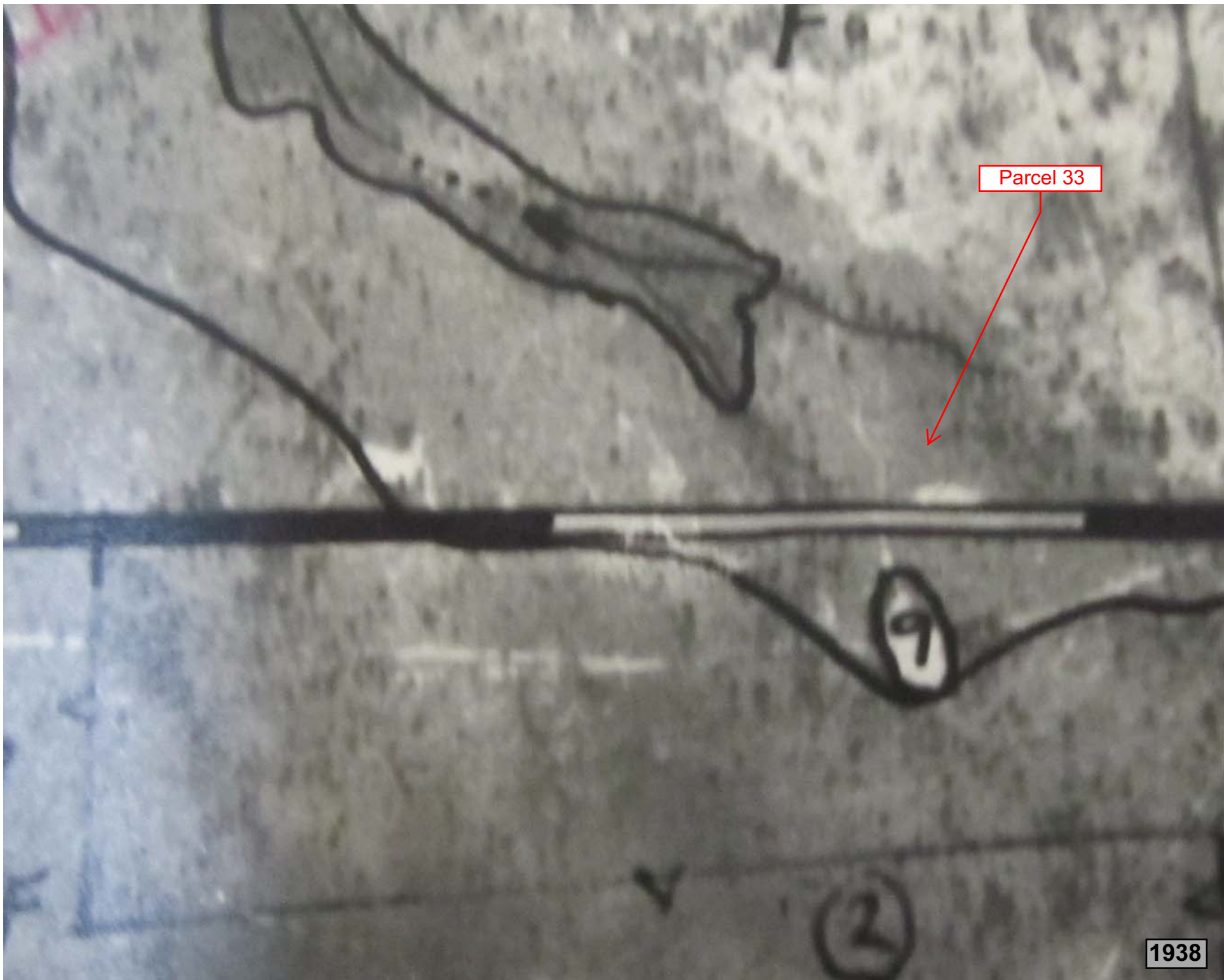
Parcel 33

LS-1



730 575

1956



Parcel 33

1938

APPENDIX B



PYRAMID ENVIRONMENTAL & ENGINEERING
(PROJECT 2013-278)


GEOPHYSICAL SURVEY


PARCEL 033 – FAST TRACK PROPERTIES
2015 N. US 1
NCDOT PROJECT R-2501C (34437.1.1)

ROCKINGHAM, RICHMOND COUNTY, NC

JANUARY 13, 2013

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GEOPHYSICAL INVESTIGATION REPORT
Parcel 033, 2015 N. US 1
Rockingham, Richmond County, North Carolina

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- Figure 2 – Parcel 033 – EM61 Bottom Coil & Differential Results Contour Maps
- Figure 3 – Parcel 033 – Overlay of EM61 Contour Map On Engineering Plans
- Figure 4 – Parcel 033 – GPR Transect Locations and Select Images

EXECUTIVE SUMMARY

Project Description: Pyramid Environmental conducted a geophysical investigation for the North Carolina Department of Transportation (NCDOT), at the Fast Track Properties, Inc. property, Parcel 033, 2015 N. US 1, Rockingham, Richmond County, NC. The survey was part of an NCDOT Right-of-Way (ROW) investigation (NCDOT Project R-2501C). The geophysical survey boundaries at the project site were designed to include the portions of the property between the existing edge of pavement and the proposed ROW and easements, whichever distance was greater. The geophysical investigation consisted of electromagnetic (EM) induction-metal detection and ground penetrating radar (GPR) surveys.

Geophysical Results: The majority of the EM61 anomalies detected could be attributed to visible objects at the ground surface such as signs and other cultural features. One minor anomaly was suspected to be the result of isolated debris, and the GPR investigation confirmed the presence of suspected debris. The geophysical investigation did not record evidence of any metallic USTs at the property.

INTRODUCTION

Pyramid Environmental conducted a geophysical investigation for the North Carolina Department of Transportation (NCDOT), at the Fast Track Properties, Inc. property, Parcel 033, 2015 N. US 1, Rockingham, Richmond County, NC. The survey was part of an NCDOT Right-of-Way (ROW) investigation (NCDOT Project R-2501C). The geophysical survey boundaries at the project site were designed to include the portions of the property between the existing edge of pavement and the proposed ROW and easements, whichever distance was greater. The main survey grid spanned approximately 310 feet from west to east and approximately 80 feet from north to south. Additional reconnaissance EM transects were performed adjacent to US 1 to the west and east of the main survey boundaries (see **Figure 1**). Conducted on December 4 and 9, 2013, the geophysical investigation was performed to determine if unknown, metallic underground storage tanks (USTs) were present beneath the survey area.

The site contained a vacant warehouse building, and otherwise consisted primarily of open grassy areas. It should be noted that an area of dense vegetation was present on the west side of the survey, limiting access for the geophysical instruments. Aerial photographs showing the survey area boundaries and ground-level photographs are shown in **Figure 1**.

FIELD METHODOLOGY

Prior to conducting the geophysical investigation, a 20-foot by 10-foot survey grid was established across the geophysical survey areas using measuring tapes and water-based marking paint. These grid marks were used as X-Y coordinates for location control when collecting the geophysical data and establishing base maps for the geophysical results.

The geophysical investigation consisted of electromagnetic (EM) induction-metal detection and ground penetrating radar (GPR) surveys. The EM survey was performed on December 4, 2013, using a Geonics EM61 metal detection instrument. According to the instrument specifications, the EM61 can detect a metal drum down to a maximum depth of approximately 8 feet. Smaller objects (1-foot or less in size) can be detected to a maximum depth of 4 to 5 feet. The EM61 data

were digitally collected at approximately 0.8 foot intervals along north-south trending or east-west trending, parallel survey lines spaced five feet apart. The data were downloaded to a computer and reviewed in the field and office using the Geonics DAT61 and Surfer for Windows Version 11.0 software programs.

GPR data were acquired across select EM differential anomalies on December 9, 2013, using a Geophysical Survey Systems, Inc. (GSSI) SIR-2000 unit equipped with a 400 MHz antenna. Data were collected generally from east to west and north to south across the property. The GPR data were viewed in real time using a vertical scan of 512 samples, at a rate of 48 scans per second. GPR data were viewed down to a maximum depth of approximately 8 feet, based on an estimated two-way travel time of 8 nanoseconds per foot. GPR Transects across specific anomalies were saved to the hard drive of the SIR unit for post-processing and figure generation.

DISCUSSION OF RESULTS

Contour plots of the EM61 bottom coil and differential results obtained across survey area at the property are presented in **Figure 2**. The bottom coil results represent the most sensitive component of the EM61 instrument and detect metal objects regardless of size. The bottom coil response can be used to delineate metal conduits or utility lines; small, isolated metal objects, and areas containing insignificant metal debris. The differential results are obtained from the difference between the top and bottom coils of the EM61 instrument. The differential results focus on the larger metal objects such as drum and UST-size objects and ignore the smaller insignificant metal objects.

Discussion of EM Anomalies: The EM anomaly at X=200, Y=40 was due to a collection of metal poles. The EM anomaly at X=250, Y=40 was the result of a metal pole and sign. The EM anomaly at X=275, Y=30 was due to a water meter cover. The EM anomaly at X=330, Y=25 was minor and suspected to be associated with isolated metallic debris. No EM anomalies were recorded in the reconnaissance transects performed near US 1 to the east and west of the main survey area. **Figure 3** presents an overlay of the EM bottom coil data on the NCDOT engineering plans for reference.

Discussion of GPR Survey: Figure 4 presents the locations of the formal GPR transects performed at the property, as well as images of the transects. GPR Transect 1 was performed across the EM anomaly at X=330, Y=25. The GPR transect recorded disrupted reflectors that were indicative of isolated debris, and not a larger structure.

The geophysical investigation did not record evidence of any metallic USTs at the property.

SUMMARY & CONCLUSIONS

Our evaluation of the EM61 and GPR data collected across Parcel 033 in Rockingham, North Carolina, provides the following summary and conclusions:

- The EM61 and GPR surveys provided reliable results for the detection of metallic USTs within the accessible portions of the geophysical survey area.
- The majority of the EM61 anomalies detected could be attributed to visible objects at the ground surface such as signs and other cultural features.
- One minor anomaly was suspected to be the result of isolated debris, and the GPR survey verified the presence of debris at this location.
- The geophysical investigation did not record evidence of any metallic USTs at the property.

LIMITATIONS

Geophysical surveys have been performed and this report prepared for the NCDOT in accordance with generally accepted guidelines for EM61 and GPR surveys. It is generally recognized that the results of the EM61 and GPR surveys are non-unique and may not represent actual subsurface conditions. The EM61 and GPR results obtained for this project have not conclusively determined the definitive presence or absence of metallic USTs, but that the evidence collected is sufficient to result in the conclusions made in this report. Additionally, it should be understood that areas

containing extensive vegetation, reinforced concrete, or other restrictions to the accessibility of the geophysical instruments could not be fully investigated.



Approximate Boundaries of the Geophysical Survey Area


- Main Survey Grid
- Reconnaissance EM Transects



View of East Portion of Survey Area
(Facing Approximately East)

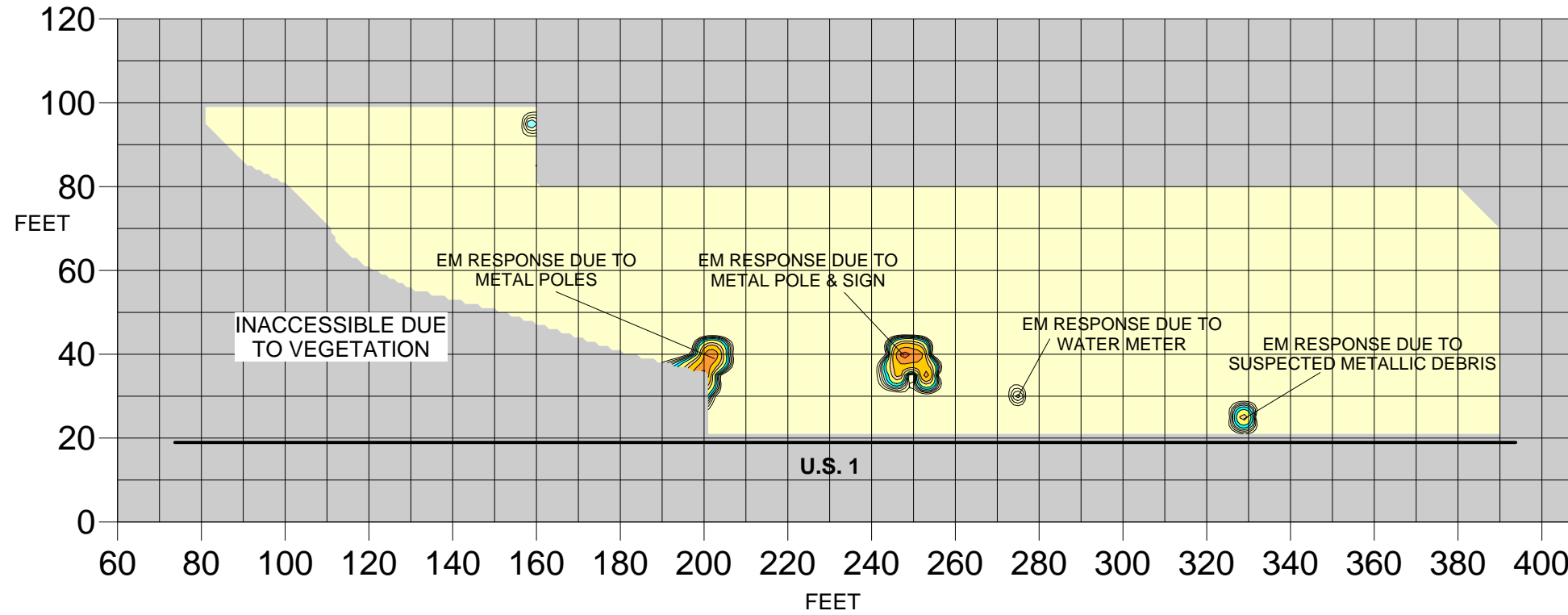


View of West Portion of Survey Area
(Facing Approximately West)

TITLE		PARCEL 033: GEOPHYSICAL SURVEY BOUNDARIES AND SITE PHOTOGRAPHS	
PROJECT		NCDOT PROJECT R-2501C (34437.1.1) ROCKINGHAM, RICHMOND COUNTY, NC	
		503 INDUSTRIAL AVENUE GREENSBORO, NC 27460 (336) 335-3174 (p) (336) 691-0648 (f) License # C1251 Eng. / License # C257 Geology	
DATE	1/6/2014	CLIENT	NCDOT
PYRAMID PROJECT #:	2013-278	FIGURE 1	



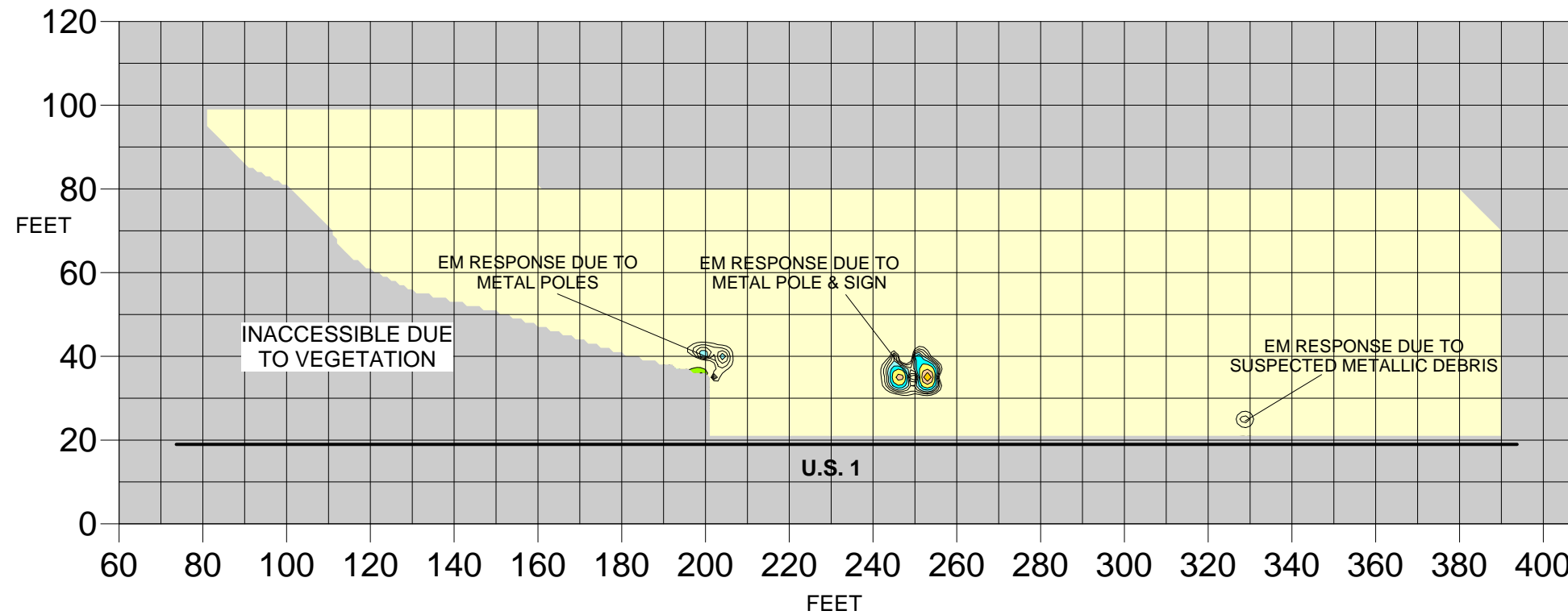
EM61 Bottom Coil Results



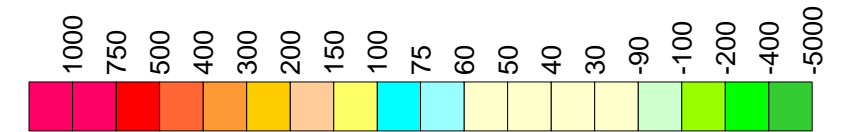
NO EVIDENCE OF METALLIC USTs OBSERVED


The contour plots show the bottom coil (most sensitive) and differential results of the EM61 instrument in millivolts (mV). The bottom coil response shows buried metallic objects regardless of size. The differential response focuses on larger, buried metallic objects such as drums and USTs and ignores smaller miscellaneous buried, metal debris. The EM61 data were collected on December 4, 2013 using a Geonics EM61 instrument. Ground penetrating radar (GPR) data were collected on December 9, 2013, using a GSSI SIR 2000 unit coupled to a 400 MHz antennae.

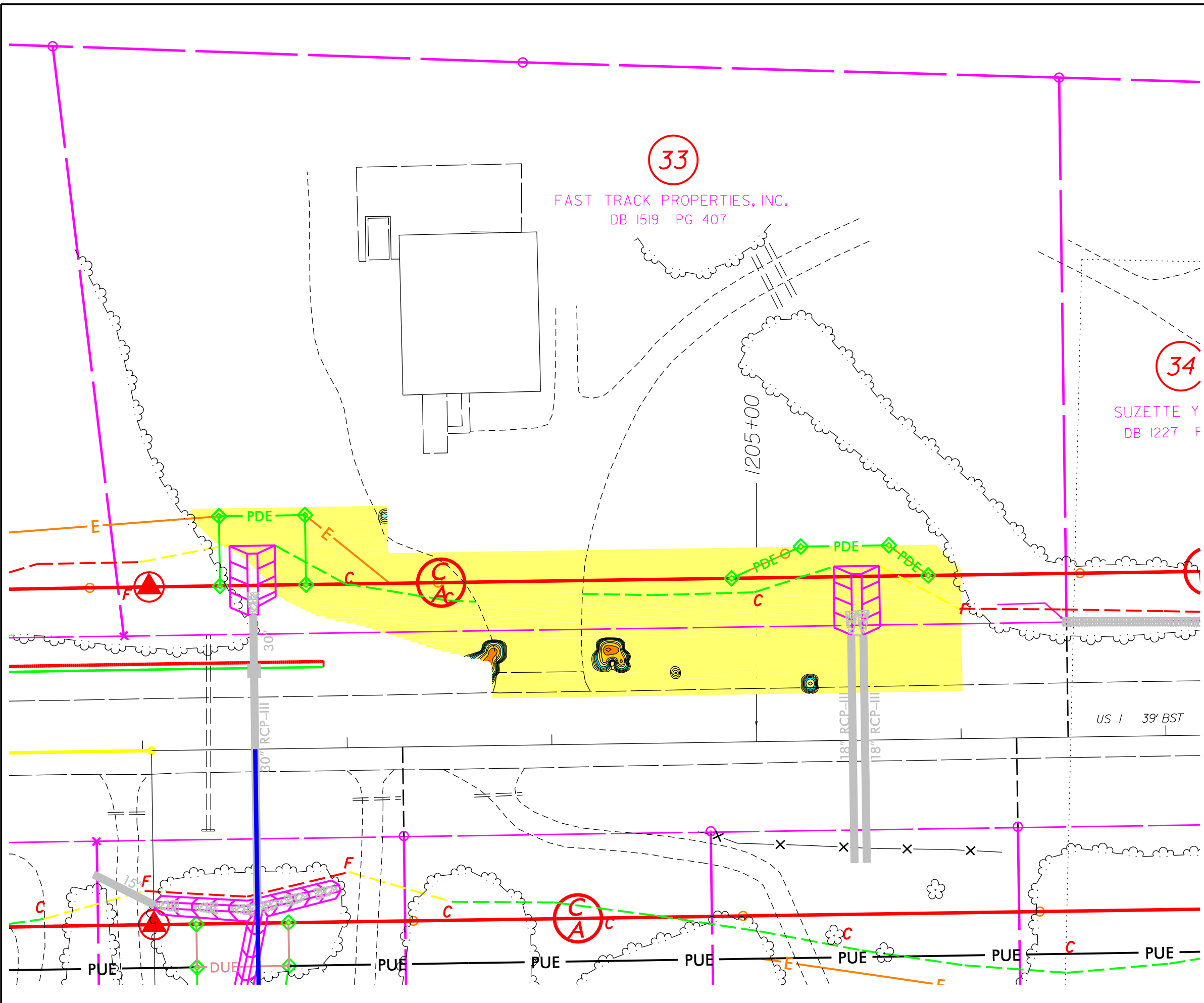
EM61 Differential Results



EM61 Metal Detection Response (millivolts)

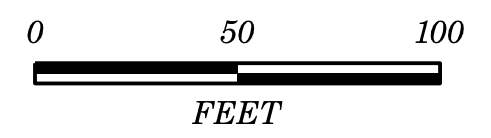


TITLE	PARCEL 033: EM61 BOTTOM COIL & DIFFERENTIAL RESULTS CONTOUR MAPS	
PROJECT	NCDOT PROJECT R-2501C (34437.1.1) ROCKINGHAM, RICHMOND COUNTY, NC	
	503 INDUSTRIAL AVENUE GREENSBORO, NC 27460 (336) 335-3174 (p) (336) 691-0648 (f) License # C1251 Eng. / License # C257 Geology	
	DATE	1/6/2014
	CLIENT	NCDOT
PYRAMID PROJECT #:	2013-278	FIGURE 2



LEGEND

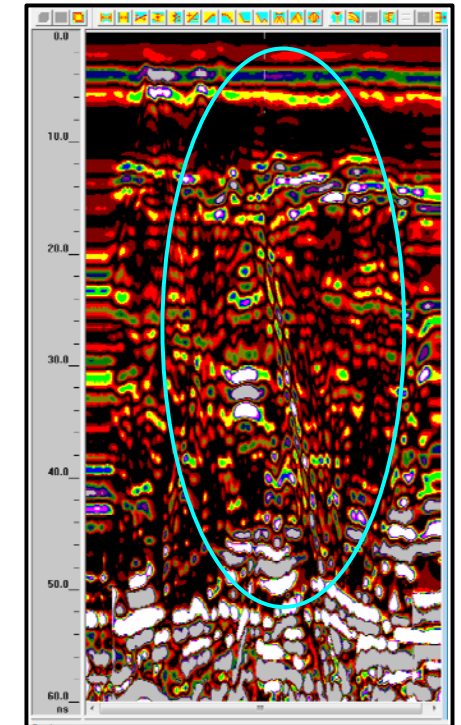
- PUE PROPOSED UTILITY EASEMENT
- - - EXISTING ROW
- - - EXISTING PROPERTY BOUNDARY
- R/W PROPOSED ROW
- E PROPOSED CONST. EASEMENT
- DUE PROP. DRAINAGE UTIL. EASEMENT
- - - PROPOSED SS CUT LINE
- - - PROPOSED SS FILL LINE
- - - PROPOSED SS TRANSITION LINE
- PROPOSED DRAINAGE PIPING
- PDE PROPOSED DRAINAGE EASEMENT
- YELLOW ZONE REPRESENTS GEOPHYSICAL SURVEY AREA, CONTOURS ARE EM61 RESULTS (METALLIC RESPONSES)




<small>TITLE</small>	OVERLAY OF EM61 CONTOUR MAP ON ENGINEERING PLANS	
<small>PROJECT</small>	NCDOT ROW PROJECT R-2501C (34437.1.1) FAST TRACK PROPERTIES, INC. - PARCEL 033 U.S. 1, RICHMOND COUNTY, NORTH CAROLINA	
	503 INDUSTRIAL AVENUE GREENSBORO, NC 27406 336.335.3174 (p) 336.691.0648 (f) License # C1251 Eng. / #C257 Geology	
<small>DATE:</small> 12-19-13	<small>REVISION NO.</small> 0	
<small>PYRAMID PROJECT NO.</small> 2012-278	<small>FIGURE NO.</small> 3	



Approximate Location of GPR Transect



GPR Transect 1
Possible Metallic Debris

TITLE	PARCEL 033: GPR TRANSECT LOCATION AND IMAGE	
PROJECT	NCDOT PROJECT R-2501C (34437.1.1) ROCKINGHAM, RICHMOND COUNTY, NC	
	 503 INDUSTRIAL AVENUE GREENSBORO, NC 27460 (336) 335-3174 (p) (336) 691-0648 (f) License # C1251 Eng. / License # C257 Geology	
DATE	1/6/2014	CLIENT NCDOT
PYRAMID PROJECT #:	2013-278	FIGURE 4

APPENDIX C

APPENDIX D

APPENDIX E

December 31, 2013

Chemical Testing Engineer
NCDOT
Materials & Tests Unit
1801 Blue Ridge Road
Raleigh, NC 27607

RE: Project: RICH. CO. 033 WSB #34437.1.1
Pace Project No.: 92184286

Dear Chemical Engineer:

Enclosed are the analytical results for sample(s) received by the laboratory on December 20, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Analyses were performed at the Pace Analytical Services location indicated on the sample analyte page for analysis unless otherwise footnoted.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jon D Bradley

jon.bradley@pacelabs.com
Project Manager

Enclosures

cc: Tim Leatherman, Pyramid



REPORT OF LABORATORY ANALYSIS

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2225 Riverside Dr.
Asheville, NC 28804
(828)254-7176

Pace Analytical Services, Inc.
9800 Kinsey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

CERTIFICATIONS

Project: RICH. CO. 033 WSB #34437.1.1
Pace Project No.: 92184286

Charlotte Certification IDs

9800 Kinsey Ave. Ste 100, Huntersville, NC 28078
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12
South Carolina Certification #: 99006001

Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
West Virginia Certification #: 357
Virginia/VELAP Certification #: 460221

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 (704)875-9092

SAMPLE ANALYTE COUNT

Project: RICH. CO. 033 WSB #34437.1.1
 Pace Project No.: 92184286

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92184286001	33.2(2.5-5)	EPA 8015 Modified	NU1	2	PASI-C
		EPA 8015 Modified	GAW	2	PASI-C
		ASTM D2974-87	TNM	1	PASI-C
92184286002	33.2(TW)	SM 6200B	CAH	63	PASI-C

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PROJECT NARRATIVE

Project: RICH. CO. 033 WSB #34437.1.1

Pace Project No.: 92184286

Method: EPA 8015 Modified
Description: 8015 GCS THC-Diesel
Client: NCDOT East Central
Date: December 31, 2013

General Information:

1 sample was analyzed for EPA 8015 Modified. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3546 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: RICH. CO. 033 WSB #34437.1.1

Pace Project No.: 92184286

Method: EPA 8015 Modified

Description: Gasoline Range Organics

Client: NCDOT East Central

Date: December 31, 2013

General Information:

1 sample was analyzed for EPA 8015 Modified. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 5035A/5030B with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: RICH. CO. 033 WSB #34437.1.1

Pace Project No.: 92184286

Method: SM 6200B

Description: 6200B MSV

Client: NCDOT East Central

Date: December 31, 2013

General Information:

1 sample was analyzed for SM 6200B. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RICH. CO. 033 WSB #34437.1.1

Pace Project No.: 92184286

Sample: 33.2(2.5-5) **Lab ID: 92184286001** Collected: 12/16/13 15:30 Received: 12/20/13 14:15 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS THC-Diesel		Analytical Method: EPA 8015 Modified Preparation Method: EPA 3546						
Diesel Components	ND	mg/kg	5.5	1	12/20/13 18:42	12/23/13 16:41	68334-30-5	
Surrogates								
n-Pentacosane (S)	68	%	41-119	1	12/20/13 18:42	12/23/13 16:41	629-99-2	
Gasoline Range Organics		Analytical Method: EPA 8015 Modified Preparation Method: EPA 5035A/5030B						
Gasoline Range Organics	ND	mg/kg	4.6	1	12/30/13 14:50	12/30/13 20:48	8006-61-9	
Surrogates								
4-Bromofluorobenzene (S)	100	%	70-167	1	12/30/13 14:50	12/30/13 20:48	460-00-4	
Percent Moisture		Analytical Method: ASTM D2974-87						
Percent Moisture	9.2	%	0.10	1		12/28/13 09:52		

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ANALYTICAL RESULTS

Project: RICH. CO. 033 WSB #34437.1.1

Pace Project No.: 92184286

Sample: 33.2(TW)	Lab ID: 92184286002	Collected: 12/17/13 08:30	Received: 12/20/13 14:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6200B MSV		Analytical Method: SM 6200B						
Benzene	ND ug/L		0.50	1		12/24/13 22:14	71-43-2	
Bromobenzene	ND ug/L		0.50	1		12/24/13 22:14	108-86-1	
Bromochloromethane	ND ug/L		0.50	1		12/24/13 22:14	74-97-5	
Bromodichloromethane	ND ug/L		0.50	1		12/24/13 22:14	75-27-4	
Bromoform	ND ug/L		0.50	1		12/24/13 22:14	75-25-2	
Bromomethane	ND ug/L		5.0	1		12/24/13 22:14	74-83-9	
n-Butylbenzene	ND ug/L		0.50	1		12/24/13 22:14	104-51-8	
sec-Butylbenzene	ND ug/L		0.50	1		12/24/13 22:14	135-98-8	
tert-Butylbenzene	ND ug/L		0.50	1		12/24/13 22:14	98-06-6	
Carbon tetrachloride	ND ug/L		0.50	1		12/24/13 22:14	56-23-5	
Chlorobenzene	ND ug/L		0.50	1		12/24/13 22:14	108-90-7	
Chloroethane	ND ug/L		1.0	1		12/24/13 22:14	75-00-3	
Chloroform	ND ug/L		0.50	1		12/24/13 22:14	67-66-3	
Chloromethane	ND ug/L		1.0	1		12/24/13 22:14	74-87-3	
2-Chlorotoluene	ND ug/L		0.50	1		12/24/13 22:14	95-49-8	
4-Chlorotoluene	ND ug/L		0.50	1		12/24/13 22:14	106-43-4	
1,2-Dibromo-3-chloropropane	ND ug/L		1.0	1		12/24/13 22:14	96-12-8	
Dibromochloromethane	ND ug/L		0.50	1		12/24/13 22:14	124-48-1	
1,2-Dibromoethane (EDB)	ND ug/L		0.50	1		12/24/13 22:14	106-93-4	
Dibromomethane	ND ug/L		0.50	1		12/24/13 22:14	74-95-3	
1,2-Dichlorobenzene	ND ug/L		0.50	1		12/24/13 22:14	95-50-1	
1,3-Dichlorobenzene	ND ug/L		0.50	1		12/24/13 22:14	541-73-1	
1,4-Dichlorobenzene	ND ug/L		0.50	1		12/24/13 22:14	106-46-7	
Dichlorodifluoromethane	ND ug/L		0.50	1		12/24/13 22:14	75-71-8	
1,1-Dichloroethane	ND ug/L		0.50	1		12/24/13 22:14	75-34-3	
1,2-Dichloroethane	ND ug/L		0.50	1		12/24/13 22:14	107-06-2	
1,1-Dichloroethene	ND ug/L		0.50	1		12/24/13 22:14	75-35-4	
cis-1,2-Dichloroethene	ND ug/L		0.50	1		12/24/13 22:14	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		0.50	1		12/24/13 22:14	156-60-5	
1,2-Dichloropropane	ND ug/L		0.50	1		12/24/13 22:14	78-87-5	
1,3-Dichloropropane	ND ug/L		0.50	1		12/24/13 22:14	142-28-9	
2,2-Dichloropropane	ND ug/L		0.50	1		12/24/13 22:14	594-20-7	
1,1-Dichloropropene	ND ug/L		0.50	1		12/24/13 22:14	563-58-6	
cis-1,3-Dichloropropene	ND ug/L		0.50	1		12/24/13 22:14	10061-01-5	
trans-1,3-Dichloropropene	ND ug/L		0.50	1		12/24/13 22:14	10061-02-6	
Diisopropyl ether	ND ug/L		0.50	1		12/24/13 22:14	108-20-3	
Ethylbenzene	ND ug/L		0.50	1		12/24/13 22:14	100-41-4	
Hexachloro-1,3-butadiene	ND ug/L		2.0	1		12/24/13 22:14	87-68-3	
Isopropylbenzene (Cumene)	ND ug/L		0.50	1		12/24/13 22:14	98-82-8	
Methylene Chloride	ND ug/L		2.0	1		12/24/13 22:14	75-09-2	
Methyl-tert-butyl ether	ND ug/L		0.50	1		12/24/13 22:14	1634-04-4	
Naphthalene	ND ug/L		2.0	1		12/24/13 22:14	91-20-3	
n-Propylbenzene	ND ug/L		0.50	1		12/24/13 22:14	103-65-1	
Styrene	ND ug/L		0.50	1		12/24/13 22:14	100-42-5	
1,1,1,2-Tetrachloroethane	ND ug/L		0.50	1		12/24/13 22:14	630-20-6	
1,1,1,2,2-Tetrachloroethane	ND ug/L		0.50	1		12/24/13 22:14	79-34-5	
Tetrachloroethene	ND ug/L		0.50	1		12/24/13 22:14	127-18-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RICH. CO. 033 WSB #34437.1.1

Pace Project No.: 92184286

Sample: 33.2(TW)		Lab ID: 92184286002	Collected: 12/17/13 08:30	Received: 12/20/13 14:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6200B MSV		Analytical Method: SM 6200B						
Toluene	ND	ug/L	0.50	1		12/24/13 22:14	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	2.0	1		12/24/13 22:14	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	2.0	1		12/24/13 22:14	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/24/13 22:14	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/24/13 22:14	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		12/24/13 22:14	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		12/24/13 22:14	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	0.50	1		12/24/13 22:14	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/L	0.50	1		12/24/13 22:14	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	0.50	1		12/24/13 22:14	108-67-8	
Vinyl chloride	ND	ug/L	1.0	1		12/24/13 22:14	75-01-4	
m&p-Xylene	ND	ug/L	1.0	1		12/24/13 22:14	179601-23-1	
o-Xylene	ND	ug/L	0.50	1		12/24/13 22:14	95-47-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	105 %		70-130	1		12/24/13 22:14	17060-07-0	
4-Bromofluorobenzene (S)	94 %		70-130	1		12/24/13 22:14	460-00-4	
Toluene-d8 (S)	101 %		70-130	1		12/24/13 22:14	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: RICH. CO. 033 WSB #34437.1.1

Pace Project No.: 92184286

QC Batch:	GCV/7658	Analysis Method:	EPA 8015 Modified
QC Batch Method:	EPA 5035A/5030B	Analysis Description:	Gasoline Range Organics
Associated Lab Samples:	92184286001		

METHOD BLANK: 1114325 Matrix: Solid
Associated Lab Samples: 92184286001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Gasoline Range Organics	mg/kg	ND	6.0	12/30/13 20:25	
4-Bromofluorobenzene (S)	%	103	70-167	12/30/13 20:25	

LABORATORY CONTROL SAMPLE: 1114326

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Gasoline Range Organics	mg/kg	49.7	49.5	100	70-165	
4-Bromofluorobenzene (S)	%			103	70-167	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1114327 1114328

Parameter	Units	92184283001 Result	MS		MSD		% Rec		% Rec Limits	RPD	Qual
			Spike Conc.	MS Result	MSD Result	% Rec	% Rec				
Gasoline Range Organics	mg/kg	ND	34.7	34.7	38.2	38.4	110	111	47-187	1	
4-Bromofluorobenzene (S)	%						107	102	70-167		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: RICH. CO. 033 WSB #34437.1.1

Pace Project No.: 92184286

QC Batch: MSV/25363 Analysis Method: SM 6200B
QC Batch Method: SM 6200B Analysis Description: 6200B MSV
Associated Lab Samples: 92184286002

METHOD BLANK: 1112442 Matrix: Water
Associated Lab Samples: 92184286002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	0.50	12/24/13 16:42	
1,1,1-Trichloroethane	ug/L	ND	0.50	12/24/13 16:42	
1,1,2,2-Tetrachloroethane	ug/L	ND	0.50	12/24/13 16:42	
1,1,2-Trichloroethane	ug/L	ND	0.50	12/24/13 16:42	
1,1-Dichloroethane	ug/L	ND	0.50	12/24/13 16:42	
1,1-Dichloroethene	ug/L	ND	0.50	12/24/13 16:42	
1,1-Dichloropropene	ug/L	ND	0.50	12/24/13 16:42	
1,2,3-Trichlorobenzene	ug/L	ND	2.0	12/24/13 16:42	
1,2,3-Trichloropropane	ug/L	ND	0.50	12/24/13 16:42	
1,2,4-Trichlorobenzene	ug/L	ND	2.0	12/24/13 16:42	
1,2,4-Trimethylbenzene	ug/L	ND	0.50	12/24/13 16:42	
1,2-Dibromo-3-chloropropane	ug/L	ND	1.0	12/24/13 16:42	
1,2-Dibromoethane (EDB)	ug/L	ND	0.50	12/24/13 16:42	
1,2-Dichlorobenzene	ug/L	ND	0.50	12/24/13 16:42	
1,2-Dichloroethane	ug/L	ND	0.50	12/24/13 16:42	
1,2-Dichloropropane	ug/L	ND	0.50	12/24/13 16:42	
1,3,5-Trimethylbenzene	ug/L	ND	0.50	12/24/13 16:42	
1,3-Dichlorobenzene	ug/L	ND	0.50	12/24/13 16:42	
1,3-Dichloropropane	ug/L	ND	0.50	12/24/13 16:42	
1,4-Dichlorobenzene	ug/L	ND	0.50	12/24/13 16:42	
2,2-Dichloropropane	ug/L	ND	0.50	12/24/13 16:42	
2-Chlorotoluene	ug/L	ND	0.50	12/24/13 16:42	
4-Chlorotoluene	ug/L	ND	0.50	12/24/13 16:42	
Benzene	ug/L	ND	0.50	12/24/13 16:42	
Bromobenzene	ug/L	ND	0.50	12/24/13 16:42	
Bromochloromethane	ug/L	ND	0.50	12/24/13 16:42	
Bromodichloromethane	ug/L	ND	0.50	12/24/13 16:42	
Bromoform	ug/L	ND	0.50	12/24/13 16:42	
Bromomethane	ug/L	ND	5.0	12/24/13 16:42	
Carbon tetrachloride	ug/L	ND	0.50	12/24/13 16:42	
Chlorobenzene	ug/L	ND	0.50	12/24/13 16:42	
Chloroethane	ug/L	ND	1.0	12/24/13 16:42	
Chloroform	ug/L	ND	0.50	12/24/13 16:42	
Chloromethane	ug/L	ND	1.0	12/24/13 16:42	
cis-1,2-Dichloroethene	ug/L	ND	0.50	12/24/13 16:42	
cis-1,3-Dichloropropene	ug/L	ND	0.50	12/24/13 16:42	
Dibromochloromethane	ug/L	ND	0.50	12/24/13 16:42	
Dibromomethane	ug/L	ND	0.50	12/24/13 16:42	
Dichlorodifluoromethane	ug/L	ND	0.50	12/24/13 16:42	
Diisopropyl ether	ug/L	ND	0.50	12/24/13 16:42	
Ethylbenzene	ug/L	ND	0.50	12/24/13 16:42	
Hexachloro-1,3-butadiene	ug/L	ND	2.0	12/24/13 16:42	
Isopropylbenzene (Cumene)	ug/L	ND	0.50	12/24/13 16:42	

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QUALITY CONTROL DATA

Project: RICH. CO. 033 WSB #34437.1.1

Pace Project No.: 92184286

METHOD BLANK: 1112442

Matrix: Water

Associated Lab Samples: 92184286002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
m&p-Xylene	ug/L	ND	1.0	12/24/13 16:42	
Methyl-tert-butyl ether	ug/L	ND	0.50	12/24/13 16:42	
Methylene Chloride	ug/L	ND	2.0	12/24/13 16:42	
n-Butylbenzene	ug/L	ND	0.50	12/24/13 16:42	
n-Propylbenzene	ug/L	ND	0.50	12/24/13 16:42	
Naphthalene	ug/L	ND	2.0	12/24/13 16:42	
o-Xylene	ug/L	ND	0.50	12/24/13 16:42	
sec-Butylbenzene	ug/L	ND	0.50	12/24/13 16:42	
Styrene	ug/L	ND	0.50	12/24/13 16:42	
tert-Butylbenzene	ug/L	ND	0.50	12/24/13 16:42	
Tetrachloroethene	ug/L	ND	0.50	12/24/13 16:42	
Toluene	ug/L	ND	0.50	12/24/13 16:42	
trans-1,2-Dichloroethene	ug/L	ND	0.50	12/24/13 16:42	
trans-1,3-Dichloropropene	ug/L	ND	0.50	12/24/13 16:42	
Trichloroethene	ug/L	ND	0.50	12/24/13 16:42	
Trichlorofluoromethane	ug/L	ND	1.0	12/24/13 16:42	
Vinyl chloride	ug/L	ND	1.0	12/24/13 16:42	
1,2-Dichloroethane-d4 (S)	%	96	70-130	12/24/13 16:42	
4-Bromofluorobenzene (S)	%	95	70-130	12/24/13 16:42	
Toluene-d8 (S)	%	103	70-130	12/24/13 16:42	

LABORATORY CONTROL SAMPLE: 1112443

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	47.5	95	60-140	
1,1,1-Trichloroethane	ug/L	50	43.3	87	60-140	
1,1,2,2-Tetrachloroethane	ug/L	50	46.9	94	60-140	
1,1,2-Trichloroethane	ug/L	50	48.7	97	60-140	
1,1-Dichloroethane	ug/L	50	45.5	91	60-140	
1,1-Dichloroethene	ug/L	50	40.2	80	60-140	
1,1-Dichloropropene	ug/L	50	47.5	95	60-140	
1,2,3-Trichlorobenzene	ug/L	50	48.1	96	60-140	
1,2,3-Trichloropropane	ug/L	50	44.6	89	60-140	
1,2,4-Trichlorobenzene	ug/L	50	47.5	95	60-140	
1,2,4-Trimethylbenzene	ug/L	50	47.0	94	60-140	
1,2-Dibromo-3-chloropropane	ug/L	50	52.8	106	60-140	
1,2-Dibromoethane (EDB)	ug/L	50	48.0	96	60-140	
1,2-Dichlorobenzene	ug/L	50	45.6	91	60-140	
1,2-Dichloroethane	ug/L	50	42.4	85	60-140	
1,2-Dichloropropane	ug/L	50	47.6	95	60-140	
1,3,5-Trimethylbenzene	ug/L	50	47.0	94	60-140	
1,3-Dichlorobenzene	ug/L	50	43.9	88	60-140	
1,3-Dichloropropane	ug/L	50	46.9	94	60-140	
1,4-Dichlorobenzene	ug/L	50	43.9	88	60-140	
2,2-Dichloropropane	ug/L	50	45.2	90	60-140	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: RICH. CO. 033 WSB #34437.1.1

Pace Project No.: 92184286

LABORATORY CONTROL SAMPLE: 1112443

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Chlorotoluene	ug/L	50	43.7	87	60-140	
4-Chlorotoluene	ug/L	50	46.0	92	60-140	
Benzene	ug/L	50	52.8	106	60-140	
Bromobenzene	ug/L	50	45.2	90	60-140	
Bromochloromethane	ug/L	50	46.1	92	60-140	
Bromodichloromethane	ug/L	50	46.3	93	60-140	
Bromoform	ug/L	50	46.1	92	60-140	
Bromomethane	ug/L	50	60.5	121	60-140	
Carbon tetrachloride	ug/L	50	44.3	89	60-140	
Chlorobenzene	ug/L	50	44.1	88	60-140	
Chloroethane	ug/L	50	37.7	75	60-140	
Chloroform	ug/L	50	43.9	88	60-140	
Chloromethane	ug/L	50	50.0	100	60-140	
cis-1,2-Dichloroethene	ug/L	50	45.2	90	60-140	
cis-1,3-Dichloropropene	ug/L	50	52.1	104	60-140	
Dibromochloromethane	ug/L	50	50.8	102	60-140	
Dibromomethane	ug/L	50	45.8	92	60-140	
Dichlorodifluoromethane	ug/L	50	33.4	67	60-140	
Diisopropyl ether	ug/L	50	50.3	101	60-140	
Ethylbenzene	ug/L	50	44.5	89	60-140	
Hexachloro-1,3-butadiene	ug/L	50	47.3	95	60-140	
Isopropylbenzene (Cumene)	ug/L	50	47.6	95	60-140	
m&p-Xylene	ug/L	100	91.6	92	60-140	
Methyl-tert-butyl ether	ug/L	50	49.1	98	60-140	
Methylene Chloride	ug/L	50	52.0	104	60-140	
n-Butylbenzene	ug/L	50	47.5	95	60-140	
n-Propylbenzene	ug/L	50	47.0	94	60-140	
Naphthalene	ug/L	50	50.4	101	60-140	
o-Xylene	ug/L	50	46.3	93	60-140	
sec-Butylbenzene	ug/L	50	47.5	95	60-140	
Styrene	ug/L	50	50.8	102	60-140	
tert-Butylbenzene	ug/L	50	47.1	94	60-140	
Tetrachloroethene	ug/L	50	43.9	88	60-140	
Toluene	ug/L	50	51.3	103	60-140	
trans-1,2-Dichloroethene	ug/L	50	44.3	89	60-140	
trans-1,3-Dichloropropene	ug/L	50	53.6	107	60-140	
Trichloroethene	ug/L	50	43.6	87	60-140	
Trichlorofluoromethane	ug/L	50	32.5	65	60-140	
Vinyl chloride	ug/L	50	43.4	87	60-140	
1,2-Dichloroethane-d4 (S)	%			93	70-130	
4-Bromofluorobenzene (S)	%			99	70-130	
Toluene-d8 (S)	%			102	70-130	

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QUALITY CONTROL DATA

Project: RICH. CO. 033 WSB #34437.1.1

Pace Project No.: 92184286

Parameter	92183935010		MS		MSD		MS		MSD		% Rec	Limits	RPD	Qual
	Units	Result	Spike Conc.	MSD Spike Conc.	Result	MSD Result	% Rec	MSD % Rec						
1,1,1,2-Tetrachloroethane	ug/L	ND	20	20	21.8	20.6	109	103	60-140	5				
1,1,1-Trichloroethane	ug/L	ND	20	20	23.3	21.5	117	108	60-140	8				
1,1,2,2-Tetrachloroethane	ug/L	ND	20	20	21.2	19.6	106	98	60-140	8				
1,1,2-Trichloroethane	ug/L	ND	20	20	22.6	20.6	113	103	60-140	10				
1,1-Dichloroethane	ug/L	ND	20	20	22.3	20.5	112	103	60-140	8				
1,1-Dichloroethene	ug/L	ND	20	20	22.1	20.5	110	103	60-140	7				
1,1-Dichloropropene	ug/L	ND	20	20	24.3	21.7	121	109	60-140	11				
1,2,3-Trichlorobenzene	ug/L	ND	20	20	19.5	18.4	98	92	60-140	6				
1,2,3-Trichloropropane	ug/L	ND	20	20	21.1	19.2	106	96	60-140	9				
1,2,4-Trichlorobenzene	ug/L	ND	20	20	18.9	17.7	94	88	60-140	7				
1,2,4-Trimethylbenzene	ug/L	ND	20	20	20.9	19.5	105	97	60-140	7				
1,2-Dibromo-3-chloropropane	ug/L	ND	20	20	22.1	20.6	110	103	60-140	7				
1,2-Dibromoethane (EDB)	ug/L	ND	20	20	21.6	19.6	108	98	60-140	10				
1,2-Dichlorobenzene	ug/L	ND	20	20	20.4	18.5	102	93	60-140	10				
1,2-Dichloroethane	ug/L	ND	20	20	21.9	19.7	109	98	60-140	11				
1,2-Dichloropropane	ug/L	1.0	20	20	23.0	21.3	110	102	60-140	8				
1,3,5-Trimethylbenzene	ug/L	ND	20	20	21.0	19.8	105	99	60-140	6				
1,3-Dichlorobenzene	ug/L	ND	20	20	19.5	18.1	97	91	60-140	7				
1,3-Dichloropropane	ug/L	ND	20	20	21.4	19.8	107	99	60-140	7				
1,4-Dichlorobenzene	ug/L	ND	20	20	19.5	18.0	98	90	60-140	8				
2,2-Dichloropropane	ug/L	ND	20	20	21.2	19.4	106	97	60-140	8				
2-Chlorotoluene	ug/L	ND	20	20	19.9	18.7	100	94	60-140	6				
4-Chlorotoluene	ug/L	ND	20	20	20.6	19.2	103	96	60-140	7				
Benzene	ug/L	ND	20	20	23.0	21.9	115	110	60-140	5				
Bromobenzene	ug/L	ND	20	20	20.2	18.5	101	93	60-140	9				
Bromochloromethane	ug/L	ND	20	20	23.0	21.4	115	107	60-140	7				
Bromodichloromethane	ug/L	ND	20	20	21.9	19.9	109	100	60-140	9				
Bromoform	ug/L	ND	20	20	19.6	18.1	98	91	60-140	8				
Bromomethane	ug/L	ND	20	20	19.5	19.1	97	95	60-140	2				
Carbon tetrachloride	ug/L	ND	20	20	22.9	21.9	114	109	60-140	4				
Chlorobenzene	ug/L	ND	20	20	20.5	19.1	102	95	60-140	7				
Chloroethane	ug/L	ND	20	20	19.5	17.9	97	89	60-140	9				
Chloroform	ug/L	ND	20	20	22.0	20.7	110	104	60-140	6				
Chloromethane	ug/L	ND	20	20	23.6	24.0	118	120	60-140	2				
cis-1,2-Dichloroethene	ug/L	ND	20	20	22.1	20.4	110	102	60-140	8				
cis-1,3-Dichloropropene	ug/L	ND	20	20	21.6	20.1	108	101	60-140	7				
Dibromochloromethane	ug/L	ND	20	20	22.1	20.5	110	103	60-140	7				
Dibromomethane	ug/L	ND	20	20	21.1	19.4	106	97	60-140	8				
Dichlorodifluoromethane	ug/L	ND	20	20	19.6	18.0	98	90	60-140	8				
Diisopropyl ether	ug/L	ND	20	20	23.9	22.2	119	111	60-140	7				
Ethylbenzene	ug/L	ND	20	20	20.8	19.8	104	99	60-140	5				
Hexachloro-1,3-butadiene	ug/L	ND	20	20	20.7	20.8	103	104	60-140	0				
Isopropylbenzene (Cumene)	ug/L	ND	20	20	21.7	20.8	109	104	60-140	4				
m&p-Xylene	ug/L	ND	40	40	42.9	40.4	107	101	60-140	6				
Methyl-tert-butyl ether	ug/L	ND	20	20	23.3	21.1	117	105	60-140	10				
Methylene Chloride	ug/L	ND	20	20	24.4	22.6	122	113	60-140	8				
n-Butylbenzene	ug/L	ND	20	20	20.3	19.6	101	98	60-140	3				

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QUALITY CONTROL DATA

Project: RICH. CO. 033 WSB #34437.1.1

Pace Project No.: 92184286

Parameter	MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1112444			1112445			MS % Rec	MSD % Rec	% Rec	Limits	RPD	Qual
	92183935010 Units	MS Spike Result	MSD Spike Conc.	MS Result	MSD Result	MSD Conc.						
n-Propylbenzene	ug/L	ND	20	20	20.9	19.9	104	100	60-140	5		
Naphthalene	ug/L	ND	20	20	20.3	18.7	102	94	60-140	8		
o-Xylene	ug/L	ND	20	20	21.3	19.8	107	99	60-140	7		
sec-Butylbenzene	ug/L	ND	20	20	21.0	20.4	105	102	60-140	3		
Styrene	ug/L	ND	20	20	22.6	21.1	113	106	60-140	7		
tert-Butylbenzene	ug/L	ND	20	20	21.2	20.4	106	102	60-140	4		
Tetrachloroethene	ug/L	ND	20	20	20.4	19.2	102	96	60-140	6		
Toluene	ug/L	ND	20	20	22.8	21.2	114	106	60-140	7		
trans-1,2-Dichloroethene	ug/L	ND	20	20	22.4	21.1	112	105	60-140	6		
trans-1,3-Dichloropropene	ug/L	ND	20	20	22.9	21.3	114	106	60-140	7		
Trichloroethene	ug/L	ND	20	20	21.5	20.0	107	100	60-140	7		
Trichlorofluoromethane	ug/L	ND	20	20	21.3	19.1	106	95	60-140	11		
Vinyl chloride	ug/L	0.38J	20	20	22.1	21.4	109	105	60-140	3		
1,2-Dichloroethane-d4 (S)	%						102	99	70-130			
4-Bromofluorobenzene (S)	%						99	99	70-130			
Toluene-d8 (S)	%						100	102	70-130			

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QUALITY CONTROL DATA

Project: RICH. CO. 033 WSB #34437.1.1
 Pace Project No.: 92184286

QC Batch: OEXT/25303 Analysis Method: EPA 8015 Modified
 QC Batch Method: EPA 3546 Analysis Description: 8015 Solid GCSV
 Associated Lab Samples: 92184286001

METHOD BLANK: 1111061 Matrix: Solid
 Associated Lab Samples: 92184286001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Components	mg/kg	ND	5.0	12/23/13 12:23	
n-Pentacosane (S)	%	89	41-119	12/23/13 12:23	

LABORATORY CONTROL SAMPLE: 1111062

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Diesel Components	mg/kg	66.7	49.8	75	49-113	
n-Pentacosane (S)	%			81	41-119	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1111063 1111064

Parameter	Units	92184266001 Result	MS		MSD		% Rec		% Rec Limits	RPD	Qual
			Spike Conc.	MS Result	MSD Result	% Rec	% Rec				
Diesel Components	mg/kg	ND	78.4	78.4	54.8	62.2	68	77	10-146	13	
n-Pentacosane (S)	%						77	82	41-119		

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QUALIFIERS

Project: RICH. CO. 033 WSB #34437.1.1

Pace Project No.: 92184286

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Acid preservation may not be appropriate for 2-Chloroethylvinyl ether, Styrene, and Vinyl chloride.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-C Pace Analytical Services - Charlotte

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: RICH. CO. 033 WSB #34437.1.1

Pace Project No.: 92184286

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92184286001	33.2(2.5-5)	EPA 3546	OEXT/25303	EPA 8015 Modified	GCSV/16310
92184286001	33.2(2.5-5)	EPA 5035A/5030B	GCV/7658	EPA 8015 Modified	GCV/7661
92184286002	33.2(TW)	SM 6200B	MSV/25363		
92184286001	33.2(2.5-5)	ASTM D2974-87	PMST/6124		

REPORT OF LABORATORY ANALYSIS

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Client Name: Pyramid Environmental

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Custody Seal on Cooler/Box Present: yes no Seals intact: yes no

Optional
Proj. Due Date:
Proj. Name:

Packing Material: Bubble Wrap Bubble Bags None Other _____

Thermometer Used: IR Gun T1102 **T1301** Type of Ice: **Wet** Blue None Samples on ice, cooling process has begun

Temp Correction Factor **T1102: No Correction T1301: No Correction**

Corrected Cooler Temp.: 2.3 °C Biological Tissue is Frozen: Yes No **N/A**

Date and Initials of person examining contents: EJW/20/13

Temp should be above freezing to 6°C

Comments:

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes date/time/ID/Analysis Matrix:		
All containers needing preservation have been checked.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	15.
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

SCURF Review:	<u>JPB</u>	Date:	<u>12/20/13</u>
SRF Review:	<u>JDB</u>	Date:	<u>12/20/13</u>

WO# : 92184286

92184286

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A Required Client Information: Company: <u>Pyramid Environmental</u> P.O. Box <u>16265</u> <u>Greensboro, NC 27416</u> Email: <u>info@pyramidenv.com</u> Phone: <u>336-335-3711</u> Fax: Requested Due Date (AET): <u>None</u>		Section B Required Project Information: Report To: <u>Jim Leatherman - Pyramid</u> Copy To: <u>NC DOT</u> Purchase Order # <u>WBS # 34437.1</u> Project Name: <u>NC DOT Richmond City Part 1 033</u> Project Number: <u>2013-278#34437.1</u>		Section C Invoice Information: Attention: <u>NC DOT</u> Company Name: <u>NC DOT</u> Address: Pace Quote Reference: <u>WBS # 34437.1</u> Pace Project Manager: <u>Jon Bradley</u> Pace Profile #:	
Section D Required Client Information: Matrix Codes MATRIX / CODE Drinking Water DW Waste Water WW Product P Soil/Solid SL Oil OL Wipe WP Air AR Tissue TS Other OT SAMPLE ID (A-Z, 0-9 / +) Sample IDs MUST BE UNIQUE		REGULATORY AGENCY <input type="checkbox"/> NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER <input checked="" type="checkbox"/> UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER Site Location STATE: <u>NC</u>		Page: <u>1</u> of <u>1</u> <u>1667331</u>	

ITEM #	Matrix Codes	SAMPLE ID	MATRIX CODE	SAMPLE TYPE	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
					COMPOSITE START	COMPOSITE END/GRAB							
1	Drinking Water	33-a(2.5-5)	SL-G	(G=GRAB C=COMP)	DATE	TIME		4	Unpreserved	12/10/13	15:30	11:20	Received on
2	Waste Water	33-a(TW)	WT-G		DATE	TIME		4	H ₂ SO ₄	12/10/13	8:30	14:15	Sealed Cooler
3	Product								HCl			14:15	Ice (Y/N)
4	Soil/Solid								HNO ₃				Custody (Y/N)
5	Oil								NaOH				Temp in °C
6	Wipe								Na ₂ S ₂ O ₃				Received on
7	Air								H ₂ SO ₄				Sealed Cooler
8	Tissue								HCl				Custody (Y/N)
9	Other								HNO ₃				Temp in °C
10									NaOH				Received on
11									Na ₂ S ₂ O ₃				Sealed Cooler
12									Other				Custody (Y/N)

Section E ADDITIONAL COMMENTS <u>Jim Leatherman / Pyramid</u> <u>12/10/13</u>		RELINQUISHED BY / AFFILIATION <u>12/10/13</u>		TIME <u>14:15</u>		ACCEPTED BY / AFFILIATION <u>Jack K. Lee</u>		DATE <u>12/10/13</u>		TIME <u>14:15</u>		SAMPLE CONDITIONS <u>Y N Y</u>	
Residual Chlorine (Y/N) <u>0284280</u> Pace Project No/Lab No. <u>0284280</u>													
Requested Analysis Filtered (Y/N)													

SAMPLER NAME AND SIGNATURE
 PRINT Name of SAMPLER: Timothy D. Leatherman
 SIGNATURE of SAMPLER: [Signature]
 DATE Signed (MM/DD/YYYY): 12/10/13

ORIGINAL

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

APPENDIX F
