

Pyramid Environmental & Engineering, P.C. Project # 2018-242
Preliminary Site Assessment (PSA) – Parcel 012 - PHD MEBANE OAKS, LLC (AKA VERAZ FONDO UNO, LLC)

PRELIMINARY SITE ASSESSMENT
PARCEL 012 - PHD MEBANE OAKS, LLC (AKA VERAZ FONDO UNO, LLC)
3886 BRUNDAGE LANE (AKA 1231 MEBANE OAKS ROAD)
MEBANE, ALAMANCE COUNTY, NORTH CAROLINA
STATE PROJECT: I-5711
WBS ELEMENT: 50401.1.FS1
OCTOBER 22, 2018

Report prepared for:


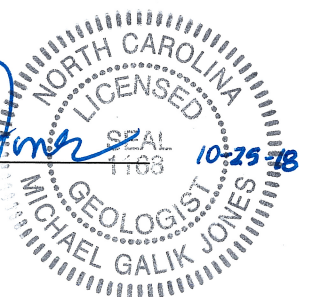
Mr. Gordon Box
GeoEnvironmental Section
Geotechnical Engineering Unit
North Carolina Department of Transportation
1020 Birch Ridge Drive
Raleigh, NC 27610

Report prepared by:



Eric C. Cross, LG
NC License #2181

Report reviewed by:



Michael G. Jones, LG
NC License #1168



PYRAMID ENVIRONMENTAL & ENGINEERING, P.C.
P.O. BOX 16265
GREENSBORO, NC 27416-0265
(336) 335-3174

C-257 – Geology
C-1251 – Engineering

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Acronyms

BLS	Below Land Surface
BTEX	Benzene, Toluene, Ethylbenzene, & Xylenes
CADD	Computer Aided Design and Drafting
COC	Chain of Custody
CSA.....	Comprehensive Site Assessment
DEQ	Department of Environmental Quality
DRO	Diesel Range Organics
DWM	Division of Waste Management
EM.....	Electromagnetic (as with EM-61)
EPA.....	Environmental Protection Agency
GRO	Gasoline Range Organics
GCLs.....	Gross Contaminant Levels
GPR.....	Ground Penetrating Radar
HASP	Health & Safety Plan
MSCC	Maximum Soil Contaminant Concentration
MTBE	Methyl Tertiary Butyl Ether
µg/L.....	Micrograms per Liter
mg/kg	Milligram per kilogram
NPDES.....	National Pollution Discharge Elimination System
NCAC	North Carolina Administrative Code
NCDOT.....	North Carolina Department of Transportation
OSHA.....	Occupational Safety and Health Administration
OVA.....	Organic Vapor Analyzer
PPM.....	Parts Per Million
PID	Photo-ionization Detector
PSA	Preliminary Site Assessment
PVC.....	Poly-vinyl Chloride
RFP	Request for Proposal
ROW	Right of Way
SVOCs	Semi-Volatile Organic Compounds
TW	Temporary Well
TPH.....	Total Petroleum Hydrocarbons
UVF.....	Ultraviolet Fluorescence (UVF) QED Analyzer
UST.....	Underground Storage Tank
US EPA.....	United States Environmental Protection Agency
VOCs.....	Volatile Organic Compounds

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PARCEL 012 - PHD MEBANE OAKS, LLC (AKA VERAZ FONDO UNO, LLC)
3886 BRUNDAGE LANE (AKA 1231 MEBANE OAKS ROAD)
MEBANE, ALAMANCE 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 012, owned by PHD MEBANE OAKS, LLC (AKA VERAZ FONDO UNO, LLC). The property currently contains a commercial building (strip mall with multiple stores) surrounded by asphalt and grass medians at 3886 Brundage Lane (AKA 1231 Mebane Oaks Road), Mebane, NC. This PSA was conducted on behalf of the North Carolina Department of Transportation (NCDOT) in accordance with Pyramid's August 9, 2018, technical proposal. This PSA is a part of State Project I-5711.

The purpose of this assessment was to determine the presence or absence of underground storage tanks (USTs) and impacted soils between the existing edge of pavement and the proposed Right-Of-Way (ROW) and/or easements, whichever distance was greater. 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.

The following statements summarize the results of the PSA:

- **Site History:** Pyramid interviewed DEQ personnel, interviewed property owners, and reviewed aerial photographs to assess past uses of the property. Pyramid reviewed historical aerial photographs obtained from Google Earth dating back to 1993. Historical information reviewed as part of the PSA indicated that the property formerly operated as a gas station (Mebane Oaks Shell and then Express Mart #21) in the 1990s and early 2000s. The aerial photographs show the original Mebane Oaks Shell in 1993, with a replacement building constructed and road work completed between 1993 and 1998. The service station was demolished prior to 2012, and the current commercial building was constructed between 2012 and 2016. Records review provided the following Facility ID information for the property: Former Facility ID 0-234593, Incident #2999.

On August 31, 2018, Pyramid emailed the Alamance County parcel address (1231 Mebane Oaks Road, Mebane, NC) to Ms. Mindy Leopard, Hydrogeologist with the Department of Environmental Quality (DEQ), UST Section, with a request to investigate any environmental incidents associated with the parcel. Ms. Leopard

responded to the email and verified that Incident #2999 was associated with the property.

Pyramid Environmental was the consultant for TAC, Inc. during the environmental assessment and remediation of this site in association with Incident #2999. The following is a detailed history of the site, extracted from Pyramid's April 2011 *Initial Abatement Action Report (IAAR) and Site Closure Request*:

In 1986, the Alamance Oil Company had a release from a gasoline underground storage tank (UST) at the former Mebane Oaks Shell station. Alamance Oil stopped the leak and started the cleanup immediately. In 1991, TAC, Inc. (TAC) purchased the Alamance Oil Company and continued the cleanup at the site. In 1995, TAC, Inc. excavated over 1,500 tons of contaminated soil from the site and installed a new, advanced UST system with secondary containment. In 1996, Pyramid built a groundwater remediation system that operated until 2002.

In 2007, the DEQ (formerly, the DENR) sent a letter requesting groundwater monitoring for the former Mebane Oaks Shell site. The groundwater sampling was completed in June 2007. The gauging data showed that the groundwater gradient was directly to the south of the former Mebane Oaks Shell station. The groundwater analyses showed the maximum benzene concentration was 94 µg/l (RW-1) and the maximum MTBE concentration was 21 µg/l (RW-4). These concentrations were detected in wells near and down-gradient from the former pump islands, the source of the release.

The down-gradient wells showed no detections of petroleum hydrocarbons. The direction of migration shown in the groundwater was to the south. This migration direction was toward the business properties that were using City of Mebane water supply. The only remaining supply well south of I-40/85 is located 660 feet east of the former Mebane Oaks Shell source area. There are no concentrations approaching the Gross Contamination Levels (GCLs) in any of the monitoring and recovery wells sampled. Since the 2007 groundwater monitoring, the DEQ has required no additional cleanup or monitoring at the site.

The former Mebane Oaks Shell station was connected to water provided by the City of Mebane in June 2010. The connection of the former Mebane Oaks Shell station to the City water system was completed in 2010 by TAC. The connection to City water and disconnection from the on-site well removed the closest supply well to the petroleum source. In 2011, the on-site supply well was abandoned with cement grout.

Based on this work, the site was granted a Notice of No Further Action (NNFA) by the DEQ in June 2011. The NNFA stated that groundwater contamination exceeded the NCAC 2L Standards and is not suitable for water supply, and the

soil exceeded residential Maximum Soil Contaminant Concentrations (MSCCs); therefore, the site is suitable only for industrial/commercial use.

Subsequent to the NNFA, the buildings at the site were demolished and the current commercial building was constructed. Pyramid was not involved in the demolition or construction activities; it is assumed that all monitoring wells on-site were properly abandoned during this process. No visual evidence of any remaining monitoring wells was observed during the PSA.

On September 10, 2018, Pyramid Project Manager Eric Cross performed a site investigation at the property. Mr. Cross did not observe any significant environmental risks on the property at the time of the investigation.

- **Geophysical Survey:** The geophysical investigation consisted of electromagnetic (EM) induction-metal detection and ground penetrating radar (GPR) surveys. A total of twelve EM anomalies were identified. The majority of the EM anomalies were directly attributed to visible cultural features at the ground surface. Several EM anomalies were associated with vehicles, a suspected large buried metal structure, and a suspected utility and were investigated further with GPR. GPR recorded two discreet, perpendicular lateral reflectors across a high-amplitude EM anomaly, consistent with a possible UST. The location of this possible UST correlated to the location of a recovery well vault, suggesting the feature may be related to the buried vault and not a UST. Excavation of the area would be required to verify the true nature of the structure. The possible UST (or well vault) was approximately 7 feet long by 4 feet wide. GPR also recorded evidence of buried debris near the vehicles on the central portion of the site. Collectively, the geophysical data recorded evidence of one possible UST (or a former well vault) at Parcel 12.
- **Limited Soil Assessment:** A total of eight soil borings were performed across the property. Soil samples were screened in the field using an organic vapor analyzer (OVA) and select soil samples were analyzed for Diesel Range Organics (DRO) and Gasoline Range Organics (GRO) using a QED Analyzer. The DEQ action level for TPH-GRO is 50 milligrams per kilogram (mg/kg) and the action level for TPH-DRO is 100 mg/kg. Soil samples were screened with an OVA and select soil samples were analyzed for DRO and GRO using a QED Analyzer. None of the soil samples analyzed exhibited DRO or GRO concentrations above DEQ action levels.
- **Limited Groundwater Assessment:** The water table was not encountered in the upper 8 feet of the soil column that was sampled during this PSA. Review of the NCDOT engineering plans for this parcel indicate that groundwater will not be encountered during construction activities, based on shallow excavations and a

water table depth greater than 8 feet below the ground surface. Therefore, it was not necessary to collect a groundwater sample.

- **Contaminated Soil Volumes:** No evidence of petroleum-impacted soils (DRO/GRO > DEQ Action Levels) was observed during this investigation. Therefore, no recommendations for the treatment, handling, or disposal of such materials are warranted.

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 DEQ Division of Waste Management (DWM) 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 012, owned by PHD MEBANE OAKS, LLC (AKA VERAZ FONDO UNO, LLC). The property currently contains a commercial building (strip mall with multiple stores) surrounded by asphalt and grass medians at 3886 Brundage Lane (AKA 1231 Mebane Oaks Road), Mebane, NC. This PSA was conducted on behalf of the North Carolina Department of Transportation (NCDOT) in accordance with Pyramid's August 9, 2018, technical proposal. This PSA is a part of State Project I-5711.

The purpose of this assessment was to determine the presence or absence of underground storage tanks (USTs) and impacted soils between the existing edge of pavement and the proposed Right-Of-Way (ROW) and/or easements, whichever distance was greater. 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. The location of the subject site is shown on **Figure 1**.

1.1 Background Information

Based on the NCDOT's August 1, 2018, *Request for Technical and Cost Proposal (RFP)*, the PSA was conducted between the existing edge of pavement and the proposed ROW and/or easement lines (whichever distance was greater), 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 across the entire parcel 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.
- If groundwater is likely to be encountered by subsequent excavation required by construction, then Pyramid will attempt to obtain a groundwater sample from the parcel.

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. Pyramid's geophysical staff provided additional private utility locating services to mark the on-site private, buried utilities.

2.0 SITE HISTORY

The NCDOT Pre-Scope comments for Parcel 012 in the RFP documents provided to Pyramid on August 1, 2018, provided the following background information related to the site:

“Formerly Mebane Oaks Shell. Six tanks removed in 1994. Formerly Express Mart # 21. Three tanks removed in 2011. NFA Issued 2011. Site redeveloped and is now a Starbucks Coffee. See WBS 43681.”

Pyramid interviewed DEQ personnel, interviewed property owners, and reviewed aerial photographs to assess past uses of the property. Pyramid reviewed historical aerial photographs obtained from Google Earth dating back to 1993. Aerial photographs ranging from 1993 to 2017 are included in **Appendix A**. Historical information reviewed as part of the PSA indicated that the property formerly operated as a gas station (Mebane Oaks Shell and then Express Mart #21) in the 1990s and early 2000s. The aerial photographs show the original Mebane Oaks Shell in 1993, with a replacement building constructed and road work completed between 1993 and 1998. The service station was demolished prior to 2012, and the current commercial building was constructed between 2012 and 2016. Records review provided the following Facility ID information for the property: Former Facility ID 0-234593, Incident #2999.

On August 31, 2018, Pyramid emailed the Alamance County parcel address (1231 Mebane Oaks Road, Mebane, NC) to Ms. Mindy Lepard, Hydrogeologist with the Department of Environmental Quality (DEQ), UST Section, with a request to investigate any environmental incidents associated with the parcel. Ms. Lepard responded to the email and verified that Incident #2999 was associated with the property.

Pyramid Environmental was the consultant for TAC, Inc. during the environmental assessment and remediation of this site in association with Incident #2999. The following is a detailed history of the site, extracted from Pyramid’s April 2011 *Initial Abatement Action Report (IAAR) and Site Closure Request*:

In 1986, the Alamance Oil Company had a release from a gasoline underground storage tank (UST) at the former Mebane Oaks Shell station. Alamance Oil stopped the leak and started the cleanup immediately. In 1991, TAC, Inc. (TAC) purchased the Alamance Oil Company and continued the cleanup at the site. In 1995, TAC, Inc. excavated over 1,500 tons of contaminated soil from the site and installed a new, advanced UST system with secondary containment. In 1996, Pyramid built a groundwater remediation system that operated until 2002.

In 2007, the DEQ (formerly, the DENR) sent a letter requesting groundwater monitoring for the former Mebane Oaks Shell site. The groundwater sampling was completed in June

2007. The gauging data showed that the groundwater gradient was directly to the south of the former Mebane Oaks Shell station. The groundwater analyses showed the maximum benzene concentration was 94 µg/l (RW-1) and the maximum MTBE concentration was 21 µg/l (RW-4). These concentrations were detected in wells near and down-gradient from the former pump islands, the source of the release.

The down-gradient wells showed no detections of petroleum hydrocarbons. The direction of migration shown in the groundwater was to the south. This migration direction was toward the business properties that were using City of Mebane water supply. The only remaining supply well south of I-40/85 is located 660 feet east of the former Mebane Oaks Shell source area. There are no concentrations approaching the Gross Contamination Levels (GCLs) in any of the monitoring and recovery wells sampled. Since the 2007 groundwater monitoring, the DEQ has required no additional cleanup or monitoring at the site.

The former Mebane Oaks Shell station was connected to water provided by the City of Mebane in June 2010. The connection of the former Mebane Oaks Shell station to the City water system was completed in 2010 by TAC. The connection to City water and disconnection from the on-site well removed the closest supply well to the petroleum source. In 2011, the on-site supply well was abandoned with cement grout.

Based on this work, the site was granted a Notice of No Further Action (NNFA) by the DEQ in June 2011. The NNFA stated that groundwater contamination exceeded the NCAC 2L Standards and is not suitable for water supply, and the soil exceeded residential MSCCs; therefore, the site is suitable only for industrial/commercial use.

Subsequent to the NNFA, the buildings at the site were demolished and the current commercial building was constructed. Pyramid was not involved in the demolition or construction activities; it is assumed that all monitoring wells on-site were properly abandoned during this process. No visual evidence of any remaining monitoring wells was observed during the PSA.

The DEQ NNFA letter, the text portion of Pyramid's April 2011 IAAR Report, and the 2011 24-Hour Release and UST Leak Reporting Form (UST-61) with associated documents are included in **Appendix B**. A full copy of Pyramid's April 2011 IAAR Report is available upon request.

On September 10, 2018, Pyramid Project Manager Eric Cross performed a site investigation at the property. Mr. Cross did not observe any significant environmental risks on the property at the time of the investigation.

3.0 GEOPHYSICAL INVESTIGATION

Pyramid’s classifications of USTs for the purposes of this PSA report are based directly on the geophysical UST ratings provided to us by the NCDOT. These ratings are as follows:

Geophysical Surveys for Underground Storage Tanks on NCDOT Projects			
High Confidence	Intermediate Confidence	Low Confidence	No Confidence
Known UST Active tank - spatial location, orientation, and approximate depth determined by geophysics.	Probable UST Sufficient geophysical data from both magnetic and radar surveys that is characteristic of a tank. Interpretation may be supported by physical evidence such as fill/vent pipe, metal cover plate, asphalt/concrete patch, etc.	Possible UST Sufficient geophysical data from either magnetic or radar surveys that is characteristic of a tank. Additional data is not sufficient enough to confirm or deny the presence of a UST.	Anomaly noted but not characteristic of a UST. Should be noted in the text and may be called out in the figures at the geophysicist’s discretion.

The geophysical investigation consisted of electromagnetic (EM) induction-metal detection and ground penetrating radar (GPR) surveys. A total of twelve EM anomalies were identified. The majority of the EM anomalies were directly attributed to visible cultural features at the ground surface. Several EM anomalies were associated with vehicles, a suspected large buried metal structure, and a suspected utility and were investigated further with GPR. GPR recorded two discreet, perpendicular lateral reflectors across a high-amplitude EM anomaly, consistent with a possible UST. The location of this possible UST correlated to the location of a recovery well vault, suggesting the feature may be related to the buried vault and not a UST. Excavation of the area would be required to verify the true nature of the structure. The possible UST (or well vault) was approximately 7 feet long by 4 feet wide. GPR also recorded evidence of buried debris near the vehicles on the central portion of the site. Collectively, the geophysical data recorded evidence of one possible UST (or a former well vault) at Parcel 12.

The full details of the geophysical investigation are documented in Pyramid’s Geophysical Investigation Report, dated September 17, 2018, which is included as **Appendix C**.

4.0 SOIL SAMPLING ACTIVITIES & RESULTS

4.1 Soil Assessment Field Activities

On October 3, 2018, Pyramid mobilized to the site, drilled soil borings and collected the proposed soil samples for the PSA. Eight (8) soil borings (12-1 through 12-8) were advanced on the subject property. The soil borings were completed using a truck-mounted Geoprobe drill rig. The selected locations were chosen to avoid public utilities along the adjacent roads and private utilities associated with the business while remaining in the proposed ROW and/or easement, or within other areas of concern such as proposed drainage features and areas designated for soil removal 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 an Organic Vapor Analyzer (OVA) approximately every 2 feet, depending on the soil recovery. In general, the soil sample with the highest OVA reading was selected from each boring for QED Ultra-Violet Fluorescence (UVF) laboratory analysis. If field screening detected multiple elevated readings, then additional soil samples from each boring were selectively chosen for UVF analysis. The soil boring logs with the soil descriptions, visual examination, and OVA screening results are included in **Appendix D**. The OVA 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. Petroleum odor was not detected in any of the boring samples 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 RED Lab. The DEQ & NCDOT now accept this instrument as an analytical method to provide total petroleum hydrocarbon (TPH) results for soil analysis for PSA projects. Pyramid preserved the samples for UVF analysis in methanol-filled containers provided by RED Lab, an approved laboratory for performing the UVF screening. The samples were analyzed in the field in real-time when possible by a Pyramid employee who has been certified by RED Lab to perform the QED 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).

4.2 Soil Sample Analytical Results

QED Results

The DEQ action level for TPH-GRO is 50 milligrams per kilogram (mg/kg) and the action level for TPH-DRO is 100 mg/kg. Soil samples were screened with an OVA and select soil samples were analyzed for DRO and GRO using a QED Analyzer. None of the soil samples analyzed exhibited DRO or GRO concentrations above DEQ action levels.

The soil sample QED results are summarized in **Table 2**. A copy of the QED analysis report is included in **Appendix E**.

4.3 Temporary Monitoring Well Installation

The water table was not encountered in the upper 8 feet of the soil column that was sampled during this PSA. Review of the NCDOT engineering plans for this parcel indicate that groundwater will not be encountered during construction activities, based on shallow excavations and a water table depth greater than 8 feet below the ground surface. Therefore, it was not necessary to collect a groundwater sample.

5.0 CONCLUSIONS AND RECOMMENDATIONS

As requested by the NCDOT, Pyramid has completed a PSA at Parcel 012 (PHD MEBANE OAKS, LLC (AKA VERAZ FONDO UNO, LLC)) located at 3886 Brundage Lane (AKA 1231 Mebane Oaks Road), Mebane, NC. The following is a summary of the assessment activities and results.

5.1 Geophysical Investigation

The geophysical investigation consisted of electromagnetic (EM) induction-metal detection and ground penetrating radar (GPR) surveys. A total of twelve EM anomalies were identified. The majority of the EM anomalies were directly attributed to visible cultural features at the ground surface. Several EM anomalies were associated with vehicles, a suspected large buried metal structure, and a suspected utility and were investigated further with GPR. GPR recorded two discreet, perpendicular lateral reflectors across a high-amplitude EM anomaly, consistent with a possible UST. The location of this possible UST correlated to the location of a recovery well vault, suggesting the feature may be related to the buried vault and not a UST. Excavation of the area would be required to verify the true nature of the structure. The possible UST (or well vault) was approximately 7 feet long by 4 feet wide. GPR also recorded evidence of buried debris near the vehicles on the central portion of the site. Collectively, the geophysical data recorded evidence of one possible UST (or a former well vault) at Parcel 12.

5.2 Limited Soil Assessment

The DEQ action level for TPH-GRO is 50 milligrams per kilogram (mg/kg) and the action level for TPH-DRO is 100 mg/kg. Soil samples were screened with an OVA and select soil samples were analyzed for DRO and GRO using a QED Analyzer. None of the soil samples analyzed exhibited DRO or GRO concentrations above DEQ action levels.

5.3 Limited Groundwater Assessment

The water table was not encountered in the upper 8 feet of the soil column that was sampled during this PSA. Review of the NCDOT engineering plans for this parcel indicate that groundwater will not be encountered during construction activities, based on shallow excavations and a water table depth greater than 8 feet below the ground surface. Therefore, it was not necessary to collect a groundwater sample.

5.4 Recommendations

Petroleum-Impacted Soils

No evidence of petroleum-impacted soils (DRO/GRO > DEQ Action Levels) was observed during this investigation. Therefore, no recommendations for the treatment, handling, or disposal of such materials are warranted.

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 DEQ Division of Waste Management (DWM) 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, the 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

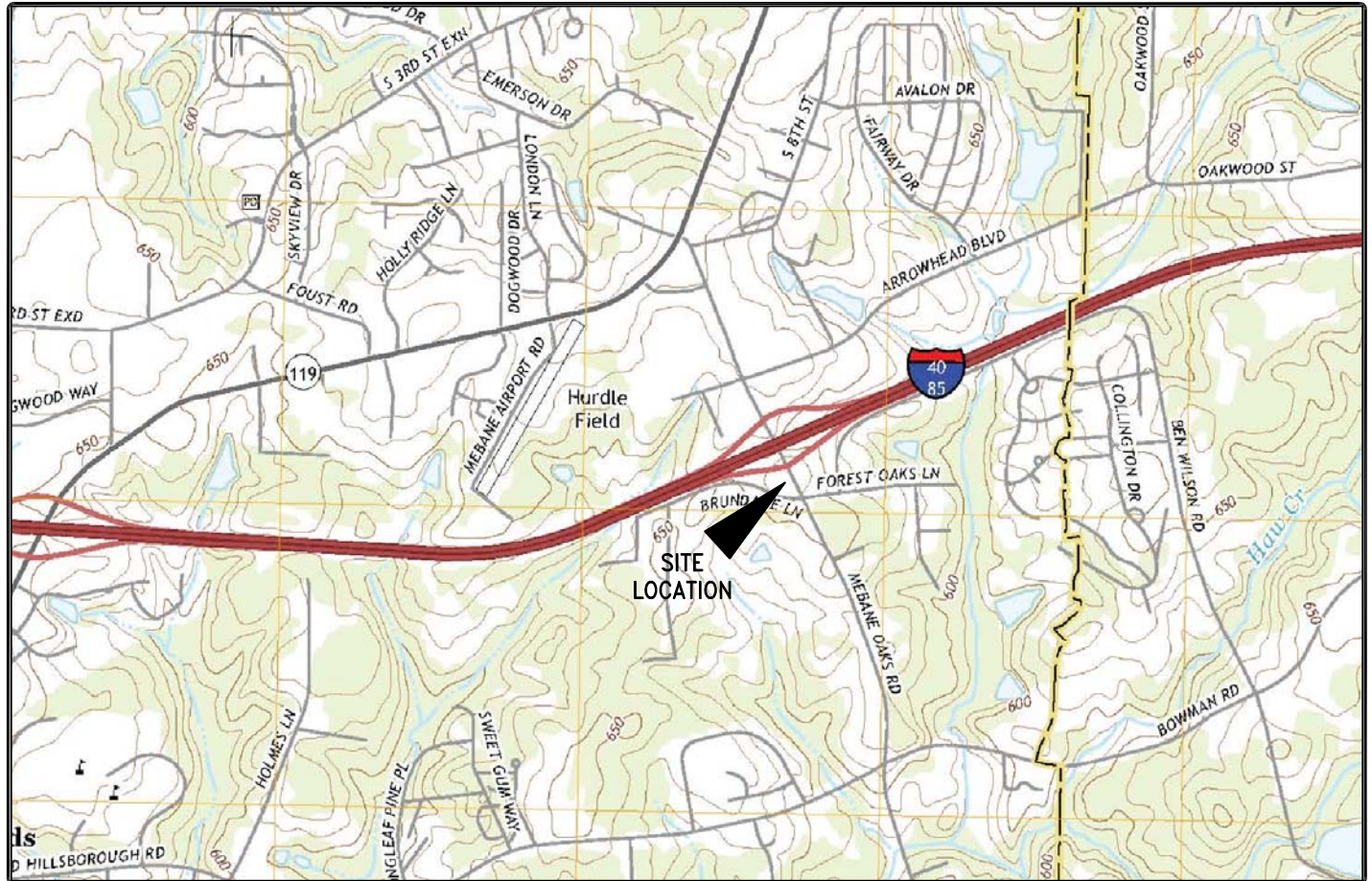
USGS TOPOGRAPHIC MAP

SITE:

PARCEL 012

LOCATION:

MEBANE, NORTH CAROLINA



USGS IDENTIFICATION

SCALES

USGS 7.5
MINUTE MAP

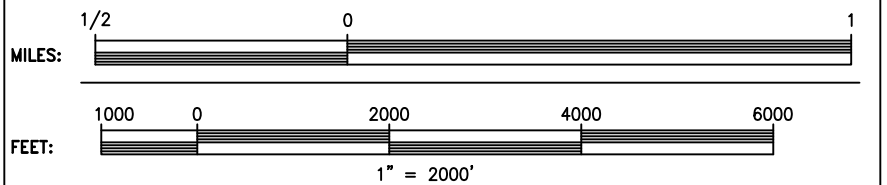
MEBANE, N.C.

ORIGINAL DATE:

1969

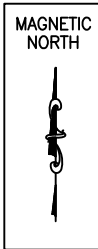
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DATE:

2016

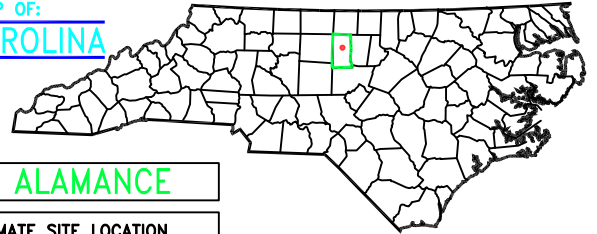


	PRIMARY HIGHWAY, HARD SURFACE
	SECONDARY HIGHWAY, HARD SURFACE
	LIGHT-DUTY ROAD HARD OR IMPROVED SURFACE
	UNIMPROVED ROAD
	STATE ROAD
	U.S. ROUTE
	INTERSTATE ROUTE

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



COUNTY MAP OF:
NORTH CAROLINA



COUNTY: **ALAMANCE**
 APPROXIMATE SITE LOCATION

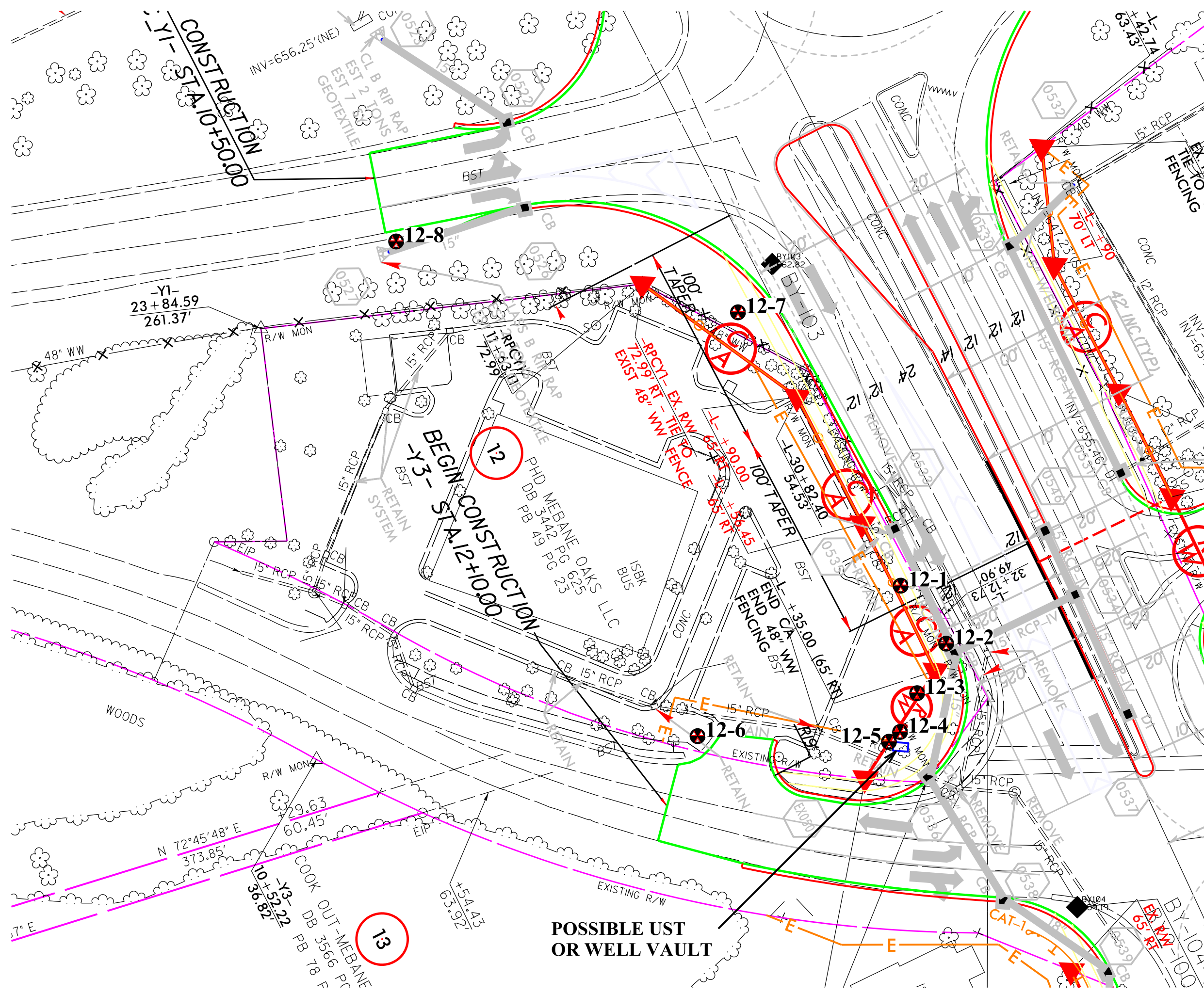


CLIENT: NCDOT I-5711
 PROPERTY NAME: 3886 BRUNDAGE LANE
 CITY: MEBANE STATE: NORTH CAROLINA
 TITLE: TOPOGRAPHIC MAP

SCALE: 1"=2000'
 DATE: 10/10/18
 DRAWING NAME: USGSTOPO

DRAWN BY: KAM
 CHECK BY: TDL
 JOB NO.: 2018-242
 TYPE: PSA
 FIGURE NUMBER: 1

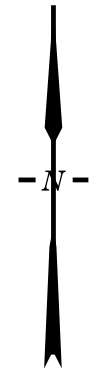
NOTES
 TOPOGRAPHIC MAP USED IN THIS GRAPHIC IS MAPPED, EDITED, AND PUBLISHED BY THE UNITED STATES GEOLOGIC SURVEY, DEPARTMENT OF THE INTERIOR, RESTON VIRGINIA.
 THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS.



LEGEND

- EXISTING ROW
- EXISTING PROPERTY BOUNDARY
- PROPOSED ROW LINE
- TEMPORARY CONSTRUCTION EASEMENT
- PDE — PROPOSED PERMANENT DRAINAGE
- PUE — PROPOSED PERMANENT UTILITY
- - - PROPOSED SS CUT LINE
- - - PROPOSED SS FILL LINE
- PROPOSED DRAINAGE PIPING
- SOIL BORING LOCATION
- POSSIBLE UST OR RECOVERY WELL VAULT

Analytical results are presented in Table 2 of PSA Report



<p>TITLE</p> <p>LOCATIONS OF SOIL BORINGS AND ONE POSSIBLE UST/FORMER WELL VAULT</p>	
<p>PROJECT</p> <p>PARCEL 12 MEBANE, NORTH CAROLINA NCDOT PROJECT I-5711</p>	
<p>503 INDUSTRIAL AVENUE GREENSBORO, NC 27406 336.335.3174 (p) 336.691.0648 (f) License # C1251 Eng. / #C257 Geology</p>	
<p>DATE: 10-10-2018</p>	<p>REVISION NO. 0</p>
<p>PYRAMID PROJECT NO. 2018-242</p>	<p>FIGURE NO. 2</p>



TABLES

TABLE 1
Summary of Soil Field Screening Results
NCDOT Project I-5711
Parcel 012 - Starbucks/AT&T Store/Mattress Firm
3886 Brundage Lane (AKA 1231 Mebane Oaks Road)
Mebane, Alamance County, North Carolina

SOIL BORING 10/3/2018	SAMPLE ID	DEPTH (feet bgs)	PID READINGS (PPM)
12-1	12-1(0-2)	0 to 2	1.8
	12-1(2-4)	2 to 4	0.8
	12-1(4-6)	4 to 6	0.7
	12-1(6-8)	6 to 8	0.7
12-2	12-2(0-2)	0 to 2	1.4
	12-2(2-4)	2 to 4	1.6
	12-2(4-6)	4 to 6	1.7
	12-2(6-8)	6 to 8	1.5
12-3	12-3(0-2)	0 to 2	1.2
	12-3(2-4)	2 to 4	1.7
	12-3(4-6)	4 to 6	1.2
	12-3(6-8)	6 to 8	1.1
12-4	12-4(0-2)	0 to 2	1.5
	12-4(2-4)	2 to 4	1.2
	12-4(4-6)	4 to 6	1.4
	12-4(6-8)	6 to 8	1.7
12-5	12-5(0-2)	0 to 2	1.9
	12-5(2-4)	2 to 4	1.3
	12-5(4-6)	4 to 6	1.7
	12-5(6-8)	6 to 8	1.2
12-6	12-6(0-2)	0 to 2	2.0
	12-6(2-4)	2 to 4	3.5
	12-6(4-6)	4 to 6	2.3
	12-6(6-8)	6 to 8	2.0
12-7	12-7(0-2)	0 to 2	0.5
	12-7(2-4)	2 to 4	0.6
	12-7(4-6)	4 to 6	1.6
	12-7(6-8)	6 to 8	0.8
12-8	12-8(0-2)	0 to 2	0.3
	12-8(2-4)	2 to 4	1.8

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 QED Analytical Results for GRO/DRO

NCDOT State Project I-5711
Parcel 12 (Starbucks/AT&T Store/Mattress Firm) - 3886 Brundage Lane (AKA 1231 Mebane Oaks Road)
Mebane, Alamance County, North Carolina

SAMPLE ID	DATE	DEPTH (feet)	PID (ppm)	QROS - QED Analysis		
				GRO (mg/kg) (C5-C10)	DRO (mg/kg) (C10-C35)	TPH (mg/kg) (C5-C35)
12-1(0-2)	10/3/2018	0-2	1.8	0.75	<0.59	0.75
12-1(2-4)	10/3/2018	2-4	0.8	<0.59	0.59	0.59
12-2(4-6)	10/3/2018	4-6	1.7	<0.64	<0.64	<0.64
12-3(0-2)	10/3/2018	0-2	1.2	<0.33	0.33	0.33
12-3(2-4)	10/3/2018	2-4	1.7	<0.6	0.6	0.6
12-4(6-8)	10/3/2018	6-8	1.7	<0.58	<0.58	<0.58
12-5(0-2)	10/3/2018	0-2	1.9	<0.56	<0.56	<0.56
12-6(2-4)	10/3/2018	2-4	3.5	<0.6	0.6	0.6
12-7(4-6)	10/3/2018	4-6	1.6	<0.61	<0.61	<0.61
12-8(2-4)	10/3/2018	2-4	1.8	<0.64	<0.64	<0.64
NC Initial Action Level - UST Section for 5035/5030-GRO; 3550-DRO				50	100	NA

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

* Bold values indicate concentrations above initial action levels

APPENDIX A

1993 Aerial Photograph

Legend
★ Parcel 12

Parcel 12

★ Parcel 12

Mebane Oaks Rd

Brundage Ln

1007



1998 Aerial Photograph
Parcel 12

Legend
★ Parcel 12





1998 Aerial Photograph

Parcel 12

Legend
★ Parcel 12

★ Parcel 12

Mebane Oaks Rd

Brundage Ln

1007



2012 Aerial Photograph
Parcel 12

Legend
★ Parcel 12

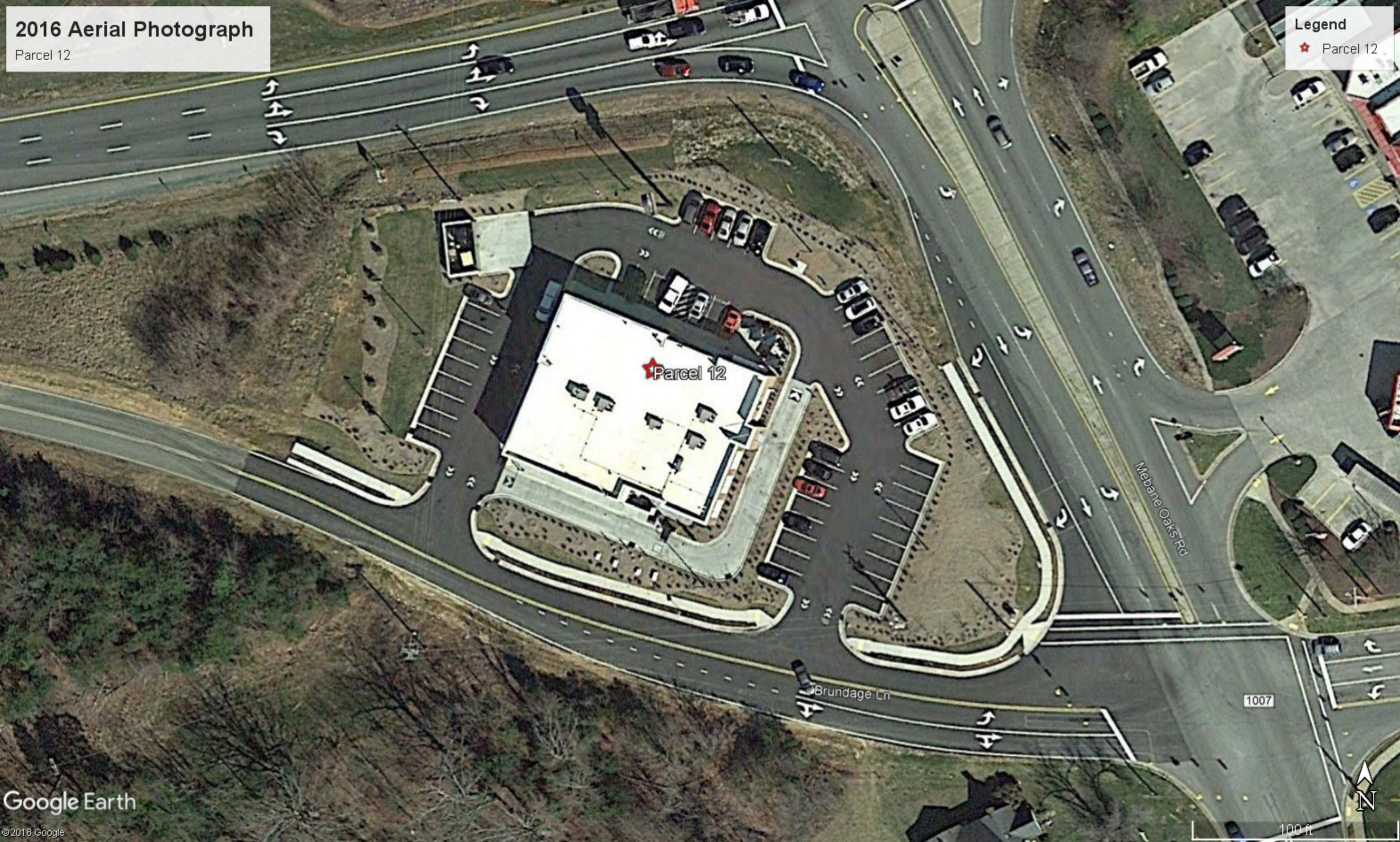


Google Earth

©2018 Google



100 ft



★ Parcel 12

Mebane Oaks Rd

Brundage Ln

1007



100 ft

2017 Aerial Photograph
Parcel 12

Legend
★ Parcel 12



APPENDIX B



North Carolina Department of Environment and Natural Resources

Beverly Eaves Perdue, Governor

Division of Waste Management
UST Section

Dee Freeman, Secretary
Dexter R. Matthews, Director

October 24, 2011

Thomas Berry
T.A.C., Inc.
2200 Bessemer Avenue
Greensboro, NC 27402

*cc FILE cc to Mike Jones
I worked*

Re: Notice of No Further Action
15A NCAC 2L .0407(d)
Risk-based Assessment and Corrective Action
for Petroleum Underground Storage Tanks

Express Stop #21
1231 Mebane Oaks Road, Mebane
Alamance County
Incident Number: 37872
Risk Classification: Low
Ranking: Low

Dear Mr. Berry:

The Initial Abatement Report/ Site Closure Request received by the UST Section, Winston-Salem Regional Office on April 11, 2011, has been reviewed. The review indicates that soil contamination does not exceed the residential maximum soil contaminant concentrations (MSCCs), established in Title 15A NCAC 2L .0411 and that groundwater contamination does not exceed the groundwater quality standards established in Title 15A NCAC 2L .0202.

The UST Section determines that no further action is warranted for this incident. This determination shall apply unless the UST Section later finds that the discharge or release poses an unacceptable risk or a potentially unacceptable risk to human health or the environment. Pursuant to Title 15A NCAC 2L .0407(a) you have a continuing obligation to notify the Department of any changes that might affect the risk or land use classifications that have been assigned.

If soil contamination exceeds the lower of the soil-to-groundwater or residential MSCCs, public notice in accordance with 15A NCAC 2L .0409(b) is required. Thus, within 30 days of receipt of this letter, a copy of the letter must be provided by certified mail, or by posting in a prominent place, if certified mail is impractical, to the local health director, the chief administrative officer of each political jurisdiction in which the contamination occurs, all property owners and occupants within or contiguous to the area containing contamination, and all property owners and occupants within or contiguous to the area where the contamination is expected to migrate. Within 60 days of receiving this no further action letter, this office must be provided with proof of receipt of the copy of the letter or of refusal by the addressee to accept delivery of the copy of the letter or with a description of the manner in which the letter was posted. This No Further Action determination will not become valid until public notice requirements are completed. Interested parties may examine the Soil Cleanup Report/ Site Closure Request by contacting

this regional office and may submit comments on the site to the regional office at the address or telephone number listed below.

This No Further Action determination applies only to the subject incident; for any other incidents at the subject site, the responsible party must continue to address contamination as required.

If you have any questions regarding this notice, please contact me at the address or telephone number listed below.

Sincerely,



W. Waddell Watters
Hydrogeologist
Winston-Salem Regional Office

cc: Alamance County Health Department

UST Regional Offices

Asheville (ARO) – 2090 US Highway 70, Swannanoa, NC 28778 (828) 296-4500

Fayetteville (FAY) – 225 Green Street, Suite 714, Systel Building, Fayetteville, NC 28301 (910) 433-3300

Mooresville (MOR) – 610 East Center Avenue, Suite 301, Mooresville, NC 28115 (704) 663-1699

Raleigh (RRO) – 1628 Mail Service Center, Raleigh, NC 27699 (919) 791-4200

Washington (WAS) – 943 Washington Square Mall, Washington, NC 27889 (252) 946-6481

Wilmington (WIL) – 127 Cardinal Drive Extension, Wilmington, NC 28405 (910) 796-7215

Winston-Salem (WS) – 585 Waughtown Street, Winston-Salem, NC 27107 (336) 771-5000

Guilford County Environmental Health, 400 West Market Street, Suite 300, Greensboro, NC 27401, (336) 641-3771



North Carolina Department of Environment and Natural Resources

Beverly Eaves Perdue, Governor

Division of Waste Management
UST Section

Dee Freeman, Secretary
Dexter R. Matthews, Director

June 21, 2011

Thomas Berry
Bessemer Group
P.O. Box 1111
Greensboro, NC 27402

Re: Notice of No Further Action
15A NCAC 2L .0407(d)
Risk-based Assessment and Corrective Action
for Petroleum Underground Storage Tanks

Mebane Oaks Food Mart
1231 Mebane Oaks Road, Mebane
Alamance County
Incident Number: 2999
Risk Classification: Low

Dear Mr. Berry:

The Initial Abatement Action Report/ Site Closure Request received by the UST Section, Winston-Salem Regional Office on April 11, 2011, and the Notice of Residual Petroleum received on June 15, 2011, have been reviewed. The review indicates that soil contamination exceeds the residential maximum soil contaminant concentrations (MSCCs) established in Title 15A NCAC 2L .0411 and groundwater contamination meets the cleanup requirements for a low-risk site but exceeds the groundwater quality standards established in Title 15A NCAC 2L .0202.

The UST Section determines that no further action is warranted for this incident. This determination shall apply unless the UST Section later finds that the discharge or release poses an unacceptable risk or a potentially unacceptable risk to human health or the environment. Pursuant to Title 15A NCAC 2L .0407(a) you have a continuing obligation to notify the Department of any changes that might affect the risk or land use classifications that have been assigned.

Be advised that as groundwater contamination exceeds the groundwater quality standards established in Title 15A NCAC 2L .0202, groundwater within the area of contamination or within the area where groundwater contamination is expected to migrate is not suitable for use as a water supply. Be advised that as soil contamination exceeds the residential MSCCs, the property containing the contamination is suitable only for industrial/ commercial use or restricted residential use (The term "residential is inclusive of, but not limited to, private houses, apartment complexes, schools, nursing homes, parks, recreation areas and day care centers), as stipulated in the Notice of Residual Petroleum (attached).

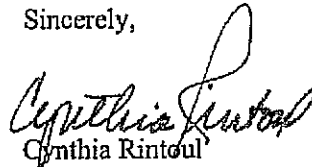
As groundwater contamination exceeds the groundwater quality standards established in Title 15A NCAC 2L .0202 and soil contamination exceeds the lower of the soil-to-groundwater or residential MSCCs, public notice in accordance with 15A NCAC 2L .0409(b) also is required. Thus, within 30 days

of receipt of this letter, a copy of the letter must be provided by certified mail, or by posting in a prominent place, if certified mail is impractical, to the local health director, the chief administrative officer of each political jurisdiction in which the contamination occurs, all property owners and occupants within or contiguous to the area containing contamination, and all property owners and occupants within or contiguous to the area where the contamination is expected to migrate. Within 60 days of receiving this no further action letter, this office must be provided with proof of receipt of the copy of the letter or of refusal by the addressee to accept delivery of the copy of the letter or with a description of the manner in which the letter was posted. This No Further Action determination will not become valid until public notice requirements are completed. Interested parties may examine the Soil Cleanup Report/ Site Closure Request by contacting this regional office and may submit comments on the site to the regional office at the address or telephone number listed below.

This No Further Action determination applies only to the subject incident; for any other incidents at the subject site, the responsible party must continue to address contamination as required.

If you have any questions regarding this notice, please contact me at the address or telephone number listed below.

Sincerely,



Cynthia Rintoul
Supervisor
Winston-Salem Regional Office

Attachments: Notice of Residual Petroleum

cc: Alamance County Health Department

UST Regional Offices

Asheville (ARO) – 2090 US Highway 70, Swannanoa, NC 28778 (828) 296-4500

Fayetteville (FAY) – 225 Green Street, Suite 714, Systel Building, Fayetteville, NC 28301 (910) 433-3300

Mooresville (MOR) – 610 East Center Avenue, Suite 301, Mooresville, NC 28115 (704) 663-1699

Raleigh (RRO) – 1628 Mail Service Center, Raleigh, NC 27699 (919) 791-4200

Washington (WAS) – 943 Washington Square Mall, Washington, NC 27889 (252) 946-6481

Wilmington (WIL) – 127 Cardinal Drive Extension, Wilmington, NC 28405 (910) 796-7215

Winston-Salem (WS) – 585 Waughtown Street, Winston-Salem, NC 27107 (336) 771-5000

Guilford County Environmental Health, 400 West Market Street, Suite 300, Greensboro, NC 27401, (336) 641-3771

INITIAL ABATEMENT ACTION REPORT AND SITE CLOSURE REQUEST

**FORMER MEBANE OAKS SHELL
1231 MEBANE OAKS ROAD
MEBANE, NORTH CAROLINA**

April 8, 2011

UST Facility ID: 0-234593
Source: (2) 12,000-gallon gasoline & (1) 10,000-gallon diesel USTs
NCDENR Incident #: Pending
UST Removal Date: March 8, 2011
Latitude / Longitude: N36° 04' 12.65" / W79° 16' 17.55"
Estimated Quantity of Release: Unknown

Report prepared for: Mr. Thomas Berry
T.A.C., Inc.
2200 Bessemer Avenue
Greensboro, North Carolina 27402

Brett S. Higgins
Project Manager

Michael G. Jones, PG
License #1168

PYRAMID ENVIRONMENTAL & ENGINEERING, P.C.
PO BOX 16265
GREENSBORO, NC 27416-0265
(336) 335-3174

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- 3) Laboratory Results of TPH UST Closure Soil Samples
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-

I. General Information

A. Ownership of Underground Storage Tank(s) (UST(s))

T.A.C., Inc.
2200 Bessemer Avenue
Greensboro, NC 27402

B. Facility Information:

1. Facility Name: Former Express Stop #21 (aka Mebane Oaks Shell)
2. Facility ID #: 0-234593
3. Facility Address: 1231 Mebane Oaks Road, Mebane, NC 27302

C. Contacts:

1. Primary Contact Person:

Mr. Thomas Berry
2200 Bessemer Avenue
Greensboro, NC 27402
336-273-8663

2. Closure Contractor:

Price Construction Company
543 Cook Florist Road
Reidsville, NC 27320
336-342-1310

3. Primary Consultant:

Pyramid Environmental and
Engineering, P.C.
PO Box 16265
Greensboro, NC 27416-0265
(336) 335-3174

4. Laboratory:

Pace Analytical Services, Inc.
9800 Kincey Ave., Suite 100
Huntersville, NC 28078
NC Certification #37706
(704) 875-9092

D. Site History – Incident #2999:

In 1986, Alamance Oil Company had a release from a gasoline underground storage tank (UST) at the former Mebane Oaks Shell station. The site location is shown on **Figure 1**, an excerpt of the Mebane USGS topographic map. Alamance Oil stopped the leak and started the cleanup immediately. In 1991 T.A.C. Inc. purchased Alamance Oil and continued the cleanup. In 1995, TAC, Inc. excavated over 1500 tons of contaminated soil from the site and installed a new, advanced UST system with secondary containment. In 1996, Pyramid built a groundwater remediation system that operated until 2002.

In 2007, the DENR sent a letter requesting groundwater monitoring for the Shell site. The groundwater sampling was completed in June 2007. The gauging data showed that the

groundwater gradient was directly to the south of the Shell station. The groundwater analyses showed the maximum benzene concentration was 94 µg/l (RW-1) and the maximum MTBE concentration was 21 µg/l (RW-4). These concentrations were detected in wells near and down-gradient from the former pump islands, the source of the release.

The down-gradient wells (MW-7 and MW-8) showed no detections of petroleum hydrocarbons. The direction of migration shown in the groundwater is to the south. This migration direction is toward the business properties that are currently using City of Mebane utilities. The only remaining supply well (SW-4) south of I-40/85 is located 660 feet east of the Shell source area. There are no concentrations even approaching the Gross Contamination Levels (GCLs) in any of the monitoring and recovery wells sampled. Since the 2007 groundwater monitoring, the DENR has required no additional cleanup or monitoring at the site. During the cleanup period, over one million dollars (\$1,000,000.00) have been spent on assessment, soil & groundwater cleanup, and monitoring of the site.

The connection of the Shell Station to the City water system was completed in 2010 by TAC. The engineering of the water line, DOT agreement, surveying, contracting, installation, and permitting, cost over \$ 50,000 to complete this water line connection. The Shell station was connected to water provided by the City of Mebane in June 2010. The connection to city water and disconnection from the on-site well removes the closest supply well to the petroleum source. In 2011, the on-site supply well was abandoned with cement grout.

E. 2010 Soil Sampling Associated with Incident #2999:

In October 2010, Pyramid prepared a Request for Groundwater Incident Closure Report on behalf of T.A.C., Inc and submitted it to the DENR Winston-Salem Regional Office (WSRO). The report requested that the site receive closure based on the low risk classification of the incident due to reduced groundwater contaminant concentrations and the lack of nearby at-risk receptors. Mr. Waddell Watters at the WSRO of DENR reviewed the request and indicated that he would consider closing the incident if additional soil samples were collected at the site. The additional soil sampling was required in areas where soil contamination was identified during the 1995 contaminated soil excavation activities.

On December 20, 2010, Pyramid supervised the installation of two soil borings (SB-1 and SB-2) at the site to assess current soil concentrations at the limits of the 1995 soil excavation. The locations of the soil borings are shown on **Figure 2**. Soil boring SB-1 was installed near the eastern limits of the 1995 excavation and SB-2 was installed near the western limits of the former excavation. The soil borings were advanced to 15 feet and soil samples were collected every 4-5 feet for field screening with an Organic Vapor Analyzer (OVA). One soil sample was collected at 14 feet at SB-1 and samples were collected at 9 feet and 14 feet at SB-2. The only detection of soil contamination was at 14 feet in SB-2. The laboratory results of the soil samples are summarized in **Table 1**. A map showing the soil borings in relation to the 1995 soil excavation and the laboratory report are presented in **Appendix A**. As indicated in Table

1, only one of the targeted compounds (benzene) detected at SB-2-14' exceeds the residential maximum soil contaminant concentrations (MSCCs).

F. UST Information:

As requested by T.A.C., Inc., Pyramid coordinated and supervised the removal and permanent closure of two 12,000-gallon gasoline and one 10,000-gallon diesel USTs and the associated product lines and dispensers at 1231 Mebane Oaks Road in Mebane, North Carolina. This UST Closure and Site Investigation Report was prepared to satisfy state and federal requirements under 40 CFR 280.72 and 15A NCAC 2N. 0803.

The facility included three USTs, two 12,000-gallon gasoline (Tank #1 & #2) and one 10,000-gallon diesel tank (Tank #3). All the USTs were owned and operated by T.A.C., Inc. and all fees were current at the time of removal. The details of the USTs are included in **Table 2** below.

Table 2: UST Details

Tank No.	Installation Date	Size (in gallons)	Tank Dimensions	Last Contents	Previous Contents
1	1995	12,000	96" dia. by 32 ft. long	Gasoline	Gasoline
2	1995	12,000	96" dia. by 32 ft. long	Gasoline	Gasoline
3	1995	10,000	96" dia. by 27 ft. long	Diesel	Diesel

The USTs at the site were Steel Tank Institute ACT-100 tanks. The ACT-100 is a steel tank with an exterior coating consisting of a minimum of 100 mils of approved fiberglass reinforced plastic (FRP).

G. Site Characteristics:

1. Facility active or inactive: Inactive

At the time of the tank removal, the facility had been inactive since mid-January 2011; and the annual tank operating fees were current.

2. Surrounding property use:

The surrounding properties are commercial and no residential properties are located adjacent to the site.

3. Site geology/hydrogeology:

Pyramid's review of the 1985 Geologic Map of North Carolina yielded information concerning local geology and hydrogeology. Based on this review, the site is located in the Carolina Slate Belt of North Carolina. The surface geology consists of regional soils created by the weathering of underlying bedrock. This belt consists of heated and deformed volcanic and sedimentary rocks. It was the site of a series of oceanic volcanic islands about 550-650 million years ago. According to the geologic map, the underlying bedrock is intermediate meta-volcanic rock.

In general, both surface and groundwater flow directions are controlled by topographic contours of land forms in the Piedmont, with flow occurring perpendicular to the contours from high to low elevations. Surface run-off on the subject site generally flows to the south-southwest and is directed by open ditches and surface topography into an unnamed intermittent tributary to Haw Creek. The unnamed tributary is located approximately 1,000 feet south of the subject property and flows approximately 1.3 miles south-southeast to Haw Creek.

II. Closure Procedures

A. Preparations for UST Closure:

In preparation for the removal and closure of the four USTs the following measures were taken:

- 1) On February 7, 2011, a Notice of Intent for UST Permanent Closure Form (UST-3) was completed and sent via electronic mail to Mr. Waddell Watters at the Winston-Salem Regional Office (WSRO) of the NCDENR. A copy of the Notice of Intent Form is included as **Appendix B**.
- 2) On March 1 - 4, 2011, Price Construction Co. dismantled and removed the canopies covering the dispenser islands and removed the concrete covering the USTs, product lines and dispenser islands.
- 3) On March 7, 2011, Pyramid paid the applicable fees for the UST removal permit to the City of Mebane Fire Department on behalf of T.A.C., Inc. and Price Construction Co. A copy of the permit application and permit receipt are included as **Appendix C**.
- 4) On March 7 & 8, 2011, Eagle SWS pumped and cleaned out all three onsite USTs using a Gamajet VI® tank cleaning tool and a vacuum truck. The material manifest indicates that a total of 784 gallons of residual gasoline, diesel fuel and rinse water were removed from the USTs and product lines and transported offsite for proper disposal. A copy of the Eagle SWS manifest is included in **Appendix D**.

B. UST Removal:

1. On March 8, 2011, Pyramid supervised the removal and permanent closure of two 12,000-gallon gasoline (Tank #1 & #2) and one 10,000-gallon diesel tank (Tank #3). The former locations of the USTs, pump islands and product lines are shown on **Figure 2**. The completed Site Investigation Report for UST Closure Form (UST-2) is included as **Appendix E**. The UST-2 Form describes site conditions and activities completed during the UST closure. Photographs taken during the UST removal activities are included in **Appendix F**.
2. Prior to removing the USTs, the flammable vapors were purged from the tank by Eagle SWS using a Gamajet VI® tank cleaning tool and the vacuum truck. Eagle SWS also monitored the lower explosive level (LEL) and oxygen in the tanks using a field meter until the LEL was less than 0%. Captain Gene Wellons with the Mebane Fire Department Bureau was onsite during the tank cleaning and vapor purging activities. Captain Wellons verified the LEL readings for each tank and authorized removal of the tanks when the level was 0%. Captain Wellons also signed and dated the UST removal permit indicating that the tanks were approved for removal. A copy of the City of Mebane Fire Department permit is included as **Appendix C**.
3. During the excavation procedures, Pyramid screened soil samples using an Organic Vapor Analyzer (OVA) to determine if a petroleum release had occurred and to determine the approximate extent of soil contamination. No evidence of a petroleum release was observed or recorded with the OVA in the UST closure soil samples. Soil contamination exceeding the DENR action limit of 10 mg/kg was discovered at one of the gasoline product line sample points and at five of the diesel product line/pump island sample points. The excavation, removal and proper disposal of the contaminated soil from these areas is discussed in **Section IV**.
4. Bedrock and groundwater were not encountered during the UST excavation activities. The excavation extended to a depth of approximately 12-13 feet below land surface (BLS). The groundwater monitoring wells were gauged and the depth to groundwater is about 33 feet below land surface.
5. After removal, the USTs were loaded, transported and sold to Hopkins Plumbing in Martinsville, Virginia for re-use. A copy of the Bill of Sale for the USTs is included in **Appendix G**.

III. Site Investigation

A. Soil Sampling Procedures, Field Screening, and Observations:

As part of the limited site assessment required under 40 CFR 280.72 and 15A NCAC 2N .0803, Pyramid collected soil samples from beneath the former USTs, pump islands and product lines. The soil sample locations are shown on **Figure 3**.

The number of soil samples collected beneath the USTs, pump island and product lines was based on the requirements in the NCDENR, UST Section, Guidelines for Tank Closure (December 2008). All soil samples were collected from the center of the track excavator bucket. A portion of each soil sample was screened in the field using an Organic Vapor Analyzer (OVA) to check for organic vapors associated with petroleum. To prevent cross-contamination from the sampling procedures, latex gloves were worn by the sampling technician during these activities and were changed between samples. The standard field procedures used by Pyramid are included in **Appendix H**. The soil samples were packed in a cooler on ice and maintained at 4 °C during shipment to Pace Analytical Services in Huntersville, North Carolina. Copies of the laboratory reports and chain-of-custody forms are included in **Appendix I**. The laboratory results are summarized in **Tables 3, 4 & 5**. The following sections summarize the soil sampling conducted in each area at the site.

12,000-Gallon Gasoline USTs (Tank #1 & #2)

The 12,000-gallon gasoline USTs (Tank #1 & #2) were located on the east side and center of the UST basin. The tanks measured 96 inches in diameter by 32 feet in length (see Table 1). The tank was buried approximately 4 feet BLS and the bottom of the tank was approximately 12 feet BLS. During removal of the USTs, no petroleum odor was observed beneath the tanks. Based on the length of the tanks, four soil samples were collected beneath each tank (A, B, C & D) at a depth of two feet beneath the tank as required for permanent UST closure. The soil sample locations are shown on **Figure 3**. The soil samples collected underneath the gasoline tanks were analyzed for TPH using EPA Method 5030/8015B (GRO) and the results are presented in **Table 3**. As indicated in Table 3 and the laboratory reports, the results for the soil samples collected underneath the gasoline USTs were all <10 mg/kg for TPH-GRO.

Gasoline Product Lines and Pump Islands

As indicated on Figures 2 and 3, the gasoline product lines trench began near the southeast corner of the UST basin and ran south-southeast to four separate gas pumps that were spaced out approximately 30 feet apart under a single canopy. The product lines consisted of Environ brand double-walled piping inside single-walled PVC conduits. As required, soil samples were collected every 10 linear feet underneath the product line trench and one soil sample was collected underneath each pump location.

The gasoline line samples are identified as GL followed by the sample number and depth. The pump island samples are designated GPI followed by the sample number and depth. The soil sample locations are shown on **Figure 3**. The soil samples collected underneath the gasoline lines and pumps were analyzed for TPH using EPA Method 5030/8015B (GRO) and the results are presented in **Table 3**. As indicated in Table 3, the laboratory results for the samples collected underneath the gasoline lines and pumps were all <10 mg/kg for TPH-GRO with the exception of GL6-4'. Sample GL6-4' contained 4,910 mg/kg GRO. The details of the excavation, transportation and proper disposal of the contaminated soil detected at GL6-4' and results of the post excavation sampling is discussed in **Section IV**. Copies of the laboratory reports and chain-of-custody forms are included in **Appendix I**.

10,000-Gallon Diesel UST (Tank #3)

The 10,000-gallon diesel UST (Tank #3) was located on the west side of the UST basin. The tank measured 96 inches in diameter by 27 feet in length (see Table 1). The tank was buried approximately 4 feet BLS and the bottom of the tank was approximately 12 feet BLS. During removal of the UST, no petroleum odor was observed beneath the tank. Based on the length of the tank, three soil samples (A, B & C) were collected at a depth of two feet beneath the tank as required for permanent UST closure. The soil samples were analyzed for TPH using EPA Methods 5030/8015B (GRO) and 3550/8015B (DRO) and the results are presented in **Table 3**. As indicated in Table 3, the laboratory results for the samples collected underneath the diesel USTs were all <10 mg/kg for TPH-GRO and TPH-DRO.

Diesel Product Lines and Pump Islands

The 10,000-gallon diesel UST served four separate product dispensers under one canopy at the subject property (see Figure 2 and 3). As shown on Figure 3, there were four separate product lines leading from the tank to the individual pumps. The pump under the north end of the diesel canopy was a "slave pump" which allowed tractor trailer drivers to fill the second saddle tank on the opposite side of the truck, while the cumulative gallons were recorded on the main dispenser. The product lines consisted of Environ brand piping inside a single-walled PVC conduit. As required, soil samples were collected every 10 linear feet underneath the product line trench and one soil sample was collected underneath each pump location. The diesel line samples are identified as DL followed by the sample number and depth. The soil samples collected from the diesel pump island area are designated DPI followed by the sample number and depth. The soil sample locations are shown on **Figure 3**.

The soil samples collected underneath the diesel lines and pumps were analyzed for TPH using EPA Method 5030/8015B (GRO) and 3550/8015B (DRO) and the results are presented in **Table 3**. As indicated in Table 3, five soil samples (DL2-4, DL4-3, DL9-4, DPI3-3 and DPI4-3) collected underneath the diesel lines and pumps contained TPH-GRO and/or TPH-

DRO concentrations that exceed the DENR action level of 10 mg/kg. The highest concentrations were detected at DL9-4 with 11,800 mg/kg TPH-DRO and 964 mg/kg TPH-GRO. The other detected concentrations that exceeded the DENR action level ranged from 14.5 mg/kg to 23.8 mg/kg.

The details of the excavation, transportation and proper disposal of the contaminated soil detected at the diesel pump island area and the laboratory results of the post excavation samples are discussed in **Section IV**. Copies of the laboratory reports and chain-of-custody forms are included in **Appendix I**.

B. Groundwater or Surface Water Sampling:

No groundwater or surface water samples were collected as part of the UST Closure activities at the site. No evidence of groundwater was observed during the UST removal and contaminated soil excavation activities.

The depth to groundwater in the existing monitoring wells ranges from 30 to 35 feet BLS. The groundwater monitoring wells for DENR Incident #2999 were sampled and analyzed in February 2011 and the results are discussed in **Section VI**.

C. Quality Control Measures:

No soil samples were collected for quality control measures. New, sterile nitrile gloves were worn while obtaining the samples. Soil samples were collected using a track excavator. The soil samples were placed into clean laboratory provided glass jars and sealed with airtight Teflon lids. The sampling jars were placed in a cooler maintained at approximately 4° Celsius immediately after collection. The soil samples were delivered to a North Carolina certified laboratory for analysis. The date and time the samples were collected and submitted to the laboratory can be found on the chain of custody forms in **Appendix I**.

IV. Contaminated Soil Excavation

Gasoline Product Line Area

On March 17, 2011, contaminated soils at gasoline line sample GL6-4' (4910 mg/kg TPH-GRO), were excavated and transported off-site for proper disposal. Prior to removing the contaminated soil, the top 3 feet of clean soil was removed and stockpiled beside the excavation to be used as backfill. The contaminated soil was transported to Soil Remedies in Mebane, North Carolina for proper disposal. Based on the certified weight tickets, 14.49 tons of petroleum contaminated soils were removed from sample location GL6-4. The final excavation measured 9 feet wide by 9 feet long by 7.5 feet deep. The location of the excavation is shown on **Figure 4**. Copies of the non-hazardous material manifests and certified weight tickets are included in **Appendix J**.

On March 17, 2011, five post-excavation soil samples (GLE1, GLE2, GLE3, GLE4, & GLE5) were collected from the limits of the excavation and at depth of approximately 7.5 feet. The soil samples were placed in laboratory prepared containers, and shipped to Pace Analytical Services in Huntersville, NC for analysis. The soil samples were analyzed for volatile petroleum hydrocarbons (VPH) using the MADEP method and for volatile organic compounds using EPA Method 8260/5035. Standard field procedures were used to collect the above-mentioned soil samples.

The laboratory results for samples GLE1, GLE2, GLE3, GLE4, & GLE5 indicate that none of the targeted compounds were detected at concentrations that exceed the soil to groundwater or residential Maximum Soil Contaminant Concentrations (MSCC). The laboratory results of the post-excavation soil samples for the gasoline product line area are summarized in **Table 4**. A copy of the laboratory report and chain of custody form are included in **Appendix I**.

Diesel Product Line/Pump Island Area

On March 17 & 29, 2011, contaminated soils at the location of diesel line samples DL2-4, DL4-3, DL9-4 and pump samples DPI3-3 and DPI4-3 were excavated and transported off-site for proper disposal. Four separate excavations were performed to effectively clean up the contaminated soil. The locations of the excavations are shown on **Figure 5**. The contaminated soil was transported to Soil Remedies in Mebane, North Carolina for proper disposal. Based on the certified weight tickets, a total 134.94 tons of petroleum contaminated soils were removed from the four excavations performed in the diesel pump island area. A copy of the Certificate of Disposal and copies of the non-hazardous material manifests and certified weight tickets are included in **Appendix J**.

The laboratory results for samples DL2-4, DL4-3 and DPI 3-3 indicated only 14.5 mg/kg, 20.2 mg/kg and 21 mg/kg TPH at 3-4 feet below land surface; therefore, only small excavations were performed in these areas and extended vertically to a depth of 8 feet and were only the width of the track excavator bucket (~4 ft.). One soil sample was collected from the bottom/center of each excavation at 8 feet (DL2-8, DL4-8 and DPI3-8) for risk-based analyses. The three excavations measured approximately 4 feet wide by 6 feet long by 8 feet deep each.

The fourth excavation included the area where pump sample DPI4-3 and line sample DL9-4 were collected. The laboratory results for diesel line sample DL9-4 indicated 11,800 mg/kg TPH-DRO at 4 feet below land surface and the contamination extended horizontally toward DPI4-3'; therefore, the two excavations were combined. The concrete footing for one of the canopy supports was located in this area and had to be removed to effectively excavate the contaminated soil. The canopy footing measured 5.5 feet wide by 5.5 feet long by 4.5 feet tall. After the footing was removed the contaminated soil was excavated to a depth of 10 feet below land surface. The final soil excavation measured 13 feet wide by 17 feet long by 10 feet deep. On March 17, 2011, five post-excavation soil samples (DLE1, DLE2, DLE3, DLE4, & DLE5) were collected from the limits of this excavation. The soil samples are shown on **Figure 5**.

The soil samples collected from the above-mentioned excavations were placed in laboratory prepared containers, and shipped to Pace Analytical Services in Huntersville, North Carolina. The soil samples were analyzed for volatile and extractable petroleum hydrocarbons (VPH & EPH) using the MADEP methods and for volatile and semi-volatile organic compounds using EPA Method 8260/5035 and 8270. Standard field procedures were used to collect the above-mentioned soil samples.

The laboratory results for the post excavation samples (DLE1, DLE2, DLE3, DLE4, DLE5, DL2-8, DL4-8 and DPI3-8) indicate that none of the targeted compounds were detected at concentrations that exceed the soil to groundwater or residential MSCCs. The laboratory results of the post-excavation soil samples for the diesel product line and pump island area are summarized in **Table 5**. A copy of the laboratory report and chain of custody form are included in **Appendix I**.

V. Backfilling and Compaction

The backfill used during the installation of the USTs in 1995 was predominantly pea gravel. The pea gravel was stockpiled adjacent to the east side of the UST basin during the tank removal. The pea gravel was checked with the OVA and was observed to be free of petroleum during the removal of the USTs. The laboratory results of all (11) of the soil samples collected underneath the USTs showed no petroleum contamination in the tank basin.

After the USTs were removed and the UST closure soil samples were collected, the UST basin measured approximately 40 feet wide by 48 feet long and 12 feet deep. To save time and costs for importing clean backfill, a large amount of the pea gravel was used to partially fill the tank basin. The pea gravel was placed and leveled in the UST basin using the track excavator to a depth of 4-6 feet below grade. Woven geotextile fabric was placed on top of the pea gravel to provide separation from the soil used to complete the excavation. The geotextile fabric (W-200) was purchased in one 12.5 foot wide roll from Green Resource in Colfax, NC. According to the manufacturer, W-200 is a woven geotextile fabric with 200 pounds of tensile strength. The geotextile fabric was rolled out over the pea gravel in overlapping sections and secured using metal u-pins.

The soil used to backfill the remainder of the UST basin was obtained from a private borrow pit in Alamance County owned by Mitch Oakley. Prior to using the soil for backfill a 20 pound sample of the material was delivered to Atlantic Coast Engineering and Testing, Inc. (ACET) in Greensboro, NC for a moisture-density test. The soil was described by ACET as brown-tan coarse sand-rock and the moisture-density test results indicated a maximum dry density of 118.8 pounds per cubic foot with an optimum moisture content of 10.4 percent. A copy of the moisture-density test results is included in **Appendix K**.

The first lift of backfill was placed at a thickness of approximately two feet before the compaction equipment was used to prevent damage to the geotextile fabric. Subsequent lifts were placed and compacted at a thickness of approximately one foot. The sand-rock backfill was compacted using a 5.2 ton Sakai pad-foot vibratory compactor (Model SV201TB-1). Several passes were made with the compactor on each lift of backfill to adequately compact the soil.

ACET, Inc. was contracted to perform in-place density tests during the backfilling procedures. The in-place density tests were performed on March 9th, 14th and 15th, 2011 while backfill was actively being placed and compacted. A total of seven tests were performed and the results indicated 95 percent or greater of the maximum dry density of the sand-rock being used. The last test was performed near grade and the results indicated 99.8 percent. Copies of the in-place density test reports are included in **Appendix K**.

The same backfill material and compaction methods described above were used in the other large soil excavations that were performed at the site; however, no additional in-place density tests were performed.

When contaminated soil was excavated at the gasoline product line and diesel pump island areas (Section IV), the final excavations were expanded when the large concrete canopy footings in those areas were removed. Four footings were located under the gasoline fueling canopy and three were located under the diesel fueling canopy (one at each pump island). These footings estimated to be 5 tons each, had to be removed as part of the contract between the land owner and a future tenant of the property. When the footings were removed a large trench was formed extending the length of each canopy and including the areas where contaminated soil had been removed. A ramp was built on one end of each trench using the track excavator to allow the 5.2 ton vibratory compactor to drive in and out of the excavations and compact each lift of backfill. These same methods were used in front of the former building where two canopy footings had to be removed.

The only places where the vibratory compactor was not used were the three small excavations performed in the diesel pump island area that were 4 feet wide by 6 feet long by 8 feet deep each. These excavations were backfilled in one foot lifts using the imported sand-rock and compacted using the four foot wide steel excavator bucket.

VI. Groundwater Sampling and Analysis

On February 17, 2011, groundwater samples were collected from three on-site monitoring wells (MW-1, 2, & 8) and four recovery wells (RW-1, 2, 3 & 4) for laboratory analysis. One of the wells (MW-4) was re-sampled on March 8, 2011 because an insufficient sample volume was collected during the first sampling event and only the lead analysis was performed. Monitoring wells MW-6 and MW-7 were dry at the time of sampling on 2/17/11; therefore, no samples were analyzed from these wells.

The depth to groundwater ranged from 30– 35 feet below the top of the well casings. The standard field procedures used by Pyramid are included in **Appendix G**. To purge stagnant water or develop the wells, three to five casing volumes of water were removed from each well using a properly decontaminated submersible pump. The groundwater samples were collected using a new disposal bailer, placed in laboratory prepared containers, packed in ice, and prepared for shipment to Pace Analytical Services, Inc. in Huntersville, North Carolina for analysis. The groundwater samples were analyzed for volatile organic compounds using EPA Method 6200B, for volatile petroleum hydrocarbons using the MADEP VPH method, for EDB using EPA Method 504.1 for lead using 3030C. Due to insufficient sample volume, MW-4 was not analyzed for EDB using Method 504.1. EDB was not detected in MW-4 as part of the 6200B analysis. The current laboratory results are summarized in **Table 6**. A copy of the laboratory report is presented as **Appendix L**.

To prevent cross contamination, new disposable gloves were worn by field personnel during purging and sampling. Free product was not observed in the wells during gauging and sampling activities.

The laboratory results of the groundwater samples indicate that the detected concentrations of benzene (7.8 µg/L to 1,890 µg/L) in all four recovery wells and one monitoring well (MW-4) exceed the NC 2L groundwater standards. Several other targeted compounds and all three of the VPH fractions were detected in RW-1 at concentrations that exceed the 2L groundwater standards. The detected concentrations of naphthalene, C9-C12 aliphatics and C9-C10 aromatics in MW-4 also exceed the 2L groundwater standards. The detected concentration of C5-C8 aliphatics in RW-4 exceeds the 2L groundwater standards. The detected concentrations of lead in MW-4, RW-1 and RW-3 also exceed the 2L groundwater standards.

None of the detected concentrations exceeds the DENR Gross Contaminant Levels (GCLs). The historic groundwater results are shown in **Table 7**. As indicated in Table 7, the contaminant concentrations decreased across the site from 1996 to 2002 when the groundwater remediation system was in operation. The system was shut down in 2002 after groundwater concentrations were reduced below GCLs for a period of several years.

Pyramid suggested that the connection of local well users to municipal water was the best regulatory closure plan for the site. Pyramid discussed the water line options with the City of Mebane over the years from 2001 to 2010 when it finally was possible to connect the site. The DENR has reviewed the current status of the site and considers the remaining water supply wells to be not at risk from the remaining contamination. All properties surrounding the site are classified as commercial properties and are either already connected to the City of Mebane, or will be required to connect to the City of Mebane water system. Based on the laboratory results of the groundwater samples collected from the site in February 2011, the incident is eligible for closure using a Notice of Residual Petroleum and a land use restriction prohibiting the use of the groundwater at the site for any purpose.

VII. Supply Well Abandonment

On March 4, 2011, the on-site water supply well (Public Supply Well ID# 0201617) was properly abandoned according to the 15A NCAC 2C Well Construction Standards. The well abandonment was supervised by Mr. John R. Garrison, NC Certified Driller #3882-C. Prior to abandonment, the well was gauged by Mr. Garrison and the total depth measured 62 feet below existing land surface. The depth of groundwater measured 41 feet below land surface. The well was disinfected using 8 ounces of calcium hypochlorite.

To prepare the well for abandonment, Price Construction removed the well house and the pump from the well and excavated a three foot wide and three foot deep hole around the existing 6-inch steel casing. The top four feet of casing was removed from the well using a cutting torch. The well was properly abandoned with approximately 846 pounds of neat cement that was delivered to the site by a local ready mix concrete company. The well was overfilled with neat cement until the 3 foot wide excavation above the remaining casing was filled. According to Mr. Garrison, the original well abandonment record was mailed to the Division of Water Quality in Raleigh, NC as required. Copies of the well abandonment record and supporting documentation are included in **Appendix M**.

VIII. Conclusions and Recommendations

As requested by TAC, Inc., Pyramid completed the soil and groundwater assessment required by the DENR for the UST removal process and for Regulatory Incident Closure. The following presents a summary of the environmental assessment and cleanup activities.

- From the 1980's through 1995, an active remediation system was operated by others. In 1994, the former USTs were removed and over 3000 cubic yards of contaminated soil was removed from the site.
- A soil and groundwater system was installed after the excavation and operated from 1996 through 2001. In 2001, the groundwater concentrations were so low that additional remediation was not required by the DENR. The plan was to wait until municipal water became available and connect well users to City water.
- In 2007, DENR required additional sampling which was completed and showed that groundwater concentrations had further declined at the site.

- In 2010, the property was connected to the City of Mebane water supply. In October 2010, TAC/Pyramid requested that the DENR consider what steps were required for regulatory closure of Incident # 2999.
- On December 20, 2010, Pyramid installed two soil borings (SB-1 and SB-2) to assess current soil concentrations at the limits of the 1995 soil excavation. The results showed no petroleum contamination in SB-1, and low detections (Below Commercial Limits) in SB-2 at 14 feet. Only one compound was barely over the residential standard.
- On February 7, 2011, a Notice of Intent for UST Permanent Closure Form (UST-3) was sent to Mr. Waddell Watters of the NCDENR in preparation for the upcoming tank removal project.
- To complete the requirements for possible incident closure, on February 17, 2011, groundwater samples were collected from the monitoring wells and recovery wells for laboratory analysis. All groundwater concentrations were below GCLs.
- On March 8th, 2011, Pyramid supervised the removal and permanent closure of two 12,000-gallon gasoline (Tank #1 & #2) and one 10,000-gallon diesel tank (Tank #3). The tank closure samples were all below action limits.
- Only one of the gasoline line samples showed detections of GRO greater than the 10 mg/kg action limit. The excavation in this area was completed and the soil analytical results at the extent of the excavation were below STGW & Residential MSCCs.
- The soil samples beneath the diesel pump island and product lines indicated that five of the thirteen samples contained TPH concentrations greater than 10 mg/kg. Contaminated soil was excavated at the diesel pump islands and final excavation samples were below STGW & Residential MSCCs.
- The laboratory results of the soil samples collected from the UST basin, product lines, dispenser locations, and the final excavations show that the soil contamination has been effectively removed from the site.

Based on the recent soil and groundwater assessment, groundwater results below GCLs, low risk to surrounding commercial properties, and groundwater flow to the south, Pyramid recommends that the DENR consider the site for Regulatory Closure. The abandonment of the monitoring and recovery wells, deed recordation, and public notice will be completed to comply with a No Further Action ruling.

Since this site is undergoing re-development, Pyramid requests that a ruling by the DENR be granted to allow the re-development process to move forward quickly. The DENR's assistance in this matter is greatly appreciated by the buyer, seller and 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 Environmental & Engineering, P.C., appreciates the opportunity to provide this environmental service.

V. Signature of Professional Engineer or Licensed Geologist



Licensed Geologist -- License #1168

Michael G. Jones, LG
Operations Manager

Brett Higgins
Project Manager

#37872

UST-61 24-Hour Release and UST Leak Reporting Form.

For Releases in NC

This form should be completed and submitted to the UST Section's regional office following a known or suspected release from an underground storage tank (UST) system. This form is required to be submitted within 24 hours of discovery of a known or suspected release

Incident # _____ Received On _____ Reported by (circle one): Phone, Fax or Report _____ Region _____	(DWM USE ONLY) Risk (H,I,L,U) _____ Received By _____	Suspected Contamination? (Y/N) <u>Y</u> Confirmed GW Contamination? (Y/N) <u>N</u> Confirmed Soil Contamination?(Y/N) <u>Y</u> Samples Taken?(Y/N) <u>Y</u> Free Product? (Y/N) <u>N</u> If Yes, State Greatest Thickness _____ Thickness <u>NA</u>	Facility ID Number <u>0-234593</u> Date Leak Discovered <u>3/8/11</u> Comm/Non-Commercial? <u>Comm</u> Reg/Non-regulated? <u>Regulated</u>
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INCIDENT DESCRIPTION

Incident Name: Former Express Stop #21

Address: 1231 Mebane Oaks Road County: Alamance

City/Town: Mebane Zip Code: 27302 Regional Office (circle one): Asheville, Mooreville, Fayetteville, Raleigh, Washington, Wilmington, Winston-Salem

Latitude (decimal degrees): N 36 04' 12.65" Longitude (decimal degrees): W 79 16' 17.55"

Obtained by:

GPS
 Topographic map
 GIS Address matching
 Other
 Unknown

Describe location:

Briefly describe suspected or confirmed release: (including but not limited to: nature of release, date of release, amount of release, amount of free product present and recovery efforts, initial responses conducted, impacts to receptors)

On 3/8/11 Pyramid supervised the removal and closure of (2) 12,000-gallon gasoline and (1) 10,000-gallon diesel USTs. Soil contamination was discovered during the removal and sampling of the gasoline and diesel pumps and product lines. The contaminated soil was removed and transported off-site on 3/17/11 and 3/29/11. The laboratory analysis of soil samples collected from the limits of the excavations indicate that none of the targeted compounds were detected at concentrations that exceed the Soil to Groundwater or Residential MSCCs.

HOW RELEASE WAS DISCOVERED (Release Code)

(Check one)

<input type="checkbox"/> Release Detection Equipment or Methods	<input type="checkbox"/> Visual/Odor	<input type="checkbox"/> Groundwater Contamination
<input checked="" type="checkbox"/> During UST Closure/Removal	<input type="checkbox"/> Water in Tank	<input type="checkbox"/> Surface Water Contamination
<input type="checkbox"/> Property Transfer	<input type="checkbox"/> Water Supply Well Contamination	<input type="checkbox"/> Other (specify) _____

SOURCE OF CONTAMINATION

Source of Release (Check one to indicate primary source)	Cause of Release (Check one to indicate primary cause)	Type of Release (Check one)	Product Type Released (Check one to indicate primary product type released)
<input type="checkbox"/> Tank <input checked="" type="checkbox"/> Piping <input type="checkbox"/> Dispenser <input type="checkbox"/> Submersible Turbine Pump <input type="checkbox"/> Delivery Problem <input type="checkbox"/> Other <input type="checkbox"/> Unknown	<input type="checkbox"/> Spill <input type="checkbox"/> Overfill <input type="checkbox"/> Corrosion <input type="checkbox"/> Physical or Mechanical Damage <input type="checkbox"/> Install Problem <input type="checkbox"/> Other <input checked="" type="checkbox"/> Unknown	<input checked="" type="checkbox"/> Petroleum <input type="checkbox"/> Non-Petroleum <input type="checkbox"/> Both Location (Check one) <input checked="" type="checkbox"/> Facility <input type="checkbox"/> Residence <input type="checkbox"/> Other	<input checked="" type="checkbox"/> Gasoline/ Diesel/ Kerosene <input type="checkbox"/> Heating Oil <input type="checkbox"/> Other Petroleum Products <input type="checkbox"/> Metals <input type="checkbox"/> Other Inorganics <input type="checkbox"/> Other Organics <input type="checkbox"/> Diesel/Veg. Oil Blend <input type="checkbox"/> Vegetable Oil 100% <input type="checkbox"/> E10 - E20 <input type="checkbox"/> E21 - E84 <input type="checkbox"/> E85 - E99 <input type="checkbox"/> Ethanol 100% <input type="checkbox"/> E01 - E09

Ownership
 1. Municipal 2. Military 3. Unknown 4. Private 5. Federal 6. County 7. State

Operation Type
 1. Public Service 2. Agricultural 3. Residential 4. Education/Relig. 5. Industrial 6. Commercial 7. Mining

Never tanks at Mebane Oaks Fuel Mart (1995)



IMPACT ON DRINKING WATER SUPPLIES

Water Supply Wells Affected? 1. Yes 2. No 3. Unknown

Number of Water Supply Wells Affected _____

Water Supply Wells Contaminated: *(Include Users Names, Addresses and Phone Numbers. Attach additional sheet if necessary)*

- 1.
- 2.
- 3.

UST SYSTEM OWNER

UST Owner/Company
T.AC., Inc.

Point of Contact Tom Berry		Address 2200 Bessemer Avenue	
City Greensboro	State NC	Zip Code 27402	Telephone Number 336-273-8663

UST SYSTEM OPERATOR

UST Operator/Company SAME		Address SAME	
City SAME	State SAME	Zip Code SAME	Telephone Number SAME

LANDOWNER AT LOCATION OF UST INCIDENT

Landowner Bessemer Group, Inc.		Address P.O. Box 1111	
City Greensboro	State NC	Zip Code 27402	Telephone Number 336-273-8663

Draw Sketch of Area (showing two major road intersections) or Attach Map

See attached maps

Person Reporting Incident B. Higgins	Company Pyramid Environmental & Engineering, P.C.	Telephone Number 336-335-3174
Title Project Manager	Address 503 industrial Ave., Greensboro, NC 27406	Date 4-05-11

UST Form 61 (02/08)

Page 2 of 2

Definitions of Sources

- Tank:** means the tank that stores the product and is part of the underground storage tank system
- Piping:** means the piping and connectors running from the tank or submersible turbine pump to the dispenser or other end-use equipment (Vent, vapor recovery, or fill lines are excluded.)
- Dispenser:** includes the dispenser and the equipment used to connect the dispenser to the piping (e.g., a release from a suction pump or from components located above the shear valve)
- Submersible Turbine Pump (STP) Area** includes the submersible turbine pump head (typically located in the tank sump), the line leak detector, and the piping that connects the submersible turbine pump to the tank
- Delivery Problem:** identifies releases that occurred during product delivery to the tank. (Typical causes associated with this source are spills and overfills.)
- Other:** serves as the option to use when the release source is known but does not fit into one of the preceding categories (e.g., for releases from vent lines, vapor recovery lines, and fill lines)
- Unknown:** identifies releases for which the source has not been determined

Definitions of Causes

- Spill:** use this cause when a spill occurs (e.g., when the delivery hose is disconnected from the tank fill pipe or when the nozzle is removed from the dispenser)
- Overfill:** use when an overfill occurs (e.g., overfills may occur from the fill pipe at the tank or when the nozzle fails to shut off at the dispenser)
- Physical or Mechanical Damage:** use for all types of physical or mechanical damage, except corrosion (e.g., puncture of tank or piping, loose fittings, broken components, and components that have changed dimension)
- Corrosion:** use when a metal tank, piping, or other component has a release due to corrosion (e.g., for steel, corrosion takes the form of rust)
- Installation Problem:** use when the problem is determined to have occurred specifically because the UST system was not installed properly
- Other:** use this option when the cause is known but does not fit into one of the preceding categories (e.g., putting regulated substances into monitoring wells)
- Unknown:** use when the cause has not been determined

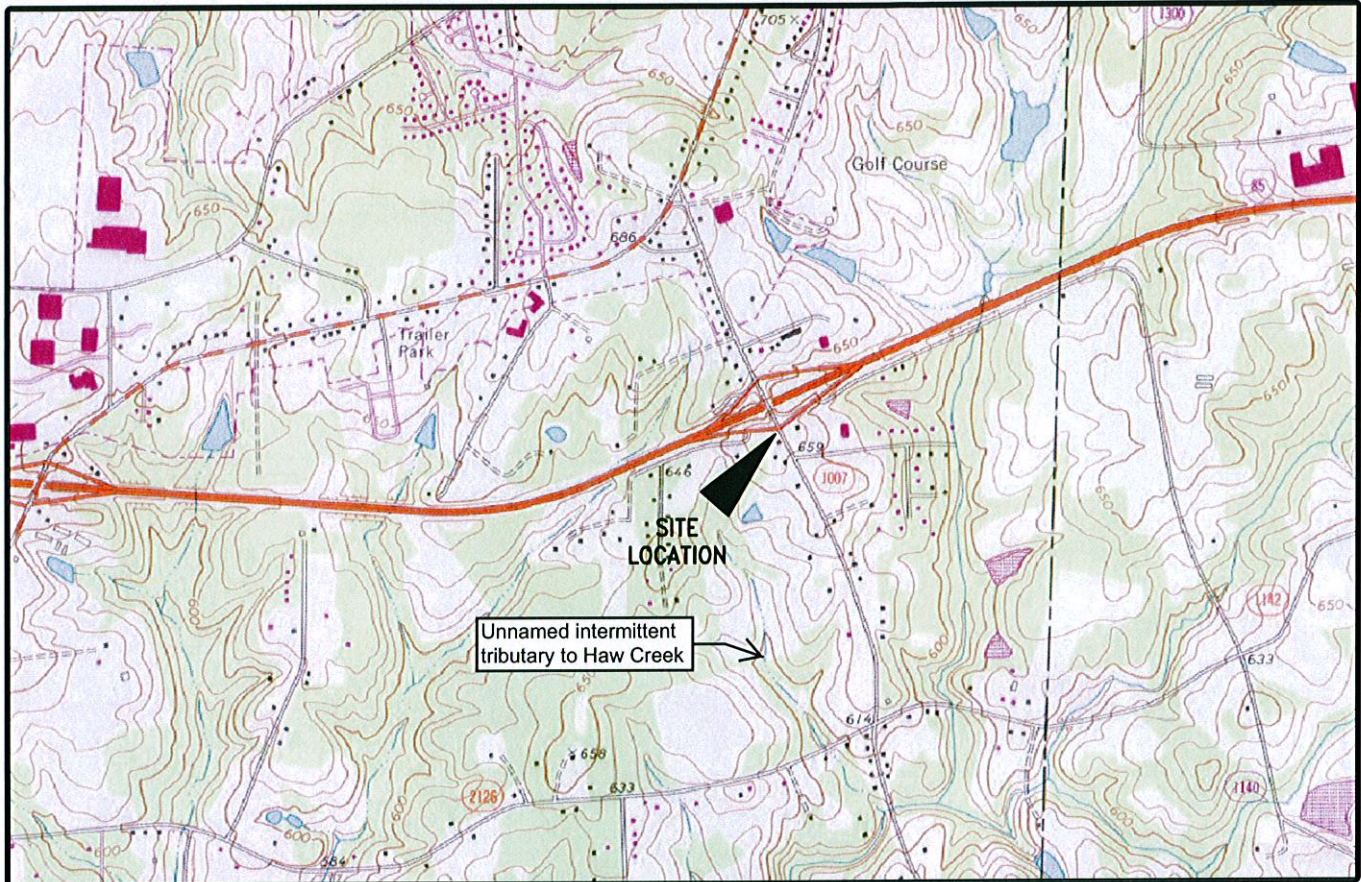
USGS TOPOGRAPHIC MAP

SITE:

MEBANE OAKS RD.

LOCATION:

MEBANE, NORTH CAROLINA



USGS IDENTIFICATION

USGS 7.5
MINUTE MAP

ORIGINAL DATE:

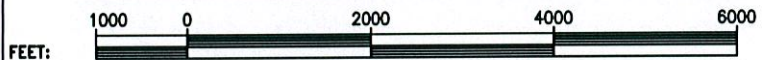
MEBANE, NC

1969

PHOTOREVISION
DATE:

1994

SCALES



1" = 2000'

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

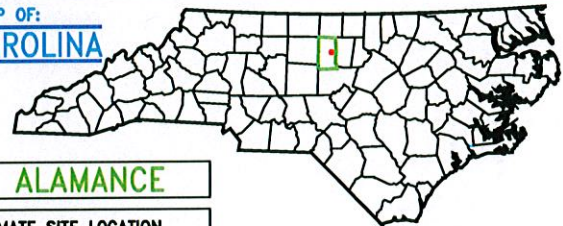
NOTES: ▶ TOPOGRAPHICAL CONTOUR INTERVAL = 10 FEET
▶ PHOTOREVISIONS DENOTED IN PURPLE

MAGNETIC
NORTH



COUNTY MAP OF:

NORTH CAROLINA



COUNTY: **ALAMANCE**

APPROXIMATE SITE LOCATION



CLIENT: T.A.C./BERICO FUELS

PROPERTY NAME: MEBANE OAKS SHELL

CITY: MEBANE STATE: NORTH CAROLINA

TITLE: TOPOGRAPHIC MAP

SCALE:
1"=2000'

DATE:
7/9/07

DRAWING NAME:
USGSTOPO

DRAWN BY: KAM

CHECK BY: TDL

JOB NO.: 2007-148

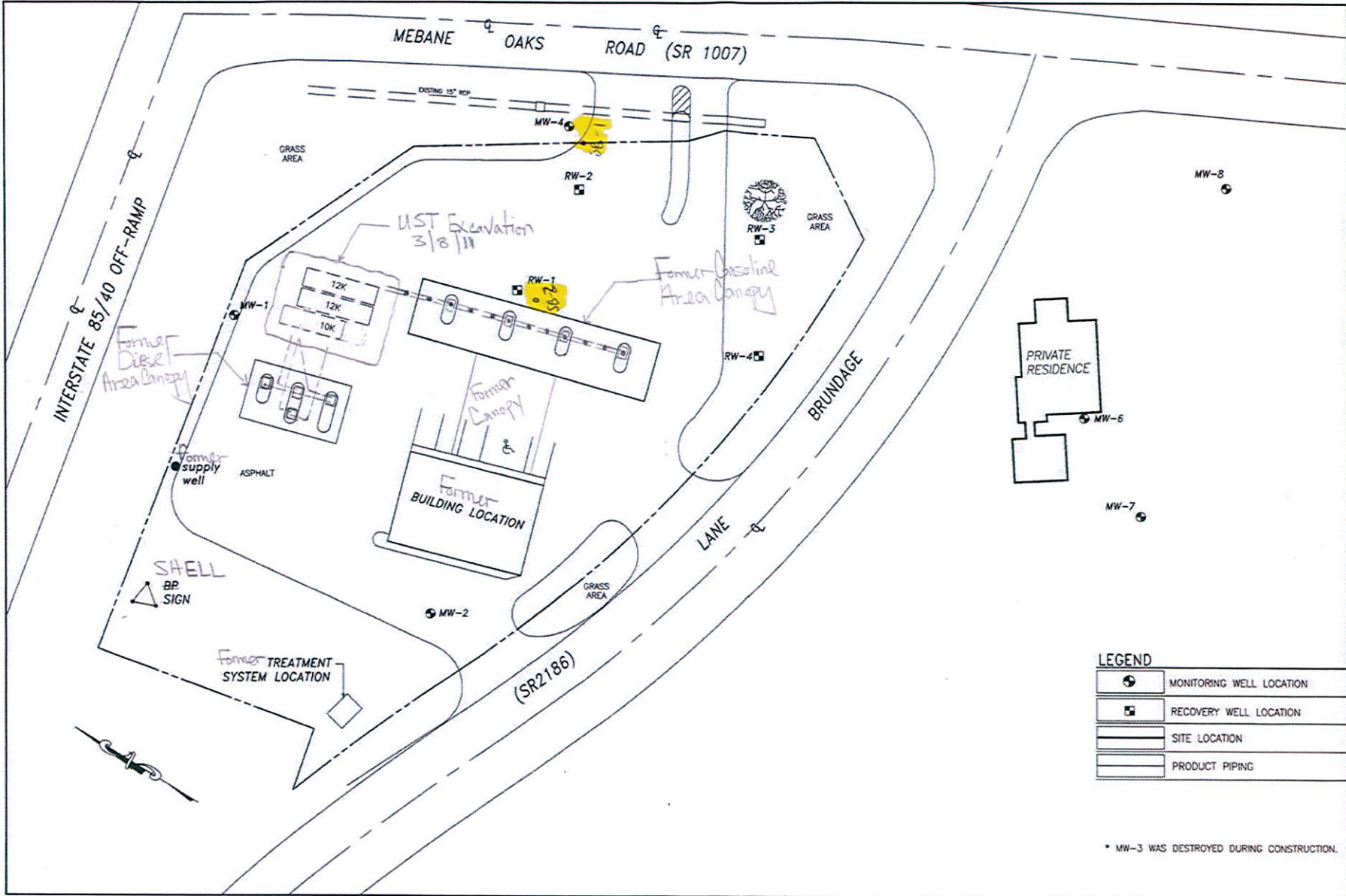
TYPE: REMEDIATION

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

	MONITORING WELL LOCATION
	RECOVERY WELL LOCATION
	SITE LOCATION
	PRODUCT PIPING

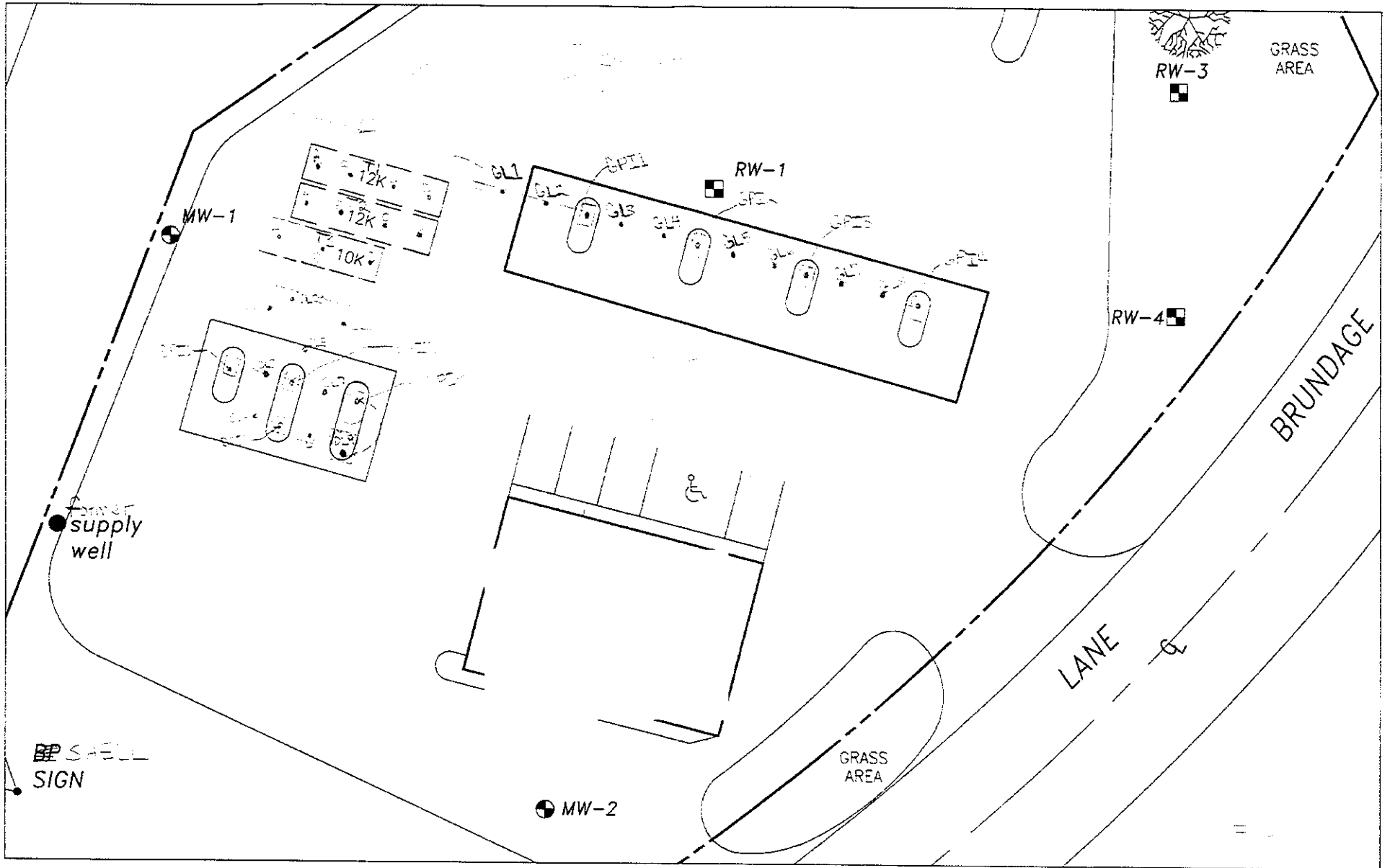
* MW-3 WAS DESTROYED DURING CONSTRUCTION.

1334 N. JONES DR. #100
 7/10/07
 2007-148
 2

BERICO FUELS
 MEBANE OAKS ROAD
 MEBANE NORTH CAROLINA
 SITE MAP

PYRAMID
 ENVIRONMENTAL & ENGINEERING, P.C.

Scale: 1" = 40'



ANALYTICAL RESULTS

Project: MEBANE OAKS SHELL 2011-030

Pace Project No.: 9289607

Sample: **DPI 3-3'** Lab ID: **9289607001** Collected: 03/09/11 14:45 Received: 03/10/11 14:41 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	21.0	mg/kg	7.1	1	03/11/11 08:35	03/13/11 19:59	68334-30-5	
n-Pentacosane (S)	79	%	41-119	1	03/11/11 08:35	03/13/11 19:59	629-99-2	
Gasoline Range Organics Analytical Method: EPA 8015 Modified Preparation Method: EPA 5035A/5030B								
Gasoline Range Organics	ND	mg/kg	7.6	1	03/12/11 11:28	03/12/11 19:25	8006-61-9	
4-Bromofluorobenzene (S)	133	%	70-167	1	03/12/11 11:28	03/12/11 19:25	460-00-4	
Percent Moisture Analytical Method: ASTM D2974-87								
Percent Moisture	28.8	%	0.10	1		03/11/11 14:06		

Sample: **DPI 4-3'** Lab ID: **9289607002** Collected: 03/09/11 15:05 Received: 03/10/11 14:41 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	23.8	mg/kg	7.3	1	03/11/11 08:35	03/13/11 20:33	68334-30-5	
n-Pentacosane (S)	84	%	41-119	1	03/11/11 08:35	03/13/11 20:33	629-99-2	
Gasoline Range Organics Analytical Method: EPA 8015 Modified Preparation Method: EPA 5035A/5030B								
Gasoline Range Organics	ND	mg/kg	6.8	1	03/12/11 11:28	03/12/11 19:50	8006-61-9	
4-Bromofluorobenzene (S)	140	%	70-167	1	03/12/11 11:28	03/12/11 19:50	460-00-4	
Percent Moisture Analytical Method: ASTM D2974-87								
Percent Moisture	31.3	%	0.10	1		03/11/11 14:06		

CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: 2 of 2
1451119

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company: <u>Paramid Eng</u>	Report To: <u>Brett Higgins</u>	Attention: <u>Brett Higgins</u>	REGULATORY AGENCY		
Address: <u>508 Industrial Greensboro NC</u>	Copy To: <u>NA</u>	Company Name: <u>SAME</u>	<input checked="" type="checkbox"/> PDES	<input type="checkbox"/> GROUND WATER	<input type="checkbox"/> DRINKING WATER
Email To: <u>Brett Higgins</u>	Purchase Order No.: <u>2011-030</u>	Address: <u>"</u>	<input checked="" type="checkbox"/> UST	<input type="checkbox"/> RCRA	<input type="checkbox"/> OTHER
Phone: <u>336-3174</u> Fax: <u>NA</u>	Project Name: <u>Mebane Oaks Shell</u>	Pace Quote Reference: <u>Kevin Godwin</u>	Site Location: <u>NC</u>		
Requested Due Date/TAT: <u>7-10 days</u>	Project Number: <u>2011-030</u>	Pace Project Manager: <u>Kevin Godwin</u>	STATE: <u>NC</u>		

ITEM #	SAMPLE ID (A-Z, 0-9 / -)	Matrix Codes MATRIX / CODE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED				SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives							Analysis Test ↓	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.	
					COMPOSITE START		COMPOSITE END/GRAB				Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₃	Methanol					Other
					DATE	TIME	DATE	TIME														
1	DPI1-3'		G		3/11/11	14:10			4	X										9289603010		
2	DPI2-3'		G			14:40			X											↓ 011		
3	DPI3-3'		G			14:45			X											9289607001		
4	DPI4-3'		G			15:05			X											↓ 002		

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS				
* 2-day rush for DPI3-3' and DPI4-3'	Brett Higgins / Pgr.	3/10/11	10:30	[Signature]	3/11/11	12:52	3.2	Y	W	Y	
	[Signature]	3/10/11	14:41	[Signature]	3/11/11	14:41					

ORIGINAL

SAMPLER NAME AND SIGNATURE				Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
PRINT Name of SAMPLER: <u>Brett S. Higgins</u>							
SIGNATURE of SAMPLER: <u>[Signature]</u>							
Date Signed (MM/DD/YY): <u>3/10/11</u>							

Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 4.5% per month.

ANALYTICAL RESULTS

Project: MEBANE OAKS SHELL 2011-030

Pace Project No.: 9289499

Sample: **GL6-4'** Lab ID: **9289499006** Collected: 03/08/11 11:30 Received: 03/09/11 14:10 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Gasoline Range Organics		Analytical Method: EPA 8015 Modified Preparation Method: EPA 5035A/5030B						
Gasoline Range Organics	4910	mg/kg	126	20	03/16/11 15:27	03/17/11 20:59	8006-61-9	
4-Bromofluorobenzene (S)	165	%	70-167	20	03/16/11 15:27	03/17/11 20:59	460-00-4	
Percent Moisture		Analytical Method: ASTM D2974-87						
Percent Moisture	26.5	%	0.10	1		03/10/11 08:37		

Sample: **GL8-4'** Lab ID: **9289499008** Collected: 03/08/11 11:55 Received: 03/09/11 14:10 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Gasoline Range Organics		Analytical Method: EPA 8015 Modified Preparation Method: EPA 5035A/5030B						
Gasoline Range Organics	ND	mg/kg	6.1	1	03/16/11 15:27	03/16/11 22:07	8006-61-9	
4-Bromofluorobenzene (S)	152	%	70-167	1	03/16/11 15:27	03/16/11 22:07	460-00-4	
Percent Moisture		Analytical Method: ASTM D2974-87						
Percent Moisture	24.7	%	0.10	1		03/10/11 08:38		

Sample: **GPI1-4'** Lab ID: **9289499009** Collected: 03/08/11 10:30 Received: 03/09/11 14:10 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Gasoline Range Organics		Analytical Method: EPA 8015 Modified Preparation Method: EPA 5035A/5030B						
Gasoline Range Organics	ND	mg/kg	7.2	1	03/16/11 15:27	03/16/11 22:31	8006-61-9	
4-Bromofluorobenzene (S)	113	%	70-167	1	03/16/11 15:27	03/16/11 22:31	460-00-4	
Percent Moisture		Analytical Method: ASTM D2974-87						
Percent Moisture	28.2	%	0.10	1		03/10/11 08:38		

Sample: **GPI2-4'** Lab ID: **9289499010** Collected: 03/08/11 11:10 Received: 03/09/11 14:10 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Gasoline Range Organics		Analytical Method: EPA 8015 Modified Preparation Method: EPA 5035A/5030B						
Gasoline Range Organics	ND	mg/kg	8.1	1	03/16/11 15:27	03/16/11 22:56	8006-61-9	
4-Bromofluorobenzene (S)	135	%	70-167	1	03/16/11 15:27	03/16/11 22:56	460-00-4	
Percent Moisture		Analytical Method: ASTM D2974-87						
Percent Moisture	33.7	%	0.10	1		03/10/11 08:38		

Date: 03/23/2011 03:47 PM

REPORT OF LABORATORY ANALYSIS

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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:		Section B Required Project Information:		Section C Invoice Information:		Page: 1 of 2	
Company: Pyramid Ind.		Report To: Brett Higgins		Attention: Brett Higgins		1451121	
Address: 503 Industrial Greensboro, NC		Copy To: NA		Company Name: Pyramid		REGULATORY AGENCY	
Email To: Brett Higgins		Purchase Order No.: 2011-030		Address: SAME		<input type="checkbox"/> NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER	
Phone: 335-3174		Project Name: Melanie Oaks Shell		Pace Quote Reference: Kevin Godwin		<input checked="" type="checkbox"/> UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER	
Requested Due Date/TAT: 7-10 days		Project Number: 2011-030		Pace Profile #: 2983-1		Site Location: NC STATE: NC	

ITEM #	Section D Required Client Information	Matrix Codes MATRIX / CODE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED				SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives							Analysis Test Y/N	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)
					COMPOSITE START		COMPOSITE END/GRAB				Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₃	Methanol			
	SAMPLE ID (A-Z, 0-9 / -) Sample IDs MUST BE UNIQUE				DATE	TIME	DATE	TIME												
1	GL1-4'		SLG		3/8/11	10:20			3											
2	GL2-4'					10:25												9289499		
3	GL3-4'					10:40												Pace Project No./ Lab I.D.		
4	GL4-4'					10:45												9289499001		
5	GL5-4'					11:25												002		
6	GL6-4'					11:30												003		
7	GL7-4'					11:50												004		
8	GL8-4'					11:55												005		
9	GPI1-4'					11:30												006		
10	GPI2-4'					11:10												007		
11	GPI3-4'					11:35												008		
12	GPI4-4'					12:00												009		
	ADDITIONAL COMMENTS																	010		
	RELINQUISHED BY / AFFILIATION																	011		
	DATE																	012		
	TIME																			
	ACCEPTED BY / AFFILIATION																			
	DATE																			
	TIME																			
	SAMPLE CONDITIONS																			

ORIGINAL

SAMPLER NAME AND SIGNATURE			Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
PRINT Name of SAMPLER: Brett S. Higgins						
SIGNATURE of SAMPLER: Brett S. Higgins DATE Signed (MM/DD/YY): 3/9/11						

*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.

ANALYTICAL RESULTS

Project: MEBANE OAKS SHELL 2011-031
Pace Project No.: 9289603

Sample: DL 1-4' **Lab ID: 9289603001** Collected: 03/09/11 14:15 Received: 03/10/11 14:41 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	6.9	1	03/17/11 15:45	03/18/11 19:23	68334-30-5	
n-Pentacosane (S)	61	%	41-119	1	03/17/11 15:45	03/18/11 19:23	629-99-2	
Gasoline Range Organics		Analytical Method: EPA 8015 Modified Preparation Method: EPA 5035A/5030B						
Gasoline Range Organics	ND	mg/kg	6.5	1	03/22/11 18:10	03/22/11 20:07	8006-61-9	
4-Bromofluorobenzene (S)	159	%	70-167	1	03/22/11 18:10	03/22/11 20:07	460-00-4	
Percent Moisture		Analytical Method: ASTM D2974-87						
Percent Moisture	27.6	%	0.10	1		03/11/11 14:31		

Sample: DL 2-4' **Lab ID: 9289603002** Collected: 03/09/11 14:20 Received: 03/10/11 14:41 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	7.4	1	03/17/11 15:45	03/21/11 13:35	68334-30-5	
n-Pentacosane (S)	62	%	41-119	1	03/17/11 15:45	03/21/11 13:35	629-99-2	
Gasoline Range Organics		Analytical Method: EPA 8015 Modified Preparation Method: EPA 5035A/5030B						
Gasoline Range Organics	14.5	mg/kg	7.5	1	03/22/11 18:10	03/22/11 20:32	8006-61-9	
4-Bromofluorobenzene (S)	150	%	70-167	1	03/22/11 18:10	03/22/11 20:32	460-00-4	
Percent Moisture		Analytical Method: ASTM D2974-87						
Percent Moisture	32.5	%	0.10	1		03/11/11 14:31		

Sample: DL 3-4' **Lab ID: 9289603003** Collected: 03/09/11 14:25 Received: 03/10/11 14:41 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	7.1	1	03/17/11 15:45	03/18/11 19:57	68334-30-5	
n-Pentacosane (S)	68	%	41-119	1	03/17/11 15:45	03/18/11 19:57	629-99-2	
Gasoline Range Organics		Analytical Method: EPA 8015 Modified Preparation Method: EPA 5035A/5030B						
Gasoline Range Organics	ND	mg/kg	7.1	1	03/22/11 18:10	03/22/11 20:57	8006-61-9	
4-Bromofluorobenzene (S)	159	%	70-167	1	03/22/11 18:10	03/22/11 20:57	460-00-4	
Percent Moisture		Analytical Method: ASTM D2974-87						
Percent Moisture	29.6	%	0.10	1		03/11/11 14:31		

ANALYTICAL RESULTS

Project: MEBANE OAKS SHELL 2011-031
Pace Project No.: 9289603

Sample: DL 4-3' Lab ID: 9289603004 Collected: 03/09/11 14:35 Received: 03/10/11 14:41 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	7.3	1	03/17/11 15:45	03/21/11 14:54	68334-30-5	
n-Pentacosane (S)	65 %		41-119	1	03/17/11 15:45	03/21/11 14:54	629-99-2	
Gasoline Range Organics								
Analytical Method: EPA 8015 Modified Preparation Method: EPA 5035A/5030B								
Gasoline Range Organics	20.2	mg/kg	7.2	1	03/22/11 18:10	03/22/11 21:21	8006-61-9	
4-Bromofluorobenzene (S)	150 %		70-167	1	03/22/11 18:10	03/22/11 21:21	460-00-4	
Percent Moisture								
Analytical Method: ASTM D2974-87								
Percent Moisture	31.4 %		0.10	1		03/11/11 14:32		

Sample: DL 5-3' Lab ID: 9289603005 Collected: 03/09/11 14:30 Received: 03/10/11 14:41 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	7.1	1	03/17/11 15:45	03/18/11 21:06	68334-30-5	
n-Pentacosane (S)	60 %		41-119	1	03/17/11 15:45	03/18/11 21:06	629-99-2	
Gasoline Range Organics								
Analytical Method: EPA 8015 Modified Preparation Method: EPA 5035A/5030B								
Gasoline Range Organics	ND	mg/kg	6.7	1	03/22/11 18:10	03/22/11 21:46	8006-61-9	
4-Bromofluorobenzene (S)	165 %		70-167	1	03/22/11 18:10	03/22/11 21:46	460-00-4	
Percent Moisture								
Analytical Method: ASTM D2974-87								
Percent Moisture	28.8 %		0.10	1		03/11/11 14:32		

Sample: DL 6-4' Lab ID: 9289603006 Collected: 03/09/11 14:50 Received: 03/10/11 14:41 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	7.1	1	03/17/11 15:45	03/21/11 15:28	68334-30-5	
n-Pentacosane (S)	66 %		41-119	1	03/17/11 15:45	03/21/11 15:28	629-99-2	
Gasoline Range Organics								
Analytical Method: EPA 8015 Modified Preparation Method: EPA 5035A/5030B								
Gasoline Range Organics	9.2	mg/kg	6.8	1	03/22/11 18:10	03/22/11 22:11	8006-61-9	
4-Bromofluorobenzene (S)	155 %		70-167	1	03/22/11 18:10	03/22/11 22:11	460-00-4	
Percent Moisture								
Analytical Method: ASTM D2974-87								
Percent Moisture	29.7 %		0.10	1		03/11/11 14:32		

ANALYTICAL RESULTS

Project: MEBANE OAKS SHELL 2011-031
Pace Project No.: 9289603

Sample: DL 7-3' Lab ID: 9289603007 Collected: 03/09/11 14:55 Received: 03/10/11 14:41 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	7.2	1	03/17/11 15:45	03/18/11 21:40	68334-30-5	
n-Pentacosane (S)	54 %		41-119	1	03/17/11 15:45	03/18/11 21:40	629-99-2	
Gasoline Range Organics Analytical Method: EPA 8015 Modified Preparation Method: EPA 5035A/5030B								
Gasoline Range Organics	ND	mg/kg	7.1	1	03/22/11 18:10	03/22/11 22:36	8006-61-9	
4-Bromofluorobenzene (S)	137 %		70-167	1	03/22/11 18:10	03/22/11 22:36	460-00-4	
Percent Moisture Analytical Method: ASTM D2974-87								
Percent Moisture	30.0 %		0.10	1		03/11/11 14:32		

Sample: DL 8-3' Lab ID: 9289603008 Collected: 03/09/11 15:00 Received: 03/10/11 14:41 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	6.7	1	03/17/11 15:45	03/21/11 16:03	68334-30-5	
n-Pentacosane (S)	69 %		41-119	1	03/17/11 15:45	03/21/11 16:03	629-99-2	
Gasoline Range Organics Analytical Method: EPA 8015 Modified Preparation Method: EPA 5035A/5030B								
Gasoline Range Organics	7.2	mg/kg	6.6	1	03/22/11 18:10	03/22/11 23:00	8006-61-9	
4-Bromofluorobenzene (S)	134 %		70-167	1	03/22/11 18:10	03/22/11 23:00	460-00-4	
Percent Moisture Analytical Method: ASTM D2974-87								
Percent Moisture	25.7 %		0.10	1		03/11/11 14:33		

Sample: DL 9-4' Lab ID: 9289603009 Collected: 03/09/11 15:25 Received: 03/10/11 14:41 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	11800	mg/kg	327	50	03/17/11 15:45	03/21/11 16:37	68334-30-5	
n-Pentacosane (S)	0 %		41-119	50	03/17/11 15:45	03/21/11 16:37	629-99-2	S4
Gasoline Range Organics Analytical Method: EPA 8015 Modified Preparation Method: EPA 5035A/5030B								
Gasoline Range Organics	964	mg/kg	62.0	10	03/22/11 18:10	03/22/11 23:25	8006-61-9	
4-Bromofluorobenzene (S)	195 %		70-167	10	03/22/11 18:10	03/22/11 23:25	460-00-4	S5
Percent Moisture Analytical Method: ASTM D2974-87								
Percent Moisture	23.6 %		0.10	1		03/11/11 14:33		



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1406838

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company: <u>Pyramid Env</u>		Report To: <u>Brett Higgins</u>		Attention: <u>Brett Higgins</u>	
Address: <u>503 Industrial Ave</u>		Copy To: <u>NA</u>		Company Name: <u>SAME</u>	
<u>Greensboro, NC</u>		Purchase Order No.: <u>2011-030</u>		Address: <u>"</u>	
Email To: <u>Brett Higgins</u>		Project Name: <u>Mebane Oaks Shell</u>		Pace Quote Reference: <u>Kevin Godwin</u>	
Phone: <u>335-3174</u> Fax: <u>NA</u>		Project Number: <u>2011-031</u>		Pace Project Manager: <u>Kevin Godwin</u>	
Requested Due Date/TAT: <u>10 days</u>				Pace Profile #: <u>2983-</u>	
				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: <u>NC</u>	
				STATE: <u>NC</u>	

ITEM #	SAMPLE ID (A-Z, 0-9 / -) Sample IDs MUST BE UNIQUE	Matrix Codes MATRIX / CODE		COLLECTED				SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives							Analysis Test ↓	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
		DW	WT	COMPOSITE START	COMPOSITE END/GRAB	Unpreserved	H ₂ SO ₄			HNO ₃	HCl	NaOH	Na ₂ O ₂	Methanol	Other	Y/N			
1	DL1-4	X	G			3/11	14:15	4	X							X		9289603001	
2	DL2-4						14:28		X							X		002	
3	DL3-4						14:35		X							X		003	
4	DL4-3						14:35		X							X		004	
5	DL5-3						14:35		X							X		005	
6	DL6-4						14:38		X							X		006	
7	DL7-3						14:55		X							X		007	
8	DL8-3						15:05		X							X		008	
9	DL9-4						15:25		X							X		009	
10																			
11																			
12																			

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Trust fund rates	Brett Higgins Py	3/10/11	10:25	[Signature]	3/11	10:30	3.2	4	N	Y
2-day wash for	[Signature]	3/10/11	14:41	[Signature]	3/10/11	14:41				

ORIGINAL

SAMPLER NAME AND SIGNATURE				Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
PRINT Name of SAMPLER: <u>Brett Higgins</u>							
SIGNATURE of SAMPLER: <u>[Signature]</u> Date Signed: <u>3/10/11</u>							



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:		Section B Required Project Information:		Section C Invoice Information:		Page: 2 of 2	
Company: Pyramid Env. Industrial		Report To: Brett Higgins		Attention: Brett Higgins		REGULATORY AGENCY	
Address: 508 Industrial Greensboro NC		Copy To: NA		Company Name: SAME			
Email To: Brett Higgins		Purchase Order No.: 2011-030		Pace Quote Reference:		<input checked="" type="checkbox"/> MPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER <input checked="" type="checkbox"/> UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER _____	
Phone: 335-3174 Fax: NA		Project Name: Mebane Oaks Shell		Pace Project Manager: Kevin Godwin		Site Location: NC	
Requested Due Date/TAT: 1-10 days		Project Number: 201-030		Pace Profile #:		STATE: NC	

ITEM #	SAMPLE ID (A-Z, 0-9 / -)	Matrix Codes MATRIX / CODE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED				SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives						Analysis Test ↓	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.		
					COMPOSITE START		COMPOSITE END/GRAB				Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₃					Methanol	Other
					DATE	TIME	DATE	TIME														
1	DPI1-3'		G																			
2	DPI2-3'		G																			
3	DPI3-3'		G																			
4	DPI4-3'		G																			

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
* 2-day rush for DPI3-3' and DPI4-3'	Brett Higgins / Pyr.	3/10/11	10:30	[Signature]	3/11/11	12:30	3.2	4	W	4

ORIGINAL

SAMPLER NAME AND SIGNATURE		Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
PRINT Name of SAMPLER:					
SIGNATURE of SAMPLER: Brett S. Higgins					
Date Signed (MM/DD/YY): 3/10/11					

*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 C




PYRAMID GEOPHYSICAL SERVICES
(PROJECT 2018-242)


GEOPHYSICAL SURVEY

METALLIC UST INVESTIGATION: PARCEL 12 NCDOT PROJECT I-5711 (50401.1.FS1)

1231 MEBANE OAKS ROAD, MEBANE, NC
SEPTEMBER 17, 2018

Report prepared for: Gordon Box
NCDOT Geotechnical Engineering Unit
1020 Birch Ridge Drive
Raleigh, NC 27610

Prepared by: 
Eric C. Cross, P.G.
NC License #2181

Reviewed by: 
Douglas A. Canavello, P.G.
NC License #1066

GEOPHYSICAL INVESTIGATION REPORT
Parcel 12 – 1231 Mebane Oaks Road
Mebane, Alamance County, North Carolina

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- Figure 2 – Parcel 12 - EM61 Results Contour Map
- Figure 3 – Parcel 12 - GPR Transect Locations and Select Images
- Figure 4 – Parcel 12 - Location and Size of One Possible UST/Well Vault
- Figure 5 – Overlay of Geophysical Survey Boundaries with One Possible UST/Well Vault on NCDOT Engineering Plans

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- Appendix A – Site Map (2007 Remediation Performed by Pyramid)
- Appendix B – GPR Transect Images

LIST OF ACRONYMS

CADD	Computer Assisted Drafting and Design
DF	Dual Frequency
EM.....	Electromagnetic
GPR.....	Ground Penetrating Radar
GPS	Global Positioning System
NCDOT.....	North Carolina Department of Transportation
ROW	Right-of-Way
UST	Underground Storage Tank

EXECUTIVE SUMMARY

Project Description: Pyramid Environmental conducted a geophysical investigation for the North Carolina Department of Transportation (NCDOT) at Parcel 12, located at 1231 Mebane Oaks Road, in Mebane, NC. The survey was part of an NCDOT Right-of-Way (ROW) investigation (NCDOT Project I-5711). The survey was designed to extend from the existing edge of pavement into the proposed ROW and/or easements, whichever distance was greater. Conducted from September 10-11, 2018, the geophysical investigation was performed to determine if unknown, metallic underground storage tanks (USTs) were present beneath the survey area.

It should be noted that Pyramid conducted extensive environmental site assessment and remediation activities at the site between 1996 and 2011 (refer to the Site History section of Pyramid's 2018 Preliminary Site Assessment report). The site formerly operated as a fuel service station. Review of site maps from Pyramid's assessment and remediation activities from 2007 indicate that there may potentially be remaining infrastructure at the parcel, such as recovery wells and associated metal vault covers.

Geophysical Results: The geophysical investigation consisted of electromagnetic (EM) induction-metal detection and ground penetrating radar (GPR) surveys. A total of twelve EM anomalies were identified. The majority of the EM anomalies were directly attributed to visible cultural features at the ground surface. Several EM anomalies were associated with vehicles, a suspected large buried metal structure, and a suspected utility and were investigated further with GPR. GPR recorded two discreet, perpendicular lateral reflectors across a high-amplitude EM anomaly, consistent with a possible UST. The location of this possible UST correlated to the location of a recovery well vault, suggesting the feature may be related to the buried vault and not a UST. Excavation of the area would be required to verify the true nature of the structure. The possible UST (or well vault) was approximately 7 feet long by 4 feet wide. GPR also recorded evidence of buried debris near the vehicles on the central portion of the site. Collectively, the geophysical data recorded evidence of one possible UST (or a former well vault) at Parcel 12.

INTRODUCTION

Pyramid Environmental conducted a geophysical investigation for the North Carolina Department of Transportation (NCDOT) at Parcel 12, located at 1231 Mebane Oaks Road, in Mebane, NC. The survey was part of an NCDOT Right-of-Way (ROW) investigation (NCDOT Project I-5711). The survey was designed to extend from the existing edge of pavement into the proposed ROW and/or easements, whichever distance was greater. Conducted from September 10-11, 2018, the geophysical investigation was performed to determine if unknown, metallic underground storage tanks (USTs) were present beneath the survey area.

The site included a commercial building surrounded by concrete, asphalt, and grass surfaces. It should be noted that Pyramid conducted extensive environmental site assessment and remediation activities at the site between 1996 and 2011 (refer to the Site History section of Pyramid's 2018 Preliminary Site Assessment report). The site formerly operated as a fuel service station. Review of site maps from Pyramid's assessment and remediation activities from 2007 indicate that there may potentially be remaining infrastructure at the parcel, such as recovery wells and associated metal vault covers. A 2007 site map showing the locations of the recovery wells is included in **Appendix A**. An aerial photograph showing the survey area boundaries and ground-level photographs are shown in **Figure 1**.

FIELD METHODOLOGY

The geophysical investigation consisted of electromagnetic (EM) induction-metal detection and ground penetrating radar (GPR) surveys. Pyramid collected the EM data using a Geonics EM61-MK2 (EM61) metal detector integrated with a Geode External GPS/GLONASS receiver. The integrated GPS system allows the location of the instrument to be recorded in real-time during data collection, resulting in an EM data set that is geo-referenced and can be overlain on aerial photographs and CADD drawings. A boundary grid was established around the perimeter of the site with marks every 10 feet to maintain

orientation of the instrument throughout the survey and assure complete coverage of the area.

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, generally parallel survey lines, spaced five feet apart. The data were downloaded to a computer and reviewed in the field and office using the Geonics NAV61 and Surfer for Windows Version 15.0 software programs.

GPR data were acquired across select EM anomalies on September 11, 2018, using a Geophysical Survey Systems, Inc. (GSSI) UtilityScan DF unit equipped with a dual frequency 300/800 MHz antenna. Data were collected both in reconnaissance fashion as well as along formal transect lines across EM features. 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 6 feet, based on dielectric constants calculated by the DF unit in the field during the reconnaissance scans. GPR transects across specific anomalies were saved to the hard drive of the DF unit for post-processing and figure generation.

Pyramid’s classifications of USTs for the purposes of this report are based directly on the geophysical UST ratings provided by the NCDOT. These ratings are as follows:

Geophysical Surveys for Underground Storage Tanks on NCDOT Projects			
High Confidence	Intermediate Confidence	Low Confidence	No Confidence
Known UST Active tank - spatial location, orientation, and approximate depth determined by geophysics.	Probable UST Sufficient geophysical data from both magnetic and radar surveys that is characteristic of a tank. Interpretation may be supported by physical evidence such as fill/vent pipe, metal cover plate, asphalt/concrete patch, etc.	Possible UST Sufficient geophysical data from either magnetic or radar surveys that is characteristic of a tank. Additional data is not sufficient enough to confirm or deny the presence of a UST.	Anomaly noted but not characteristic of a UST. Should be noted in the text and may be called out in the figures at the geophysicist’s discretion.

DISCUSSION OF RESULTS

Discussion of EM Results

A contour plot of the EM61 results obtained across the survey area at the property is presented in **Figure 2**. Each EM anomaly is numbered for reference in the figure. The following table presents the list of EM anomalies and the cause of the metallic response, if known:

LIST OF METALLIC ANOMALIES IDENTIFIED BY EM SURVEY

Metallic Anomaly #	Cause of Anomaly	Investigated with GPR
1	Fence	
2	Sign	
3	Sign	
4	Vehicles	☑
5	Water Spigot	
6	Drop Inlets/Utility	
7	Utility	
8	Utilities	
9	Drop Inlets/Utility	☑
10	Drop Inlet	
11	Sign	
12	One Possible UST or Well Vault	☑

The majority of the EM anomalies were directly attributed to visible cultural features at the ground surface, including a fence, signs, vehicles, a water spigot, drop inlets, and utilities. Anomaly 4 was associated with vehicles and was further investigated with GPR. Anomaly 9 was associated with a suspected utility and was further investigated with GPR.

A large high-amplitude EM anomaly (Anomaly 12), characteristic of a large buried metal structures, was identified and investigated further with GPR.

Discussion of GPR Results

Figure 3 presents the locations of the formal GPR transects performed at the property, as well as select transect images. A total of eleven GPR transects were performed at the site.

All of the transect images are included in **Appendix B**. GPR Transect 1 was performed across EM Anomaly 9. This transect verified the presence of a buried utility.

Transects 2 and 3 were performed across EM Anomaly 12. Both transects recorded discreet lateral reflectors that are characteristic of a buried structure. A clear hyperbolic reflector that would be characteristic of the curved width of a UST was not readily observed. Additionally, review of the site map from 2007 provided in **Appendix A** suggests that a recovery well was located in the direct vicinity of this EM anomaly. It is possible that this feature may represent the metal vault cover associated with the former recovery well. However, without physically excavating the area, the actual nature of the anomaly cannot be verified. Therefore, for the purposes of this investigation, the feature will be classified as one possible metallic UST. The possible UST (or well vault) was approximately 7 feet long and 4 feet wide. **Figure 4** provides the location and size of one possible metallic UST (or well vault) overlain on an aerial, along with ground-level photographs.

Transects 4-11 were performed across EM Anomaly 4. Transects 4 and 5 recorded isolated and intermittent high-amplitude reflectors consistent with buried debris near the vehicles on the central portion of the site. The remaining transects did not record any evidence of larger structures, such as USTs.

Collectively, the geophysical data recorded evidence of one possible UST (or well vault) at Parcel 12. **Figure 5** provides an overlay of the geophysical survey area and the location of the possible UST (or well vault) onto the NCDOT MicroStation engineering plans for reference.

SUMMARY & CONCLUSIONS

Pyramid's evaluation of the EM61 and GPR data collected at Parcel 12 in Mebane, North Carolina, provides the following summary and conclusions:

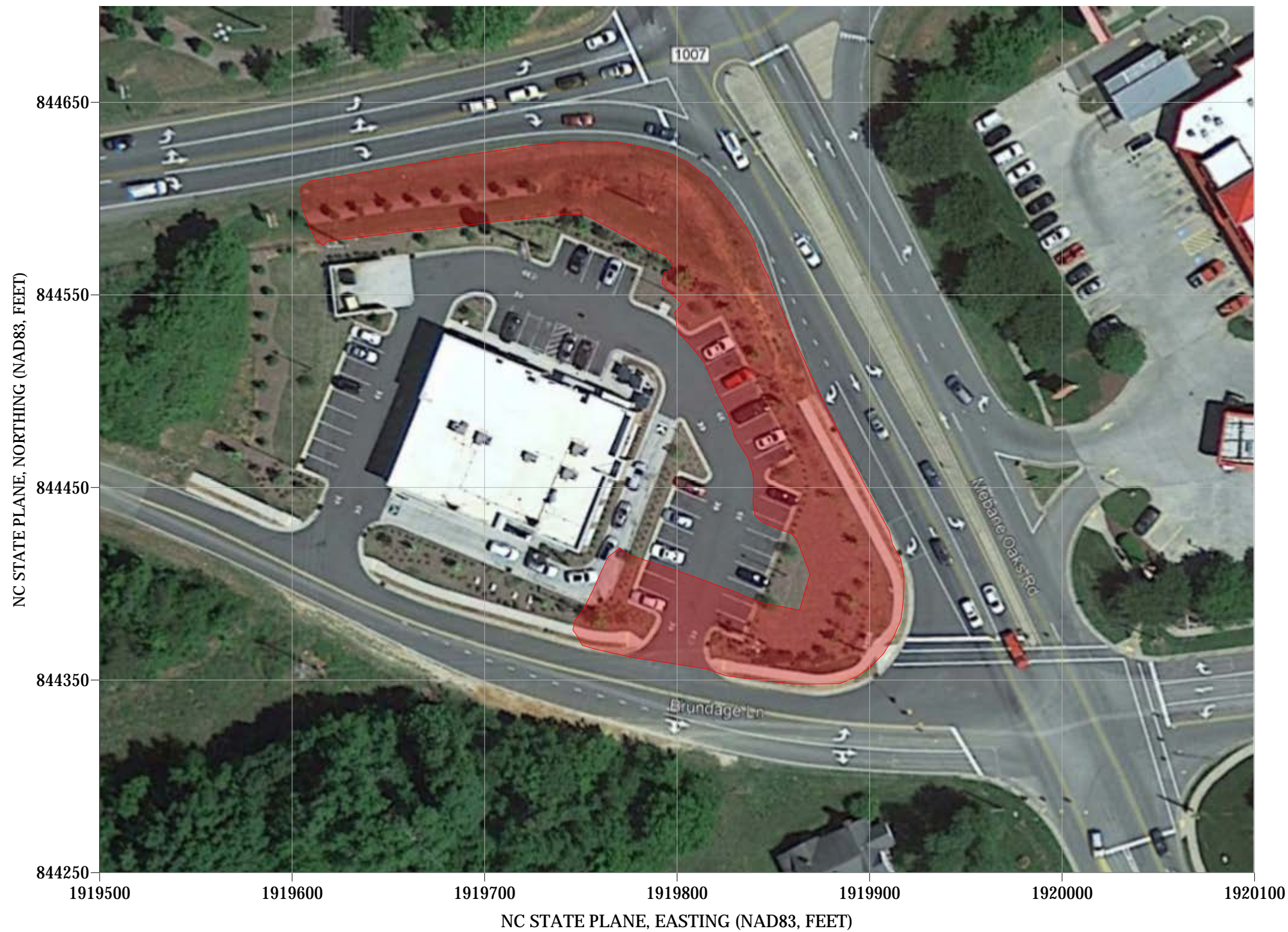
- The EM61 and GPR surveys provided reliable results for the detection of metallic USTs within the accessible portions of the geophysical survey area.

- The majority of the EM anomalies were directly attributed to visible cultural features at the ground surface.
- Several EM anomalies were associated with vehicles, a suspected large buried metal structure, and a suspected utility and were investigated further with GPR.
- GPR recorded two discreet, perpendicular lateral reflectors across a high-amplitude EM anomaly, consistent with a possible UST.
- The location of this possible UST correlated to the location of an underground vault of a former recovery well, suggesting the feature may be related to the buried vault and not a UST. Excavation of the area would be required to verify the true nature of the structure.
- The possible UST (or well vault) was approximately 7 feet long by 4 feet wide.
- GPR also recorded evidence of buried debris near the vehicles on the central portion of the site.
- Collectively, the geophysical data recorded evidence of one possible UST (or well vault) at Parcel 12.

LIMITATIONS

Geophysical surveys have been performed and this report was 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 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 GEOPHYSICAL SURVEY AREA



View of Survey Area
(Facing Approximately North)



View of Survey Area
(Facing Approximately West)

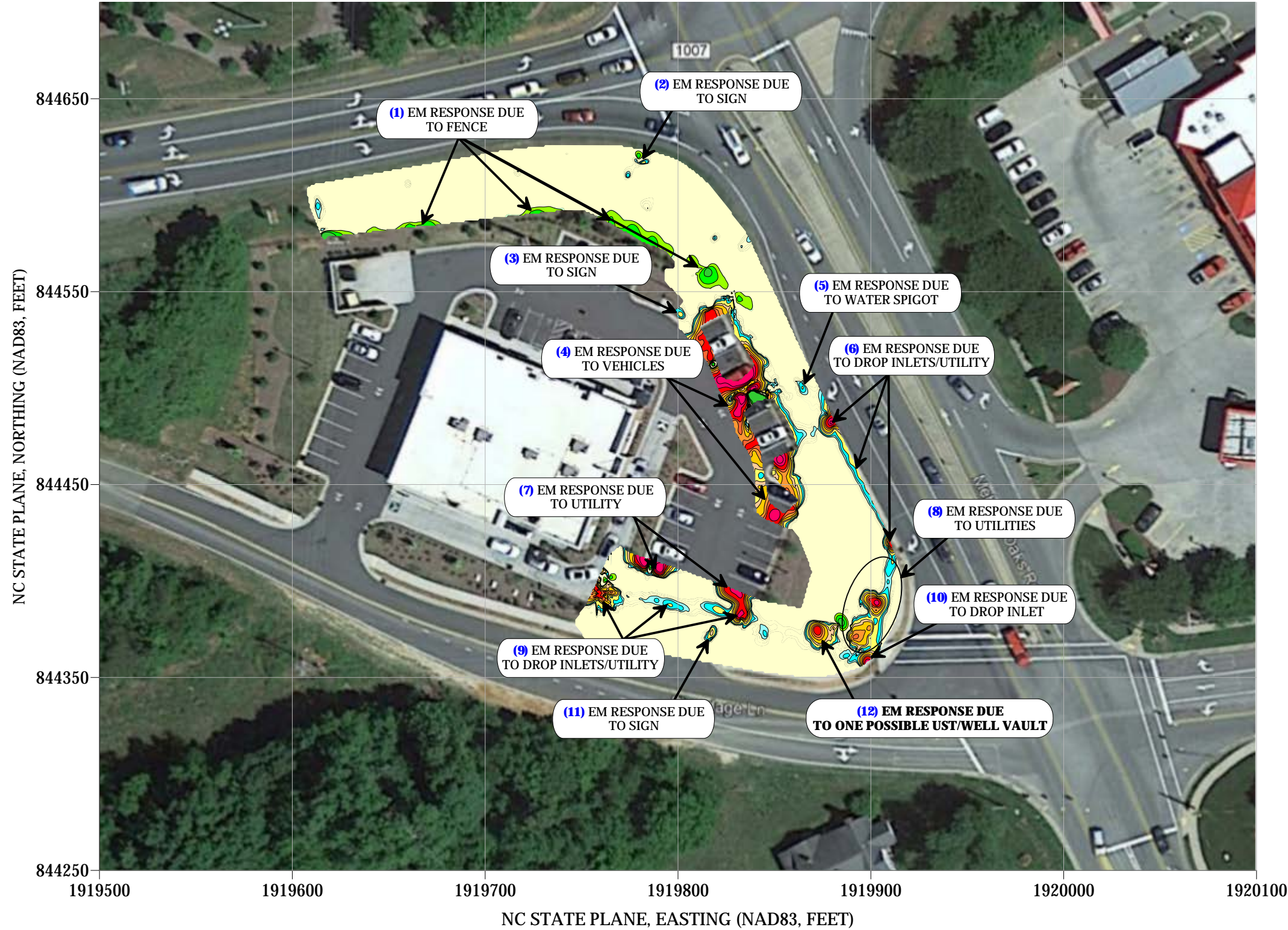


<p>503 INDUSTRIAL AVENUE GREENSBORO, NC 27460 (336) 335-3174 (p) (336) 691-0648 (f) License # C1251 Eng. / License # C257 Geology</p>	<p>PROJECT</p> <p>PARCEL 12 MEBANE, NORTH CAROLINA NCDOT PROJECT I-5711</p>	<p>TITLE</p> <p>PARCEL 12 - GEOPHYSICAL SURVEY BOUNDARIES AND SITE PHOTOGRAPHS</p>	<p>DATE</p> <p>9/10/2018</p>	<p>CLIENT</p> <p>NCDOT</p>
			<p>PYRAMID PROJECT #:</p> <p>2018-242</p>	<p>FIGURE 1</p>

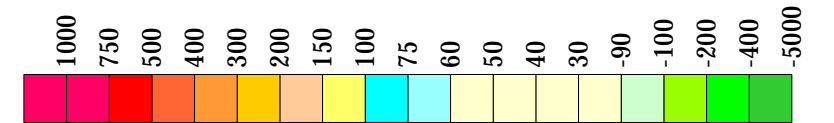
EM61 METAL DETECTION RESULTS

EVIDENCE OF ONE POSSIBLE METALLIC UST/WELL VAULT OBSERVED.

The contour plot shows the differential results of the EM61 instrument in millivolts (mV). The differential results focus on larger metallic objects such as USTs and drums. The EM61 data were collected on September 10, 2018, using a Geonics EM61 instrument. Verification GPR data were collected using a GSSI UtilityScan DF instrument with a dual frequency 300/800 MHz antenna on September 11, 2018.



EM61 Metal Detection Response (millivolts)



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PROJECT
PARCEL 12
MEBANE, NORTH CAROLINA
NCDOT PROJECT I-5711

TITLE
PARCEL 12 - EM61 METAL DETECTION
CONTOUR MAP

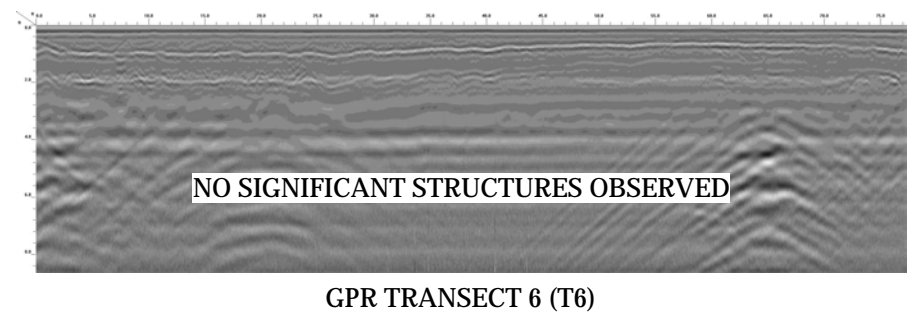
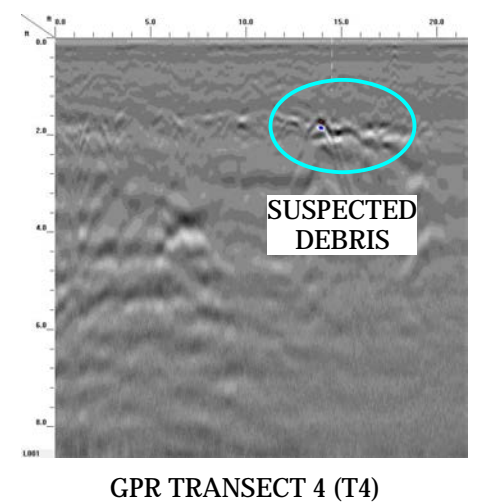
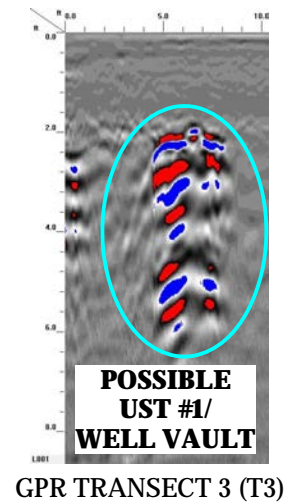
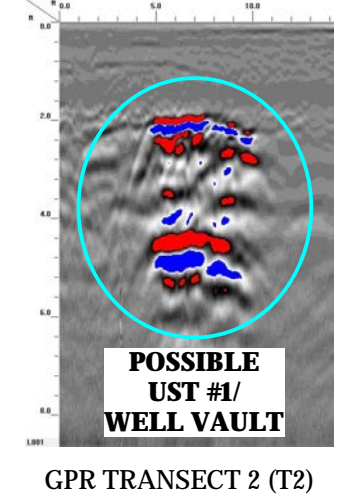
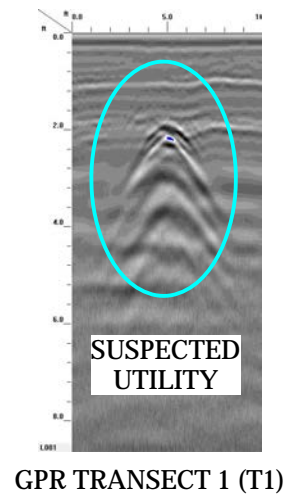
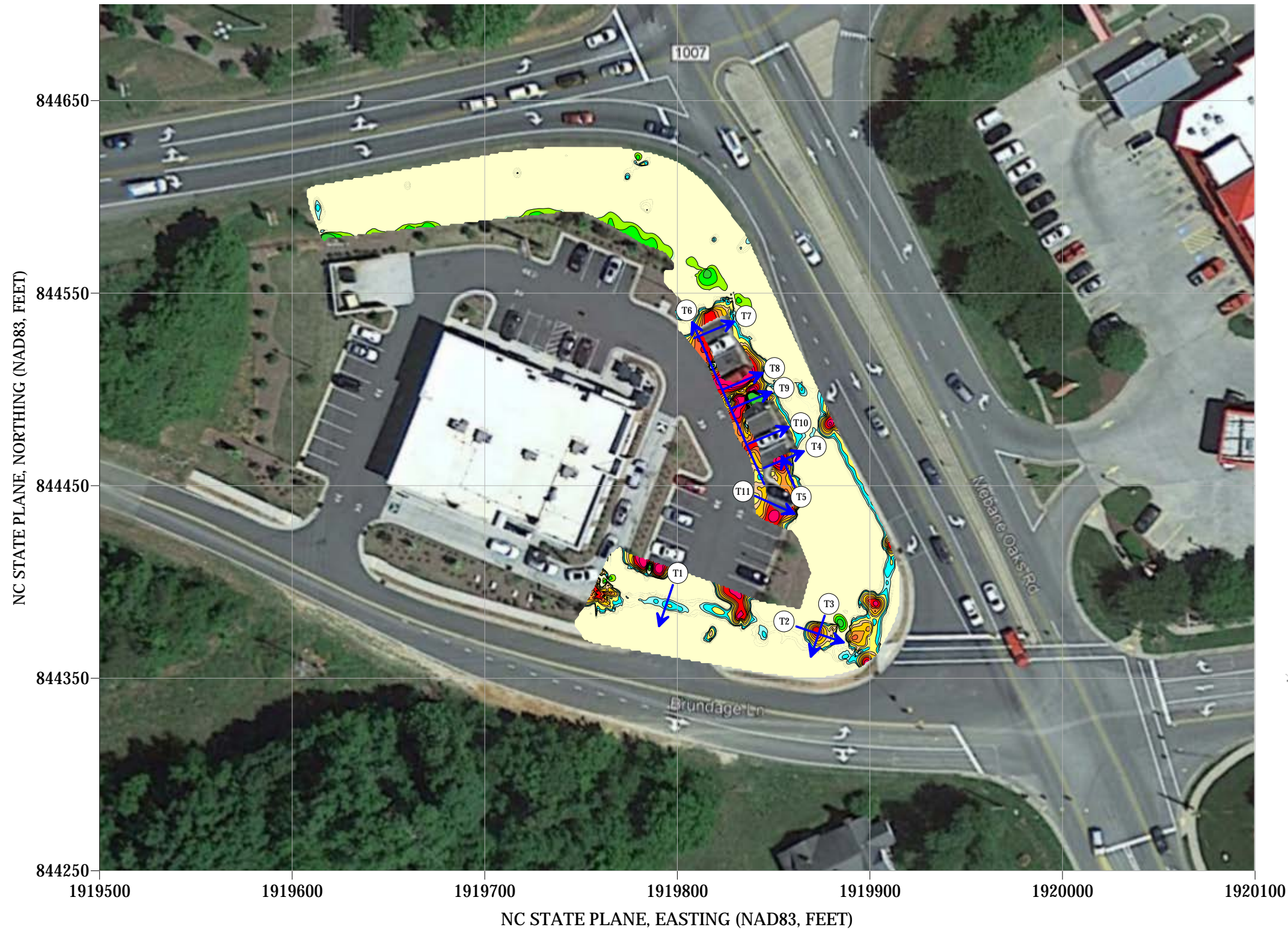
DATE 9/10/2018

CLIENT NCDOT

PYRAMID PROJECT #: 2018-242

FIGURE 2

LOCATIONS OF GPR TRANSECTS



	503 INDUSTRIAL AVENUE GREENSBORO, NC 27460 (336) 335-3174 (p) (336) 691-0648 (f) License # C1251 Eng. / License # C257 Geology	PROJECT PARCEL 12 MEBANE, NORTH CAROLINA NCDOT PROJECT I-5711	TITLE PARCEL 12 - GPR TRANSECT LOCATIONS AND SELECT IMAGES	DATE 9/11/2018	CLIENT NCDOT
			PYRAMID PROJECT #: 2018-242		FIGURE 3

LOCATION OF ONE POSSIBLE METALLIC UST/WELL VAULT




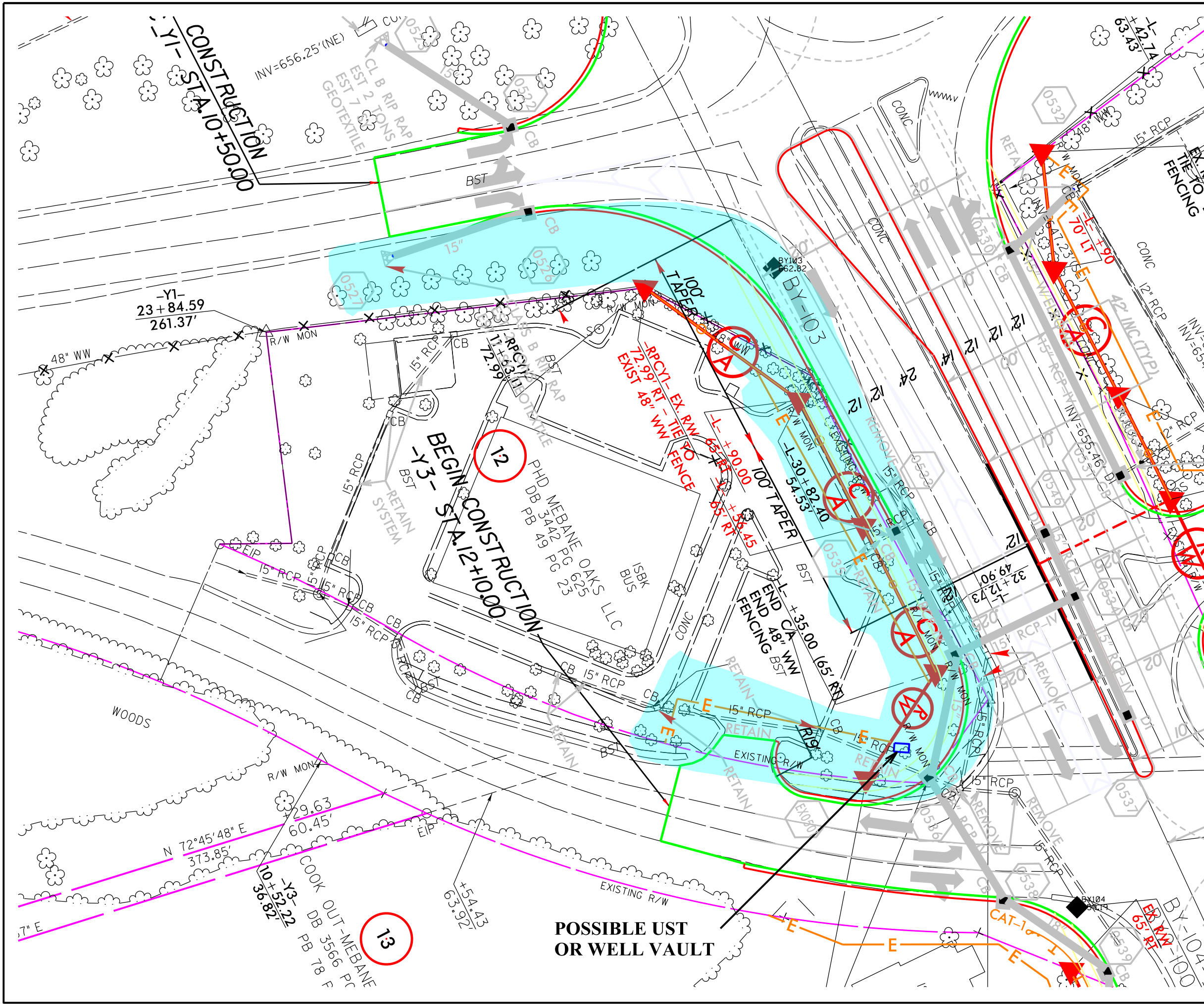
View of One Possible UST/Well Vault Facing Approximately South



View of One Possible UST/Well Vault Facing Approximately West

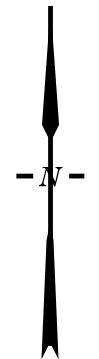
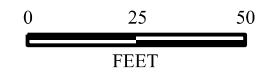


 <p>503 INDUSTRIAL AVENUE GREENSBORO, NC 27460 (336) 335-3174 (p) (336) 691-0648 (f) License # C1251 Eng. / License # C257 Geology</p>	<p>PROJECT</p> <p style="text-align: center;">PARCEL 12 MEBANE, NORTH CAROLINA NCDOT PROJECT I-5711</p>	<p>TITLE</p> <p style="text-align: center;">PARCEL 12 - LOCATION AND SIZE OF ONE POSSIBLE METALLIC UST/WELL VAULT</p>	<p>DATE</p> <p style="text-align: center;">9/11/2018</p>	<p>CLIENT</p> <p style="text-align: center;">NCDOT</p>
			<p>PYRAMID PROJECT #:</p> <p style="text-align: center;">2018-242</p>	<p>FIGURE 4</p>



LEGEND

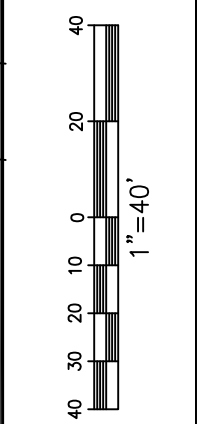
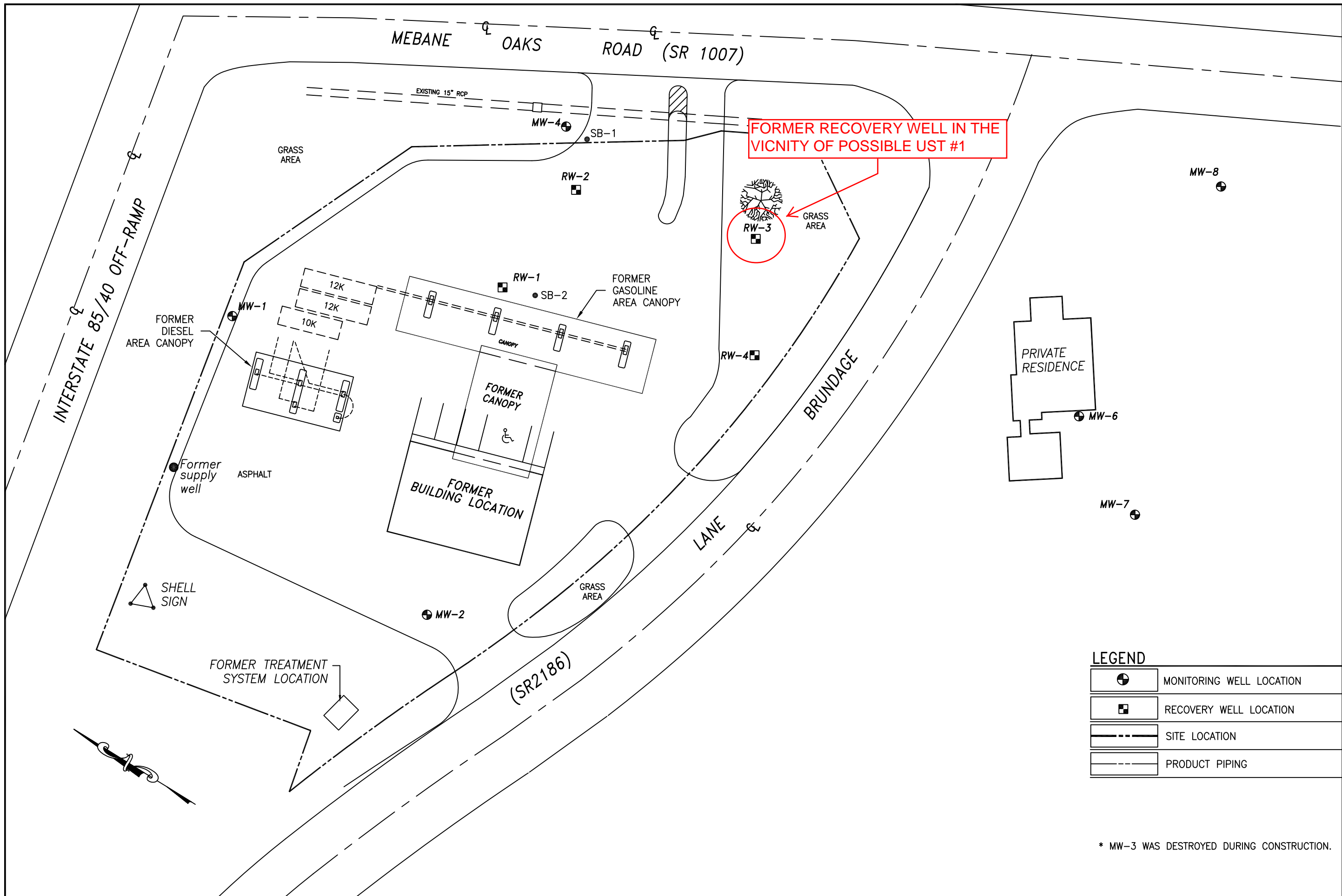
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- EXISTING PROPERTY BOUNDARY
- PROPOSED ROW LINE
- TEMPORARY CONSTRUCTION EASEMENT
- PDE — PROPOSED PERMANENT DRAINAGE
- PUE — PROPOSED PERMANENT UTILITY
- - - PROPOSED SS CUT LINE
- - - PROPOSED SS FILL LINE
- PROPOSED DRAINAGE PIPING
- GEOPHYSICAL SURVEY AREA
- POSSIBLE UST OR RECOVERY WELL VAULT



TITLE OVERLAY OF GEOPHYSICAL SURVEY BOUNDARIES AND ONE POSSIBLE UST/FORMER WELL VAULT ON NCDOT ENGINEERING PLANS	
PROJECT PARCEL 12 MEBANE, NORTH CAROLINA NCDOT PROJECT I-5711	
503 INDUSTRIAL AVENUE GREENSBORO, NC 27406 336.335.3174 (p) 336.691.0648 (f) License # C1251 Eng. / #C257 Geology	
DATE: 09-18-2018	REVISION NO. 0
PYRAMID PROJECT NO. 2018-242	FIGURE NO. 5

POSSIBLE UST OR WELL VAULT

Appendix A – Site Map (2007 Remediation Performed By Pyramid)

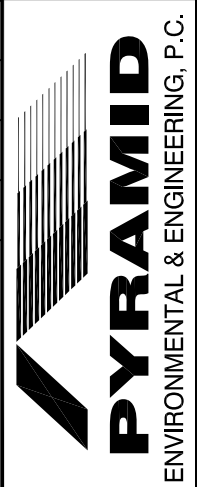


DATE	7/10/07	DATE	2007-148
BY	MT	FIGURE	2
CHECKED	MT	PROJECT	MEBANE OAKS SITE MAP
DESIGNED	KAM	TITLE	SITE MAP
PROJECT		STATE	
MEBANE OAKS ROAD		NORTH CAROLINA	
CLIENT		OWNER	
BERICO FUELS		SITE	

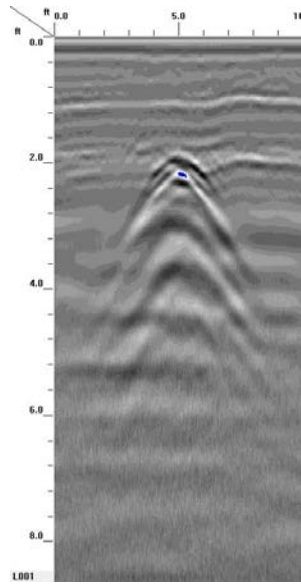
LEGEND

	MONITORING WELL LOCATION
	RECOVERY WELL LOCATION
	SITE LOCATION
	PRODUCT PIPING

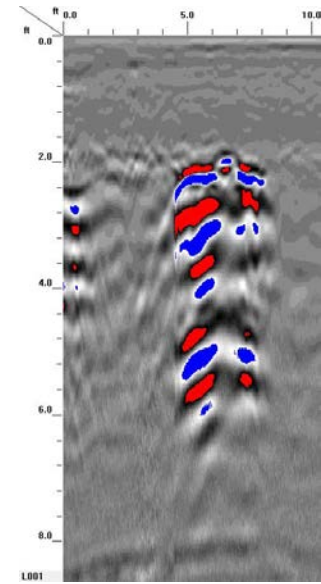
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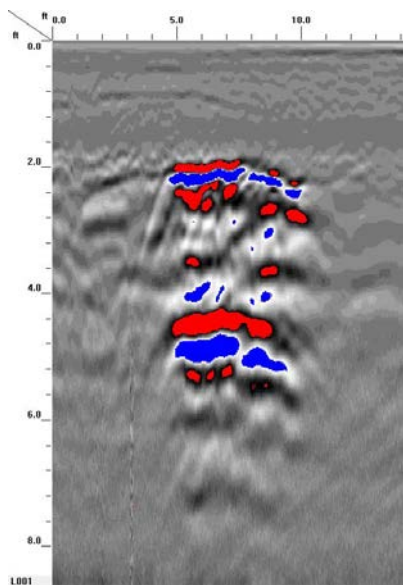
Appendix B – GPR Transect Images



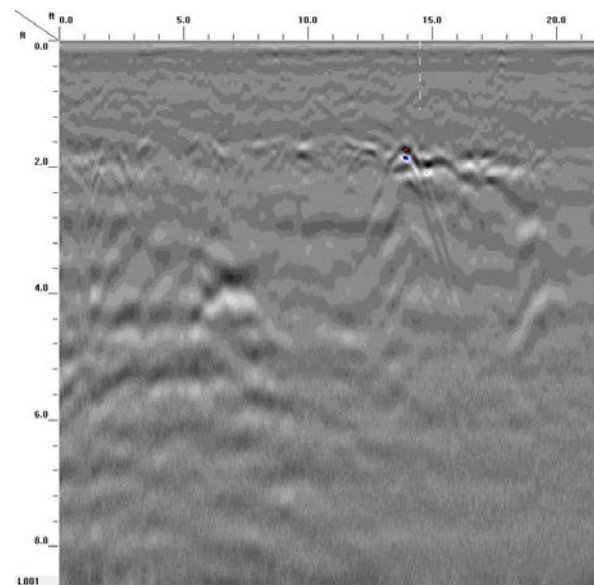
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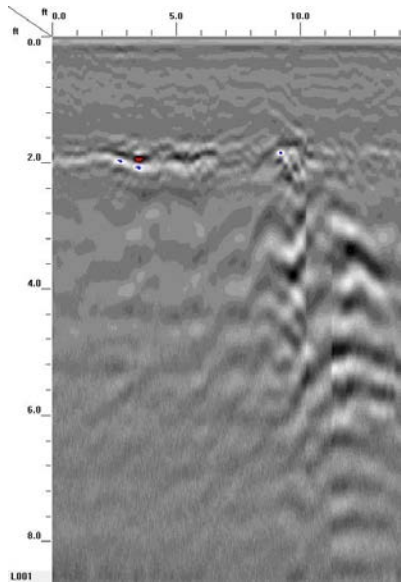
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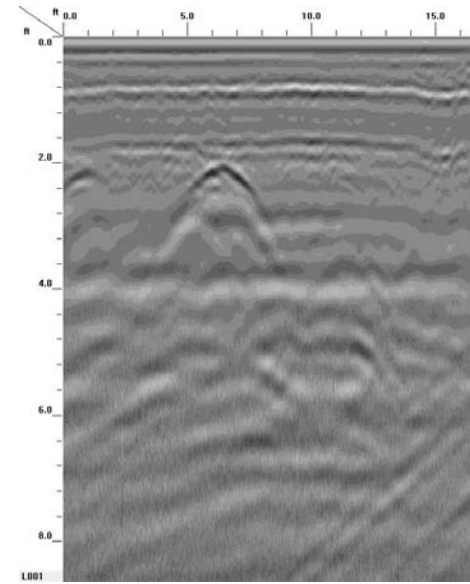
Transect 2



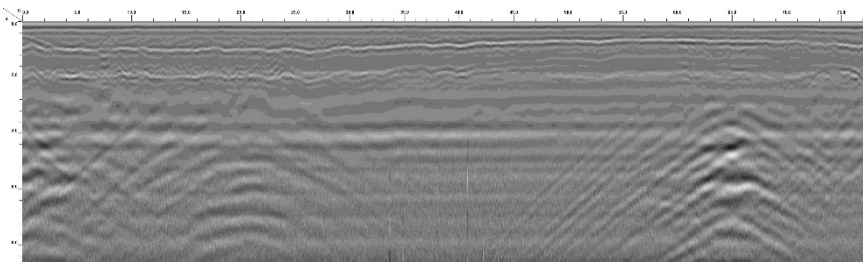
Transect 4



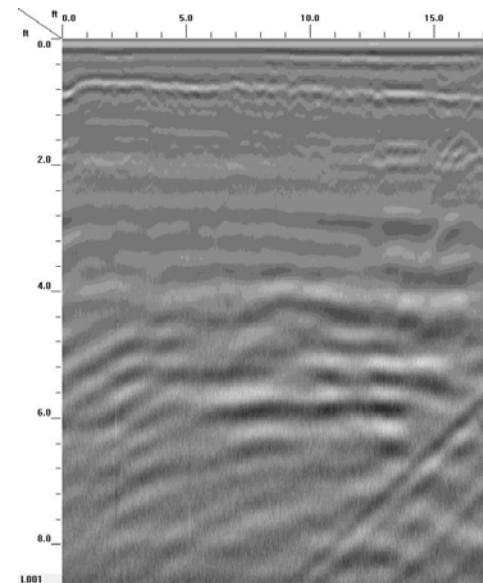
Transect 5



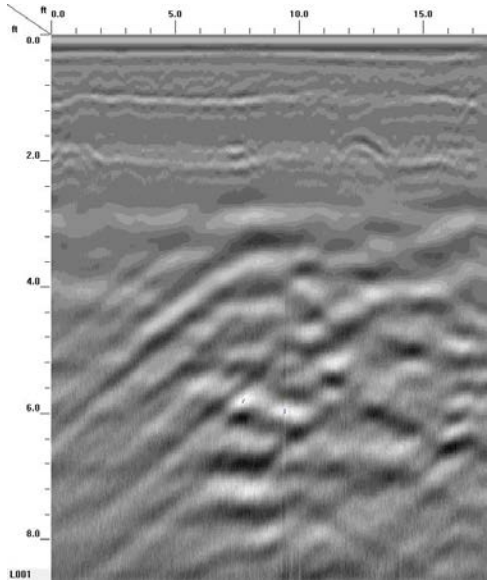
Transect 7



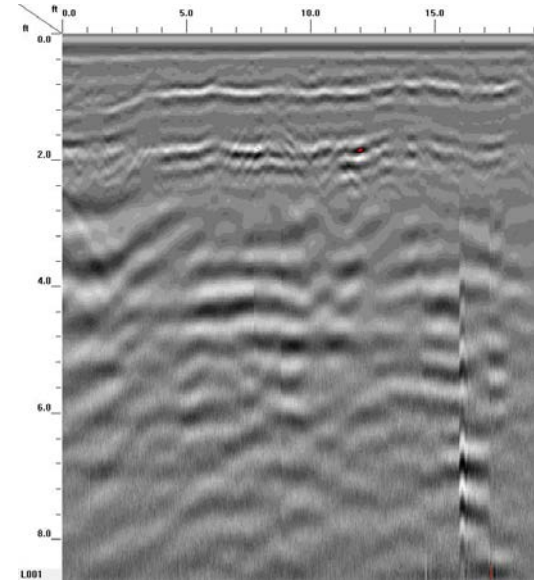
Transect 6



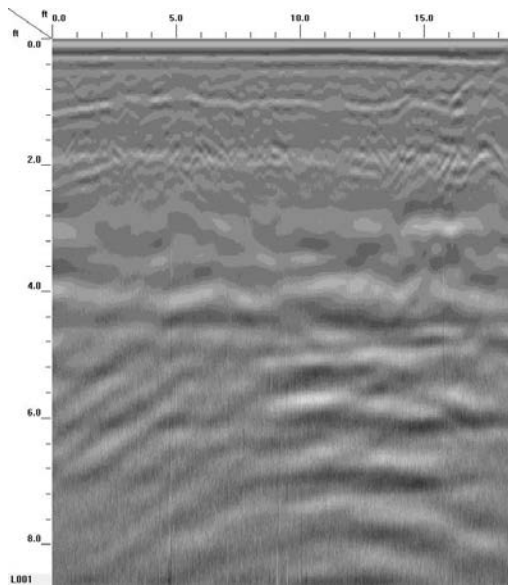
Transect 8



Transect 9



Transect 11



Transect 10

APPENDIX D

Pyramid Environmental & Engineering, P.C.

FIELD DRILLING RECORD

PROJECT NAME: PROJECT NUMBER:	NC DOT I-5711, Parcel 012, Mebane, NC (2018-242)	BORING/WELL NO:	12-2
SITE LOCATION:	Alamance County, NC	BORING/WELL LOCATION:	Parcel 012, SE portion
START DATE:	10/03/18	COMPLETED:	10/03/18
GEOLOGIST:	M. Trifunovic / T. Leatherman	DRILLER:	Solutions-IES
DRILL METHOD:	Geoprobe	SAMPLE METHOD:	Macro-core
BORING DIA:	2-inch	CASING DIA:	N/A
TOTAL DEPTH:	8 feet	CASING DEPTH:	N/A

DEPTH (ft.)	VISUAL MANUAL SOIL CLASSIFICATION COLOR, TEXTURE, STRUCTURE, CONSISTENCY, ODOR, ETC.	OVA RESULTS PERCENT RECOVERY BLOW COUNTS
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		Core Sample Depths
0-2	Reddish-brown, clayey-silt (ML), moist, no odor	PID= 1.4 PPM
2-4	Reddish-brown, clayey-silt (ML), moist, no odor	PID= 1.6 PPM
4-6	Reddish-brown, clayey-silt (ML), moist, no odor	PID= 1.7 PPM
6-8	Reddish-brown, clayey-silt (ML), moist, no odor	PID= 1.5 PPM
	Water table not encountered	

MONITORING WELL INFORMATION (IF APPLICABLE)

RISER LENGTH (ft) ____ DEPTH (ft) ____ DIAMETER (in) ____ MATERIAL ____.
 SCREEN LENGTH (ft) ____ DEPTH (ft) ____ DIAMETER (in) ____ MATERIAL ____.
 DEPTH TO TOP OF SAND ____ BAGS OF SAND ____.
 DEPTH TO TOP SEAL ____ BENTONITE USED ____ BAGS OF CEMENT USED 0.

Pyramid Environmental & Engineering, P.C.

FIELD DRILLING RECORD

PROJECT NAME: PROJECT NUMBER:	NC DOT I-5711, Parcel 012, Mebane, NC (2018-242)	BORING/WELL NO:	12-3
SITE LOCATION:	Alamance County, NC	BORING/WELL LOCATION:	Parcel 012, South portion
START DATE:	10/03/18	COMPLETED:	10/03/18
GEOLOGIST:	M. Trifunovic / T. Leatherman	DRILLER:	Solutions-IES
DRILL METHOD:	Geoprobe	SAMPLE METHOD:	Macro-core
BORING DIA:	2-inch	CASING DIA:	N/A
TOTAL DEPTH:	8 feet	CASING DEPTH:	N/A

DEPTH (ft.)	VISUAL MANUAL SOIL CLASSIFICATION COLOR, TEXTURE, STRUCTURE, CONSISTENCY, ODOR, ETC.	OVA RESULTS PERCENT RECOVERY BLOW COUNTS
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		Core Sample Depths
0-2	Reddish-brown, silty-clay (ML), moist, no odor	PID= 1.2 PPM
2-4	Reddish-brown, silty-clay (ML), moist, no odor	PID= 1.7 PPM
4-6	Reddish-brown, silty-clay (ML), moist, no odor	PID= 1.2 PPM
6-8	Reddish-brown, silty-clay (ML), moist, no odor	PID= 1.1 PPM
	Water table not encountered	

MONITORING WELL INFORMATION (IF APPLICABLE)

RISER LENGTH (ft) ___ DEPTH (ft) _____ DIAMETER (in) ___ MATERIAL _____.
 SCREEN LENGTH (ft) ___ DEPTH (ft) _____ DIAMETER (in) ___ MATERIAL _____.
 DEPTH TO TOP OF SAND _____ BAGS OF SAND _____.
 DEPTH TO TOP SEAL _____ BENTONITE USED _____ BAGS OF CEMENT USED 0.

Pyramid Environmental & Engineering, P.C.

FIELD DRILLING RECORD

PROJECT NAME: PROJECT NUMBER:	NC DOT I-5711, Parcel 012, Mebane, NC (2018-242)	BORING/WELL NO:	12-6
SITE LOCATION:	Alamance County, NC	BORING/WELL LOCATION:	Parcel 012, SW portion
START DATE:	10/03/18	COMPLETED:	10/03/18
GEOLOGIST:	M. Trifunovic / T. Leatherman	DRILLER:	Solutions-IES
DRILL METHOD:	Geoprobe	SAMPLE METHOD:	Macro-core
BORING DIA:	2-inch	CASING DIA:	N/A
TOTAL DEPTH:	8 feet	CASING DEPTH:	N/A

DEPTH (ft.)	VISUAL MANUAL SOIL CLASSIFICATION COLOR, TEXTURE, STRUCTURE, CONSISTENCY, ODOR, ETC.	OVA RESULTS PERCENT RECOVERY BLOW COUNTS
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DEPTH (ft.)	VISUAL MANUAL SOIL CLASSIFICATION COLOR, TEXTURE, STRUCTURE, CONSISTENCY, ODOR, ETC.	OVA RESULTS PERCENT RECOVERY BLOW COUNTS
		Core Sample Depths
0-2	Reddish-brown, clayey-silt (ML), moist, no odor	PID= 2.0 PPM
2-4	Reddish-brown, clayey-silt (ML), moist, no odor	PID= 3.5 PPM
4-6	Reddish-brown, clayey-silt (ML), moist, no odor	PID= 2.3 PPM
6-8	Reddish-brown, clayey-silt (ML), moist, no odor	PID= 2.0 PPM
	Water table not encountered	

MONITORING WELL INFORMATION (IF APPLICABLE)

RISER LENGTH (ft) ___ DEPTH (ft) _____ DIAMETER (in) ___ MATERIAL _____.
 SCREEN LENGTH (ft) ___ DEPTH (ft) _____ DIAMETER (in) ___ MATERIAL _____.
 DEPTH TO TOP OF SAND _____ BAGS OF SAND _____.
 DEPTH TO TOP SEAL _____ BENTONITE USED _____ BAGS OF CEMENT USED 0.

APPENDIX E



Hydrocarbon Analysis Results

Client: NCDOT Alamance - Mebane Parcel 012
Address: Mebane Oaks Rd. - Starbucks

Samples taken Ten
Samples extracted Ten
Samples analysed Ten

Contact: **Operator** Tim Leatherman

Project: NCDOT Alamance - Mebane Parcel 012

H09382

Matrix	Sample ID	Dilution used	BTEX (C6 - C9)	GRO (C5 - C10)	DRO (C10 - C35)	TPH (C5 - C35)	Total Aromatics (C10-C35)	16 EPA PAHs	BaP	% Ratios			HC Fingerprint Match
										C5 - C10	C10 - C18	C18	
s	12-1(0-2)	23.6	<0.59	0.75	<0.59	0.75	<0.12	<0.19	<0.024	94.6	1	4.4	Residual HC,(BO)
s	12-1(0-2)	23.6	<0.59	<0.59	0.59	0.59	0.49	<0.19	<0.024	0	66.4	33.6	V.Deg.PHC 77.4%,(FCM)
s	12-2(4-6)	25.7	<0.64	<0.64	<0.64	<0.64	<0.13	<0.21	<0.026	0	0	0	PHC not detected,(BO)
s	12-3(0-2)	13.1	<0.33	<0.33	0.33	0.33	0.19	<0.1	<0.013	0	62	38	V.Deg.PHC 75.9%,(FCM)
s	12-3(2-4)	24.1	<0.6	<0.6	0.6	0.6	0.51	<0.19	<0.024	0	59.4	40.6	V.Deg.PHC 73.1%,(FCM),(BO),(P)
s	12-4(6-8)	23.0	<0.58	<0.58	<0.58	<0.58	<0.12	<0.18	<0.023	0	0	0	PHC not detected,(BO)
s	12-5(0-2)	22.4	<0.56	<0.56	<0.56	<0.56	<0.11	<0.18	<0.022	0	0	100	Residual HC,(BO)
s	12-8(2-4)	25.5	<0.64	<0.64	<0.64	<0.64	<0.13	<0.2	<0.025	0	28.9	71.1	Residual HC,(BO)
s	12-6(2-4)	24.1	<0.6	<0.6	0.6	0.6	0.39	<0.19	<0.024	0	70.4	29.6	V.Deg.PHC 76.6%,(FCM)
s	12-7(4-6)	24.5	<0.61	<0.61	<0.61	<0.61	<0.12	<0.2	<0.025	0	0	0	PHC not detected,(BO)

Initial Calibrator QC check **OK**

Final FCM QC Check **OK**

95.4 %

Concentration values in mg/kg for soil samples and mg/L for water samples. Soil values uncorrected for moisture or stone content. Fingerprints provide a tentative hydrocarbon identification.

Abbreviations :- FCM = Results calculated using Fundamental Calibration Mode : % = confidence of hydrocarbon identification : (PFM) = Poor Fingerprint Match : (T) = Turbid : (P) = Particulate detected

B = Blank Drift : (SBS)/(LBS) = Site Specific or Library Background Subtraction applied to result : (BO) = Background Organics detected : (OCR) = Outside cal range : (M) = Modified Result.

% Ratios estimated aromatic carbon number proportions : HC = Hydrocarbon : PHC = Petroleum HC : FP = Fingerprint only. **Data generated by HC-1 Analyser**

