Prepared for:

North Carolina Department of Transportation
Geotechnical Engineering Unit
GeoEnvironmental Section
1589 Mail Service Center
Raleigh, North Carolina, 27699-1589

Preliminary Site Assessment Report

ARCP WG Portfolio II LLC
Parcel # 56
803 N. JK Powell Boulevard
Whiteville, Columbus County, North Carolina
US 701 Bypass from SR 1437 to US 74/76
TIP Number: R-5020B
WBS Element: 41499.1.3

Apex Companies, LLC
(dba Apex Engineering, PC)
10610 Metromont Parkway, Suite 206
Charlotte, North Carolina 28269

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November 21, 2018

not considered final unless all signatures are completed

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1.0 INTRODUCTION

This report presents the results of a Preliminary Site Assessment (PSA) for the North Carolina Department of Transportation (NCDOT) ARCP WG Portfolio II LLC (ARCP) Property performed by Apex Companies, LLC (Apex) (dba Apex Engineering, PC) on behalf of the NCDOT. The subject site of this PSA report will be affected by the widening of the US 701 Bypass from SR 1437 to US 74/76. The Site is comprised of one parcel and is located at 803 N. JK Powell Boulevard and is identified as Parcel 56, ARCP WG Portfolio II LLC (ARCP). Property, within the NCDOT R-5020B design project. The property is located northwest of the Washington Street and N. JK Powell Boulevard intersection in Whiteville, Columbus County, North Carolina, as shown in the attached Site Location Map (**Figure 1)**. The site investigation was conducted in accordance with Apex Company's Technical and Cost proposal dated May 15, 2018.

NCDOT contracted Apex to perform the PSA within the existing right-of-way (ROW) and/or easement of Parcel 56, the ARCP Property grading may occur within the area. The PSA was performed to evaluate if soils have been impacted as a result of past and present uses of the property within the proposed investigation area, if buried underground storage tanks (USTs) are present in the area of investigation, and if groundwater is impacted.

The following report presents the results of an electromagnetic (EM) and ground penetrating radar (GPR) evaluation to identify USTs in the investigation area and describes the subsurface field investigation conducted. The report includes the evaluation of field screening, as well as field and laboratory analyses with regards to the presence or absence of soil and groundwater contamination within the area of investigation across ARCP Property. **Appendix A** includes a Photograph log for the site.

1.1 Site History

The ARCP Property has been identified with the address of 803 N. JK Powell Boulevard. Based on a search of the North Carolina Department of Environmental Quality (NCDEQ) UST database registry, no active tanks were identified for the 803 N. JK Powell Boulevard site. Apex observed a commercial brick building, which operates as a Walgreens Pharmacy. Apex personnel also reviewed the NCDEQ Incident Management Database and found the property to be identified with Facility ID number 0-012311 and Incident Number 5381. According to the NC DEQ Database, multiple historical reports were available for review.

- In 1988, the subject property was identified as The Pantry, a Subsurface Gasoline Investigation Report was issued by S&ME Environmental Services (S&ME). S&ME performed the initial assessment activities to determine if a release had occurred from any of the three USTs which had been located near the northwestern corner of the

parcel. Three temporary wells were installed to evaluate groundwater. Based on the groundwater data, it was confirmed the groundwater had been impacted by a release from a gasoline UST.

- Southern Pump and Tank Company (SPATCO) conducted additional assessment activities in 1989. SPATCO confirmed that groundwater flow is toward the east-southeast direction, toward the proposed NCDOT ROW. Based on the concentrations observed, active remediation was recommended following additional assessment activities. The majority of the impact was located near the former UST tank pit, at the northwest corner of the parcel.

- In 1991, the State of North Carolina Department of Environmental Natural Resources (NCDENR) issued a Notice of Regulatory Requirements (NORR) requiring additional assessment and remedial activities.

- The risk ranking of the site was reevaluated in 1998 and the site was given low risk. Soil concentrations were found to be less than health-based screening levels and concentrations of the constituents of concern in groundwater were less than gross contaminant levels. Therefore, NCDENR issued a No Further Action letter for the site on October 26, 1998. However, groundwater impact likely remains and could be encountered if the surficial soils are excavated below the water table.

Historical Records can be found in **Appendix B**.

1.2 Site Description

The site is located in a mixed commercial and residential area of Whiteville in Columbus bordered to the north by a W. Nance Street followed by residential properties. N. JK Powell Boulevard followed by a fueling station borders the subject parcel to the east. Washington Street followed by a vacant commercial lot bordered to the south. A drive path followed by a vacant undeveloped lot bordered to the west. Parcel 56, ARCP Property, does not appears on the NCDEQ UST database registry. The geophysical surveyor, Pyramid Environmental & Engineering, PC, (Pyramid) identified 11 EM anomalies. No evidence of larger structures, such as USTs were observed in the parcel area. Pyramid concluded the geophysical data did not record any evidence of metallic USTs at Parcel 56.

2.0 GEOLOGY

2.1 Regional Geology

Parcel 56, the ARCP WG Portfolio II, LLC property, is located within the Coastal Plain Physiographic Province. The Coastal Plain is the largest physiographic province in the state, covering about 45% of the land area. According to the US Geological Survey Hydrogeological framework of the North Carolina coastal plain, the geology consists of eastward-dipping and eastward-thickening series of sedimentary strata which range in age from Holocene to Cretaceous. The most common type of sediment types are sand and clay, although a significant amount of limestone occurs in the southern part of the coastal plain. The Site overlies surficial sediments (to approximately 30 to 40 feet bls), the PeeDee Confining unit (approximately 10 feet thick in this area), and the Late Cretaceous age Peedee Formation. The Peedee Formation is named for exposures along the great Peedee River, it preserves belemnites and foraminifera fossils dating from the Late Cretaceous. It generally consists of marine sand, clayey sand and clay (M.D. Winner Jr. and R.W. Coble, 1996, *Hydrogeologic Framework of the North Carolina Coastal Plain, Regional Aquifer-System Analysis – Northern Atlantic Coastal Plain*, USGS Professional Paper 1404-I).

2.2 Site Geology

Site geology was observed through the drilling and sampling of six direct push technology (DPT) soil borings (SB) onsite. **Figure 2** presents the boring locations and site layout. Borings did not exceed a total depth of five feet below ground surface (bgs) since this is a fill area of the design project and water was encountered as shallow as 3.5 feet bgs. Soil consisting predominantly of tan sand was observed across the parcel. The soils were unconsolidated and as a result the borings often collapsed. According to the historic assessment reports, groundwater flows toward the east-southeast. Boring logs are presented in **Appendix C**.

3.0 FIELD ACTIVITIES

3.1 Preliminary Activities

Prior to commencing field sampling activities at the site, several tasks were accomplished in preparation for the subsurface investigation. A Health and Safety Plan (HASP) was prepared to include the site-specific health and safety information necessary for the field activities. North Carolina-One Call was contacted on May 25, 2018 to report the proposed drilling activities and notify affected utilities. Apex subcontracted Pyramid to locate subsurface utilities and other subsurface drilling hazards as well as to perform a geophysical survey. Carolina Soil Investigations, LLC (CSI) of Olin, North Carolina was retained by Apex to perform DPT borings for soil sampling. REDLAB, LLC (REDLAB) provided an ultraviolet fluorescence (UVF) Hydrocarbon Analyzer and Eastern Solutions provided a calibrated Flame Ionization/Photoionization Detector (FID/PID). Boring locations were strategically placed in a

pattern within the area of investigation to maximize the opportunity to encounter potentially contaminated soil.

3.2 Site Reconnaissance

Apex personnel performed a site reconnaissance on June 5, 2018. During the site reconnaissance, the area was visually examined for the presence of potential USTs or areas/obstructions that could potentially affect the subsurface investigation. The proposed boring locations were marked based on the site inspection and geophysical survey results. Apex personnel also used the site visit as an opportunity to contact the property manager/owner to inform them of upcoming field activities.

3.3 Geophysics Survey Results

The geophysical survey of the site was conducted from May 29, 2018 to May 31, 2018. Pyramid performed an EM induction metal survey followed by a GPR survey. A copy of the Geophysical Report is presented in **Appendix D**. A total of 11 suspected EM anomalies were identified. The majority of the anomalies were directly attributed to visible cultural features at the ground surface including buried metallic, suspected utilities, or interference from vehicles. No evidence of larger structures, such as USTs, were observed in this area. Pyramid concluded the geophysical data did not indicate evidence of metallic USTs on Parcel 56.

3.4 Well Survey

No water supply wells or monitoring wells were observed on site.

3.5 Soil Sampling

Apex conducted drilling activities at the site on June 7, 2018. The purpose of soil sampling was to determine if a petroleum release had occurred within the investigation area, and if so, to estimate the volume of impacted soil that might require special handling during construction activities. Apex drilling subcontractor, CSI, advanced six direct push soil borings within the proposed investigation area. The six boring locations were placed in a pattern to maximize the likelihood of identifying potential soil contamination. **Figure 2** presents the Site Map with boring locations and site structures.

Soil sampling was performed utilizing hand auger and direct push methods accompanied by field screening with the FID/PID unit and onsite quantitative analyses with the UVF Hydrocarbon Analyzer. One to two intervals of the soil boring, exhibiting the most elevated FID/PID readings, were selected for onsite quantitative analysis of total petroleum hydrocarbons (TPH) in soil using the REDLAB UVF Hydrocarbon Analyzer. The analysis was performed onsite by Mr. Troy Holzschuh, a certified REDLAB UVF technician with Apex. The UVF results were generated

concurrent with soil boring activities so that rapid assessment could be utilized for strategic boring placement.

3.6 Groundwater Sampling

Groundwater was encountered on site at a depth ranging from 3.5 to five feet bgs. Significant soil contamination was not evident below the water table within the smear zone based on FID/PID field screening of volatile organic vapors or UVF hydrocarbon analysis. However, historical assessment data indicates that groundwater impact had been present in the proposed work area and groundwater is flowing from the former source area toward the proposed ROW. Therefore, groundwater impacted with low levels of constituents of concern may be encountered during site construction activities.

4.0 SAMPLING RESULTS

Based on FID/PID field screening and onsite UVF hydrocarbon analysis from the June 2018 soil sampling there is no significant evidence of petroleum hydrocarbon contamination onsite, within the area of investigation.

Elevated FID/PID readings, above ten parts per million (ppm), were observed in soils in several of the borings. The FID readings ranged from one to 300 parts per million (ppm) and the PID readings ranged from four to 78 ppm. The FID/PID field screening results are provided on the boring logs in **Appendix C**.

Soil samples which exhibited elevated PID and/or FID readings were analyzed using the UVF for the presence of total petroleum hydrocarbons (TPH) as diesel range organics (DRO) and gasoline range organics (GRO). These analytical results are provided in **Table 1**, with instrument generated tables and chromatographs included as **Appendix E**. **Figure 3** presents the GRO and DRO results at each boring.

Based on the UVF analyses, TPH-GRO was not detected in soils above the smear zone. TPH-DRO was identified in soils above the smear zone that ranged from below detectable levels to 1.4 mg/kg ((P56-SB5 (1-2)). TPH-GRO concentrations within the smear zone ranged from below detectable levels to 1.1 mg/kg in P56-SB2 (3-4). TPH-DRO concentrations ranged from below detectable levels to 9.1 mg/kg in P56-SB2 (3-4) for soils sampled within the smear zone. TPH-GRO concentrations did not exceed the regulatory action level of 50 mg/kg and the TPH-DRO concentrations did not exceed the regulatory action level of 100 mg/kg.

5.0 CONCLUSIONS

Based on site observations and onsite UVF analysis, the following bulleted summary is based upon Apex's evaluation of field observations and onsite quantitative analyses of samples collected from the Site on June 7, 2018.

- Results of the geophysical survey did not produce anomalies characteristic of USTs.
- Six soil borings were advanced onsite. Soil samples collected from each boring were analyzed in the field using a REDLAB UVF Hydrocarbon Analyzer.
- Soil samples that were analyzed using the UVF contained TPH-DRO and TPH-GRO concentrations below their respective NCDEQ Action levels of 100 mg/kg and 50 mg/kg.
- Historic assessment results indicate that the site received a No Further Action Letter with residual fuel impacts below Gross Contaminant Levels. The groundwater from the source area flows toward the proposed ROW and the impacted groundwater may be encountered if excavations are advanced below approximately four feet below land surface.

6.0 RECOMMENDATIONS

The subject property is designed as a fill area. Based on these PSA results, Apex does not recommend further assessment or soil sampling in the area of investigation. Apex notes the parcel has historical USTs and incidents associated with this site.

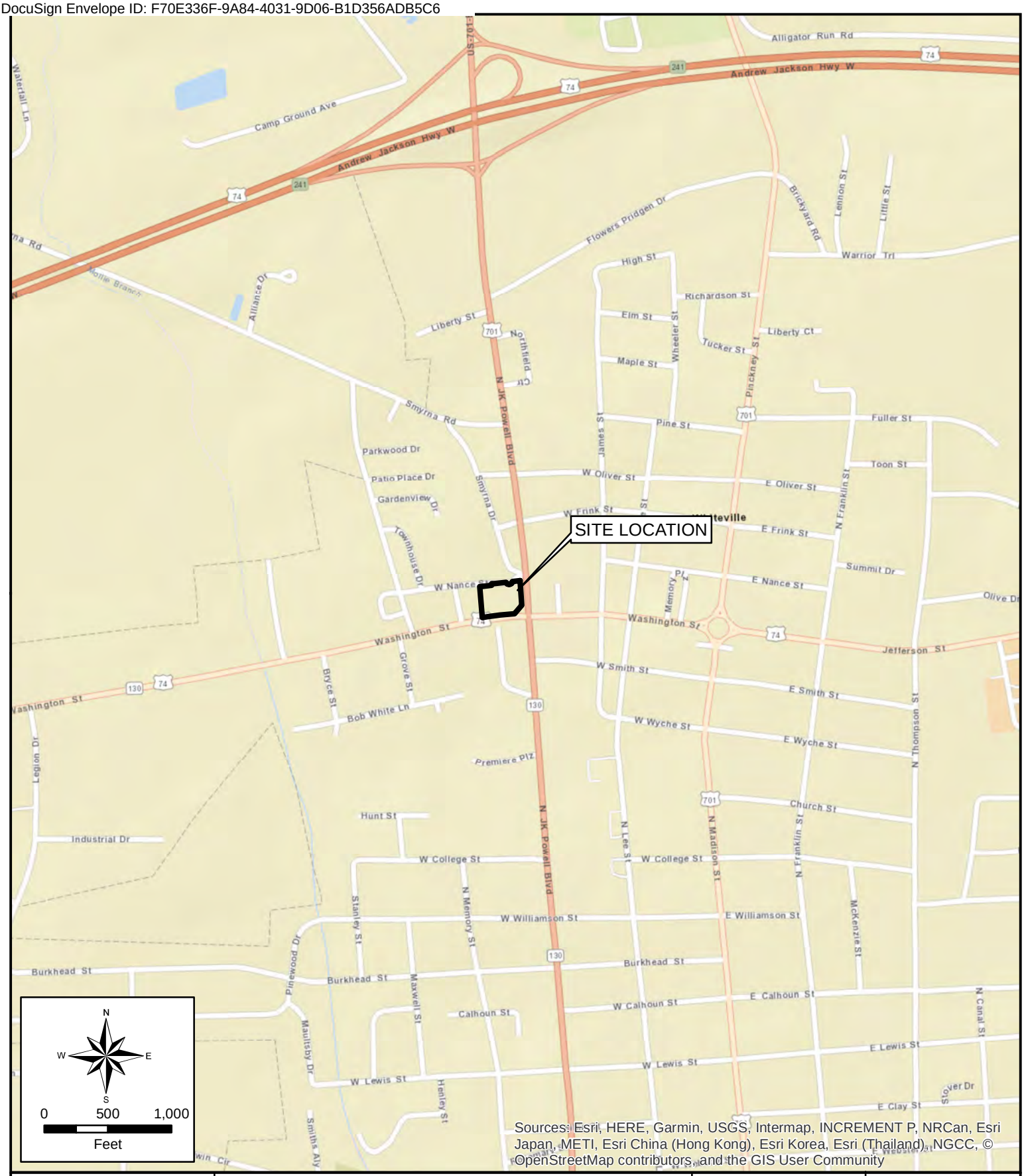
TABLES

Table 1
UVF Onsite Hydrocarbon Analytical Soil Data from June 2018
R-5020B, Parcel 56, ARCP WG Portfolio II LLC Property
Whiteville, Columbus County, North Carolina

Sample ID Number	Sample Date	Sample Depth (ft bgs)	GRO (mg/kg) (C5-C10)	DRO (mg/kg) (C10-C35)
SOIL				
NCDEQ Action Level in mg/kg			**50**	**100**
P56-SB-1	6/5/2018	2 -3	<0.68	0.68
P56-SB1	6/5/2018	4 - 5	<0.73	1.6
P56-SB2	6/5/2018	3 - 4	1.1	9.1
P56-SB2	6/5/2018	4 - 5	<0.5	6.3
P56-SB3	6/5/2018	2 - 3	<0.56	0.56
P56-SB3	6/5/2018	4 - 5	<0.61	<0.61
P56-SB4	6/5/2018	1 - 2	<0.56	0.56
P56-SB4	6/5/2018	3.5 - 4	<0.64	<0.64
P56-SB5*	6/5/2018	1 - 2	<0.8	1.4
P56-SB5	6/5/2018	3.5 - 4	<0.63	<0.63
P56-SB6	6/5/2018	1 - 2	<0.51	<0.51
P56-SB6	6/5/2018	3.5 - 4	<0.75	<0.75
P56-DUP-1	6/5/2018	---	<0.8	1.8

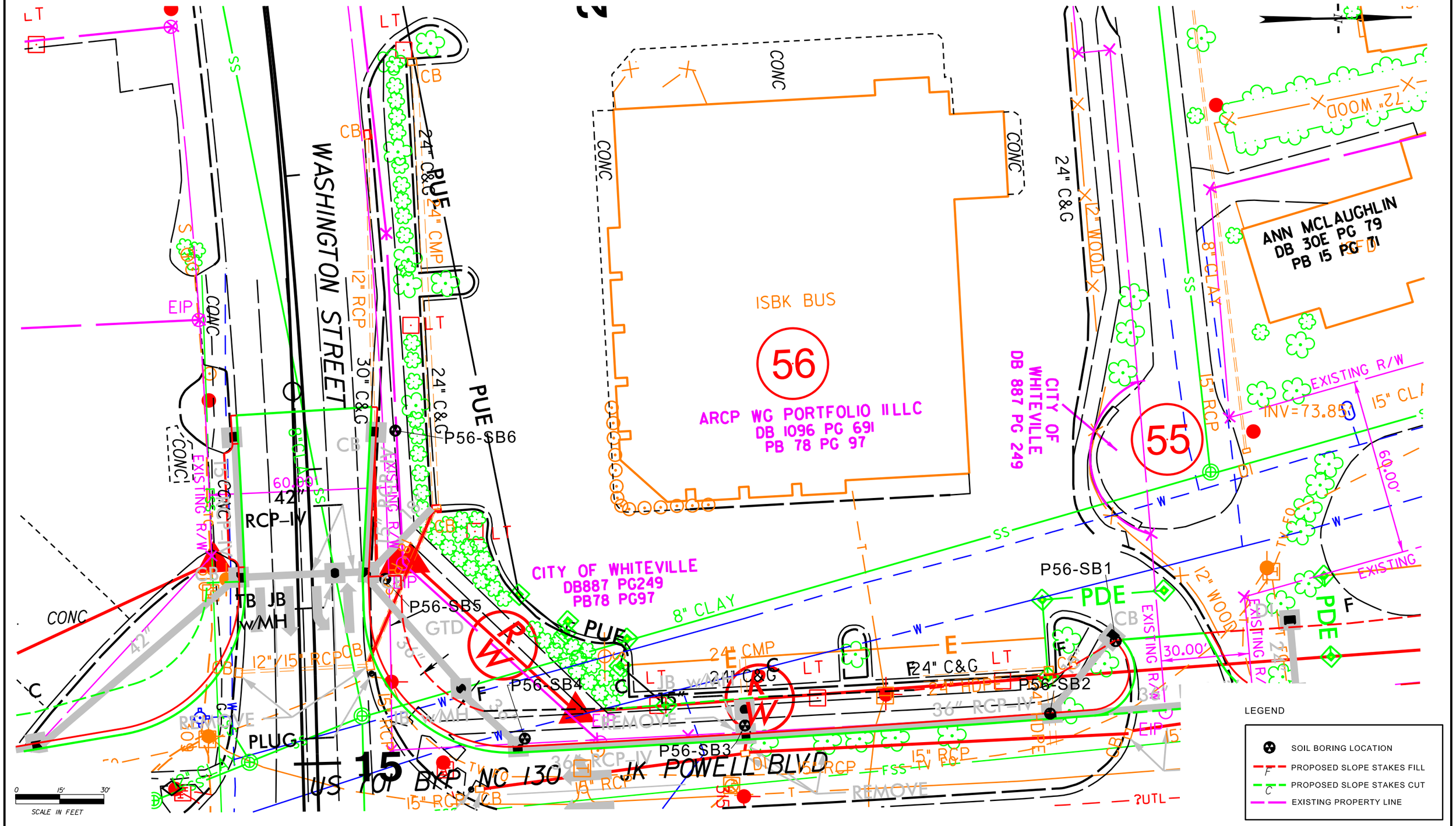
NOTES:
(mg/kg) = Milligrams per kilogram
* = Duplicate sample was collected
GRO = Gasoline Range Organics
DRO = Diesel Range Organics
ft bgs = feet below ground surface
TPH - GRO values in exceedance of NCDEQ Action Level of 50 mg/kg are shown in Bold
TPH - DRO values in exceedance of NCDEQ Action Level of 100 mg/kg are shown in Bold

FIGURES



Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, © OpenStreetMap contributors, and the GIS User Community

CHECK BY: TH	SITE LOCATION MAP	APEX	FIGURE
DRAWN BY: SP			1
DATE: 7/6/2018	PARCEL #56		
SCALE: AS SHOWN	803 N. JK POWELL BOULEVARD		
CAD NO:. NCDOT-001	WHITEVILLE, NORTH CAROLINA		
PRJ NO.: NCDOT-001			



APEX COMPANIES, LLC
10610 METROMONT PARKWAY
SUITE 206
CHARLOTTE, NC 28117
PHONE: (704) 799-6390

FIGURE 2
PARCEL 056
803 N. JK. POWELL BLVD
SITE MAP WITH SOIL BORING LOCATIONS

Date: 6/6/18	R-5020B US 701 BYPASS COLUMBUS COUNTY
Proj. # NCDOT-001	
CAD File: pc_056_fig 2.dgn	Project Title:
Approx. Scale: 1" = 30'	Drawn by: MJO
	Client: NC DOT

Sample Identification	P56-SB3
Sample Depth (Feet bgs)	2-3
TPH GRO (mg/kg)	<0.56
THP DRO (mg/kg)	0.56
Sample Depth (Feet bgs)	4-5
TPH GRO (mg/kg)	<0.61
THP DRO (mg/kg)	<0.61

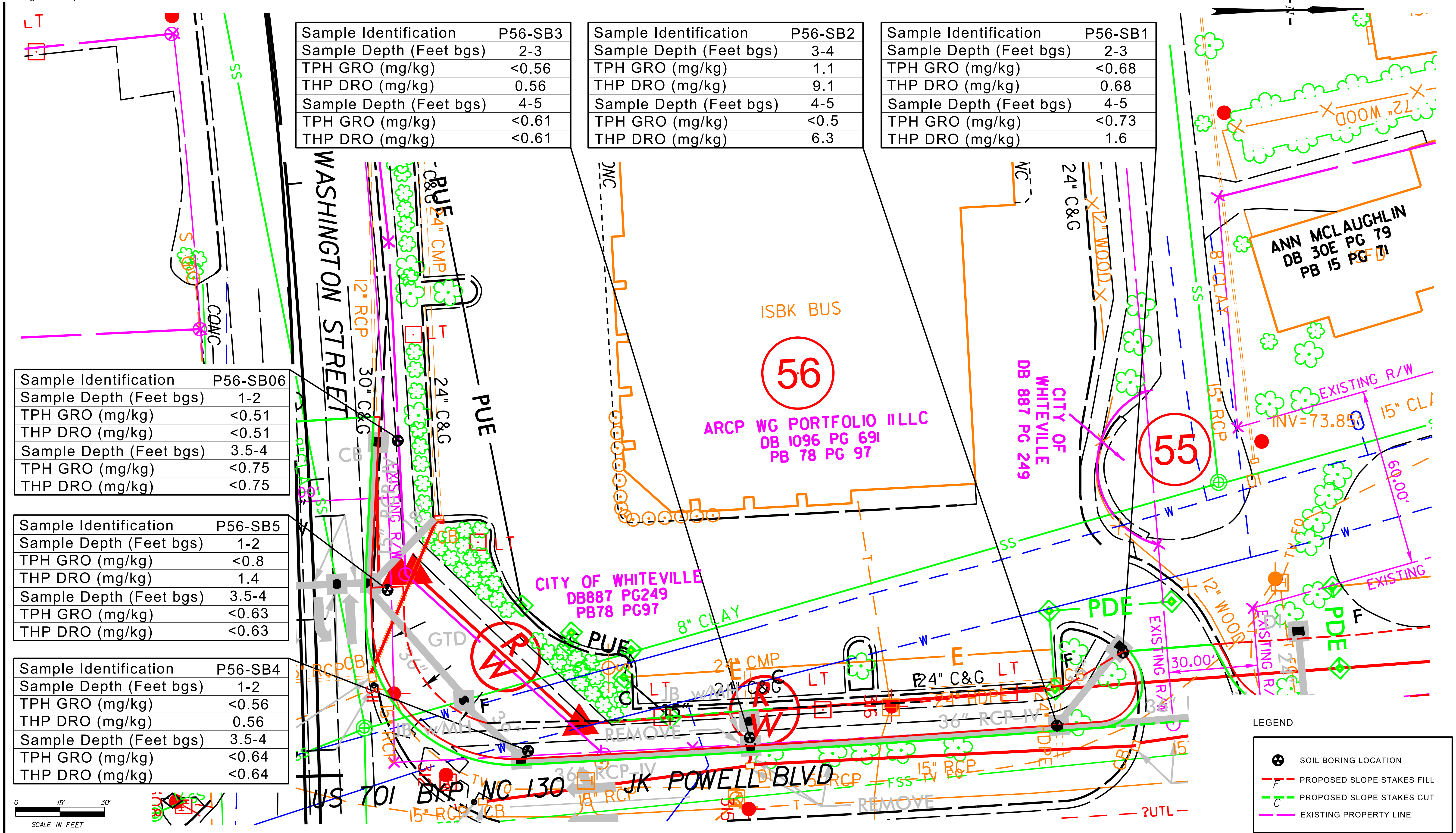
Sample Identification	P56-SB2
Sample Depth (Feet bgs)	3-4
TPH GRO (mg/kg)	1.1
THP DRO (mg/kg)	9.1
Sample Depth (Feet bgs)	4-5
TPH GRO (mg/kg)	<0.5
THP DRO (mg/kg)	6.3

Sample Identification	P56-SB1
Sample Depth (Feet bgs)	2-3
TPH GRO (mg/kg)	<0.68
THP DRO (mg/kg)	0.68
Sample Depth (Feet bgs)	4-5
TPH GRO (mg/kg)	<0.73
THP DRO (mg/kg)	1.6

Sample Identification	P56-SB06
Sample Depth (Feet bgs)	1-2
TPH GRO (mg/kg)	<0.51
THP DRO (mg/kg)	<0.51
Sample Depth (Feet bgs)	3.5-4
TPH GRO (mg/kg)	<0.75
THP DRO (mg/kg)	<0.75

Sample Identification	P56-SB5
Sample Depth (Feet bgs)	1-2
TPH GRO (mg/kg)	<0.8
THP DRO (mg/kg)	1.4
Sample Depth (Feet bgs)	3.5-4
TPH GRO (mg/kg)	<0.63
THP DRO (mg/kg)	<0.63

Sample Identification	P56-SB4
Sample Depth (Feet bgs)	1-2
TPH GRO (mg/kg)	<0.56
THP DRO (mg/kg)	0.56
Sample Depth (Feet bgs)	3.5-4
TPH GRO (mg/kg)	<0.64
THP DRO (mg/kg)	<0.64



APEX
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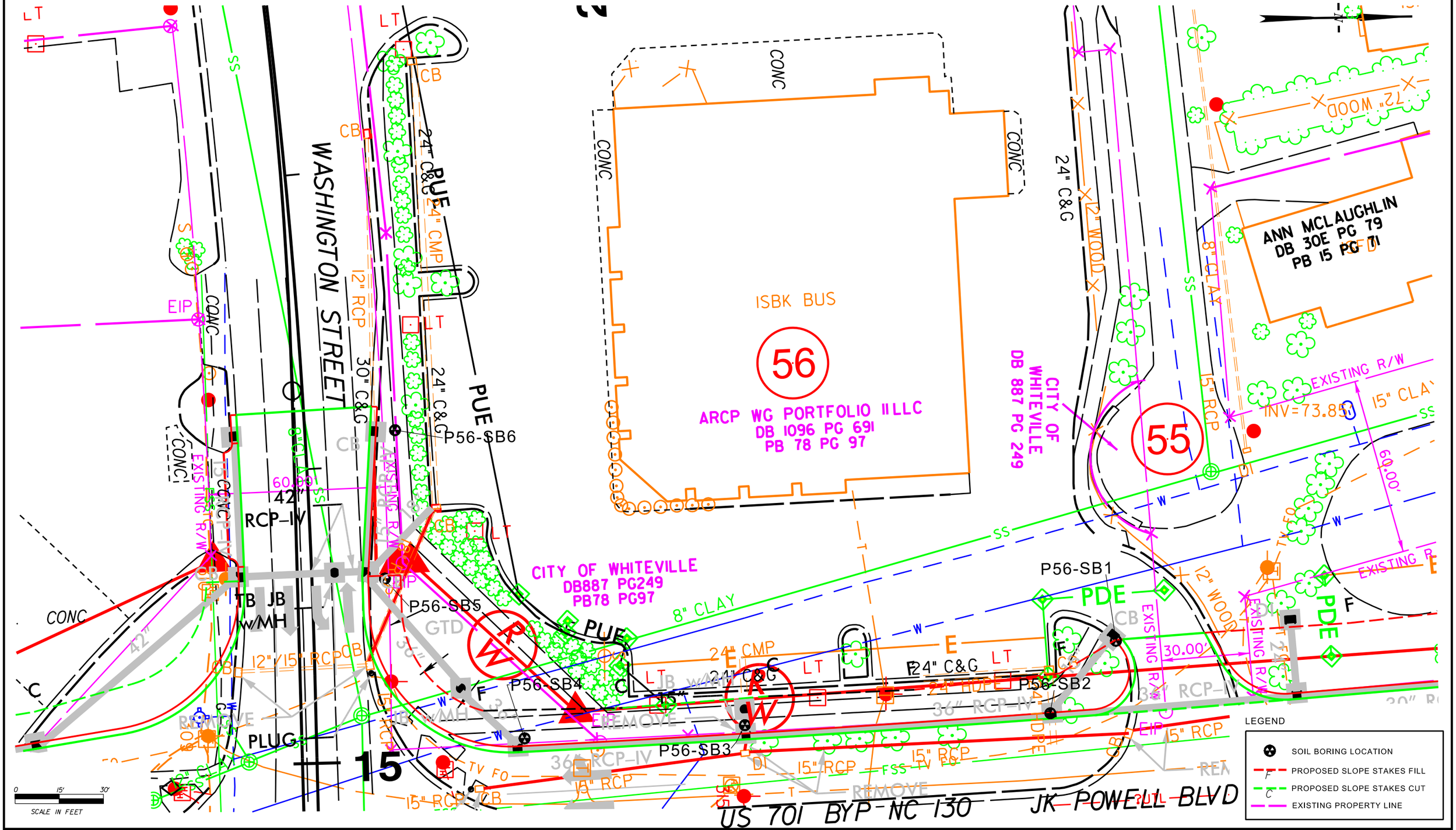
FIGURE 3
PARCEL 056
803 N. JK. POWELL BLVD
ONSITE UVF HYDROCARBON ANALYSIS RESULTS - SOIL
6/5/18

Date:	7/24/18
Proj. #:	NCDOT-001
CAD File:	pc_056_fig 3.dgn
Approx. Scale:	1" = 30'
Drawn by:	MJO
Client:	NC DOT
Project Title:	R-5020B US 701 BYPASS COLUMBUS COUNTY



APEX COMPANIES, LLC
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SUITE 206
CHARLOTTE, NC 28117
PHONE: (704) 799-6390

FIGURE 4
PARCEL 056
803 N. JK. POWELL BLVD
SITE MAP WITH ESTIMATED AREA OF GROUNDWATER IMPACT

Date: 8/21/18	R-5020B US 701 BYPASS COLUMBUS COUNTY
Proj. # NCDOT-001	
CAD File: pc__056__fig 2.dgn	Project Title:
Approx. Scale: 1" = 30'	Drawn by: MJO
	Client: NC DOT

APPENDIX A
PHOTOGRAPH LOG

Photo 1

Overview of site prior to preliminary site assessment activities.

Photo 2

Photo of CSI personnel operating a hand auger to clear for utilites.

10610 Metromont Pkwy
Suite 206
Charlotte, NC 28269

APEX

NCDT Project R-5020B
PROCESSED TLH
DATE June 2018

PHOTOGRAPHIC LOG
PSA Field Activities
Parcel 56
ARCP WG Portfolio II LLC Property,
Whiteville, NC

APPENDIX B
HISTORICAL RECORDS

S&ME

March 7, 1988

North Carolina Division of Environmental Management
Wilmington Regional Office
7225 Wrightsville Avenue
Wilmington, North Carolina 28403

Attention: Mr. Rich Shiver

Reference: The Pantry, Inc.
Retail Store #439
Whiteville, North Carolina
S&ME Project No. 4115-87-538

Dear Mr. Shiver:

As per our recent phone conversation, the subject gasoline retail store has been investigated and is more suspected of being the source of a release of petroleum hydrocarbons. The enclosed copy of S&ME's Subsurface Gasoline Investigation for the site describes our finds to date.

S&ME is scheduling the additional fieldwork described in the report for March. If you have any questions about our progress please feel free to call.

Sincerely,

S&ME Environmental Services

Thomas E. Mappes

Thomas E. Mappes, P.E.
Project Manager

TEM/jg

Enclosures

Subsurface Gasoline Investigation
The Pantry Facility #439
Whiteville, North Carolina

Prepared for

The Pantry, Inc.
P.O. Box 1410
Sanford, North Carolina 27330

Prepared by

S&ME Environmental Services
P.O. Box 1308
Cary, North Carolina 27512

January, 1988

S&ME

January 13, 1988

The Pantry, Inc.
P.O. Box 1410
Sanford, North Carolina 27330

Attention: Ms. Doris Bridges

Reference: Subsurface Gasoline Investigation
The Pantry Facility #439
Whiteville, North Carolina
S&ME Job No. 4115-87-522

Dear Ms. Bridges:

As part of their environmental assessment program, The Pantry, Inc. has requested the services of S&ME Environmental Services (S&ME) to provide an initial subsurface investigation at the referenced facility. The purpose of this investigation was to assess the possibility of soil and/or ground water degradation associated with underground gasoline storage tanks. If any significant degradation was identified, S&ME would propose further assessment or remedial measures.

SCOPE OF WORK

The scope of work involved the augering of borings and the emplacement of temporary ground water monitoring wells around three (3) underground gasoline storage tanks as shown in Figure 2. Each boring would be advanced into the water table by means of a hand auger. Soil samples

would be collected at selected intervals and scanned with an Organic Vapor Analyzer (OVA) to determine relative levels of volatile organic compounds. Temporary wells would be constructed in each boring and ground water samples would be collected and analyzed to determine levels of contamination, if any.

FIELD INVESTIGATION

On November 20, 1987, S&ME dispatched a geologist and a field technician to the Pantry facility located in Whiteville, North Carolina (Figure 1). After a visual site survey it was decided that four borings around the underground tanks would be sufficient for assessing any degradation in the soil or ground water. Therefore, the technician cored four openings through the concrete pavement around the tanks to provide access for augering the borings. Utilizing a decontaminated stainless steel hand auger, the geologist advanced two borings to below the water table. Due to physical obstructions below the concrete, the other two borings around the tanks could not be emplaced; therefore, a third boring was emplaced at a distance away from the tanks in an accessible location. Boring locations are shown in Figure 2.

In each boring, soil samples were collected at selected depths, classified according to the Unified Soil Classification System (ASTM D-1586), and recorded on Test Boring Records contained in Appendix A.

Upon collection, the soil samples were placed in clean glass jars with a sealed top and allowed to equilibrate at room temperature for ten (10) minutes. The top was then opened and a total volatilized organic compound reading was measured with the OVA. The OVA readings are presented in Table 1 and on the Test Boring Records.

Table 1

OVA Readings from Soils

Boring #	Sample Depth (ft)	OVA Reading (ppm)
TW-1	1.5	1000+
	4.5	1000+
	7.0	1000+
TW-2	2.0	850
	5.0	1000+
	8.0	350
TW-3	5.0	3.0
	9.0	0.0

Once each boring was completed, a temporary ground water monitoring well was constructed in each, as shown in Figure 3. Prior to sampling, each well was developed by bailing it to dryness using a decontaminated teflon bailer with a new nylon line. After each water level had recovered fully, teflon bailers were used to collect ground water samples from each well. Ground water samples were placed in one 500 ml jar and three 40 ml glass vials which had teflon-lined septums and allowed no headspace. The samples were labeled with a tag which identified the sample number, sample

location, time, date, analysis to be conducted, samplers, and remarks. The samples were then placed in an iced cooler, chilled to approximately 4°C, and transported to the analytical laboratory using EPA approved chain-of-custody procedures. Each sample was analyzed for purgeable aromatic compounds (EPA Method 602) and total lead with results presented in Table 2 and Appendix B. Decontamination procedures for the sampling equipment, well materials, and containers are outlined in Appendix C.

Table 2

Ground Water Analysis

Parameter	Date	Units	TW-1	TW-2	TW-3
Benzene	11-20-87	ug/L	1800	1600	BQL
Ethylbenzene	11-20-87	ug/L	400	1200	BQL
Toluene	11-20-87	ug/L	2500	4500	BQL
Xylenes	11-20-87	ug/L	2600	4800	BQL
Total Lead	11-20-87	mg/L	0.005	0.009	0.029

BQL: Below Quantitation Limit = (1.0 ug/L)

Analytical Laboratory: Industrial & Environmental Analysts, Inc., Cary, NC

After sampling was completed, each temporary well was abandoned by removing the PVC screen and casing and grouting the borehole with a neat cement/bentonite grout mixture to the surface. The abandonment records are presented in Appendix D.

CONCLUSIONS AND RECOMMENDATIONS

Three temporary monitoring wells were emplaced as shown in Figure 2. Soil samples were scanned with an OVA to determine relative levels of volatile organics, and ground water samples were analyzed for five gasoline constituents: benzene, ethylbenzene, toluene, xylenes (BETX) and total lead. Field data and analytical results indicate that some soil and ground water degradation, possibly associated with the underground tanks, has occurred at this site.

OVA readings from soils collected from TW-1 and TW-2, as well as the presence of gasoline odors, indicated apparent soil degradation. Due to the high OVA readings and obvious hydrocarbon odors, laboratory analysis of the soil was deemed unnecessary.

Laboratory analytical results from the ground water samples show elevated levels of organic contamination in temporary wells TW-1 (7300 ug/L Total BETX) and TW-2 (12,100 ug/L Total BETX). No contamination was found in temporary well TW-3.

Due to the close proximity of the sample locations to the tanks and the limited nature of the investigation, the areal and vertical extent of degradation could not be delineated; therefore, S&ME proposes to perform a further soil and ground water assessment of the site. Based on these findings, the following recommendations are made:

- The three underground tanks and the gasoline dispenser lines should be tested for their integrity utilizing the Heath Petro Tite tank test, or an equivalent method.
- Four to six soil test borings should be emplaced in the vicinity of the tanks to determine the extent of unsaturated soil degradation. It is thought that any lateral contaminant

migration would be limited in the unsaturated soil due to the existence of a high water table and the clayey nature of the soil.

- Four additional ground water monitoring wells should be emplaced and sampled to delineate the areal and vertical extent of contamination. Three of the wells will be screened at the top of the water table. A fourth well will be located hydraulically downgradient and will be screened at a deeper depth to determine any vertical contaminant migration. Due to the proximity of the tanks, migration of contaminants to the adjacent property is possible; therefore, S&ME will attempt to secure permission to emplace one additional shallow well on the adjacent property. If permission cannot be obtained, the wells will be emplaced as close to the property line as possible, as shown in Figure 4.

S&ME will implement these recommendations in an expedient manner upon your review and approval. Should you have any questions or comments, please do not hesitate to contact us.

Sincerely,

S&ME Environmental Services

W. Perry Sugg

W. Perry Sugg
Staff Geologist

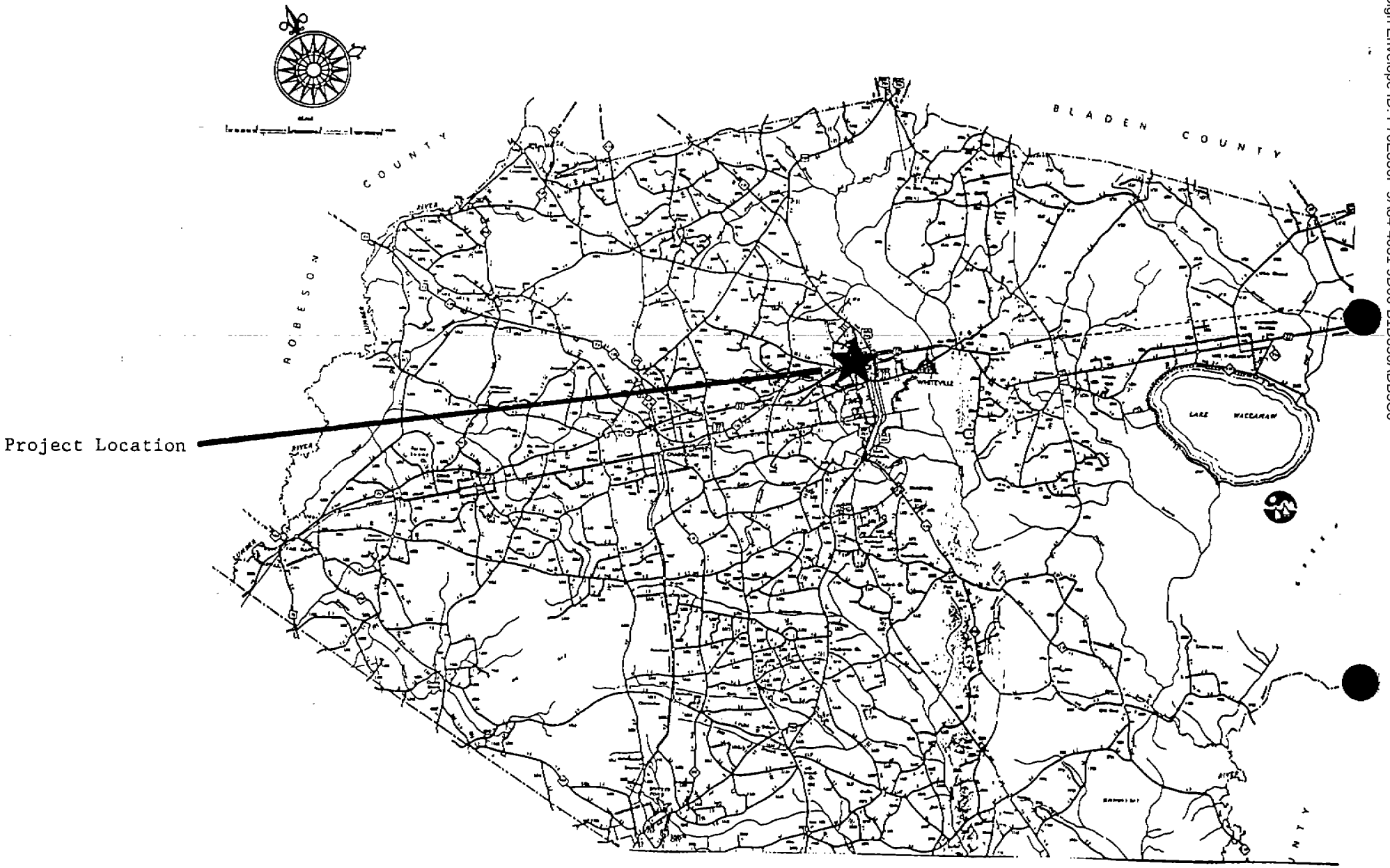
Thomas E. Mappes

Thomas E. Mappes, P.E.
Senior Engineer and Project Manager

WPS/TEM/jav

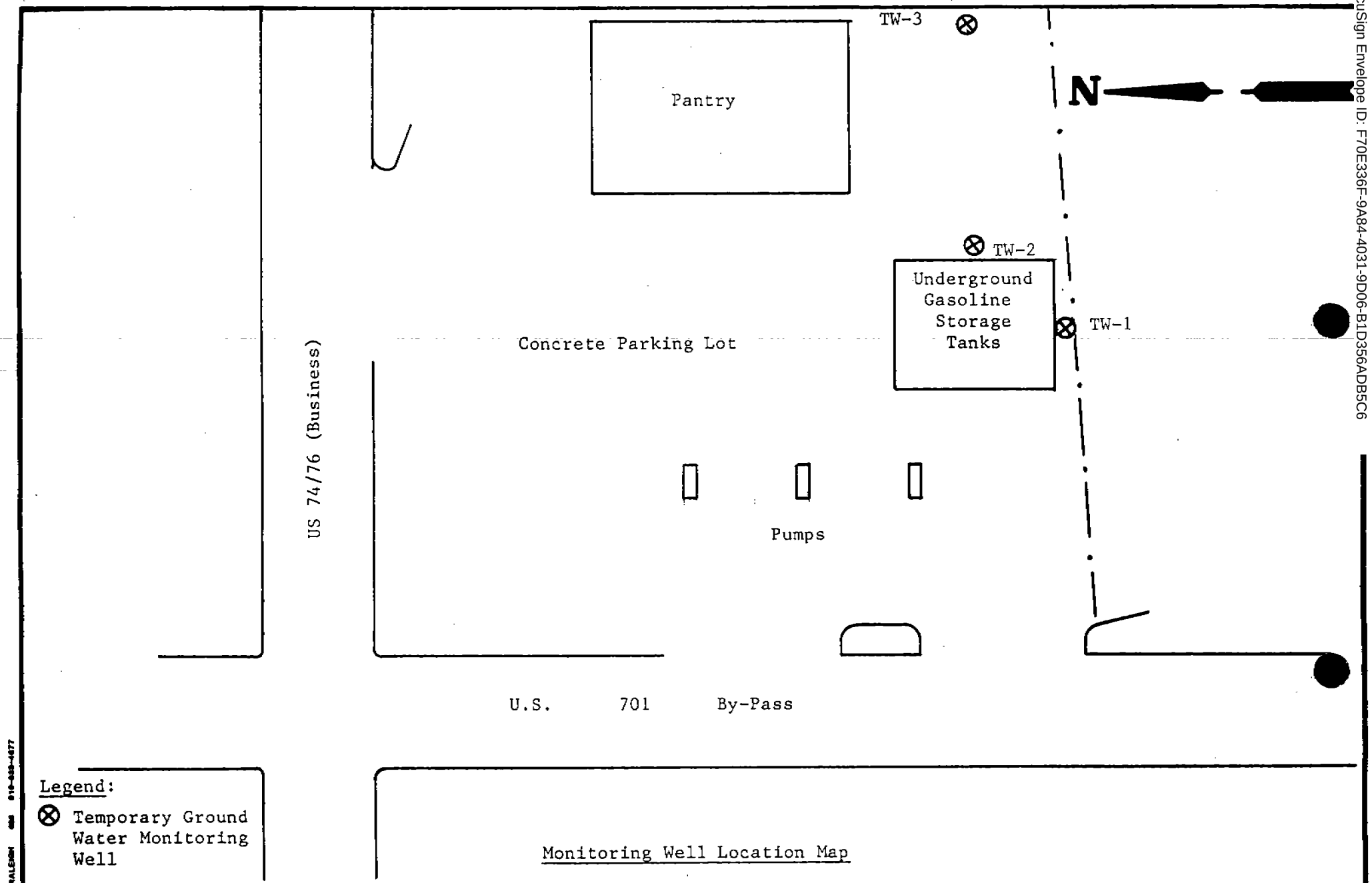
Attachments

FIGURES



PROJECT	SOIL & MATERIAL ENGINEERS, INC.	SCALE: NTS
The Pantry, Inc. Whiteville, NC	RALEIGH, NORTH CAROLINA	JOB NO: 4115-87-538
		FIG NO: 1

SM-B1

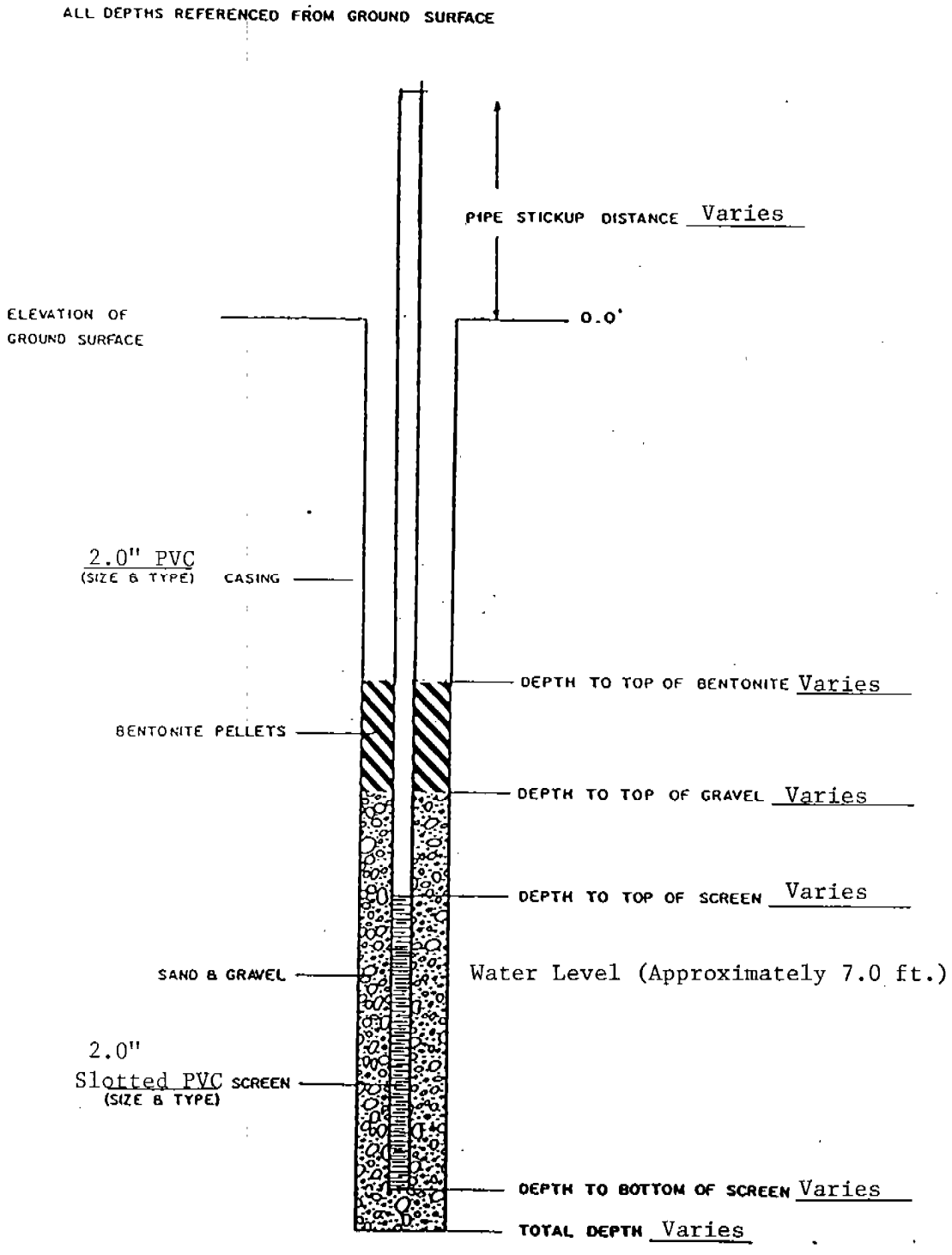


Monitoring Well Location Map

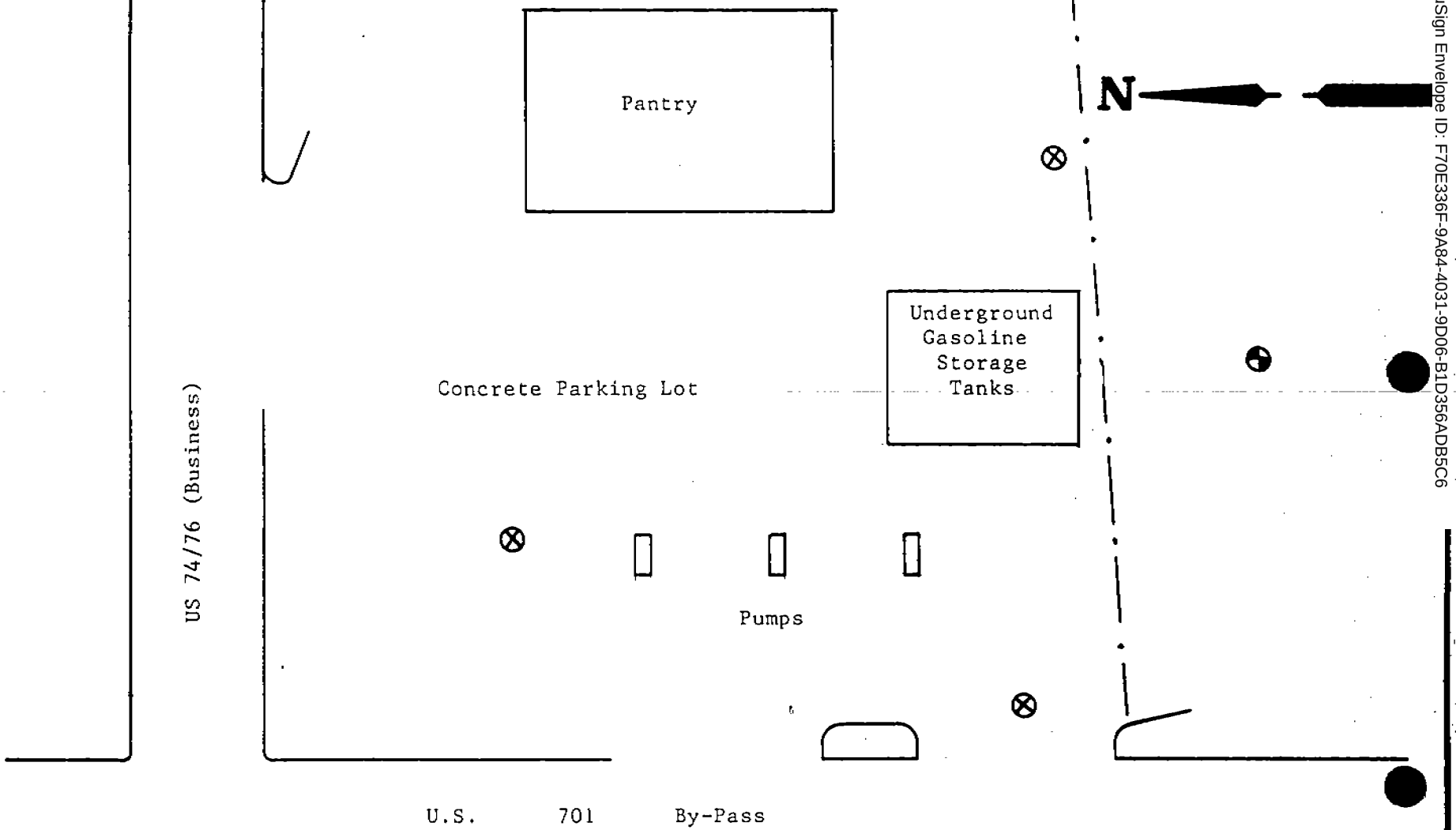
PROJECT	SOIL & MATERIAL ENGINEERS, INC.	SCALE: 1" = 30'
The Pantry, Inc. Whitesville, N.C.	RALEIGH, NORTH CAROLINA	JOB NO: 4115-87-538
		FIG NO: 2

SM-B1

TEMPORARY MONITOR WELL SCHEMATIC



PROJECT	SOIL & MATERIAL ENGINEERS, INC. RALEIGH, NORTH CAROLINA	SCALE: N.T.S.
The Pantry, Inc. Whiteville, NC		JOB NO: 4115-87-538
		FIG. NO: 3



Legend:

⊗ Proposed Permanent Shallow Monitor Well

◔ Proposed Shallow Monitor Well (Adjacent property)

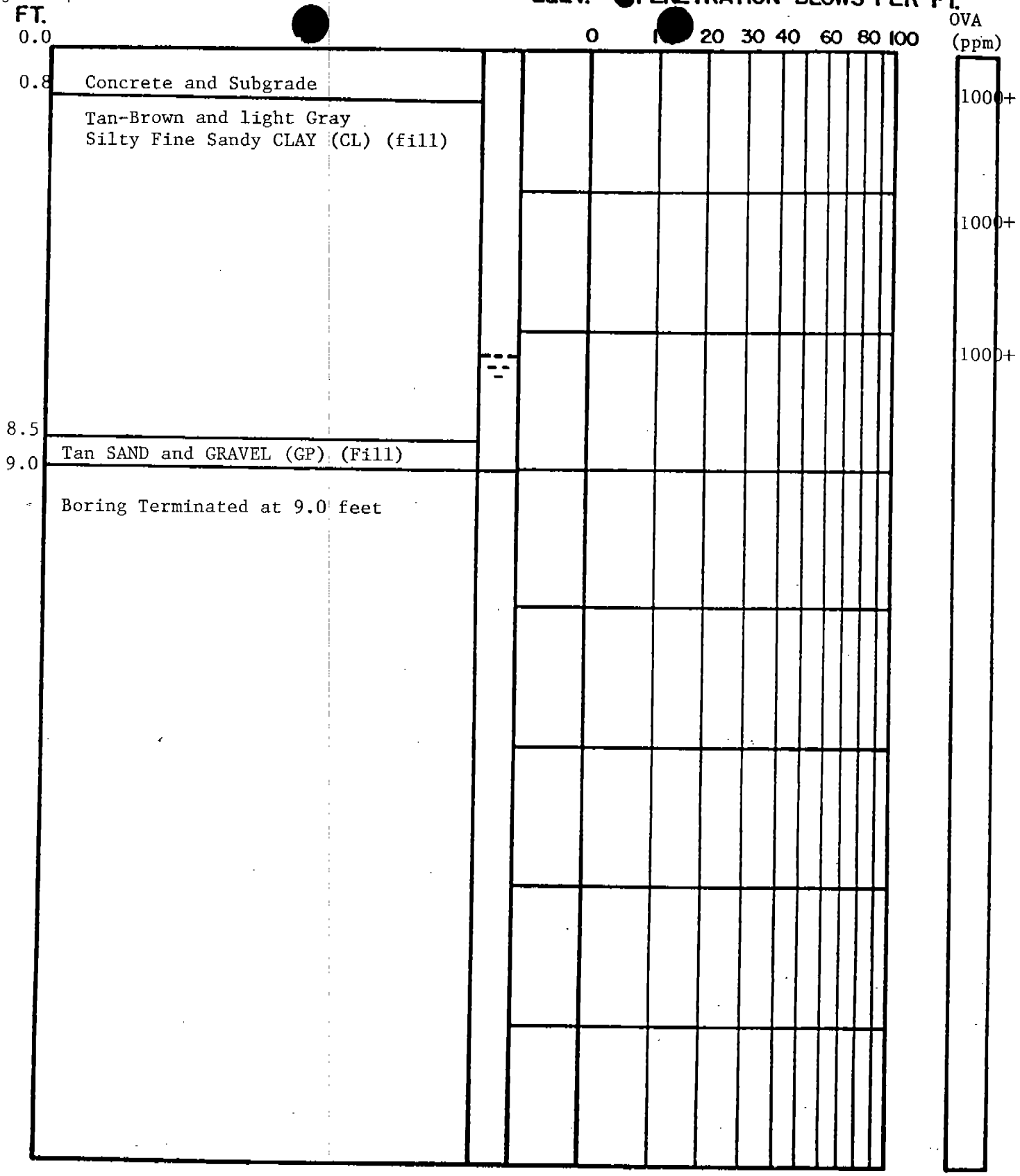
PROPOSED MONITOR WELL LOCATION MAP

PROJECT The Pantry, Inc. Whitesville, N.C.	SOIL & MATERIAL ENGINEERS, INC. RALEIGH, NORTH CAROLINA	SCALE: 1" = 30' JOB NO: 4115-87-538 FIG NO: 4

SM-B1

APPENDIX A

Test Boring Records



BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-2113

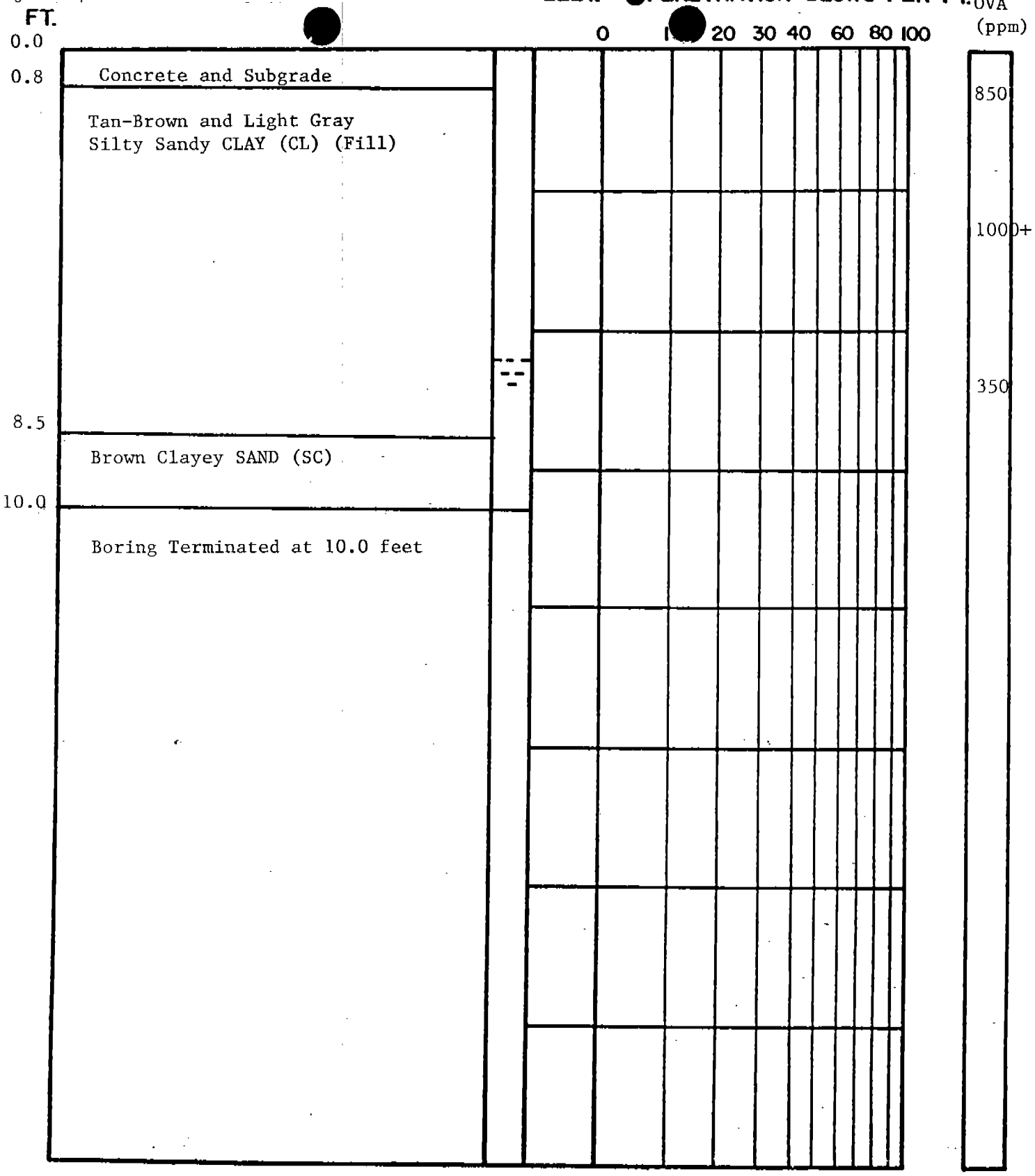
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE
50% ROCK CORE RECOVERY
LOSS OF DRILLING WATER
WATER TABLE-24 HR.
WATER TABLE-1 HR.

TEST BORING RECORD

BORING NO. TW-1
DATE DRILLED 11-20-87
JOB NO. 4115-87-538

SOIL & MATERIAL ENGINEERS, INC.



BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-2113

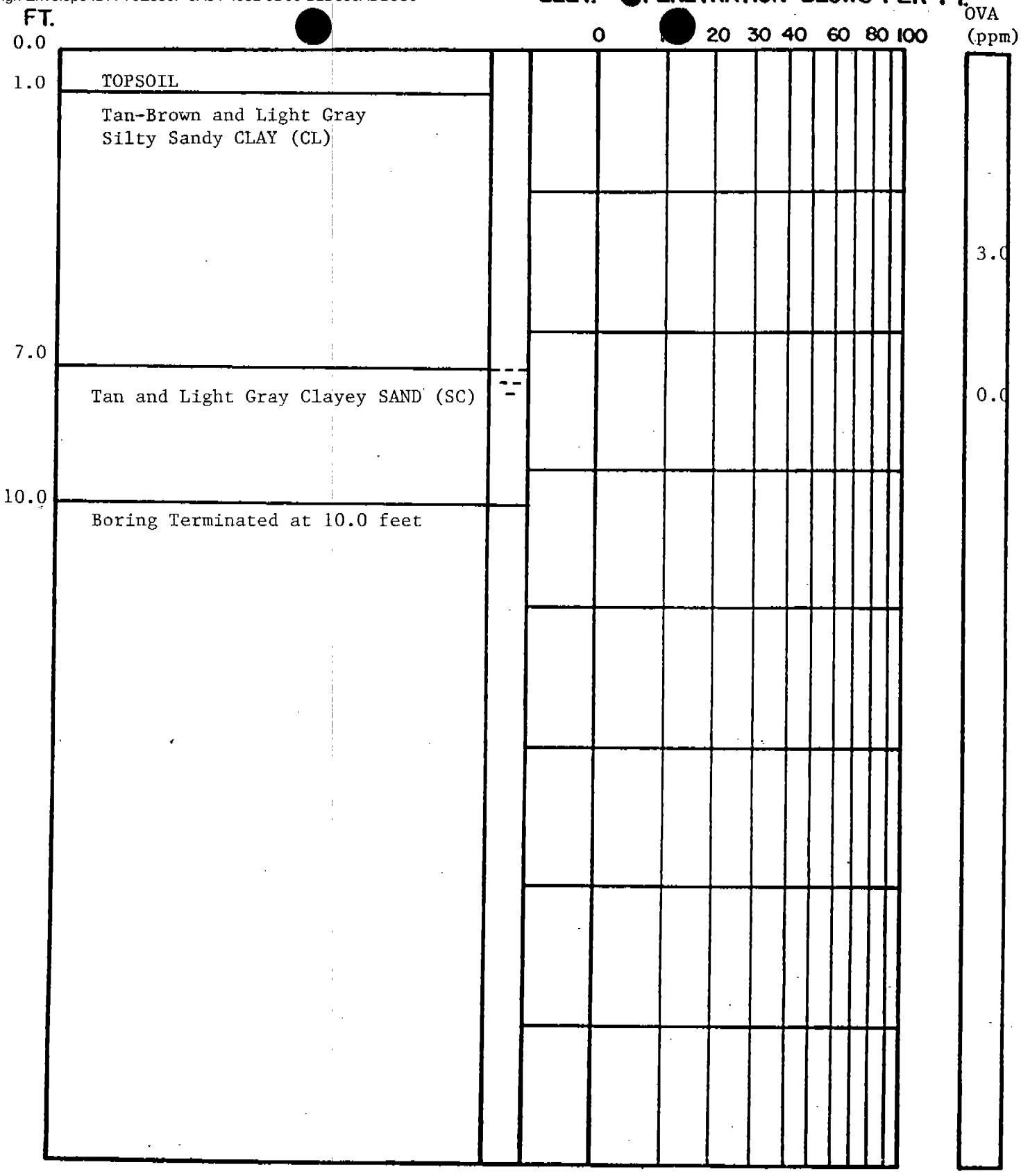
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE
50% ROCK CORE RECOVERY
LOSS OF DRILLING WATER
WATER TABLE-24HR.
WATER TABLE-1HR.

TEST BORING RECORD

BORING NO. TW-2
DATE DRILLED 11-20-87
JOB NO. 4115-87-538

SOIL & MATERIAL ENGINEERS, INC.



BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-2113

PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE
50% ROCK CORE RECOVERY
LOSS OF DRILLING WATER
WATER TABLE-24HR.
WATER TABLE-1HR.

TEST BORING RECORD

BORING NO. TW-3
DATE DRILLED 11-20-87
JOB NO. 4115-87-538

SOIL & MATERIAL ENGINEERS, INC.

APPENDIX B

Laboratory Data Sheets

Industrial & Environmental Analysts, Inc.
P.O. Box 12846 • Research Triangle Park, NC 27709 • 919-467-9919

Date: December 8, 1987

Mr. Tom Mappes
Soil & Material Engineers-Cary
P.O. Box 1308
Cary, NC 27512

Reference: IEA Report No. 115580
Project# 4115-87-538

Dear Mr. Mappes,

Transmitted herewith are the results of analyses on three samples submitted to our laboratory on November 23, 1987.
Please see the enclosed reports for your results.

Very truly yours,

INDUSTRIAL & ENVIRONMENTAL ANALYSTS, INC.

Mark D. Randall

Mark Randall
Senior Chemist

IEA LAB RESULTS

IEA#	115580 Samples: 3 Total Parameters: 6
Client Name	Soil & Material Engineers-Cary

Sa#	Sample I.D.	Parameter Studied	Results	Date Analyzed	Comments
1	TW-1	Lead	0.005 mg/L	12/3/87	
2	TW-2	Lead	0.009 mg/L	12/3/87	
3	TW-3	Lead	0.029 mg/L	12/3/87	

Comments | BQL - BELOW QUANTITATION LIMIT

Purgeable Aromatics

IEA Sample No. 115580 1
Sample Identification TW-1
Date Analyzed December 1, 1987 **By** Joaquin

Number	Compound	Quantitation Limit µg/L	Results Concentration µg/L
1	Benzene	25	1800
2	Chlorobenzene	25	BQL
3	1,2-Dichlorobenzene	25	BQL
4	1,3-Dichlorobenzene	25	BQL
5	1,4-Dichlorobenzene	25	BQL
6	Ethylbenzene	25	400
7	Toluene	25	2500
	Xylenes	25	2600

Comments | BQL - BELOW QUANTITATION LIMIT

Purgeable Aromatics

IEA Sample No. 115580 2
Sample Identification TW-2
Date Analyzed December 1, 1987 **By** Joaquin

Number	Compound	Quantitation Limit µg/L	Results Concentration µg/L
1	Benzene	25	1600
2	Chlorobenzene	25	BQL
3	1,2-Dichlorobenzene	25	BQL
4	1,3-Dichlorobenzene	25	BQL
5	1,4-Dichlorobenzene	25	BQL
6	Ethylbenzene	25	1200
7	Toluene	25	4500
	Xylenes	25	4800

Comments | BQL - BELOW QUANTITATION LIMIT

Purgeable Aromatics

IEA Sample No. 115580 3
Sample Identification TW-3
Date Analyzed December 1, 1987 **By** Joaquin

Number	Compound	Quantitation Limit µg/L	Results Concentration µg/L
1	Benzene	1.0	BQL
2	Chlorobenzene	1.0	BQL
3	1,2-Dichlorobenzene	1.0	BQL
4	1,3-Dichlorobenzene	1.0	BQL
5	1,4-Dichlorobenzene	1.0	BQL
6	Ethylbenzene	1.0	BQL
7	Toluene	1.0	BQL
	Xylenes	1.0	BQL

S&ME

Branch:

Department:

CHAIN OF CUSTODY RECORD

S&ME Job No.	Project Name
4115 87-538	Pantry Whiteville

Samplers: (signature) [signature]

Station No.	Date	Time	Comp.	Grab	Station Location	Number of Containers	BTEX	Total Lead					REMARKS
TW-1	11-20-87	1320		X			-	-					
TW-2	↓	1325		X			-	-					
TW-3	↓	1332		X			-	-					

Relinquished by: (signature)	Date: Time:	Received by:(signature)	Relinquished by: (signature)	Date: Time:	Received by:(signature)
Relinquished by: (signature)	Date: Time:	Received by:(signature)	Relinquished by: (signature)	Date: Time:	Received by:(signature)
Relinquished by: (signature) [signature]	Date: 11-23-87 Time: 0946	Received by:(signature) [signature]	Date: 11-23-87 Time: 8:46 am	Remarks	

6/87

DISTRIBUTION: White and Canary copies accompany sample shipment.
Pink and Goldenrod copies maintained in file.

APPENDIX C

Decontamination Procedures

Equipment Decontamination Procedures

Where augers or drilling rigs are used to advance the boreholes to a sampling location, the augers will be steam cleaned between sampling stations to minimize the potential for cross-contamination.

All sample spoons, split spoons and other sampling equipment will be decontaminated by the following procedures:

1. Soap (Alconox or equivalent) and tap water wash;
2. Tap water rinse;
3. Distilled, deionized water rinse;
4. Isopropyl alcohol rinse;
5. Double distilled water rinse, air dried and individually wrapped in aluminum foil with shining side out.

All Teflon bailers will be decontaminated by the following procedure:

1. Soap (Alconox or equivalent) and tap water wash;
2. Tap water rinse;
3. 10% nitric acid wash;
4. Distilled water rinse;
5. Isopropyl alcohol wash;
6. Double distilled water rinse;
7. Air dried and wrapped in aluminum foil with shining side out.

All glassware is decontaminated by the following procedure:

1. Soap (Alconox or equivalent) and distilled water rinse;
2. Triple distilled water rinse;
3. Oven dried at 105°C.

APPENDIX D

Well Abandonment Records

North Carolina
Department of Natural Resources and Community Development
Division of Environmental Management
P.O. Box 27687 - Raleigh, N.C. 27611

Well Abandonment Record

Contractor S&ME Reg. No. 412

1. Well Location: (Show a sketch of the location on back of form.)

Nearest Town: Whiteville, NC County: Columbus

U.S. 701 By-Pass & U.S. 74/76 Business Quadrangle No.: BB-40
(Road, Community, Subdivision, Lot No.)

2. Owner: The Pantry, Inc.

3. Address: P.O. Box 1410, Sanford, NC

4. Topography: draw, slope, hilltop, valley, flat.

5. Use of Well: Monitor Date: 11-20-87

6. Total Depth: 9.0' Dia.: 2.0 inches

7. Casing Removed:

feet	diameter
10'	2.0"

8. Sealing Material:

Neat Cement	Sand Cement
bags of cement 1	bags of cement
gals. of water 5	yds. of sand
	gals. of water

Other
Type Material:
Amount:

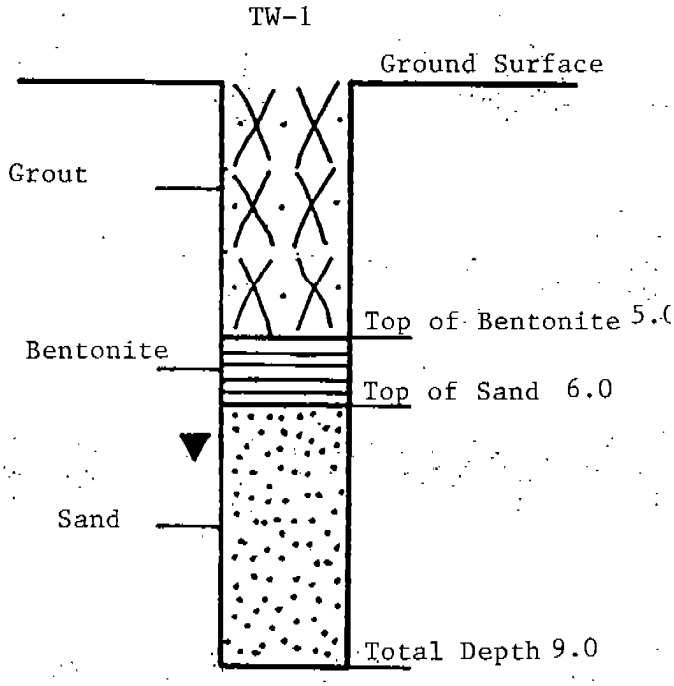
9. Explain Method of emplacement of material

Removed well screen & casing. Poured grout mix down borehole and grouted to grade.

I do hereby certify that this well abandonment record is true and exact.

Signature of Contractor or Agent Date

Well Diagram: Draw a detailed sketch of well showing total depth, screen depth and diameter remaining in well, gravel interval, intervals of casing perforations, and depths and types of fill materials used.



Submit original to the Divesion of Environmental Management, one copy to the Driller, and one copy to the Owner.

North Carolina
Department of Natural Resources and Community Development
Division of Environmental Management
P.O. Box 27687 - Raleigh, N.C. 27611

Well Abandonment Record

Contractor S&ME Reg. No. 412

1. Well Location: (Show a sketch of the location on back of form.)

Nearest Town: Whiteville, NC County: Columbus

U.S. 701 By-Pass & U.S. 74/76 Business Quadrangle No.: BB-40
(Road, Community, Subdivision, Lot No.)

2. Owner: The Pantry, Inc.

3. Address: P.O. Box 1410, Sanford, NC

4. Topography: draw, slope, hilltop, valley, flat.

5. Use of Well: Monitor Date: 11-20-87

6. Total Depth: 10' Dia.: 2.0"

7. Casing Removed:

feet	diameter
11'	2.0"

8. Sealing Material:

Neat Cement	Sand Cement
bags of cement 1	bags of cement
gals. of water 5	yds. of sand
	gals. of water

Other
Type Material:
Amount:

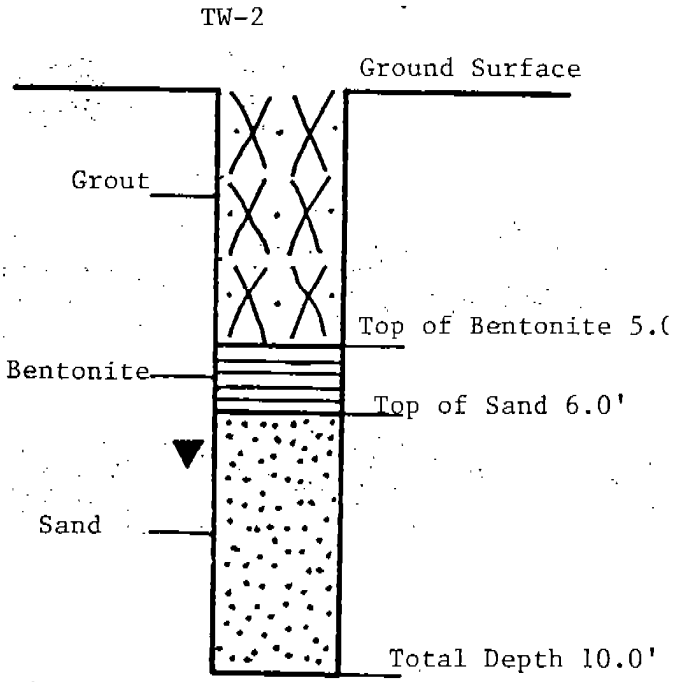
9. Explain Method of emplacement of material

Removed well screen & casing. Poured grout mix down borehole and grouted to grade.

I do hereby certify that this well abandonment record is true and exact.

Signature of Contractor or Agent Date

Well Diagram: Draw a detailed sketch of well showing total depth, screen depth and diameter remaining in well, gravel interval, intervals of casing perforations, and depths and types of fill materials used.



Submit original to the Divesion of Environmental Management, one copy to the Driller, and one copy to the Owner.

North Carolina
Department of Natural Resources and Community Development
Division of Environmental Management
P.O. Box 27687 - Raleigh, N.C. 27611

Well Abandonment Record

Contractor S&ME Reg. No. 412

1. Well Location: (Show a sketch of the location on back of form.)

Nearest Town: Whiteville, NC County: Columbus

U.S. 701 By-Pass & U.S. 74/76 Business Quadrangle No.: BB-40
(Road, Community, Subdivision, Lot No.)

2. Owner: The Pantry, Inc.

3. Address: P.O. Box 1410, Sanford, NC

4. Topography: draw, slope, hilltop, valley, flat.

5. Use of Well: Monitor Date: 11-20-87

6. Total Depth: 10' Dia.: 2.0"

7. Casing Removed:

feet	diameter
11'	2.0"

8. Sealing Material:

Neat Cement	Sand Cement
bags of cement 1	bags of cement
gals. of water 5	yds. of sand
	gals. of water

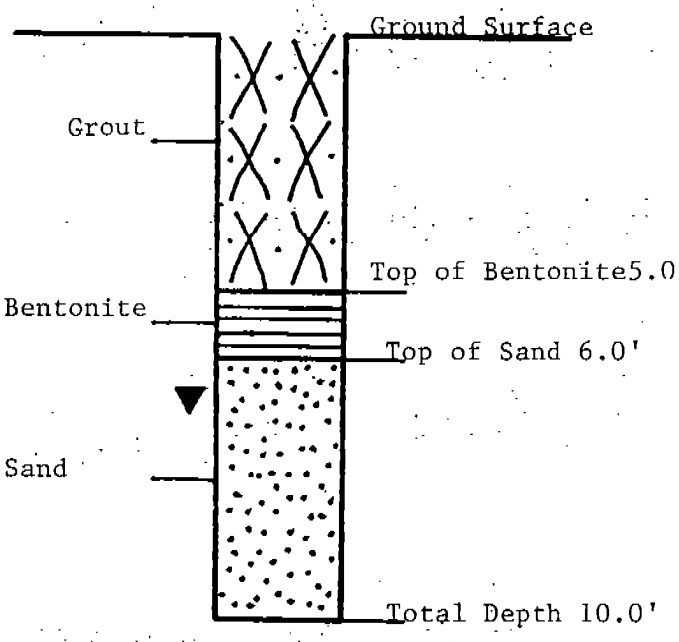
Other
Type Material:
Amount:

9. Explain Method of emplacement of material

Removed well screen & casing. Poured grout mix down borehole and grouted to grade.

Well Diagram: Draw a detailed sketch of well showing total depth, screen depth and diameter remaining in well, gravel interval, intervals of casing perforations, and depths and types of fill materials used.

TW-3



I do hereby certify that this well abandonment record is true and exact.

Signature of Contractor or Agent Date

Submit original to the Divesion of Environmental Management, one copy to the Driller, and one copy to the Owner.

THE PANTRY, INC.

P.O. BOX 1410, 1801 DOUGLAS DRIVE
SANFORD, NORTH CAROLINA 27331-1410
PHONE (919) 774-6700
FACSIMILES: (919) 775-5464
(919) 774-3329

January 3, 1990

NCDEM - WRO - GWS
7225 Wrightsville Ave.
Wilmington, NC 28403

INCIDENT # _____
√ ASSESSMENT
___ 20 DAY
___ 45 DAY
___ CAP

RE: PANTRY #439
U.S. HWY. 74/76
Whiteville, NC

Dear Sir:

Enclosed, please find subsurface investigation report for the above referenced site.

Should there be any questions or if additional information is needed, please give me a call.

Sincerely,

THE PANTRY, INC.

Doris Bridges
Director of Gasoline Marketing

DB/awt

Enclosure

RECEIVED
JAN 4 1990
Wilmington Regional Office
DEM

Subsurface Investigation for Hydrocarbons The Pantry #439 US Highway 74/76 (Business) and US Highway 70 (By Pass) Whiteville, North Carolina

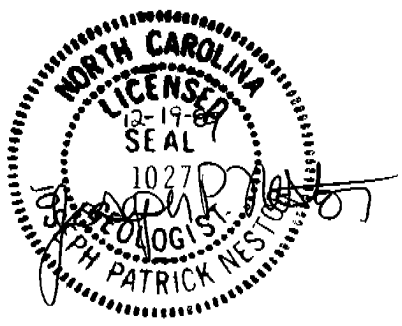
Prepared for:

Ms. Doris Bridges
The Pantry, Inc.
Post Office Box 1410
Sanford, North Carolina 27330

Prepared by:

Mr. Joseph P. Nestor
Southern Pump and Tank Company
Environmental Services Division
Post Office Box 31516
Charlotte, North Carolina 28231

December 1989



1.0 Introduction and Background

This report is being written as the result of investigative activities performed at the subject site. Earlier work performed by S&ME, Inc. (report dated January 1988) and SPATCO-Environmental Services Division (SPATCO-ESD) (report dated July 1988) indicated the presence of hydrocarbon contamination. SPATCO-ESD constructed four 2-inch diameter monitor wells in May and June, 1988. The positions of these wells are indicated in Figure 1. The wells were sampled and analyzed for benzene, toluene, ethylbenzene, and xylenes in June 1988. The results of this round of sampling are shown below:

Sample ID	Benzene	Toluene	Ethylbenzene	Xylenes
MW-1	33.8	<5	<5	9.4
MW-2	412	188	16.6	342
MW-3	5820	6880	3620	12,200
MW-4	372	1700	1060	1010

results expressed as ug/l

Groundwater flow was calculated to be in an east southeasterly direction towards US Highway 701 By-Pass. It was recommended in the SPATCO-ESD report of July 1988 to construct two additional wells downgradient of the tank excavation and to analyze samples from these wells. The present report is a summary of the findings which resulted from implementing these recommendations.

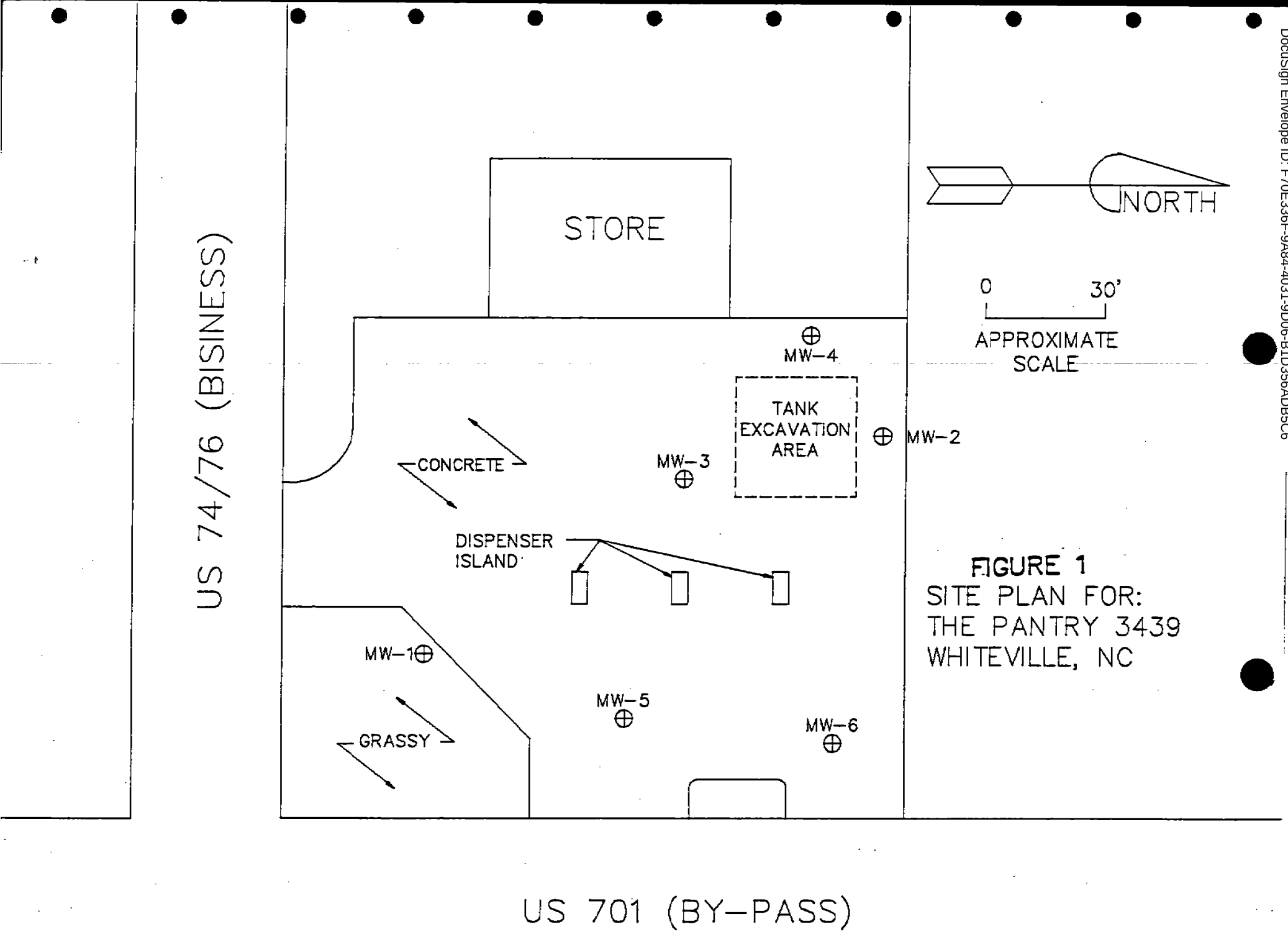


FIGURE 1
SITE PLAN FOR:
THE PANTRY 3439
WHITEVILLE, NC

2.0 Field Activities

2.1 Monitor Well Construction

On January 23, 1989, monitor wells MW-5 and MW-6 were constructed in the positions indicated in Figure 1. Excavated material from the borehole was logged by a staff geologist. Well construction records may be found in Appendix I. After completion the wells were manually developed with a surge block.

2.2 Monitor Well Sampling

On January 24, 1989, groundwater samples were collected from all wells at the site. Samples were collected following methodologies consistent for this type of investigation. Samples were placed in a chilled cooler and were transported to an independent laboratory for analysis.

3.0 Findings

3.1 Subsurface Materials

As indicated in the boring logs which may be found in Appendix I, the subsurface materials encountered consisted primarily of silts of varying colors and clay content.

3.2 Groundwater Laboratory Results

Laboratory results may be found in their entirety in Appendix II. They are summarized below:

Sample ID	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Total Petroleum Hydrocarbons (gasoline)
MW-1	620	17	15	13	31,000
MW-2	5500	1900	1500	5200	540,000
MW-3	4000	300	1100	3100	370,000
MW-4	2000	2500	1000	2700	280,000
MW-5	170	4.9	5.0	78	8,400
MW-6	ND	0.66	ND	0.51	86

results expressed as ug/l

4.0 Conclusions

Significant contaminant concentrations were detected in groundwater at the site. Contaminants appear to be attenuated or degraded as they migrate from the tank excavation zone. Contaminants may be leaving the site in concentrations above North Carolina water quality standards, but because of attenuation and degradation processes contaminant concentrations are expected to decrease significantly with distance from the site.

5.0 Recommendations

Because of the high levels of contaminants detected in the monitor wells on site, especially MW-2, MW-3, and MW-4, active groundwater remediation is recommended. Discharge options for recovered and treated groundwater should be explored first.

These options include discharge to the city sanitary sewer with a city permit; discharge to surface waters and/or storm sewers with a state National Pollution Discharge Elimination System (NPDES) permit, and/or reintroduction to the subsurface via an infiltration gallery or spray irrigation field with a state non-discharge permit.

Prior to designing a groundwater extraction and treatment system, aquifer parameters should be better defined. It is recommended that a short term (2 to 6 hours) pumping test be conducted in monitor well MW-5. Water level data would be collected from a temporary piezometer constructed by installing 2 inch diameter well screen in a bore hole hand augered in the nearest grassy area. The test should provide information regarding short term sustained well yield after borehole dewatering and information regarding the area of influence created by pumping the existing wells. From this information a sound decision can be made as to whether the existing wells will be satisfactory for recovery purposes or whether additional wells or a recovery trench will be necessary. Recovered water would be limited to less than 2,000 gallons and would be transported to a proper treatment facility for disposal.

It is believed that the most practical groundwater treatment system for the types of contaminants detected will be an aeration system. Once the sustained yield is determined, an appropriate aeration device may be specified.

All wells on-site should be resampled and analyzed for BTEX so that a more current understanding of contaminant levels may be obtained.

6.0 Limitation of Liability

The findings, conclusions, recommendations, qualifications, and/or professional advice contained in this report have been prepared in accordance with applicable governmental regulations and in accordance with generally accepted professional practice in the fields of geology, hydrogeology, hydrology, and engineering technology (as appropriate). Our conclusions and recommendations are based upon analysis of samples from six borings/monitor wells. These data points are believed to be representative of the subject site, but may not be completely representative of all subsurface conditions.

APPENDIX I

ITY DEVELOPMENT
DIVISION OF ENVIRONMENTAL MANAGEME[illegible] GROUNDWATER SECTION
P.O. BOX 27687 – RALEIGH,N.C. 276[illegible] HONE (919) 733-5083

FOR OFFICE USE ONLY
[illegible] No. _____ Serial No. _____
Lat. _____ Long. _____ Pc _____
Minor Basin _____
Basin Code _____
Header Ent. _____ GW-1 Ent. _____

WELL CONSTRUCTION RECORD

DRILLING CONTRACTOR SPATCO

DRILLER REGISTRATION NUMBER 1068

MW -5

STATE WELL CONSTRUCTION PERMIT NUMBER: 23-0190-WM-0057

1. WELL LOCATION: (Show sketch of the location below)
Nearest Town: Whiteville, N.C.
Bypass 701, Whiteville, N.C.
(Road, Community, or Subdivision and Lot No.)

County: Columbus

2. OWNER The Pantry Inc.
ADDRESS P.O.Box 1410 (Street or Route No.)
Sanford, North Carolina 27730
City or Town State Zip Code

3. DATE DRILLED 1-23-89 USE OF WELL Ground water monitoring

4. TOTAL DEPTH 10.0 feet CUTTINGS COLLECTED ☐ Yes ☒ No

5. DOES WELL REPLACE EXISTING WELL? ☐ Yes ☒ No

6. STATIC WATER LEVEL: 5.42 feet FT. ☐ above ☒ below TOP OF CASING,
TOP OF CASING IS 0 FT. ABOVE LAND SURFACE.

7. YIELD (gpm): N/A METHOD OF TEST N/A

8. WATER ZONES (depth): 5.42 to 10.0 feet

9. CHLORINATION: Type _____ Amount _____

10. CASING:

	Depth From	Depth To	Diameter	Wall Thickness or Weight/Ft.	Material
	0	4.25 Ft.	2"	Sch40	PVC
		Ft.			
		Ft.			

11. GROUT:

	Depth From	Depth To	Material	Method
	0	2.25 Ft.	Cement	Pour
		Ft.		

12. SCREEN:

	Depth From	Depth To	Diameter	Slot Size	Material
	4.25	9.25 Ft.	2" in.	.010 in.	PVC
		Ft.	in.	in.	
		Ft.	in.	in.	

13. GRAVEL PACK:

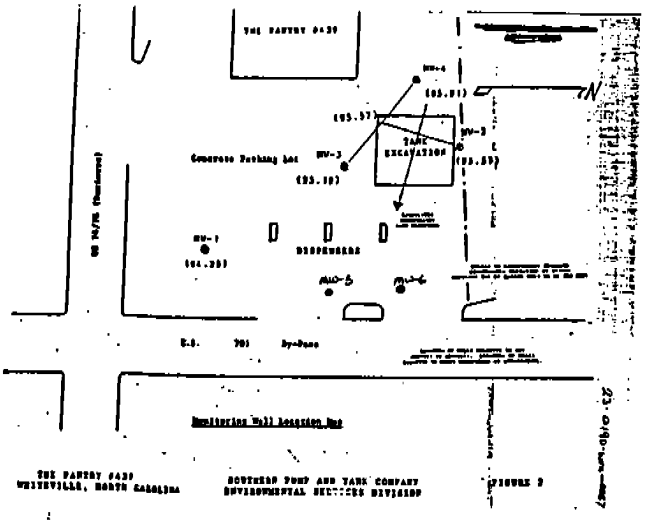
	Depth From	Depth To	Size	Material
	3.25	9.25 Ft.	45 to 55 mm	Sand
		Ft.		

14. REMARKS: Bentonite pellets 2.25 to 3.25 feet

Depth From	Depth To	DRILLING LOG Formation Description
0	0.5	Concrete
0.5"	0.75"	Base coarse
~~0.75"~~	~~3.0'~~	~~Black-brown, fine to medium~~ sandy, silt
3.0	10.0'	Light brown, fine sandy, clayey silt

If additional space is needed use back of form.

LOCATION SKETCH
(Show direction and distance from at least two State Roads, or other map reference points)



I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15 NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

Steven B Lucas 1-31-89
SIGNATURE OF CONTRACTOR OR AGENT DATE

Submit original to Division of Environmental Management and copy to well owner.

GW-1 Revised 11/94

...EVELOPMENT
DIVISION OF ENVIRONMENTAL MANAGEMENT – ...UNDWATER SECTION
P.O. BOX 27687 – RALEIGH,N.C. 27611, PH...E (919) 733-5083

FOR OFFICE USE ONLY
Quad. No. _____ Serial No. _____
Lat. _____ Long. _____ Pc ____
Minor Basin _____
Basin Code _____
Header Ent. _____ GW-1 Ent. _____

WELL CONSTRUCTION RECORD

MW-6

DRILLING CONTRACTOR SPATCO

DRILLER REGISTRATION NUMBER 1068

STATE WELL CONSTRUCTION PERMIT NUMBER: 2-3-0190-WM-0057

1. WELL LOCATION: (Show sketch of the location below)
Nearest Town: Whiteville, N.C.
701 Bypass, White Ville, N.C.
(Road, Community, or Subdivision and Lot No.)

County: Columbus

2. OWNER The Pantry Inc.
ADDRESS P.O.Box 1410 (Street or Route No.)
Sanford, N.C. (City or Town) 27330 (State) (Zip Code)

3. DATE DRILLED 1-23-89 USE OF WELL Ground water monitoring

4. TOTAL DEPTH 10.0 FT CUTTINGS COLLECTED ☐ Yes ☒ No

5. DOES WELL REPLACE EXISTING WELL? ☐ Yes ☒ No

6. STATIC WATER LEVEL: 5.42' FT. ☐ above ☒ below TOP OF CASING,
TOP OF CASING IS 0 FT. ABOVE LAND SURFACE.

7. YIELD (gpm): N/A METHOD OF TEST N/A

8. WATER ZONES (depth): 5.42 to 10.0 Feet

9. CHLORINATION: Type N/A Amount N/A

10. CASING:

	Depth From	To	Ft.	Diameter	Wall Thickness or Weight/Ft.	Material
	0	4.33		2"	Sch40	PVC

11. GROUT:

	Depth From	To	Ft.	Material	Method
	0	2.33		Cement	Pour

12. SCREEN:

	Depth From	To	Ft.	Diameter	Slot Size		Material
	4.33	9.33		2"	.010	In.	PVC
						In.	
						In.	

13. GRAVEL PACK:

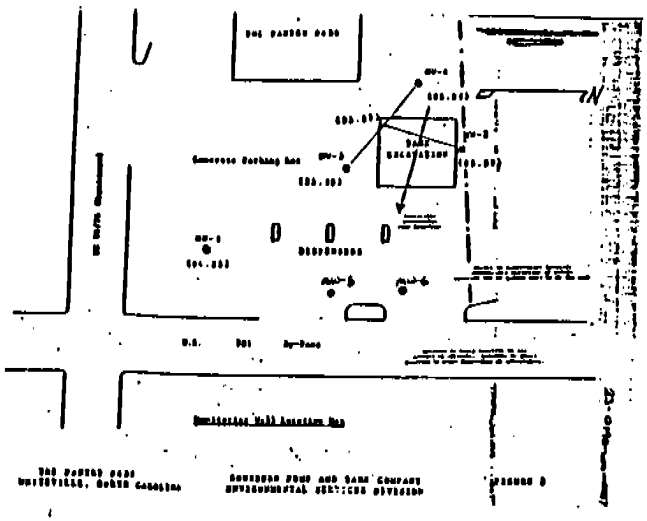
	Depth From	To	Ft.	Size	Material
	3.33	9.33		45 to 55mm	Sand

14. REMARKS: Bentonite pellets at 2.33 to 3.33 feet

Depth From	To	DRILLING LOG Formation Description
0	0.5	Concrete
0.5"	0.75"	Base Coarse
0.75"	4.0'	Dark brown-black, very fine sandy, clayey, silt
4.0'	8.5'	Medium brown, fine sandy, clayey, silt
8.5'	10.0'	Orange brown, sifty, clayey, fine sand

If additional space is needed use back of form.

LOCATION SKETCH
(Show direction and distance from at least two State Roads, or other map reference points)



I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15 NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

SIGNATURE OF CONTRACTOR OR AGENT — DATE 2-6-89

Submit original to Division of Environmental Management and copy to well owner.

GW-1 Revised 11/84

APPENDIX II

RADIAN CORPORATION

Page 1 RAS Sacramento REPORT Work Order # S9-01-234
Received: 01/27/89 02/02/89 10:11:23

REPORT TO: SPATCO
Southern Pump & Tank Co.
5100 North I-85 Service Road
Suite 8, Charlotte, NC 28206
ATTEN: J. Nestor

CLIENT: SPATCO SAMPLES: 7
COMPANY: SPATCO
FACILITY: Southern Pump & Tank Co.

PREPARED BY: Radian Analytical Services
10395 Old Placerville Road
Sacramento,
California 95827
ATTEN:
PHONE: 916-362-5332

David H Hale
CERTIFIED BY

CONTACT: BROWN

WORK ID: The Pantry #439
TAKEN: 01/24/89
TRANS: UPS 1291 2701 258
TYPE: H20-602 & BTEX
P.O. #: 172615
INVOICE: under separate cover

SAMPLE IDENTIFICATION

01 MW-1 H20
02 MW-2 H20
03 MW-3 H20
04 MW-4 H20
05 MW-5 H20
06 MW-6 H20
07 REAGENT BLANK H20

TEST CODES and NAMES used on this report

TPH W Petroleum Hydrocarbons

SAMPLE ID MW-1 H20 FRACTION 01A TEST CODE TPH W NAME Petroleum Hydrocarbons
Date & Time Collected 01/24/89 Category

LIQUID TOTAL PETROLEUM HYDROCARBONS - CALIFORNIA LUFT (1) VERIFIED JD

ANALYST AL
INSTRMT A
INJECTED 01/30/89
FILE # A19013021
UNITS

CAS#	COMPOUND	RESULT	DET LIMIT	FACTOR
71-43-2	Benzene	620 C	3.0	10
108-88-3	Toluene	17 C	3.0	10
100-41-4	Ethylbenzene	15 C	3.0	10
1330-20-7	Total Xylenes	130 C	5.0	10
	TPH Gasoline	31000	500	10
	TPH Mid-Boiling	NA	500	10
106-93-4	1,2-Dibromoethane	NA	50	10

(1) See Appendix A for Glossary of Report and Data Flag Definitions

RADIAN CORPORATION

Received: 01/27/89

RAS Sacramento REPORT
Results by Sample

Work Order # S9-01-234

SAMPLE ID MW-2 H20 FRACTION 02A TEST CODE TPH W NAME Petroleum Hydrocarbons
Date & Time Collected 01/24/89 Category

LIQUID TOTAL PETROLEUM HYDROCARBONS - CALIFORNIA LUFT (1)

VERIFIED JD

ANALYST AL
INSTRMT A

INJECTED 01/30/89

FILE # A19013024

UNITS

CAS#	COMPOUND	RESULT	DET LIMIT	FACTOR
71-43-2	Benzene	5500 C	15	50
108-88-3	Toluene	1900 C	15	50
100-41-4	Ethylbenzene	1500 C	15	50
1330-20-7	Total Xylenes	5200 C	25	50
	TPH Gasoline	540000	2500	50
	TPH Mid-Boiling	NA	2500	50
106-93-4	1,2-Dibromoethane	NA	250	50

(1) See Appendix A for Glossary of Report and Data Flag Definitions

RADIAN CORPORATION

Page 4 RAS Sacramento REPORT Work Order # S9-01-234
Received: 01/27/89 Results by Sample

SAMPLE ID MW-3 H20 FRACTION 03A TEST CODE TPH W NAME Petroleum Hydrocarbons
Date & Time Collected 01/24/89 Category

LIQUID TOTAL PETROLEUM HYDROCARBONS - CALIFORNIA LUFT (1) VERIFIED JD

ANALYST AL
INSTRMT A INJECTED 01/30/89 FILE # A19013023
UNITS

CAS#	COMPOUND	RESULT	DET LIMIT	FACTOR
71-43-2	Benzene	4000 C	15	50
108-88-3	Toluene	300 C	15	50
100-41-4	Ethylbenzene	1100 C	15	50
1330-20-7	Total Xylenes	3100 C	25	50
	TPH Gasoline	370000	2500	50
	TPH Mid-Boiling	NA	2500	50
106-93-4	1,2-Dibromoethane	NA	250	50

(1) See Appendix A for Glossary of Report and Data Flag Definitions

RADIAN CORPORATION

Received: 01/27/89

RAS Sacramento REPORT
Results by Sample

Work Order # S9-01-234

SAMPLE ID MW-4 H2O FRACTION Q4A TEST CODE TPH W NAME Petroleum Hydrocarbons
Date & Time Collected 01/24/89 Category

LIQUID TOTAL PETROLEUM HYDROCARBONS - CALIFORNIA LUFT (1)

VERIFIED JD

ANALYST AL
INSTRMT A

INJECTED 01/30/89

FILE # A19013025

UNITS

CAS#	COMPOUND	RESULT	DET LIMIT	FACTOR
71-43-2	Benzene	2000 C	15	50
108-88-3	Toluene	2500 C	15	50
100-41-4	Ethylbenzene	1000 C	15	50
1330-20-7	Total Xylenes	2700 C	25	50
	TPH Gasoline	280000	2500	50
	TPH Mid-Boiling	NA	2500	50
106-93-4	1,2-Dibromoethane	NA	250	50

(1) See Appendix A for Glossary of Report and Data Flag Definitions

RADIAN CORPORATION

Received: 01/27/89

RAS Sacramento REPORT
Results by Sample

Work Order # S9-01-234

SAMPLE ID MW-5 H20 FRACTION 05A TEST CODE TPH W NAME Petroleum Hydrocarbons
Date & Time Collected 01/24/89 Category

LIQUID TOTAL PETROLEUM HYDROCARBONS - CALIFORNIA LUFT (1)

VERIFIED JD

ANALYST AL
INSTRMT A

INJECTED 01/30/89

FILE # A19013022

UNITS

CAS#	COMPOUND	RESULT	DET LIMIT	FACTOR
71-43-2	Benzene	170 C	1.5	5
108-88-3	Toluene	4.9 C	1.5	5
100-41-4	Ethylbenzene	5.0 C	1.5	5
1330-20-7	Total Xylenes	78 C	2.5	5
	TPH Gasoline	8400	250	5
	TPH Mid-Boiling	NA	250	5
106-93-4	1,2-Dibromoethane	NA	25	5

(1) See Appendix A for Glossary of Report and Data Flag Definitions

RADIAN CORPORATION

Received: 01/27/89

RAS Sacramento REPORT
Results by Sample

Work Order # S9-01-234

SAMPLE ID MW-6 H20 FRACTION 06A TEST CODE TPH W NAME Petroleum Hydrocarbons
Date & Time Collected 01/24/89 Category

LIQUID TOTAL PETROLEUM HYDROCARBONS - CALIFORNIA LUFT (1) VERIFIED JD

ANALYST AL
INSTRMT A
INJECTED 01/30/89
FILE # A19013017
UNITS

CAS#	COMPOUND	RESULT	DET LIMIT	FACTOR
71-43-2	Benzene	ND	0.30	1
108-88-3	Toluene	0.66 C	0.30	1
100-41-4	Ethylbenzene	ND	0.30	1
1330-20-7	Total Xylenes	0.51 C	0.50	1
	TPH Gasoline	84	50	1
	TPH Mid-Boiling	NA	50	1
106-93-4	1,2-Dibromoethane	NA	5.0	1

(1) See Appendix A for Glossary of Report and Data Flag Definitions

RADIAN CORPORATION

Page 8 RAS Sacramento REPORT Work Order # S9-01-234
Received: 01/27/89 Results by Sample

SAMPLE ID REAGENT BLANK H2O FRACTION 07A TEST CODE TPH W NAME Petroleum Hydrocarbons
Date & Time Collected not specified Category

LIQUID TOTAL PETROLEUM HYDROCARBONS - CALIFORNIA LUFT (1) VERIFIED JD

ANALYST AL
INSTRMT A INJECTED 01/30/89 FILE # A1901301
UNITS

CAS#	COMPOUND	RESULT	DET LIMIT	FACTOR
71-43-2	Benzene	ND	0.30	1
108-88-3	Toluene	ND	0.30	1
100-41-4	Ethylbenzene	ND	0.30	1
1330-20-7	Total Xylenes	ND	0.50	1
	TPH Gasoline	ND	50	1
	TPH Mid-Boiling	NA	50	1
106-93-4	1,2-Dibromoethane	NA	5.0	1

(1) See Appendix A for Glossary of Report and Data Flag Definitions

FRACTION AND TEST CODES FOR WORK NOT REPORTED ELSEWHERE

01B	:	DUPGC
02B	:	DUPGC
03B	:	DUPGC
04B	:	DUPGC
05B	:	DUPGC
06B	:	DUPGC

RADIAN
CORPORATION

Appendix A

Comments, Notes and Definitions

RADIAN CORPORATION

Notes and Definitions

Radian Work Order: S9-01-234

*	Est. result less than 5 times detection limit
A	Analytical and/or post-digestion spike
B	Detected in blank, result not corrected
C	Confirmed on second column
D	Sample diluted for this analyte
E	Estimated result - see report narrative
G	Exceeds calibration range
J	Detected at less than detection limit
NA	Not analyzed
NC	Not calculated
ND	Not detected at specified detection limit
NR	Analyte not requested
NS	Not spiked
N\A	Not available
P	Previously confirmed
Q	Outside control limits
R	Detected in blank, result corrected
S	Determined by Method of Standard Addition
U	Unconfirmed-2nd column not requested
X	Not confirmed by analysis on 2nd column

Radian Work Order: S9-01-234

*

The asterisk(*) is used to flag results which are less than five times the method specified detection limit. Studies have shown that the uncertainty of the analysis will increase exponentially as the method detection limit is approached. These results should be considered approximate.

A This flag indicates that a spike is an analytical and/or post-digestion spike. These spikes have not been subjected to the extraction or digestion step.

B This flag indicates that the analyte was detected in the reagent blank but the sample results are not corrected for the amount in the blank.

C Most methods of analysis by gas chromatography recommend reanalysis on a second column of dissimilar phase to resolve compounds of interest from interferences that may occur and for analyte confirmation. The C flag indicates that the analyte has been confirmed by analysis on a second column.

D This flag identifies all analytes identified in analysis at a secondary dilution factor. In an analysis some compounds can exceed the calibration range of the instrument. Therefore two analyses are performed, one at the concentration of the majority of the analytes, and a second with the sample diluted so that high concentration analyte(s) fall within the calibration range.

Radian Work Order: S9-01-234

E

The reported value is estimated because of the presence of interference. The potential source of the interference is included in the report narrative.

G This flag identifies a GC/MS result whose concentration exceeds the calibration range for that specific analysis. Usually if one or more compounds have a response greater than full scale, the sample or extract is diluted and re-analyzed.

J Indicates an estimated value for GC/MS data. This flag is used either when estimating a concentration for tentatively identified compounds where a response factor of 1 is assumed, or when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the sample quantitation limit.

NA This analyte was not analyzed.

NC Applies to RPD and spike recovery results. The relative percent difference (RPD) and spike recovery are not calculated when a result value is less than five times the detection limit or obvious matrix interferences are present. See * definition for further explanation of the unreliability of data near the detection limit. A spike recovery is not calculated when the sample result is greater than four times the spike added concentration because the spike added concentration is considered insignificant.

Radian Work Order: 59-01-234

ND This flag (or <) is used to denote analytes which are not detected at or above the specified detection limit. The value to the right of the < symbol is the method specified detection limit for the sample.

NR This analyte was not requested by the client.

NS This analyte or surrogate was not added (spiked) to the sample for this analysis.

N\A A result or value is not available for this parameter, usually a detection limit.

P Most methods of analysis by gas chromatography recommend reanalysis on a second column of dissimilar phase to resolve compounds of interest from interferences that may occur and for analyte confirmation. The P flag indicates that the analyte has been confirmed previously. This flag is applicable to analyses of samples arising from a regular sampling program of a specific sample source; for example, a quarterly well monitoring program.

Radian Work Order: S9-01-234

Q

This quality control standard is outside method or laboratory specified control limits. This flag is applied to matrix spike, analytical QC spike, and surrogate recoveries; and to RPD(relative percent difference) values for duplicate analyses and matrix spike/matrix spike duplicate result.

R This flag indicates that the analyte was detected in the reagent blank and the sample results are corrected for the amount in the blank.

S This flag indicates that a specific result from a metals analysis has been obtained using the Method of Standard Addition.

U Most methods of analysis by gas chromatography recommend reanalysis on a second column of dissimilar phase to resolve compounds of interest from interferences that may occur and for analyte confirmation. The U flag indicates that second column was not requested.

X Most methods of analysis by gas chromatography recommend reanalysis on a second column of dissimilar phase to resolve compounds of interest from interferences that may occur and for analyte confirmation. The X flag indicates a second column confirmation was performed but the analyte was not confirmed and is likely a false positive.

Radian Work Order: S9-01-234

TERMS USED IN THIS REPORT:

Analyte - A chemical for which a sample is to be analyzed. The analysis will meet EPA method and QC specifications.

Compound - See Analyte.

Detection Limit - The method specified detection limit, which is the lower limit of quantitation specified by EPA for a method. Radian staff regularly assess their laboratories' method detection limits to verify that they meet or are lower than those specified by EPA. Detection limits which are higher than method limits are based on experimental values at the 99% confidence level. Note, the detection limit may vary from that specified by EPA based on sample size, dilution or cleanup. (Refer to Factor, below)

EPA Method - The EPA specified method used to perform an analysis. EPA has specified standard methods for analysis of environmental samples. Radian will perform its analyses and accompanying QC tests in conformance with EPA methods unless otherwise specified.

Factor - Default method detection limits are based on analysis of clean water samples. A factor is required to calculate sample specific detection limits based on alternate matrices (soil or water), use of cleanup procedures, or dilution of extracts/ digestates. For example, extraction or digestion of 10 grams of soil in contrast to 1 liter of water will result in a factor of 100.

Matrix - The sample material. Generally, it will be soil, water, air, oil, or solid waste.

Radian Work Order - The unique Radian identification code assigned to the samples reported in the analytical summary.

Units -

ug/L	micrograms per liter (parts per billion); liquids/water
ug/Kg	micrograms per kilogram (parts per billion); soils/solids
ug/M3	micrograms per cubic meter; air samples
mg/L	milligrams per liter (parts per million); liquids/water
mg/Kg	milligrams per kilogram (parts per million); soils/solids
%	percent; usually used for percent recovery of QC standards
uS/cm	conductance unit; microSiemans/centimeter
mL/hr	milliliters per hour; rate of settlement of matter in water
NTU	turbidity unit; nephelometric turbidity unit
CU	color unit; equal to 1 mg/L of chloroplatinate salt

State of North Carolina
Department of Natural Resources and Community Development
Wilmington Regional Office

James G. Martin, Governor
S. Thomas Rhodes, Secretary

Bob Jamieson

November 30, 1988

Ms. Doris Bridges
Director of Gasoline Marketing
The Pantry, Inc.
1801 Douglas Drive
Post Office Box 1410
Sanford, North Carolina 27330

Subject: Groundwater Assessment
Pantry No. 439
Whiteville
Columbus County

Dear Ms. Bridges:

The Groundwater Section concurs with your consultant's recommendation for additional monitoring wells at the Pantry No. 439. Please proceed with the site assessment and submit to us a report of finding and action plan once the extent of the contamination has been defined.

Please be reminded that a well construction permit must be obtained before construction of any monitoring well.

Sincerely,

b-55

Rick Shiver
Regional Hydrogeologist

RSS:DAT:pj

cc: Joe Nestor
Perry Nelson
WiRO - GWS

7225 Wrightsville Avenue Wilmington N.C. 28403-3696 • Telephone 919-256-4161

State of North Carolina
Department of Environment, Health, and Natural Resources
Wilmington Regional Office

James G. Martin, Governor
William W. Cobey, Jr., Secretary

Bob Jamieson
Regional Manager

DIVISION OF ENVIRONMENTAL MANAGEMENT

Groundwater Section

October 4, 1991

CERTIFIED MAIL P 813 412 780
RETURN RECEIPT REQUESTED

Ms. Doris Bridges
Director of Gasoline Marketing
The Pantry, Inc.
1801 Douglas Drive
Sanford, North Carolina 27330

Subject: NOTICE OF REGULATORY REQUIREMENTS
Release of Petroleum from a
Commercial Underground Storage
Tank
Pantry No. 439
Incident No. 5381
Whiteville
Columbus County

Dear Ms. Bridges:

Thank you for notifying us on March 10, 1988 of the release of petroleum from an underground storage tank or tanks at the subject location. This letter is to advise The Pantry, Inc. of the requirements of applicable State law and regulation.

The Division of Environmental Management (the Division) administers the regulations for underground storage tanks. They are found at Title 15A Chapter 2 Subchapter 2N of the North Carolina Administrative Code (15A NCAC 2N). State law (N.C.G.S. 143.215.94E) also applies and requires The Pantry, Inc. to immediately clean up the release and to restore the area to pre-spill conditions.

The attached excerpt from the regulations describes what must be done. You should pay particular attention to the following:

1. The initial response actions in section .0702;

2. The requirement to begin free product removal within 14 days of the release;

3. The report of initial response and free product removal within 20 days of the release (see .0703);

4. The report of information about the site and the release within 45 days of the release (see .0704); and

5. The investigation for soil and groundwater cleanup in section .0706.

After reviewing the reports, the Division may require additional information or a corrective action plan for cleanup of contaminated soils or groundwater.

The reports required by paragraphs 3 and 4 above are due not later than October 24, 1991 and November 13, 1991, respectively. Many of these requirements may have already been met. It is important that these deadlines be met or an extension of time be requested for good cause. A civil penalty of up to $10,000 for each day of non-compliance may be assessed.

The Pantry, Inc. may be eligible for partial reimbursement of cleanup costs from the State Leaking Petroleum Underground Storage Tank Fund. Additional information on the fund is being mailed to you under separate cover

Please send a letter, within ten days, to confirm The Pantry's intent to comply with the above requirements or to explain the reasons why not. You should direct the response and any questions to Kirk McDonald at (919) 395-3900

Sincerely,
Original Signed By
RICK SHIVER
FOR
A. Preston Howard, Jr., P.E.
Regional Supervisor

APH/RSS/KWM/lfc

Enclosures

cc: Pollution Control Branch
Perry Nelson
CF
WiRO-GWS

PANTRY.NOT
10-03-91

P 813 412 780

Certified Mail Receipt

No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

UNITED STATES POSTAL SERVICE

Sent to: Ms. Doris Bridges
~~Dir. of Gasoline Marketing~~
Street & No.: The Pantry, Inc.
~~1801 Douglas Drive~~
P.O., State & ZIP Code: Sanford NC 27330

Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Address of Delivery	
TOTAL Postage & Fees	$
Postmark or Date: October 4, 1991	

PS Form **3800**, June 1990

SENDER: Complete items 1 and 2 when additional services are desired, and complete items 3 and 4.

Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.

1. ☐ Show to whom delivered, date, and addressee's address. *(Extra charge)*
2. ☐ Restricted Delivery *(Extra charge)*

3. Article Addressed to:
Mr. Rogers Clark - President
Sampson-Bladen Oil Company
P. O. Box 617
Clinton NC 28328

4. Article Number
P 813 412 763

Type of Service:
☐ Registered ☐ Insured
☑ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

Always obtain signature of addressee or agent and DATE DELIVERED.

5. Signature — Addressee
X

6. Signature — Agent
X

7. Date of Delivery
10-10-91

8. Addressee's Address *(ONLY if requested and fee paid)*

PS Form **3811**, Apr. 1989 * U.S.G.P.O. 1989-238-815 **DOMESTIC RETURN RECEIPT**

State of North Carolina
Department of Environment, Health, and Natural Resources
Wilmington Regional Office

James G. Martin, Governor
William W. Cobey, Jr., Secretary

Bob Jamieson
Regional Manager

DIVISION OF ENVIRONMENTAL MANAGEMENT

Groundwater Section

December 10, 1992

The Pantry Incorporated
Post Office Box 1410
Sanford, North Carolina 27331-1410
Attn: Doris Bridges

Subject: Review of Your Corrective Action Plan
The Pantry Store No. 439
Incident No. 5381
Whiteville
Columbus County

Dear Ms. Bridges:

Thank you for submitting your Corrective Action Plan for the subject facility on November 30, 1992. We are in general agreement with the recommendations made in this report and you should proceed with clean up at this site as soon as possible. Any major delay in active remediation of this site through the implementation of this plan should be reported in writing to our office to explain the reasons for the delay. You are reminded to obtain any and all permits that may be required to operate the proposed remediation system.

Please note that this letter does not guarantee that any or all expenses incurred by this remediation system will be eligible for reimbursement under the State Trust Fund.

If you have any questions, please call me at (919) 395-3900.

Sincerely,

Kirk W. McDonald, P.G.
Hydrogeologist

KWM/jp

cc: Michael D. Harman
WiRO-GWS

KIRK\PANTRY.DEC
12/08/92

State of North Carolina
Department of Environment
and Natural Resources
Wilmington Regional Office
UST Section

James B. Hunt, Jr., Governor
Wayne McDevitt, Secretary

NCDENR
NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

October 26, 1998

CERTIFIED MAIL Z 312 646 138
RETURN RECEIPT REQUESTED
Mr. Bill Snyder
SPATCO Environmental, Inc.
5100 North I-85, Ste. 7
Charlotte, NC 28206

Subject: **Notice of No Further Action**
15A NCAC 2L .0115(h)
Pantry #439
Incident No. 5381
Low Risk Classification
Whiteville
Columbus County

Dear Mr. Snyder:

On September 18, 1998, the Division of Waste Management (DWM) Wilmington Regional Office received a Site Closure Request for the above-referenced site. An earlier report shows that soil contamination does not exceed the ***soil cleanup levels established by the Department in the "Groundwater Section Guidelines for the Investigation and Remediation of Soil and Groundwater" (March 1997)***. A review of the Soil Cleanup Report with Site Closure Request also shows that contaminated groundwater does not exceed gross contamination levels that were established in 15A NCAC 2L .0115(g).

Based on information provided to date, the DWM determines that no further action is required for this incident. This determination is conditional pending completion of the public notice specified below. Once proper public notice has been given, this determination will apply unless the DWM later determines that the discharge or release poses an unacceptable risk or a potentially unacceptable risk to human health or the environment.

Please be advised that because contaminated groundwater has not been restored to the level of the standard or interim standard established in 15A NCAC 2L .0202, groundwater within the area of contamination or within the area where contamination is expected to migrate, **is not suitable** for use as a water supply.

Pursuant to 15A NCAC 2L .0115(e), you have a continuing obligation to notify the DWM of any changes that you know of or should know of, that might affect the level of risk assigned to the discharge or release. Such changes include, but are not limited to, changes in zoning of real property, use of real property or the use of groundwater that has been contaminated or is expected to be contaminated by the discharge or release, if such change could cause the DWM to reclassify the risk. Please note that this responsibility not only pertains to changes involving the property on which the release occurred, but to changes involving the surrounding properties as well.

Please be advised that you must comply with the public notice requirements of 15A NCAC 2L .0115(k) as specified below. **If public notice is not provided as required, this no further action determination will be deemed invalid.** Within **30 days** of receipt of this no further action notice, you must provide a copy of this notice to the following persons:

- local health director;
- chief administrative officer (i.e., Mayor, Chairman of the County Commissioners, County Manager, City Manager or other official of equal or similar position) 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.

Copies of this no further action notice must be sent to the persons listed above by certified mail. If it is impractical to provide notice by certified mail to the occupants of apartment buildings, condominiums, office buildings, etc., you may post a copy of this notice in a prominent place where the occupants are most likely to see it.

Within **60 days** of receiving this no further action notice, you must provide the DWM Wilmington Regional Office with proof of receipt of the copy of the notice or of refusal by the addressee to accept delivery of the copy of the notice. If a copy of the notice is posted, you must provide the DWM with a description of the manner in which the notice was posted.

The DWM Wilmington Regional Office has the Soil Cleanup Report with Site Closure Request along with other site information on file and available for public review. Interested parties may arrange to review this information by contacting the regional office as listed below.

Ms. Terri Cooper
Wilmington Regional Office
127 Cardinal Drive Extension
Wilmington, N C 28405
(910) 395-3900

In addition, comments on the Soil Cleanup Report with Site Closure Request may be submitted to the regional office. Please be advised that you must close any monitoring wells or injection wells used to investigate or remediate this incident in accordance with 15A NCAC 2C .0113 and .0214, respectively. For guidance on closure of infiltration galleries, please contact the Wilmington Regional Office.

If you have any questions concerning this notice, please contact Kirk McDonald at (910) 395-3900.

Sincerely,

Pat C. Coughlan

Patricia Coughlan
UST Regional Supervisor

PCC/KWM/tdc

Attachments: 15A NCAC 2C .0113
15A NCAC 2C .0214
Well Abandonment Form

cc: Mr. Michael Shaw, P.G. - SEI Environmental (Charlotte)
Ms. Doris Bridges, The Pantry, Inc.
Incident Management Files
WiRO-UST

S:\ust\kirk\pant439h.cls

DocuSign Envelope ID: F70E336F-9A84-4031-9D06-B1D356ADB5C6

VST Z 312 646 138 KWM

US Postal Service
Receipt for Certified Mail
No Insurance Coverage Provided.
Do not use for International Mail *(See reverse)*

Sent to	Bill Snyder-SATCO
Street & Number	5100 North I-85, Ste. 7
Post Office, State, & ZIP Code	Charlotte, NC 28206
Postage	$ .55
Certified Fee	1.35
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	1.10
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	$ 3.00
Postmark or Date	Wilmington, NC 28411 USPS

PS Form **3800**, April 1995

Thank you for using Return Receipt Service.

I also wish to receive the following services (for an extra fee):
1. ☐ Addressee's Address
2. ☐ Restricted Delivery
Consult postmaster for fee.

SENDER:
- Complete items 1 and/or 2 for additional services.
- Complete items 3, 4a, and 4b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

3. Article Addressed to:
Mr. Bill Snyder
SATCO Environmental Inc.
5100 North I-85, Ste. 7
Charlotte, NC 28206

4a. Article Number 230 646 138

4b. Service Type
☐ Registered ☐ Certified
☐ Express Mail ☐ Insured
☐ Return Receipt for Merchandise ☐ COD

7. Date of Delivery 11/2/94

5. Received By: *(Print Name)*

8. Addressee's Address *(Only if requested and fee is paid)*

6. Signature: *(Addressee or Agent)*
X

PS Form **3811**, December 1994 Domestic Return Receipt

102595-97-B-0179

Is your RETURN ADDRESS completed on the reverse side?

APPENDIX C

BORING LOGS

Apex Companies, LLC

Boring Log

Boring/Well No.: P56-SB1	**Site Name: Parcel 56**
Date: 6/5/18	**Location: Whiteville, Columbus County, NC**
Job No.: NCDOT-001	**Sample Method: Hand Auger and Direct Push**
Apex Rep: Thomas Fisher	**Drilling Method: Hand Auger and Direct Push**
Drilling Company: Carolina Soil Investigations	**Driller Name/Cert #: Danny Summers/2579**
Remarks:	

Depth (ft BLS)	FID Reading (ppm)	PID Reading (ppm)	Lab Sample ID	Soil/Lithologic Description
1	7	4		0-1.5' Grass-Dark gray silty **SAND**, loose.
2	6	5		1.5'-3' Tan silty **SAND**, loose, slightly moist.
3	56	6		
4	300	6		3'-4' Dark gray and tan fine sandy **SILT**, moist.
5	168	6		4'-5' Dark gray fine sandy **SILT**, loose, saturated at 4'.
6				Boring terminated at 5 feet
7				
8				
9				
10				
11				
12				
13				
14				

WELL CONSTRUCTION DETAILS (If Applicable)

Well Type/Diameter:	Outer Casing Interval:
Total Depth:	Outer Casing Diameter:
Screen Interval:	Bentonite Interval:
Sand Interval:	Slot Size:
Grout Interval:	Static Water Level:

Apex Companies, LLC

Boring Log

Boring/Well No.: P56-SB2	**Site Name: Parcel 56**
Date: 6/5/18	**Location: Whiteville, Columbus County, NC**
Job No.: NCDOT-001	**Sample Method: Hand Auger and Direct Push**
Apex Rep: Thomas Fisher	**Drilling Method: Hand Auger and Direct Push**
Drilling Company: Carolina Soil Investigations	**Driller Name/Cert #: Danny Summers/2579**
Remarks:	

Depth (ft BLS)	FID Reading (ppm)	PID Reading (ppm)	Lab Sample ID	Soil/Lithologic Description
1	9	4		0-1' Grass-Dark gray sandy **SILT**, loose
2	10	7		1'-3' Tan sandy **SILT**, slightly plastic, moist.
3	51	7		
4	269	11		3'-5' Dark gray and Dark Brown sandy **SILT**, loose.
5	241	9		
				Boring terminated at 5 feet
6				
7				
8				
9				
10				
11				
12				
13				
14				

WELL CONSTRUCTION DETAILS (If Applicable)

Well Type/Diameter:	Outer Casing Interval:
Total Depth:	Outer Casing Diameter:
Screen Interval:	Bentonite Interval:
Sand Interval:	Slot Size:
Grout Interval:	Static Water Level:

Apex Companies, LLC

Boring Log

Boring/Well No.: P56-SB3	**Site Name: Parcel 56**
Date: 6/5/18	**Location: Whiteville, Columbus County, NC**
Job No.: NCDOT-001	**Sample Method: Hand Auger and Direct Push**
Apex Rep: Thomas Fisher	**Drilling Method: Hand Auger and Direct Push**
Drilling Company: Carolina Soil Investigations	**Driller Name/Cert #: Danny Summers/2579**
Remarks:	

Depth (ft BLS)	FID Reading (ppm)	PID Reading (ppm)	Lab Sample ID	Soil/Lithologic Description
	10	7		0-0.5' Grass-Dark gray sandy **SILT**
1				0.5'-4' Tan **SAND**, loose, wet at 4'.
	13	8		
2				
	12	6		
3				
	14	5		
4				
	11	5		4'-5' Tan silty **CLAY**, stiff, plastic
5				
				Boring terminated at 5 feet
6				
7				
8				
9				
10				
11				
12				
13				
14				

WELL CONSTRUCTION DETAILS (If Applicable)

Well Type/Diameter:	Outer Casing Interval:
Total Depth:	Outer Casing Diameter:
Screen Interval:	Bentonite Interval:
Sand Interval:	Slot Size:
Grout Interval:	Static Water Level:

Apex Companies, LLC

Boring Log

Boring/Well No.: P56-SB4	**Site Name: Parcel 56**
Date: 6/5/18	**Location: Whiteville, Columbus County, NC**
Job No.: NCDOT-001	**Sample Method: Hand Auger and Direct Push**
Apex Rep: Thomas Fisher	**Drilling Method: Hand Auger and Direct Push**
Drilling Company: Carolina Soil Investigations	**Driller Name/Cert #: Danny Summers/2579**
Remarks:	

Depth (ft BLS)	FID Reading (ppm)	PID Reading (ppm)	Lab Sample ID	Soil/Lithologic Description
	1	23		0-1.5' Grass-Black fine sandy **SILT**, loose, slightly moist.
1				
2				1.5'-5' Tan sandy **SILT,** with a trace of clay, slightly plastic, moist, sticky and saturated at 3.5'.
	2	17		
3				
	2	20		
4				
	1	16		
5				
				Boring terminated at 5 feet
6				
7				
8				
9				
10				
11				
12				
13				
14				

WELL CONSTRUCTION DETAILS (If Applicable)

Well Type/Diameter:	Outer Casing Interval:
Total Depth:	Outer Casing Diameter:
Screen Interval:	Bentonite Interval:
Sand Interval:	Slot Size:
Grout Interval:	Static Water Level:

Apex Companies, LLC

Boring Log

Boring/Well No.: P56-SB5	**Site Name: Parcel 56**
Date: 6/5/18	**Location: Whiteville, Columbus County, NC**
Job No.: NCDOT-001	**Sample Method: Hand Auger and Direct Push**
Apex Rep: Thomas Fisher	**Drilling Method: Hand Auger and Direct Push**
Drilling Company: Carolina Soil Investigations	**Driller Name/Cert #: Danny Summers/2579**
Remarks:	

Depth (ft BLS)	FID Reading (ppm)	PID Reading (ppm)	Lab Sample ID	Soil/Lithologic Description
	1	59		0-1' Grass-Black fine sandy **SILT**, loose with gravel.
1				
				1-2 Tan **SAND**, loose.
2				
	1	21		2'-3.5' Tan clayey **SILT**, plastic, moist.
3				
	2	78		
4				3.5'-5' Gray and tan clayey **SAND**, plastic, slightly moist.
	2	53		
5				
				Boring terminated at 5 feet
6				
7				
8				
9				
10				
11				
12				
13				
14				

WELL CONSTRUCTION DETAILS (If Applicable)

Well Type/Diameter:	Outer Casing Interval:
Total Depth:	Outer Casing Diameter:
Screen Interval:	Bentonite Interval:
Sand Interval:	Slot Size:
Grout Interval:	Static Water Level:

Apex Companies, LLC

Boring Log

Boring/Well No.: P56-SB6	**Site Name: Parcel 56**
Date: 6/5/18	**Location: Whiteville, Columbus County, NC**
Job No.: NCDOT-001	**Sample Method: Hand Auger and Direct Push**
Apex Rep: Thomas Fisher	**Drilling Method: Hand Auger and Direct Push**
Drilling Company: Carolina Soil Investigations	**Driller Name/Cert #: Danny Summers/2579**
Remarks:	

Depth (ft BLS)	FID Reading (ppm)	PID Reading (ppm)	Lab Sample ID	Soil/Lithologic Description
1	1	40		0-1' Grass-Tan silty **SAND**, loose.
2				1'-3.5' Tan sandy **SILT**, slightly dense.
3	1	31		
4	1	22		3.5'-5' Tan and gray clayey **SAND**, slightly stiff, plastic.
5	1	21		
6				Boring terminated at 5 feet
7				
8				
9				
10				
11				
12				
13				
14				

WELL CONSTRUCTION DETAILS (If Applicable)

Well Type/Diameter:	Outer Casing Interval:
Total Depth:	Outer Casing Diameter:
Screen Interval:	Bentonite Interval:
Sand Interval:	Slot Size:
Grout Interval:	Static Water Level:

APPENDIX D
GEOPHYSICAL REPORT

PYRAMID GEOPHYSICAL SERVICES
(PROJECT 2018-139)

GEOPHYSICAL SURVEY

METALLIC UST INVESTIGATION:
PARCEL 56
NCDOT PROJECT R-5020B (41499.1.3)

803 N. JK POWELL BLVD., WHITEVILLE, NC

JUNE 21, 2018

Report prepared for: Katie Lippard
Apex Companies, LLC
1071 Pemberton Hill Rd., Suite 203
Apex, NC 27502

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

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

503 INDUSTRIAL AVENUE, GREENSBORO, NC 27406
P: 336.335.3174 F: 336.691.0648
C257: GEOLOGY C1251: ENGINEERING

GEOPHYSICAL INVESTIGATION REPORT
Parcel 56 – 803 N. JK Powell Blvd.
Whiteville, Columbus County, North Carolina

Table of Contents

Figures

Appendices

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 Apex Companies, LLC at Parcel 56, located at 803 N. JK Powell Blvd., in Whiteville, NC. The survey was part of a North Carolina Department of Transportation (NCDOT) Right-of-Way (ROW) investigation (NCDOT Project R-5020B). 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 May 29 – 31, 2018, the geophysical investigation was performed to determine if unknown, metallic underground storage tanks (USTs) were present beneath the survey area.

Geophysical Results: The geophysical investigation consisted of electromagnetic (EM) induction-metal detection and ground penetrating radar (GPR) surveys. A total of eleven 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 suspected buried metallic debris, suspected utilities, or interference from vehicles and were investigated further with GPR. EM Anomaly 7 was inspected with GPR to investigate whether the high-amplitude features were the result of metallic USTs. GPR transects recorded evidence of isolated, small hyperbolic reflectors and increases in signal amplitude that were suggestive of buried metallic debris or utilities. No evidence of larger structures, such as USTs, was observed in this area. GPR was performed between the vehicles on the site (Anomalies 3 and 5), where possible. Isolated small, hyperbolic reflectors were identified, consistent with potential utilities. No evidence of larger structures, such as USTs, was observed in this area. Collectively, the geophysical data did not record any evidence of metallic USTs at Parcel 56.

INTRODUCTION

Pyramid Environmental conducted a geophysical investigation for Apex Companies, LLC at Parcel 56, located at 803 N. JK Powell Blvd., in Whiteville, NC. The survey was part of a North Carolina Department of Transportation (NCDOT) Right-of-Way (ROW) investigation (NCDOT Project R-5020B). 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 May 29 – 31, 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 asphalt parking areas and grass medians. 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 metal detector integrated with a Trimble AG-114 GPS antenna. 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 May 31, 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	Drop Inlet/Sign	
2	Drop Inlet	
3	Vehicles	☑
4	Drop Inlet/Manhole/Utility	
5	Vehicles	☑
6	Drop Inlet/Manhole	
7	Suspected Utility/Buried Metallic Debris	☑
8	Drop Inlet/Storm Sewer	
9	Sign	
10	Drop Inlet/Utility	
11	Drop Inlet/Utilities	

The majority of the EM anomalies were directly attributed to visible cultural features at the ground surface, including drop inlets, vehicles, a manhole, utilities, a storm sewer, and signs. GPR scans were performed between vehicles (Anomalies 3 and 5), where possible, to verify that there were no buried metallic structures.

EM Anomaly 7, suspected to be the result of a buried utility or metallic debris, was also investigated by 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 twelve GPR transects were performed at the site. All of the transect images are included in **Appendix A**. GPR Transects 1 – 5 were performed across EM Anomaly 7. These transects recorded evidence of isolated, small hyperbolic reflectors and increases in signal amplitude that were suggestive of buried metallic debris or utilities. No evidence of larger structures, such as USTs, was observed in this area.

GPR Transects 6 – 12 were performed between the vehicles parked on the site (Anomalies 3 and 5), where possible. Some isolated small, hyperbolic reflectors were recorded, indicative of potential utilities, but no significant structures were identified.

Collectively, the geophysical data did not record any evidence of metallic USTs at Parcel 56. **Figure 4** provides an overlay of the geophysical survey onto the NCDOT MicroStation engineering plans for reference.

SUMMARY & CONCLUSIONS

Pyramid's evaluation of the EM61 and GPR data collected at Parcel 56 in Whiteville, 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 suspected buried metallic debris, suspected utilities, or interference from vehicles and were investigated further with GPR.
- EM Anomaly 7 was inspected with GPR to investigate whether the high-amplitude anomalies were the result of metallic USTs. GPR transects recorded evidence of isolated, small hyperbolic reflectors and increases in signal amplitude that were suggestive of buried metallic debris or utilities. No evidence of larger structures, such as USTs, was observed in this area.
- GPR was performed between the vehicles on the site (Anomalies 3 and 5), where possible. Isolated small, hyperbolic reflectors were identified, consistent with potential utilities. No evidence of larger structures, such as USTs, was observed in this area.

- Collectively, the geophysical data did not record any evidence of metallic USTs at Parcel 56.

LIMITATIONS

Geophysical surveys have been performed and this report was prepared for Apex Companies, LLC 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

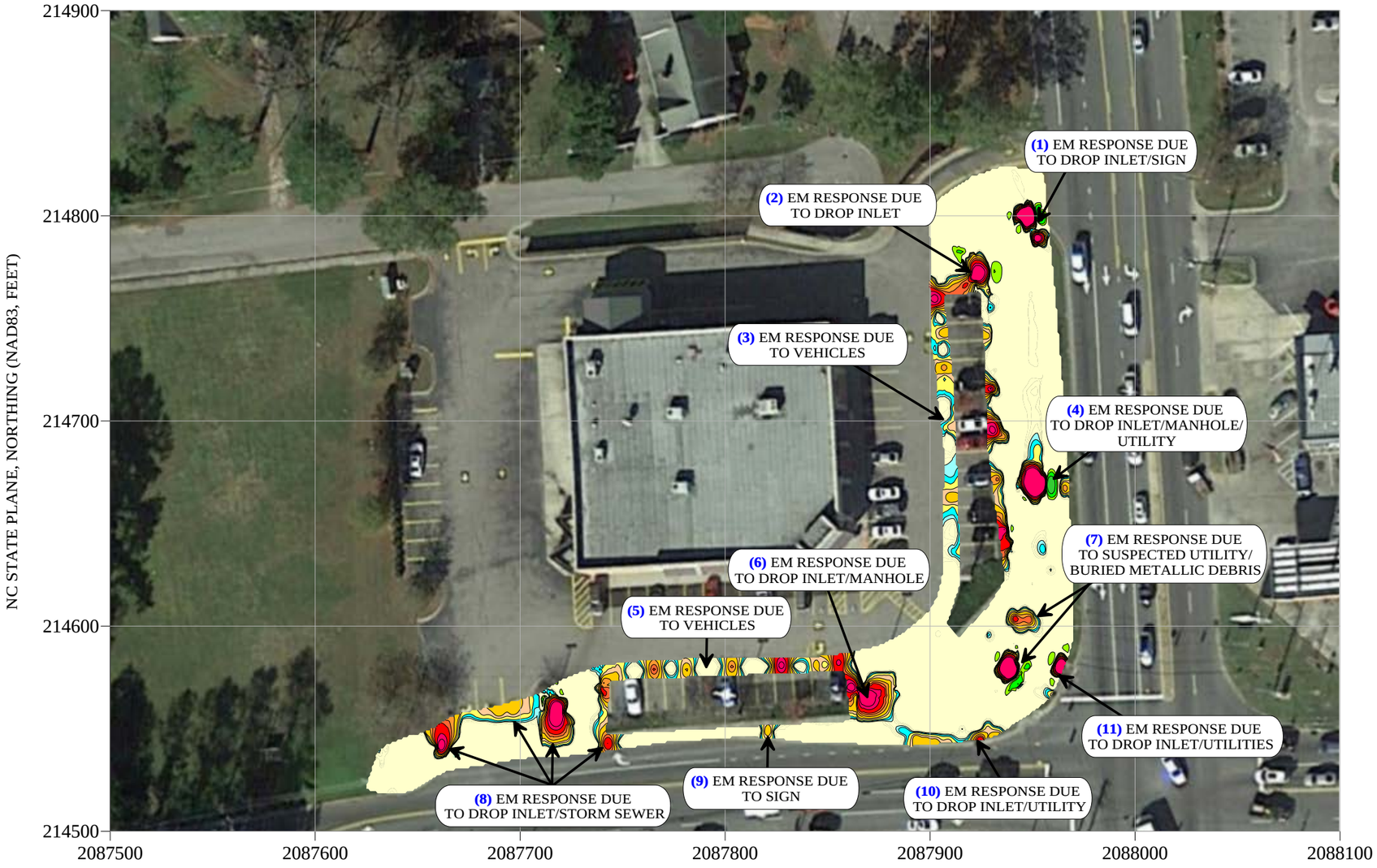
View of Survey Area
(Facing Approximately South)

View of Survey Area
(Facing Approximately East)

N

PYRAMID GEOPHYSICS 503 INDUSTRIAL AVENUE GREENSBORO, NC 27460 (336) 335-3174 (p) (336) 691-0648 (f) License # C1251 Eng. / License # C257 Geology	PROJECT PARCEL 56 WHITEVILLE, NORTH CAROLINA NCDOT PROJECT R-5020B	TITLE PARCEL 56 - GEOPHYSICAL SURVEY BOUNDARIES AND SITE PHOTOGRAPHS	DATE 5/29/2018 PYRAMID PROJECT #: 2018-139	CLIENT Apex Companies, LLC **FIGURE 1**

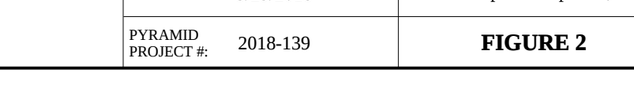
EM61 METAL DETECTION RESULTS



NO EVIDENCE OF UNKNOWN METALLIC USTs OBSERVED.

The contour plot shows the bottom coil data results of the EM61 instrument in millivolts (mV), which provide a stronger metallic response of the instrument and do not incorporate the top coil. Differential data (difference between top and bottom coils) were not used for this parcel due to interference. The EM61 data were collected on May 29, 2018, using a Geonics EM61 instrument.Verification GPR data were collected using a GSSI UtilityScan DF instrument with a dual frequency300/800 MHz antenna on May 31, 2018.

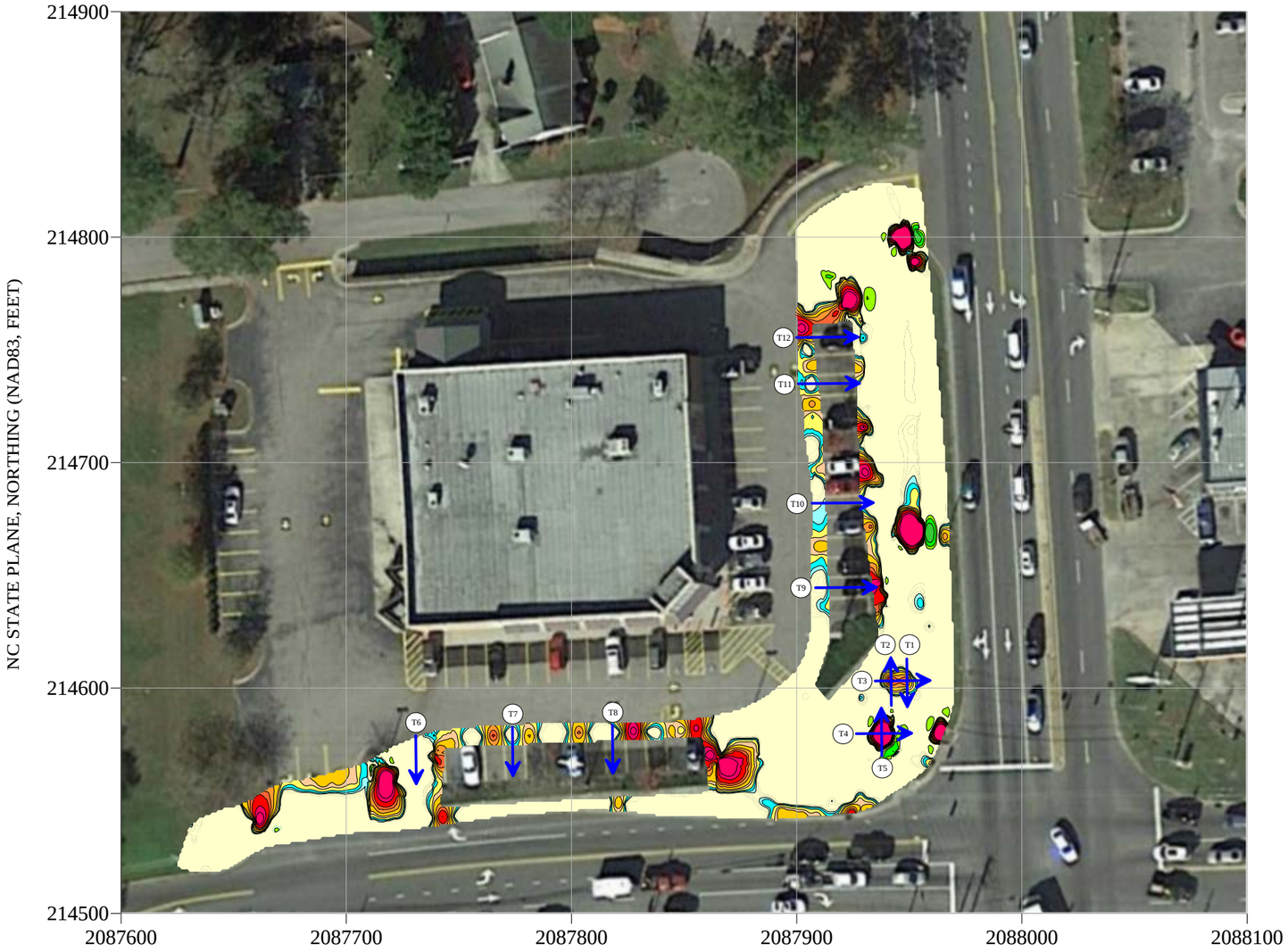
EM61 Metal Detection Response (millivolts)

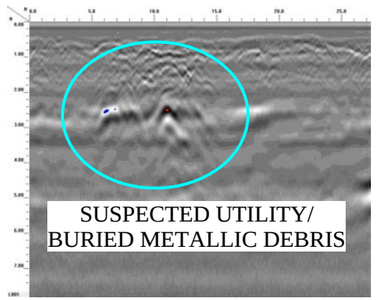


N

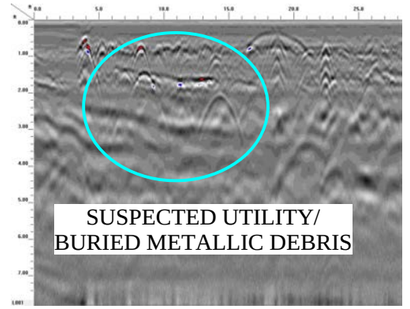
PYRAMID GEOPHYSICS 503 INDUSTRIAL AVENUE GREENSBORO, NC 27460 (336) 335-3174 (p) (336) 691-0648 (f) License # C1251 Eng. / License # C257 Geology	PROJECT PARCEL 56 WHITEVILLE, NORTH CAROLINA NCDOT PROJECT R-5020B	TITLE PARCEL 56 - EM61 METAL DETECTION CONTOUR MAP	DATE 5/29/2018 PYRAMID PROJECT #: 2018-139	CLIENT Apex Companies, LLC **FIGURE 2**

LOCATIONS OF GPR TRANSECTS

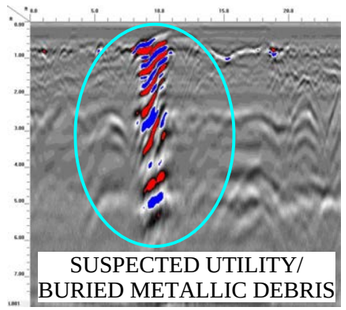




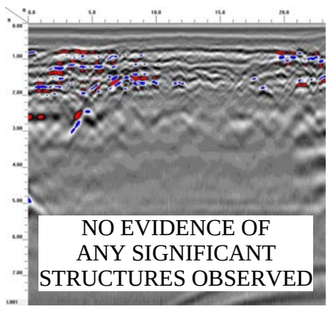
GPR TRANSECT 1 (T1)



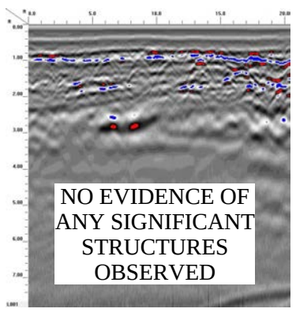
GPR TRANSECT 3 (T3)



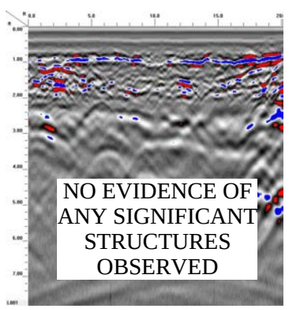
GPR TRANSECT 4 (T4)



GPR TRANSECT 8 (T8)



GPR TRANSECT 9 (T9)

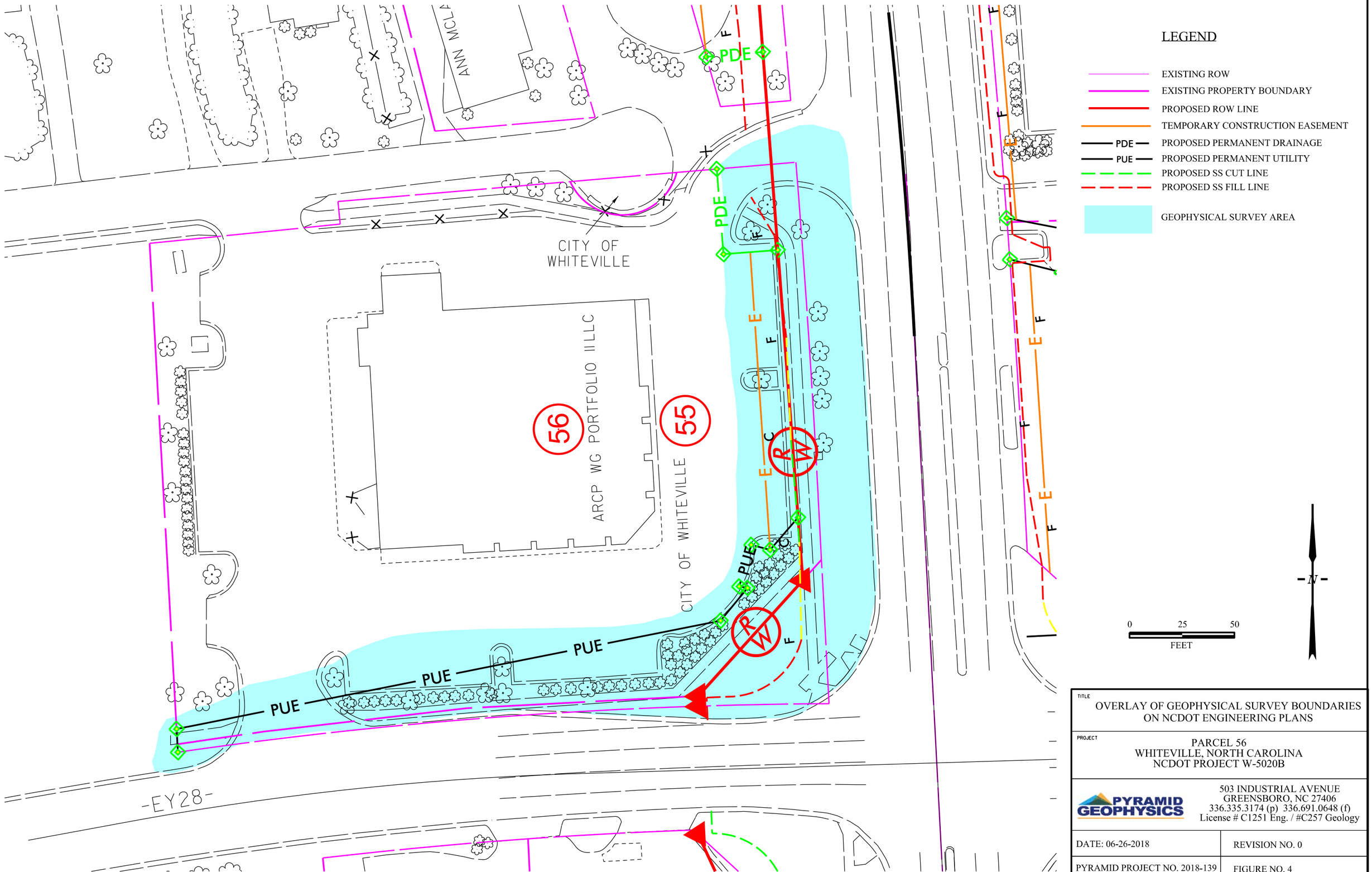


GPR TRANSECT 11 (T11)

N

PYRAMID GEOPHYSICS
503 INDUSTRIAL AVENUE
GREENSBORO, NC 27460
(336) 335-3174 (p) (336) 691-0648 (f)
License # C1251 Eng. / License # C257 Geology

PROJECT	PARCEL 56 WHITEVILLE, NORTH CAROLINA NCDOT PROJECT R-5020B
TITLE	PARCEL 56 - GPR TRANSECT LOCATIONS AND SELECT IMAGES
DATE	5/31/2018
PYRAMID PROJECT #:	2018-139
CLIENT	Apex Companies, LLC
	FIGURE 3



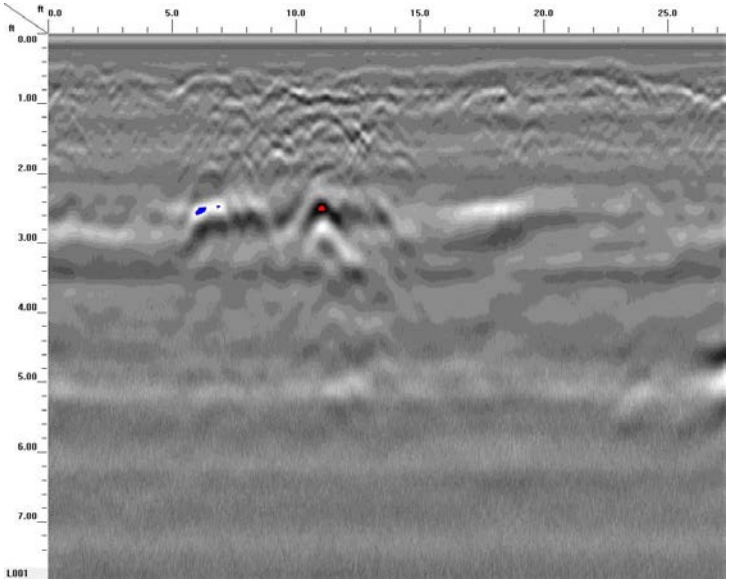
TITLE
OVERLAY OF GEOPHYSICAL SURVEY BOUNDARIES ON NCDOT ENGINEERING PLANS

PROJECT
PARCEL 56
WHITEVILLE, NORTH CAROLINA
NCDOT PROJECT W-5020B

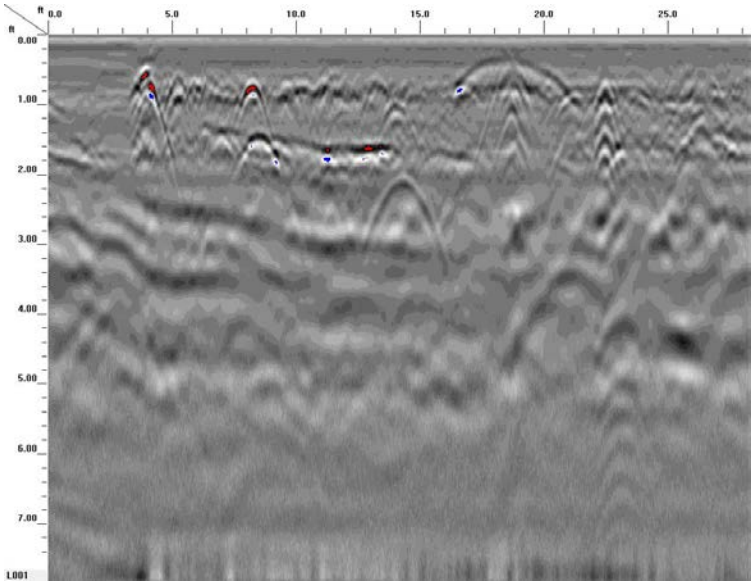
PYRAMID GEOPHYSICS
503 INDUSTRIAL AVENUE
GREENSBORO, NC 27406
336.335.3174 (p) 336.691.0648 (f)
License # C1251 Eng. / #C257 Geology

DATE: 06-26-2018	REVISION NO. 0
PYRAMID PROJECT NO. 2018-139	FIGURE NO. 4

Appendix A – GPR Transect Images



Transect 1



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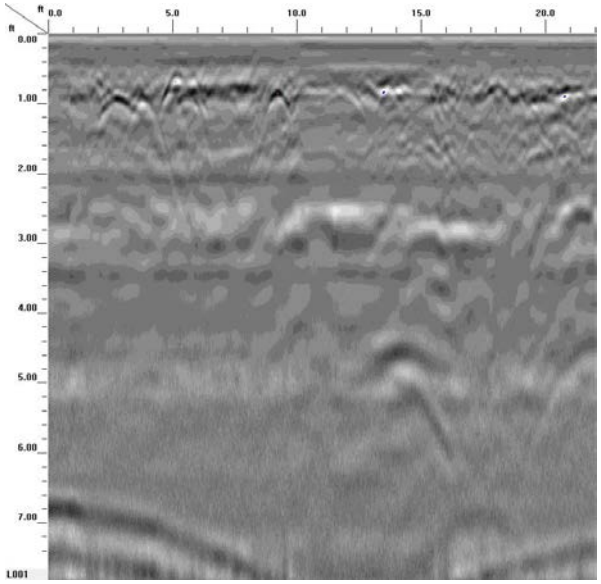

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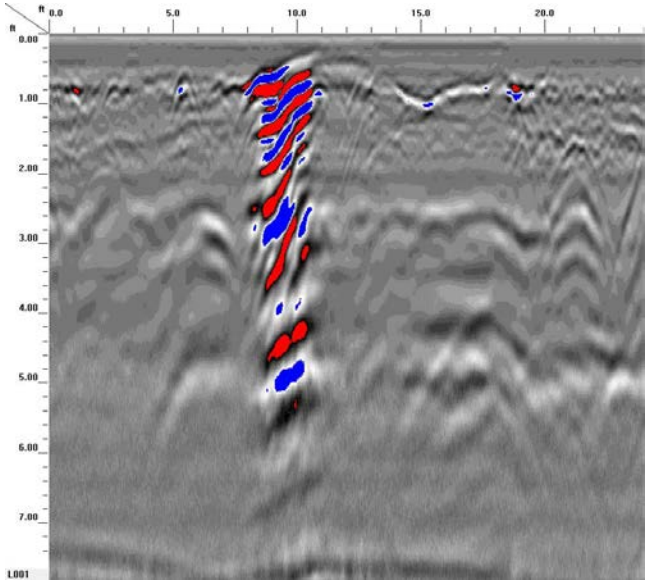

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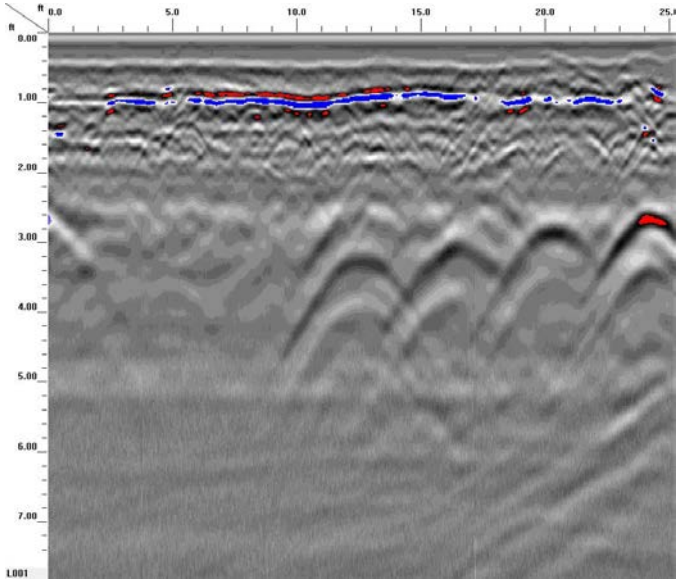

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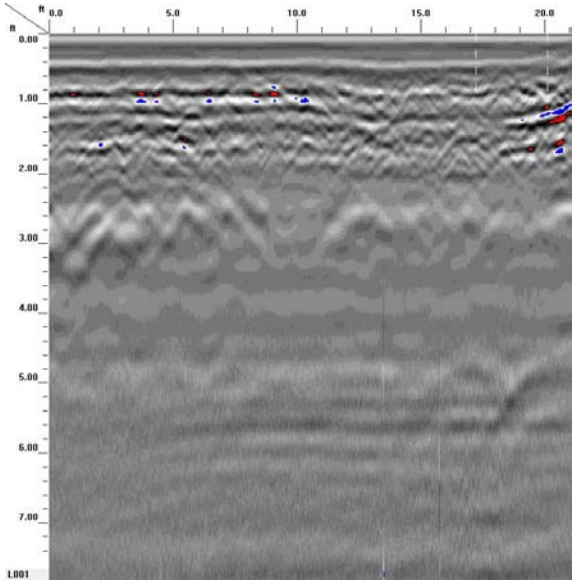

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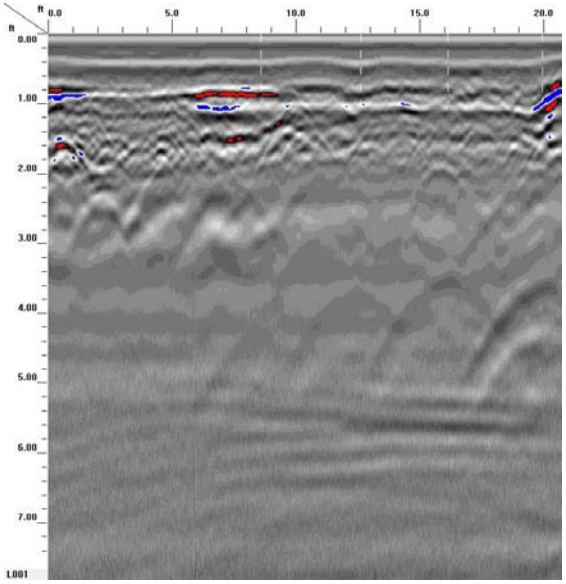

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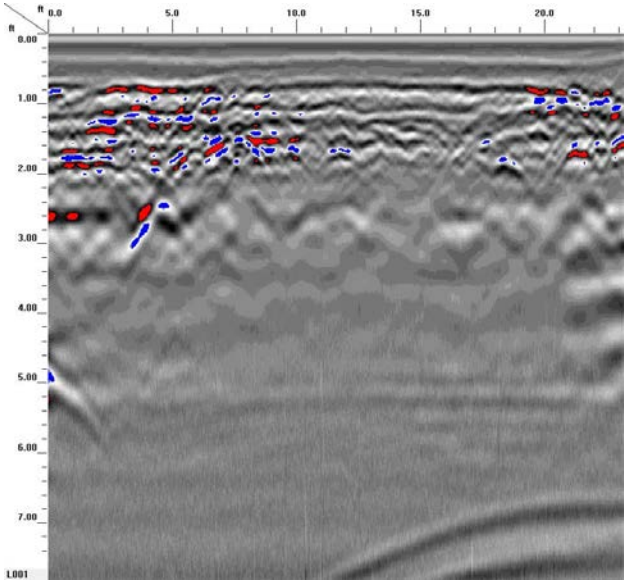

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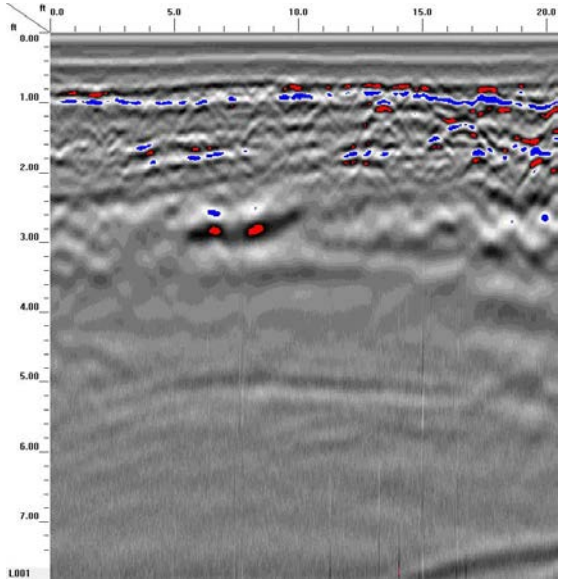

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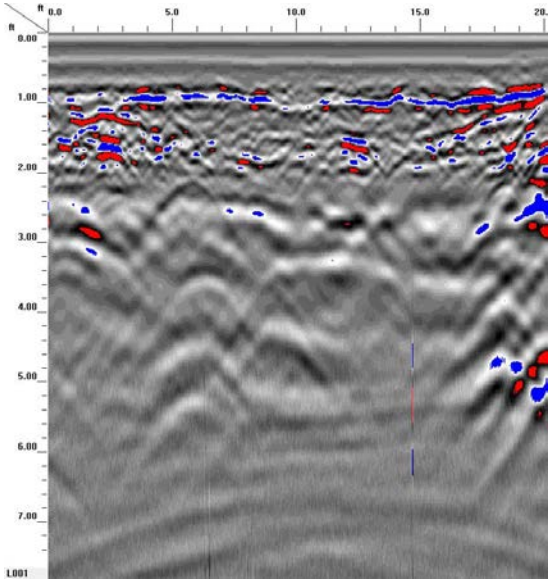
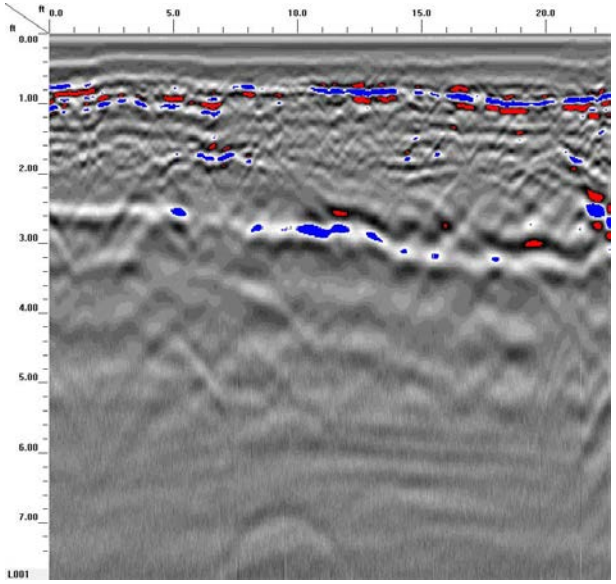
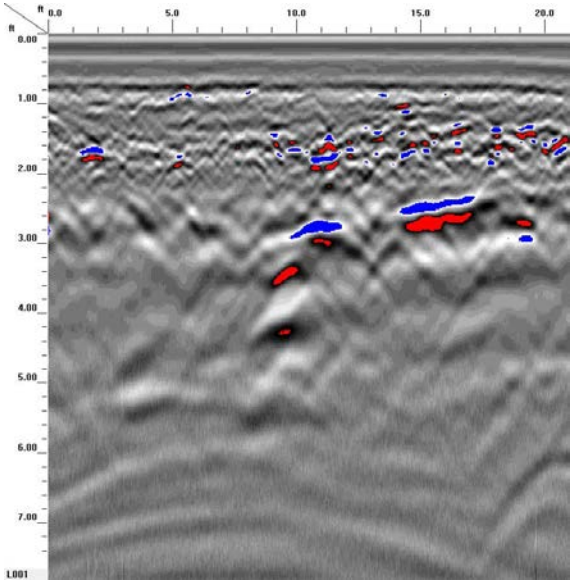


Transect 11



Transect 10



Transect 12

APPENDIX E

UVF HYDROCARBON ANALYSIS RESULTS AND PACE ANALYTICAL LABORATORY REPORT

QED REDLAB RAPID ENVIRONMENTAL DIAGNOSTICS QROS

Hydrocarbon Analysis Results

Client: NCDOT
Address: Parcel 56

Samples taken Tuesday, June 5, 2018
Samples extracted Tuesday, June 5, 2018
Samples analysed Tuesday, June 5, 2018

Contact: Craig Haden

Operator Troy L. Holzschuh

Project: R-5020B Whiteville, NC

F03640

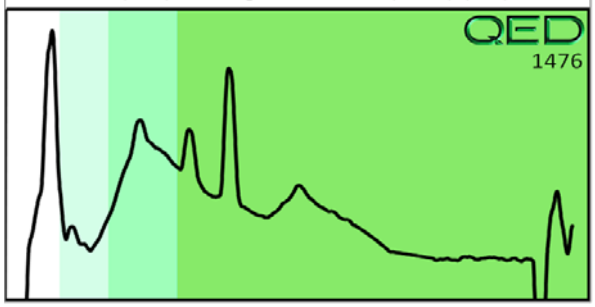
Matrix	Sample ID	Dilution used	BTEX (C6 - C9)	GRO (C5 - C10)	DRO (C10 - C35)	TPH (C5 - C35)	Total Aromatics (C10-C35)	16 EPA PAHs	BaP	Ratios			HC Fingerprint Match
										% light	% mid	% heavy	
s	P56-SB1 (2-3)	27.4	<0.68	<0.68	0.68	0.68	0.48	<0.22	<0.027	0	69.5	30.5	V.Deg.PHC 77.7%,(FCM),(BO)
s	P56-SB1 (4-5)	29.2	<0.73	<0.73	1.6	1.6	1	<0.23	<0.029	0	80.9	19.1	Deg Fuel 72.8%,(FCM)
s	P56-SB2 (3-4)	21.1	<0.53	1.1	9.1	10.2	4.4	<0.17	<0.021	33.8	51.3	14.9	V.Deg.Diesel 77.1%,(FCM)
s	P56-SB2 (4-5)	20.0	<0.5	<0.5	6.3	6.3	3.3	<0.16	<0.02	0	73.3	26.7	Deg.Fuel 71.7%,(FCM)
s	P56-SB3 (2-3)	22.4	<0.56	<0.56	0.56	0.56	0.42	<0.18	<0.022	0	62.4	37.6	V.Deg.PHC 73.7%,(FCM)
s	P56-SB3 (4-5)	24.5	<0.61	<0.61	<0.61	<0.61	<0.12	<0.2	<0.025	0	0	0	PHC not detected
s	P56-SB4 (1-2)	22.4	<0.56	<0.56	0.56	0.56	0.59	<0.18	<0.022	0	60.4	39.6	Residual HC,(BO)
s	P56-SB4 (3.5-4)	25.7	<0.64	<0.64	<0.64	<0.64	<0.13	<0.21	<0.026	0	0	0	PHC not detected,(BO)
s	P56-SB5 (1-2)	32.1	<0.8	<0.8	1.4	1.4	0.78	<0.26	<0.032	0	72.4	27.6	V.Deg.PHC 87%,(FCM)
s	P56-DUP-1	32.1	<0.8	<0.8	1.8	1.8	0.72	<0.26	<0.032	0	67.4	32.6	Deg Fuel 58.9%,(FCM)

Initial Calibrator QC check OK Final FCM QC Check OK 96.1 %

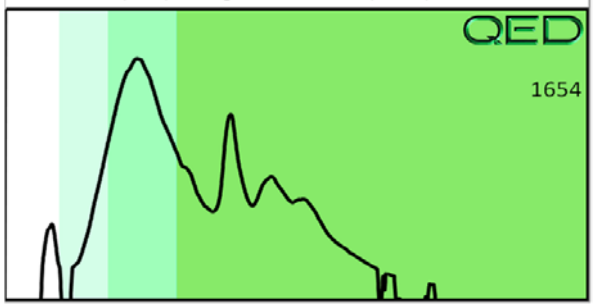
Results generated by a QED HC-1 analyser. Concentration values in mg/kg for soil samples and mg/L for water samples. Soil values are not corrected for moisture or stone content

Fingerprints provide a tentative hydrocarbon identification. The abbreviations are:- FCM = Results calculated using Fundamental Calibration Mode : % = confidence for sample fingerprint match to library (SBS) or (LBS) = Site Specific or Library Background Subtraction applied to result : (PFM) = Poor Fingerprint Match : (T) = Turbid : (P) = Particulate present

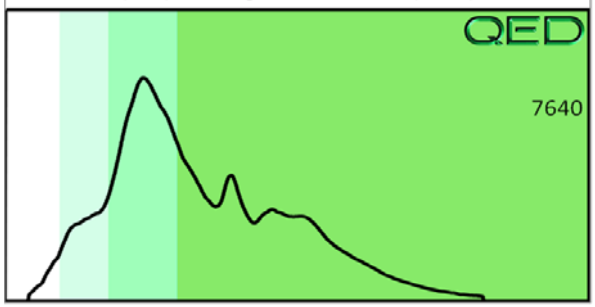
P56-SB1 (2-3) : V.Deg.PHC 77.7%,(FCM),(BO)



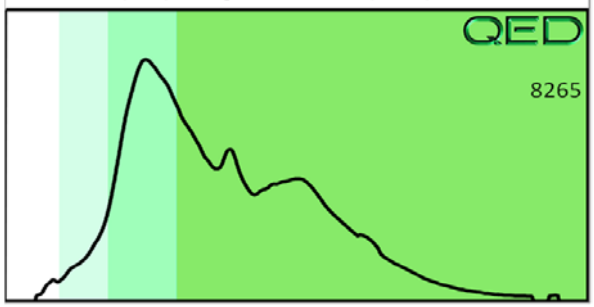
P56-SB1 (4-5) : Deg Fuel 72.8%,(FCM)



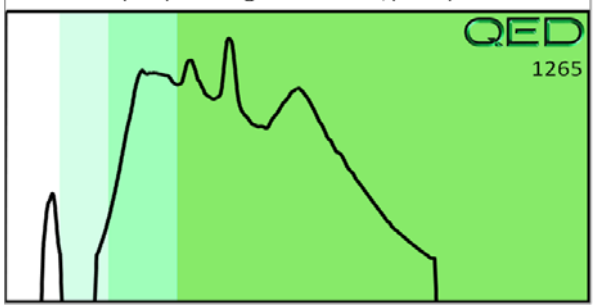
P56-SB2 (3-4) : V.Deg.Diesel 77.1%,(FCM)



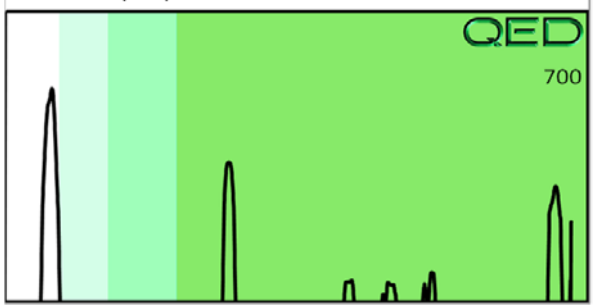
P56-SB2 (4-5) : Deg.Fuel 71.7%,(FCM)



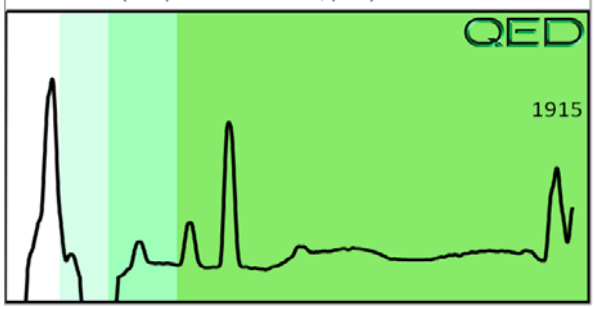
P56-SB3 (2-3) : V.Deg.PHC 73.7%,(FCM)



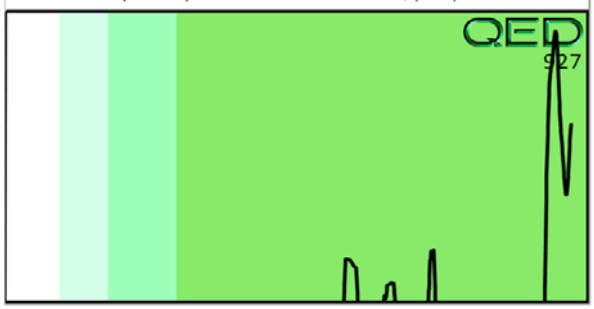
P56-SB3 (4-5) : PHC not detected



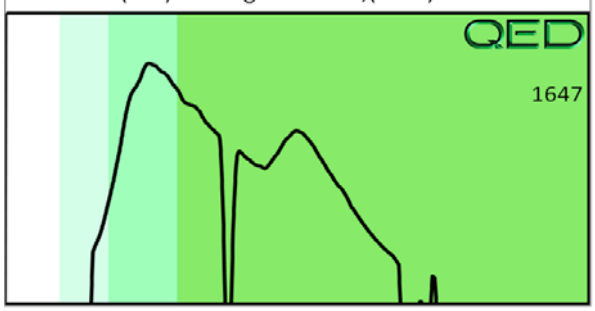
P56-SB4 (1-2) : Residual HC,(BO)



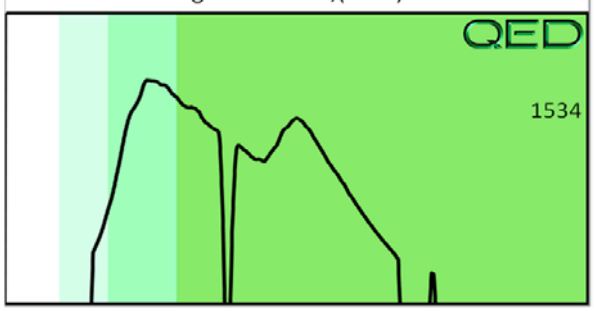
P56-SB4 (3.5-4) : PHC not detected,(BO)



P56-SB5 (1-2) : V.Deg.PHC 87%,(FCM)



P56-DUP-1 : Deg Fuel 58.9%,(FCM)



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Matrix	Sample ID	Dilution used	BTEX (C6 - C9)	GRO (C5 - C10)	DRO (C10 - C35)	TPH (C5 - C35)	Total Aromatics (C10-C35)	16 EPA PAHs	BaP	Ratios			HC Fingerprint Match
										% light	% mid	% heavy	
s	P56-SB5 (3.5-4)	25.3	<0.63	<0.63	<0.63	<0.63	<0.13	<0.2	<0.025	0	0	0	PHC not detected
s	P56-SB6 (1-2)	20.4	<0.51	<0.51	<0.51	<0.51	<0.1	<0.16	<0.02	0	0	0	PHC not detected,(BO)
s	P56-SB6 (3.5-4)	29.9	<0.75	<0.75	<0.75	<0.75	<0.15	<0.24	<0.03	0	0	0	PHC not detected,(P)

Initial Calibrator QC check OK Final FCM QC Check OK 98.6 %

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

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

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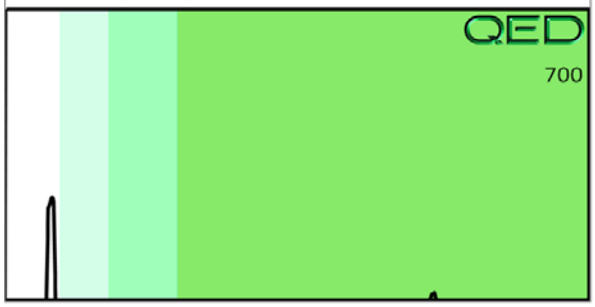
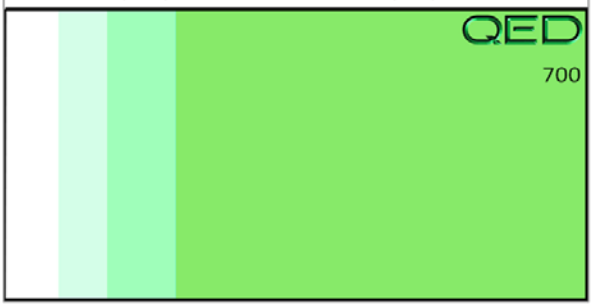
P56-SB5 (3.5-4) : PHC not detected



P56-SB6 (1-2) : PHC not detected,(BO)



P56-SB6 (3.5-4) : PHC not detected,(P)