Solutions-IES
Industrial & Environmental Services

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February 11, 2014

Mr. Terry Fox, L.G.
North Carolina Department of Transportation
Geotechnical Engineering Unit
1589 Mail Service Center
Raleigh, North Carolina 27699-1589

Reference: **Preliminary Site Assessment**
Derek Sifford Property (Parcel #004)
7920 US 52
Rockwell, Rowan County, North Carolina
NCDOT Tip No. W-5316
WBS Element 46139.1.1
SIES Project No. 2013.0077.NDOT

Dear Mr. Fox:

Solutions-IES, Inc., (SIES) has completed the Preliminary Site Assessment conducted at the above-referenced property. The work was performed in accordance with the Technical and Cost proposal dated November 26, 2013, and the North Carolina Department of Transportation's (NCDOT's) Notice to Proceed dated December 3, 2013. Activities associated with the assessment consisted of conducting a geophysical investigation, collecting soil samples for laboratory analysis, and reviewing applicable North Carolina Department of Environment and Natural Resources (NCDENR) records. The purpose of this report is to document the field activities, present the laboratory analyses, and provide recommendations regarding the property.

Location and Description

The Derek Sifford Property (Parcel #004) is located at 7920 US 52 in Rockwell, Rowan County, North Carolina. The property is situated on the west side of US 52 in the southwest quadrant of the intersection of US 52 and Crescent Road (**Figure 1**). Based on NCDOT-supplied information and a site visit, SIES understands that the site is a former gas station where seven underground storage tanks (USTs) have been used on the property. These USTs include three 4,000-gallon gasoline, one 4,000-gallon diesel fuel, and one 1,000-gallon diesel fuel, one 560-

gallon waste/used oil, and one 560-gallon fuel oil UST installed in 1972. In 1998, the waste/used oil and fuel oil USTs were closed and removed. As of the date of the site visit, the remaining five USTs were present on the property and an automotive repair shop occupied the building (**Figure 2**). The structures on the site consist of one building with three repair bays. Two of the bays have hydraulic lifts. An asphalt parking area surrounds the building and extends almost to the property boundaries. A canopy is located in front of the building, but the dispensers have been removed. One waste/used oil above ground storage tank (AST) was located on the southwest corner of the building and one fuel oil AST was located at the northwest corner of the building. Because of the site history as a gas station and automotive repair, the NCDOT requested a Preliminary Site Assessment. The NCDOT also advised that the property will be taken in its entirety and that the assessment encompass the full site. The scope of work as defined in the Request for Technical and Cost Proposal was to evaluate the site with respect to the presence of known and unknown USTs and assess where contamination exists on the property. An estimate of the quantity of impacted soil was to be provided.

SIES reviewed the on-line NCDENR Incident Management database and Incident Number MO-2111 has been assigned to the property. No additional information regarding the cause or source of the incident was available. SIES also examined the UST registration database to obtain UST ownership information. According to the database, the USTs on the property are operated under Facility Number 0-003601. According to the database, the five USTs remaining on the property are temporarily closed. The owner and operator of the tanks are listed as follows:

Owner	Operator
Jimmy W. Sifford	Sifford Service, Inc.
7920 US 52	7920 US 52
Rockwell, NC 28138	Rockwell, NC 28138

Geophysical Survey

Prior to SIES's mobilization to the site, Pyramid Environmental conducted a geophysical survey to evaluate if USTs, other than those known, were present on the property. The geophysical survey consisted of an electromagnetic survey using a Geonics EM61 time-domain electromagnetic induction meter to locate buried metallic objects, specifically USTs. A survey

grid was laid out at the property with the X-axis oriented approximately perpendicular to US 52 and the Y-axis oriented approximately parallel to US 52. The grid was located to cover the accessible portions of the property. However, several vehicles were parked within the survey area and the business owner was not willing to move them. As a result, some of the property could not be surveyed. Therefore, no conclusions as to the presence or absence of USTs in these areas could be ascertained. The survey lines were spaced 5 feet apart and magnetic data was collected continuously along each survey line with a data logger. After collection, the data was reviewed in the field with graphical computer software. Following the electromagnetic survey, a ground penetrating radar (GPR) survey was conducted to further evaluate any significant metallic anomalies if such a survey was considered necessary.

Access was available to all areas of the property, except as noted above, and several anomalies were detected with the geophysical survey. The anomalies were generally attributed to reinforced concrete, underground utilities, or vehicles. One anomaly on the north side of the property was interpreted as a septic tank. The survey concluded that other than the known USTs, no other metallic USTs were present on the property. A detailed report of findings and interpretations is presented in **Attachment A**.

Site Assessment Activities

On January 9, 2014, SIES mobilized to the site to conduct a Geoprobe® direct push investigation to evaluate subsurface soil conditions on the property. Continuous sampling using SIES's Geoprobe® resulted in generally good recovery of soil samples from the direct-push holes. Soil samples were collected and contained in 4-foot long acetate sleeves inside the direct push sampler. Each of these sleeves was divided into 2-foot long sections for soil sample screening. Each 2-foot interval was placed in a resealable plastic bag and the bag was set aside for a sufficient amount of time to allow volatilization of organic compounds from the soil to the bag headspace. The probe of a flame ionization detector (FID) was inserted into the bag and the reading was recorded. After terminating the sample hole, the soil sample from the depth interval with the highest FID reading (or at various depths if low FID readings were observed) was submitted for analysis to Pace Analytical in Huntersville, North Carolina, using standard chain-

of-custody procedures. The laboratory analyzed the soil samples for total petroleum hydrocarbons (TPH) in the diesel range organics (DRO) and gasoline range organics (GRO). At the direction of the NCDOT, SIES split the soil samples and submitted a second set to KB Mobile Labs to evaluate the DRO and GRO concentrations using QROS's ultraviolet fluorescence (UVF) technology. In addition, the soil samples from the AST areas and in front of the repair bays were submitted for analysis of volatile organic compounds (VOCs) using EPA Method 8260, semivolatile organic compounds (SVOCs) using EPA Method 8270, and RCRA metals using EPA Method 6010.

Twelve direct-push holes (4-1 through 4-12) were advanced throughout the property to depths ranging from 12 to 16 feet below ground surface (ft bgs) as shown in **Figure 2** and **Attachment B**. Borings 4-1 through 4-6 were located to evaluate the subsurface area at the existing UST basin and the south side of the former dispensers. Borings 4-7 and 4-8 were placed to assess soil conditions on the north side of the former dispensers. Boring 4-9 was situated to evaluate subsurface soil at a step-out location, and borings 4-10 through 4-12 were located to evaluate subsurface conditions at the fuel oil AST, repair bays, and waste/used oil AST, respectively (**Attachment C**). The lithology encountered by the direct-push samples was generally consistent throughout the site. The ground surface was covered with about 0.5 feet of asphalt and fill or concrete. The borings around the existing USTs indicated interlayered silts and clays with an interval of brown medium-grained sand to a depth of about 10 ft bgs. This may be indicative of the UST basin backfill, but was not verified. For the remainder of the property, a 0.5-foot thick clay was below the fill and a red to red and tan clayey silt saprolite was below the clay. No bedrock was encountered in any of the borings. The "Geologic Map of North Carolina" dated 1985 indicates that the site is underlain by a metamorphosed volcanic sequence of interbedded tuffs and flowrocks. The saprolite observed at the site is consistent with this parent rock. Boring 4-1 was terminated at a depth of 16 ft bgs and groundwater observed at about 13 ft bgs. Based on this observation, borings 4-2 through 4-12 were terminated at 12 ft bgs. Based on field screening, soil samples were submitted for laboratory analyses, which are summarized in **Table 1**. Following the completion of each boring, it was backfilled in accordance with 15A NCAC 2C.

Analytical Results

Based on the laboratory reports, summarized in **Table 1** and presented in **Attachment D**, petroleum hydrocarbon compounds identified as DRO and/or GRO by UVF were detected in two of the 12 soil samples collected from the site (**Figure 3**). Petroleum hydrocarbon compounds identified as DRO and/or GRO by Method 8015 were detected in one of the six soil samples collected from the site. No GRO concentrations were detected in any of the soil samples. As part of its on-going evaluation of laboratories and analytical methods, NCDOT requested that SIES split soil samples for DRO/GRO analysis; one soil sample to be analyzed using EPA Method 8015 and one soil sample to be analyzed using the UVF method. No GRO was detected, so no comparison could be made. Some discrepancy between the methods exists for DRO detections; however, the concentrations are sufficiently low that a comparison is not realistic. For the purpose of this assessment, the UVF concentrations were used.

The soil samples from borings 4-1 and 4-3 contained DRO concentrations above the method detection limit. According to the NCDENR UST Section's *Guidelines for Site Checks, Tank Closure, and Initial Response* dated December 1, 2013, the action level for TPH analyses is 10 milligrams per kilogram (mg/kg) for both gasoline and diesel fuel. However, that agency's *Guidelines for Assessment and Corrective Action* dated December 1, 2013, does not allow for use of TPH analyses for confirmation of the extent of petroleum contamination or its cleanup. As a result, while TPH concentrations are no longer applicable in cleanup confirmation, this analysis is a legitimate screening tool. Based on the TPH action level for UST closures, the action level for this report is 10 mg/kg. The DRO concentrations in the soil samples from borings 4-1 and 4-3 were present at concentrations above the 10 mg/kg action level.

Three of the soil borings (4-10, 4-11, and 4-12) were located in areas containing a waste/used oil AST, a fuel oil AST, and repair bays with hydraulic lifts. These areas represented a section of the property where non-petroleum contamination may be present. Consequently, these samples were analyzed for VOCs, SVOCs, and RCRA metals. Based on the analytical results (**Table 1** and **Attachment D**), no VOCs or SVOCs were detected in any of the three soil samples. The analyses indicated that the metals barium, cadmium, chromium, lead, and mercury were detected

in the three samples. A comparison of the metal concentrations with the IHSB protection of groundwater PSRGs suggests that cadmium, ranging from 3.4 to 5.7 mg/kg, is present above the action level of 3 mg/kg in all three of the soil samples analyzed. However, these concentrations are below the residential and the industrial health-based PSRGs. The scope of this project did not include background metals sampling and analysis; therefore, SIES cannot make a determination as to whether the cadmium concentrations are the result of a release or are naturally occurring and the results are not shown on **Figure 3**.

Conclusions and Recommendations

A Preliminary Site Assessment was conducted to evaluate the Derek Sifford Property (Parcel #004) located at 7920 US 52 in Rockwell, Rowan County, North Carolina. A geophysical survey conducted at the site indicated that no metallic USTs, other than those known, were detected on the property. Twelve soil borings were advanced to evaluate the subsurface soil conditions throughout the property. The laboratory reports of the soil samples from these borings suggest that DRO concentrations were present above the action level in two of the 12 soil samples analyzed. The location of these borings and the depth of contamination suggest that the contaminant source is the USTs in front of the building. Three soil samples were analyzed for VOCs, SVOCs, and metals. Only cadmium was detected in all three soil samples at a concentration above the PSRGs. SIES was not able to determination the cadmium source.

To evaluate the volume of soil requiring possible remediation, the soil samples with TPH concentrations above 10 mg/kg were considered. The analytical results of the soil samples show that the soil from borings 4-1 and 4-3 (40.5 mg/kg and 13.8 mg/kg DRO respectively) contained TPH concentrations above the action level. SIES considered the field screening readings (**Table 1**) to estimate the thickness of the potentially contaminated soil. However, there is no correlation between field screening results and laboratory results, and the field screening values are so low that SIES could only assume a 2-foot thickness for the contamination. After estimating the potential contamination geometry using field observations and experience with similar sites and geology, SIES measured the affected section on **Figure 3** by using CAD software, which indicated a total area of about 1,033 ft^2. Based on a 2-foot contamination thickness, this

calculates to a volume of 76 cubic yards. This volume is estimated from TPH analytical data, which are no longer valid for remediation of sites reported after January 2, 1998. After that date, MADEP EPH/VPH and EPA Method 8260/8270 analyses will be required to confirm cleanup. However, these analyses do not correlate exactly with TPH data and, as a result, the actual volume of contaminated soil may be higher or lower.

SIES appreciates the opportunity to work with the NCDOT on this project. Because compounds were detected above the action level in the soil samples, SIES recommends that a copy of this report be submitted to the Division of Waste Management, UST Section, in the Mooresville Regional Office. If you have any questions, please contact us at (919) 873-1060.

Sincerely,

Michael W. Branson, P.G.
Project Manager

Jessica Keener, P.G.
Senior Hydrogeologist

Attachments

NORTH CAROLINA LICENSED SEAL 467 GEOLOGIST MICHAEL W. BRANSON

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TABLE 1

SOIL FIELD SCREENING AND ANALYTICAL RESULTS
SIFFORD PROPERTY (PARCEL #004)
ROCKWELL, ROWAN COUNTY, NORTH CAROLINA
NCDOT PROJECT NO. W-5316
WBS ELEMENT 46139.1.1
SIES PROJECT NO. 2013.0077.NDOT

LOCATION	DEPTH (ft)	FID READING (ppm)	SAMPLE ID	ANALYTICAL RESULTS (mg/kg)	ACTION LEVEL (mg/kg)
4-1	0 - 2	2.23			
	2 - 4	1.2			
	4 - 6	2.02			
	6 - 8	3.02	4-1	**8015 DRO (123)**	10
				8015 GRO (<6.9)	10
				UVF DRO (40.5)	10
				UVF GRO (4.6)	10
	8 - 10	1.52			
	10 - 12	2.07			
	12 - 14	1.72			
	14 - 15	1.51			
4-2	0 - 2	6.45	4-2	8015 DRO (<6.4)	10
				8015 GRO (<6.2)	10
				UVF DRO (4.2)	10
				UVF GRO (<1.1)	10
	2 - 4	1.23			
	4 - 6	1.02			
	6 - 8	2.04			
	8 - 10	2			
	10 - 12	0.53			
4-3	0 - 2	6.03	4-3	8015 DRO (<6.6)	10
				8015 GRO (<6)	10
				UVF DRO (13.8)	10
				UVF GRO (<1.0)	10
	2 - 4	2.9			
	4 - 6	3.21			
	6 - 8	1.43			
	8 - 10	1.24			
	10 - 12	0.84			
4-4	0 - 2	0.5			
	2 - 4	0.42			
	4 - 6	0.72	4-4	8015 DRO (<6.4)	10
				8015 GRO (<6.5)	10
				UVF DRO (<0.6)	10
				UVF GRO (<0.6)	10
	6 - 8	0.44			
	8 - 10	0.48			
	10 - 12	0.4			
4-5	0 - 2	0.42			
	2 - 4	0.34			
	4 - 6	0.73			
	6 - 8	0.94			
	8 - 10	1.51	4-5	8015 DRO (<7.3)	10
				8015 GRO (<7.4)	10
				UVF DRO (<0.6)	10
				UVF GRO (<0.6)	10
	10 - 12	0.25			
4-6	0 - 2	0.95			
	2 - 4	1.58	4-6	8015 DRO (<6.5)	10
				8015 GRO (<6.8)	10
				UVF DRO (<0.6)	10
				UVF GRO (<0.6)	10
	4 - 6	0.89			
	6 - 8	0.61			
	8 - 10	0.42			
	10 - 12	0.14			

TABLE 1 (cont)

SOIL FIELD SCREENING AND ANALYTICAL RESULTS
SIFFORD PROPERTY (PARCEL #004)
ROCKWELL, ROWAN COUNTY, NORTH CAROLINA
NCDOT PROJECT NO. W-5316
WBS ELEMENT 46139.1.1
SIES PROJECT NO. 2013.0077.NDOT

LOCATION	DEPTH (ft)	FID READING (ppm)	SAMPLE ID	ANALYTICAL RESULTS (mg/kg)	ACTION LEVEL (mg/kg)
4-7	0 - 2	0.22			
	2 - 4	0.04			
	4 - 6	0.55	4-7	8015 DRO (<6.6) 8015 GRO (<6.2) UVF DRO (<0.6) UVF GRO (<0.6)	10 10 10 10
	6 - 8	0.4			
	8 - 10	0.36			
	10 - 12	0.3			
4-8	0 - 2	1.71			
	2 - 4	0.74			
	4 - 6	0.51	4-8	8015 DRO (<5.6) 8015 GRO (NT) UVF DRO (1.3) UVF GRO (<1.0)	10 10 10 10
	6 - 8	0.12			
	8 - 10	0.24			
	10 - 12	0.06			
4-9	0 - 2	0.31			
	2 - 4	0.29			
	4 - 6	0.51			
	6 - 8	0.1	4-9	8015 DRO (<7.1) 8015 GRO (<6.9) UVF DRO (<0.6) UVF GRO (<0.6)	10 10 10 10
	8 - 10	0.21			
	10 - 12	0.18			
4-10	0 - 2	0.6			
	2 - 4	1.05			
	4 - 6	2.54			
	6 - 8	1.59	4-10	8015 DRO (<6.9) 8015 GRO (<7.2) UVF DRO (<0.6) UVF GRO (<0.6) 8270 All Compounds (<DL) 8260 All Compounds (<DL) 6010 Chromium (38.1) 6010 Lead (16.3) 6010 Barium (11.1) **6010 Cadmium (5.5)** 7471 Mercury (0.017)	10 10 10 10 NA NA 360,000 (1) 270 (1) 580 (1) 3.0 (1) 1.0 (1)
	8 - 10	0.62			
	10 - 12	0.19			

TABLE 1

SOIL FIELD SCREENING AND ANALYTICAL RESULTS
SIFFORD PROPERTY (PARCEL #004)
ROCKWELL, ROWAN COUNTY, NORTH CAROLINA
NCDOT PROJECT NO. W-5316
WBS ELEMENT 46139.1.1
SIES PROJECT NO. 2013.0077.NDOT

LOCATION	DEPTH (ft)	FID READING (ppm)	SAMPLE ID	ANALYTICAL RESULTS (mg/kg)	ACTION LEVEL (mg/kg)
4-11	0 - 2	1.59			
	2 - 4	2.3			
	4 - 6	17.61	4-11	8015 DRO (<6.5)	10
				8015 GRO (<6.3)	10
				UVF DRO (<0.6)	10
				UVF GRO (<0.6)	10
				8270 All Compounds (<DL)	NA
				8260 All Compounds (<DL)	NA
				6010 Chromium (16.1)	360,000 (1)
				6010 Lead (14.4)	270 (1)
				6010 Barium (8.9)	580 (1)
				6010 Cadmium (3.7)	3.0 (1)
				7471 Mercury (0.011)	1.0 (1)
	6 - 8	5.51			
	8 - 10	3.28			
	10 - 12	1.64			
4-12	0 - 2	0.89	4-12	8015 DRO (<7.0)	10
				8015 GRO (<7.2)	10
				UVF DRO (<0.6)	10
				UVF GRO (<0.6)	10
				8270 All Compounds (<DL)	NA
				8260 All Compounds (<DL)	NA
				6010 Chromium (20.6)	360,000 (1)
				6010 Lead (13.7)	270 (1)
				6010 Barium (13.5)	580 (1)
				6010 Cadmium (3.4)	3.0 (1)
				7471 Mercury (0.17)	1.0 (1)
	2 - 4	0			
	4 - 6	0.09			
	6 - 8	0.08			
	8 - 10	0.26			
	10 - 12	0.06			

Soil samples were collected on January 9, 2014.

(1) Action level from Inactive Hazardous Sites Branch guidance for protection of groundwater Preliminary Soil Remediation Goals.
8015 DRO - Diesel range organics by Method 8015.
8015 GRO - Gasoline range organics by Method 8015.
UVF DRO - Diesel range organics by UVF.
UVF GRO - Gasoline range organics by UVF.
8260 - Volatile organic compounds by EPA Method 8260.
8270 - Semivolatile organic compounds by EPA Method 8270.
6010 - Metals by EPA Method 6010.
7471 - Mercury by EPA Method 7471.
ppm - parts per million.
mg/kg - milligrams per kilogram.
NT - Not analyzed due to bottleware breakage.
NA - Not applicable.
BOLD values are present above the action level.

FIGURES

PROJECT NUMBER 2013.0077.NDOT

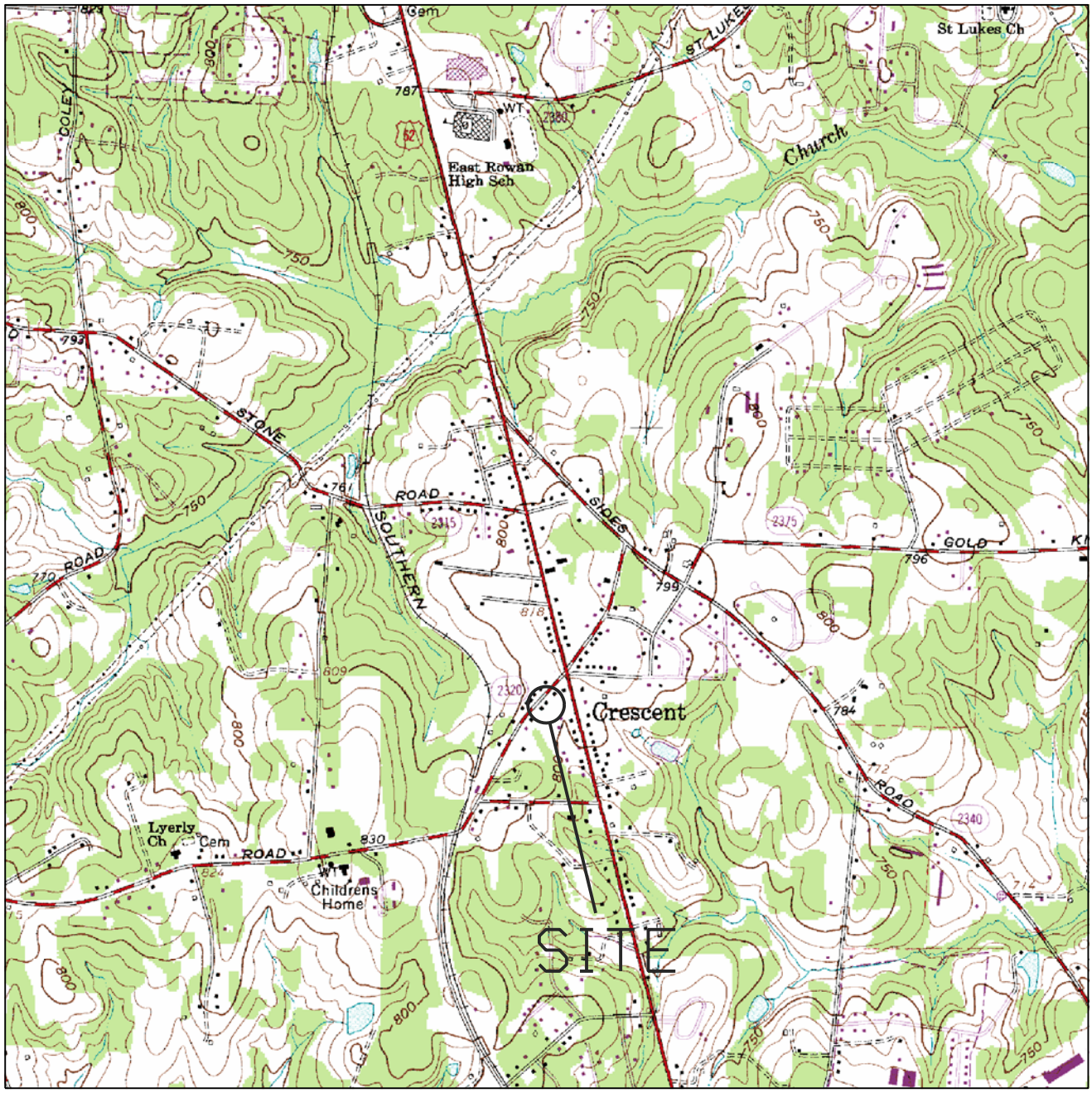
CHECKED BY MWB

PROJECT MANAGER MWB

DATE JANUARY 2013

ROWAN COUNTY PSA

FILE



SCALE 1:24,000

1 ½ 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 .5 0 1 KILOMETER

SOURCE: U.S. GEOLOGICAL SURVEY 7.5 MIN QUADRANGLE: ROCKWELL, NC (REV 2013)

Solutions-IES
Industrial & Environmental Services
1101 NOWELL ROAD
RALEIGH, NORTH CAROLINA 27607
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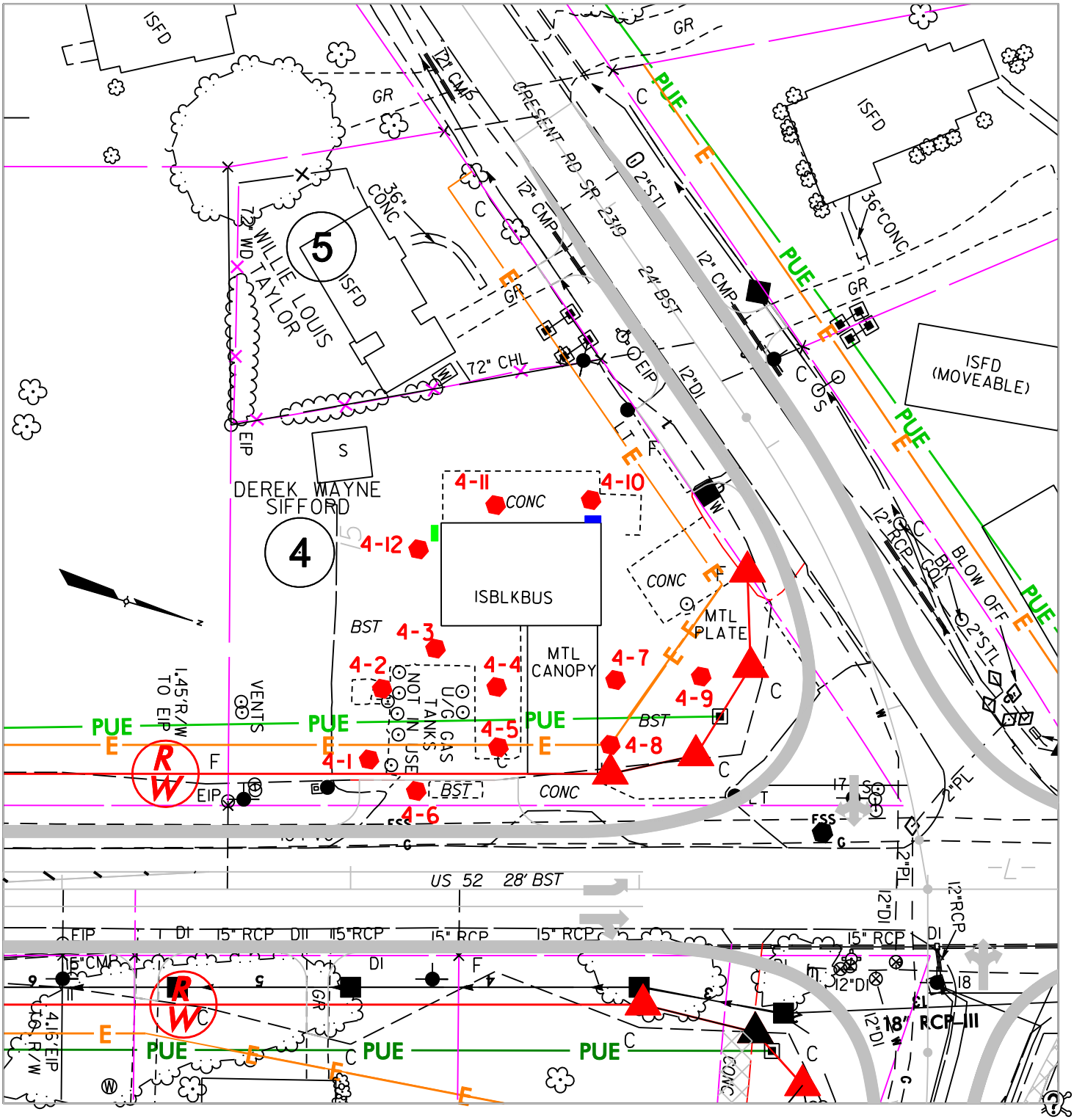
VICINITY MAP

DEREK SIFFORD PROPERTY (PARCEL #004)
ROCKWELL, ROWAN COUNTY NORTH CAROLINA

FIGURE 1



LEGEND

4-1 SOIL SAMPLE LOCATION AND IDENTIFICATION

USED/WASTE OIL AST

FUEL OIL AST

0 25 50

GRAPHIC SCALE (FEET)

PROJECT NUMBER 2013.0077.NDOT
DRAFTER MWB
CHECKED BY
PROJECT MANAGER MWB
DATE JANUARY 2013
FILE ROWAN CO PSA

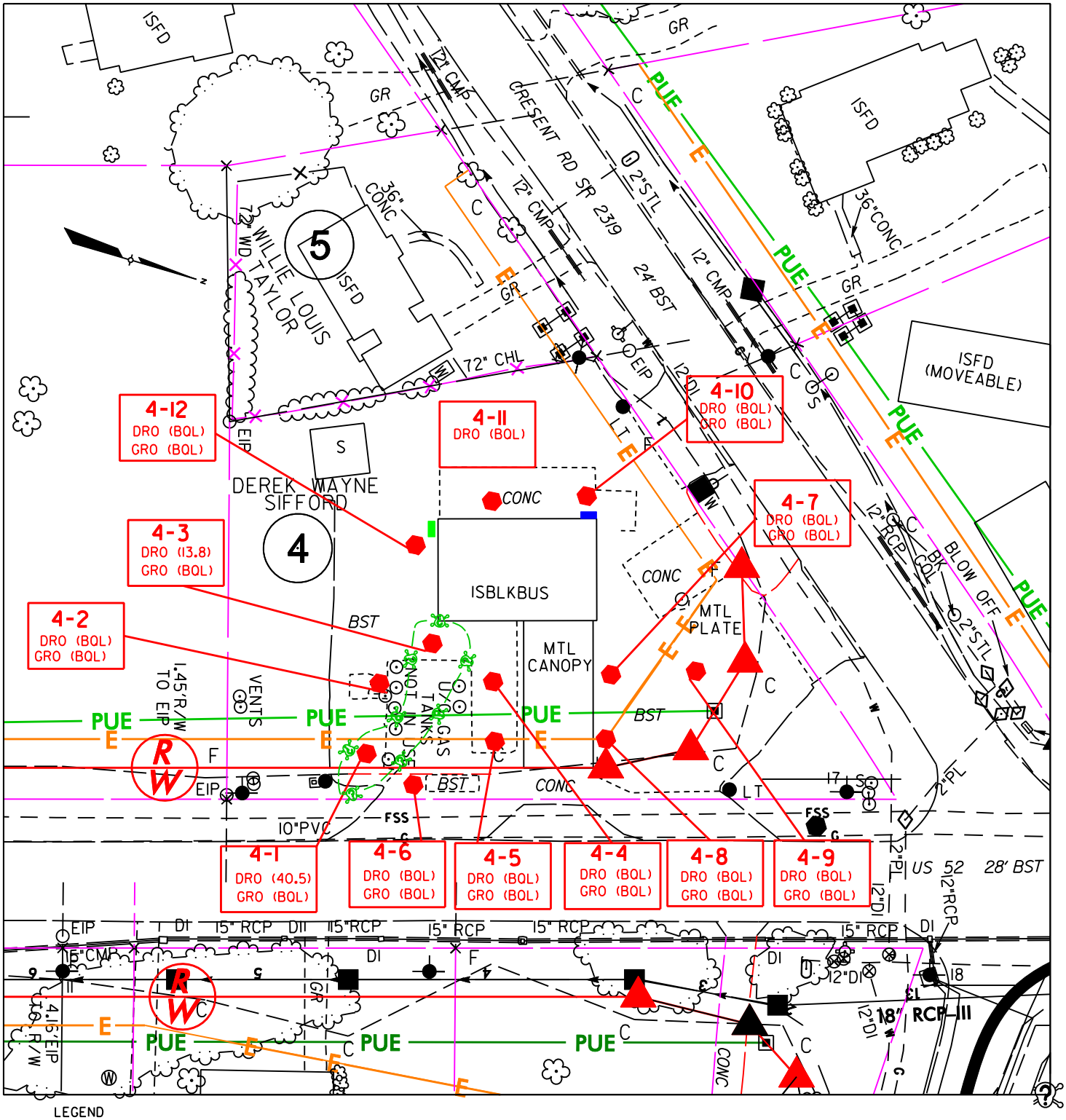
Solutions-IES
Industrial & Environmental Services
1101 NOWELL ROAD
RALEIGH, NORTH CAROLINA 27607
TEL: (919) 873-1060 FAX: (919) 873-1074

SITE MAP

DEREK SIFFORD PROPERTY (PARCEL #004)

ROCKWELL, ROWAN COUNTY, NORTH CAROLINA

FIGURE 2



LEGEND

4-1 SOIL SAMPLE LOCATION AND IDENTIFICATION

DRO (123) TPH AS DIESEL FUEL IN MG/KG

GRO (123) TPH AS GASOLINE IN MG/KG

BQL BELOW QUANTITATION LIMIT

APPROXIMATE POTENTIAL CONTAMINATION LIMIT (10 MG/KG)

0 25 50

GRAPHIC SCALE (FEET)

Solutions-IES
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1101 NOWELL ROAD
RALEIGH, NORTH CAROLINA 27607
TEL: (919) 873-1060 FAX: (919) 873-1074

SOIL ANALYTICAL RESULTS MAP

DEREK SIFFORD PROPERTY (PARCEL #004)

ROCKWELL, ROWAN COUNTY, NORTH CAROLINA

FIGURE 3

ATTACHMENT A

PYRAMID ENVIRONMENTAL & ENGINEERING, P.C.

PYRAMID ENVIRONMENTAL & ENGINEERING
(PROJECT 2013-290)

GEOPHYSICAL SURVEY

PARCEL 004 –
U.S. HWY 52 AND CRESCENT ROAD
NCDOT PROJECT W-5316

ROCKWELL, ROWAN COUNTY, NC

JANUARY 3, 2013

Report prepared for: **Mike Branson**
Solutions, IES
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C257: GEOLOGY C1251: ENGINEERING

GEOPHYSICAL INVESTIGATION REPORT
Parcel 004, U.S. Hwy 52
Rockwell, Rowan County, North Carolina

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EXECUTIVE SUMMARY

Project Description: Pyramid Environmental conducted a geophysical investigation for Solutions, IES at Parcel 004, located at the southwest quadrant of the intersection of U.S. 52 and Crescent Road in Rockwell, Rowan County, NC. The survey was part of a North Carolina Department of Transportation (NCDOT) Right-of-Way (ROW) investigation (NCDOT Project W-5316). Solutions, IES directed Pyramid as to the geophysical survey boundaries at the project site, which were designed to include all accessible areas across the entire parcel. The geophysical investigation consisted of an electromagnetic (EM) induction-metal detection and ground penetrating radar (GPR) surveys.

Geophysical Results: The majority of the EM61 anomalies detected could be attributed to visible objects at the ground surface such as signs and vehicles, or were associated with reinforced concrete. Two unexplained EM anomalies were investigated further with GPR, and were suspected to be associated with metallic debris and/or utilities. Additional scans by the GPR confirmed the presence of reinforcement within the concrete at multiple locations across the property, and did not record any other significant features beneath the reinforcement. The location of the septic tank at the property was indicated by the presence of metal access panels at the ground surface and the drain line extending away from the panels, which was mapped by the EM survey and the GPR survey. The existing UST basin to the southeast of the building was evident in the EM survey, and was not delineated further, per the instructions of Solutions, IES. Other than the septic tank and existing UST basin, no evidence of additional metallic USTs was recorded at the property.

INTRODUCTION

Pyramid Environmental conducted a geophysical investigation for Solutions, IES at Parcel 004, located at the southwest quadrant of the intersection of U.S. 52 and Crescent Road in Rockwell, Rowan County, NC. The survey was part of a North Carolina Department of Transportation (NCDOT) Right-of-Way (ROW) investigation (NCDOT Project W-5316). Solutions, IES directed Pyramid as to the geophysical survey boundaries at the project site, which were designed to include all accessible areas across the entire parcel. The survey grid spanned approximately 160 feet from west to east and approximately 240 feet from north to south. Conducted on December 11 and 12, 2013, the geophysical investigation was performed to determine if unknown, metallic underground storage tanks (USTs) were present beneath the survey area, and to identify the location of the septic tank at the property.

The site was an active auto repair facility (former gas station) and consisted primarily of open asphalt areas with grassy medians and sections of reinforced concrete. Several areas were inaccessible due to parked vehicles. Aerial photographs showing the survey area boundaries and ground-level photographs are shown in **Figure 1**.

FIELD METHODOLOGY

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

The geophysical investigation consisted of electromagnetic (EM) induction-metal detection and ground penetrating radar (GPR) surveys. The EM survey was performed on December 11, 2013, using a Geonics EM61 metal detection instrument. According to the instrument specifications, the EM61 can detect a metal drum down to a maximum depth of approximately 8 feet. Smaller objects (1-foot or less in size) can be detected to a maximum depth of 4 to 5 feet. The EM61 data

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

GPR data were acquired across select EM differential anomalies and/or across areas of reinforced concrete on December 12, 2013, using a Geophysical Survey Systems, Inc. (GSSI) SIR-2000 unit equipped with a 400 MHz antenna. Data were collected generally from east to west and north to south across the property. The GPR data were viewed in real time using a vertical scan of 512 samples, at a rate of 48 scans per second. GPR data were viewed down to a maximum depth of approximately 8 feet, based on an estimated two-way travel time of 8 nanoseconds per foot. GPR Transects across specific anomalies and areas of reinforced concrete were saved to the hard drive of the SIR unit for post-processing and figure generation.

DISCUSSION OF RESULTS

Contour plots of the EM61 bottom coil and differential results obtained across survey area at the property are presented in **Figures 2 and 3,** respectively. The bottom coil results represent the most sensitive component of the EM61 instrument and detect metal objects regardless of size. The bottom coil response can be used to delineate metal conduits or utility lines; small, isolated metal objects, and areas containing insignificant metal debris. The differential results are obtained from the difference between the top and bottom coils of the EM61 instrument. The differential results focus on the larger metal objects such as drum and UST-size objects and ignore the smaller insignificant metal objects.

Discussion of EM Anomalies: Several areas containing reinforced concrete were present at the property, and resulted in significant high amplitude EM responses. These areas are outlined by light blue lines on Figures 2 and 3, and are located around the service station building as well as near Crescent Road and U.S. 52. The existing UST basin is also outlined on the figures with a light green line. This UST basin resulted in a high amplitude EM response associated with the tanks and auxiliary equipment. The EM response surrounding the service station building was the result of reinforcement within the foundation and concrete directly adjacent to the structure.

Additionally, high amplitude EM responses were recorded surrounding all of the parked vehicles across the property, which are delineated by white polygons with blue hatched lines on the figures.

The EM response at X=45, Y=55 was the result of the former gas pumps, which had been moved to this location. The EM response at X=70, Y=35 was the result of a metal dumpster. The EM response at X=135, Y=20 was the result of metal vent pipes connected to the existing UST basin. The EM response at X=165, Y=25 was the result of a power pole. The EM response at X=180, Y=25 was the result of a metal sign. The EM response at X=165, Y=50 was the result of a flag pole. The EM response at X=163, Y=195 was the result of a light pole. The EM response at X=165, Y=215 was the result of a metal sign. The collection of EM responses at the northeast corner of the survey areas were the result of multiple metal street signs near the intersection. The EM response spanning the north boundary of the survey area from northeast to southwest was suspected to be associated with a utility running parallel to Crescent Road (likely a water line). The northeast/southwest oriented feature centered at X=120, Y=200 was suspected to be associated with the drain line connected to the septic tank at the property (discussed in detail below).

Two unexplained EM anomalies were recorded at the property. The first was located at X=85, Y=50, and the second was located at X=40, Y=135. These anomalies were not attributed to any visible objects at the ground surface, and were further investigated with the GPR. Any features not discussed in this section are associated with visible metal at the ground surface or reinforced concrete, as indicated on the figures.

Discussion of GPR Survey

Two of the EM anomalies recorded by the survey could not be directly attributable to visible objects at the ground surface or utilities, and were investigated by the GPR. Additionally, all areas containing reinforced concrete were surveyed with the GPR due to the high level of interference during the EM61 data collection. Lastly, Solutions, IES indicated that a septic tank was known to be present at the property however, its location was unknown. The EM survey was used to direct additional GPR transects in an attempt to identify the location of the septic tank. **Figure 4** presents the locations of the formal GPR transects performed at the property, as well as

select images of the transects. Images of all GPR transects are included in **Appendix A**. Additional reconnaissance GPR transects were performed and viewed in real time.

GPR across unexplained EM anomalies

GPR Transect 1 was performed across the anomaly located at X=85, Y=50, and GPR Transects 2 and 3 were performed across the anomaly centered at X=40, Y=135. Transect 1 recorded GPR reflectors that suggested the presence of either isolated buried metallic debris or a possible section of an unknown utility at this location. GPR Transects 2 and 3 did not record any clear reflectors that would commonly indicate the presence of an object or structure, suggesting the second anomaly was associated with metallic debris. No evidence of USTs was recorded at either location.

GPR across areas of reinforced concrete

GPR Transects 1-10 and 14-21 were performed across the areas of suspected reinforced concrete at various locations across the property. The GPR surveys in these areas all recorded shallow reflective patterns that are consistent with reinforcement within the concrete. No clear evidence of any structures that would be indicative of USTs was observed below the reinforcement. It should be noted that reinforcement in the concrete can result in "multiple" reflectors at depth in a GPR survey that can sometimes obscure the presence of deeper structures, objects, or geologic horizons.

GPR survey to locate the septic tank

The owner of the property indicated to Pyramid during our surveys that the septic tank was located directly underneath the metal ground access panels that were visible on the north side of the service station building. This area contained reinforced concrete, thereby resulting in EM interference. No visible structure that was indicative of a septic tank was observed in the GPR transects performed in this area, however, air gaps beneath the metal access panels and the reinforcement itself would likely prevent the tank from being imaged. The EM survey did indicate that utility lines were present extending away from the suspected location of the septic tank. GPR transects 11-13 were performed to the northeast of the suspected septic tank across the EM feature that appeared to be consistent with a utility line. These GPR transects provided evidence of a utility that extended from the metal access panels to the northeast. The owner of the property verified that this utility was the septic drain line. For these reasons, it is our conclusion that the septic tank is located on the north side of the building at the location of the

metal access panels. **Figure 5** presents the approximate location of the septic tank, as well as the approximate boundaries of the existing fuel UST basin, which was not further delineated in accordance with directions give to Pyramid by Solutions, IES.

In addition to the GPR transects presented on Figure 4, general reconnaissance GPR surveys were performed across the site in areas with limited access, such as between parked vehicles, and data was viewed in real time. No evidence of additional USTs was observed.

The geophysical investigation indicated a septic tank was present on the north side of the service station building, and the existing fuel UST basin was located on the southeast side of the building. No evidence of additional USTs was recorded at the property.

SUMMARY & CONCLUSIONS

Our evaluation of the EM61 and GPR data collected across Parcel 004 in Rockwell, North Carolina, provides the following summary and conclusions:

- The EM61 and GPR surveys provided reliable results for the detection of metallic USTs within the accessible portions of the geophysical survey area.
- The majority of the EM61 anomalies detected could be attributed to visible objects at the ground surface such as signs and vehicles, or were associated with reinforced concrete.
- Two unexplained EM anomalies were investigated further with GPR, and were suspected to be associated with metallic debris and/or utilities.
- Additional scans by the GPR confirmed the presence of reinforcement within the concrete at multiple locations across the property, and did not record any other significant features beneath the reinforcement.
- The location of the septic tank at the property was indicated by the presence of metal access panels at the ground surface and the drain line extending away from the panels, which was mapped by the EM survey and the GPR survey.
- The existing UST basin to the southeast of the building was evident in the EM survey, and was not delineated further, per the instructions of Solutions, IES.

- The geophysical investigation indicated the septic tank was located on the north side of the building, and the existing UST basin was located to the southeast of the building. No evidence of additional USTs was recorded within the directed survey area.

LIMITATIONS

Geophysical surveys have been performed and this report prepared for Solutions, IES 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 conclusively determined the definitive presence or absence of metallic USTs, but that the evidence collected is sufficient to result in the conclusions made in this report. Additionally, it should be understood that areas containing extensive vegetation, reinforced concrete, or other restrictions to the accessibility of the geophysical instruments could not be fully investigated.

Approximate Boundaries of the Geophysical Survey Area

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

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

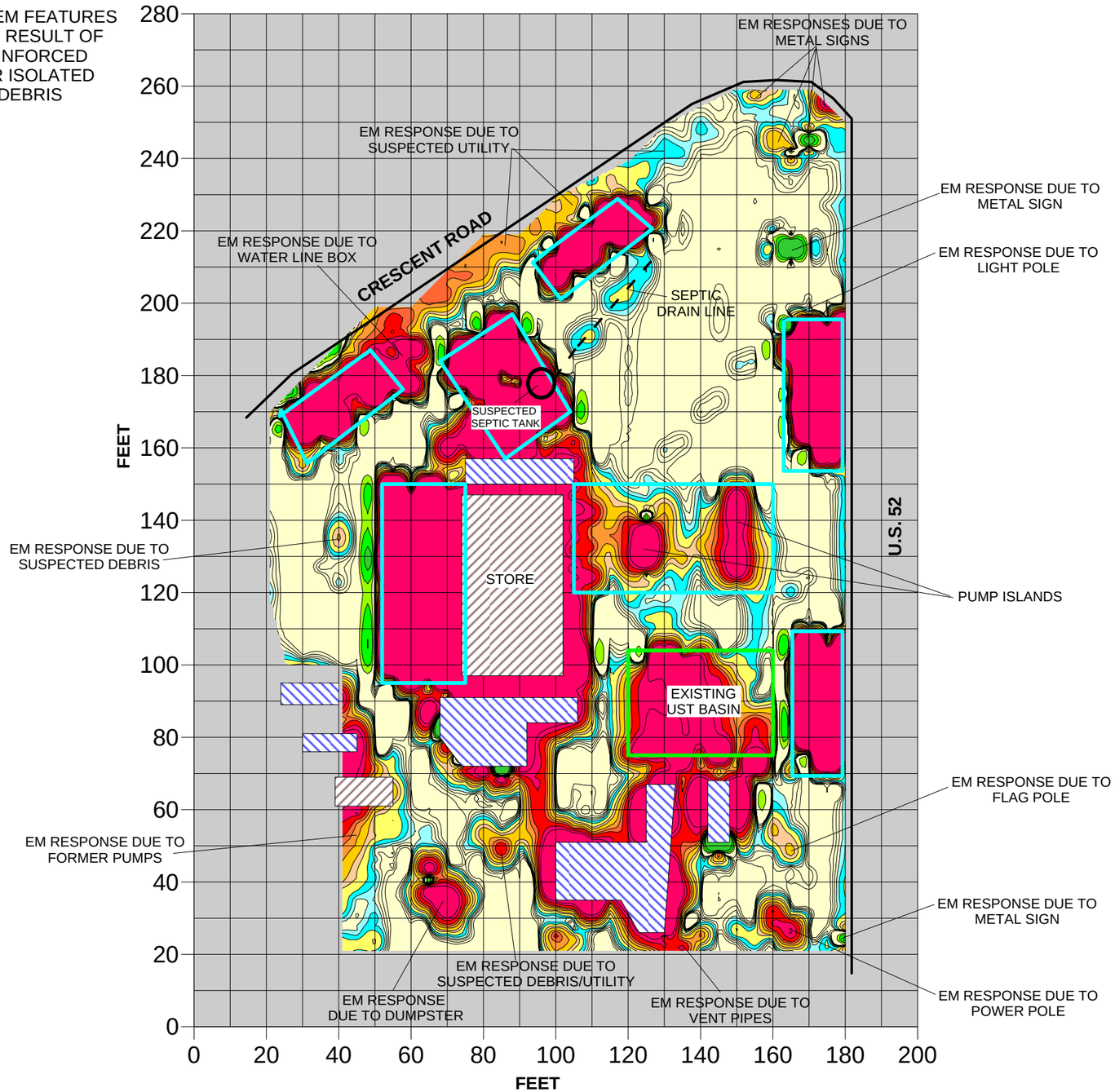
TITLE	PARCEL 4: GEOPHYSICAL SURVEY BOUNDARIES AND SITE PHOTOGRAPHS
PROJECT	NCDOT PROJECT W-5316 ROCKWELL, ROWAN COUNTY, NC

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

DATE	12/17/2013	CLIENT	SOLUTIONS, IES
PYRAMID PROJECT #:	2013-290		**FIGURE 1**

EM61 Bottom Coil Results

ALL UNMARKED EM FEATURES ARE LIKELY THE RESULT OF VEHICLES, REINFORCED CONCRETE, OR ISOLATED METALLIC DEBRIS



EVIDENCE OF ONE METALLIC UST (SEPTIC) OBSERVED OUTSIDE OF EXISTING UST BASIN

The contour plot shows the bottom coil (most sensitive) results of the EM61 instrument in millivolts (mV). The bottom coil response shows buried metallic objects regardless of size. The EM61 data were collected on December 11, 2013, using a Geonics EM61 instrument. Ground penetrating radar (GPR) data were collected on December 12, 2013, using a GSSI SIR 2000 unit coupled to a 400 MHz antennae.

- Existing UST Basin
- Reinforced Concrete
- Building
- Vehicles

EM61 Metal Detection Response (millivolts)

1000 750 500 400 300 200 150 100 75 60 50 40 30 -90 -100 -200 -400 -5000

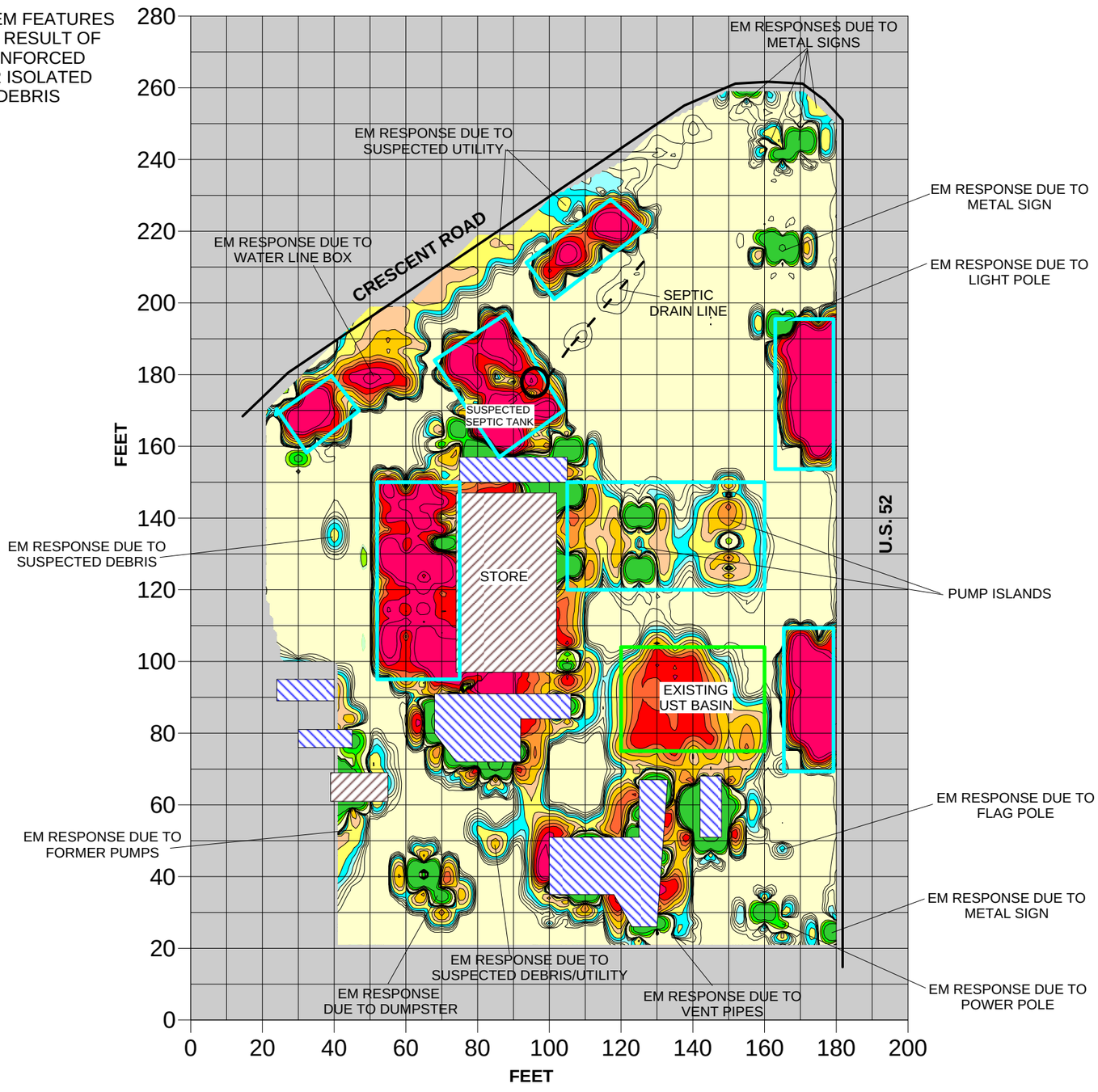
TITLE	PARCEL 4: EM61 BOTTOM COIL RESULTS CONTOUR MAP
PROJECT	NCDOT PROJECT W-5316 ROCKWELL, ROWAN COUNTY, NC

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

DATE 12/17/2013	CLIENT SOLUTIONS, IES
PYRAMID PROJECT #: 2013-290	**FIGURE 2**

EM61 Differential Results

ALL UNMARKED EM FEATURES ARE LIKELY THE RESULT OF VEHICLES, REINFORCED CONCRETE, OR ISOLATED METALLIC DEBRIS



EVIDENCE OF ONE METALLIC UST (SEPTIC) OBSERVED OUTSIDE OF EXISTING UST BASIN

The contour plots show the differential results of the EM61 instrument in millivolts(mV). The differential response focuses on larger, buried metallic objects such as drums and USTs and ignores smaller miscellaneous buried, metal debris.The EM61 data were collected on bDecember 11, 2013, using a Geonics EM61 instrument. Ground penetrating radar (GPR) data were collected on December 12, 2013, using a GSSI SIR 2000 unit coupledto a 400 MHz antennae.

- Existing UST Basin
- Reinforced Concrete
- Building
- Vehicles

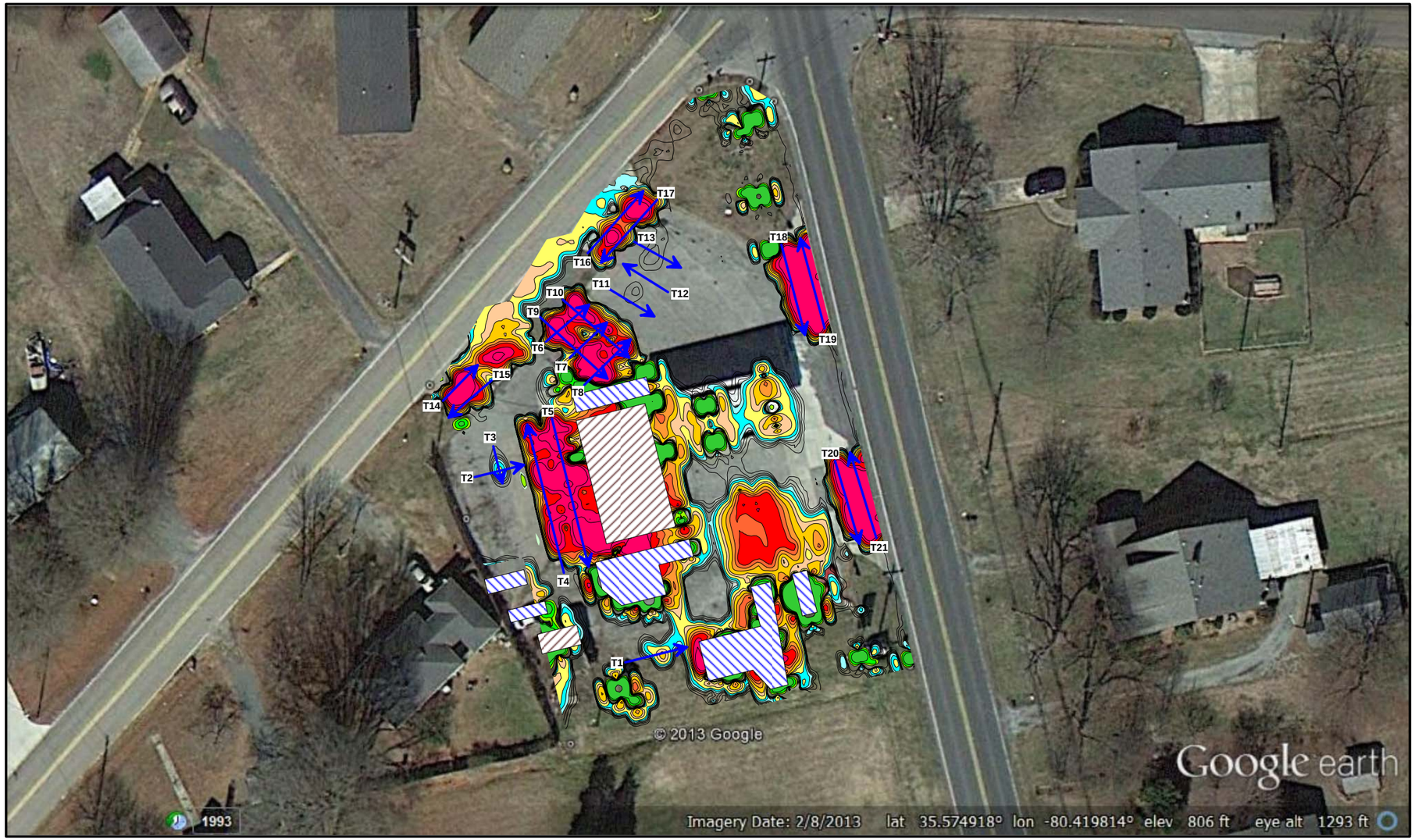
EM61 Metal Detection Response (millivolts)

1000 750 500 400 300 200 150 100 75 60 50 40 30 -90 -100 -200 -400 -5000

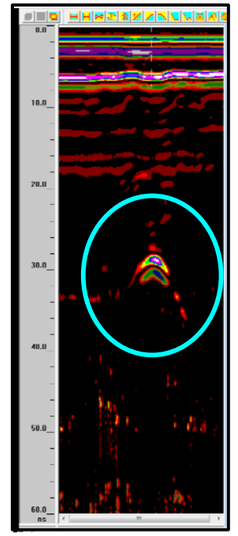
TITLE	PARCEL 4: EM61 DIFFERENTIAL RESULTS CONTOUR MAP
PROJECT	NCDOT PROJECT W-5316 ROCKWELL, ROWAN COUNTY, NC

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

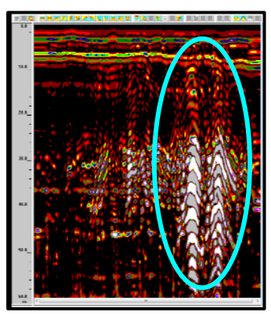
DATE	12/17/2013	CLIENT	SOLUTIONS, IES
PYRAMID PROJECT #:	2013-290		**FIGURE 3**



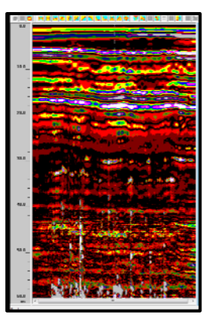
Approximate Locations of GPR Transects



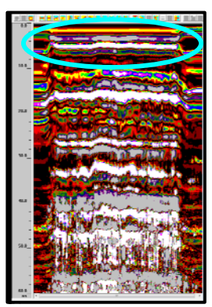
GPR Transect 11 -
Suspected Septic Drain Line



GPR Transect 1 -
Possible Metallic Debris or Utility



GPR Transect 2 -
No Clear Evidence of Structures



GPR Transect 6 -
Example of Reinforced Concrete

TITLE
PARCEL 4:
GPR TRANSECT LOCATIONS
AND SELECT IMAGES

PROJECT
NCDOT PROJECT W-5316
ROCKWELL, ROWAN COUNTY, NC

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

DATE 12/17/2013	CLIENT SOLUTIONS, IES
PYRAMID PROJECT #: 2013-290	**FIGURE 4**

The geophysical survey provided evidence of a septic tank located to the north of the service station building beneath two visible metal ground covers. The tank was not imaged by the GPR, but was evidenced by the drain line exiting the tank area. The existing UST basin is noted on this map, but was not delineated further, per the instructions of Solutions, IES.

TITLE
PARCEL 4:
APPROXIMATE LOCATION OF
SEPTIC TANK AND UST BASIN

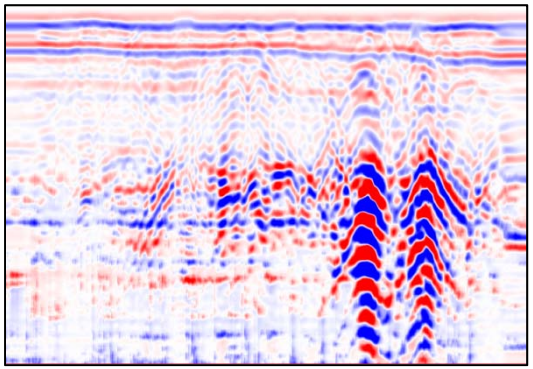
PROJECT
NCDOT PROJECT W-5316
ROCKWELL, ROWAN COUNTY, NC

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

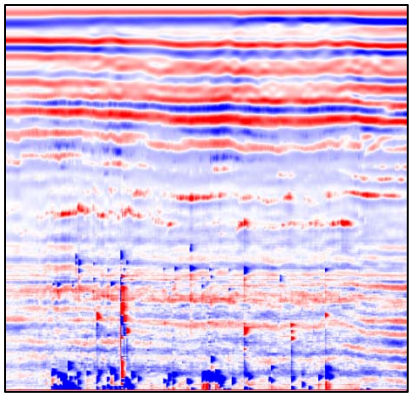
DATE 12/17/2013	CLIENT SOLUTIONS, IES
PYRAMID PROJECT #: 2013-290	**FIGURE 5**

APPENDIX A – GPR TRANSECT IMAGES

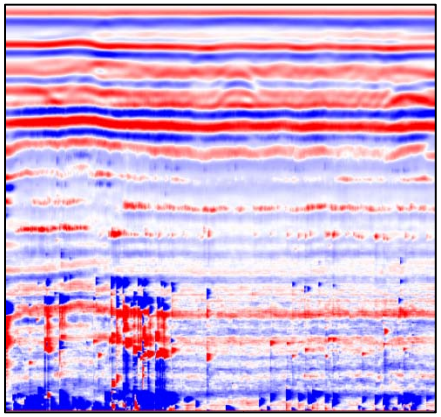
Transect 1



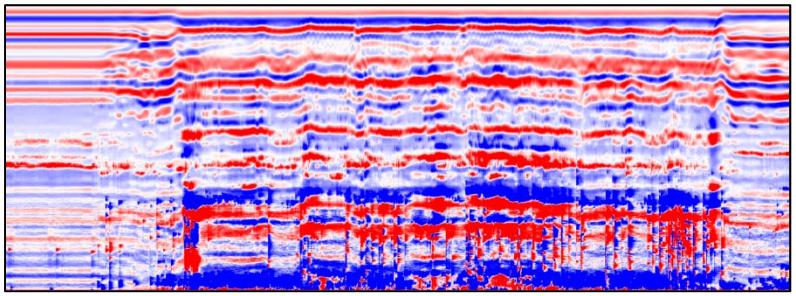
Transect 2



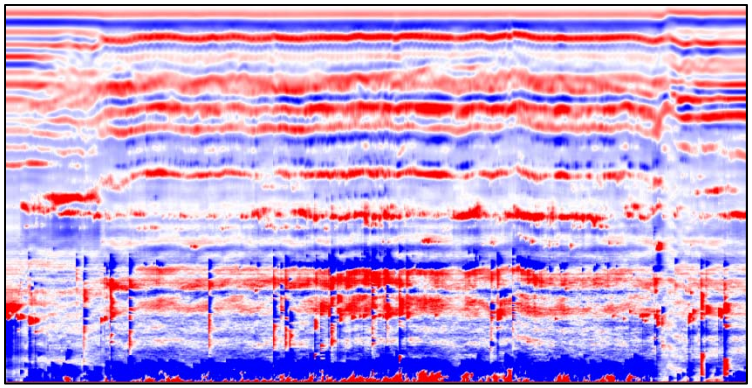
Transect 3



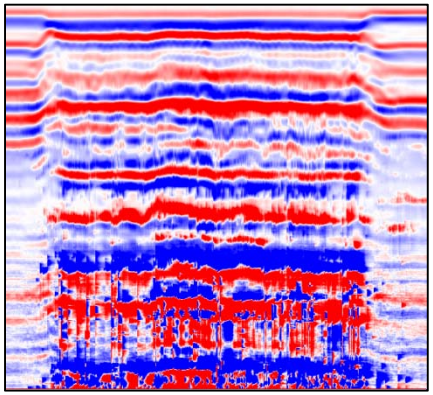
Transect 4



Transect 5



Transect 6



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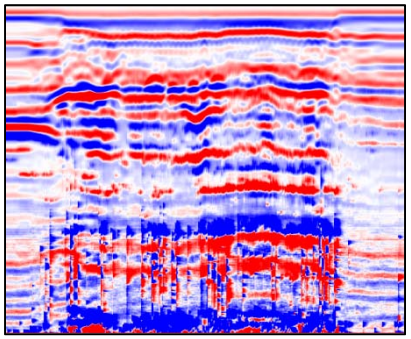

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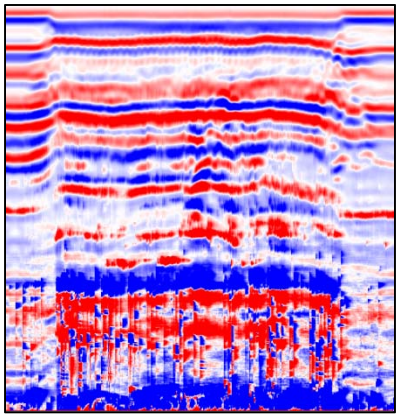

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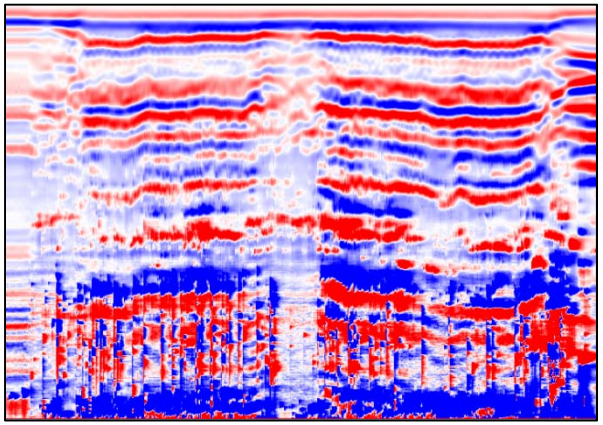

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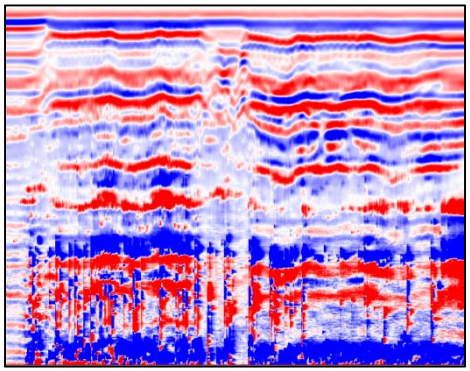

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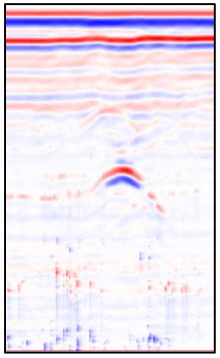

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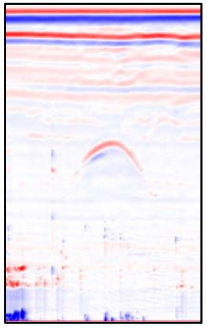

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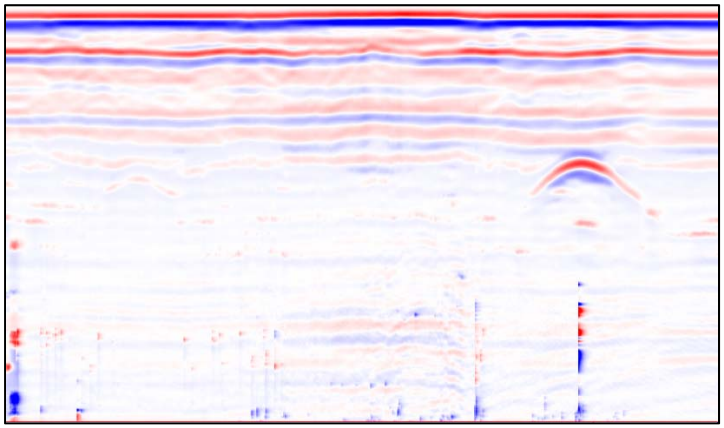

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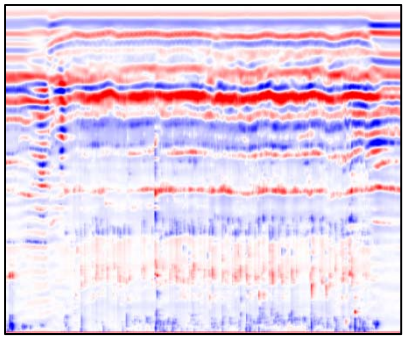

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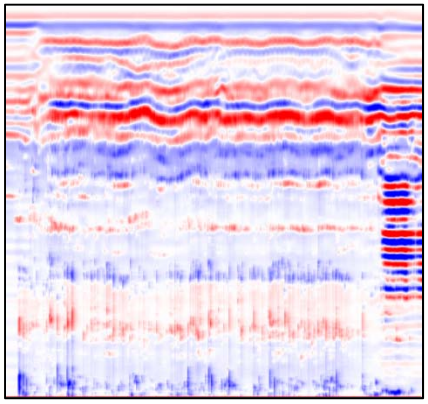
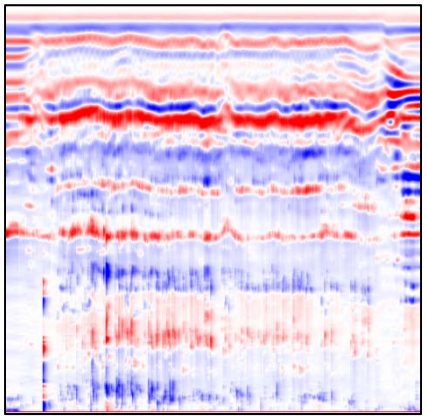


Transect 16



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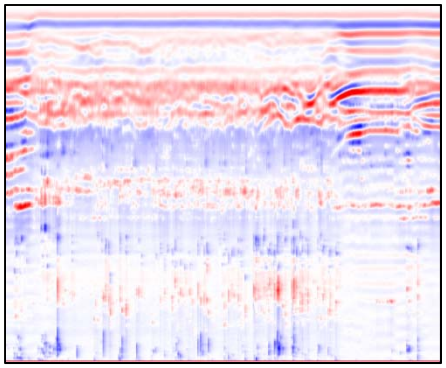

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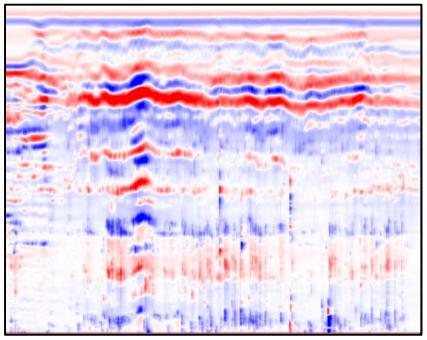

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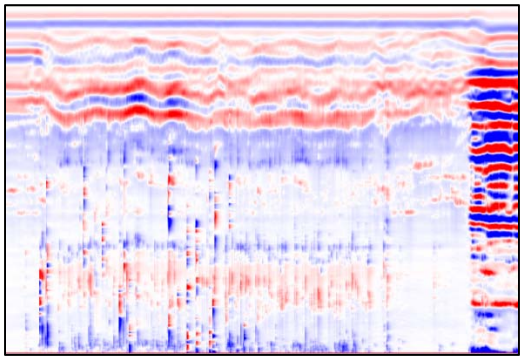
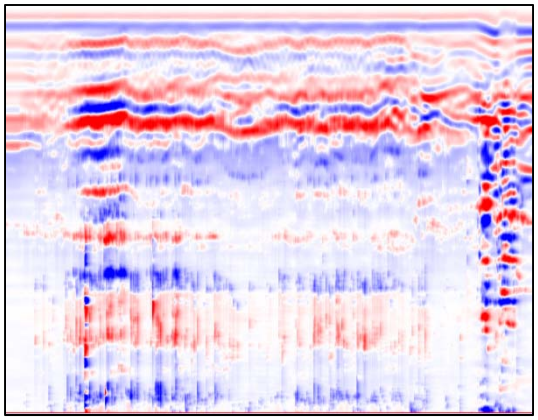
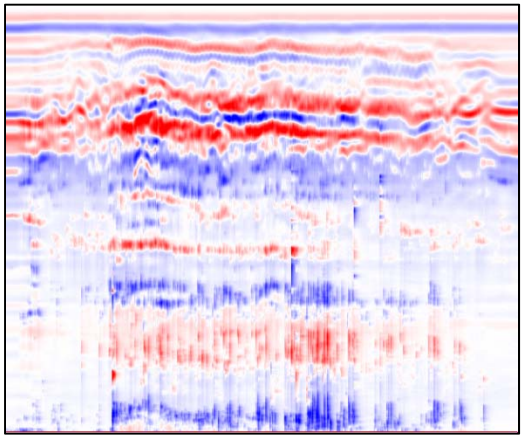


Transect 20



Transect 21

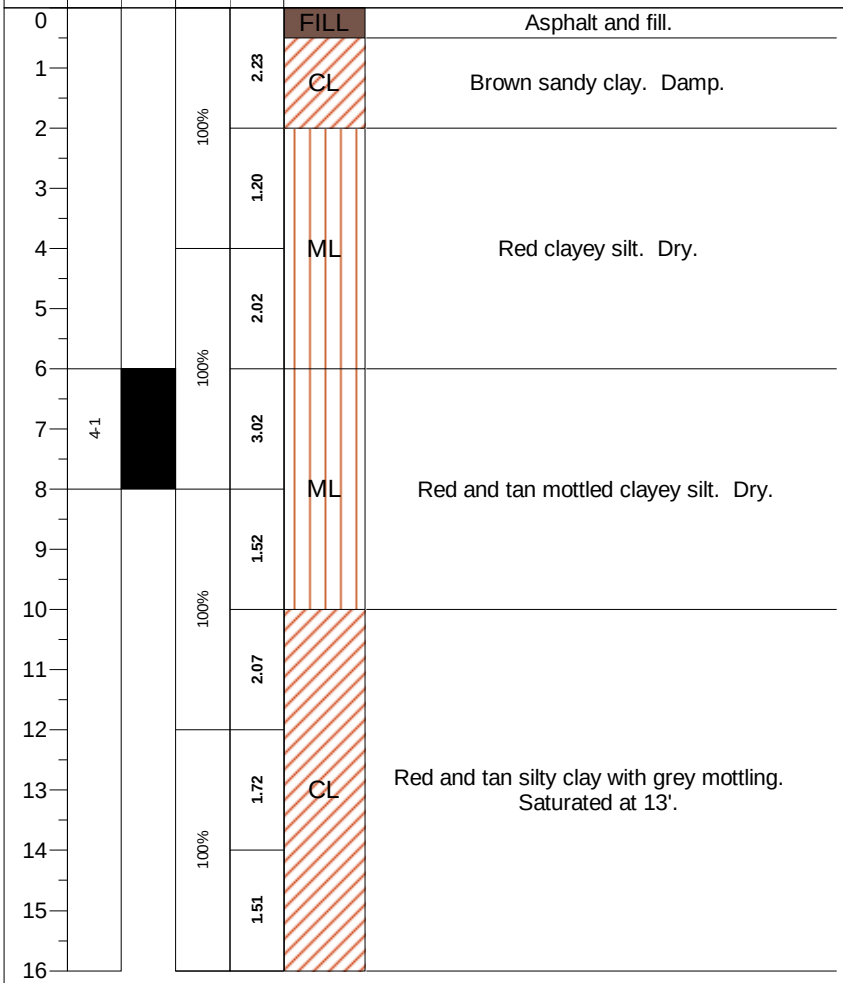


ATTACHMENT B

Solutions-IES
Industrial & Environmental Services

Log of Soil Boring 4-1

BORING LOCATION:	Rowan Co., NC - Parcel 4	PROJECT NUMBER: 2013.0077.NDOT	
DRILLING CONTRACTOR:	Solutions-IES	DATE STARTED: 1/9/2014	DATE FINISHED: 1/9/2014
DRILLING METHOD:	Direct Push	TOTAL DEPTH (ftbgs): 16'	SCREEN INTERVAL (ftbgs): NA
DRILLING EQUIPMENT:	Geoprobe 5400	NORTHING: NA	EASTING: NA
SAMPLING METHOD:	Macro Core	INITIAL DTW: NA	FINAL DTW: NA
LOGGED BY: Stewart Farling	CHECKED BY: MWB		



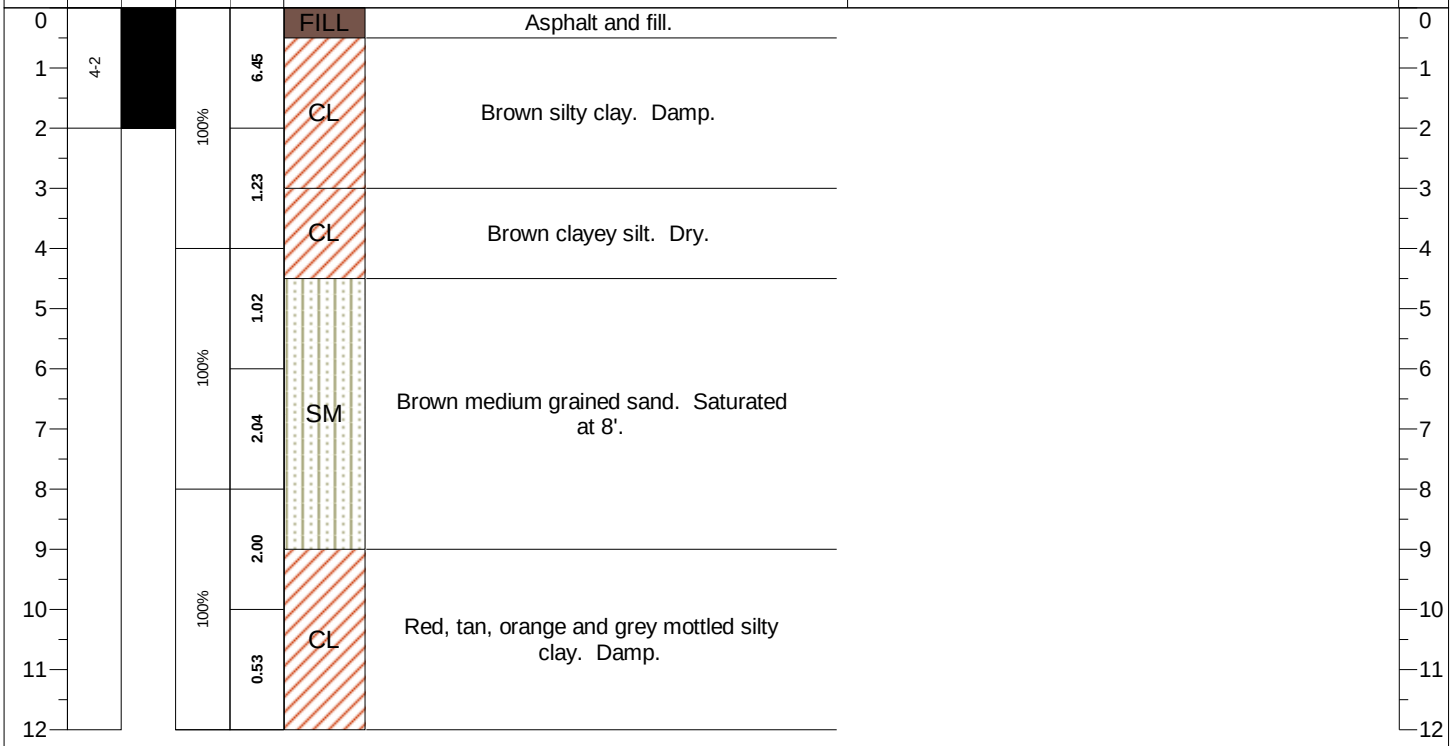
End of Boring.

Notes: Groundwater encountered at approximately 13' bgs.

Solutions-IES
Industrial & Environmental Services

Log of Soil Boring 4-2

BORING LOCATION:	Rowan Co., NC - Parcel 4	PROJECT NUMBER:	2013.0077.NDOT
DRILLING CONTRACTOR:	Solutions-IES	DATE STARTED: 1/9/2014	DATE FINISHED: 1/9/2014
DRILLING METHOD:	Direct Push	TOTAL DEPTH (ftbgs): 12'	SCREEN INTERVAL (ftbgs): NA
DRILLING EQUIPMENT:	Geoprobe 5400	NORTHING: NA	EASTING: NA
SAMPLING METHOD:	Macro Core	INITIAL DTW: NA	FINAL DTW: NA
LOGGED BY: Stewart Farling	CHECKED BY: MWB		



End of Boring.

Notes: Groundwater encountered at approximately 8' bgs.

Solutions-IES
Industrial & Environmental Services

Log of Soil Boring 4-3

BORING LOCATION:	Rowan Co., NC - Parcel 4	PROJECT NUMBER:	2013.0077.NDOT
DRILLING CONTRACTOR:	Solutions-IES	DATE STARTED: 1/9/2014	DATE FINISHED: 1/9/2014
DRILLING METHOD:	Direct Push	TOTAL DEPTH (ftbgs): 12'	SCREEN INTERVAL (ftbgs): NA
DRILLING EQUIPMENT:	Geoprobe 5400	NORTHING: NA	EASTING: NA
SAMPLING METHOD:	Macro Core	INITIAL DTW: NA	FINAL DTW: NA
LOGGED BY: Stewart Farling	CHECKED BY: MWB		

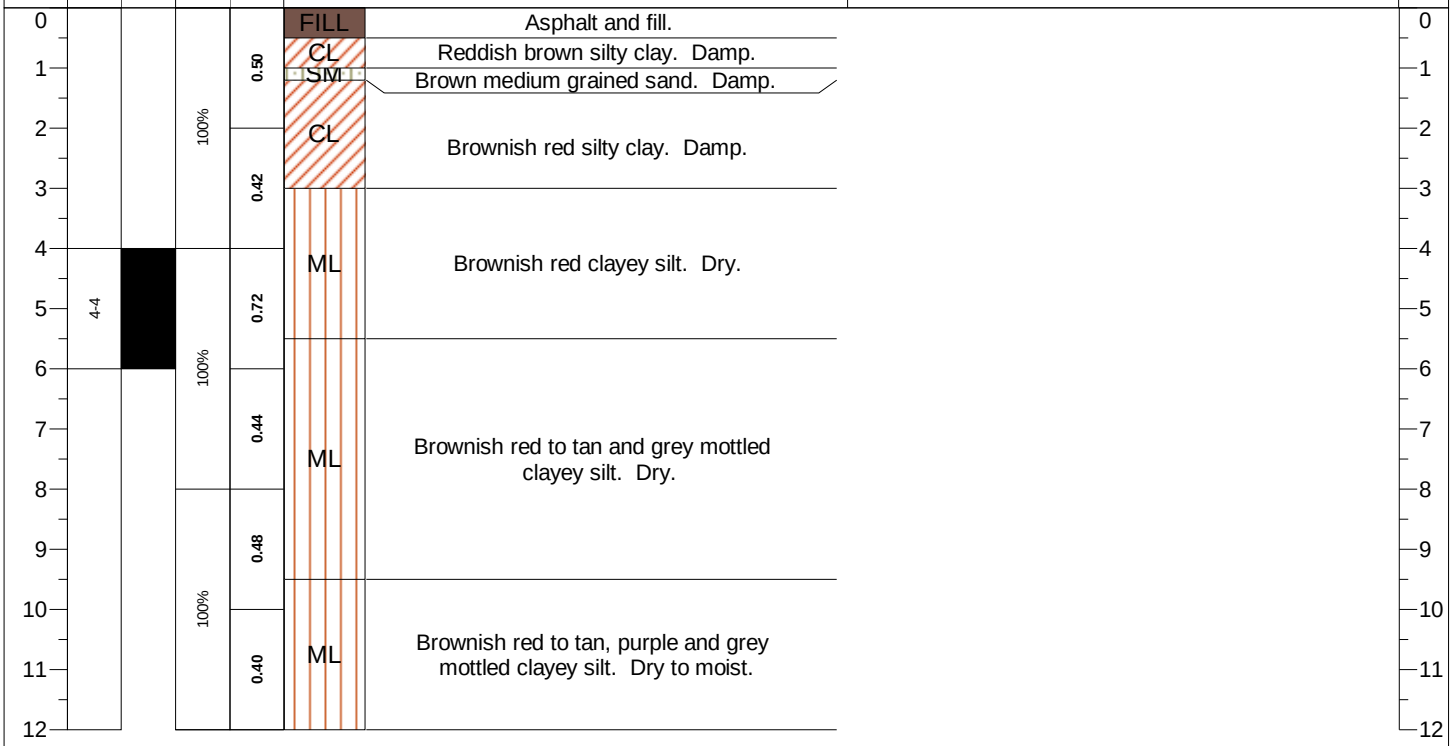
DEPTH (ftbgs)	SAMPLES: Sample ID	SAMPLES: Lab Sample	SAMPLES: Recovery	FID Reading (ppm)	DESCRIPTION OF MATERIALS
0					FILL — Asphalt and fill.
1	4-3		100%	6.03	CL — Brown silty clay. Damp.
2					
3				2.90	
4			100%	3.21	SM — Brown medium grained sand. Saturated at 8'
5					
6				1.43	
7					
8			100%	1.24	CL — Red, tan, orange and grey mottled silty clay. Damp.
9					
10				0.84	
11					
12					End of Boring.

Notes: Groundwater encountered at approximately 8' bgs.

Solutions-IES
Industrial & Environmental Services

Log of Soil Boring 4-4

BORING LOCATION:	Rowan Co., NC - Parcel 4	PROJECT NUMBER:	2013.0077.NDOT
DRILLING CONTRACTOR:	Solutions-IES	DATE STARTED: 1/9/2014	DATE FINISHED: 1/9/2014
DRILLING METHOD:	Direct Push	TOTAL DEPTH (ftbgs): 12'	SCREEN INTERVAL (ftbgs): NA
DRILLING EQUIPMENT:	Geoprobe 5400	NORTHING: NA	EASTING: NA
SAMPLING METHOD:	Macro Core	INITIAL DTW: NA	FINAL DTW: NA
LOGGED BY: Stewart Farling	CHECKED BY: MWB		



End of Boring.

Notes: No groundwater encountered.

Solutions-IES
Industrial & Environmental Services

Log of Soil Boring 4-5

BORING LOCATION:	Rowan Co., NC - Parcel 4	PROJECT NUMBER:	2013.0077.NDOT
DRILLING CONTRACTOR:	Solutions-IES	DATE STARTED: 1/9/2014	DATE FINISHED: 1/9/2014
DRILLING METHOD:	Direct Push	TOTAL DEPTH (ftbgs): 12'	SCREEN INTERVAL (ftbgs): NA
DRILLING EQUIPMENT:	Geoprobe 5400	NORTHING: NA	EASTING: NA
SAMPLING METHOD:	Macro Core	INITIAL DTW: NA	FINAL DTW: NA
LOGGED BY: Stewart Farling	CHECKED BY: MWB		

DEPTH (ftbgs)	SAMPLES: Sample ID	SAMPLES: Lab Sample	SAMPLES: Recovery	FID Reading (ppm)	DESCRIPTION OF MATERIALS
0					FILL — Asphalt and fill.
1			100%	0.42	CL — Reddish orange silty clay. Damp.
2					
3				0.34	ML — Red clayey silty. Dry.
4					
5			100%	0.73	
6					
7				0.94	ML — Red and tan mottled clayey silt. Dry.
8					
9	4-5			1.51	
10			100%		
11				0.25	ML — Red, tan, purple and grey mottled clayey silt. Damp.
12					

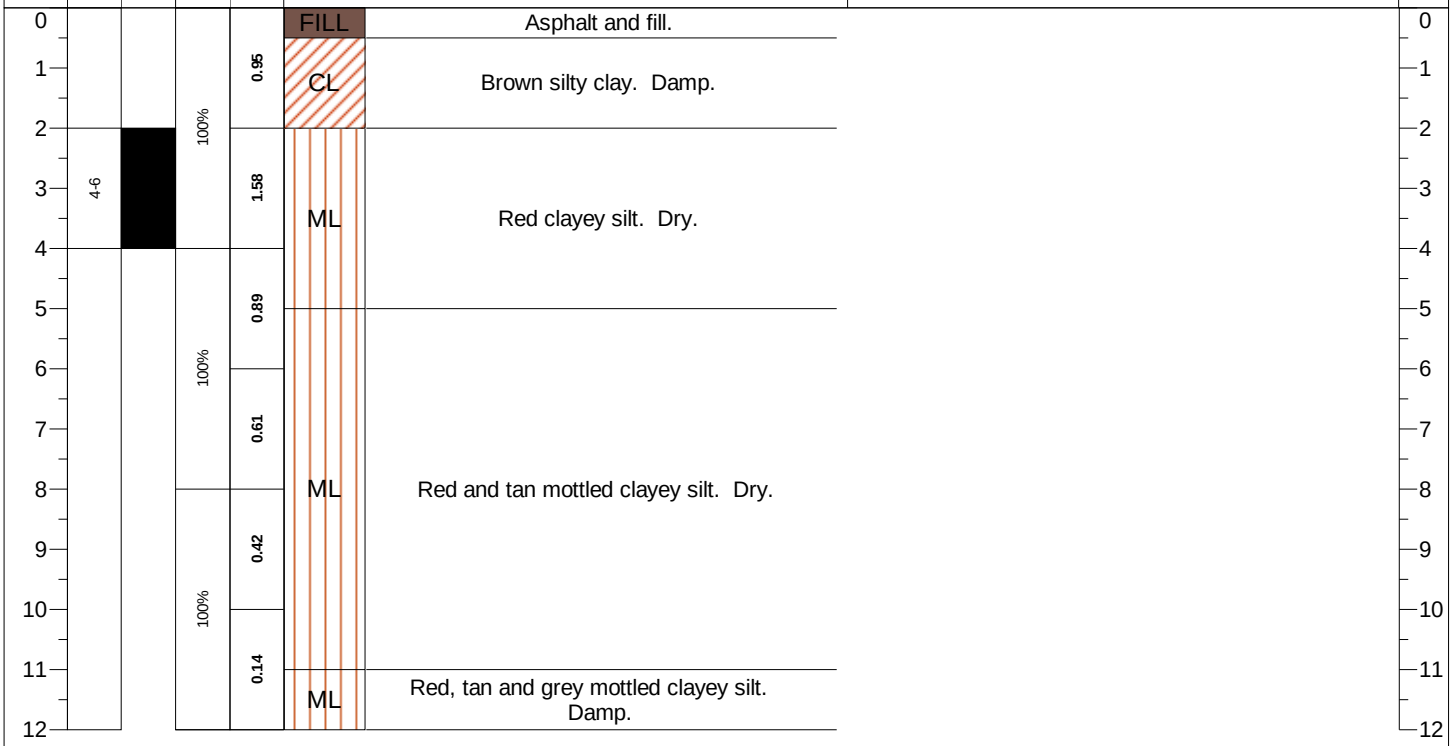
End of Boring.

Notes: No groundwater encountered.

Solutions-IES
Industrial & Environmental Services

Log of Soil Boring 4-6

BORING LOCATION:	Rowan Co., NC - Parcel 4	PROJECT NUMBER:	2013.0077.NDOT
DRILLING CONTRACTOR:	Solutions-IES	DATE STARTED: 1/9/2014	DATE FINISHED: 1/9/2014
DRILLING METHOD:	Direct Push	TOTAL DEPTH (ftbgs): 12'	SCREEN INTERVAL (ftbgs): NA
DRILLING EQUIPMENT:	Geoprobe 5400	NORTHING: NA	EASTING: NA
SAMPLING METHOD:	Macro Core	INITIAL DTW: NA	FINAL DTW: NA
LOGGED BY: Stewart Farling	CHECKED BY: MWB		



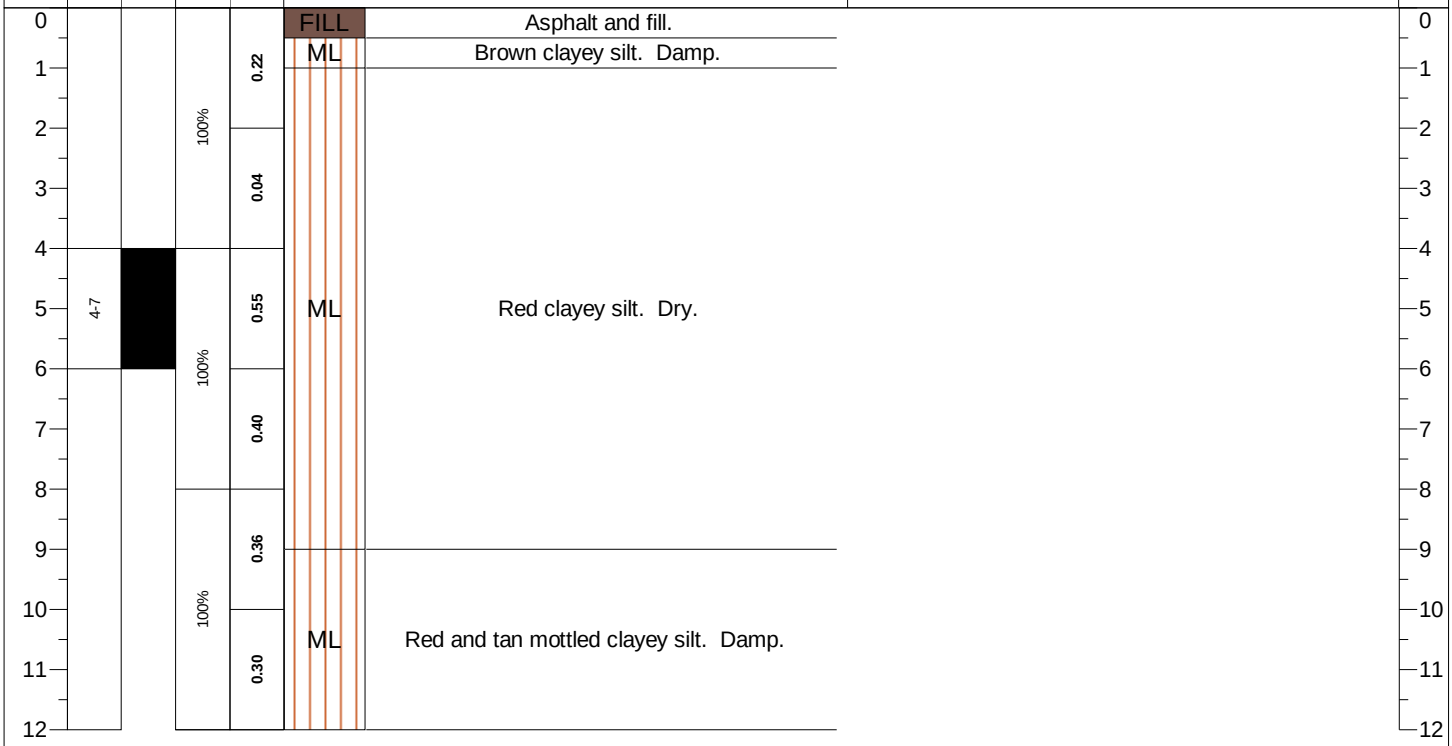
End of Boring.

Notes: No groundwater encountered.

Solutions-IES
Industrial & Environmental Services

Log of Soil Boring 4-7

BORING LOCATION:	Rowan Co., NC - Parcel 4	PROJECT NUMBER:	2013.0077.NDOT
DRILLING CONTRACTOR:	Solutions-IES	DATE STARTED: 1/9/2014	DATE FINISHED: 1/9/2014
DRILLING METHOD:	Direct Push	TOTAL DEPTH (ftbgs): 12'	SCREEN INTERVAL (ftbgs): NA
DRILLING EQUIPMENT:	Geoprobe 5400	NORTHING: NA	EASTING: NA
SAMPLING METHOD:	Macro Core	INITIAL DTW: NA	FINAL DTW: NA
LOGGED BY: Stewart Farling	CHECKED BY: MWB		



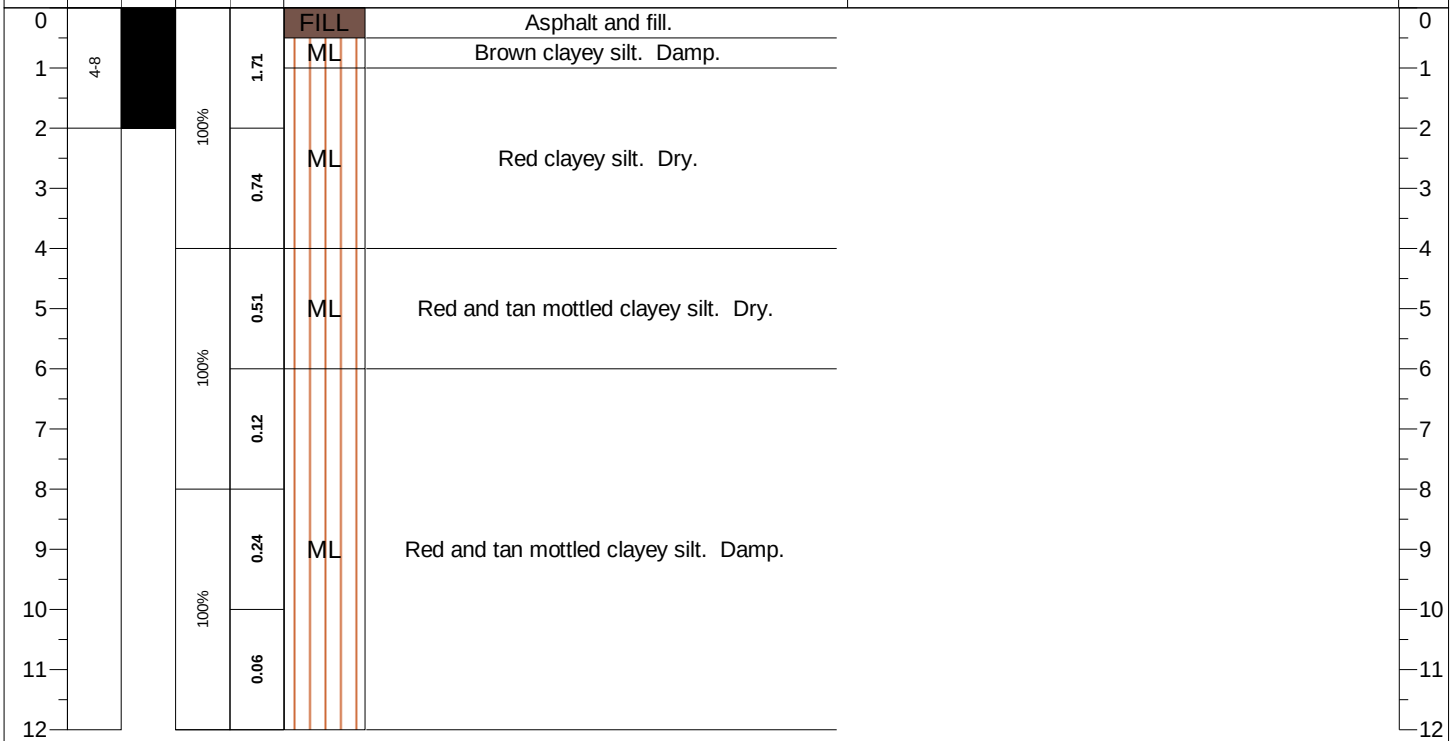
End of Boring.

Notes: No groundwater encountered.

Solutions-IES
Industrial & Environmental Services

Log of Soil Boring 4-8

BORING LOCATION:	Rowan Co., NC - Parcel 4	PROJECT NUMBER:	2013.0077.NDOT
DRILLING CONTRACTOR:	Solutions-IES	DATE STARTED: 1/9/2014	DATE FINISHED: 1/9/2014
DRILLING METHOD:	Direct Push	TOTAL DEPTH (ftbgs): 12'	SCREEN INTERVAL (ftbgs): NA
DRILLING EQUIPMENT:	Geoprobe 5400	NORTHING: NA	EASTING: NA
SAMPLING METHOD:	Macro Core	INITIAL DTW: NA	FINAL DTW: NA
LOGGED BY: Stewart Farling	CHECKED BY: MWB		



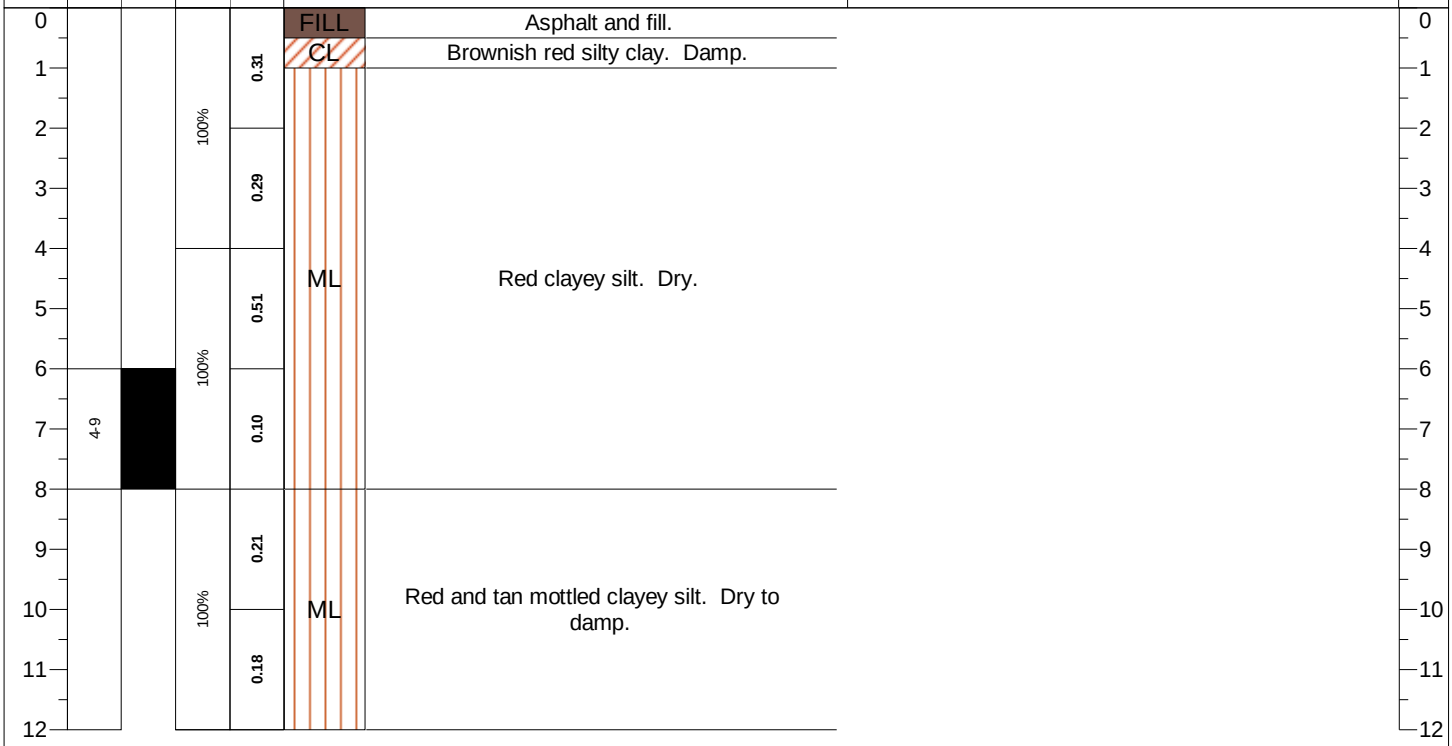
End of Boring.

Notes: No groundwater encountered.

Solutions-IES
Industrial & Environmental Services

Log of Soil Boring 4-9

BORING LOCATION:	Rowan Co., NC - Parcel 4	PROJECT NUMBER:	2013.0077.NDOT
DRILLING CONTRACTOR:	Solutions-IES	DATE STARTED: 1/9/2014	DATE FINISHED: 1/9/2014
DRILLING METHOD:	Direct Push	TOTAL DEPTH (ftbgs): 12'	SCREEN INTERVAL (ftbgs): NA
DRILLING EQUIPMENT:	Geoprobe 5400	NORTHING: NA	EASTING: NA
SAMPLING METHOD:	Macro Core	INITIAL DTW: NA	FINAL DTW: NA
LOGGED BY: Stewart Farling	CHECKED BY: MWB		



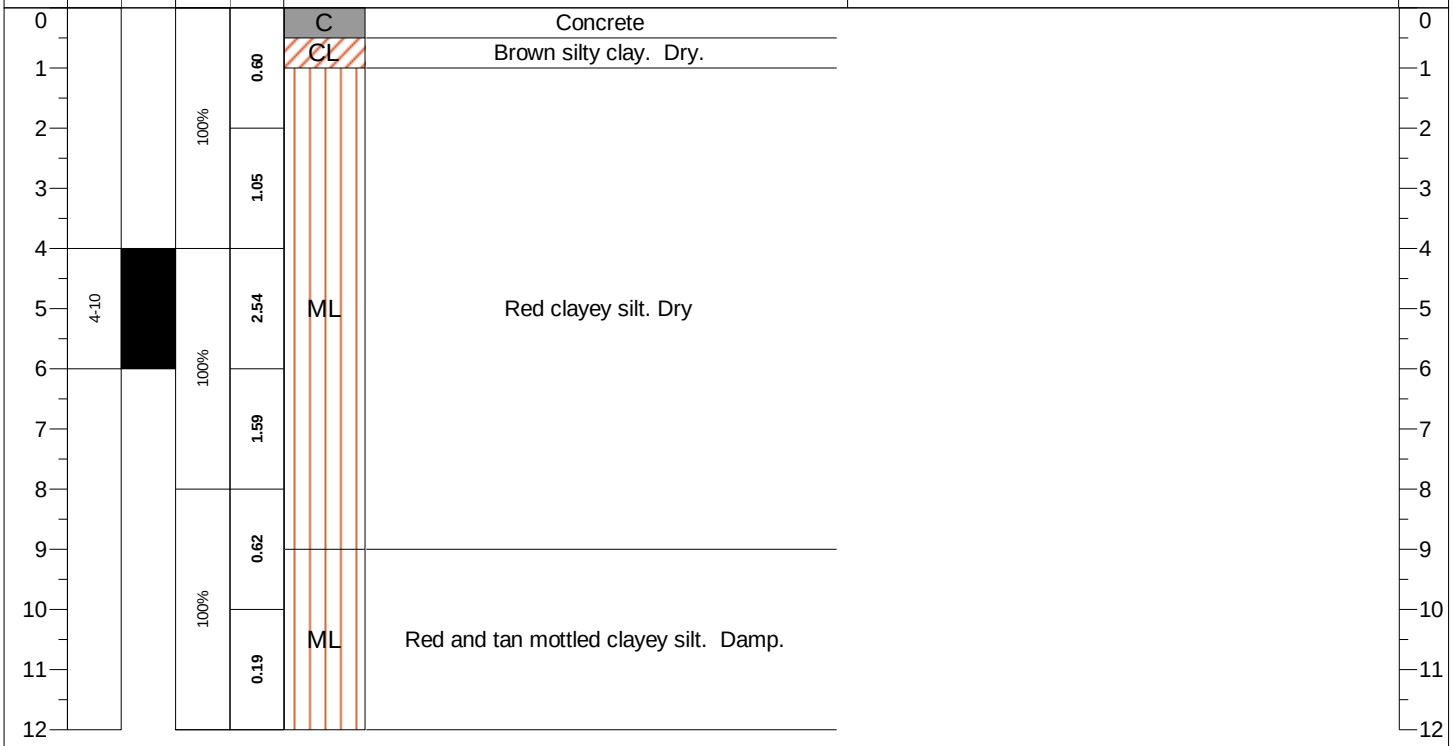
End of Boring.

Notes: No groundwater encountered.

Solutions-IES
Industrial & Environmental Services

Log of Soil Boring 4-10

BORING LOCATION:	Rowan Co., NC - Parcel 4	PROJECT NUMBER:	2013.0077.NDOT
DRILLING CONTRACTOR:	Solutions-IES	DATE STARTED: 1/9/2014	DATE FINISHED: 1/9/2014
DRILLING METHOD:	Direct Push	TOTAL DEPTH (ftbgs): 12'	SCREEN INTERVAL (ftbgs): NA
DRILLING EQUIPMENT:	Geoprobe 5400	NORTHING: NA	EASTING: NA
SAMPLING METHOD:	Macro Core	INITIAL DTW: NA	FINAL DTW: NA
LOGGED BY: Stewart Farling	CHECKED BY: MWB		



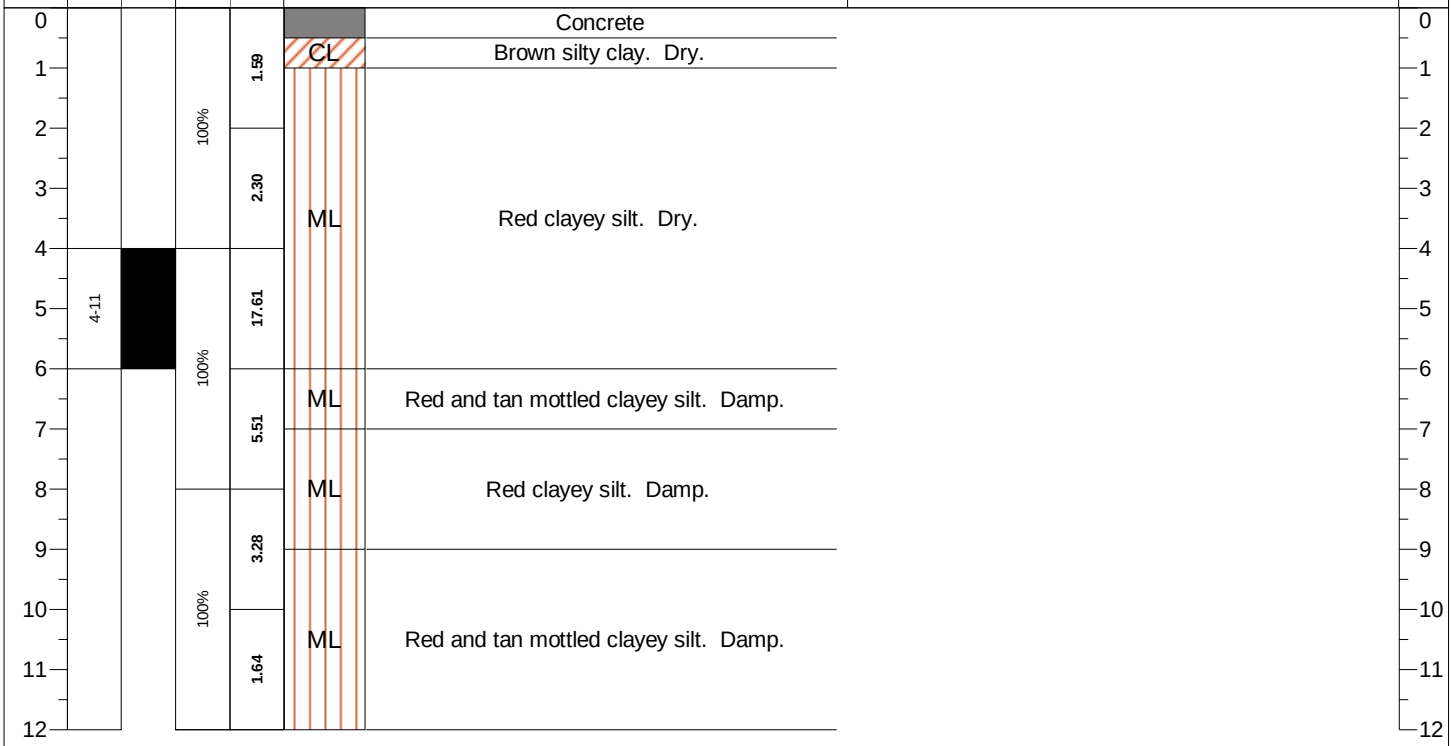
End of Boring.

Notes: No groundwater encountered.

Solutions-IES
Industrial & Environmental Services

Log of Soil Boring 4-11

BORING LOCATION:	Rowan Co., NC - Parcel 4	PROJECT NUMBER:	2013.0077.NDOT
DRILLING CONTRACTOR:	Solutions-IES	DATE STARTED: 1/9/2014	DATE FINISHED: 1/9/2014
DRILLING METHOD:	Direct Push	TOTAL DEPTH (ftbgs): 12'	SCREEN INTERVAL (ftbgs): NA
DRILLING EQUIPMENT:	Geoprobe 5400	NORTHING: NA	EASTING: NA
SAMPLING METHOD:	Macro Core	INITIAL DTW: NA	FINAL DTW: NA
LOGGED BY: Stewart Farling	CHECKED BY: MWB		



End of Boring.

Notes: No groundwater encountered.

Solutions-IES
Industrial & Environmental Services

Log of Soil Boring 4-12

BORING LOCATION:	Rowan Co., NC - Parcel 4	PROJECT NUMBER:	2013.0077.NDOT
DRILLING CONTRACTOR:	Solutions-IES	DATE STARTED: 1/9/2014	DATE FINISHED: 1/9/2014
DRILLING METHOD:	Direct Push	TOTAL DEPTH (ftbgs): 12'	SCREEN INTERVAL (ftbgs): NA
DRILLING EQUIPMENT:	Geoprobe 5400	NORTHING: NA	EASTING: NA
SAMPLING METHOD:	Macro Core	INITIAL DTW: NA	FINAL DTW: NA
LOGGED BY: Stewart Farling	CHECKED BY: MWB		

DEPTH (ftbgs)	SAMPLES: Sample ID	SAMPLES: Lab Sample	SAMPLES: Recovery	FID Reading (ppm)		DESCRIPTION OF MATERIALS
0–2	4-12		100%	0.89	FILL	Asphalt and fill.
					CL	Brown silty clay. Damp.
2–5				0.00	ML	Red clayey silt. Dry.
5–8			100%	0.09		
				0.08		
8–12			100%	0.26	ML	Red and tan mottled clayey silt. Damp at 8'.
				0.06		

End of Boring.

Notes: No groundwater encountered.

ATTACHMENT C

PHOTO 1- BORINGS AT EXISTING UST BASIN LOOKING NORTHWEST

PHOTO 2 - BORINGS AT EXISTING UST BASIN LOOKING NORTH

PHOTO 3 - BORING AT EXISTING UST BASIN LOOKING NORTH

PHOTO 4 - BORING AT EXISTING UST BASIN LOOKING WEST

PHOTO 5 - BORINGS AT THE SITE LOOKING NORTHWEST

PHOTO 6 - BORINGS AT EXISTING UST BASIN LOOKING WEST

PHOTO 7 - BORING AT FORMER PUMP ISLAND LOOKING SOUTHWEST

PHOTO 8 - BORING AT FORMER PUMP ISLAND LOOKING SOUTH

PHOTO 9 - STEP-OUT BORING IN PARKING LOT LOOKING SOUTH

PHOTO 10 - BORING AT FUEL OIL AST LOOKING EAST

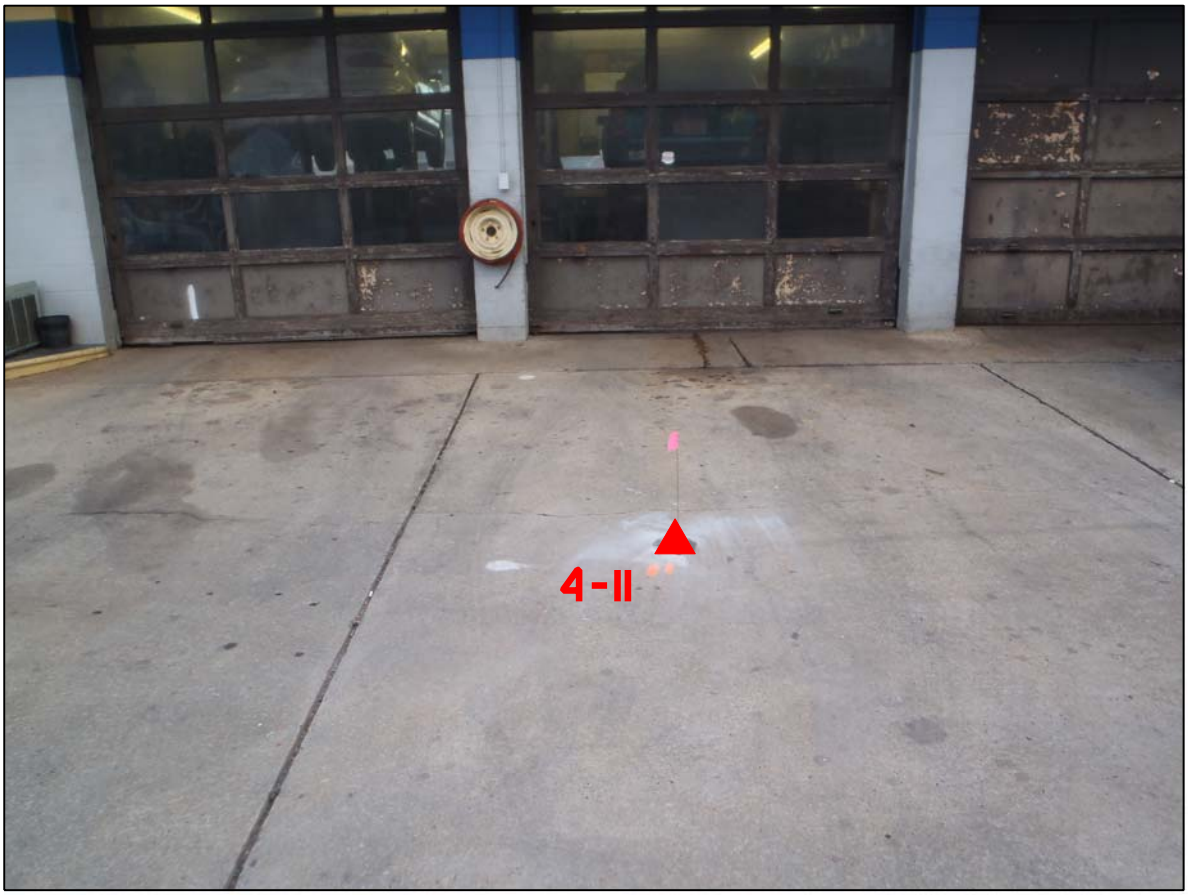


PHOTO 11 - BORING IN FRONT OF BAYS LOOKING EAST

PHOTO 12 - BORING AT WASTE/USED OIL AST LOOKING NORTH

ATTACHMENT D

Hydrocarbon Analysis Results

Client: Solutions IES
Address: Raleigh, NC

Samples taken Thursday, January 09, 2014
Samples extracted Thursday, January 09, 2014
Samples analysed Friday, January 10, 2014

Contact: Mike Branson

Operator Bob George

Project: Rowan Co. PSA

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	4-1	21.3	<1.1	4.6	40.5	45.1	26.14	0.36	< 0.053	95.9	3.6	0.5	Deg.Diesel 93.1%
s	4-2	22.6	<1.1	<1.1	4.2	4.2	3.06	< 0.11	< 0.057	58.7	32.8	8.5	Deg.Diesel 0.7%
s	4-3	19.4	<1	<1	13.8	13.8	5.41	< 0.1	< 0.049	41.4	51.1	7.5	Degraded Fuel 79.2%
s	4-4	11.7	<0.6	<0.6	<0.6	<0.6	< 0.58	< 0.06	< 0.029	0	0	100	Match not possible
s	4-5	12.3	<0.6	<0.6	<0.6	<0.6	< 0.61	< 0.06	< 0.031	0	26.3	73.7	Match not possible
s	4-6	12.6	<0.6	<0.6	<0.6	<0.6	< 0.63	< 0.06	< 0.032	0	0	100	Match not possible
s	4-7	12.2	<0.6	<0.6	<0.6	<0.6	< 0.61	< 0.06	< 0.03	0	58.7	41.3	Match not possible

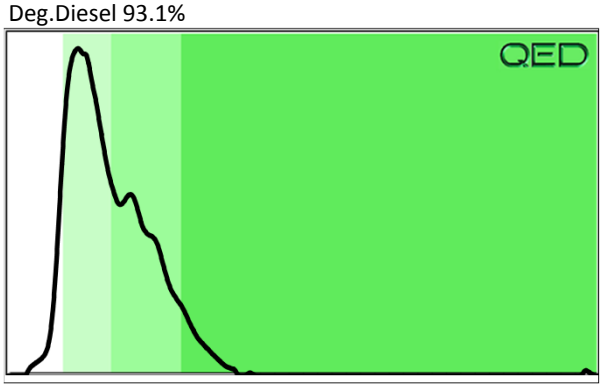
Initial Calibrator QC check OK
Low Range Calibrator Final check OK 0.075
High Range Calibrator Final check OK 1.486

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

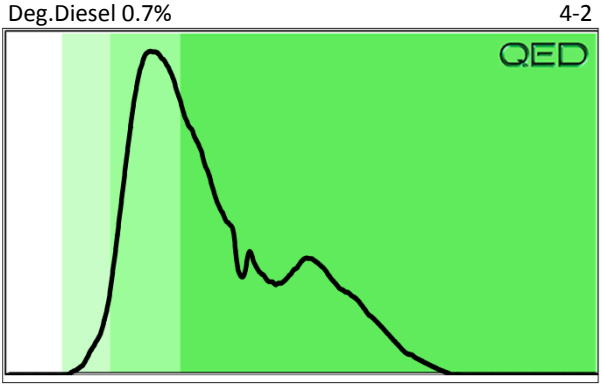
Fingerprints provide a tentative hydrocarbon identification based on operator selected library matches
Fingerprint match abbreviations Est = Specific calibrator not used, result estimated (PFM)= Poor library fingerprint match
(SBS)= site specific background subracted (LBS)= Library background subtracted % = match confidence

Project Rowan Co. PSA **Date** Friday, January 10, 2014

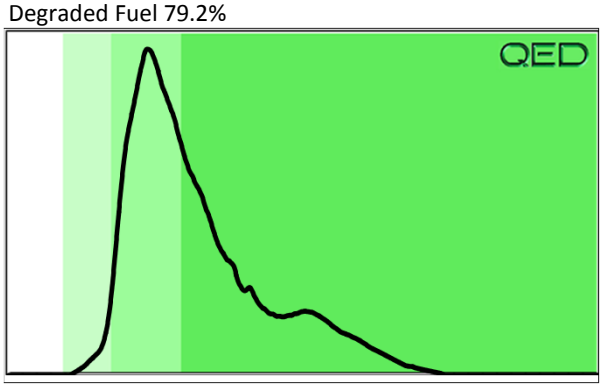
Deg.Diesel 93.1% 4-1



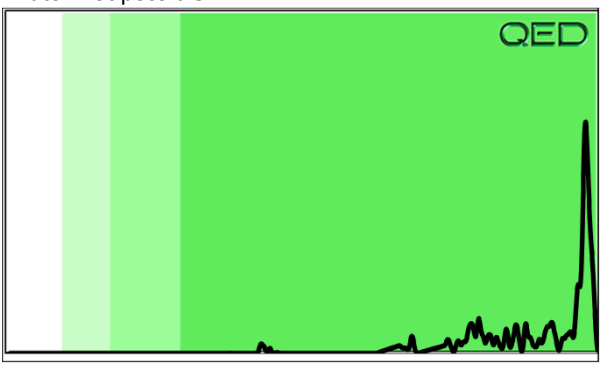
Deg.Diesel 0.7% 4-2



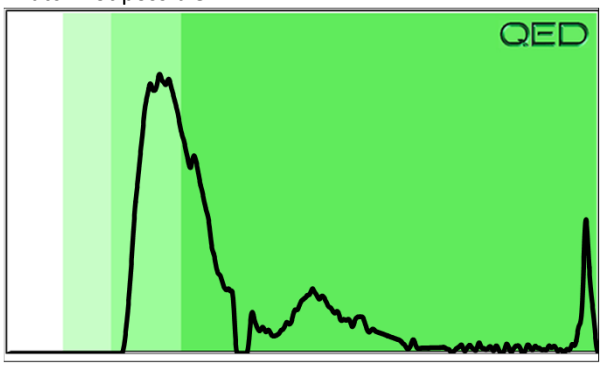
Degraded Fuel 79.2% 4-3



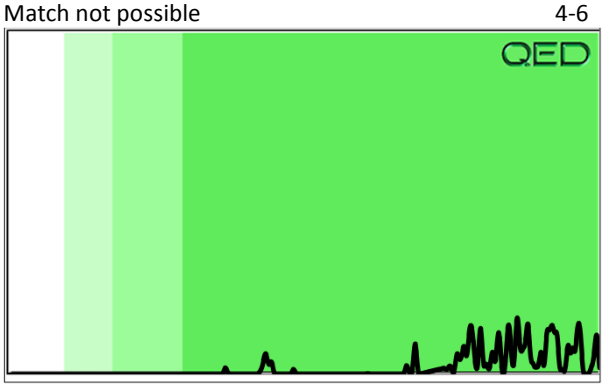
Match not possible 4-4



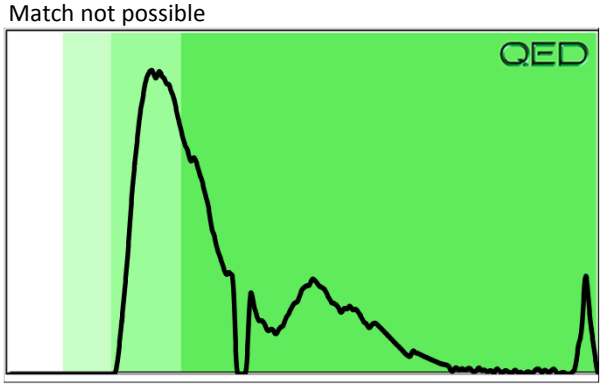
Match not possible 4-5



Match not possible 4-6



Match not possible 4-7



Hydrocarbon Analysis Results

Client: Solutions IES
Address: Raleigh, NC

Samples taken Thursday, January 09, 2014
Samples extracted Thursday, January 09, 2014
Samples analysed Friday, January 10, 2014

Contact: Mike Branson

Operator Bob George

Project: Rowan Co. PSA

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	4-8	20.6	<1	<1	1.3	1.3	< 1.03	0.13	< 0.052	59.4	26.1	14.5	V.Deg.PHC (PFM)
s	4-9	11.4	<0.6	<0.6	<0.6	<0.6	< 0.57	< 0.06	< 0.028	0	0	100	Match not possible
s	4-10	13.2	<0.7	<0.7	<0.7	<0.7	< 0.66	< 0.07	< 0.033	0	0	100	Match not possible
s	4-11	11.9	<0.6	<0.6	<0.6	<0.6	< 0.59	< 0.06	< 0.03	0	0	100	Match not possible
s	4-12	12.7	<0.6	<0.6	<0.6	<0.6	< 0.64	< 0.06	< 0.032	0	26.6	73.4	Match not possible

Initial Calibrator QC check OK

Low Range Calibrator Final check OK 0.085

High Range Calibrator Final check OK 1.469

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

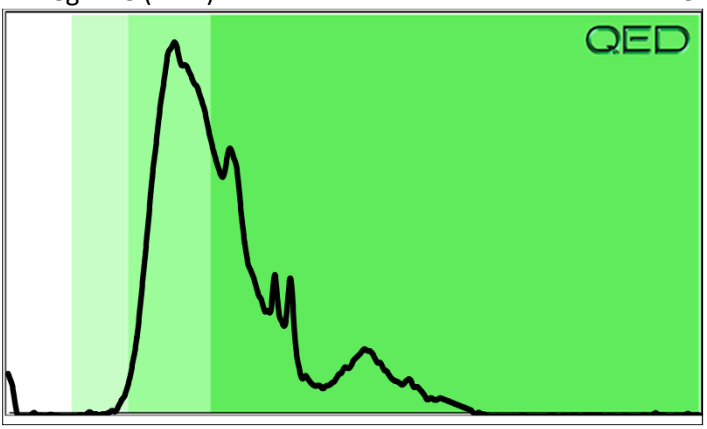
Fingerprints provide a tentative hydrocarbon identification based on operator selected library matches

Fingerprint match abbreviations Est = Specific calibrator not used, result estimated (PFM)= Poor library fingerprint match

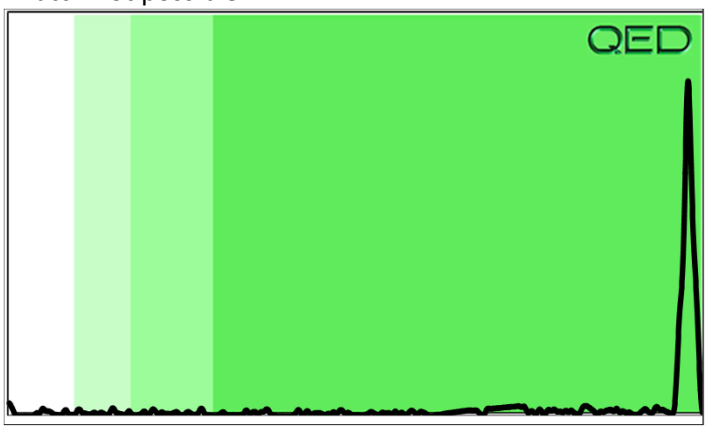
(SBS)= site specific background subracted (LBS)= Library background subtracted % = match confidence

Project Rowan Co. PSA **Date** Friday, January 10, 2014

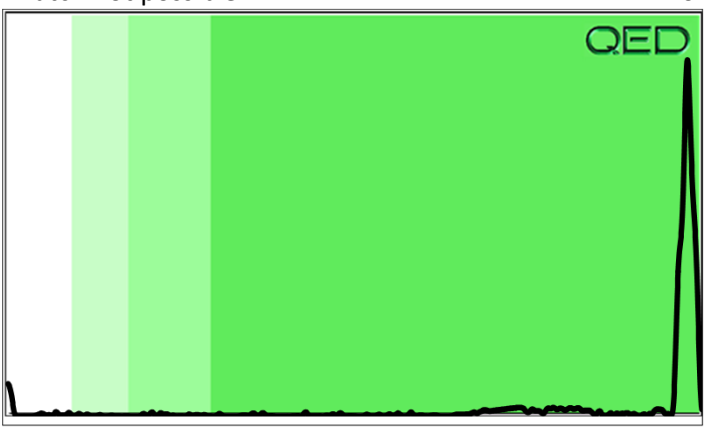
V.Deg.PHC (PFM) 4-8



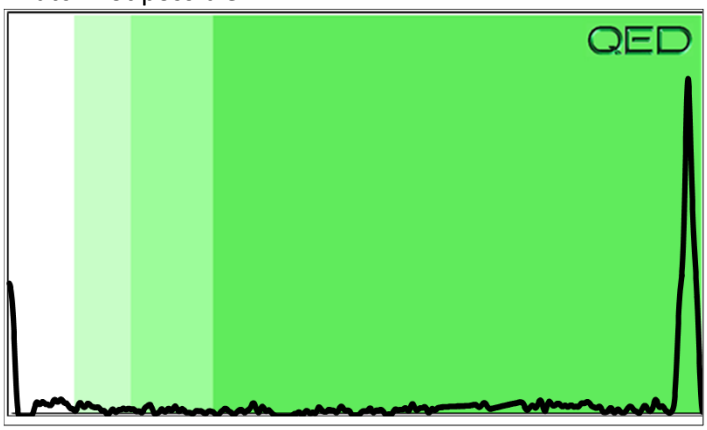
Match not possible 4-9



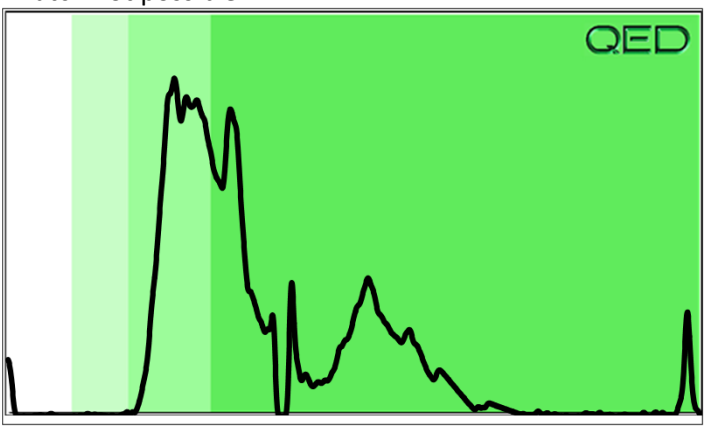
Match not possible 4-10



Match not possible 4-11



Match not possible 4-12



CHAIN-OF-CUSTODY RECORD

2012

KB LABS inc. Mobile Laboratory Services

☐ 25132 SW 1st Avenue
Newberry, FL 32669
TEL (352) 367-0073
FAX (352) 472-5832

☐ 200 Quade Drive
Cary, NC 27513
TEL (919) 678-0030

MOBILE UNIT #

CLIENT NAME	PROJECT NAME & ADDRESS
Solutions-IES	Rowan Co. PSA

SAMPLERS	CONTACT PERSON	BATCH # (Lab Use Only)
Stewart Farley	Mike Branson	

IDENTIFY PARAMETERS DESIRED AND NO. OF CONTAINERS: VOLATILES; DRO/GRO [illegible]

PRESERVATION: C Chilled; H HCL; Ot Other (see Remarks)

SAMPLE FIELD ID.\ NUMBER	DATE SAMPLED	TIME SAMPLED	COMP.	GRAB	DATE REC'D	TIME REC'D	STATION LOCATION / No.	SAMPLE MATRIX	NUMBER OF CONTAINERS	VOLATILES	DRO/GRO			COMMENT / SAMPLE PRE FIX
4-1	1/4/14	1600		X				S	1		X			
4-2	↓	1602		↓				↓	↓		↓			
4-3	↓	1604		↓				↓	↓		↓			
4-4	↓	1606		↓				↓	↓		↓			
4-5	↓	1608		↓				↓	↓		↓			
4-6	↓	1610		↓				↓	↓		↓			
4-7	↓	1612		↓				↓	↓		↓			
4-8	↓	1614		↓				↓	↓		↓			
4-9	↓	1616		↓				↓	↓		↓			
4-10	↓	1620		↓				↓	↓		↓			
4-11	↓	1622		↓				↓	↓		↓			
4-12	↓	1640		↓				↓	↓		↓			

Precleaned Containers Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Date / Time	Remarks and Observations
[signature]	1/4/14 1220	[signature]	1/4/14 1220	
Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Date / Time	

Matrix Types S Soil SW Surface Water GW Ground Water SG Soil Gas

Pace Analytical Services, Inc.
205 East Meadow Road - Suite A
Eden, NC 27288
(336)623-8921

Pace Analytical Services, Inc.
2225 Riverside Dr.
Asheville, NC 28804
(828)254-7176

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

January 29, 2014

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

RE: Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

Dear Chemical Engineer:
Enclosed are the analytical results for sample(s) received by the laboratory on January 11, 2014. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

The laboratory report is being reissued on January 29, 2014, due to laboratory log in error.

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

Sincerely,

Angela M. Baioni

Angela Baioni
angela.baioni@pacelabs.com
Project Manager

Enclosures

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CERTIFICATIONS

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

Charlotte Certification IDs
9800 Kincey Ave. Ste 100, Huntersville, NC 28078
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12
South Carolina Certification #: 99006001
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
West Virginia Certification #: 357
Virginia/VELAP Certification #: 460221

Asheville Certification IDs
2225 Riverside Dr., Asheville, NC 28804
Florida/NELAP Certification #: E87648
Massachusetts Certification #: M-NC030
North Carolina Drinking Water Certification #: 37712
North Carolina Wastewater Certification #: 40
South Carolina Certification #: 99030001
West Virginia Certification #: 356
Virginia/VELAP Certification #: 460222

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

Lab ID	Sample ID	Matrix	Date Collected	Date Received
		Solid	01/08/14 15:00	01/11/14 10:20
		Solid	01/08/14 15:01	01/11/14 10:20
		Solid	01/08/14 15:02	01/11/14 10:20
		Solid	01/08/14 15:03	01/11/14 10:20
		Solid	01/08/14 15:04	01/11/14 10:20
		Solid	01/08/14 15:05	01/11/14 10:20
		Solid	01/08/14 15:06	01/11/14 10:20
92186113008	**4-1**	Solid	01/09/14 16:00	01/11/14 10:20
92186113009	**4-2**	Solid	01/09/14 16:02	01/11/14 10:20
92186113010	**4-3**	Solid	01/09/14 16:04	01/11/14 10:20
92186113011	**4-4**	Solid	01/09/14 16:06	01/11/14 10:20
92186113012	**4-5**	Solid	01/09/14 16:08	01/11/14 10:20
92186113013	**4-6**	Solid	01/09/14 16:10	01/11/14 10:20
92186113014	**4-7**	Solid	01/09/14 16:12	01/11/14 10:20
92186113015	**4-8**	Solid	01/09/14 16:14	01/11/14 10:20
92186113016	**4-9**	Solid	01/09/14 16:16	01/11/14 10:20
92186113017	**4-10**	Solid	01/09/14 16:20	01/11/14 10:20
92186113018	**4-11**	Solid	01/09/14 16:22	01/11/14 10:20
92186113019	**4-12**	Solid	01/09/14 16:40	01/11/14 10:20
92186113020	**27-1**	Solid	01/08/14 17:15	01/11/14 10:20
92186113021	**27-2**	Solid	01/08/14 17:16	01/11/14 10:20
92186113022	**27-3**	Solid	01/08/14 17:17	01/11/14 10:20
92186113023	**27-4**	Solid	01/09/14 08:55	01/11/14 10:20
92186113024	**27-5**	Solid	01/09/14 08:55	01/11/14 10:20
92186113025	**27-6**	Solid	01/09/14 08:57	01/11/14 10:20

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SAMPLE ANALYTE COUNT

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 8015 Modified	NU1	2	PASI-C
		EPA 8015 Modified	GAW	2	PASI-C
		ASTM D2974-87	TNM	1	PASI-C
		EPA 8015 Modified	NU1	2	PASI-C
		EPA 8015 Modified	GAW	2	PASI-C
		ASTM D2974-87	TNM	1	PASI-C
		EPA 8015 Modified	NU1	2	PASI-C
		EPA 8015 Modified	GAW	2	PASI-C
		ASTM D2974-87	TNM	1	PASI-C
		EPA 8015 Modified	NU1	2	PASI-C
		EPA 8015 Modified	GAW	2	PASI-C
		ASTM D2974-87	TNM	1	PASI-C
		EPA 8015 Modified	NU1	2	PASI-C
		EPA 8015 Modified	GAW	2	PASI-C
		ASTM D2974-87	TNM	1	PASI-C
		EPA 8015 Modified	NU1	2	PASI-C
		EPA 8015 Modified	GAW	2	PASI-C
		ASTM D2974-87	TNM	1	PASI-C
		EPA 8015 Modified	NU1	2	PASI-C
		EPA 8015 Modified	GAW	2	PASI-C
		ASTM D2974-87	TNM	1	PASI-C
92186113008	**4-1**	EPA 8015 Modified	NU1	2	PASI-C
		EPA 8015 Modified	GAW	2	PASI-C
		ASTM D2974-87	TNM	1	PASI-C
92186113009	**4-2**	EPA 8015 Modified	NU1	2	PASI-C
		EPA 8015 Modified	GAW	2	PASI-C
		ASTM D2974-87	TNM	1	PASI-C
92186113010	**4-3**	EPA 8015 Modified	NU1	2	PASI-C
		EPA 8015 Modified	GAW	2	PASI-C
		ASTM D2974-87	TNM	1	PASI-C
92186113011	**4-4**	EPA 8015 Modified	NU1	2	PASI-C
		EPA 8015 Modified	GAW	2	PASI-C
		ASTM D2974-87	TNM	1	PASI-C
92186113012	**4-5**	EPA 8015 Modified	NU1	2	PASI-C
		EPA 8015 Modified	GAW	2	PASI-C
		ASTM D2974-87	TNM	1	PASI-C
92186113013	**4-6**	EPA 8015 Modified	NU1	2	PASI-C

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SAMPLE ANALYTE COUNT

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 8015 Modified	GAW	2	PASI-C
		ASTM D2974-87	TNM	1	PASI-C
92186113014	**4-7**	EPA 8015 Modified	NU1	2	PASI-C
		EPA 8015 Modified	GAW	2	PASI-C
		ASTM D2974-87	TNM	1	PASI-C
92186113015	**4-8**	EPA 8015 Modified	GAW	2	PASI-C
		ASTM D2974-87	TNM	1	PASI-C
92186113016	**4-9**	EPA 8015 Modified	NU1	2	PASI-C
		EPA 8015 Modified	GAW	2	PASI-C
		ASTM D2974-87	TNM	1	PASI-C
92186113017	**4-10**	EPA 8015 Modified	NU1	2	PASI-C
		EPA 8015 Modified	GAW	2	PASI-C
		EPA 6010	JMW	7	PASI-A
		EPA 7471	MTS	1	PASI-A
		EPA 8270	RES	74	PASI-C
		EPA 8260	DLK	70	PASI-C
		ASTM D2974-87	TNM	1	PASI-C
92186113018	**4-11**	EPA 8015 Modified	NU1	2	PASI-C
		EPA 8015 Modified	GAW	2	PASI-C
		EPA 6010	JMW	7	PASI-A
		EPA 7471	MTS	1	PASI-A
		EPA 8270	RES	74	PASI-C
		EPA 8260	DLK	70	PASI-C
		ASTM D2974-87	TNM	1	PASI-C
92186113019	**4-12**	EPA 8015 Modified	NU1	2	PASI-C
		EPA 8015 Modified	GAW	2	PASI-C
		EPA 6010	JMW	7	PASI-A
		EPA 7471	MTS	1	PASI-A
		EPA 8270	RES	74	PASI-C
		EPA 8260	DLK	70	PASI-C
		ASTM D2974-87	TNM	1	PASI-C
		EPA 8015 Modified	NU1	2	PASI-C
		EPA 8015 Modified	GAW	2	PASI-C
		ASTM D2974-87	TNM	1	PASI-C
		EPA 8015 Modified	NU1	2	PASI-C
		EPA 8015 Modified	GAW	2	PASI-C
		ASTM D2974-87	TNM	1	PASI-C

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ANALYTICAL RESULTS

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

Sample: 4-1 **Lab ID: 92186113008** Collected: 01/09/14 16:00 Received: 01/11/14 10:20 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS THC-Diesel	Analytical Method: EPA 8015 Modified Preparation Method: EPA 3546								
Diesel Components	**123**	mg/kg	6.8	6.1	1	01/13/14 14:20	01/14/14 23:03	68334-30-5	
Surrogates									
n-Pentacosane (S)	81	%	41-119		1	01/13/14 14:20	01/14/14 23:03	629-99-2	
Gasoline Range Organics	Analytical Method: EPA 8015 Modified Preparation Method: EPA 5035A/5030B								
Gasoline Range Organics	ND	mg/kg	6.9	6.9	1	01/16/14 09:28	01/16/14 12:12	8006-61-9	
Surrogates									
4-Bromofluorobenzene (S)	104	%	70-167		1	01/16/14 09:28	01/16/14 12:12	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**26.7**	%	0.10	0.10	1		01/17/14 09:33		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

Sample: 4-2 **Lab ID: 92186113009** Collected: 01/09/14 16:02 Received: 01/11/14 10:20 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS THC-Diesel	Analytical Method: EPA 8015 Modified Preparation Method: EPA 3546								
Diesel Components	ND	mg/kg	6.4	5.7	1	01/13/14 14:20	01/14/14 23:03	68334-30-5	
Surrogates									
n-Pentacosane (S)	75	%	41-119		1	01/13/14 14:20	01/14/14 23:03	629-99-2	
Gasoline Range Organics	Analytical Method: EPA 8015 Modified Preparation Method: EPA 5035A/5030B								
Gasoline Range Organics	ND	mg/kg	6.2	6.2	1	01/16/14 09:28	01/16/14 12:36	8006-61-9	
Surrogates									
4-Bromofluorobenzene (S)	104	%	70-167		1	01/16/14 09:28	01/16/14 12:36	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**21.7**	%	0.10	0.10	1		01/17/14 09:26		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

Sample: 4-3 **Lab ID: 92186113010** Collected: 01/09/14 16:04 Received: 01/11/14 10:20 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS THC-Diesel	Analytical Method: EPA 8015 Modified Preparation Method: EPA 3546								
Diesel Components	ND	mg/kg	6.6	5.9	1	01/13/14 14:20	01/14/14 23:27	68334-30-5	
Surrogates									
n-Pentacosane (S)	69	%	41-119		1	01/13/14 14:20	01/14/14 23:27	629-99-2	
Gasoline Range Organics	Analytical Method: EPA 8015 Modified Preparation Method: EPA 5035A/5030B								
Gasoline Range Organics	ND	mg/kg	6.0	6.0	1	01/16/14 09:28	01/16/14 12:59	8006-61-9	
Surrogates									
4-Bromofluorobenzene (S)	107	%	70-167		1	01/16/14 09:28	01/16/14 12:59	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**23.7**	%	0.10	0.10	1		01/17/14 09:26		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

Sample: 4-4 **Lab ID: 92186113011** Collected: 01/09/14 16:06 Received: 01/11/14 10:20 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS THC-Diesel	Analytical Method: EPA 8015 Modified Preparation Method: EPA 3546								
Diesel Components	ND	mg/kg	6.4	5.8	1	01/13/14 14:20	01/14/14 23:27	68334-30-5	
Surrogates									
n-Pentacosane (S)	75	%	41-119		1	01/13/14 14:20	01/14/14 23:27	629-99-2	
Gasoline Range Organics	Analytical Method: EPA 8015 Modified Preparation Method: EPA 5035A/5030B								
Gasoline Range Organics	ND	mg/kg	6.5	6.5	1	01/16/14 09:28	01/16/14 13:21	8006-61-9	
Surrogates									
4-Bromofluorobenzene (S)	115	%	70-167		1	01/16/14 09:28	01/16/14 13:21	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**21.8**	%	0.10	0.10	1		01/17/14 09:26		

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ANALYTICAL RESULTS

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

Sample: 4-5 **Lab ID: 92186113012** Collected: 01/09/14 16:08 Received: 01/11/14 10:20 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS THC-Diesel	Analytical Method: EPA 8015 Modified Preparation Method: EPA 3546								
Diesel Components	ND	mg/kg	7.3	6.6	1	01/13/14 14:20	01/14/14 23:51	68334-30-5	
Surrogates									
n-Pentacosane (S)	75	%	41-119		1	01/13/14 14:20	01/14/14 23:51	629-99-2	
Gasoline Range Organics	Analytical Method: EPA 8015 Modified Preparation Method: EPA 5035A/5030B								
Gasoline Range Organics	ND	mg/kg	7.4	7.4	1	01/16/14 09:28	01/16/14 13:44	8006-61-9	
Surrogates									
4-Bromofluorobenzene (S)	102	%	70-167		1	01/16/14 09:28	01/16/14 13:44	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**31.5**	%	0.10	0.10	1		01/17/14 09:26		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

Sample: 4-6 **Lab ID: 92186113013** Collected: 01/09/14 16:10 Received: 01/11/14 10:20 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS THC-Diesel	Analytical Method: EPA 8015 Modified Preparation Method: EPA 3546								
Diesel Components	ND	mg/kg	6.5	5.9	1	01/13/14 14:20	01/14/14 23:51	68334-30-5	
Surrogates									
n-Pentacosane (S)	83	%	41-119		1	01/13/14 14:20	01/14/14 23:51	629-99-2	
Gasoline Range Organics	Analytical Method: EPA 8015 Modified Preparation Method: EPA 5035A/5030B								
Gasoline Range Organics	ND	mg/kg	6.8	6.8	1	01/16/14 09:28	01/16/14 14:07	8006-61-9	
Surrogates									
4-Bromofluorobenzene (S)	106	%	70-167		1	01/16/14 09:28	01/16/14 14:07	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**23.5**	%	0.10	0.10	1		01/17/14 09:26		

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ANALYTICAL RESULTS

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

Sample: 4-7 **Lab ID: 92186113014** Collected: 01/09/14 16:12 Received: 01/11/14 10:20 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS THC-Diesel	Analytical Method: EPA 8015 Modified Preparation Method: EPA 3546								
Diesel Components	ND	mg/kg	6.6	5.9	1	01/13/14 14:20	01/15/14 00:14	68334-30-5	
Surrogates									
n-Pentacosane (S)	81	%	41-119		1	01/13/14 14:20	01/15/14 00:14	629-99-2	
Gasoline Range Organics	Analytical Method: EPA 8015 Modified Preparation Method: EPA 5035A/5030B								
Gasoline Range Organics	ND	mg/kg	6.2	6.2	1	01/16/14 09:28	01/16/14 14:30	8006-61-9	
Surrogates									
4-Bromofluorobenzene (S)	105	%	70-167		1	01/16/14 09:28	01/16/14 14:30	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**24.2**	%	0.10	0.10	1		01/17/14 09:26		

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ANALYTICAL RESULTS

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

Sample: 4-8 **Lab ID: 92186113015** Collected: 01/09/14 16:14 Received: 01/11/14 10:20 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Gasoline Range Organics	Analytical Method: EPA 8015 Modified Preparation Method: EPA 5035A/5030B								
Gasoline Range Organics	ND	mg/kg	5.6	5.6	1	01/16/14 09:28	01/16/14 14:53	8006-61-9	
Surrogates									
4-Bromofluorobenzene (S)	109	%	70-167		1	01/16/14 09:28	01/16/14 14:53	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**18.9**	%	0.10	0.10	1		01/17/14 09:26		

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ANALYTICAL RESULTS

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

Sample: 4-9 **Lab ID: 92186113016** Collected: 01/09/14 16:16 Received: 01/11/14 10:20 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS THC-Diesel	Analytical Method: EPA 8015 Modified Preparation Method: EPA 3546								
Diesel Components	ND	mg/kg	7.1	6.4	1	01/13/14 14:20	01/15/14 00:14	68334-30-5	
Surrogates									
n-Pentacosane (S)	73	%	41-119		1	01/13/14 14:20	01/15/14 00:14	629-99-2	
Gasoline Range Organics	Analytical Method: EPA 8015 Modified Preparation Method: EPA 5035A/5030B								
Gasoline Range Organics	ND	mg/kg	6.9	6.9	1	01/16/14 09:28	01/16/14 15:16	8006-61-9	
Surrogates									
4-Bromofluorobenzene (S)	109	%	70-167		1	01/16/14 09:28	01/16/14 15:16	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**29.5**	%	0.10	0.10	1		01/17/14 09:34		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

Sample: 4-10 **Lab ID: 92186113017** Collected: 01/09/14 16:20 Received: 01/11/14 10:20 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS THC-Diesel	Analytical Method: EPA 8015 Modified Preparation Method: EPA 3546								
Diesel Components	ND	mg/kg	6.9	6.2	1	01/13/14 14:20	01/15/14 00:38	68334-30-5	
Surrogates									
n-Pentacosane (S)	81	%	41-119		1	01/13/14 14:20	01/15/14 00:38	629-99-2	
Gasoline Range Organics	Analytical Method: EPA 8015 Modified Preparation Method: EPA 5035A/5030B								
Gasoline Range Organics	ND	mg/kg	7.2	7.2	1	01/16/14 09:28	01/16/14 15:38	8006-61-9	
Surrogates									
4-Bromofluorobenzene (S)	109	%	70-167		1	01/16/14 09:28	01/16/14 15:38	460-00-4	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050								
Arsenic	ND	mg/kg	1.2	0.39	1	01/15/14 11:35	01/16/14 17:55	7440-38-2	
Barium	**11.1**	mg/kg	0.61	0.024	1	01/15/14 11:35	01/16/14 17:55	7440-39-3	
Cadmium	**5.5**	mg/kg	0.12	0.073	1	01/15/14 11:35	01/16/14 17:55	7440-43-9	
Chromium	**38.1**	mg/kg	0.61	0.036	1	01/15/14 11:35	01/16/14 17:55	7440-47-3	
Lead	**16.3**	mg/kg	0.61	0.58	1	01/15/14 11:35	01/16/14 17:55	7439-92-1	
Selenium	ND	mg/kg	1.2	0.46	1	01/15/14 11:35	01/16/14 17:55	7782-49-2	
Silver	ND	mg/kg	0.61	0.036	1	01/15/14 11:35	01/16/14 17:55	7440-22-4	
7471 Mercury	Analytical Method: EPA 7471 Preparation Method: EPA 7471								
Mercury	**0.017**	mg/kg	0.0067	0.00013	1	01/15/14 15:50	01/15/14 18:57	7439-97-6	
8270 MSSV Microwave	Analytical Method: EPA 8270 Preparation Method: EPA 3546								
Acenaphthene	ND	ug/kg	457	105	1	01/14/14 09:55	01/14/14 17:22	83-32-9	
Acenaphthylene	ND	ug/kg	457	108	1	01/14/14 09:55	01/14/14 17:22	208-96-8	
Aniline	ND	ug/kg	457	123	1	01/14/14 09:55	01/14/14 17:22	62-53-3	
Anthracene	ND	ug/kg	457	102	1	01/14/14 09:55	01/14/14 17:22	120-12-7	
Benzo(a)anthracene	ND	ug/kg	457	84.5	1	01/14/14 09:55	01/14/14 17:22	56-55-3	
Benzo(a)pyrene	ND	ug/kg	457	87.2	1	01/14/14 09:55	01/14/14 17:22	50-32-8	
Benzo(b)fluoranthene	ND	ug/kg	457	78.9	1	01/14/14 09:55	01/14/14 17:22	205-99-2	
Benzo(g,h,i)perylene	ND	ug/kg	457	116	1	01/14/14 09:55	01/14/14 17:22	191-24-2	
Benzo(k)fluoranthene	ND	ug/kg	457	90.0	1	01/14/14 09:55	01/14/14 17:22	207-08-9	
Benzoic Acid	ND	ug/kg	2280	83.1	1	01/14/14 09:55	01/14/14 17:22	65-85-0	
Benzyl alcohol	ND	ug/kg	914	91.4	1	01/14/14 09:55	01/14/14 17:22	100-51-6	
4-Bromophenylphenyl ether	ND	ug/kg	457	83.1	1	01/14/14 09:55	01/14/14 17:22	101-55-3	
Butylbenzylphthalate	ND	ug/kg	457	96.9	1	01/14/14 09:55	01/14/14 17:22	85-68-7	
4-Chloro-3-methylphenol	ND	ug/kg	914	94.2	1	01/14/14 09:55	01/14/14 17:22	59-50-7	
4-Chloroaniline	ND	ug/kg	2280	127	1	01/14/14 09:55	01/14/14 17:22	106-47-8	
bis(2-Chloroethoxy)methane	ND	ug/kg	457	107	1	01/14/14 09:55	01/14/14 17:22	111-91-1	
bis(2-Chloroethyl) ether	ND	ug/kg	457	116	1	01/14/14 09:55	01/14/14 17:22	111-44-4	
bis(2-Chloroisopropyl) ether	ND	ug/kg	457	122	1	01/14/14 09:55	01/14/14 17:22	108-60-1	
2-Chloronaphthalene	ND	ug/kg	457	90.0	1	01/14/14 09:55	01/14/14 17:22	91-58-7	
2-Chlorophenol	ND	ug/kg	457	125	1	01/14/14 09:55	01/14/14 17:22	95-57-8	
4-Chlorophenylphenyl ether	ND	ug/kg	457	94.2	1	01/14/14 09:55	01/14/14 17:22	7005-72-3	
Chrysene	ND	ug/kg	457	60.9	1	01/14/14 09:55	01/14/14 17:22	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	457	96.9	1	01/14/14 09:55	01/14/14 17:22	53-70-3	

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ANALYTICAL RESULTS

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

Sample: 4-10 **Lab ID: 92186113017** Collected: 01/09/14 16:20 Received: 01/11/14 10:20 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV Microwave	Analytical Method: EPA 8270 Preparation Method: EPA 3546								
Dibenzofuran	ND	ug/kg	457	74.8	1	01/14/14 09:55	01/14/14 17:22	132-64-9	
1,2-Dichlorobenzene	ND	ug/kg	457	122	1	01/14/14 09:55	01/14/14 17:22	95-50-1	
1,3-Dichlorobenzene	ND	ug/kg	457	104	1	01/14/14 09:55	01/14/14 17:22	541-73-1	
1,4-Dichlorobenzene	ND	ug/kg	457	129	1	01/14/14 09:55	01/14/14 17:22	106-46-7	
3,3'-Dichlorobenzidine	ND	ug/kg	2280	99.7	1	01/14/14 09:55	01/14/14 17:22	91-94-1	
2,4-Dichlorophenol	ND	ug/kg	457	99.7	1	01/14/14 09:55	01/14/14 17:22	120-83-2	
Diethylphthalate	ND	ug/kg	457	70.6	1	01/14/14 09:55	01/14/14 17:22	84-66-2	
2,4-Dimethylphenol	ND	ug/kg	457	180	1	01/14/14 09:55	01/14/14 17:22	105-67-9	
Dimethylphthalate	ND	ug/kg	457	92.8	1	01/14/14 09:55	01/14/14 17:22	131-11-3	
Di-n-butylphthalate	ND	ug/kg	457	74.8	1	01/14/14 09:55	01/14/14 17:22	84-74-2	
4,6-Dinitro-2-methylphenol	ND	ug/kg	914	91.4	1	01/14/14 09:55	01/14/14 17:22	534-52-1	
2,4-Dinitrophenol	ND	ug/kg	2280	74.8	1	01/14/14 09:55	01/14/14 17:22	51-28-5	
2,4-Dinitrotoluene	ND	ug/kg	457	85.8	1	01/14/14 09:55	01/14/14 17:22	121-14-2	
2,6-Dinitrotoluene	ND	ug/kg	457	95.5	1	01/14/14 09:55	01/14/14 17:22	606-20-2	
Di-n-octylphthalate	ND	ug/kg	457	95.5	1	01/14/14 09:55	01/14/14 17:22	117-84-0	
bis(2-Ethylhexyl)phthalate	ND	ug/kg	457	125	1	01/14/14 09:55	01/14/14 17:22	117-81-7	
Fluoranthene	ND	ug/kg	457	66.5	1	01/14/14 09:55	01/14/14 17:22	206-44-0	
Fluorene	ND	ug/kg	457	94.2	1	01/14/14 09:55	01/14/14 17:22	86-73-7	
Hexachloro-1,3-butadiene	ND	ug/kg	457	78.9	1	01/14/14 09:55	01/14/14 17:22	87-68-3	
Hexachlorobenzene	ND	ug/kg	457	58.2	1	01/14/14 09:55	01/14/14 17:22	118-74-1	
Hexachlorocyclopentadiene	ND	ug/kg	457	84.5	1	01/14/14 09:55	01/14/14 17:22	77-47-4	
Hexachloroethane	ND	ug/kg	457	120	1	01/14/14 09:55	01/14/14 17:22	67-72-1	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	457	94.2	1	01/14/14 09:55	01/14/14 17:22	193-39-5	
Isophorone	ND	ug/kg	457	102	1	01/14/14 09:55	01/14/14 17:22	78-59-1	
1-Methylnaphthalene	ND	ug/kg	457	119	1	01/14/14 09:55	01/14/14 17:22	90-12-0	
2-Methylnaphthalene	ND	ug/kg	457	98.3	1	01/14/14 09:55	01/14/14 17:22	91-57-6	
2-Methylphenol(o-Cresol)	ND	ug/kg	457	138	1	01/14/14 09:55	01/14/14 17:22	95-48-7	
3&4-Methylphenol(m&p Cresol)	ND	ug/kg	457	180	1	01/14/14 09:55	01/14/14 17:22		
Naphthalene	ND	ug/kg	457	112	1	01/14/14 09:55	01/14/14 17:22	91-20-3	
2-Nitroaniline	ND	ug/kg	2280	141	1	01/14/14 09:55	01/14/14 17:22	88-74-4	
3-Nitroaniline	ND	ug/kg	2280	125	1	01/14/14 09:55	01/14/14 17:22	99-09-2	
4-Nitroaniline	ND	ug/kg	914	129	1	01/14/14 09:55	01/14/14 17:22	100-01-6	
Nitrobenzene	ND	ug/kg	457	125	1	01/14/14 09:55	01/14/14 17:22	98-95-3	
2-Nitrophenol	ND	ug/kg	457	111	1	01/14/14 09:55	01/14/14 17:22	88-75-5	
4-Nitrophenol	ND	ug/kg	2280	81.7	1	01/14/14 09:55	01/14/14 17:22	100-02-7	
N-Nitrosodimethylamine	ND	ug/kg	457	148	1	01/14/14 09:55	01/14/14 17:22	62-75-9	
N-Nitroso-di-n-propylamine	ND	ug/kg	457	87.2	1	01/14/14 09:55	01/14/14 17:22	621-64-7	
N-Nitrosodiphenylamine	ND	ug/kg	457	136	1	01/14/14 09:55	01/14/14 17:22	86-30-6	
Pentachlorophenol	ND	ug/kg	2280	83.1	1	01/14/14 09:55	01/14/14 17:22	87-86-5	
Phenanthrene	ND	ug/kg	457	76.2	1	01/14/14 09:55	01/14/14 17:22	85-01-8	
Phenol	ND	ug/kg	457	137	1	01/14/14 09:55	01/14/14 17:22	108-95-2	
Pyrene	ND	ug/kg	457	77.5	1	01/14/14 09:55	01/14/14 17:22	129-00-0	
1,2,4-Trichlorobenzene	ND	ug/kg	457	88.6	1	01/14/14 09:55	01/14/14 17:22	120-82-1	
2,4,5-Trichlorophenol	ND	ug/kg	457	141	1	01/14/14 09:55	01/14/14 17:22	95-95-4	
2,4,6-Trichlorophenol	ND	ug/kg	457	101	1	01/14/14 09:55	01/14/14 17:22	88-06-2	

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ANALYTICAL RESULTS

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

Sample: 4-10 **Lab ID: 92186113017** Collected: 01/09/14 16:20 Received: 01/11/14 10:20 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV Microwave	Analytical Method: EPA 8270 Preparation Method: EPA 3546								
Surrogates									
Nitrobenzene-d5 (S)	70	%	23-110		1	01/14/14 09:55	01/14/14 17:22	4165-60-0	
2-Fluorobiphenyl (S)	67	%	30-110		1	01/14/14 09:55	01/14/14 17:22	321-60-8	
Terphenyl-d14 (S)	74	%	28-110		1	01/14/14 09:55	01/14/14 17:22	1718-51-0	
Phenol-d6 (S)	72	%	22-110		1	01/14/14 09:55	01/14/14 17:22	13127-88-3	
2-Fluorophenol (S)	68	%	13-110		1	01/14/14 09:55	01/14/14 17:22	367-12-4	
2,4,6-Tribromophenol (S)	71	%	27-110		1	01/14/14 09:55	01/14/14 17:22	118-79-6	
8260/5035A Volatile Organics	Analytical Method: EPA 8260								
Acetone	ND	ug/kg	116	11.6	1		01/17/14 15:52	67-64-1	
Benzene	ND	ug/kg	5.8	1.8	1		01/17/14 15:52	71-43-2	
Bromobenzene	ND	ug/kg	5.8	2.3	1		01/17/14 15:52	108-86-1	
Bromochloromethane	ND	ug/kg	5.8	2.0	1		01/17/14 15:52	74-97-5	
Bromodichloromethane	ND	ug/kg	5.8	2.2	1		01/17/14 15:52	75-27-4	
Bromoform	ND	ug/kg	5.8	2.7	1		01/17/14 15:52	75-25-2	
Bromomethane	ND	ug/kg	11.6	2.9	1		01/17/14 15:52	74-83-9	
2-Butanone (MEK)	ND	ug/kg	116	3.4	1		01/17/14 15:52	78-93-3	
n-Butylbenzene	ND	ug/kg	5.8	2.1	1		01/17/14 15:52	104-51-8	
sec-Butylbenzene	ND	ug/kg	5.8	1.8	1		01/17/14 15:52	135-98-8	
tert-Butylbenzene	ND	ug/kg	5.8	2.3	1		01/17/14 15:52	98-06-6	
Carbon tetrachloride	ND	ug/kg	5.8	3.0	1		01/17/14 15:52	56-23-5	
Chlorobenzene	ND	ug/kg	5.8	2.2	1		01/17/14 15:52	108-90-7	
Chloroethane	ND	ug/kg	11.6	2.8	1		01/17/14 15:52	75-00-3	
Chloroform	ND	ug/kg	5.8	1.8	1		01/17/14 15:52	67-66-3	
Chloromethane	ND	ug/kg	11.6	2.8	1		01/17/14 15:52	74-87-3	
2-Chlorotoluene	ND	ug/kg	5.8	2.0	1		01/17/14 15:52	95-49-8	
4-Chlorotoluene	ND	ug/kg	5.8	2.1	1		01/17/14 15:52	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/kg	5.8	4.2	1		01/17/14 15:52	96-12-8	
Dibromochloromethane	ND	ug/kg	5.8	2.1	1		01/17/14 15:52	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/kg	5.8	2.1	1		01/17/14 15:52	106-93-4	
Dibromomethane	ND	ug/kg	5.8	2.9	1		01/17/14 15:52	74-95-3	
1,2-Dichlorobenzene	ND	ug/kg	5.8	2.2	1		01/17/14 15:52	95-50-1	
1,3-Dichlorobenzene	ND	ug/kg	5.8	2.3	1		01/17/14 15:52	541-73-1	
1,4-Dichlorobenzene	ND	ug/kg	5.8	2.0	1		01/17/14 15:52	106-46-7	
Dichlorodifluoromethane	ND	ug/kg	11.6	4.2	1		01/17/14 15:52	75-71-8	
1,1-Dichloroethane	ND	ug/kg	5.8	1.7	1		01/17/14 15:52	75-34-3	
1,2-Dichloroethane	ND	ug/kg	5.8	2.5	1		01/17/14 15:52	107-06-2	
1,1-Dichloroethene	ND	ug/kg	5.8	2.1	1		01/17/14 15:52	75-35-4	
cis-1,2-Dichloroethene	ND	ug/kg	5.8	1.6	1		01/17/14 15:52	156-59-2	
trans-1,2-Dichloroethene	ND	ug/kg	5.8	2.2	1		01/17/14 15:52	156-60-5	
1,2-Dichloropropane	ND	ug/kg	5.8	2.0	1		01/17/14 15:52	78-87-5	
1,3-Dichloropropane	ND	ug/kg	5.8	2.2	1		01/17/14 15:52	142-28-9	
2,2-Dichloropropane	ND	ug/kg	5.8	2.0	1		01/17/14 15:52	594-20-7	
1,1-Dichloropropene	ND	ug/kg	5.8	1.7	1		01/17/14 15:52	563-58-6	
cis-1,3-Dichloropropene	ND	ug/kg	5.8	2.1	1		01/17/14 15:52	10061-01-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

Sample: 4-10 **Lab ID: 92186113017** Collected: 01/09/14 16:20 Received: 01/11/14 10:20 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260/5035A Volatile Organics	Analytical Method: EPA 8260								
trans-1,3-Dichloropropene	ND	ug/kg	5.8	1.7	1		01/17/14 15:52	10061-02-6	
Diisopropyl ether	ND	ug/kg	5.8	2.0	1		01/17/14 15:52	108-20-3	
Ethylbenzene	ND	ug/kg	5.8	2.1	1		01/17/14 15:52	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/kg	5.8	2.3	1		01/17/14 15:52	87-68-3	
2-Hexanone	ND	ug/kg	57.8	4.5	1		01/17/14 15:52	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/kg	5.8	2.2	1		01/17/14 15:52	98-82-8	
p-Isopropyltoluene	ND	ug/kg	5.8	2.0	1		01/17/14 15:52	99-87-6	
Methylene Chloride	ND	ug/kg	23.1	3.5	1		01/17/14 15:52	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	57.8	4.3	1		01/17/14 15:52	108-10-1	
Methyl-tert-butyl ether	ND	ug/kg	5.8	1.7	1		01/17/14 15:52	1634-04-4	
Naphthalene	ND	ug/kg	5.8	1.4	1		01/17/14 15:52	91-20-3	
n-Propylbenzene	ND	ug/kg	5.8	2.0	1		01/17/14 15:52	103-65-1	
Styrene	ND	ug/kg	5.8	2.1	1		01/17/14 15:52	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/kg	5.8	2.4	1		01/17/14 15:52	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/kg	5.8	2.2	1		01/17/14 15:52	79-34-5	
Tetrachloroethene	ND	ug/kg	5.8	2.0	1		01/17/14 15:52	127-18-4	
Toluene	ND	ug/kg	5.8	2.1	1		01/17/14 15:52	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/kg	5.8	2.5	1		01/17/14 15:52	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/kg	5.8	1.8	1		01/17/14 15:52	120-82-1	
1,1,1-Trichloroethane	ND	ug/kg	5.8	2.1	1		01/17/14 15:52	71-55-6	
1,1,2-Trichloroethane	ND	ug/kg	5.8	2.4	1		01/17/14 15:52	79-00-5	
Trichloroethene	ND	ug/kg	5.8	2.4	1		01/17/14 15:52	79-01-6	
Trichlorofluoromethane	ND	ug/kg	5.8	2.5	1		01/17/14 15:52	75-69-4	
1,2,3-Trichloropropane	ND	ug/kg	5.8	1.8	1		01/17/14 15:52	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/kg	5.8	2.3	1		01/17/14 15:52	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/kg	5.8	2.1	1		01/17/14 15:52	108-67-8	
Vinyl acetate	ND	ug/kg	57.8	10.2	1		01/17/14 15:52	108-05-4	
Vinyl chloride	ND	ug/kg	11.6	2.1	1		01/17/14 15:52	75-01-4	
Xylene (Total)	ND	ug/kg	11.6	4.2	1		01/17/14 15:52	1330-20-7	
m&p-Xylene	ND	ug/kg	11.6	4.2	1		01/17/14 15:52	179601-23-1	
o-Xylene	ND	ug/kg	5.8	2.2	1		01/17/14 15:52	95-47-6	
Surrogates									
Toluene-d8 (S)	99	%	70-130		1		01/17/14 15:52	2037-26-5	
4-Bromofluorobenzene (S)	88	%	70-130		1		01/17/14 15:52	460-00-4	
1,2-Dichloroethane-d4 (S)	107	%	70-132		1		01/17/14 15:52	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**27.8**	%	0.10	0.10	1		01/17/14 09:34		

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ANALYTICAL RESULTS

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

Sample: 4-11 **Lab ID: 92186113018** Collected: 01/09/14 16:22 Received: 01/11/14 10:20 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS THC-Diesel	Analytical Method: EPA 8015 Modified Preparation Method: EPA 3546								
Diesel Components	ND	mg/kg	6.5	5.8	1	01/13/14 14:20	01/15/14 00:38	68334-30-5	
Surrogates									
n-Pentacosane (S)	79	%	41-119		1	01/13/14 14:20	01/15/14 00:38	629-99-2	
Gasoline Range Organics	Analytical Method: EPA 8015 Modified Preparation Method: EPA 5035A/5030B								
Gasoline Range Organics	ND	mg/kg	6.3	6.3	1	01/16/14 09:28	01/16/14 16:01	8006-61-9	
Surrogates									
4-Bromofluorobenzene (S)	106	%	70-167		1	01/16/14 09:28	01/16/14 16:01	460-00-4	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050								
Arsenic	ND	mg/kg	0.94	0.30	1	01/15/14 11:35	01/16/14 17:59	7440-38-2	
Barium	**8.9**	mg/kg	0.47	0.019	1	01/15/14 11:35	01/16/14 17:59	7440-39-3	
Cadmium	**3.7**	mg/kg	0.094	0.056	1	01/15/14 11:35	01/16/14 17:59	7440-43-9	
Chromium	**16.1**	mg/kg	0.47	0.028	1	01/15/14 11:35	01/16/14 17:59	7440-47-3	
Lead	**14.4**	mg/kg	0.47	0.45	1	01/15/14 11:35	01/16/14 17:59	7439-92-1	
Selenium	ND	mg/kg	0.94	0.36	1	01/15/14 11:35	01/16/14 17:59	7782-49-2	
Silver	ND	mg/kg	0.47	0.028	1	01/15/14 11:35	01/16/14 17:59	7440-22-4	
7471 Mercury	Analytical Method: EPA 7471 Preparation Method: EPA 7471								
Mercury	**0.011**	mg/kg	0.0051	0.00010	1	01/15/14 15:50	01/15/14 18:59	7439-97-6	
8270 MSSV Microwave	Analytical Method: EPA 8270 Preparation Method: EPA 3546								
Acenaphthene	ND	ug/kg	427	98.3	1	01/14/14 09:55	01/14/14 17:50	83-32-9	
Acenaphthylene	ND	ug/kg	427	101	1	01/14/14 09:55	01/14/14 17:50	208-96-8	
Aniline	ND	ug/kg	427	115	1	01/14/14 09:55	01/14/14 17:50	62-53-3	
Anthracene	ND	ug/kg	427	95.7	1	01/14/14 09:55	01/14/14 17:50	120-12-7	
Benzo(a)anthracene	ND	ug/kg	427	78.9	1	01/14/14 09:55	01/14/14 17:50	56-55-3	
Benzo(a)pyrene	ND	ug/kg	427	81.4	1	01/14/14 09:55	01/14/14 17:50	50-32-8	
Benzo(b)fluoranthene	ND	ug/kg	427	73.7	1	01/14/14 09:55	01/14/14 17:50	205-99-2	
Benzo(g,h,i)perylene	ND	ug/kg	427	109	1	01/14/14 09:55	01/14/14 17:50	191-24-2	
Benzo(k)fluoranthene	ND	ug/kg	427	84.0	1	01/14/14 09:55	01/14/14 17:50	207-08-9	
Benzoic Acid	ND	ug/kg	2130	77.6	1	01/14/14 09:55	01/14/14 17:50	65-85-0	
Benzyl alcohol	ND	ug/kg	853	85.3	1	01/14/14 09:55	01/14/14 17:50	100-51-6	
4-Bromophenylphenyl ether	ND	ug/kg	427	77.6	1	01/14/14 09:55	01/14/14 17:50	101-55-3	
Butylbenzylphthalate	ND	ug/kg	427	90.5	1	01/14/14 09:55	01/14/14 17:50	85-68-7	
4-Chloro-3-methylphenol	ND	ug/kg	853	87.9	1	01/14/14 09:55	01/14/14 17:50	59-50-7	
4-Chloroaniline	ND	ug/kg	2130	119	1	01/14/14 09:55	01/14/14 17:50	106-47-8	
bis(2-Chloroethoxy)methane	ND	ug/kg	427	99.5	1	01/14/14 09:55	01/14/14 17:50	111-91-1	
bis(2-Chloroethyl) ether	ND	ug/kg	427	109	1	01/14/14 09:55	01/14/14 17:50	111-44-4	
bis(2-Chloroisopropyl) ether	ND	ug/kg	427	114	1	01/14/14 09:55	01/14/14 17:50	108-60-1	
2-Chloronaphthalene	ND	ug/kg	427	84.0	1	01/14/14 09:55	01/14/14 17:50	91-58-7	
2-Chlorophenol	ND	ug/kg	427	116	1	01/14/14 09:55	01/14/14 17:50	95-57-8	
4-Chlorophenylphenyl ether	ND	ug/kg	427	87.9	1	01/14/14 09:55	01/14/14 17:50	7005-72-3	
Chrysene	ND	ug/kg	427	56.9	1	01/14/14 09:55	01/14/14 17:50	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	427	90.5	1	01/14/14 09:55	01/14/14 17:50	53-70-3	

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ANALYTICAL RESULTS

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

Sample: 4-11 **Lab ID: 92186113018** Collected: 01/09/14 16:22 Received: 01/11/14 10:20 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV Microwave	Analytical Method: EPA 8270 Preparation Method: EPA 3546								
Dibenzofuran	ND	ug/kg	427	69.8	1	01/14/14 09:55	01/14/14 17:50	132-64-9	
1,2-Dichlorobenzene	ND	ug/kg	427	114	1	01/14/14 09:55	01/14/14 17:50	95-50-1	
1,3-Dichlorobenzene	ND	ug/kg	427	97.0	1	01/14/14 09:55	01/14/14 17:50	541-73-1	
1,4-Dichlorobenzene	ND	ug/kg	427	120	1	01/14/14 09:55	01/14/14 17:50	106-46-7	
3,3'-Dichlorobenzidine	ND	ug/kg	2130	93.1	1	01/14/14 09:55	01/14/14 17:50	91-94-1	
2,4-Dichlorophenol	ND	ug/kg	427	93.1	1	01/14/14 09:55	01/14/14 17:50	120-83-2	
Diethylphthalate	ND	ug/kg	427	65.9	1	01/14/14 09:55	01/14/14 17:50	84-66-2	
2,4-Dimethylphenol	ND	ug/kg	427	168	1	01/14/14 09:55	01/14/14 17:50	105-67-9	
Dimethylphthalate	ND	ug/kg	427	86.6	1	01/14/14 09:55	01/14/14 17:50	131-11-3	
Di-n-butylphthalate	ND	ug/kg	427	69.8	1	01/14/14 09:55	01/14/14 17:50	84-74-2	
4,6-Dinitro-2-methylphenol	ND	ug/kg	853	85.3	1	01/14/14 09:55	01/14/14 17:50	534-52-1	
2,4-Dinitrophenol	ND	ug/kg	2130	69.8	1	01/14/14 09:55	01/14/14 17:50	51-28-5	
2,4-Dinitrotoluene	ND	ug/kg	427	80.2	1	01/14/14 09:55	01/14/14 17:50	121-14-2	
2,6-Dinitrotoluene	ND	ug/kg	427	89.2	1	01/14/14 09:55	01/14/14 17:50	606-20-2	
Di-n-octylphthalate	ND	ug/kg	427	89.2	1	01/14/14 09:55	01/14/14 17:50	117-84-0	
bis(2-Ethylhexyl)phthalate	ND	ug/kg	427	116	1	01/14/14 09:55	01/14/14 17:50	117-81-7	
Fluoranthene	ND	ug/kg	427	62.1	1	01/14/14 09:55	01/14/14 17:50	206-44-0	
Fluorene	ND	ug/kg	427	87.9	1	01/14/14 09:55	01/14/14 17:50	86-73-7	
Hexachloro-1,3-butadiene	ND	ug/kg	427	73.7	1	01/14/14 09:55	01/14/14 17:50	87-68-3	
Hexachlorobenzene	ND	ug/kg	427	54.3	1	01/14/14 09:55	01/14/14 17:50	118-74-1	
Hexachlorocyclopentadiene	ND	ug/kg	427	78.9	1	01/14/14 09:55	01/14/14 17:50	77-47-4	
Hexachloroethane	ND	ug/kg	427	112	1	01/14/14 09:55	01/14/14 17:50	67-72-1	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	427	87.9	1	01/14/14 09:55	01/14/14 17:50	193-39-5	
Isophorone	ND	ug/kg	427	95.7	1	01/14/14 09:55	01/14/14 17:50	78-59-1	
1-Methylnaphthalene	ND	ug/kg	427	111	1	01/14/14 09:55	01/14/14 17:50	90-12-0	
2-Methylnaphthalene	ND	ug/kg	427	91.8	1	01/14/14 09:55	01/14/14 17:50	91-57-6	
2-Methylphenol(o-Cresol)	ND	ug/kg	427	129	1	01/14/14 09:55	01/14/14 17:50	95-48-7	
3&4-Methylphenol(m&p Cresol)	ND	ug/kg	427	168	1	01/14/14 09:55	01/14/14 17:50		
Naphthalene	ND	ug/kg	427	105	1	01/14/14 09:55	01/14/14 17:50	91-20-3	
2-Nitroaniline	ND	ug/kg	2130	132	1	01/14/14 09:55	01/14/14 17:50	88-74-4	
3-Nitroaniline	ND	ug/kg	2130	116	1	01/14/14 09:55	01/14/14 17:50	99-09-2	
4-Nitroaniline	ND	ug/kg	853	120	1	01/14/14 09:55	01/14/14 17:50	100-01-6	
Nitrobenzene	ND	ug/kg	427	116	1	01/14/14 09:55	01/14/14 17:50	98-95-3	
2-Nitrophenol	ND	ug/kg	427	103	1	01/14/14 09:55	01/14/14 17:50	88-75-5	
4-Nitrophenol	ND	ug/kg	2130	76.3	1	01/14/14 09:55	01/14/14 17:50	100-02-7	
N-Nitrosodimethylamine	ND	ug/kg	427	138	1	01/14/14 09:55	01/14/14 17:50	62-75-9	
N-Nitroso-di-n-propylamine	ND	ug/kg	427	81.4	1	01/14/14 09:55	01/14/14 17:50	621-64-7	
N-Nitrosodiphenylamine	ND	ug/kg	427	127	1	01/14/14 09:55	01/14/14 17:50	86-30-6	
Pentachlorophenol	ND	ug/kg	2130	77.6	1	01/14/14 09:55	01/14/14 17:50	87-86-5	
Phenanthrene	ND	ug/kg	427	71.1	1	01/14/14 09:55	01/14/14 17:50	85-01-8	
Phenol	ND	ug/kg	427	128	1	01/14/14 09:55	01/14/14 17:50	108-95-2	
Pyrene	ND	ug/kg	427	72.4	1	01/14/14 09:55	01/14/14 17:50	129-00-0	
1,2,4-Trichlorobenzene	ND	ug/kg	427	82.7	1	01/14/14 09:55	01/14/14 17:50	120-82-1	
2,4,5-Trichlorophenol	ND	ug/kg	427	132	1	01/14/14 09:55	01/14/14 17:50	95-95-4	
2,4,6-Trichlorophenol	ND	ug/kg	427	94.4	1	01/14/14 09:55	01/14/14 17:50	88-06-2	

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ANALYTICAL RESULTS

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

Sample: 4-11 **Lab ID: 92186113018** Collected: 01/09/14 16:22 Received: 01/11/14 10:20 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV Microwave	Analytical Method: EPA 8270 Preparation Method: EPA 3546								
Surrogates									
Nitrobenzene-d5 (S)	61	%	23-110		1	01/14/14 09:55	01/14/14 17:50	4165-60-0	
2-Fluorobiphenyl (S)	52	%	30-110		1	01/14/14 09:55	01/14/14 17:50	321-60-8	
Terphenyl-d14 (S)	64	%	28-110		1	01/14/14 09:55	01/14/14 17:50	1718-51-0	
Phenol-d6 (S)	63	%	22-110		1	01/14/14 09:55	01/14/14 17:50	13127-88-3	
2-Fluorophenol (S)	64	%	13-110		1	01/14/14 09:55	01/14/14 17:50	367-12-4	
2,4,6-Tribromophenol (S)	51	%	27-110		1	01/14/14 09:55	01/14/14 17:50	118-79-6	
8260/5035A Volatile Organics	Analytical Method: EPA 8260								
Acetone	ND	ug/kg	98.8	9.9	1		01/17/14 16:12	67-64-1	
Benzene	ND	ug/kg	4.9	1.6	1		01/17/14 16:12	71-43-2	
Bromobenzene	ND	ug/kg	4.9	2.0	1		01/17/14 16:12	108-86-1	
Bromochloromethane	ND	ug/kg	4.9	1.7	1		01/17/14 16:12	74-97-5	
Bromodichloromethane	ND	ug/kg	4.9	1.9	1		01/17/14 16:12	75-27-4	
Bromoform	ND	ug/kg	4.9	2.3	1		01/17/14 16:12	75-25-2	
Bromomethane	ND	ug/kg	9.9	2.5	1		01/17/14 16:12	74-83-9	
2-Butanone (MEK)	ND	ug/kg	98.8	2.9	1		01/17/14 16:12	78-93-3	
n-Butylbenzene	ND	ug/kg	4.9	1.8	1		01/17/14 16:12	104-51-8	
sec-Butylbenzene	ND	ug/kg	4.9	1.6	1		01/17/14 16:12	135-98-8	
tert-Butylbenzene	ND	ug/kg	4.9	2.0	1		01/17/14 16:12	98-06-6	
Carbon tetrachloride	ND	ug/kg	4.9	2.6	1		01/17/14 16:12	56-23-5	
Chlorobenzene	ND	ug/kg	4.9	1.9	1		01/17/14 16:12	108-90-7	
Chloroethane	ND	ug/kg	9.9	2.4	1		01/17/14 16:12	75-00-3	
Chloroform	ND	ug/kg	4.9	1.6	1		01/17/14 16:12	67-66-3	
Chloromethane	ND	ug/kg	9.9	2.4	1		01/17/14 16:12	74-87-3	
2-Chlorotoluene	ND	ug/kg	4.9	1.7	1		01/17/14 16:12	95-49-8	
4-Chlorotoluene	ND	ug/kg	4.9	1.8	1		01/17/14 16:12	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/kg	4.9	3.6	1		01/17/14 16:12	96-12-8	
Dibromochloromethane	ND	ug/kg	4.9	1.8	1		01/17/14 16:12	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/kg	4.9	1.8	1		01/17/14 16:12	106-93-4	
Dibromomethane	ND	ug/kg	4.9	2.5	1		01/17/14 16:12	74-95-3	
1,2-Dichlorobenzene	ND	ug/kg	4.9	1.9	1		01/17/14 16:12	95-50-1	
1,3-Dichlorobenzene	ND	ug/kg	4.9	2.0	1		01/17/14 16:12	541-73-1	
1,4-Dichlorobenzene	ND	ug/kg	4.9	1.7	1		01/17/14 16:12	106-46-7	
Dichlorodifluoromethane	ND	ug/kg	9.9	3.6	1		01/17/14 16:12	75-71-8	
1,1-Dichloroethane	ND	ug/kg	4.9	1.5	1		01/17/14 16:12	75-34-3	
1,2-Dichloroethane	ND	ug/kg	4.9	2.2	1		01/17/14 16:12	107-06-2	
1,1-Dichloroethene	ND	ug/kg	4.9	1.8	1		01/17/14 16:12	75-35-4	
cis-1,2-Dichloroethene	ND	ug/kg	4.9	1.4	1		01/17/14 16:12	156-59-2	
trans-1,2-Dichloroethene	ND	ug/kg	4.9	1.9	1		01/17/14 16:12	156-60-5	
1,2-Dichloropropane	ND	ug/kg	4.9	1.7	1		01/17/14 16:12	78-87-5	
1,3-Dichloropropane	ND	ug/kg	4.9	1.9	1		01/17/14 16:12	142-28-9	
2,2-Dichloropropane	ND	ug/kg	4.9	1.7	1		01/17/14 16:12	594-20-7	
1,1-Dichloropropene	ND	ug/kg	4.9	1.5	1		01/17/14 16:12	563-58-6	
cis-1,3-Dichloropropene	ND	ug/kg	4.9	1.8	1		01/17/14 16:12	10061-01-5	

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ANALYTICAL RESULTS

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

Sample: 4-11 **Lab ID: 92186113018** Collected: 01/09/14 16:22 Received: 01/11/14 10:20 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260/5035A Volatile Organics	Analytical Method: EPA 8260								
trans-1,3-Dichloropropene	ND	ug/kg	4.9	1.5	1		01/17/14 16:12	10061-02-6	
Diisopropyl ether	ND	ug/kg	4.9	1.7	1		01/17/14 16:12	108-20-3	
Ethylbenzene	ND	ug/kg	4.9	1.8	1		01/17/14 16:12	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/kg	4.9	2.0	1		01/17/14 16:12	87-68-3	
2-Hexanone	ND	ug/kg	49.4	3.9	1		01/17/14 16:12	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/kg	4.9	1.9	1		01/17/14 16:12	98-82-8	
p-Isopropyltoluene	ND	ug/kg	4.9	1.7	1		01/17/14 16:12	99-87-6	
Methylene Chloride	ND	ug/kg	19.8	3.0	1		01/17/14 16:12	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	49.4	3.7	1		01/17/14 16:12	108-10-1	
Methyl-tert-butyl ether	ND	ug/kg	4.9	1.5	1		01/17/14 16:12	1634-04-4	
Naphthalene	ND	ug/kg	4.9	1.2	1		01/17/14 16:12	91-20-3	
n-Propylbenzene	ND	ug/kg	4.9	1.7	1		01/17/14 16:12	103-65-1	
Styrene	ND	ug/kg	4.9	1.8	1		01/17/14 16:12	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/kg	4.9	2.1	1		01/17/14 16:12	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/kg	4.9	1.9	1		01/17/14 16:12	79-34-5	
Tetrachloroethene	ND	ug/kg	4.9	1.7	1		01/17/14 16:12	127-18-4	
Toluene	ND	ug/kg	4.9	1.8	1		01/17/14 16:12	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/kg	4.9	2.2	1		01/17/14 16:12	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/kg	4.9	1.6	1		01/17/14 16:12	120-82-1	
1,1,1-Trichloroethane	ND	ug/kg	4.9	1.8	1		01/17/14 16:12	71-55-6	
1,1,2-Trichloroethane	ND	ug/kg	4.9	2.1	1		01/17/14 16:12	79-00-5	
Trichloroethene	ND	ug/kg	4.9	2.1	1		01/17/14 16:12	79-01-6	
Trichlorofluoromethane	ND	ug/kg	4.9	2.2	1		01/17/14 16:12	75-69-4	
1,2,3-Trichloropropane	ND	ug/kg	4.9	1.6	1		01/17/14 16:12	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/kg	4.9	2.0	1		01/17/14 16:12	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/kg	4.9	1.8	1		01/17/14 16:12	108-67-8	
Vinyl acetate	ND	ug/kg	49.4	8.7	1		01/17/14 16:12	108-05-4	
Vinyl chloride	ND	ug/kg	9.9	1.8	1		01/17/14 16:12	75-01-4	
Xylene (Total)	ND	ug/kg	9.9	3.6	1		01/17/14 16:12	1330-20-7	
m&p-Xylene	ND	ug/kg	9.9	3.6	1		01/17/14 16:12	179601-23-1	
o-Xylene	ND	ug/kg	4.9	1.9	1		01/17/14 16:12	95-47-6	
Surrogates									
Toluene-d8 (S)	99	%	70-130		1		01/17/14 16:12	2037-26-5	
4-Bromofluorobenzene (S)	86	%	70-130		1		01/17/14 16:12	460-00-4	
1,2-Dichloroethane-d4 (S)	105	%	70-132		1		01/17/14 16:12	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**22.6**	%	0.10	0.10	1		01/17/14 09:34		

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ANALYTICAL RESULTS

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

Sample: 4-12 **Lab ID: 92186113019** Collected: 01/09/14 16:40 Received: 01/11/14 10:20 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS THC-Diesel	Analytical Method: EPA 8015 Modified Preparation Method: EPA 3546								
Diesel Components	ND	mg/kg	7.0	6.3	1	01/13/14 14:20	01/15/14 01:02	68334-30-5	
Surrogates									
n-Pentacosane (S)	75	%	41-119		1	01/13/14 14:20	01/15/14 01:02	629-99-2	
Gasoline Range Organics	Analytical Method: EPA 8015 Modified Preparation Method: EPA 5035A/5030B								
Gasoline Range Organics	ND	mg/kg	7.2	7.2	1	01/16/14 09:28	01/16/14 16:24	8006-61-9	
Surrogates									
4-Bromofluorobenzene (S)	108	%	70-167		1	01/16/14 09:28	01/16/14 16:24	460-00-4	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050								
Arsenic	ND	mg/kg	1.1	0.34	1	01/15/14 11:35	01/16/14 18:03	7440-38-2	
Barium	**13.5**	mg/kg	0.54	0.022	1	01/15/14 11:35	01/16/14 18:03	7440-39-3	
Cadmium	**3.4**	mg/kg	0.11	0.065	1	01/15/14 11:35	01/16/14 18:03	7440-43-9	
Chromium	**20.6**	mg/kg	0.54	0.032	1	01/15/14 11:35	01/16/14 18:03	7440-47-3	
Lead	**13.7**	mg/kg	0.54	0.52	1	01/15/14 11:35	01/16/14 18:03	7439-92-1	
Selenium	ND	mg/kg	1.1	0.41	1	01/15/14 11:35	01/16/14 18:03	7782-49-2	
Silver	ND	mg/kg	0.54	0.032	1	01/15/14 11:35	01/16/14 18:03	7440-22-4	
7471 Mercury	Analytical Method: EPA 7471 Preparation Method: EPA 7471								
Mercury	**0.17**	mg/kg	0.022	0.00045	5	01/15/14 15:50	01/15/14 19:30	7439-97-6	
8270 MSSV Microwave	Analytical Method: EPA 8270 Preparation Method: EPA 3546								
Acenaphthene	ND	ug/kg	461	106	1	01/14/14 09:55	01/14/14 18:18	83-32-9	
Acenaphthylene	ND	ug/kg	461	109	1	01/14/14 09:55	01/14/14 18:18	208-96-8	
Aniline	ND	ug/kg	461	124	1	01/14/14 09:55	01/14/14 18:18	62-53-3	
Anthracene	ND	ug/kg	461	103	1	01/14/14 09:55	01/14/14 18:18	120-12-7	
Benzo(a)anthracene	ND	ug/kg	461	85.3	1	01/14/14 09:55	01/14/14 18:18	56-55-3	
Benzo(a)pyrene	ND	ug/kg	461	88.0	1	01/14/14 09:55	01/14/14 18:18	50-32-8	
Benzo(b)fluoranthene	ND	ug/kg	461	79.7	1	01/14/14 09:55	01/14/14 18:18	205-99-2	
Benzo(g,h,i)perylene	ND	ug/kg	461	117	1	01/14/14 09:55	01/14/14 18:18	191-24-2	
Benzo(k)fluoranthene	ND	ug/kg	461	90.8	1	01/14/14 09:55	01/14/14 18:18	207-08-9	
Benzoic Acid	ND	ug/kg	2310	83.9	1	01/14/14 09:55	01/14/14 18:18	65-85-0	
Benzyl alcohol	ND	ug/kg	922	92.2	1	01/14/14 09:55	01/14/14 18:18	100-51-6	
4-Bromophenylphenyl ether	ND	ug/kg	461	83.9	1	01/14/14 09:55	01/14/14 18:18	101-55-3	
Butylbenzylphthalate	ND	ug/kg	461	97.8	1	01/14/14 09:55	01/14/14 18:18	85-68-7	
4-Chloro-3-methylphenol	ND	ug/kg	922	95.0	1	01/14/14 09:55	01/14/14 18:18	59-50-7	
4-Chloroaniline	ND	ug/kg	2310	129	1	01/14/14 09:55	01/14/14 18:18	106-47-8	
bis(2-Chloroethoxy)methane	ND	ug/kg	461	108	1	01/14/14 09:55	01/14/14 18:18	111-91-1	
bis(2-Chloroethyl) ether	ND	ug/kg	461	117	1	01/14/14 09:55	01/14/14 18:18	111-44-4	
bis(2-Chloroisopropyl) ether	ND	ug/kg	461	123	1	01/14/14 09:55	01/14/14 18:18	108-60-1	
2-Chloronaphthalene	ND	ug/kg	461	90.8	1	01/14/14 09:55	01/14/14 18:18	91-58-7	
2-Chlorophenol	ND	ug/kg	461	126	1	01/14/14 09:55	01/14/14 18:18	95-57-8	
4-Chlorophenylphenyl ether	ND	ug/kg	461	95.0	1	01/14/14 09:55	01/14/14 18:18	7005-72-3	
Chrysene	ND	ug/kg	461	61.5	1	01/14/14 09:55	01/14/14 18:18	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	461	97.8	1	01/14/14 09:55	01/14/14 18:18	53-70-3	

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ANALYTICAL RESULTS

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

Sample: 4-12 **Lab ID: 92186113019** Collected: 01/09/14 16:40 Received: 01/11/14 10:20 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV Microwave	Analytical Method: EPA 8270 Preparation Method: EPA 3546								
Dibenzofuran	ND	ug/kg	461	75.5	1	01/14/14 09:55	01/14/14 18:18	132-64-9	
1,2-Dichlorobenzene	ND	ug/kg	461	123	1	01/14/14 09:55	01/14/14 18:18	95-50-1	
1,3-Dichlorobenzene	ND	ug/kg	461	105	1	01/14/14 09:55	01/14/14 18:18	541-73-1	
1,4-Dichlorobenzene	ND	ug/kg	461	130	1	01/14/14 09:55	01/14/14 18:18	106-46-7	
3,3'-Dichlorobenzidine	ND	ug/kg	2310	101	1	01/14/14 09:55	01/14/14 18:18	91-94-1	
2,4-Dichlorophenol	ND	ug/kg	461	101	1	01/14/14 09:55	01/14/14 18:18	120-83-2	
Diethylphthalate	ND	ug/kg	461	71.3	1	01/14/14 09:55	01/14/14 18:18	84-66-2	
2,4-Dimethylphenol	ND	ug/kg	461	182	1	01/14/14 09:55	01/14/14 18:18	105-67-9	
Dimethylphthalate	ND	ug/kg	461	93.6	1	01/14/14 09:55	01/14/14 18:18	131-11-3	
Di-n-butylphthalate	ND	ug/kg	461	75.5	1	01/14/14 09:55	01/14/14 18:18	84-74-2	
4,6-Dinitro-2-methylphenol	ND	ug/kg	922	92.2	1	01/14/14 09:55	01/14/14 18:18	534-52-1	
2,4-Dinitrophenol	ND	ug/kg	2310	75.5	1	01/14/14 09:55	01/14/14 18:18	51-28-5	
2,4-Dinitrotoluene	ND	ug/kg	461	86.6	1	01/14/14 09:55	01/14/14 18:18	121-14-2	
2,6-Dinitrotoluene	ND	ug/kg	461	96.4	1	01/14/14 09:55	01/14/14 18:18	606-20-2	
Di-n-octylphthalate	ND	ug/kg	461	96.4	1	01/14/14 09:55	01/14/14 18:18	117-84-0	
bis(2-Ethylhexyl)phthalate	ND	ug/kg	461	126	1	01/14/14 09:55	01/14/14 18:18	117-81-7	
Fluoranthene	ND	ug/kg	461	67.1	1	01/14/14 09:55	01/14/14 18:18	206-44-0	
Fluorene	ND	ug/kg	461	95.0	1	01/14/14 09:55	01/14/14 18:18	86-73-7	
Hexachloro-1,3-butadiene	ND	ug/kg	461	79.7	1	01/14/14 09:55	01/14/14 18:18	87-68-3	
Hexachlorobenzene	ND	ug/kg	461	58.7	1	01/14/14 09:55	01/14/14 18:18	118-74-1	
Hexachlorocyclopentadiene	ND	ug/kg	461	85.3	1	01/14/14 09:55	01/14/14 18:18	77-47-4	
Hexachloroethane	ND	ug/kg	461	122	1	01/14/14 09:55	01/14/14 18:18	67-72-1	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	461	95.0	1	01/14/14 09:55	01/14/14 18:18	193-39-5	
Isophorone	ND	ug/kg	461	103	1	01/14/14 09:55	01/14/14 18:18	78-59-1	
1-Methylnaphthalene	ND	ug/kg	461	120	1	01/14/14 09:55	01/14/14 18:18	90-12-0	
2-Methylnaphthalene	ND	ug/kg	461	99.2	1	01/14/14 09:55	01/14/14 18:18	91-57-6	
2-Methylphenol(o-Cresol)	ND	ug/kg	461	140	1	01/14/14 09:55	01/14/14 18:18	95-48-7	
3&4-Methylphenol(m&p Cresol)	ND	ug/kg	461	182	1	01/14/14 09:55	01/14/14 18:18		
Naphthalene	ND	ug/kg	461	113	1	01/14/14 09:55	01/14/14 18:18	91-20-3	
2-Nitroaniline	ND	ug/kg	2310	143	1	01/14/14 09:55	01/14/14 18:18	88-74-4	
3-Nitroaniline	ND	ug/kg	2310	126	1	01/14/14 09:55	01/14/14 18:18	99-09-2	
4-Nitroaniline	ND	ug/kg	922	130	1	01/14/14 09:55	01/14/14 18:18	100-01-6	
Nitrobenzene	ND	ug/kg	461	126	1	01/14/14 09:55	01/14/14 18:18	98-95-3	
2-Nitrophenol	ND	ug/kg	461	112	1	01/14/14 09:55	01/14/14 18:18	88-75-5	
4-Nitrophenol	ND	ug/kg	2310	82.5	1	01/14/14 09:55	01/14/14 18:18	100-02-7	
N-Nitrosodimethylamine	ND	ug/kg	461	150	1	01/14/14 09:55	01/14/14 18:18	62-75-9	
N-Nitroso-di-n-propylamine	ND	ug/kg	461	88.0	1	01/14/14 09:55	01/14/14 18:18	621-64-7	
N-Nitrosodiphenylamine	ND	ug/kg	461	137	1	01/14/14 09:55	01/14/14 18:18	86-30-6	
Pentachlorophenol	ND	ug/kg	2310	83.9	1	01/14/14 09:55	01/14/14 18:18	87-86-5	
Phenanthrene	ND	ug/kg	461	76.9	1	01/14/14 09:55	01/14/14 18:18	85-01-8	
Phenol	ND	ug/kg	461	138	1	01/14/14 09:55	01/14/14 18:18	108-95-2	
Pyrene	ND	ug/kg	461	78.3	1	01/14/14 09:55	01/14/14 18:18	129-00-0	
1,2,4-Trichlorobenzene	ND	ug/kg	461	89.4	1	01/14/14 09:55	01/14/14 18:18	120-82-1	
2,4,5-Trichlorophenol	ND	ug/kg	461	143	1	01/14/14 09:55	01/14/14 18:18	95-95-4	
2,4,6-Trichlorophenol	ND	ug/kg	461	102	1	01/14/14 09:55	01/14/14 18:18	88-06-2	

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ANALYTICAL RESULTS

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

Sample: 4-12 **Lab ID: 92186113019** Collected: 01/09/14 16:40 Received: 01/11/14 10:20 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV Microwave	Analytical Method: EPA 8270 Preparation Method: EPA 3546								
Surrogates									
Nitrobenzene-d5 (S)	62	%	23-110		1	01/14/14 09:55	01/14/14 18:18	4165-60-0	
2-Fluorobiphenyl (S)	59	%	30-110		1	01/14/14 09:55	01/14/14 18:18	321-60-8	
Terphenyl-d14 (S)	74	%	28-110		1	01/14/14 09:55	01/14/14 18:18	1718-51-0	
Phenol-d6 (S)	60	%	22-110		1	01/14/14 09:55	01/14/14 18:18	13127-88-3	
2-Fluorophenol (S)	58	%	13-110		1	01/14/14 09:55	01/14/14 18:18	367-12-4	
2,4,6-Tribromophenol (S)	69	%	27-110		1	01/14/14 09:55	01/14/14 18:18	118-79-6	
8260/5035A Volatile Organics	Analytical Method: EPA 8260								
Acetone	ND	ug/kg	111	11.1	1		01/17/14 16:31	67-64-1	
Benzene	ND	ug/kg	5.6	1.8	1		01/17/14 16:31	71-43-2	
Bromobenzene	ND	ug/kg	5.6	2.2	1		01/17/14 16:31	108-86-1	
Bromochloromethane	ND	ug/kg	5.6	1.9	1		01/17/14 16:31	74-97-5	
Bromodichloromethane	ND	ug/kg	5.6	2.1	1		01/17/14 16:31	75-27-4	
Bromoform	ND	ug/kg	5.6	2.6	1		01/17/14 16:31	75-25-2	
Bromomethane	ND	ug/kg	11.1	2.8	1		01/17/14 16:31	74-83-9	
2-Butanone (MEK)	ND	ug/kg	111	3.2	1		01/17/14 16:31	78-93-3	
n-Butylbenzene	ND	ug/kg	5.6	2.0	1		01/17/14 16:31	104-51-8	
sec-Butylbenzene	ND	ug/kg	5.6	1.8	1		01/17/14 16:31	135-98-8	
tert-Butylbenzene	ND	ug/kg	5.6	2.2	1		01/17/14 16:31	98-06-6	
Carbon tetrachloride	ND	ug/kg	5.6	2.9	1		01/17/14 16:31	56-23-5	
Chlorobenzene	ND	ug/kg	5.6	2.1	1		01/17/14 16:31	108-90-7	
Chloroethane	ND	ug/kg	11.1	2.7	1		01/17/14 16:31	75-00-3	
Chloroform	ND	ug/kg	5.6	1.8	1		01/17/14 16:31	67-66-3	
Chloromethane	ND	ug/kg	11.1	2.7	1		01/17/14 16:31	74-87-3	
2-Chlorotoluene	ND	ug/kg	5.6	1.9	1		01/17/14 16:31	95-49-8	
4-Chlorotoluene	ND	ug/kg	5.6	2.0	1		01/17/14 16:31	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/kg	5.6	4.0	1		01/17/14 16:31	96-12-8	
Dibromochloromethane	ND	ug/kg	5.6	2.0	1		01/17/14 16:31	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/kg	5.6	2.0	1		01/17/14 16:31	106-93-4	
Dibromomethane	ND	ug/kg	5.6	2.8	1		01/17/14 16:31	74-95-3	
1,2-Dichlorobenzene	ND	ug/kg	5.6	2.1	1		01/17/14 16:31	95-50-1	
1,3-Dichlorobenzene	ND	ug/kg	5.6	2.2	1		01/17/14 16:31	541-73-1	
1,4-Dichlorobenzene	ND	ug/kg	5.6	1.9	1		01/17/14 16:31	106-46-7	
Dichlorodifluoromethane	ND	ug/kg	11.1	4.0	1		01/17/14 16:31	75-71-8	
1,1-Dichloroethane	ND	ug/kg	5.6	1.7	1		01/17/14 16:31	75-34-3	
1,2-Dichloroethane	ND	ug/kg	5.6	2.4	1		01/17/14 16:31	107-06-2	
1,1-Dichloroethene	ND	ug/kg	5.6	2.0	1		01/17/14 16:31	75-35-4	
cis-1,2-Dichloroethene	ND	ug/kg	5.6	1.6	1		01/17/14 16:31	156-59-2	
trans-1,2-Dichloroethene	ND	ug/kg	5.6	2.1	1		01/17/14 16:31	156-60-5	
1,2-Dichloropropane	ND	ug/kg	5.6	1.9	1		01/17/14 16:31	78-87-5	
1,3-Dichloropropane	ND	ug/kg	5.6	2.1	1		01/17/14 16:31	142-28-9	
2,2-Dichloropropane	ND	ug/kg	5.6	1.9	1		01/17/14 16:31	594-20-7	
1,1-Dichloropropene	ND	ug/kg	5.6	1.7	1		01/17/14 16:31	563-58-6	
cis-1,3-Dichloropropene	ND	ug/kg	5.6	2.0	1		01/17/14 16:31	10061-01-5	

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ANALYTICAL RESULTS

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

Sample: 4-12 **Lab ID: 92186113019** Collected: 01/09/14 16:40 Received: 01/11/14 10:20 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260/5035A Volatile Organics	Analytical Method: EPA 8260								
trans-1,3-Dichloropropene	ND	ug/kg	5.6	1.7	1		01/17/14 16:31	10061-02-6	
Diisopropyl ether	ND	ug/kg	5.6	1.9	1		01/17/14 16:31	108-20-3	
Ethylbenzene	ND	ug/kg	5.6	2.0	1		01/17/14 16:31	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/kg	5.6	2.2	1		01/17/14 16:31	87-68-3	
2-Hexanone	ND	ug/kg	55.5	4.3	1		01/17/14 16:31	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/kg	5.6	2.1	1		01/17/14 16:31	98-82-8	
p-Isopropyltoluene	ND	ug/kg	5.6	1.9	1		01/17/14 16:31	99-87-6	
Methylene Chloride	ND	ug/kg	22.2	3.3	1		01/17/14 16:31	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	55.5	4.1	1		01/17/14 16:31	108-10-1	
Methyl-tert-butyl ether	ND	ug/kg	5.6	1.7	1		01/17/14 16:31	1634-04-4	
Naphthalene	ND	ug/kg	5.6	1.3	1		01/17/14 16:31	91-20-3	
n-Propylbenzene	ND	ug/kg	5.6	1.9	1		01/17/14 16:31	103-65-1	
Styrene	ND	ug/kg	5.6	2.0	1		01/17/14 16:31	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/kg	5.6	2.3	1		01/17/14 16:31	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/kg	5.6	2.1	1		01/17/14 16:31	79-34-5	
Tetrachloroethene	ND	ug/kg	5.6	1.9	1		01/17/14 16:31	127-18-4	
Toluene	ND	ug/kg	5.6	2.0	1		01/17/14 16:31	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/kg	5.6	2.4	1		01/17/14 16:31	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/kg	5.6	1.8	1		01/17/14 16:31	120-82-1	
1,1,1-Trichloroethane	ND	ug/kg	5.6	2.0	1		01/17/14 16:31	71-55-6	
1,1,2-Trichloroethane	ND	ug/kg	5.6	2.3	1		01/17/14 16:31	79-00-5	
Trichloroethene	ND	ug/kg	5.6	2.3	1		01/17/14 16:31	79-01-6	
Trichlorofluoromethane	ND	ug/kg	5.6	2.4	1		01/17/14 16:31	75-69-4	
1,2,3-Trichloropropane	ND	ug/kg	5.6	1.8	1		01/17/14 16:31	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/kg	5.6	2.2	1		01/17/14 16:31	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/kg	5.6	2.0	1		01/17/14 16:31	108-67-8	
Vinyl acetate	ND	ug/kg	55.5	9.8	1		01/17/14 16:31	108-05-4	
Vinyl chloride	ND	ug/kg	11.1	2.0	1		01/17/14 16:31	75-01-4	
Xylene (Total)	ND	ug/kg	11.1	4.0	1		01/17/14 16:31	1330-20-7	
m&p-Xylene	ND	ug/kg	11.1	4.0	1		01/17/14 16:31	179601-23-1	
o-Xylene	ND	ug/kg	5.6	2.1	1		01/17/14 16:31	95-47-6	
Surrogates									
Toluene-d8 (S)	100	%	70-130		1		01/17/14 16:31	2037-26-5	
4-Bromofluorobenzene (S)	90	%	70-130		1		01/17/14 16:31	460-00-4	
1,2-Dichloroethane-d4 (S)	120	%	70-132		1		01/17/14 16:31	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**28.4**	%	0.10	0.10	1		01/17/14 09:34		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

QC Batch: GCV/7709 Analysis Method: EPA 8015 Modified
QC Batch Method: EPA 5035A/5030B Analysis Description: Gasoline Range Organics
Associated Lab Samples: 92186113001, 92186113002, 92186113003, 92186113004, 92186113005

METHOD BLANK: 1120401 Matrix: Solid
Associated Lab Samples: 92186113001, 92186113002, 92186113003, 92186113004, 92186113005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Gasoline Range Organics	mg/kg	ND	6.0	01/14/14 10:38	
4-Bromofluorobenzene (S)	%	102	70-167	01/14/14 10:38	

LABORATORY CONTROL SAMPLE: 1120402

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Gasoline Range Organics	mg/kg	50	53.2	106	70-165	
4-Bromofluorobenzene (S)	%			96	70-167	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1120403 1120404

Parameter	Units	92185828001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Gasoline Range Organics	mg/kg	ND	60.7	60.7	71.9	65.6	117	107	47-187	9	30	
4-Bromofluorobenzene (S)	%						107	106	70-167			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1120405 1120406

Parameter	Units	92185830001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Gasoline Range Organics	mg/kg	ND	63.6	63.6	73.9	73.1	115	114	47-187	1	30	
4-Bromofluorobenzene (S)	%						106	109	70-167			

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QUALITY CONTROL DATA

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

QC Batch: GCV/7714 Analysis Method: EPA 8015 Modified
QC Batch Method: EPA 5035A/5030B Analysis Description: Gasoline Range Organics
Associated Lab Samples: 92186113006, 92186113007, 92186113008, 92186113009, 92186113010, 92186113011, 92186113012, 92186113013, 92186113014, 92186113015, 92186113016, 92186113017, 92186113018, 92186113019, 92186113020, 92186113021, 92186113022, 92186113023, 92186113024, 92186113025

METHOD BLANK: 1122174 Matrix: Solid
Associated Lab Samples: 92186113006, 92186113007, 92186113008, 92186113009, 92186113010, 92186113011, 92186113012, 92186113013, 92186113014, 92186113015, 92186113016, 92186113017, 92186113018, 92186113019, 92186113020, 92186113021, 92186113022, 92186113023, 92186113024, 92186113025

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Gasoline Range Organics	mg/kg	ND	6.0	01/16/14 10:41	
4-Bromofluorobenzene (S)	%	103	70-167	01/16/14 10:41	

LABORATORY CONTROL SAMPLE: 1122175

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Gasoline Range Organics	mg/kg	49.6	52.7	106	70-165	
4-Bromofluorobenzene (S)	%			99	70-167	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1122176 1122177

Parameter	Units	92186113006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Gasoline Range Organics	mg/kg	ND	56.1	56.1	63.4	62.1	113	110	47-187	2	30	
4-Bromofluorobenzene (S)	%						106	105	70-167			

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QUALITY CONTROL DATA

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

QC Batch: MERP/6049 Analysis Method: EPA 7471
QC Batch Method: EPA 7471 Analysis Description: 7471 Mercury
Associated Lab Samples: 92186113017, 92186113018, 92186113019

METHOD BLANK: 1121654 Matrix: Solid
Associated Lab Samples: 92186113017, 92186113018, 92186113019

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	mg/kg	ND	0.0050	01/15/14 18:25	

LABORATORY CONTROL SAMPLE: 1121655

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/kg	.067	0.071	106	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1121656 1121657

Parameter	Units	92186004001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/kg	0.0045	.063	.053	.0023J	0.0043	-3	0	75-125		20	M1

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QUALITY CONTROL DATA

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

QC Batch: MPRP/15050 Analysis Method: EPA 6010
QC Batch Method: EPA 3050 Analysis Description: 6010 MET
Associated Lab Samples: 92186113017, 92186113018, 92186113019

METHOD BLANK: 1121372 Matrix: Solid
Associated Lab Samples: 92186113017, 92186113018, 92186113019

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/kg	ND	1.0	01/16/14 17:14	
Cadmium	mg/kg	ND	0.10	01/16/14 17:14	
Chromium	mg/kg	ND	0.50	01/16/14 17:14	
Lead	mg/kg	ND	0.50	01/16/14 17:14	
Selenium	mg/kg	ND	1.0	01/16/14 17:14	

LABORATORY CONTROL SAMPLE: 1121373

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/kg	50	49.7	99	80-120	
Cadmium	mg/kg	50	49.7	99	80-120	
Chromium	mg/kg	50	47.1	94	80-120	
Lead	mg/kg	50	49.9	100	80-120	
Selenium	mg/kg	50	49.9	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1121374 1121375

Parameter	Units	92186081001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/kg	1.1	61.5	51.3	59.0	46.3	94	88	75-125	24	20	R1
Cadmium	mg/kg	ND	61.5	51.3	57.8	45.0	94	88	75-125	25	20	R1
Chromium	mg/kg	2.3	61.5	51.3	58.5	46.3	91	86	75-125	23	20	R1
Lead	mg/kg	2.7	61.5	51.3	59.8	46.9	93	86	75-125	24	20	R1
Selenium	mg/kg	ND	61.5	51.3	57.3	44.4	93	86	75-125	25	20	R1

REPORT OF LABORATORY ANALYSIS

QUALITY CONTROL DATA

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

QC Batch: MSV/25542 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV 5035A Volatile Organics
Associated Lab Samples: 92186113017, 92186113018, 92186113019, 92186113024, 92186113025

METHOD BLANK: 1123342 Matrix: Solid
Associated Lab Samples: 92186113017, 92186113018, 92186113019, 92186113024, 92186113025

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/kg	ND	5.5	01/17/14 12:16	
1,1,1-Trichloroethane	ug/kg	ND	5.5	01/17/14 12:16	
1,1,2,2-Tetrachloroethane	ug/kg	ND	5.5	01/17/14 12:16	
1,1,2-Trichloroethane	ug/kg	ND	5.5	01/17/14 12:16	
1,1-Dichloroethane	ug/kg	ND	5.5	01/17/14 12:16	
1,1-Dichloroethene	ug/kg	ND	5.5	01/17/14 12:16	
1,1-Dichloropropene	ug/kg	ND	5.5	01/17/14 12:16	
1,2,3-Trichlorobenzene	ug/kg	ND	5.5	01/17/14 12:16	
1,2,3-Trichloropropane	ug/kg	ND	5.5	01/17/14 12:16	
1,2,4-Trichlorobenzene	ug/kg	ND	5.5	01/17/14 12:16	
1,2,4-Trimethylbenzene	ug/kg	ND	5.5	01/17/14 12:16	
1,2-Dibromo-3-chloropropane	ug/kg	ND	5.5	01/17/14 12:16	
1,2-Dibromoethane (EDB)	ug/kg	ND	5.5	01/17/14 12:16	
1,2-Dichlorobenzene	ug/kg	ND	5.5	01/17/14 12:16	
1,2-Dichloroethane	ug/kg	ND	5.5	01/17/14 12:16	
1,2-Dichloropropane	ug/kg	ND	5.5	01/17/14 12:16	
1,3,5-Trimethylbenzene	ug/kg	ND	5.5	01/17/14 12:16	
1,3-Dichlorobenzene	ug/kg	ND	5.5	01/17/14 12:16	
1,3-Dichloropropane	ug/kg	ND	5.5	01/17/14 12:16	
1,4-Dichlorobenzene	ug/kg	ND	5.5	01/17/14 12:16	
2,2-Dichloropropane	ug/kg	ND	5.5	01/17/14 12:16	
2-Butanone (MEK)	ug/kg	ND	111	01/17/14 12:16	
2-Chlorotoluene	ug/kg	ND	5.5	01/17/14 12:16	
2-Hexanone	ug/kg	ND	55.3	01/17/14 12:16	
4-Chlorotoluene	ug/kg	ND	5.5	01/17/14 12:16	
4-Methyl-2-pentanone (MIBK)	ug/kg	ND	55.3	01/17/14 12:16	
Acetone	ug/kg	ND	111	01/17/14 12:16	
Benzene	ug/kg	ND	5.5	01/17/14 12:16	
Bromobenzene	ug/kg	ND	5.5	01/17/14 12:16	
Bromochloromethane	ug/kg	ND	5.5	01/17/14 12:16	
Bromodichloromethane	ug/kg	ND	5.5	01/17/14 12:16	
Bromoform	ug/kg	ND	5.5	01/17/14 12:16	
Bromomethane	ug/kg	ND	11.1	01/17/14 12:16	
Carbon tetrachloride	ug/kg	ND	5.5	01/17/14 12:16	
Chlorobenzene	ug/kg	ND	5.5	01/17/14 12:16	
Chloroethane	ug/kg	ND	11.1	01/17/14 12:16	
Chloroform	ug/kg	ND	5.5	01/17/14 12:16	
Chloromethane	ug/kg	ND	11.1	01/17/14 12:16	
cis-1,2-Dichloroethene	ug/kg	ND	5.5	01/17/14 12:16	
cis-1,3-Dichloropropene	ug/kg	ND	5.5	01/17/14 12:16	
Dibromochloromethane	ug/kg	ND	5.5	01/17/14 12:16	
Dibromomethane	ug/kg	ND	5.5	01/17/14 12:16	
Dichlorodifluoromethane	ug/kg	ND	11.1	01/17/14 12:16	

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QUALITY CONTROL DATA

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

METHOD BLANK: 1123342 Matrix: Solid
Associated Lab Samples: 92186113017, 92186113018, 92186113019, 92186113024, 92186113025

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diisopropyl ether	ug/kg	ND	5.5	01/17/14 12:16	
Ethylbenzene	ug/kg	ND	5.5	01/17/14 12:16	
Hexachloro-1,3-butadiene	ug/kg	ND	5.5	01/17/14 12:16	
Isopropylbenzene (Cumene)	ug/kg	ND	5.5	01/17/14 12:16	
m&p-Xylene	ug/kg	ND	11.1	01/17/14 12:16	
Methyl-tert-butyl ether	ug/kg	ND	5.5	01/17/14 12:16	
Methylene Chloride	ug/kg	ND	22.1	01/17/14 12:16	
n-Butylbenzene	ug/kg	ND	5.5	01/17/14 12:16	
n-Propylbenzene	ug/kg	ND	5.5	01/17/14 12:16	
Naphthalene	ug/kg	ND	5.5	01/17/14 12:16	
o-Xylene	ug/kg	ND	5.5	01/17/14 12:16	
p-Isopropyltoluene	ug/kg	ND	5.5	01/17/14 12:16	
sec-Butylbenzene	ug/kg	ND	5.5	01/17/14 12:16	
Styrene	ug/kg	ND	5.5	01/17/14 12:16	
tert-Butylbenzene	ug/kg	ND	5.5	01/17/14 12:16	
Tetrachloroethene	ug/kg	ND	5.5	01/17/14 12:16	
Toluene	ug/kg	ND	5.5	01/17/14 12:16	
trans-1,2-Dichloroethene	ug/kg	ND	5.5	01/17/14 12:16	
trans-1,3-Dichloropropene	ug/kg	ND	5.5	01/17/14 12:16	
Trichloroethene	ug/kg	ND	5.5	01/17/14 12:16	
Trichlorofluoromethane	ug/kg	ND	5.5	01/17/14 12:16	
Vinyl acetate	ug/kg	ND	55.3	01/17/14 12:16	
Vinyl chloride	ug/kg	ND	11.1	01/17/14 12:16	
Xylene (Total)	ug/kg	ND	11.1	01/17/14 12:16	
1,2-Dichloroethane-d4 (S)	%	122	70-132	01/17/14 12:16	
4-Bromofluorobenzene (S)	%	83	70-130	01/17/14 12:16	
Toluene-d8 (S)	%	99	70-130	01/17/14 12:16	

LABORATORY CONTROL SAMPLE: 1123343

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/kg	55.7	52.9	95	70-131	
1,1,1-Trichloroethane	ug/kg	55.7	53.3	96	70-141	
1,1,2,2-Tetrachloroethane	ug/kg	55.7	50.3	90	70-130	
1,1,2-Trichloroethane	ug/kg	55.7	51.5	92	70-132	
1,1-Dichloroethane	ug/kg	55.7	53.2	95	70-143	
1,1-Dichloroethene	ug/kg	55.7	55.0	99	70-137	
1,1-Dichloropropene	ug/kg	55.7	53.6	96	70-135	
1,2,3-Trichlorobenzene	ug/kg	55.7	45.6	82	69-153	
1,2,3-Trichloropropane	ug/kg	55.7	54.4	98	70-130	
1,2,4-Trichlorobenzene	ug/kg	55.7	43.7	79	55-171	
1,2,4-Trimethylbenzene	ug/kg	55.7	51.8	93	70-149	
1,2-Dibromo-3-chloropropane	ug/kg	55.7	48.8	88	68-141	
1,2-Dibromoethane (EDB)	ug/kg	55.7	51.3	92	70-130	
1,2-Dichlorobenzene	ug/kg	55.7	52.0	93	70-140	

REPORT OF LABORATORY ANALYSIS

QUALITY CONTROL DATA

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

LABORATORY CONTROL SAMPLE: 1123343

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2-Dichloroethane	ug/kg	55.7	53.6	96	70-137	
1,2-Dichloropropane	ug/kg	55.7	52.5	94	70-133	
1,3,5-Trimethylbenzene	ug/kg	55.7	52.2	94	70-143	
1,3-Dichlorobenzene	ug/kg	55.7	50.5	91	70-144	
1,3-Dichloropropane	ug/kg	55.7	54.0	97	70-132	
1,4-Dichlorobenzene	ug/kg	55.7	51.9	93	70-142	
2,2-Dichloropropane	ug/kg	55.7	54.1	97	68-152	
2-Butanone (MEK)	ug/kg	111	94.1J	84	70-149	
2-Chlorotoluene	ug/kg	55.7	50.5	91	70-141	
2-Hexanone	ug/kg	111	108	97	70-149	
4-Chlorotoluene	ug/kg	55.7	51.8	93	70-149	
4-Methyl-2-pentanone (MIBK)	ug/kg	111	107	96	70-153	
Acetone	ug/kg	111	106J	95	70-157	
Benzene	ug/kg	55.7	51.6	93	70-130	
Bromobenzene	ug/kg	55.7	50.8	91	70-141	
Bromochloromethane	ug/kg	55.7	52.6	95	70-149	
Bromodichloromethane	ug/kg	55.7	52.8	95	70-130	
Bromoform	ug/kg	55.7	51.9	93	70-131	
Bromomethane	ug/kg	55.7	57.5	103	64-136	
Carbon tetrachloride	ug/kg	55.7	53.8	97	70-154	
Chlorobenzene	ug/kg	55.7	52.3	94	70-135	
Chloroethane	ug/kg	55.7	54.3	97	68-151	
Chloroform	ug/kg	55.7	54.8	98	70-130	
Chloromethane	ug/kg	55.7	49.6	89	70-132	
cis-1,2-Dichloroethene	ug/kg	55.7	52.1	93	70-140	
cis-1,3-Dichloropropene	ug/kg	55.7	48.9	88	70-137	
Dibromochloromethane	ug/kg	55.7	52.2	94	70-130	
Dibromomethane	ug/kg	55.7	51.6	93	70-136	
Dichlorodifluoromethane	ug/kg	55.7	51.6	93	36-148	
Diisopropyl ether	ug/kg	55.7	56.7	102	70-139	
Ethylbenzene	ug/kg	55.7	53.4	96	70-137	
Hexachloro-1,3-butadiene	ug/kg	55.7	46.0	83	70-145	
Isopropylbenzene (Cumene)	ug/kg	55.7	56.4	101	70-141	
m&p-Xylene	ug/kg	111	111	100	70-140	
Methyl-tert-butyl ether	ug/kg	55.7	55.7	100	45-150	
Methylene Chloride	ug/kg	55.7	54.5	98	70-133	
n-Butylbenzene	ug/kg	55.7	53.9	97	65-155	
n-Propylbenzene	ug/kg	55.7	54.9	99	70-148	
Naphthalene	ug/kg	55.7	49.2	88	70-148	
o-Xylene	ug/kg	55.7	53.8	97	70-141	
p-Isopropyltoluene	ug/kg	55.7	54.4	98	70-148	
sec-Butylbenzene	ug/kg	55.7	55.6	100	70-145	
Styrene	ug/kg	55.7	55.1	99	70-138	
tert-Butylbenzene	ug/kg	55.7	53.5	96	70-143	
Tetrachloroethene	ug/kg	55.7	50.2	90	70-140	
Toluene	ug/kg	55.7	52.3	94	70-130	
trans-1,2-Dichloroethene	ug/kg	55.7	51.8	93	70-136	
trans-1,3-Dichloropropene	ug/kg	55.7	53.3	96	70-138	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

LABORATORY CONTROL SAMPLE: 1123343

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Trichloroethene	ug/kg	55.7	53.8	97	70-132	
Trichlorofluoromethane	ug/kg	55.7	57.5	103	69-134	
Vinyl acetate	ug/kg	111	119	107	24-161	
Vinyl chloride	ug/kg	55.7	53.9	97	55-140	
Xylene (Total)	ug/kg	167	165	99	70-141	
1,2-Dichloroethane-d4 (S)	%			103	70-132	
4-Bromofluorobenzene (S)	%			95	70-130	
Toluene-d8 (S)	%			98	70-130	

MATRIX SPIKE SAMPLE: 1124395

Parameter	Units	92186115001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethene	ug/kg	ND	28.2	24.2	86	49-180	
Benzene	ug/kg	ND	28.2	29.8	105	50-166	
Chlorobenzene	ug/kg	ND	28.2	30.1	107	43-169	
Toluene	ug/kg	ND	28.2	45.3	160	52-163	
Trichloroethene	ug/kg	ND	28.2	29.5	105	49-167	
1,2-Dichloroethane-d4 (S)	%				120	70-132	
4-Bromofluorobenzene (S)	%				90	70-130	
Toluene-d8 (S)	%				99	70-130	

SAMPLE DUPLICATE: 1124394

Parameter	Units	92186113017 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1,2-Tetrachloroethane	ug/kg	ND	ND		30	
1,1,1-Trichloroethane	ug/kg	ND	ND		30	
1,1,2,2-Tetrachloroethane	ug/kg	ND	ND		30	
1,1,2-Trichloroethane	ug/kg	ND	ND		30	
1,1-Dichloroethane	ug/kg	ND	ND		30	
1,1-Dichloroethene	ug/kg	ND	ND		30	
1,1-Dichloropropene	ug/kg	ND	ND		30	
1,2,3-Trichlorobenzene	ug/kg	ND	ND		30	
1,2,3-Trichloropropane	ug/kg	ND	ND		30	
1,2,4-Trichlorobenzene	ug/kg	ND	ND		30	
1,2,4-Trimethylbenzene	ug/kg	ND	6J		30	
1,2-Dibromo-3-chloropropane	ug/kg	ND	ND		30	
1,2-Dibromoethane (EDB)	ug/kg	ND	ND		30	
1,2-Dichlorobenzene	ug/kg	ND	ND		30	
1,2-Dichloroethane	ug/kg	ND	ND		30	
1,2-Dichloropropane	ug/kg	ND	ND		30	
1,3,5-Trimethylbenzene	ug/kg	ND	6.6		30	
1,3-Dichlorobenzene	ug/kg	ND	ND		30	
1,3-Dichloropropane	ug/kg	ND	ND		30	
1,4-Dichlorobenzene	ug/kg	ND	ND		30	
2,2-Dichloropropane	ug/kg	ND	ND		30	

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QUALITY CONTROL DATA

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

SAMPLE DUPLICATE: 1124394

Parameter	Units	92186113017 Result	Dup Result	RPD	Max RPD	Qualifiers
2-Butanone (MEK)	ug/kg	ND	8J		30	
2-Chlorotoluene	ug/kg	ND	ND		30	
2-Hexanone	ug/kg	ND	ND		30	
4-Chlorotoluene	ug/kg	ND	ND		30	
4-Methyl-2-pentanone (MIBK)	ug/kg	ND	ND		30	
Acetone	ug/kg	ND	69.2J		30	
Benzene	ug/kg	ND	ND		30	
Bromobenzene	ug/kg	ND	ND		30	
Bromochloromethane	ug/kg	ND	ND		30	
Bromodichloromethane	ug/kg	ND	ND		30	
Bromoform	ug/kg	ND	ND		30	
Bromomethane	ug/kg	ND	ND		30	
Carbon tetrachloride	ug/kg	ND	ND		30	
Chlorobenzene	ug/kg	ND	ND		30	
Chloroethane	ug/kg	ND	ND		30	
Chloroform	ug/kg	ND	ND		30	
Chloromethane	ug/kg	ND	ND		30	
cis-1,2-Dichloroethene	ug/kg	ND	ND		30	
cis-1,3-Dichloropropene	ug/kg	ND	ND		30	
Dibromochloromethane	ug/kg	ND	ND		30	
Dibromomethane	ug/kg	ND	ND		30	
Dichlorodifluoromethane	ug/kg	ND	ND		30	
Diisopropyl ether	ug/kg	ND	ND		30	
Ethylbenzene	ug/kg	ND	ND		30	
Hexachloro-1,3-butadiene	ug/kg	ND	ND		30	
Isopropylbenzene (Cumene)	ug/kg	ND	ND		30	
m&p-Xylene	ug/kg	ND	8.6J		30	
Methyl-tert-butyl ether	ug/kg	ND	ND		30	
Methylene Chloride	ug/kg	ND	ND		30	
n-Butylbenzene	ug/kg	ND	ND		30	
n-Propylbenzene	ug/kg	ND	ND		30	
Naphthalene	ug/kg	ND	5.4J		30	
o-Xylene	ug/kg	ND	2.6J		30	
p-Isopropyltoluene	ug/kg	ND	ND		30	
sec-Butylbenzene	ug/kg	ND	ND		30	
Styrene	ug/kg	ND	ND		30	
tert-Butylbenzene	ug/kg	ND	ND		30	
Tetrachloroethene	ug/kg	ND	ND		30	
Toluene	ug/kg	ND	3.3J		30	
trans-1,2-Dichloroethene	ug/kg	ND	ND		30	
trans-1,3-Dichloropropene	ug/kg	ND	ND		30	
Trichloroethene	ug/kg	ND	ND		30	
Trichlorofluoromethane	ug/kg	ND	ND		30	
Vinyl acetate	ug/kg	ND	ND		30	
Vinyl chloride	ug/kg	ND	ND		30	
Xylene (Total)	ug/kg	ND	ND		30	
1,2-Dichloroethane-d4 (S)	%	107	100	5		
4-Bromofluorobenzene (S)	%	88	85	10		

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QUALITY CONTROL DATA

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

SAMPLE DUPLICATE: 1124394

Parameter	Units	92186113017 Result	Dup Result	RPD	Max RPD	Qualifiers
Toluene-d8 (S)	%	99	100	14		

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QUALITY CONTROL DATA

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

QC Batch: OEXT/25495 Analysis Method: EPA 8015 Modified
QC Batch Method: EPA 3546 Analysis Description: 8015 Solid GCSV
Associated Lab Samples: 92186113001, 92186113002, 92186113003, 92186113004, 92186113005, 92186113006, 92186113007, 92186113008, 92186113009, 92186113010, 92186113011, 92186113012, 92186113013, 92186113014, 92186113016, 92186113017, 92186113018, 92186113019, 92186113020

METHOD BLANK: 1120120 Matrix: Solid
Associated Lab Samples: 92186113001, 92186113002, 92186113003, 92186113004, 92186113005, 92186113006, 92186113007, 92186113008, 92186113009, 92186113010, 92186113011, 92186113012, 92186113013, 92186113014, 92186113016, 92186113017, 92186113018, 92186113019, 92186113020

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Components	mg/kg	ND	5.0	01/14/14 20:41	
n-Pentacosane (S)	%	77	41-119	01/14/14 20:41	

LABORATORY CONTROL SAMPLE: 1120121

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Diesel Components	mg/kg	66.7	49.5	74	49-113	
n-Pentacosane (S)	%			81	41-119	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1120122 1120123

Parameter	Units	92186113004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Diesel Components	mg/kg	ND	94.2	94.2	65.3	49.5	68	51	10-146	28	30	
n-Pentacosane (S)	%						73	53	41-119			

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QUALITY CONTROL DATA

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

QC Batch: OEXT/25503 Analysis Method: EPA 8015 Modified
QC Batch Method: EPA 3546 Analysis Description: 8015 Solid GCSV
Associated Lab Samples: 92186113021, 92186113022, 92186113023, 92186113024, 92186113025

METHOD BLANK: 1120384 Matrix: Solid
Associated Lab Samples: 92186113021, 92186113022, 92186113023, 92186113024, 92186113025

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Components	mg/kg	ND	5.0	01/15/14 01:49	
n-Pentacosane (S)	%	76	41-119	01/15/14 01:49	

LABORATORY CONTROL SAMPLE: 1120385

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Diesel Components	mg/kg	66.7	51.4	77	49-113	
n-Pentacosane (S)	%			79	41-119	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1120386 1120387

Parameter	Units	92186150001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Diesel Components	mg/kg	ND	87.4	87.4	63.5	65.8	72	74	10-146	4	30	
n-Pentacosane (S)	%						76	77	41-119			

REPORT OF LABORATORY ANALYSIS

QUALITY CONTROL DATA

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

QC Batch: OEXT/25493 Analysis Method: EPA 8270
QC Batch Method: EPA 3546 Analysis Description: 8270 Solid MSSV Microwave
Associated Lab Samples: 92186113017, 92186113018, 92186113019

METHOD BLANK: 1120090 Matrix: Solid
Associated Lab Samples: 92186113017, 92186113018, 92186113019

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/kg	ND	330	01/14/14 11:51	
1,2-Dichlorobenzene	ug/kg	ND	330	01/14/14 11:51	
1,3-Dichlorobenzene	ug/kg	ND	330	01/14/14 11:51	
1,4-Dichlorobenzene	ug/kg	ND	330	01/14/14 11:51	
1-Methylnaphthalene	ug/kg	ND	330	01/14/14 11:51	
2,4,5-Trichlorophenol	ug/kg	ND	330	01/14/14 11:51	
2,4,6-Trichlorophenol	ug/kg	ND	330	01/14/14 11:51	
2,4-Dichlorophenol	ug/kg	ND	330	01/14/14 11:51	
2,4-Dimethylphenol	ug/kg	ND	330	01/14/14 11:51	
2,4-Dinitrophenol	ug/kg	ND	1650	01/14/14 11:51	
2,4-Dinitrotoluene	ug/kg	ND	330	01/14/14 11:51	
2,6-Dinitrotoluene	ug/kg	ND	330	01/14/14 11:51	
2-Chloronaphthalene	ug/kg	ND	330	01/14/14 11:51	
2-Chlorophenol	ug/kg	ND	330	01/14/14 11:51	
2-Methylnaphthalene	ug/kg	ND	330	01/14/14 11:51	
2-Methylphenol(o-Cresol)	ug/kg	ND	330	01/14/14 11:51	
2-Nitroaniline	ug/kg	ND	1650	01/14/14 11:51	
2-Nitrophenol	ug/kg	ND	330	01/14/14 11:51	
3&4-Methylphenol(m&p Cresol)	ug/kg	ND	330	01/14/14 11:51	
3,3'-Dichlorobenzidine	ug/kg	ND	1650	01/14/14 11:51	
3-Nitroaniline	ug/kg	ND	1650	01/14/14 11:51	
4,6-Dinitro-2-methylphenol	ug/kg	ND	660	01/14/14 11:51	
4-Bromophenylphenyl ether	ug/kg	ND	330	01/14/14 11:51	
4-Chloro-3-methylphenol	ug/kg	ND	660	01/14/14 11:51	
4-Chloroaniline	ug/kg	ND	1650	01/14/14 11:51	
4-Chlorophenylphenyl ether	ug/kg	ND	330	01/14/14 11:51	
4-Nitroaniline	ug/kg	ND	660	01/14/14 11:51	
4-Nitrophenol	ug/kg	ND	1650	01/14/14 11:51	
Acenaphthene	ug/kg	ND	330	01/14/14 11:51	
Acenaphthylene	ug/kg	ND	330	01/14/14 11:51	
Aniline	ug/kg	ND	330	01/14/14 11:51	
Anthracene	ug/kg	ND	330	01/14/14 11:51	
Benzo(a)anthracene	ug/kg	ND	330	01/14/14 11:51	
Benzo(a)pyrene	ug/kg	ND	330	01/14/14 11:51	
Benzo(b)fluoranthene	ug/kg	ND	330	01/14/14 11:51	
Benzo(g,h,i)perylene	ug/kg	ND	330	01/14/14 11:51	
Benzo(k)fluoranthene	ug/kg	ND	330	01/14/14 11:51	
Benzoic Acid	ug/kg	ND	1650	01/14/14 11:51	
Benzyl alcohol	ug/kg	ND	660	01/14/14 11:51	
bis(2-Chloroethoxy)methane	ug/kg	ND	330	01/14/14 11:51	
bis(2-Chloroethyl) ether	ug/kg	ND	330	01/14/14 11:51	
bis(2-Chloroisopropyl) ether	ug/kg	ND	330	01/14/14 11:51	
bis(2-Ethylhexyl)phthalate	ug/kg	ND	330	01/14/14 11:51	

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QUALITY CONTROL DATA

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

METHOD BLANK: 1120090 Matrix: Solid
Associated Lab Samples: 92186113017, 92186113018, 92186113019

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Butylbenzylphthalate	ug/kg	ND	330	01/14/14 11:51	
Chrysene	ug/kg	ND	330	01/14/14 11:51	
Di-n-butylphthalate	ug/kg	ND	330	01/14/14 11:51	
Di-n-octylphthalate	ug/kg	ND	330	01/14/14 11:51	
Dibenz(a,h)anthracene	ug/kg	ND	330	01/14/14 11:51	
Dibenzofuran	ug/kg	ND	330	01/14/14 11:51	
Diethylphthalate	ug/kg	ND	330	01/14/14 11:51	
Dimethylphthalate	ug/kg	ND	330	01/14/14 11:51	
Fluoranthene	ug/kg	ND	330	01/14/14 11:51	
Fluorene	ug/kg	ND	330	01/14/14 11:51	
Hexachloro-1,3-butadiene	ug/kg	ND	330	01/14/14 11:51	
Hexachlorobenzene	ug/kg	ND	330	01/14/14 11:51	
Hexachlorocyclopentadiene	ug/kg	ND	330	01/14/14 11:51	
Hexachloroethane	ug/kg	ND	330	01/14/14 11:51	
Indeno(1,2,3-cd)pyrene	ug/kg	ND	330	01/14/14 11:51	
Isophorone	ug/kg	ND	330	01/14/14 11:51	
N-Nitroso-di-n-propylamine	ug/kg	ND	330	01/14/14 11:51	
N-Nitrosodimethylamine	ug/kg	ND	330	01/14/14 11:51	
N-Nitrosodiphenylamine	ug/kg	ND	330	01/14/14 11:51	
Naphthalene	ug/kg	ND	330	01/14/14 11:51	
Nitrobenzene	ug/kg	ND	330	01/14/14 11:51	
Pentachlorophenol	ug/kg	ND	1650	01/14/14 11:51	
Phenanthrene	ug/kg	ND	330	01/14/14 11:51	
Phenol	ug/kg	ND	330	01/14/14 11:51	
Pyrene	ug/kg	ND	330	01/14/14 11:51	
2,4,6-Tribromophenol (S)	%	46	27-110	01/14/14 11:51	
2-Fluorobiphenyl (S)	%	48	30-110	01/14/14 11:51	
2-Fluorophenol (S)	%	48	13-110	01/14/14 11:51	
Nitrobenzene-d5 (S)	%	47	23-110	01/14/14 11:51	
Phenol-d6 (S)	%	52	22-110	01/14/14 11:51	
Terphenyl-d14 (S)	%	90	28-110	01/14/14 11:51	

LABORATORY CONTROL SAMPLE: 1120091

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/kg	3330	2300	69	39-101	
1,2-Dichlorobenzene	ug/kg	3330	2180	65	36-110	
1,3-Dichlorobenzene	ug/kg	3330	2220	67	35-110	
1,4-Dichlorobenzene	ug/kg	3330	2230	67	35-110	
1-Methylnaphthalene	ug/kg	3330	2610	78	45-105	
2,4,5-Trichlorophenol	ug/kg	3330	3170	95	48-109	
2,4,6-Trichlorophenol	ug/kg	3330	2770	83	45-111	
2,4-Dichlorophenol	ug/kg	3330	2690	81	51-116	
2,4-Dimethylphenol	ug/kg	3330	2760	83	42-103	
2,4-Dinitrophenol	ug/kg	16700	13200	79	28-103	

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QUALITY CONTROL DATA

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

LABORATORY CONTROL SAMPLE: 1120091

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2,4-Dinitrotoluene	ug/kg	3330	3260	98	46-114	
2,6-Dinitrotoluene	ug/kg	3330	3340	100	48-112	
2-Chloronaphthalene	ug/kg	3330	2250	68	44-105	
2-Chlorophenol	ug/kg	3330	2610	78	36-110	
2-Methylnaphthalene	ug/kg	3330	2730	82	39-112	
2-Methylphenol(o-Cresol)	ug/kg	3330	2720	81	39-101	
2-Nitroaniline	ug/kg	6670	6010	90	44-111	
2-Nitrophenol	ug/kg	3330	3010	90	41-100	
3&4-Methylphenol(m&p Cresol)	ug/kg	3330	2670	80	43-103	
3,3'-Dichlorobenzidine	ug/kg	6670	4890	73	10-150	
3-Nitroaniline	ug/kg	6670	5720	86	35-110	
4,6-Dinitro-2-methylphenol	ug/kg	6670	5220	78	38-118	
4-Bromophenylphenyl ether	ug/kg	3330	2740	82	47-115	
4-Chloro-3-methylphenol	ug/kg	6670	5920	89	43-127	
4-Chloroaniline	ug/kg	6670	5090	76	34-109	
4-Chlorophenylphenyl ether	ug/kg	3330	2810	84	44-115	
4-Nitroaniline	ug/kg	6670	5990	90	37-111	
4-Nitrophenol	ug/kg	16700	12200	73	21-152	
Acenaphthene	ug/kg	3330	2530	76	38-117	
Acenaphthylene	ug/kg	3330	2670	80	46-107	
Aniline	ug/kg	3330	2420	73	29-110	
Anthracene	ug/kg	3330	2690	81	50-110	
Benzo(a)anthracene	ug/kg	3330	2580	77	47-116	
Benzo(a)pyrene	ug/kg	3330	2920	88	47-106	
Benzo(b)fluoranthene	ug/kg	3330	2710	81	47-109	
Benzo(g,h,i)perylene	ug/kg	3330	2890	87	39-115	
Benzo(k)fluoranthene	ug/kg	3330	2550	76	45-117	
Benzoic Acid	ug/kg	16700	12600	76	16-110	
Benzyl alcohol	ug/kg	6670	4680	70	38-105	
bis(2-Chloroethoxy)methane	ug/kg	3330	2600	78	39-110	
bis(2-Chloroethyl) ether	ug/kg	3330	2590	78	19-119	
bis(2-Chloroisopropyl) ether	ug/kg	3330	2340	70	21-110	
bis(2-Ethylhexyl)phthalate	ug/kg	3330	2630	79	35-116	
Butylbenzylphthalate	ug/kg	3330	2760	83	38-110	
Chrysene	ug/kg	3330	2690	81	49-110	
Di-n-butylphthalate	ug/kg	3330	2540	76	43-109	
Di-n-octylphthalate	ug/kg	3330	2840	85	37-109	
Dibenz(a,h)anthracene	ug/kg	3330	3020	90	43-116	
Dibenzofuran	ug/kg	3330	2280	68	45-106	
Diethylphthalate	ug/kg	3330	2580	77	41-114	
Dimethylphthalate	ug/kg	3330	2590	78	43-110	
Fluoranthene	ug/kg	3330	2760	83	50-114	
Fluorene	ug/kg	3330	2670	80	46-114	
Hexachloro-1,3-butadiene	ug/kg	3330	2390	72	28-111	
Hexachlorobenzene	ug/kg	3330	2430	73	46-120	
Hexachlorocyclopentadiene	ug/kg	3330	3150	94	18-119	
Hexachloroethane	ug/kg	3330	2170	65	33-110	
Indeno(1,2,3-cd)pyrene	ug/kg	3330	3050	92	42-115	

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, Inc.
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(704)875-9092

QUALITY CONTROL DATA

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

LABORATORY CONTROL SAMPLE: 1120091

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Isophorone	ug/kg	3330	2880	86	44-109	
N-Nitroso-di-n-propylamine	ug/kg	3330	2110	63	43-104	
N-Nitrosodimethylamine	ug/kg	3330	2340	70	29-110	
N-Nitrosodiphenylamine	ug/kg	3330	2150	64	48-113	
Naphthalene	ug/kg	3330	2540	76	41-110	
Nitrobenzene	ug/kg	3330	2690	81	38-110	
Pentachlorophenol	ug/kg	6670	3890	58	32-128	
Phenanthrene	ug/kg	3330	2610	78	50-110	
Phenol	ug/kg	3330	2640	79	28-106	
Pyrene	ug/kg	3330	2840	85	45-114	
2,4,6-Tribromophenol (S)	%			89	27-110	
2-Fluorobiphenyl (S)	%			78	30-110	
2-Fluorophenol (S)	%			81	13-110	
Nitrobenzene-d5 (S)	%			79	23-110	
Phenol-d6 (S)	%			83	22-110	
Terphenyl-d14 (S)	%			87	28-110	

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QUALITY CONTROL DATA

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

QC Batch: PMST/6159
QC Batch Method: ASTM D2974-87
Analysis Method: ASTM D2974-87
Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 92186113009, 92186113010, 92186113011, 92186113012, 92186113013, 92186113014, 92186113015

SAMPLE DUPLICATE: 1121730

Parameter	Units	92186192001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	13.3	13.9	5	25	

SAMPLE DUPLICATE: 1121731

Parameter	Units	92186113015 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	18.9	17.7	7	25	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

QC Batch: PMST/6163
QC Batch Method: ASTM D2974-87
Analysis Method: ASTM D2974-87
Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 92186113001, 92186113002, 92186113003, 92186113004, 92186113005, 92186113006, 92186113007, 92186113008, 92186113016, 92186113017, 92186113018, 92186113019, 92186113020, 92186113021

SAMPLE DUPLICATE: 1121766

Parameter	Units	92186378006 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	12.8	13.7	6	25	

SAMPLE DUPLICATE: 1121767

Parameter	Units	92186113021 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	23.5	23.3	1	25	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

QC Batch: PMST/6164
QC Batch Method: ASTM D2974-87
Analysis Method: ASTM D2974-87
Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 92186113022, 92186113023, 92186113024, 92186113025

SAMPLE DUPLICATE: 1121804

Parameter	Units	92186316001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	19.3	18.7	3	25	

SAMPLE DUPLICATE: 1121805

Parameter	Units	92186447002 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	98.3	98.4	0	25	

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

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

TNI - The NELAC Institute.

LABORATORIES

PASI-A	Pace Analytical Services - Asheville
PASI-C	Pace Analytical Services - Charlotte

ANALYTE QUALIFIERS

A+	The reaction of the soil preservative, sodium bisulfate, is known to react with humic acid in soils to produce ketones. Based upon method blank results, the laboratory feels the ketones in this sample are a result of that reaction.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
R1	RPD value was outside control limits.
S4	Surrogate recovery not evaluated against control limits due to sample dilution.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92186113001	**SB-1**	EPA 3546	OEXT/25495	EPA 8015 Modified	GCSV/16432
92186113002	**SB-2**	EPA 3546	OEXT/25495	EPA 8015 Modified	GCSV/16432
92186113003	**SB-3**	EPA 3546	OEXT/25495	EPA 8015 Modified	GCSV/16432
92186113004	**SB-4**	EPA 3546	OEXT/25495	EPA 8015 Modified	GCSV/16432
92186113005	**SB-5**	EPA 3546	OEXT/25495	EPA 8015 Modified	GCSV/16432
92186113006	**SB-6**	EPA 3546	OEXT/25495	EPA 8015 Modified	GCSV/16432
92186113007	**SB-7**	EPA 3546	OEXT/25495	EPA 8015 Modified	GCSV/16432
92186113008	**4-1**	EPA 3546	OEXT/25495	EPA 8015 Modified	GCSV/16432
92186113009	**4-2**	EPA 3546	OEXT/25495	EPA 8015 Modified	GCSV/16432
92186113010	**4-3**	EPA 3546	OEXT/25495	EPA 8015 Modified	GCSV/16432
92186113011	**4-4**	EPA 3546	OEXT/25495	EPA 8015 Modified	GCSV/16432
92186113012	**4-5**	EPA 3546	OEXT/25495	EPA 8015 Modified	GCSV/16432
92186113013	**4-6**	EPA 3546	OEXT/25495	EPA 8015 Modified	GCSV/16432
92186113014	**4-7**	EPA 3546	OEXT/25495	EPA 8015 Modified	GCSV/16432
92186113016	**4-9**	EPA 3546	OEXT/25495	EPA 8015 Modified	GCSV/16432
92186113017	**4-10**	EPA 3546	OEXT/25495	EPA 8015 Modified	GCSV/16432
92186113018	**4-11**	EPA 3546	OEXT/25495	EPA 8015 Modified	GCSV/16432
92186113019	**4-12**	EPA 3546	OEXT/25495	EPA 8015 Modified	GCSV/16432
92186113020	**27-1**	EPA 3546	OEXT/25495	EPA 8015 Modified	GCSV/16432
92186113021	**27-2**	EPA 3546	OEXT/25503	EPA 8015 Modified	GCSV/16433
92186113022	**27-3**	EPA 3546	OEXT/25503	EPA 8015 Modified	GCSV/16433
92186113023	**27-4**	EPA 3546	OEXT/25503	EPA 8015 Modified	GCSV/16433
92186113024	**27-5**	EPA 3546	OEXT/25503	EPA 8015 Modified	GCSV/16433
92186113025	**27-6**	EPA 3546	OEXT/25503	EPA 8015 Modified	GCSV/16433
92186113001	**SB-1**	EPA 5035A/5030B	GCV/7709	EPA 8015 Modified	GCV/7712
92186113002	**SB-2**	EPA 5035A/5030B	GCV/7709	EPA 8015 Modified	GCV/7712
92186113003	**SB-3**	EPA 5035A/5030B	GCV/7709	EPA 8015 Modified	GCV/7712
92186113004	**SB-4**	EPA 5035A/5030B	GCV/7709	EPA 8015 Modified	GCV/7712
92186113005	**SB-5**	EPA 5035A/5030B	GCV/7709	EPA 8015 Modified	GCV/7712
92186113006	**SB-6**	EPA 5035A/5030B	GCV/7714	EPA 8015 Modified	GCV/7718
92186113007	**SB-7**	EPA 5035A/5030B	GCV/7714	EPA 8015 Modified	GCV/7718
92186113008	**4-1**	EPA 5035A/5030B	GCV/7714	EPA 8015 Modified	GCV/7718
92186113009	**4-2**	EPA 5035A/5030B	GCV/7714	EPA 8015 Modified	GCV/7718
92186113010	**4-3**	EPA 5035A/5030B	GCV/7714	EPA 8015 Modified	GCV/7718
92186113011	**4-4**	EPA 5035A/5030B	GCV/7714	EPA 8015 Modified	GCV/7718
92186113012	**4-5**	EPA 5035A/5030B	GCV/7714	EPA 8015 Modified	GCV/7718
92186113013	**4-6**	EPA 5035A/5030B	GCV/7714	EPA 8015 Modified	GCV/7718
92186113014	**4-7**	EPA 5035A/5030B	GCV/7714	EPA 8015 Modified	GCV/7718
92186113015	**4-8**	EPA 5035A/5030B	GCV/7714	EPA 8015 Modified	GCV/7718
92186113016	**4-9**	EPA 5035A/5030B	GCV/7714	EPA 8015 Modified	GCV/7718
92186113017	**4-10**	EPA 5035A/5030B	GCV/7714	EPA 8015 Modified	GCV/7718
92186113018	**4-11**	EPA 5035A/5030B	GCV/7714	EPA 8015 Modified	GCV/7718
92186113019	**4-12**	EPA 5035A/5030B	GCV/7714	EPA 8015 Modified	GCV/7718
92186113020	**27-1**	EPA 5035A/5030B	GCV/7714	EPA 8015 Modified	GCV/7718
92186113021	**27-2**	EPA 5035A/5030B	GCV/7714	EPA 8015 Modified	GCV/7718
92186113022	**27-3**	EPA 5035A/5030B	GCV/7714	EPA 8015 Modified	GCV/7718
92186113023	**27-4**	EPA 5035A/5030B	GCV/7714	EPA 8015 Modified	GCV/7718

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Rowan Co. PSA WBS46139.1.1
Pace Project No.: 92186113

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92186113024	**27-5**	EPA 5035A/5030B	GCV/7714	EPA 8015 Modified	GCV/7718
92186113025	**27-6**	EPA 5035A/5030B	GCV/7714	EPA 8015 Modified	GCV/7718
92186113017	**4-10**	EPA 3050	MPRP/15050	EPA 6010	ICP/13661
92186113018	**4-11**	EPA 3050	MPRP/15050	EPA 6010	ICP/13661
92186113019	**4-12**	EPA 3050	MPRP/15050	EPA 6010	ICP/13661
92186113017	**4-10**	EPA 7471	MERP/6049	EPA 7471	MERC/5840
92186113018	**4-11**	EPA 7471	MERP/6049	EPA 7471	MERC/5840
92186113019	**4-12**	EPA 7471	MERP/6049	EPA 7471	MERC/5840
92186113017	**4-10**	EPA 3546	OEXT/25493	EPA 8270	MSSV/8650
92186113018	**4-11**	EPA 3546	OEXT/25493	EPA 8270	MSSV/8650
92186113019	**4-12**	EPA 3546	OEXT/25493	EPA 8270	MSSV/8650
92186113017	**4-10**	EPA 8260	MSV/25542		
92186113018	**4-11**	EPA 8260	MSV/25542		
92186113019	**4-12**	EPA 8260	MSV/25542		
92186113024	**27-5**	EPA 8260	MSV/25542		
92186113025	**27-6**	EPA 8260	MSV/25542		
92186113001	**SB-1**	ASTM D2974-87	PMST/6163		
92186113002	**SB-2**	ASTM D2974-87	PMST/6163		
92186113003	**SB-3**	ASTM D2974-87	PMST/6163		
92186113004	**SB-4**	ASTM D2974-87	PMST/6163		
92186113005	**SB-5**	ASTM D2974-87	PMST/6163		
92186113006	**SB-6**	ASTM D2974-87	PMST/6163		
92186113007	**SB-7**	ASTM D2974-87	PMST/6163		
92186113008	**4-1**	ASTM D2974-87	PMST/6163		
92186113009	**4-2**	ASTM D2974-87	PMST/6159		
92186113010	**4-3**	ASTM D2974-87	PMST/6159		
92186113011	**4-4**	ASTM D2974-87	PMST/6159		
92186113012	**4-5**	ASTM D2974-87	PMST/6159		
92186113013	**4-6**	ASTM D2974-87	PMST/6159		
92186113014	**4-7**	ASTM D2974-87	PMST/6159		
92186113015	**4-8**	ASTM D2974-87	PMST/6159		
92186113016	**4-9**	ASTM D2974-87	PMST/6163		
92186113017	**4-10**	ASTM D2974-87	PMST/6163		
92186113018	**4-11**	ASTM D2974-87	PMST/6163		
92186113019	**4-12**	ASTM D2974-87	PMST/6163		
92186113020	**27-1**	ASTM D2974-87	PMST/6163		
92186113021	**27-2**	ASTM D2974-87	PMST/6163		
92186113022	**27-3**	ASTM D2974-87	PMST/6164		
92186113023	**27-4**	ASTM D2974-87	PMST/6164		
92186113024	**27-5**	ASTM D2974-87	PMST/6164		
92186113025	**27-6**	ASTM D2974-87	PMST/6164		

Pace Analytical	Sample Condition Upon Receipt (SCUR)	Page 1 of 2
	Document Number: F-CHR-CS-03-rev.13	Issuing Authority: Pace Huntersville Quality Office

Client Name: Solutions

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other_____

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

Optional
Proj. Due Date:
Proj. Name:

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other_____

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

Temp Correction Factor T1102: No Correction T1301: No Correction

Corrected Cooler Temp.: 3.8 °C Biological Tissue is Frozen: Yes No N/A

Date and Initials of person examining contents: mm 1/11/14

Temp should be above freezing to 6°C

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

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: Mike Branson Date/Time: 1-13-14

Comments/ Resolution: WBS 446139.1.1

1-13-14 → let him know WGFU broken for 4-8. Cannot run DRO.

SCURF Review:	AMB	Date:	1-13-14
SRF Review:	JDB	Date:	1/13/14

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

WO# : 92186113

92186113

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CHAIN-OF-CUSTODY / Analytical Request Document

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

1732703

Section A Required Client Information:

Company: Solutions-IES
Address: 1101 Nowell Rd.
Raleigh NC 27607
Email To: mbranson@solutions-ies.com
Phone: (919) 873-1060 Fax:
Requested Due Date/TAT: STD

Section B Required Project Information:

Report To: Mike Branson
Copy To:
Purchase Order No.:
Project Name: ~~Stokes~~ Co. PSA BOWMAN
Project Number: 2013.0077.NDOT

Section C Invoice Information:

Attention: Emily Davis
Company Name: SIES
Address:
Pace Quote Reference:
Pace Project Manager:
Pace Profile #: 4151-1

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: NC

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Matrix Codes MATRIX / CODE

Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Tissue	TS
Other	OT

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N: DRO/GRO	VOCs 8260	SVOCs 8270	Metals 6010C	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	4-1	SL	G			1/9/14	1600		4							X		X					92186113 008
2	4-2						1602																009
3	4-3						1604																010
4	4-4						1606																011
5	4-5						1608																012
6	4-6						1610																013
7	4-7						1612																014
8	4-8						1614																015
9	4-9						1616																016
10	4-10						1620		~~5~~ 9						X				X	X	X		017
11	4-11						1622																018
12	4-12						1640																019

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
Parcel 4 samples collect DRO, 8270, ~~metals~~ SS from 8oz Jar. Metals in Seperate 8oz JAR for 4-10, 4-11, 4-12 (if needed)	SIES	1/9/14	1215		1/10/14	12:45				
					1/14/14	10:20	3.6	Yes	no	no

ORIGINAL

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Stewart Forling

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 1/9/14

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

F-ALL-Q-020rev.07, 15-May-2007