

PRELIMINARY SITE ASSESSMENT

**PARCEL 003
NAEGELE OUTDOOR ADVERTISING, INC. PROPERTY
1730 BURNETT BLVD.
WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA**

**INTERSECTION OF SR 1436 / US 421 TRUCK (FRONT STREET) AND SR 1140
(BURNETT BLVD.) SOUTH OF WILLARD STREET
WBS ELEMENT: 17BP.3.R.28**

CATLIN PROJECT NO. 214037

PREPARED FOR:



**NCDOT GEOTECHNICAL ENGINEERING UNIT-GEOENVIRONMENTAL SECTION
1589 MSC
RALEIGH, NORTH CAROLINA 27699-1589**

JUNE 25, 2014

PREPARED BY:

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1.0 INTRODUCTION

The North Carolina Department of Transportation (NCDOT) is planning construction activities and acquisition of the right-of-way (ROW) is necessary for intersection improvements at the Greenfield Lake Spillway Culvert (above referenced WBS Element 17BP.3.R.28). NCDOT has indicated site investigations are necessary to determine the presence of contaminated groundwater and/or soil at three (3) sites along the proposed construction area.

2.0 PURPOSE OF INVESTIGATION AND DESCRIPTION

Catlin Engineers & Scientists (CATLIN) was retained by the NCDOT Geotechnical Engineering Unit to provide field investigations concluding with Preliminary Site Assessment (PSA) reports for three (3) sites associated with WBS Element 17BP.3.R.28. In response to a Request for Technical and Cost Proposal (RFP) dated March 17, 2014, CATLIN submitted a proposal for conducting PSAs at the three (3) sites. This report documents the investigation at Parcel 003, Naegele Outdoor Advertising, Inc. Property, 1730 Burnett Blvd. in Wilmington, North Carolina 28401. The property is a vacant lot except for an advertisement billboard. The general location is illustrated on Sheet 1. CATLIN personnel conducted a field investigation at the property on May 16, 2014. This PSA report documents activities and findings.

According to the RFP, this heavily vegetated property is undeveloped. The proposed ROW will be expanded up to 35 feet onto this parcel. This parcel does not appear on the North Carolina Department of Environment and Natural Resources (NCDENR) Underground Storage Tank (UST) Section registry or Ground Water Incident database.

The requested area of investigation is within the proposed right of way (ROW) and easement along Front Street near the intersection of Burnett Blvd. Borings were proposed within the proposed ROW and along planned

drainage features including catch basins and drainage piping. The NCDOT conventional plan sheet symbols are provided on Sheet 2 and the site layout including proposed features are illustrated on Sheet 3.

The NCDOT has requested an investigation to determine if contamination is present at the site. The purpose of this investigation was to:

- Locate all USTs and determine approximate size and contents (if any).
- Determine if contaminated soils are present.
- If contamination is evident, estimate the quantity of impacted soils and indicate the approximate area of soil contamination on a site map.
- Provide a MicroStation file with the location of USTs, soil contamination and monitoring wells.
- Prepare a report including field activities, findings, and recommendations for this site and submit to this office in triplicate.

3.0 METHODS

Proposed boring/sample locations were illustrated on a Plan Sheet provided by NCDOT and agreed upon before beginning investigations. Borings/samples were approved by NCDOT at proposed drainage catch basin locations, along the proposed drainage features, and near the edge of the proposed ROW.

CATLIN coordinated geophysical activities with Pyramid Environmental and Engineering (Pyramid). The geophysical investigation methods are detailed in the Pyramid geophysical report provided in Appendix A.

CATLIN proposed utilizing QROS On-Site Rapid measurement Techniques and Tools (QED™ Analyzer) to evaluate potential for petroleum impacts to soil in a cost effective manner. Soil samples collected from above the approximate water table depth with concentrations greater than 10 milligrams per kilogram (mg/kg) diesel range organics (DRO) or gasoline range organics (GRO) will be considered contaminated for estimated contaminated vadose soil volume calculations. Contaminated soil volume is estimated from the surface to the water table and/or the midpoint distance between a clean sample location and dirty sample location or the property line and ROW/easement. Saturated soils were encountered two (2) to three (3) feet below land surface (BLS).

Borings advanced during this investigation are identified with the parcel number prefix ("3") and numbered sequentially "##". Proposed boring locations and nomenclature were established before beginning field work. During field work, it was determined that proposed borings 3-01 and 3-02 could not be accessed due to heavy vegetation (wooded area) so therefore, there are no borings/samples numbered "-01" or "-02". Soil samples for

analysis per QROS QED™ Analyzer were identified by parcel number, boring number, and depth [example: 3-03 (2')].

3.1 FIELD METHODS

All field work was conducted in general accordance with state and federal guidelines and industry standards.

Underground utility locating was coordinated by CATLIN personnel. The North Carolina One Call Center (NC-1-Call) was contacted for underground utility location. The areas around the proposed boring locations were checked and underground utilities were indicated by NC-1-Call personnel.

CATLIN personnel gathered subsurface soil data by Direct Push Technology boring advancement using an AMS PowerProbe™ 9600D (PowerProbe) and a hand auger (at three locations, 3-03, 3-04, and 3-07). When using the PowerProbe, the borings are advanced to depth by static force and a 90-pound hydraulic percussion hammer. Two and one-quarter inch diameter by four-foot length steel is used as casing. Soil samples are continuously collected in one and one-half inch clear liners. Liners are removed from the casing and then cut in half longitudinally to allow for visual/manual classification utilizing the Unified Soil Classification System (USCS). Boring information was recorded on field logs and transferred to Boring Logs (see Appendix B). Soil samples were collected and packed in the appropriate glassware for analysis.

Following removal of the PowerProbe tooling at boring 3-08, groundwater was pumped from the open bore hole directly into the appropriate laboratory provided glassware utilizing new polypropylene tubing and a peristaltic pump.

New disposable nitrile gloves were worn during sampling activities. Soils selected for QROS QED™ analysis were placed into new glassware provided by QROS. All samples were placed on ice in an insulated cooler for transportation to the laboratory. Sample integrity was maintained by following proper Chain of Custody procedures. A copy of the Chain of Custody is provided following the analytical report in Appendix C.

The groundwater sample was placed in a cooler and transported following proper Chain of Custody procedures to Pace Analytical Services, Inc. (Pace) laboratory in Huntersville, North Carolina by a Pace courier. A copy of the Chain of Custody is provided following the analytical report in Appendix D.

Boreholes were abandoned to the surface in grassy areas and just below existing asphalt in asphalt areas using three-eighth inch bentonite chips. Bentonite and water were poured into the borehole simultaneously to facilitate hydration. Boreholes in asphalt were finished with asphalt patch to the surface.

3.2 ANALYTICAL TESTING

Soil

The QROS QED™ Analyzer methods have been approved by the NCDENR for petroleum contamination determination. Complete QROS QED™ procedures are on file with the NCDENR and are available upon request. The QROS QED™ analysis was conducted by QROS personnel at their laboratory in Wilmington, North Carolina.

QROS QED™ analysis provides total Benzene, Toluene, Ethylbenzene, and Toluene (BTEX), DRO, GRO, total petroleum hydrocarbon (TPH), total aromatics (C-10-C35) and (total) 16 Environmental Protection Agency (EPA) Poly Aromatic Hydrocarbons (PAHs) concentrations. Soil sample DRO and GRO results greater than 10 mg/kg are considered contaminated for this investigation.

Groundwater

One groundwater sample was collected near the proposed replacement culvert under Front Street. The groundwater sample was submitted to Pace (NC Certification #12) for volatile and semi volatile organics analysis per Standard Method (SM) 6200B and EPA 625, respectively.

4.0 FIELD ACTIVITIES

4.1 CURRENT SITE CONDITIONS AND FIELD OBSERVATIONS

As previously mentioned, the site is a vacant lot with an advertising billboard and portions of the site are covered with heavy vegetation (wooded). No signs of USTs were observed. Photographs taken during the geophysical investigation are included in the geophysical report provided in Appendix A.

The site vicinity is illustrated on Sheet 1 and Sheet 3 illustrates the current site map with soil boring and sample locations.

4.2 SOIL SAMPLING

A total of six (6) borings were installed as part of the investigation. At least one (1) soil sample interval was collected from each boring and submitted for analysis. Boring/sample locations are illustrated on Sheet 3. Boring logs are included in Appendix B.

PowerProbe borings were advanced to approximately four (4) feet deep and terminated in saturated soils except boring 3-08 was terminated at eight (8) feet BLS. One hand auger boring (3-07) was terminated at one foot deep. Soils were collected continuously to boring termination. After retrieving the drive, soil was visually/manually classified for USCS classification. Soil samples collected from each boring for analysis were packed in the appropriate glassware, labeled, and placed in a cooler on ice. Borings 3-03 and 3-06 were located at proposed catch basins and two (2) soil samples were collected for analysis at these locations (one soil sample at 2 feet BLS and one at 4 feet BLS). A total of eight (8) soil samples were submitted to QROS for QED™ analysis. Chain of Custody documentation is included in Appendix C.

4.3 GROUNDWATER SAMPLING

Boring 3-08 was advanced for groundwater sample collection. Groundwater was encountered at approximately three (3) feet BLS. A groundwater sample was pumped directly from the open bore hole into laboratory provided glassware. The groundwater samples was submitted to Pace for analysis per SM 6200B and EPA Method 625.

4.4 SURVEYING

Boring/sample locations were recorded utilizing a Trimble® global positioning survey instrument and data collector. Boring coordinates are shown on the Boring Logs provided in Appendix B. Borings locations are indicated on plan sheets provided by NCDOT and are included as Sheet 3.

5.0 RESULTS

Geophysical Investigation

The complete geophysical investigation report is included in Appendix A. As indicated in the Pyramid Report, the investigation did not reveal any evidence of metallic USTs in the survey area.

Soil

Soil sample results from the recent assessment activities utilizing QROS QED™ analysis are provided on Table 1. Soil sample locations, summarized results and estimated extent of TPH impacted soils are illustrated on Sheet 3. The complete QROS QED™ report is provided in Appendix C.

Soils encountered across the site were predominately sands with gravel. Saturated soils were encountered approximately two (2) to three (3) feet BLS. Soils from the surface to two (2) feet BLS are considered vadose zone.

No GRO soil concentrations were reported above the detection limits. Soils collected from proposed catch basin (CB) 0425 (boring 3-03) revealed DRO concentrations greater than 10 mg/kg in the samples collected from two (2) and four (4) feet BLS (results = 127.1 mg/kg and 689.3 mg/kg DRO, respectively). Soil samples 3-06 (2') and 3-06 (4') were collected at CB 0423 and revealed DRO concentrations of 11.62 mg/kg and 10.38 mg/kg, respectively. The boring 3-08 advanced at proposed catch basin 0435 did not reveal DRO or GRO concentrations above 10 mg/kg in the soil sample collected from two (2) feet BLS.

The soil samples collected from two (2) feet BLS along the proposed drainage pipe at borings 3-04 and 3-05 revealed DRO soil contamination of 54.7 mg/kg and 20.22 mg/kg, respectively. The sample collected from approximately one foot deep at boring 3-07 and near the end of the proposed drainage line and ditch did not reveal soil contamination above 10 mg/kg.

The estimated volume of petroleum impacted soils as illustrated on Sheet 3 includes the area around all borings except borings 3-07 and 3-08. The approximate water table at both these locations is two (2) to three (3) feet BLS. The approximate area is 4,380 feet² and a total volume of impacted soils is approximately 320 yds³.

Groundwater

The one groundwater sample collected at boring 3-08 located near the end of the culvert under Front Street and CB 0435 did not reveal any SM 6200B or EPA Method 625 parameters above the method detection limits. The laboratory analytical report including a list of all parameters and method detection limits is provided in Appendix D.

6.0 SUMMARY AND CONCLUSIONS

The site is currently a vacant lot except for an advertising billboard. No USTs are suspected at the area of investigation. Six (6) borings were advanced for soil sample collection at proposed drainage features and within the proposed

ROW. There were no borings advanced that numbered "01" or "02" due to proposed boring locations being inaccessible in a heavily wooded area.

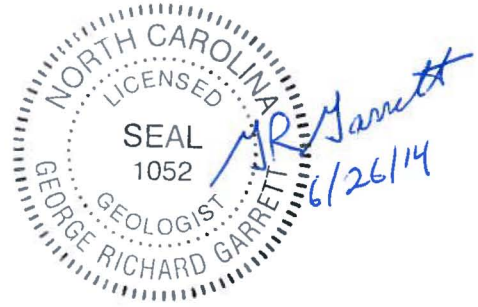
Contaminated soils were revealed by QROS QED™ in borings 3-03 and 3-06 at proposed catch basins 0425 and 0423, respectively, in samples collected from two (2) and four (4) feet BLS. The borings 3-04 and 3-05 were advanced along the proposed drainage line and samples collected at two (2) feet BLS from these locations also revealed contamination. No soil or groundwater contamination was detected in samples collected from boring 3-08 near the culvert under Front Street and CB 0435. No soil contaminant concentrations were detected above 10 mg/kg in the soil sample collected from boring 3-07 (where the proposed drainage line ends at a ditch).

A total estimated contaminated soil volume of 320 yds³ may be encountered in vadose zone soils across the site and around borings 3-03 through 3-06. Any detectable concentrations in excavated soils may require handling and disposal as an impacted waste.

7.0 SIGNATURES



Benjamin J. Ashba, P.G.
Project Manager



G. Richard Garrett, P.G.
Contract Manager

TABLES

TABLE 1
SUMMARY OF SOIL RESULTS



Hydrocarbon Analysis Results

Client: Catlin
Address: Wilmington, NC
Contact: Ben Ashba

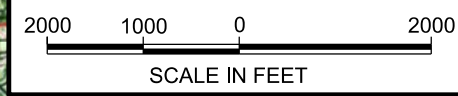
Samples taken Friday, May 16, 2014
Samples extracted Friday, May 16, 2014
Samples analysed Monday, May 19, 2014
Operator Rachel Menoher

Project: Parcel 3 NCDOT Front St. and Burnett Blvd - WBS: 17BP.3.R.28
CATLIN Project No. 214037

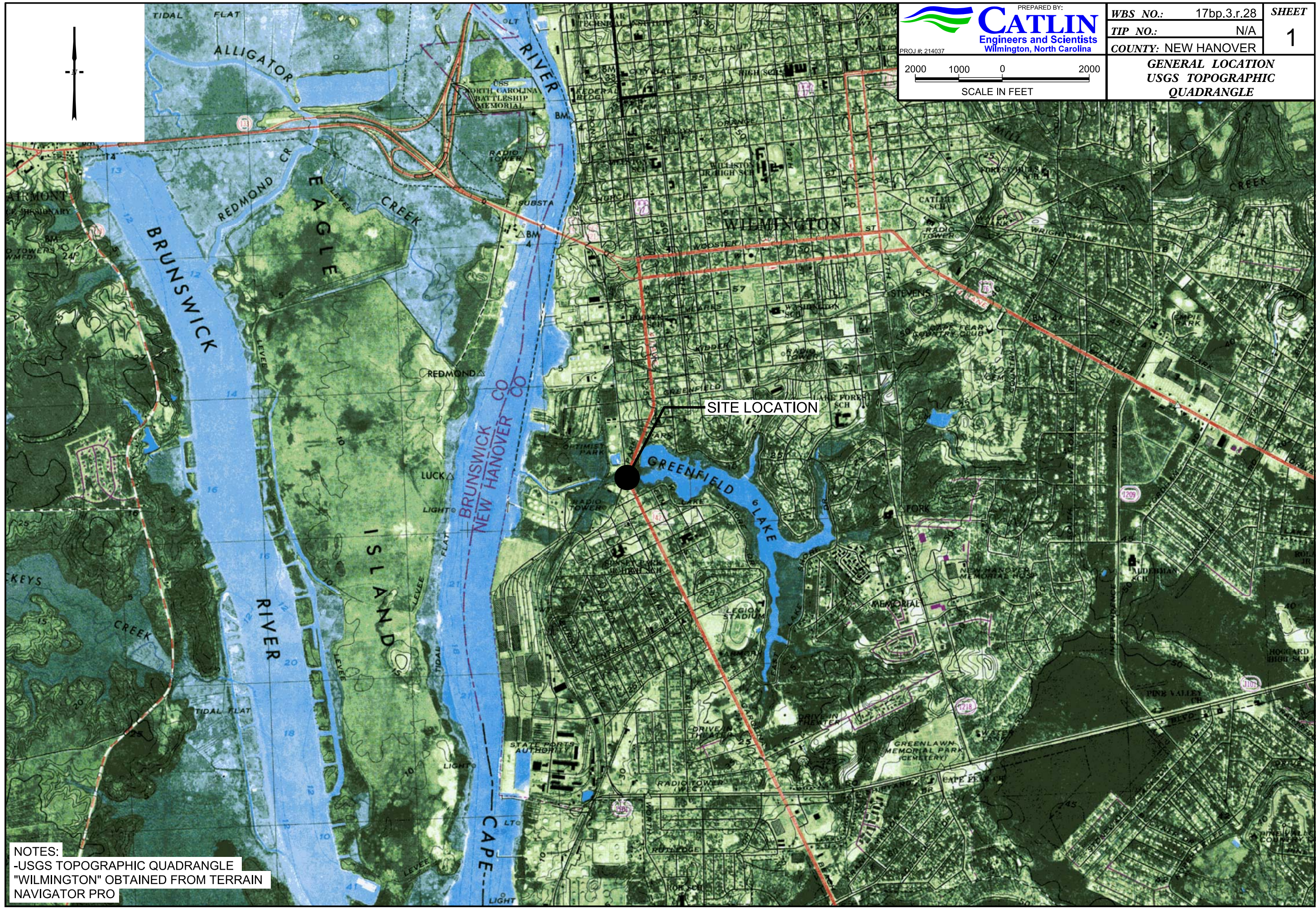
Matrix	Sample ID	Location	Dilution used	BTEX (C6 - C9)	GRO (C5 - C10)	DRO (C10 - C35)	TPH (C5 - C35)	Total Aromatics (C10-C35)	16 EPA PAHs	BaP	Ratios			HC Fingerprint Match	
											% light	% mid	% heavy		
s	3-03 (2')	Proposed Catch Basin (CB) 0425	21.0	<1	<1	127.1	127.1	35.19	2.18	<0.021	57.9	37.4	4.7	Waste Oil (FCM) 97.7%	
s	3-03 (4')		256.0	<12.8	<12.8	689.3	689.3	161.2	5.67	<0.256	85.5	12.1	2.3	Waste Oil (FCM) 70.8%	
s	3-04 (2')	North of CB 0425 along proposed drainage line	20.0	<1	<1	54.7	54.7	40.72	2.09	0.037	27.3	58.5	14.3	V.Deg.PHC 77.6%	
s	3-05 (2')	Along proposed drainage line north of boring 3-03	19.0	<1	<1	20.22	20.22	19.12	1.02	<0.019	51.6	39.8	8.6	V.Deg.PHC 90.4%	
s	3-06 (2')	CB 0423	22.0	<1.1	<1.1	11.62	11.62	10.65	0.71	<0.022	36.9	47.5	15.6	V.Deg.PHC 74.2%	
s	3-06 (4')		19.0	<0.9	<0.9	10.38	10.38	10.35	0.64	<0.019	50.8	38.1	11.1	V.Deg.PHC 83.7%	
s	3-07 (1')	End of proposed drainage line at ditch	22.0	<1.1	<1.1	9.57	9.57	8.77	0.58	<0.022	40.9	44.1	15	V.Deg.PHC 76.8%	
s	3-08 (2')	Near end of culvert under Front St. and CB 0435	21.0	<1.1	<1.1	5.52	5.52	5.06	0.34	<0.021	46.4	37.3	16.3	V.Deg.PHC 76.1%	
Initial Calibrator QC check				OK				Final FCM QC Check				OK 98.3%			

Results generated by a QED HC-1 analyser. Concentration values in mg/kg for soil samples and mg/L for water samples. Soil values are not corrected for moisture or stone content
Fingerprints provide a tentative hydrocarbon identification. The abbreviations are:- FCM = Results calculated using Fundamental Calibration Mode : % = confidence for sample fingerprint match to library (SBS) or (LBS) = Site Specific or Library Background Subtraction applied to result : (PFM) = Poor Fingerprint Match : (T) = Turbid : (P) = Particulate present

SHEETS



GENERAL LOCATION
 USGS TOPOGRAPHIC
 QUADRANGLE



NOTES:
 -USGS TOPOGRAPHIC QUADRANGLE
 "WILMINGTON" OBTAINED FROM TERRAIN
 NAVIGATOR PRO

Note: Not to Scale

*S.U.E. = Subsurface Utility Engineering

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

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

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

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

RAILROADS:

Standard Gauge	
RR Signal Milepost	
Switch	
RR Abandoned	
RR Dismantled	

RIGHT OF WAY:

Baseline Control Point	
Existing Right of Way Marker	
Existing Right of Way Line	
Proposed Right of Way Line	
Proposed Right of Way Line with Iron Pin and Cap Marker	
Proposed Right of Way Line with Concrete or Granite Marker	
Existing Control of Access	
Proposed Control of Access	
Existing Easement Line	
Proposed Temporary Construction Easement	
Proposed Temporary Drainage Easement	
Proposed Permanent Drainage Easement	
Proposed Permanent Drainage / Utility Easement	
Proposed Permanent Utility Easement	
Proposed Temporary Utility Easement	
Proposed Aerial Utility Easement	
Proposed Permanent Easement with Iron Pin and Cap Marker	

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	
Existing Curb	
Proposed Slope Stakes Cut	
Proposed Slope Stakes Fill	
Proposed Curb Ramp	
Curb Cut Future Ramp	
Existing Metal Guardrail	
Proposed Guardrail	
Existing Cable Guiderail	
Proposed Cable Guiderail	
Equality Symbol	
Pavement Removal	
VEGETATION:	
Single Tree	
Single Shrub	
Hedge	
Woods Line	

Orchard	
Vineyard	

EXISTING STRUCTURES:

MAJOR:	
Bridge, Tunnel or Box Culvert	
Bridge Wing Wall, Head Wall and End Wall	
MINOR:	
Head and End Wall	
Pipe Culvert	
Footbridge	
Drainage Box: Catch Basin, DI or JB	
Paved Ditch Gutter	
Storm Sewer Manhole	
Storm Sewer	

UTILITIES:

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

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

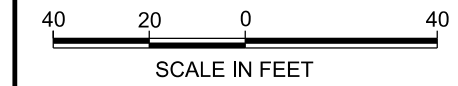
Gas Valve	
Gas Meter	
Recorded U/G Gas Line	
Designated U/G Gas Line (S.U.E.*)	
Above Ground Gas Line	

SANITARY SEWER:

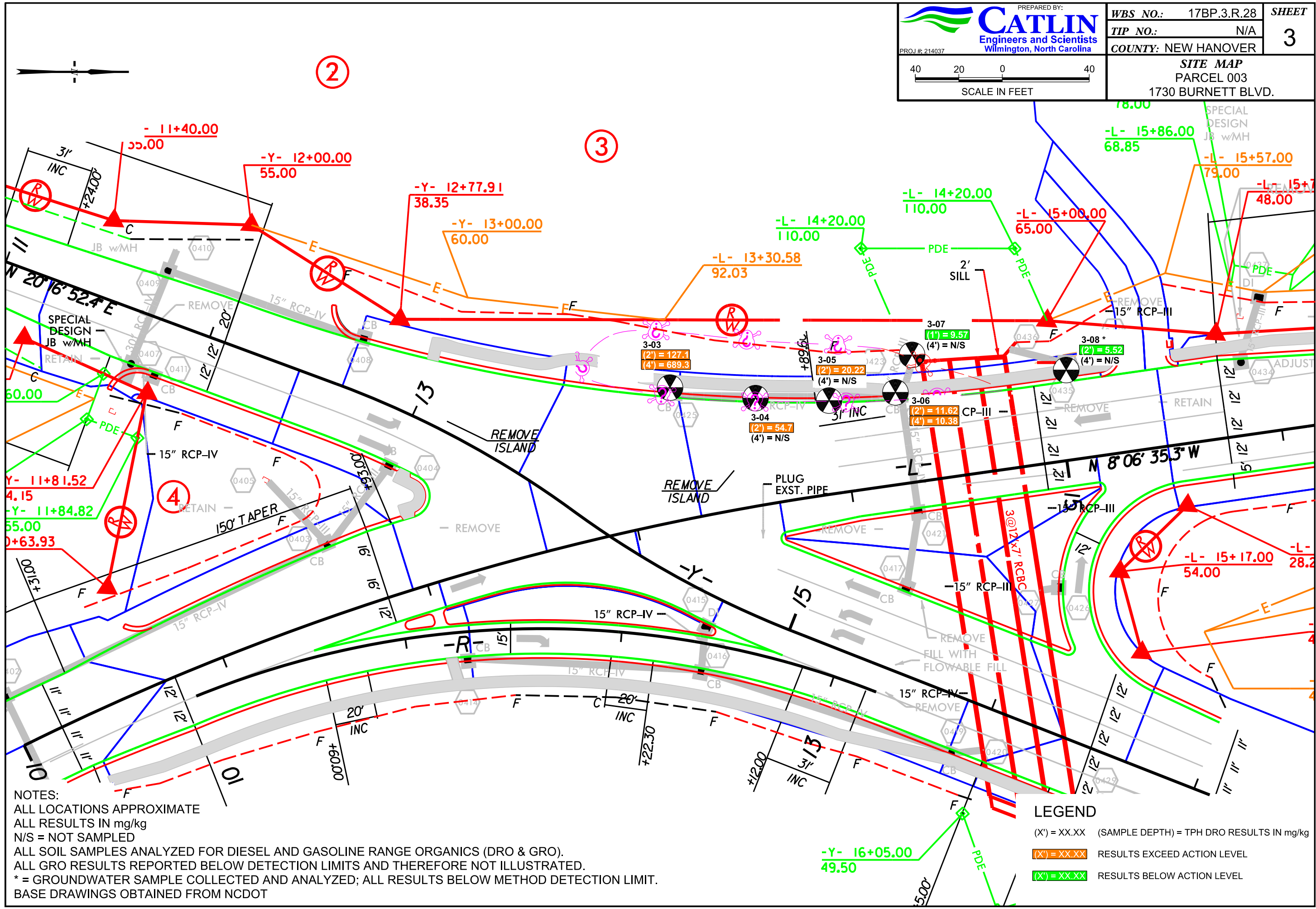
Sanitary Sewer Manhole	
Sanitary Sewer Cleanout	
U/G Sanitary Sewer Line	
Above Ground Sanitary Sewer	
Recorded SS Forced Main Line	
Designated SS Forced Main Line (S.U.E.*)	

MISCELLANEOUS:

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



SITE MAP
 PARCEL 003
 1730 BURNETT BLVD.



NOTES:
 ALL LOCATIONS APPROXIMATE
 ALL RESULTS IN mg/kg
 N/S = NOT SAMPLED
 ALL SOIL SAMPLES ANALYZED FOR DIESEL AND GASOLINE RANGE ORGANICS (DRO & GRO).
 ALL GRO RESULTS REPORTED BELOW DETECTION LIMITS AND THEREFORE NOT ILLUSTRATED.
 * = GROUNDWATER SAMPLE COLLECTED AND ANALYZED; ALL RESULTS BELOW METHOD DETECTION LIMIT.
 BASE DRAWINGS OBTAINED FROM NCDOT

LEGEND
 (X) = XX.XX (SAMPLE DEPTH) = TPH DRO RESULTS IN mg/kg
 (X) = XX.XX RESULTS EXCEED ACTION LEVEL
 (X) = XX.XX RESULTS BELOW ACTION LEVEL

APPENDIX A
PYRAMID GEOPHYSICAL REPORT



PYRAMID ENVIRONMENTAL & ENGINEERING
(PROJECT 2014-103)

GEOPHYSICAL SURVEY

PARCEL 003 – VICINITY OF FRONT
STREET & BURNETT BOULEVARD
NCDOT PROJECT WBS: 17BP.3.R.28

WILMINGTON, NEW HANOVER COUNTY, NC

MAY 12, 2014

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C257: GEOLOGY C1251: ENGINEERING

GEOPHYSICAL INVESTIGATION REPORT
Parcel 003 - Front St. & Burnett Blvd.
Wilmington, New Hanover County, North Carolina

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EXECUTIVE SUMMARY

Project Description: Pyramid Environmental conducted a geophysical investigation for Catlin Engineers & Scientists at NCDOT Parcel 3 located along Burnett Blvd. near the Front Street intersection in Wilmington, New Hanover County, NC. The survey was part of a North Carolina Department of Transportation (NCDOT) overhead rail line project (NCDOT Project WBS 17BP.3.R.28). Catlin Engineers & Scientists directed Pyramid as to the geophysical survey boundaries at the project site, which were designed to include the area between the existing edge of pavement and the NCDOT proposed ROW and/or easement. The geophysical investigation consisted of an electromagnetic (EM) induction-metal detection survey.

Geophysical Results: All of the EM61 anomalies detected could be attributed to known cultural features such as underground utilities and metal guy wires. The geophysical investigation did not record any evidence of metallic UST at the property.

INTRODUCTION

Pyramid Environmental conducted a geophysical investigation for Catlin Engineers & Scientists at NCDOT Parcel 3 located along Burnett Blvd. near the Front Street intersection in Wilmington, New Hanover County, NC. The survey was part of a North Carolina Department of Transportation (NCDOT) overhead rail line project (NCDOT Project WBS 17BP.3.R.28). Catlin Engineers & Scientists directed Pyramid as to the geophysical survey boundaries at the project site, which were designed to include the area between the existing edge of pavement and the NCDOT proposed ROW and/or easement. The survey grid spanned approximately 110 feet from north to south and a maximum of 40 feet from west to east, and included the accessible areas of the parcel. Conducted on May 9, 2014, the geophysical investigation was performed to determine if unknown, metallic underground storage tanks (USTs) were present beneath the survey area.

The consisted open grassy areas, heavily vegetated forest area, and a large drainage ditch. Dense tree cover was present on the south side of the parcel that was not accessible by the geophysical equipment. Similarly, the large drainage ditch and an area containing debris prevented the survey from extending to the north boundary of the parcel. Aerial photographs showing the survey area boundaries and ground-level photographs are shown in **Figure 1**.

FIELD METHODOLOGY

The geophysical investigation consisted of an electromagnetic (EM) induction-metal detection survey. Pyramid collected the EM data using a Geonics EM61 metal detector integrated with a Trimble AG-114 GPS antenna. The integrated GPS system allows the location of the instrument to be recorded in real-time during data collection, resulting in an EM data set that geo-referenced and can be overlain on aerial photographs and CADD drawings. A boundary grid was established around the perimeter of the site with marks every 10 feet to maintain orientation of the instrument throughout the survey and assure complete coverage of the area.

According to the instrument specifications, the EM61 can detect a metal drum down to a maximum depth of approximately 8 feet. Smaller objects (1-foot or less in size) can be detected to a maximum depth of 4 to 5 feet. The EM61 data were digitally collected at approximately 0.8

foot intervals along north-south trending or east-west trending, generally parallel survey lines spaced five feet apart. The data were downloaded to a computer and reviewed in the field and office using the Geonics NAV61 and Surfer for Windows Version 11.0 software programs.

GPR data were not required due to all anomalies being directly attributed to known cultural features (see discussions below).

DISCUSSION OF RESULTS

A contour plot of the EM61 differential results obtained across survey area at the property is presented in **Figure 2**. The differential results are obtained from the difference between the top and bottom coils of the EM61 instrument. The differential results focus on the larger metal objects such as drum and UST-size objects and ignore the smaller insignificant metal objects.

Discussion of EM Anomalies: The EM response that was observed along the entire east boundary of the survey area adjacent to the road was associated with a large natural gas pipeline located in this area. The pipeline had been marked by utility locators, and was also visible above ground. The EM response at northwest corner of the survey area was associated with a metal guy wire. The remaining survey area did not exhibit any significant EM responses that would be indicative of USTs or other structures.

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

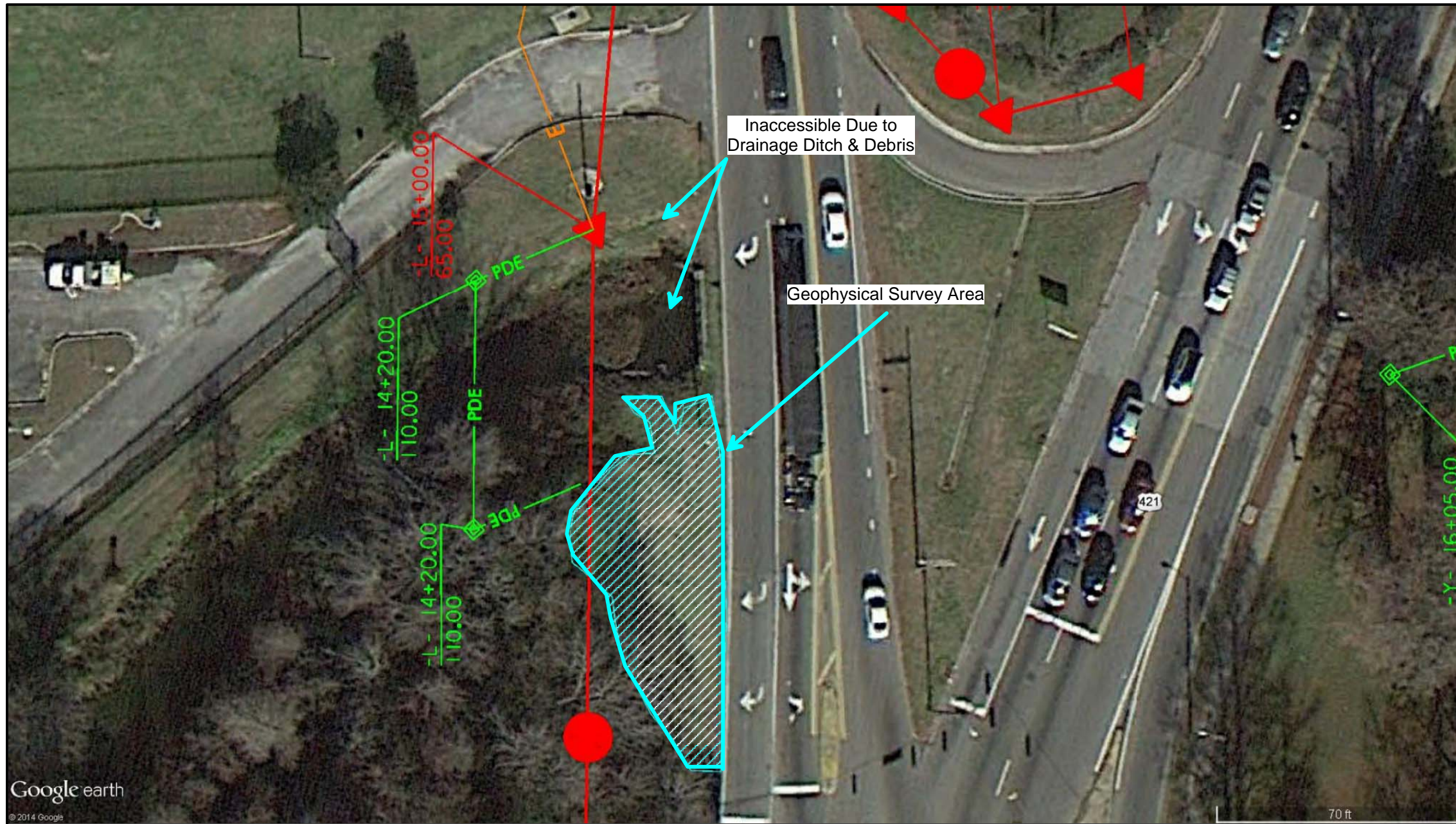
SUMMARY & CONCLUSIONS

Our evaluation of the EM61 data collected at Parcel 003 along Burnett Blvd. in Wilmington, New Hanover County, North Carolina, provides the following summary and conclusions:

- The EM61 survey provided reliable results for the detection of metallic USTs within the accessible portions of the geophysical survey area.
- All of the EM61 anomalies detected could be attributed to known cultural features such as underground utilities and metal guy wires.
- The geophysical investigation did not record any evidence of metallic UST at the property.

LIMITATIONS

Geophysical surveys have been performed and this report prepared for Catlin Engineers & Scientists in accordance with generally accepted guidelines for EM61 and GPR surveys. It is generally recognized that the results of the EM61 and GPR surveys are non-unique and may not represent actual subsurface conditions. The EM61 and GPR results obtained for this project have not conclusively determined the definitive presence or absence of metallic USTs, but that the evidence collected is sufficient to result in the conclusions made in this report. Additionally, it should be understood that areas containing extensive vegetation, reinforced concrete, or other restrictions to the accessibility of the geophysical instruments could not be fully investigated.




Approximate Location of the Geophysical Survey Area
With NCDOT Proposed ROW/Easement Overlay



View of Geophysical Survey Area
(Facing Approximately North)

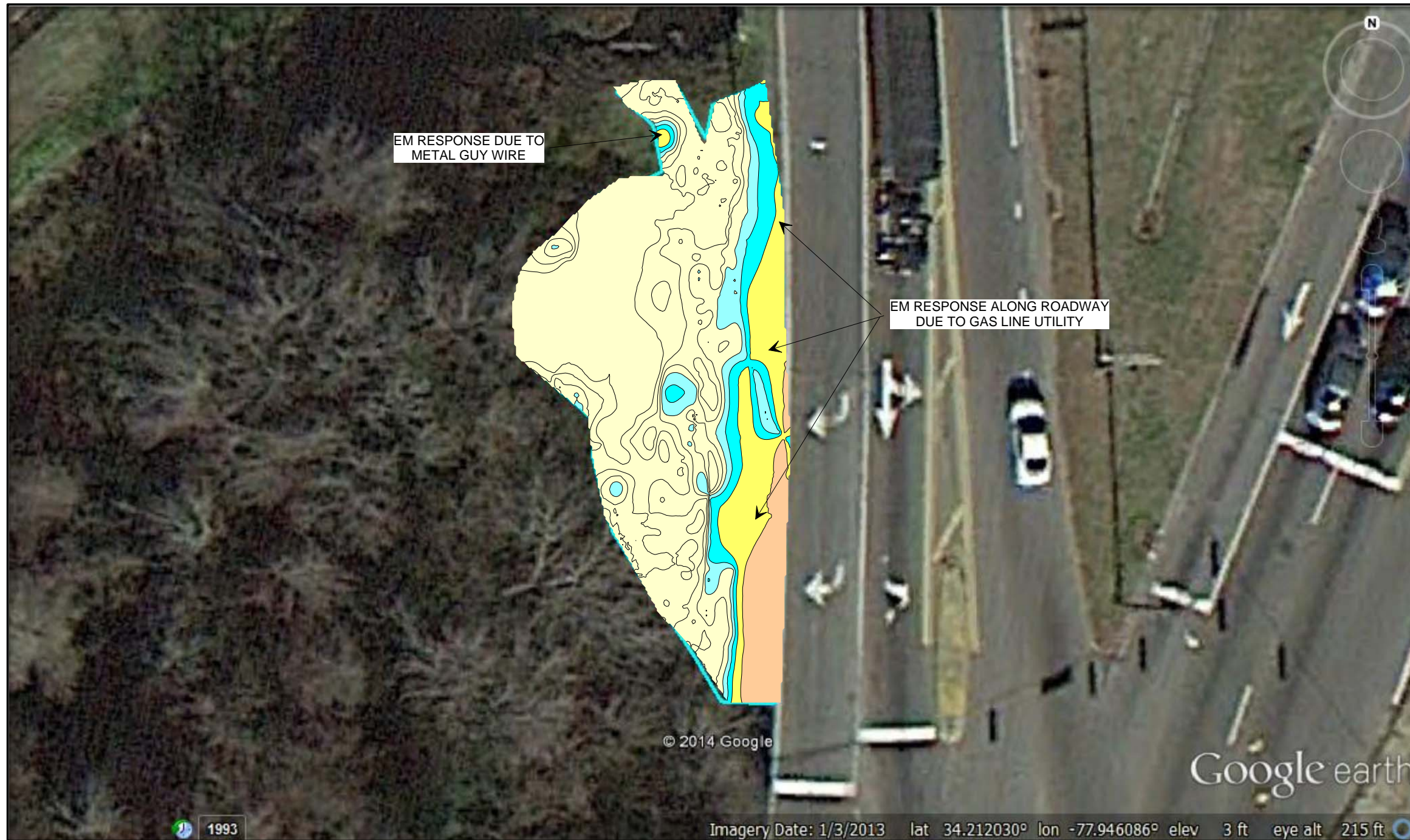


View of Inaccessible Drainage
Area and Debris

TITLE	PARCEL 003: GEOPHYSICAL SURVEY BOUNDARIES AND SITE PHOTOGRAPHS	
PROJECT	FRONT ST. & BURNETT BLVD. (NCDOT WBS 17BP.3.R.28) WILMINGTON, NEW HANOVER COUNTY, NC	
		503 INDUSTRIAL AVENUE GREENSBORO, NC 27460 (336) 335-3174 (p) (336) 691-0648 (f) License # C1251 Eng. / License # C257 Geology
DATE	5/9/2014	CLIENT CATLIN ENGINEERS
PYRAMID PROJECT #:	2014-	FIGURE 1



EM61 Differential Results




NO EVIDENCE OF METALLIC USTs OBSERVED

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 May 9, 2014, using a Geonics EM61 instrument. Ground penetrating radar (GPR) data were not required due to all anomalies being directly attributed to visible objects at ground surface or known utility lines.

EM61 Metal Detection Response (millivolts)



TITLE	PARCEL 003: EM61 DIFFERENTIAL RESULTS CONTOUR MAP	
PROJECT	FRONT ST. & BURNETT BLVD. (NCDOT WBS 17BP.3.R.28) WILMINGTON, NEW HANOVER COUNTY, NC	
		503 INDUSTRIAL AVENUE GREENSBORO, NC 27460 (336) 335-3174 (p) (336) 691-0648 (f) License # C1251 Eng. / License # C257 Geology
DATE	5/9/2014	CLIENT CATLIN ENGINEERS
PYRAMID PROJECT #:	2014-	FIGURE 2

APPENDIX B
BORING LOGS

BORING LOG



214037
Wilmington, NC

SHEET 1 OF 1

PROJECT NO.: 214037	STATE: NC	COUNTY: New Hanover	LOCATION: Wilmington
PROJECT NAME: PARCEL 003 - Naegele Outdoor Advertising, Inc. Property		LOGGED BY: Michael D. Mason	BORING ID: 3-03
NORTHING: 169,784		EASTING: 2,318,653	DRILLER: Larry Wessell
SYSTEM: NCSP NAD 83 (USft)		BORING LOCATION:	CREW: CATLIN
DRILL MACHINE: Hand Auger	METHOD: Hand Auger	0 HOUR DTW: Dry	BORING DEPTH: 3.5
START DATE: 5/16/14	FINISH DATE: 5/16/14	24 HOUR DTW: FIAD	WATER DEPTH: --

DEPTH	BLOW COUNT 0.5 0.5 0.5 0.5	MOI.	SCREENING RESULTS (ppm) 0 250 500 750 1,000	LAB.	U S C S	L O G	SOIL AND ROCK DESCRIPTION	
							DEPTH	ELEVATION
0.0							0.0	LAND SURFACE
	G R A B			3-03 (2')				Black, poorly graded SAND w/Gravel. Moist.
2.0							2.0	S.A.A. w/HCO. Wet.
	G R A B			3-03 (4')				
3.5							3.5	Boring Terminated by Auger Refusal at Depth 3.5 ft due to obstruction.

CATLIN\ENVIRO_LOG_214037_NCDOT-BURNETT-BLVD.GPJ CATLIN.GDT 6/26/14

▽ = 0hr. DTW

▼ = 24hr. DTW

BORING LOG



214037
Wilmington, NC

SHEET 1 OF 1

PROJECT NO.: 214037	STATE: NC	COUNTY: New Hanover	LOCATION: Wilmington
PROJECT NAME: PARCEL 003 - Naegele Outdoor Advertising, Inc. Property		LOGGED BY: Michael D. Mason	BORING ID: 3-04
NORTHING: 169,823	EASTING: 2,318,658	DRILLER: Larry Wessell	CREW: CATLIN
SYSTEM: NCSP NAD 83 (USft)	BORING LOCATION:		LAND ELEV.: 3.0
DRILL MACHINE: Hand Auger	METHOD: Hand Auger	0 HOUR DTW: Dry	BORING DEPTH: 4.0
START DATE: 5/16/14	FINISH DATE: 5/16/14	24 HOUR DTW: FIAD	WATER DEPTH: --

DEPTH	BLOW COUNT 0.5 0.5 0.5 0.5	MOI.	SCREENING RESULTS (ppm) 0 250 500 750 1,000	LAB.	U S C S	L O G	SOIL AND ROCK DESCRIPTION		
							DEPTH	ELEVATION	
0.0							0.0	LAND SURFACE 3.0	
2.0	G R A B			3-04 (2')				Black, poorly graded SAND mixed w/Gravel. Moist.	
4.0	G R A B						4.0	-1.0	
								Boring Terminated at Elevation -1.0 ft	

CATLIN\ENVIRO_LOG_214037_NCDOT-BURNETT-BLVD.GPJ CATLIN.GDT 6/28/14

▽ = 0hr. DTW

▼ = 24hr. DTW

BORING LOG



214037
Wilmington, NC

SHEET 1 OF 1

PROJECT NO.:	214037	STATE:	NC	COUNTY:	New Hanover	LOCATION:	Wilmington	
PROJECT NAME:	PARCEL 003 - Naegele Outdoor Advertising, Inc. Property			LOGGED BY:	Michael D. Mason	BORING ID:	3-05	
				DRILLER:	Larry Wessell			
NORTHING:	169,857	EASTING:	2,318,659	CREW:	CATLIN			
SYSTEM:	NCSP NAD 83 (USft)	BORING LOCATION:					LAND ELEV.:	3.6
DRILL MACHINE:	Power Probe	METHOD:	CPT / DPT	0 HOUR DTW:	Dry	BORING DEPTH:	4.0	
START DATE:	5/16/14	FINISH DATE:	5/16/14	24 HOUR DTW:	FIAD	WATER DEPTH:	--	

DEPTH	BLOW COUNT 0.5 0.5 0.5 0.5	MOI.	SCREENING RESULTS (ppm)				LAB.	U S C S	L O G	SOIL AND ROCK DESCRIPTION	
			0	250	500	750				1,000	DEPTH
0.0									0.0	LAND SURFACE	3.6
	G R A B					3-05 (2')				Black to brown, poorly graded SAND. Moist. Wet at bottom.	
2.0											
	G R A B										
4.0									4.0	Boring Terminated at Elevation -0.4 ft	-0.4

CATLIN\ENVIRO_LOG_214037_NCDOT-BURNETT-BLVD.GPJ CATLIN.GDT 6/26/14

▽ = 0hr. DTW

▼ = 24hr. DTW

BORING LOG



214037
Wilmington, NC

SHEET 1 OF 1

PROJECT NO.: 214037	STATE: NC	COUNTY: New Hanover	LOCATION: Wilmington
PROJECT NAME: PARCEL 003 - Naegele Outdoor Advertising, Inc. Property		LOGGED BY: Michael D. Mason	BORING ID: 3-06
NORTHING: 169,888		EASTING: 2,318,655	DRILLER: Larry Wessell
SYSTEM: NCSP NAD 83 (USft)		BORING LOCATION:	CREW: CATLIN
DRILL MACHINE: Power Probe	METHOD: CPT / DPT	0 HOUR DTW: Dry	BORING DEPTH: 4.0
START DATE: 5/16/14	FINISH DATE: 5/16/14	24 HOUR DTW: FIAD	WATER DEPTH: --

DEPTH	BLOW COUNT 0.5 0.5 0.5 0.5	MOI.	SCREENING RESULTS (ppm) 0 250 500 750 1,000	LAB.	U S C S	L O G	SOIL AND ROCK DESCRIPTION	
							DEPTH	ELEVATION
0.0							0.0	LAND SURFACE 3.7
2.0	G R A B			3-06 (2')				Olive gray, poorly graded SAND. Moist. Wet at bottom.
4.0	G R A B			3-06 (4')			4.0	-0.3
								Boring Terminated at Elevation -0.3 ft

CATLIN\ENVIRO_LOG_214037_NCDOT-BURNETT-BLVD.GPJ CATLIN.GDT 6/26/14

▽ = 0hr. DTW

▼ = 24hr. DTW

BORING LOG



214037
Wilmington, NC

SHEET 1 OF 1

PROJECT NO.: 214037	STATE: NC	COUNTY: New Hanover	LOCATION: Wilmington
PROJECT NAME: PARCEL 003 - Naegele Outdoor Advertising, Inc. Property		LOGGED BY: Michael D. Mason	BORING ID: 3-07
NORTHING: 169,895	EASTING: 2,318,638	DRILLER: Larry Wessell	
SYSTEM: NCSP NAD 83 (USft)		CREW: CATLIN	LAND ELEV.: 3.0
DRILL MACHINE: Hand Auger	METHOD: Hand Auger	0 HOUR DTW: Dry	BORING DEPTH: 1.0
START DATE: 5/16/14	FINISH DATE: 5/16/14	24 HOUR DTW: FIAD	WATER DEPTH: --

DEPTH	BLOW COUNT 0.5 0.5 0.5 0.5	MOI.	SCREENING RESULTS (ppm) 0 250 500 750 1,000	LAB.	U S C S	L O G	SOIL AND ROCK DESCRIPTION	
							DEPTH	ELEVATION
0.0							0.0	LAND SURFACE 3.0
1.0	G R A B			3-07 (1')			1.0	Black, TOPSOIL and organic (grass). Boring Terminated at Elevation 2.0 ft

CATLIN\ENVIRO_LOG_214037_NCDOT-BURNETT-BLVD.GPJ CATLIN.GDT 6/26/14

▽ = 0hr. DTW

▼ = 24hr. DTW

BORING LOG



214037
Wilmington, NC

SHEET 1 OF 1

PROJECT NO.: 214037	STATE: NC	COUNTY: New Hanover	LOCATION: Wilmington
PROJECT NAME: PARCEL 003 - Naegele Outdoor Advertising, Inc. Property		LOGGED BY: Michael D. Mason	BORING ID: 3-08
NORTHING: 169,966	EASTING: 2,318,645	DRILLER: Larry Wessell	
SYSTEM: NCSP NAD 83 (USft)		CREW: CATLIN	LAND ELEV.: 3.4
BORING LOCATION:		DRILL MACHINE: Power Probe	METHOD: CPT / DPT
		0 HOUR DTW: 3.0	BORING DEPTH: 8.0
START DATE: 5/16/14		FINISH DATE: 5/16/14	24 HOUR DTW: FIAD
			WATER DEPTH: --

DEPTH	BLOW COUNT 0.5 0.5 0.5 0.5	MOI.	SCREENING RESULTS (ppm)				LAB.	U S C S	L O G	SOIL AND ROCK DESCRIPTION	
			0	250	500	750				1,000	DEPTH
0.0									0.0	LAND SURFACE	3.4
2.0	G R A B					3-08 (2')					
8.0						▽				Black, poorly graded SAND. Moist. Sat. @ 3'.	
									8.0	Boring Terminated at Elevation -4.6 ft	-4.6

CATLIN\ENVIRO.LOG_214037_NCDOT-BURNETT-BLVD.GPJ CATLIN.GDT 6/26/14

▽ = 0hr. DTW

▼ = 24hr. DTW

APPENDIX C
QROS QED™ REPORT



Hydrocarbon Analysis Results

Client: Catlin
Address: Wilmington, NC

Samples taken Friday, May 16, 2014
Samples extracted Friday, May 16, 2014
Samples analysed Monday, May 19, 2014

Contact: Ben Ashba

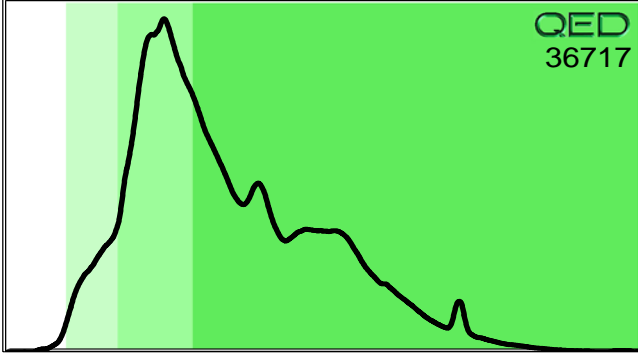
Operator Rachel Menoher

Project: Parcel 3 NCDOT Front St. and Burnett Blvd - WBS: 17BP.3.R.28
 CATLIN Project No. 214037

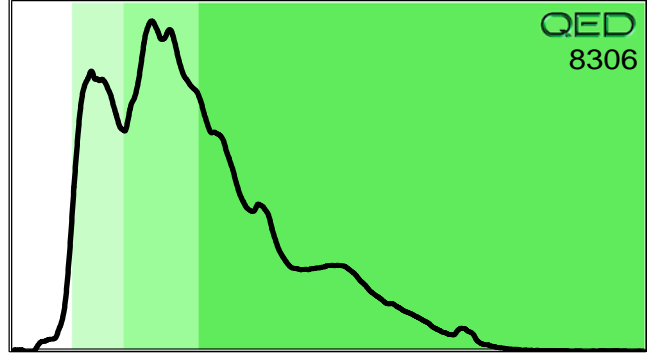
Matrix	Sample ID	Dilution used	BTEX (C6 - C9)	GRO (C5 - C10)	DRO (C10 - C35)	TPH (C5 - C35)	Total Aromatics (C10-C35)	16 EPA PAHs	BaP	Ratios			HC Fingerprint Match	
										% light	% mid	% heavy		
s	3-03 (2')	21.0	<1	<1	127.1	127.1	35.19	2.18	<0.021	57.9	37.4	4.7	Waste Oil (FCM) 97.7%	
s	3-03 (4')	256.0	<12.8	<12.8	689.3	689.3	161.2	5.67	<0.256	85.5	12.1	2.3	Waste Oil (FCM) 70.8%	
s	3-04 (2')	20.0	<1	<1	54.7	54.7	40.72	2.09	0.037	27.3	58.5	14.3	V.Deg.PHC 77.6%	
s	3-05 (2')	19.0	<1	<1	20.22	20.22	19.12	1.02	<0.019	51.6	39.8	8.6	V.Deg.PHC 90.4%	
s	3-06 (2')	22.0	<1.1	<1.1	11.62	11.62	10.65	0.71	<0.022	36.9	47.5	15.6	V.Deg.PHC 74.2%	
s	3-06 (4')	19.0	<0.9	<0.9	10.38	10.38	10.35	0.64	<0.019	50.8	38.1	11.1	V.Deg.PHC 83.7%	
s	3-07 (1')	22.0	<1.1	<1.1	9.57	9.57	8.77	0.58	<0.022	40.9	44.1	15	V.Deg.PHC 76.8%	
s	3-08 (2')	21.0	<1.1	<1.1	5.52	5.52	5.06	0.34	<0.021	46.4	37.3	16.3	V.Deg.PHC 76.1%	
Initial Calibrator QC check			OK			Final FCM QC Check			OK			98.3%		

Results generated by a QED HC-1 analyser. Concentration values in mg/kg for soil samples and mg/L for water samples. Soil values are not corrected for moisture or stone content
 Fingerprints provide a tentative hydrocarbon identification. The abbreviations are:- FCM = Results calculated using Fundamental Calibration Mode : % = confidence for sample fingerprint match to library
 (SBS) or (LBS) = Site Specific or Library Background Subtraction applied to result : (PFM) = Poor Fingerprint Match : (T) = Turbid : (P) = Particulate present

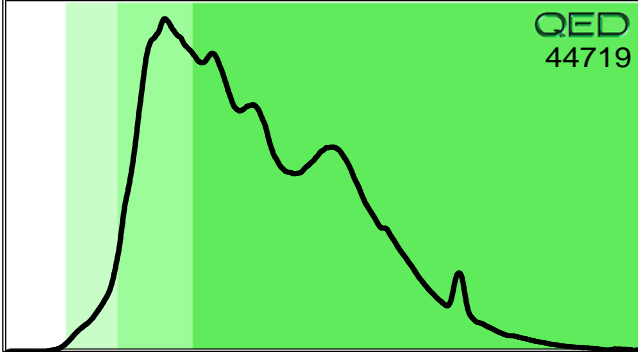
Waste Oil (FCM) 97.7% 3-03 (2')



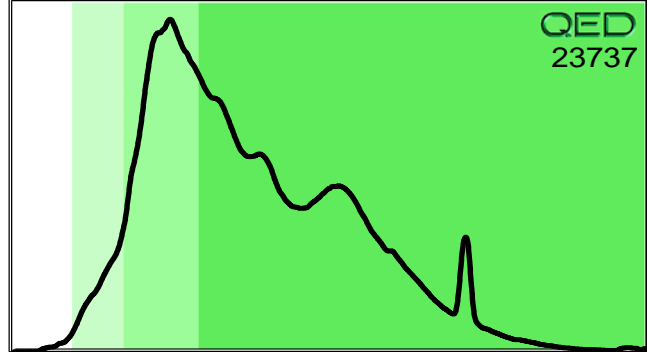
Waste Oil (FCM) 70.8% 3-03 (4')



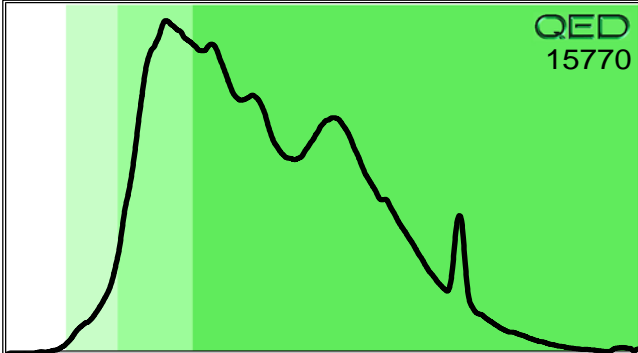
V.Deg.PHC 77.6% 3-04 (2')



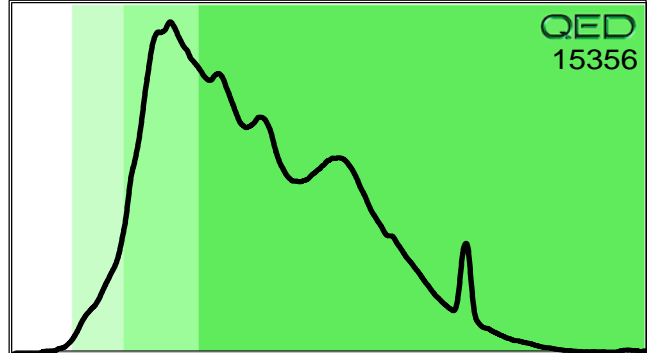
V.Deg.PHC 90.4% 3-05 (2')



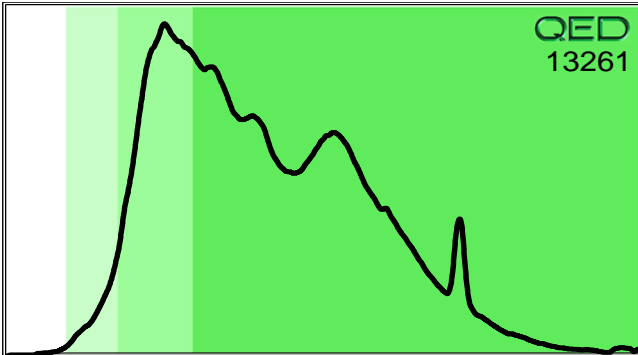
V.Deg.PHC 74.2% 3-06 (2')



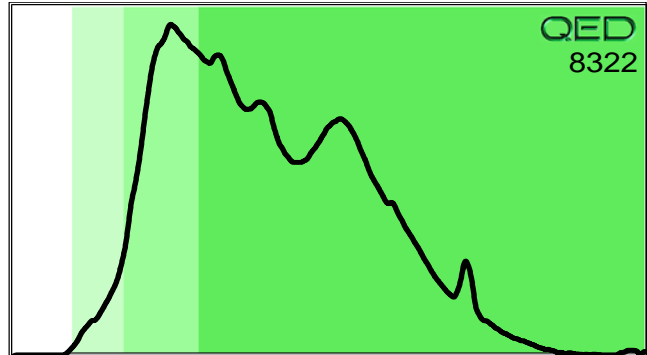
V.Deg.PHC 83.7% 3-06 (4')



V.Deg.PHC 76.8% 3-07 (1')



V.Deg.PHC 76.1% 3-08 (2')





Chain of Custody Record and Analytical Request Form

Sample ID	Sample Collection			TAT Requested	
	Date	Time	Initials	24 Hour	48 Hour
3-03(2')	5-16-14	1350	MMW		X
3-03(4')		1355	MMW		
3-04(2')		1335	MMW		
3-05(2')		1320	MMW		
3-06(2')		1300	MMW		
3-06(4')		130	MMW		
3-07(1')	v	1250	MMW		v
3-08(2')		1205	MMW		

Client: CATLIN

Contact: Ben Ashby

Phone: 910-452-5861

Email: ben.ashby@catlinusa.com

Project Reference: 214037
PO# 140519-1

Each Sample will be analyzed for total BTEX, GRO, DRO, TPH, and PAH

Each Sample will generate a fingerprint representative of the petroleum product within the sample. Electronic Data will be submitted to the email above.

Relinquished by	Date/time	Accepted by	Date/time
<i>[Signature]</i>	5/19/14 8:40	<i>[Signature]</i>	5-19-14 8:40
Relinquished by	Date/time	Accepted by	Date/time
<i>[Signature]</i>	5-19-14 8:40	<i>[Signature]</i>	5/19/14 9:30
Relinquished by	Date/time	Accepted by	Date/time

SHIP TO: QROS

420 Raleigh Street Suite E
Wilmington, NC 28412

Rachel Menoher-
rachelm@qrosllc.com

910-520-2902

APPENDIX D

**PACE ANALYTICAL SERVICES, INC. GROUNDWATER SAMPLE ANALYTICAL
RESULTS AND CHAIN OF CUSTODY DOCUMENTATION**

June 04, 2014

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

RE: Project: NCDOT FRONT ST. WBS17BP.3.R.28
Pace Project No.: 92202425

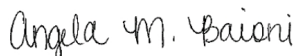
Dear Chemical Engineer:

Enclosed are the analytical results for sample(s) received by the laboratory on May 22, 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.

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

Sincerely,



Angela Baioni
angela.baioni@pacelabs.com
Project Manager

Enclosures

cc: Ben Ashba, NCDOT South East
Sean O'Neil, NCDOT South East



REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

CERTIFICATIONS

Project: NCDOT FRONT ST. WBS17BP.3.R.28

Pace Project No.: 92202425

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

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: NCDOT FRONT ST. WBS17BP.3.R.28
Pace Project No.: 92202425

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92202425001	3-08	Water	05/16/14 12:25	05/22/14 09:30

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: NCDOT FRONT ST. WBS17BP.3.R.28
Pace Project No.: 92202425

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92202425001	3-08	EPA 625	RES	58	PASI-C
		SM 6200B	CAH	63	PASI-C

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: NCDOT FRONT ST. WBS17BP.3.R.28

Pace Project No.: 92202425

Sample: 3-08 **Lab ID: 92202425001** Collected: 05/16/14 12:25 Received: 05/22/14 09:30 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
625 MSSV Analytical Method: EPA 625 Preparation Method: EPA 625									
Acenaphthene	ND ug/L		5.0	0.25	1	05/23/14 11:30	06/02/14 22:36	83-32-9	
Acenaphthylene	ND ug/L		5.0	0.21	1	05/23/14 11:30	06/02/14 22:36	208-96-8	
Anthracene	ND ug/L		5.0	0.14	1	05/23/14 11:30	06/02/14 22:36	120-12-7	
Benzo(a)anthracene	ND ug/L		5.0	0.33	1	05/23/14 11:30	06/02/14 22:36	56-55-3	
Benzo(a)pyrene	ND ug/L		5.0	0.30	1	05/23/14 11:30	06/02/14 22:36	50-32-8	
Benzo(b)fluoranthene	ND ug/L		5.0	0.28	1	05/23/14 11:30	06/02/14 22:36	205-99-2	
Benzo(g,h,i)perylene	ND ug/L		5.0	0.38	1	05/23/14 11:30	06/02/14 22:36	191-24-2	
Benzo(k)fluoranthene	ND ug/L		5.0	0.43	1	05/23/14 11:30	06/02/14 22:36	207-08-9	
4-Bromophenylphenyl ether	ND ug/L		5.0	0.82	1	05/23/14 11:30	06/02/14 22:36	101-55-3	
Butylbenzylphthalate	ND ug/L		5.0	0.79	1	05/23/14 11:30	06/02/14 22:36	85-68-7	
4-Chloro-3-methylphenol	ND ug/L		5.0	3.7	1	05/23/14 11:30	06/02/14 22:36	59-50-7	
bis(2-Chloroethoxy)methane	ND ug/L		10.0	0.92	1	05/23/14 11:30	06/02/14 22:36	111-91-1	
bis(2-Chloroethyl) ether	ND ug/L		5.0	1.0	1	05/23/14 11:30	06/02/14 22:36	111-44-4	
bis(2-Chloroisopropyl) ether	ND ug/L		5.0	0.95	1	05/23/14 11:30	06/02/14 22:36	108-60-1	
2-Chloronaphthalene	ND ug/L		5.0	0.98	1	05/23/14 11:30	06/02/14 22:36	91-58-7	
2-Chlorophenol	ND ug/L		5.0	1.3	1	05/23/14 11:30	06/02/14 22:36	95-57-8	
4-Chlorophenylphenyl ether	ND ug/L		5.0	0.87	1	05/23/14 11:30	06/02/14 22:36	7005-72-3	
Chrysene	ND ug/L		5.0	0.21	1	05/23/14 11:30	06/02/14 22:36	218-01-9	
Dibenz(a,h)anthracene	ND ug/L		5.0	0.55	1	05/23/14 11:30	06/02/14 22:36	53-70-3	
3,3'-Dichlorobenzidine	ND ug/L		25.0	2.1	1	05/23/14 11:30	06/02/14 22:36	91-94-1	
2,4-Dichlorophenol	ND ug/L		5.0	1.7	1	05/23/14 11:30	06/02/14 22:36	120-83-2	
Diethylphthalate	ND ug/L		5.0	0.58	1	05/23/14 11:30	06/02/14 22:36	84-66-2	
2,4-Dimethylphenol	ND ug/L		10.0	1.2	1	05/23/14 11:30	06/02/14 22:36	105-67-9	
Dimethylphthalate	ND ug/L		5.0	0.76	1	05/23/14 11:30	06/02/14 22:36	131-11-3	
Di-n-butylphthalate	ND ug/L		5.0	0.75	1	05/23/14 11:30	06/02/14 22:36	84-74-2	
4,6-Dinitro-2-methylphenol	ND ug/L		20.0	2.6	1	05/23/14 11:30	06/02/14 22:36	534-52-1	
2,4-Dinitrophenol	ND ug/L		50.0	9.0	1	05/23/14 11:30	06/02/14 22:36	51-28-5	
2,4-Dinitrotoluene	ND ug/L		5.0	0.90	1	05/23/14 11:30	06/02/14 22:36	121-14-2	
2,6-Dinitrotoluene	ND ug/L		5.0	0.98	1	05/23/14 11:30	06/02/14 22:36	606-20-2	
Di-n-octylphthalate	ND ug/L		5.0	0.66	1	05/23/14 11:30	06/02/14 22:36	117-84-0	
bis(2-Ethylhexyl)phthalate	ND ug/L		5.0	0.79	1	05/23/14 11:30	06/02/14 22:36	117-81-7	
Fluoranthene	ND ug/L		5.0	0.21	1	05/23/14 11:30	06/02/14 22:36	206-44-0	
Fluorene	ND ug/L		5.0	0.21	1	05/23/14 11:30	06/02/14 22:36	86-73-7	
Hexachloro-1,3-butadiene	ND ug/L		5.0	0.94	1	05/23/14 11:30	06/02/14 22:36	87-68-3	
Hexachlorobenzene	ND ug/L		5.0	0.72	1	05/23/14 11:30	06/02/14 22:36	118-74-1	
Hexachlorocyclopentadiene	ND ug/L		10.0	0.88	1	05/23/14 11:30	06/02/14 22:36	77-47-4	
Hexachloroethane	ND ug/L		5.0	1.1	1	05/23/14 11:30	06/02/14 22:36	67-72-1	
Indeno(1,2,3-cd)pyrene	ND ug/L		5.0	0.29	1	05/23/14 11:30	06/02/14 22:36	193-39-5	
Isophorone	ND ug/L		10.0	0.89	1	05/23/14 11:30	06/02/14 22:36	78-59-1	
Naphthalene	ND ug/L		5.0	0.34	1	05/23/14 11:30	06/02/14 22:36	91-20-3	
Nitrobenzene	ND ug/L		5.0	1.1	1	05/23/14 11:30	06/02/14 22:36	98-95-3	
2-Nitrophenol	ND ug/L		5.0	0.91	1	05/23/14 11:30	06/02/14 22:36	88-75-5	
4-Nitrophenol	ND ug/L		50.0	4.1	1	05/23/14 11:30	06/02/14 22:36	100-02-7	
N-Nitrosodimethylamine	ND ug/L		5.0	0.91	1	05/23/14 11:30	06/02/14 22:36	62-75-9	
N-Nitroso-di-n-propylamine	ND ug/L		5.0	0.99	1	05/23/14 11:30	06/02/14 22:36	621-64-7	
N-Nitrosodiphenylamine	ND ug/L		10.0	1.0	1	05/23/14 11:30	06/02/14 22:36	86-30-6	

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ANALYTICAL RESULTS

Project: NCDOT FRONT ST. WBS17BP.3.R.28

Sample Project No.: 92202425

Sample: 3-08 **Lab ID: 92202425001** Collected: 05/16/14 12:25 Received: 05/22/14 09:30 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
625 MSSV									
Analytical Method: EPA 625 Preparation Method: EPA 625									
Pentachlorophenol	ND ug/L		10.0	4.6	1	05/23/14 11:30	06/02/14 22:36	87-86-5	
Phenanthrene	ND ug/L		5.0	0.22	1	05/23/14 11:30	06/02/14 22:36	85-01-8	
Phenol	ND ug/L		5.0	1.9	1	05/23/14 11:30	06/02/14 22:36	108-95-2	
Pyrene	ND ug/L		5.0	0.19	1	05/23/14 11:30	06/02/14 22:36	129-00-0	
1,2,4-Trichlorobenzene	ND ug/L		5.0	0.98	1	05/23/14 11:30	06/02/14 22:36	120-82-1	
2,4,6-Trichlorophenol	ND ug/L		10.0	1.3	1	05/23/14 11:30	06/02/14 22:36	88-06-2	
Surrogates									
Nitrobenzene-d5 (S)	70 %		10-120		1	05/23/14 11:30	06/02/14 22:36	4165-60-0	
2-Fluorobiphenyl (S)	74 %		15-120		1	05/23/14 11:30	06/02/14 22:36	321-60-8	
Terphenyl-d14 (S)	71 %		11-131		1	05/23/14 11:30	06/02/14 22:36	1718-51-0	
Phenol-d6 (S)	26 %		10-120		1	05/23/14 11:30	06/02/14 22:36	13127-88-3	
2-Fluorophenol (S)	34 %		10-120		1	05/23/14 11:30	06/02/14 22:36	367-12-4	
2,4,6-Tribromophenol (S)	73 %		10-137		1	05/23/14 11:30	06/02/14 22:36	118-79-6	
6200B MSV									
Analytical Method: SM 6200B									
Benzene	ND ug/L		0.50	0.25	1		05/24/14 22:09	71-43-2	
Bromobenzene	ND ug/L		0.50	0.25	1		05/24/14 22:09	108-86-1	
Bromochloromethane	ND ug/L		0.50	0.25	1		05/24/14 22:09	74-97-5	
Bromodichloromethane	ND ug/L		0.50	0.25	1		05/24/14 22:09	75-27-4	
Bromoform	ND ug/L		0.50	0.25	1		05/24/14 22:09	75-25-2	
Bromomethane	ND ug/L		5.0	0.50	1		05/24/14 22:09	74-83-9	
n-Butylbenzene	ND ug/L		0.50	0.25	1		05/24/14 22:09	104-51-8	
sec-Butylbenzene	ND ug/L		0.50	0.25	1		05/24/14 22:09	135-98-8	
tert-Butylbenzene	ND ug/L		0.50	0.25	1		05/24/14 22:09	98-06-6	
Carbon tetrachloride	ND ug/L		0.50	0.25	1		05/24/14 22:09	56-23-5	
Chlorobenzene	ND ug/L		0.50	0.25	1		05/24/14 22:09	108-90-7	
Chloroethane	ND ug/L		1.0	0.50	1		05/24/14 22:09	75-00-3	
Chloroform	ND ug/L		0.50	0.25	1		05/24/14 22:09	67-66-3	
Chloromethane	ND ug/L		1.0	0.50	1		05/24/14 22:09	74-87-3	
2-Chlorotoluene	ND ug/L		0.50	0.25	1		05/24/14 22:09	95-49-8	
4-Chlorotoluene	ND ug/L		0.50	0.25	1		05/24/14 22:09	106-43-4	
1,2-Dibromo-3-chloropropane	ND ug/L		1.0	0.50	1		05/24/14 22:09	96-12-8	
Dibromochloromethane	ND ug/L		0.50	0.25	1		05/24/14 22:09	124-48-1	
1,2-Dibromoethane (EDB)	ND ug/L		0.50	0.25	1		05/24/14 22:09	106-93-4	
Dibromomethane	ND ug/L		0.50	0.25	1		05/24/14 22:09	74-95-3	
1,2-Dichlorobenzene	ND ug/L		0.50	0.25	1		05/24/14 22:09	95-50-1	
1,3-Dichlorobenzene	ND ug/L		0.50	0.25	1		05/24/14 22:09	541-73-1	
1,4-Dichlorobenzene	ND ug/L		0.50	0.25	1		05/24/14 22:09	106-46-7	
Dichlorodifluoromethane	ND ug/L		0.50	0.25	1		05/24/14 22:09	75-71-8	
1,1-Dichloroethane	ND ug/L		0.50	0.25	1		05/24/14 22:09	75-34-3	
1,2-Dichloroethane	ND ug/L		0.50	0.25	1		05/24/14 22:09	107-06-2	
1,1-Dichloroethene	ND ug/L		0.50	0.25	1		05/24/14 22:09	75-35-4	
cis-1,2-Dichloroethene	ND ug/L		0.50	0.25	1		05/24/14 22:09	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		0.50	0.25	1		05/24/14 22:09	156-60-5	
1,2-Dichloropropane	ND ug/L		0.50	0.25	1		05/24/14 22:09	78-87-5	
1,3-Dichloropropane	ND ug/L		0.50	0.25	1		05/24/14 22:09	142-28-9	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: NCDOT FRONT ST. WBS17BP.3.R.28

Pace Project No.: 92202425

Sample: 3-08 **Lab ID: 92202425001** Collected: 05/16/14 12:25 Received: 05/22/14 09:30 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6200B MSV									
Analytical Method: SM 6200B									
2,2-Dichloropropane	ND ug/L		0.50	0.25	1		05/24/14 22:09	594-20-7	
1,1-Dichloropropene	ND ug/L		0.50	0.25	1		05/24/14 22:09	563-58-6	
cis-1,3-Dichloropropene	ND ug/L		0.50	0.25	1		05/24/14 22:09	10061-01-5	
trans-1,3-Dichloropropene	ND ug/L		0.50	0.25	1		05/24/14 22:09	10061-02-6	
Diisopropyl ether	ND ug/L		0.50	0.25	1		05/24/14 22:09	108-20-3	
Ethylbenzene	ND ug/L		0.50	0.25	1		05/24/14 22:09	100-41-4	
Hexachloro-1,3-butadiene	ND ug/L		2.0	1.0	1		05/24/14 22:09	87-68-3	
Isopropylbenzene (Cumene)	ND ug/L		0.50	0.25	1		05/24/14 22:09	98-82-8	
Methylene Chloride	ND ug/L		2.0	1.0	1		05/24/14 22:09	75-09-2	
Methyl-tert-butyl ether	ND ug/L		0.50	0.25	1		05/24/14 22:09	1634-04-4	
Naphthalene	ND ug/L		2.0	1.0	1		05/24/14 22:09	91-20-3	
n-Propylbenzene	ND ug/L		0.50	0.25	1		05/24/14 22:09	103-65-1	
Styrene	ND ug/L		0.50	0.25	1		05/24/14 22:09	100-42-5	
1,1,1,2-Tetrachloroethane	ND ug/L		0.50	0.25	1		05/24/14 22:09	630-20-6	
1,1,2,2-Tetrachloroethane	ND ug/L		0.50	0.25	1		05/24/14 22:09	79-34-5	
Tetrachloroethene	ND ug/L		0.50	0.25	1		05/24/14 22:09	127-18-4	
Toluene	ND ug/L		0.50	0.25	1		05/24/14 22:09	108-88-3	
1,2,3-Trichlorobenzene	ND ug/L		2.0	1.0	1		05/24/14 22:09	87-61-6	
1,2,4-Trichlorobenzene	ND ug/L		2.0	1.0	1		05/24/14 22:09	120-82-1	
1,1,1-Trichloroethane	ND ug/L		0.50	0.25	1		05/24/14 22:09	71-55-6	
1,1,2-Trichloroethane	ND ug/L		0.50	0.25	1		05/24/14 22:09	79-00-5	
Trichloroethene	ND ug/L		0.50	0.25	1		05/24/14 22:09	79-01-6	
Trichlorofluoromethane	ND ug/L		1.0	0.50	1		05/24/14 22:09	75-69-4	
1,2,3-Trichloropropane	ND ug/L		0.50	0.25	1		05/24/14 22:09	96-18-4	
1,2,4-Trimethylbenzene	ND ug/L		0.50	0.25	1		05/24/14 22:09	95-63-6	
1,3,5-Trimethylbenzene	ND ug/L		0.50	0.25	1		05/24/14 22:09	108-67-8	
Vinyl chloride	ND ug/L		1.0	0.25	1		05/24/14 22:09	75-01-4	
m&p-Xylene	ND ug/L		1.0	0.50	1		05/24/14 22:09	179601-23-1	
o-Xylene	ND ug/L		0.50	0.25	1		05/24/14 22:09	95-47-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	98 %		70-130		1		05/24/14 22:09	17060-07-0	
4-Bromofluorobenzene (S)	95 %		70-130		1		05/24/14 22:09	460-00-4	
Toluene-d8 (S)	101 %		70-130		1		05/24/14 22:09	2037-26-5	

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QUALITY CONTROL DATA

Project: NCDOT FRONT ST. WBS17BP.3.R.28

Pace Project No.: 92202425

QC Batch:	MSV/26940	Analysis Method:	SM 6200B
QC Batch Method:	SM 6200B	Analysis Description:	6200B MSV
Associated Lab Samples:	92202425001		

METHOD BLANK: 1206081 Matrix: Water

Associated Lab Samples: 92202425001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	0.50	05/24/14 18:18	
1,1,1-Trichloroethane	ug/L	ND	0.50	05/24/14 18:18	
1,1,2,2-Tetrachloroethane	ug/L	ND	0.50	05/24/14 18:18	
1,1,2-Trichloroethane	ug/L	ND	0.50	05/24/14 18:18	
1,1-Dichloroethane	ug/L	ND	0.50	05/24/14 18:18	
1,1-Dichloroethene	ug/L	ND	0.50	05/24/14 18:18	
1,1-Dichloropropene	ug/L	ND	0.50	05/24/14 18:18	
1,2,3-Trichlorobenzene	ug/L	ND	2.0	05/24/14 18:18	
1,2,3-Trichloropropane	ug/L	ND	0.50	05/24/14 18:18	
1,2,4-Trichlorobenzene	ug/L	ND	2.0	05/24/14 18:18	
1,2,4-Trimethylbenzene	ug/L	ND	0.50	05/24/14 18:18	
1,2-Dibromo-3-chloropropane	ug/L	ND	1.0	05/24/14 18:18	
1,2-Dibromoethane (EDB)	ug/L	ND	0.50	05/24/14 18:18	
1,2-Dichlorobenzene	ug/L	ND	0.50	05/24/14 18:18	
1,2-Dichloroethane	ug/L	ND	0.50	05/24/14 18:18	
1,2-Dichloropropane	ug/L	ND	0.50	05/24/14 18:18	
1,3,5-Trimethylbenzene	ug/L	ND	0.50	05/24/14 18:18	
1,3-Dichlorobenzene	ug/L	ND	0.50	05/24/14 18:18	
1,3-Dichloropropane	ug/L	ND	0.50	05/24/14 18:18	
1,4-Dichlorobenzene	ug/L	ND	0.50	05/24/14 18:18	
2,2-Dichloropropane	ug/L	ND	0.50	05/24/14 18:18	
2-Chlorotoluene	ug/L	ND	0.50	05/24/14 18:18	
4-Chlorotoluene	ug/L	ND	0.50	05/24/14 18:18	
Benzene	ug/L	ND	0.50	05/24/14 18:18	
Bromobenzene	ug/L	ND	0.50	05/24/14 18:18	
Bromochloromethane	ug/L	ND	0.50	05/24/14 18:18	
Bromodichloromethane	ug/L	ND	0.50	05/24/14 18:18	
Bromoform	ug/L	ND	0.50	05/24/14 18:18	
Bromomethane	ug/L	ND	5.0	05/24/14 18:18	
Carbon tetrachloride	ug/L	ND	0.50	05/24/14 18:18	
Chlorobenzene	ug/L	ND	0.50	05/24/14 18:18	
Chloroethane	ug/L	ND	1.0	05/24/14 18:18	
Chloroform	ug/L	ND	0.50	05/24/14 18:18	
Chloromethane	ug/L	ND	1.0	05/24/14 18:18	
cis-1,2-Dichloroethene	ug/L	ND	0.50	05/24/14 18:18	
cis-1,3-Dichloropropene	ug/L	ND	0.50	05/24/14 18:18	
Dibromochloromethane	ug/L	ND	0.50	05/24/14 18:18	
Dibromomethane	ug/L	ND	0.50	05/24/14 18:18	
Dichlorodifluoromethane	ug/L	ND	0.50	05/24/14 18:18	
Diisopropyl ether	ug/L	ND	0.50	05/24/14 18:18	
Ethylbenzene	ug/L	ND	0.50	05/24/14 18:18	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: NCDOT FRONT ST. WBS17BP.3.R.28

Pace Project No.: 92202425

METHOD BLANK: 1206081

Matrix: Water

Associated Lab Samples: 92202425001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Hexachloro-1,3-butadiene	ug/L	ND	2.0	05/24/14 18:18	
Isopropylbenzene (Cumene)	ug/L	ND	0.50	05/24/14 18:18	
m&p-Xylene	ug/L	ND	1.0	05/24/14 18:18	
Methyl-tert-butyl ether	ug/L	ND	0.50	05/24/14 18:18	
Methylene Chloride	ug/L	ND	2.0	05/24/14 18:18	
n-Butylbenzene	ug/L	ND	0.50	05/24/14 18:18	
n-Propylbenzene	ug/L	ND	0.50	05/24/14 18:18	
Naphthalene	ug/L	ND	2.0	05/24/14 18:18	
o-Xylene	ug/L	ND	0.50	05/24/14 18:18	
sec-Butylbenzene	ug/L	ND	0.50	05/24/14 18:18	
Styrene	ug/L	ND	0.50	05/24/14 18:18	
tert-Butylbenzene	ug/L	ND	0.50	05/24/14 18:18	
Tetrachloroethene	ug/L	ND	0.50	05/24/14 18:18	
Toluene	ug/L	ND	0.50	05/24/14 18:18	
trans-1,2-Dichloroethene	ug/L	ND	0.50	05/24/14 18:18	
trans-1,3-Dichloropropene	ug/L	ND	0.50	05/24/14 18:18	
Trichloroethene	ug/L	ND	0.50	05/24/14 18:18	
Trichlorofluoromethane	ug/L	ND	1.0	05/24/14 18:18	
Vinyl chloride	ug/L	ND	1.0	05/24/14 18:18	
1,2-Dichloroethane-d4 (S)	%	97	70-130	05/24/14 18:18	
4-Bromofluorobenzene (S)	%	96	70-130	05/24/14 18:18	
Toluene-d8 (S)	%	100	70-130	05/24/14 18:18	

LABORATORY CONTROL SAMPLE: 1206082

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	57.3	115	60-140	
1,1,1-Trichloroethane	ug/L	50	48.8	98	60-140	
1,1,2,2-Tetrachloroethane	ug/L	50	54.0	108	60-140	
1,1,2-Trichloroethane	ug/L	50	52.7	105	60-140	
1,1-Dichloroethane	ug/L	50	47.5	95	60-140	
1,1-Dichloroethene	ug/L	50	50.9	102	60-140	
1,1-Dichloropropene	ug/L	50	51.0	102	60-140	
1,2,3-Trichlorobenzene	ug/L	50	57.5	115	60-140	
1,2,3-Trichloropropane	ug/L	50	52.7	105	60-140	
1,2,4-Trichlorobenzene	ug/L	50	55.2	110	60-140	
1,2,4-Trimethylbenzene	ug/L	50	57.9	116	60-140	
1,2-Dibromo-3-chloropropane	ug/L	50	55.7	111	60-140	
1,2-Dibromoethane (EDB)	ug/L	50	54.6	109	60-140	
1,2-Dichlorobenzene	ug/L	50	54.9	110	60-140	
1,2-Dichloroethane	ug/L	50	48.2	96	60-140	
1,2-Dichloropropane	ug/L	50	49.9	100	60-140	
1,3,5-Trimethylbenzene	ug/L	50	56.4	113	60-140	
1,3-Dichlorobenzene	ug/L	50	54.7	109	60-140	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: NCDOT FRONT ST. WBS17BP.3.R.28

Pace Project No.: 92202425

LABORATORY CONTROL SAMPLE: 1206082

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,3-Dichloropropane	ug/L	50	52.4	105	60-140	
1,4-Dichlorobenzene	ug/L	50	52.7	105	60-140	
2,2-Dichloropropane	ug/L	50	47.3	95	60-140	
2-Chlorotoluene	ug/L	50	54.6	109	60-140	
4-Chlorotoluene	ug/L	50	53.1	106	60-140	
Benzene	ug/L	50	52.8	106	60-140	
Bromobenzene	ug/L	50	53.9	108	60-140	
Bromochloromethane	ug/L	50	51.2	102	60-140	
Bromodichloromethane	ug/L	50	56.6	113	60-140	
Bromoform	ug/L	50	48.1	96	60-140	
Bromomethane	ug/L	50	49.6	99	60-140	
Carbon tetrachloride	ug/L	50	54.7	109	60-140	
Chlorobenzene	ug/L	50	51.7	103	60-140	
Chloroethane	ug/L	50	52.5	105	60-140	
Chloroform	ug/L	50	50.6	101	60-140	
Chloromethane	ug/L	50	56.6	113	60-140	
cis-1,2-Dichloroethene	ug/L	50	51.1	102	60-140	
cis-1,3-Dichloropropene	ug/L	50	54.7	109	60-140	
Dibromochloromethane	ug/L	50	47.9	96	60-140	
Dibromomethane	ug/L	50	49.9	100	60-140	
Dichlorodifluoromethane	ug/L	50	62.3	125	60-140	
Diisopropyl ether	ug/L	50	52.5	105	60-140	
Ethylbenzene	ug/L	50	52.5	105	60-140	
Hexachloro-1,3-butadiene	ug/L	50	57.2	114	60-140	
Isopropylbenzene (Cumene)	ug/L	50	57.6	115	60-140	
m&p-Xylene	ug/L	100	108	108	60-140	
Methyl-tert-butyl ether	ug/L	50	51.6	103	60-140	
Methylene Chloride	ug/L	50	51.3	103	60-140	
n-Butylbenzene	ug/L	50	58.8	118	60-140	
n-Propylbenzene	ug/L	50	56.1	112	60-140	
Naphthalene	ug/L	50	57.1	114	60-140	
o-Xylene	ug/L	50	56.4	113	60-140	
sec-Butylbenzene	ug/L	50	57.0	114	60-140	
Styrene	ug/L	50	59.8	120	60-140	
tert-Butylbenzene	ug/L	50	57.4	115	60-140	
Tetrachloroethene	ug/L	50	51.8	104	60-140	
Toluene	ug/L	50	51.4	103	60-140	
trans-1,2-Dichloroethene	ug/L	50	50.1	100	60-140	
trans-1,3-Dichloropropene	ug/L	50	47.4	95	60-140	
Trichloroethene	ug/L	50	51.2	102	60-140	
Trichlorofluoromethane	ug/L	50	51.0	102	60-140	
Vinyl chloride	ug/L	50	62.1	124	60-140	
1,2-Dichloroethane-d4 (S)	%			94	70-130	
4-Bromofluorobenzene (S)	%			101	70-130	
Toluene-d8 (S)	%			100	70-130	

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QUALITY CONTROL DATA

Project: NCDOT FRONT ST. WBS17BP.3.R.28

Pace Project No.: 92202425

Parameter	92202441006		MS		MSD		MS		MSD		Max	
	Units	Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	ND	20	20	23.8	20.6	119	103	60-140	15	30	
1,1,1-Trichloroethane	ug/L	ND	20	20	22.3	19.5	111	98	60-140	13	30	
1,1,2,2-Tetrachloroethane	ug/L	ND	20	20	22.2	19.5	111	97	60-140	13	30	
1,1,2-Trichloroethane	ug/L	ND	20	20	22.2	19.3	111	97	60-140	14	30	
1,1-Dichloroethane	ug/L	ND	20	20	20.8	18.5	104	93	60-140	11	30	
1,1-Dichloroethene	ug/L	ND	20	20	23.0	20.5	115	103	60-140	11	30	
1,1-Dichloropropene	ug/L	ND	20	20	23.1	20.5	115	103	60-140	12	30	
1,2,3-Trichlorobenzene	ug/L	ND	20	20	21.7	19.2	109	96	60-140	12	30	
1,2,3-Trichloropropane	ug/L	ND	20	20	22.1	19.6	111	98	60-140	12	30	
1,2,4-Trichlorobenzene	ug/L	ND	20	20	21.0	18.5	105	92	60-140	13	30	
1,2,4-Trimethylbenzene	ug/L	ND	20	20	23.2	20.7	116	103	60-140	12	30	
1,2-Dibromo-3-chloropropane	ug/L	ND	20	20	23.1	19.6	115	98	60-140	16	30	
1,2-Dibromoethane (EDB)	ug/L	ND	20	20	22.6	20.3	113	101	60-140	11	30	
1,2-Dichlorobenzene	ug/L	ND	20	20	22.2	19.4	111	97	60-140	14	30	
1,2-Dichloroethane	ug/L	ND	20	20	20.8	18.5	104	92	60-140	12	30	
1,2-Dichloropropane	ug/L	ND	20	20	21.3	19.2	107	96	60-140	11	30	
1,3,5-Trimethylbenzene	ug/L	ND	20	20	22.8	20.6	114	103	60-140	10	30	
1,3-Dichlorobenzene	ug/L	ND	20	20	22.3	19.4	111	97	60-140	14	30	
1,3-Dichloropropane	ug/L	ND	20	20	21.7	19.5	109	97	60-140	11	30	
1,4-Dichlorobenzene	ug/L	ND	20	20	21.3	18.7	106	93	60-140	13	30	
2,2-Dichloropropane	ug/L	ND	20	20	20.5	18.2	102	91	60-140	12	30	
2-Chlorotoluene	ug/L	ND	20	20	22.3	19.8	111	99	60-140	12	30	
4-Chlorotoluene	ug/L	ND	20	20	21.3	19.2	107	96	60-140	11	30	
Benzene	ug/L	ND	20	20	22.8	20.2	114	101	60-140	12	30	
Bromobenzene	ug/L	ND	20	20	22.2	19.5	111	97	60-140	13	30	
Bromochloromethane	ug/L	ND	20	20	23.2	20.5	116	103	60-140	12	30	
Bromodichloromethane	ug/L	ND	20	20	22.9	20.7	115	103	60-140	10	30	
Bromoform	ug/L	ND	20	20	20.4	18.2	102	91	60-140	11	30	
Bromomethane	ug/L	ND	20	20	23.3	19.3	117	96	60-140	19	30	
Carbon tetrachloride	ug/L	ND	20	20	24.0	21.3	120	106	60-140	12	30	
Chlorobenzene	ug/L	ND	20	20	21.5	19.2	108	96	60-140	11	30	
Chloroethane	ug/L	ND	20	20	23.8	22.8	119	114	60-140	4	30	
Chloroform	ug/L	ND	20	20	22.2	19.7	111	99	60-140	12	30	
Chloromethane	ug/L	ND	20	20	24.0	21.9	120	109	60-140	9	30	
cis-1,2-Dichloroethene	ug/L	ND	20	20	22.6	19.6	113	98	60-140	15	30	
cis-1,3-Dichloropropene	ug/L	ND	20	20	22.0	19.5	110	98	60-140	12	30	
Dibromochloromethane	ug/L	ND	20	20	20.5	17.7	103	89	60-140	14	30	
Dibromomethane	ug/L	ND	20	20	21.0	18.7	105	94	60-140	11	30	
Dichlorodifluoromethane	ug/L	ND	20	20	26.9	24.0	135	120	60-140	11	30	
Diisopropyl ether	ug/L	ND	20	20	22.6	20.4	113	102	60-140	11	30	
Ethylbenzene	ug/L	ND	20	20	21.9	19.7	110	99	60-140	10	30	
Hexachloro-1,3-butadiene	ug/L	ND	20	20	22.6	20.4	113	102	60-140	10	30	
Isopropylbenzene (Cumene)	ug/L	ND	20	20	23.5	21.3	118	107	60-140	10	30	
m&p-Xylene	ug/L	ND	40	40	45.2	40.4	113	101	60-140	11	30	
Methyl-tert-butyl ether	ug/L	0.74	20	20	23.2	20.6	112	99	60-140	12	30	
Methylene Chloride	ug/L	ND	20	20	21.4	18.5	107	93	60-140	14	30	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: NCDOT FRONT ST. WBS17BP.3.R.28

Pace Project No.: 92202425

Parameter	MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1207285			1207286			MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
	92202441006 Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
n-Butylbenzene	ug/L	ND	20	20	22.8	20.6	114	103	60-140	10	30	
n-Propylbenzene	ug/L	ND	20	20	22.7	20.6	114	103	60-140	10	30	
Naphthalene	ug/L	ND	20	20	22.2	19.1	111	96	60-140	15	30	
o-Xylene	ug/L	ND	20	20	22.9	20.5	115	102	60-140	11	30	
sec-Butylbenzene	ug/L	ND	20	20	23.4	20.9	117	105	60-140	11	30	
Styrene	ug/L	ND	20	20	23.9	21.0	120	105	60-140	13	30	
tert-Butylbenzene	ug/L	ND	20	20	23.4	21.0	117	105	60-140	11	30	
Tetrachloroethene	ug/L	ND	20	20	21.9	19.7	109	99	60-140	10	30	
Toluene	ug/L	ND	20	20	21.8	19.6	109	98	60-140	11	30	
trans-1,2-Dichloroethene	ug/L	ND	20	20	22.1	19.9	110	99	60-140	11	30	
trans-1,3-Dichloropropene	ug/L	ND	20	20	19.5	17.5	98	87	60-140	11	30	
Trichloroethene	ug/L	ND	20	20	22.3	20.1	111	100	60-140	10	30	
Trichlorofluoromethane	ug/L	ND	20	20	24.8	22.2	124	111	60-140	11	30	
Vinyl chloride	ug/L	ND	20	20	28.4	25.3	142	126	60-140	12	30	M0
1,2-Dichloroethane-d4 (S)	%						97	97	70-130			
4-Bromofluorobenzene (S)	%						100	100	70-130			
Toluene-d8 (S)	%						99	100	70-130			

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QUALITY CONTROL DATA

Project: NCDOT FRONT ST. WBS17BP.3.R.28

Pace Project No.: 92202425

QC Batch:	OEXT/27878	Analysis Method:	EPA 625
QC Batch Method:	EPA 625	Analysis Description:	625 MSS
Associated Lab Samples:	92202425001		

METHOD BLANK: 1205691 Matrix: Water

Associated Lab Samples: 92202425001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5.0	06/02/14 22:08	
2,4,6-Trichlorophenol	ug/L	ND	10.0	06/02/14 22:08	
2,4-Dichlorophenol	ug/L	ND	5.0	06/02/14 22:08	
2,4-Dimethylphenol	ug/L	ND	10.0	06/02/14 22:08	
2,4-Dinitrophenol	ug/L	ND	50.0	06/02/14 22:08	
2,4-Dinitrotoluene	ug/L	ND	5.0	06/02/14 22:08	
2,6-Dinitrotoluene	ug/L	ND	5.0	06/02/14 22:08	
2-Chloronaphthalene	ug/L	ND	5.0	06/02/14 22:08	
2-Chlorophenol	ug/L	ND	5.0	06/02/14 22:08	
2-Nitrophenol	ug/L	ND	5.0	06/02/14 22:08	
3,3'-Dichlorobenzidine	ug/L	ND	25.0	06/02/14 22:08	
4,6-Dinitro-2-methylphenol	ug/L	ND	20.0	06/02/14 22:08	
4-Bromophenylphenyl ether	ug/L	ND	5.0	06/02/14 22:08	
4-Chloro-3-methylphenol	ug/L	ND	5.0	06/02/14 22:08	
4-Chlorophenylphenyl ether	ug/L	ND	5.0	06/02/14 22:08	
4-Nitrophenol	ug/L	ND	50.0	06/02/14 22:08	
Acenaphthene	ug/L	ND	5.0	06/02/14 22:08	
Acenaphthylene	ug/L	ND	5.0	06/02/14 22:08	
Anthracene	ug/L	ND	5.0	06/02/14 22:08	
Benzo(a)anthracene	ug/L	ND	5.0	06/02/14 22:08	
Benzo(a)pyrene	ug/L	ND	5.0	06/02/14 22:08	
Benzo(b)fluoranthene	ug/L	ND	5.0	06/02/14 22:08	
Benzo(g,h,i)perylene	ug/L	ND	5.0	06/02/14 22:08	
Benzo(k)fluoranthene	ug/L	ND	5.0	06/02/14 22:08	
bis(2-Chloroethoxy)methane	ug/L	ND	10.0	06/02/14 22:08	
bis(2-Chloroethyl) ether	ug/L	ND	5.0	06/02/14 22:08	
bis(2-Chloroisopropyl) ether	ug/L	ND	5.0	06/02/14 22:08	
bis(2-Ethylhexyl)phthalate	ug/L	ND	5.0	06/02/14 22:08	
Butylbenzylphthalate	ug/L	ND	5.0	06/02/14 22:08	
Chrysene	ug/L	ND	5.0	06/02/14 22:08	
Di-n-butylphthalate	ug/L	ND	5.0	06/02/14 22:08	
Di-n-octylphthalate	ug/L	ND	5.0	06/02/14 22:08	
Dibenz(a,h)anthracene	ug/L	ND	5.0	06/02/14 22:08	
Diethylphthalate	ug/L	ND	5.0	06/02/14 22:08	
Dimethylphthalate	ug/L	ND	5.0	06/02/14 22:08	
Fluoranthene	ug/L	ND	5.0	06/02/14 22:08	
Fluorene	ug/L	ND	5.0	06/02/14 22:08	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	06/02/14 22:08	
Hexachlorobenzene	ug/L	ND	5.0	06/02/14 22:08	
Hexachlorocyclopentadiene	ug/L	ND	10.0	06/02/14 22:08	
Hexachloroethane	ug/L	ND	5.0	06/02/14 22:08	

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QUALITY CONTROL DATA

Project: NCDOT FRONT ST. WBS17BP.3.R.28

Pace Project No.: 92202425

METHOD BLANK: 1205691

Matrix: Water

Associated Lab Samples: 92202425001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Indeno(1,2,3-cd)pyrene	ug/L	ND	5.0	06/02/14 22:08	
Isophorone	ug/L	ND	10.0	06/02/14 22:08	
N-Nitroso-di-n-propylamine	ug/L	ND	5.0	06/02/14 22:08	
N-Nitrosodimethylamine	ug/L	ND	5.0	06/02/14 22:08	
N-Nitrosodiphenylamine	ug/L	ND	10.0	06/02/14 22:08	
Naphthalene	ug/L	ND	5.0	06/02/14 22:08	
Nitrobenzene	ug/L	ND	5.0	06/02/14 22:08	
Pentachlorophenol	ug/L	ND	10.0	06/02/14 22:08	
Phenanthrene	ug/L	ND	5.0	06/02/14 22:08	
Phenol	ug/L	ND	5.0	06/02/14 22:08	
Pyrene	ug/L	ND	5.0	06/02/14 22:08	
2,4,6-Tribromophenol (S)	%	64	10-137	06/02/14 22:08	
2-Fluorobiphenyl (S)	%	65	15-120	06/02/14 22:08	
2-Fluorophenol (S)	%	34	10-120	06/02/14 22:08	
Nitrobenzene-d5 (S)	%	64	10-120	06/02/14 22:08	
Phenol-d6 (S)	%	27	10-120	06/02/14 22:08	
Terphenyl-d14 (S)	%	80	11-131	06/02/14 22:08	

LABORATORY CONTROL SAMPLE: 1205692

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	19.9	40	44-142	L2
2,4,6-Trichlorophenol	ug/L	50	20.9	42	37-144	
2,4-Dichlorophenol	ug/L	50	18.2	36	1-191	
2,4-Dimethylphenol	ug/L	50	18.2	36	32-119	
2,4-Dinitrophenol	ug/L	250	171	69	1-181	
2,4-Dinitrotoluene	ug/L	50	55.1	110	39-139	
2,6-Dinitrotoluene	ug/L	50	45.2	90	50-158	
2-Chloronaphthalene	ug/L	50	19.5	39	60-118	L2
2-Chlorophenol	ug/L	50	19.5	39	23-134	
2-Nitrophenol	ug/L	50	18.9	38	29-182	
3,3'-Dichlorobenzidine	ug/L	100	88.7	89	1-262	
4,6-Dinitro-2-methylphenol	ug/L	100	83.2	83	1-181	
4-Bromophenylphenyl ether	ug/L	50	34.2	68	53-127	
4-Chloro-3-methylphenol	ug/L	100	48.2	48	22-147	
4-Chlorophenylphenyl ether	ug/L	50	31.8	64	25-158	
4-Nitrophenol	ug/L	250	111	44	1-132	
Acenaphthene	ug/L	50	23.8	48	47-145	
Acenaphthylene	ug/L	50	23.3	47	33-145	
Anthracene	ug/L	50	39.7	79	1-166	
Benzo(a)anthracene	ug/L	50	42.2	84	33-143	
Benzo(a)pyrene	ug/L	50	43.2	86	17-163	
Benzo(b)fluoranthene	ug/L	50	41.5	83	24-159	
Benzo(g,h,i)perylene	ug/L	50	42.6	85	1-219	

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QUALITY CONTROL DATA

Project: NCDOT FRONT ST. WBS17BP.3.R.28

Pace Project No.: 92202425

LABORATORY CONTROL SAMPLE: 1205692

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzo(k)fluoranthene	ug/L	50	42.5	85	11-162	
bis(2-Chloroethoxy)methane	ug/L	50	19.9	40	33-184	
bis(2-Chloroethyl) ether	ug/L	50	21.2	42	12-158	
bis(2-Chloroisopropyl) ether	ug/L	50	20.0	40	36-166	
bis(2-Ethylhexyl)phthalate	ug/L	50	47.0	94	8-158	
Butylbenzylphthalate	ug/L	50	47.6	95	1-152	
Chrysene	ug/L	50	43.3	87	17-168	
Di-n-butylphthalate	ug/L	50	44.8	90	1-118	
Di-n-octylphthalate	ug/L	50	45.8	92	4-146	
Dibenz(a,h)anthracene	ug/L	50	44.2	88	1-227	
Diethylphthalate	ug/L	50	46.0	92	1-114	
Dimethylphthalate	ug/L	50	39.7	79	1-112	
Fluoranthene	ug/L	50	41.9	84	26-137	
Fluorene	ug/L	50	33.5	67	59-121	
Hexachloro-1,3-butadiene	ug/L	50	19.8	40	24-116	
Hexachlorobenzene	ug/L	50	35.2	70	1-152	
Hexachlorocyclopentadiene	ug/L	50	14.5	29	25-150	
Hexachloroethane	ug/L	50	19.3	39	40-113 L2	
Indeno(1,2,3-cd)pyrene	ug/L	50	34.9	70	1-171	
Isophorone	ug/L	50	23.0	46	21-196	
N-Nitroso-di-n-propylamine	ug/L	50	18.7	37	1-230	
N-Nitrosodimethylamine	ug/L	50	12.6	25	25-150	
N-Nitrosodiphenylamine	ug/L	50	36.8	74	25-150	
Naphthalene	ug/L	50	20.4	41	21-133	
Nitrobenzene	ug/L	50	25.2	50	35-180	
Pentachlorophenol	ug/L	100	80.8	81	14-176	
Phenanthrene	ug/L	50	38.0	76	54-120	
Phenol	ug/L	50	9.5	19	5-112	
Pyrene	ug/L	50	43.6	87	52-115	
2,4,6-Tribromophenol (S)	%			72	10-137	
2-Fluorobiphenyl (S)	%			36	15-120	
2-Fluorophenol (S)	%			23	10-120	
Nitrobenzene-d5 (S)	%			40	10-120	
Phenol-d6 (S)	%			16	10-120	
Terphenyl-d14 (S)	%			88	11-131	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1205693 1205694

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		92202592004 Result	Spike Conc.	Spike Conc.	MS Result							MSD Result
1,2,4-Trichlorobenzene	ug/L	<5.0	100	100	75.7	68.0	76	68	44-142	11	30	
2,4,6-Trichlorophenol	ug/L	<10.0	100	100	81.4	70.8	81	71	37-144	14	30	
2,4-Dichlorophenol	ug/L	<5.0	100	100	85.7	73.1	86	73	1-191	16	30	
2,4-Dimethylphenol	ug/L	<10.0	100	100	78.4	32.7	78	33	32-119	82	30	R1
2,4-Dinitrophenol	ug/L	<50.0	500	500	426	403	85	81	1-181	5	30	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: NCDOT FRONT ST. WBS17BP.3.R.28

Pace Project No.: 92202425

Parameter	92202592004		MS	MSD	1205693		1205694		% Rec	% Rec	Limits	RPD	Max RPD	Qual
	Units	Result	Spike Conc.	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec						
2,4-Dinitrotoluene	ug/L	<5.0	100	100	104	103	104	103	39-139	0	30			
2,6-Dinitrotoluene	ug/L	<5.0	100	100	104	97.2	104	97	50-158	7	30			
2-Chloronaphthalene	ug/L	<5.0	100	100	82.9	73.8	83	74	60-118	12	30			
2-Chlorophenol	ug/L	<5.0	100	100	89.9	70.5	90	71	23-134	24	30			
2-Nitrophenol	ug/L	<5.0	100	100	84.6	70.5	85	71	29-182	18	30			
3,3'-Dichlorobenzidine	ug/L	<25.0	200	200	158	140	79	70	1-262	12	30			
4,6-Dinitro-2-methylphenol	ug/L	<20.0	200	200	180	170	90	85	1-181	6	30			
4-Bromophenylphenyl ether	ug/L	<5.0	100	100	85.7	81.6	86	82	53-127	5	30			
4-Chloro-3-methylphenol	ug/L	<5.0	200	200	181	153	90	76	22-147	17	30			
4-Chlorophenylphenyl ether	ug/L	<5.0	100	100	87.6	84.7	88	85	25-158	3	30			
4-Nitrophenol	ug/L	<50.0	500	500	310	285	62	57	1-132	8	30			
Acenaphthene	ug/L	<5.0	100	100	84.8	77.8	83	76	47-145	9	30			
Acenaphthylene	ug/L	<5.0	100	100	82.2	76.0	82	76	33-145	8	30			
Anthracene	ug/L	<5.0	100	100	85.2	83.1	85	83	1-166	2	30			
Benzo(a)anthracene	ug/L	<5.0	100	100	87.9	81.3	88	81	33-143	8	30			
Benzo(a)pyrene	ug/L	<5.0	100	100	91.5	87.6	91	88	17-163	4	30			
Benzo(b)fluoranthene	ug/L	<5.0	100	100	88.9	86.8	89	87	24-159	2	30			
Benzo(g,h,i)perylene	ug/L	<5.0	100	100	86.0	81.6	86	82	1-219	5	30			
Benzo(k)fluoranthene	ug/L	<5.0	100	100	92.2	87.6	92	88	11-162	5	30			
bis(2-Chloroethoxy)methane	ug/L	<10.0	100	100	86.0	75.6	86	76	33-184	13	30			
bis(2-Chloroethyl) ether	ug/L	<5.0	100	100	93.2	74.7	93	75	12-158	22	30			
bis(2-Chloroisopropyl) ether	ug/L	<5.0	100	100	90.0	73.3	90	73	36-166	21	30			
bis(2-Ethylhexyl)phthalate	ug/L	<5.0	100	100	95.8	90.6	96	91	8-158	6	30			
Butylbenzylphthalate	ug/L	<5.0	100	100	97.7	89.5	98	89	1-152	9	30			
Chrysene	ug/L	<5.0	100	100	88.9	83.5	89	84	17-168	6	30			
Di-n-butylphthalate	ug/L	<5.0	100	100	89.0	90.8	89	91	1-118	2	30			
Di-n-octylphthalate	ug/L	<5.0	100	100	92.4	85.1	92	85	4-146	8	30			
Dibenz(a,h)anthracene	ug/L	<5.0	100	100	88.7	84.1	89	84	1-227	5	30			
Diethylphthalate	ug/L	<5.0	100	100	87.2	88.4	87	88	1-114	1	30			
Dimethylphthalate	ug/L	<5.0	100	100	86.7	81.5	87	81	1-112	6	30			
Fluoranthene	ug/L	<5.0	100	100	83.5	86.1	83	86	26-137	3	30			
Fluorene	ug/L	<5.0	100	100	86.2	84.2	84	82	59-121	2	30			
Hexachloro-1,3-butadiene	ug/L	<5.0	100	100	71.8	64.7	72	65	24-116	10	30			
Hexachlorobenzene	ug/L	<5.0	100	100	78.4	74.0	78	74	1-152	6	30			
Hexachlorocyclopentadiene	ug/L	<10.0	100	100	80.5	65.5	80	65	25-150	21	30			
Hexachloroethane	ug/L	<5.0	100	100	83.3	72.1	83	72	40-113	14	30			
Indeno(1,2,3-cd)pyrene	ug/L	<5.0	100	100	68.8	65.2	69	65	1-171	5	30			
Isophorone	ug/L	<10.0	100	100	100	87.8	100	88	21-196	13	30			
N-Nitroso-di-n-propylamine	ug/L	<5.0	100	100	107	79.8	107	80	1-230	29	30			
N-Nitrosodimethylamine	ug/L	<5.0	100	100	64.8	53.6	65	54	25-150	19	30			
N-Nitrosodiphenylamine	ug/L	<10.0	100	100	87.6	81.6	88	82	25-150	7	30			
Naphthalene	ug/L	<5.0	100	100	82.5	74.5	78	70	21-133	10	30			
Nitrobenzene	ug/L	<5.0	100	100	97.9	84.5	98	84	35-180	15	30			
Pentachlorophenol	ug/L	<10.0	200	200	169	161	85	81	14-176	5	30			
Phenanthrene	ug/L	<5.0	100	100	84.4	82.3	82	80	54-120	3	30			
Phenol	ug/L	<5.0	100	100	61.4	43.6	61	44	5-112	34	30	R1		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: NCDOT FRONT ST. WBS17BP.3.R.28

Pace Project No.: 92202425

Parameter	Units	1205693		1205694		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		92202592004 Result	MS Spike Conc.	MSD Spike Conc.								
Pyrene	ug/L	<5.0	100	100	91.2	82.8	91	83	52-115	10	30	
2,4,6-Tribromophenol (S)	%							82	82	10-137		
2-Fluorobiphenyl (S)	%							81	75	15-120		
2-Fluorophenol (S)	%							58	49	10-120		
Nitrobenzene-d5 (S)	%							77	72	10-120		
Phenol-d6 (S)	%							57	41	10-120		
Terphenyl-d14 (S)	%							86	84	11-131		

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: NCDOT FRONT ST. WBS17BP.3.R.28
Pace Project No.: 92202425

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

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

TNI - The NELAC Institute.

LABORATORIES

PASI-C Pace Analytical Services - Charlotte

ANALYTE QUALIFIERS

L2 Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.

M0 Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

R1 RPD value was outside control limits.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: NCDOT FRONT ST. WBS17BP.3.R.28

Pace Project No.: 92202425

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92202425001	3-08	EPA 625	OEXT/27878	EPA 625	MSSV/9170
92202425001	3-08	SM 6200B	MSV/26940		

REPORT OF LABORATORY ANALYSIS

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Document Name: **Sample Condition Upon Receipt (SCUR)**

Document Revised: April 07, 2014

Page 1 of 2

Document Number:
F-CHR-CS-003-rev.14

Issuing Authority:
Pace Huntersville Quality Office

Client Name: Catlin/NCDOU

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

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

Packing Material: Bubble Wrap Bubble Bags None Other _____

Thermometer Used: IR Gun T1102 T1401 Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Temp Correction Factor T1102: No Correction T1301: No Correction

Corrected Cooler Temp.: 2.1 °C Biological Tissue is Frozen: Yes No N/A

Temp should be above freezing to 6°C

Comments:

Date and Initials of person examining contents: AW 5/22/14

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Sample Labels match COC:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	12. Samples from ID 3-08 do not have dates 5/14/14 - all
-Includes date/time/ID/Analysis Matrix:		
All containers needing preservation have been checked.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Samples checked for dechlorination:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	14.
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	15.
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

SCURF Review:	<u>JDB</u>	Date:	<u>5/22/14</u>
SRF Review:	<u>AUB</u>	Date:	<u>5-23-14</u>

WO# : 92202425

92202425

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

CHAIN-OF-CUSTODY / Analytical Request Document
The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 1
16666490

Section A Required Client Information:
Company: **CATLIN/NCDOT**
Address: **220 Old Dairy Rd.**
Email To: **William Fenwick 28465**
Ben Ashba & catlinusa.com
Phone: **910-452-5861** Fax: **910-452-7503**
Requested Due Date: **STANDARD**

Section B Required Project Information:
Report To: **Ben Ashba & CATLIN**
Copy To: **NCDOT**
Project Name: **New Home County Front St. & Burnett Blvd**
Project Number: **17BP-3.R.28**

Section C Invoice Information:
Attention: **NCDOT**
Company Name: **NCDOT Geotiviro**
Address: **5815-1**
Reference: **Angela**
Pace Quote: **5815-1**
Pace Project Manager: **Angela**
Pace Profile #:

REGULATORY AGENCY
 NPDES GROUND WATER DRINKING WATER
 UST RCRA OTHER
 Site Location: **NC**
 STATE:

ITEM #	Section D Required Client Information	Matrix Codes MATRIX L CODE	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives		Analysis Test	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)
			COMPOSITE START	COMPOSITE END/GRAB			H ₂ SO ₄	HNO ₃			
1	3-08		DATE	TIME	DATE	TIME	Unpreserved		↓ Analysis Test ↓		
2							H ₂ SO ₄		SM6200B		
3							HNO ₃		EPA 625		
4							HCl				
5							NaOH				
6							Na ₂ S ₂ O ₃				
7							Methanol				
8							Other				
9											
10											
11											
12											

ADDITIONAL COMMENTS
Please report "J" values as any less than 100

RELINQUISHED BY / AFFILIATION
DATE
TIME

ACCEPTED BY / AFFILIATION
DATE
TIME

SAMPLE CONDITIONS
 Received on Ice (Y/N)
 Custody Sealed Cooler (Y/N)
 Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE
 PRINT Name of SAMPLER: **Mike D. Mason**
 SIGNATURE of SAMPLER: *Mike D. Mason*
 DATE Signed (MM/DD/YY): **05/19/14**

ORIGINAL

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