GEOENVIRONMENTAL PHASE II INVESTIGATION

ANDREA LAWRENCE
204 W. NEW HOPE RD.

GOLDSBORO, NORTH CAROLINA

TIP NUMBER: U-3609B
WBS NUMBER: 39026.1.2
COUNTY: WAYNE
DESCRIPTION: GOLDSBORO - US 13 (BERKELEY BLVD) FROM SR 1003 (NEW HOPE RD) TO SR 1572 (SAULSTON RD)

PREPARED FOR:

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

JANUARY 27, 2020

PREPARED BY:

CATLIN ENGINEERS AND SCIENTISTS
P. O. BOX 10279
WILMINGTON, NORTH CAROLINA 28404-0279
(910) 452-5861

CATLIN PROJECT NO. 219139
CORPORATE GEOLOGY LICENSE CERTIFICATION NO. C-118
CORPORATE LICENSURE NO. FOR ENGINEERING SERVICES C-0585

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JANUARY 27, 2020

1.0 INTRODUCTION

Acquisition of the right-of-way (ROW) and/or easement is necessary for the US 13 improvements (including drainage) in Goldsboro, North Carolina. The North Carolina Department of Transportation (NCDOT) has indicated a site investigation is necessary to determine if underground storage tanks (UST), contaminated groundwater and/or contaminated soils are present.

2.0 PURPOSE OF INVESTIGATION AND DESCRIPTION

CATLIN Engineers and Scientists (CATLIN) was retained by the NCDOT Geotechnical Engineering Unit to provide field investigations concluding with GeoEnvironmental Phase II Investigation reports for nine (9) sites. In response to a request for proposal by Mr. John Pilipchuk, L.G., P.E. dated November 12, 2019 and subsequent work scope discussions with Mr. Craig Haden, CATLIN submitted a proposal for conducting an investigation at 204 W. New Hope Rd. – Andrea Lawrence, along the NCDOT Project "Goldsboro – US 13 (Berkeley Blvd) from SR 1003 (New Hope Rd) to SR 1572 (Saulston Rd)" in Goldsboro, North Carolina. Figure 1 illustrates the general site location. The NCDOT Conventional Plan Sheet Symbols are provided on Figure 2.

According to NCDOT, ROW and/or easement acquisition is necessary for the roadway construction (TIP Number U-3609B) and specifically at the above referenced address (204 W. New Hope Rd). A site investigation was requested before parcel acquisition and roadway construction. The work scope as requested includes:

- Notify property owners/occupants of schedule and scope of work.
- Locate all drums and/or USTs, determine approximate size and contents (if any).
- Determine if contaminated soils are present.
- Test soil for contaminants relevant to the site's past use and/or possible release(s). For petroleum contaminants, Ultra-Violet Fluorescence (UVF) analysis is the preferred method.
- Advance four (4) borings and collect one (1) soil sample from each boring to determine if contaminated soils are present.
- Submit four (4) soil samples for UVF analyses.

- Collect one (1) groundwater sample and submit for volatile and semi-volatile organics analyses per Standard Method 6200B and Environmental Protection Agency (EPA) Method 625.
- Include (as a standard delivery item) the RED Lab, LLC (RED Lab) graphs in reports and send the GeoEnvironmental Section a copy of the RED Lab Excel file(s).
- If soil and groundwater contamination are evident, estimate the quantity of impacted soils and indicate the approximate area of soil and groundwater contamination on report figures.
- Provide a MicroStation file with the location of soil borings, USTs, soil contamination and monitoring wells.
- Prepare a report including field activities, findings, and recommendations and submit one electronic copy to the NCDOT GeoEnvironmental Section.

This report documents our activities and findings for the Andrea Lawrence property at 204 W. New Hope Rd., Goldsboro, North Carolina.

3.0 METHODS

Proposed boring/sample locations were discussed and agreed upon before boring advancement.

CATLIN coordinated geophysical activities with Pyramid Geophysical Services (Pyramid). The geophysical investigation methods and site photographs are detailed in the Pyramid Geophysical Survey provided in Appendix A.

CATLIN proposed utilizing QROS On-Site Rapid Measurement Techniques and Tools (QED™ Analyzer) by RED Lab to evaluate potential for petroleum and Poly Aromatic Hydrocarbon (PAH) impacts to soil in a cost-effective manner. Soil samples collected from above the approximate water table depth with total petroleum hydrocarbon (TPH) concentrations greater than the North Carolina Department of Environmental Quality (NCDEQ) Action Levels [100 milligrams per kilogram (mg/kg) diesel range organics (DRO) or 50 mg/kg gasoline range organics (GRO)] will be considered contaminated for estimated impacted 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 contaminated sample location or the property line/easement.

Borings advanced during this investigation are identified with “204DPT-” and numbered sequentially 01 through 04. Soil samples for analysis per QROS QED™ Analyzer were identified by boring number and depth [example: 204DPT-01 (9’)]. A groundwater sample for analysis per Standard Method 6200B and EPA Method 625 was identified by boring number [example: 204DPT-02]. CATLIN’s field activities at the site began and concluded on December 10, 2019.

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. Pyramid also marked private underground utilities and cleared the boring locations.

CATLIN personnel gathered subsurface soil data by Direct Push Technology boring advancement using a GeoProbe 5400 (GeoProbe). When using the GeoProbe, the borings are advanced to depth by static force and a 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). Soils were removed from the liner in two (2) foot intervals and placed in sealable polyethylene bags for organic volatile (headspace) analysis (OVA) utilizing a MiniRAE 3000 Photoionization Detector (PID). The OVA results were documented on field logs and are included on the boring logs in Appendix B. Soil samples were selected and packed in appropriate glassware for analysis. One (1) soil sample was collected from each soil boring location.

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 RED Lab in Wilmington, NC. Sample integrity was maintained by following proper Chain of Custody (COC) procedures. A copy of the COC is provided following the analytical report in Appendix C.

Following boring termination and tooling removal, new one-inch slotted poly vinyl chloride (PVC) well screen and casing was installed in a selected borehole for groundwater sampling. A grab groundwater sample was collected utilizing a peristaltic pump and new polyethylene tubing. Groundwater was pumped directly into laboratory provided glassware. New, disposable nitrile gloves were worn when handling well material and while collecting groundwater samples. The samples were packed on ice in an insulated cooler for transportation to the laboratory. Sample integrity was maintained by following proper COC procedures (see Appendix C).

The PVC materials were subsequently removed from the boring. 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

The QROS QED™ Analyzer methods have been approved by the NCDEQ for petroleum contamination determination. Complete QROS QED™ procedures are on file with the NCDEQ and are available upon request. The QROS QED™ analysis was conducted by RED Lab personnel at their laboratory in Wilmington, North Carolina. QROS QED™ analysis provides Benzene, Toluene, Ethylbenzene, and Total Xylenes (BTEX), DRO, GRO, TPH, total Aromatics (C10-C35) and 16 EPA PAH concentrations. A total of four (4) soil samples were submitted to RED Lab. The COC documentation is included in Appendix C.

One (1) groundwater sample was submitted to ENCO Laboratories (ENCO) for analysis per EPA Methods 625 and Standard Method 6200B for the presence of semi-volatile and volatile organics (including potential petroleum and chlorinated solvent parameters). The COC documentation is included in Appendix C.

4.0 FIELD ACTIVITIES

4.1 CURRENT SITE CONDITIONS AND FIELD OBSERVATIONS

The site currently operates as a carpet and flooring retail store consisting of one building and a parking lot. The building is outside of the proposed ROW and/or easement. No signs of USTs were observed.

Photographs taken during the geophysical investigation are included in the geophysical survey provided in Appendix A.

Figure 3 illustrates the subject site with soil borings and sample locations.

4.2 SOIL SAMPLING

A total of four (4) borings were advanced as part of this investigation. The four (4) soil samples collected (one from each boring) were submitted for analysis. Boring/sample locations are illustrated on Figure 3. Boring logs are included in Appendix B.

Soil borings were advanced to eight (8) or 16 feet below land surface (BLS) and terminated in dry to saturated fine to coarse sand except boring 204DPT-03 and –04, which were terminated in silty clay and sandy clay respectively. Soils were collected continuously to boring termination. After retrieving the drive, soil was visually/manually classified for USCS and screened for organic vapor head space. Soil samples collected from each

boring for analysis were packed in the appropriate glassware, labeled, and placed in a cooler on ice. The four (4) soil samples were submitted to RED Lab for QED™ analyses. The COC documentation is included in Appendix C.

4.3 GROUNDWATER SAMPLING

One (1) groundwater sample (204DPT-02) was collected and submitted for analysis per Standard Method 6200B and EPA Method 625 under proper COC protocol (see Appendix C).

4.4 SURVEYING

Boring/sample locations were recorded utilizing a Trimble® global positioning survey instrument and data collector. Boring coordinates are on the boring logs provided in Appendix B and Table 2. Boring locations are indicated on plan sheets provided by NCDOT and illustrated on Figure 3.

5.0 RESULTS

Historical review

Review of the NCDEQ Division of Waste Management Site Locator Tool indicated no registered USTs, ASTs, or incidents at the subject site.

Geophysical Investigation

The geophysical investigation consisted of electromagnetic (EM) induction-metal detection and ground penetrating radar (GPR) surveys. A total of six (6) EM anomalies were identified. The majority of the EM anomalies were directly attributed to visible cultural features at the ground surface. EM and GPR recorded evidence of possible utilities or small metallic debris on the eastern portion of the site. The complete geophysical survey report by Pyramid is included in Appendix A.

Soil

Soil borings 204DPT-01 through –02 were terminated in fine and coarse sands at 10 and 16 feet BLS respectively. Borings 204DPT-03 through –04 were terminated at eight (8) feet BLS in silty clay and sandy clay respectively. Complete boring logs are provided in Appendix B. A soil sample was collected at each boring from within five (5) to nine (9) feet BLS (+/- 1 foot) and submitted for laboratory analysis. The complete analytical reports and COC documents are provided in Appendix C.

The soil headspace OVA results ranged from 0.0 ppm [204DPT-03 (0-2')] to 16.5 ppm [204DPT-02 (0-2')]. The soil headspace screening is summarized in Table 1. The soil samples collected from borings 204DPT-01 through 204DPT-04 did not reveal TPH DRO and/or TPH GRO above the State Action Levels (100 ppm DRO, 50 ppm GRO) or laboratory reporting limits. Summarized TPH results are provided

on Table 2 and illustrated on Figure 3. No impacted soils are suspected to be encountered during construction.

Groundwater

Based on the saturated soils found in the 204DPT-02 temporary monitoring well, depth to groundwater is assumed at approximately 10.0' BLS. No Standard Method 6200B and EPA Method 625 compounds were detected above the North Carolina Administrative Code (NCAC) T15A:02L Groundwater Quality Standards (2L GWQS). The original extraction (within "Hold Time") for EPA Method 625 was re-extracted outside of hold time and both sets of data have been reported. The groundwater sample results are summarized on Table 3. The groundwater sample location and summarized results are illustrated on Figure 4. The complete laboratory analytical report is provided in Appendix C. A monitoring well construction and abandonment record were submitted to NCDEQ. Copies of the records are provided in Appendix B.

6.0 SUMMARY AND CONCLUSIONS

The Andrea Lawrence property at 204 W. New Hope Rd. currently operates as a carpet and flooring retail store consisting of one building and a parking lot. The building is outside of the proposed ROW and/or easement. No signs of USTs were observed during site reconnaissance or through geophysical surveying in the ROW and/or easement. Review of the NCDEQ Division of Waste Management Site Locator Tool indicated no registered USTs, ASTs, or incidents at the site.

Soil and groundwater samples (4 soil, 1 groundwater) did not reveal TPH DRO/GRO or semi-volatile/volatile organic concentrations, respectively. The proposed construction at the site is not suspected to encounter contaminated soil or groundwater.

7.0 LIMITATIONS

This report is based on the agreed work scope and a review of available data from limited sampling. It is possible that this investigation may have failed to reveal the presence of contamination in the project area where such contamination may exist. Although CATLIN has used accepted methods appropriate for soil and groundwater sampling, CATLIN cannot guarantee that additional soil and/or groundwater contamination does not exist.

8.0 SIGNATURES

(Document Not Considered Final Unless All Signatures Are Completed)

DocuSigned by:
Benjamin J. Ashba
DAC04414B7D4F0...2328

NORTH CAROLINA SEAL GEOLOGIST BENJAMIN J. ASHBA

2/6/2020

Benjamin J. Ashba, P.G.
Project Manager

DocuSigned by:
Corey D. Futral
10FF8E52EF63477...

Corey D. Futral
Project Geologist

TABLES

TABLE 1
SUMMARY OF SOIL HEADSPACE SCREENING

Andrea Lawrence
204 W. New Hope Rd., Goldsboro, North Carolina

BORING I.D.	Sample Depth (ft.)	OVA READING (ppm)	Sample Selected for Laboratory Analysis
204DPT-01	0 - 2	4.4	
204DPT-01	2 - 4	4.1	
204DPT-01	4 - 6	5.1	
204DPT-01	6 - 8	5.2	
204DPT-01	8 - 10	6.3	204 DPT-01 (9')
204DPT-02	0 - 2	16.5	
204DPT-02	2 - 4	11.8	
204DPT-02	4 - 6	13.1	
204DPT-02	6 - 8	6.5	
204DPT-02	8 - 10	7.0	Soil 204 DPT-02 (8')
204DPT-02	10 - 12	4.1	
204DPT-02	12 - 14	Not Measured	
204DPT-02	14 - 16	Not Measured	Water 204 DPT-02
204DPT-03	0 - 2	0.0	
204DPT-03	2 - 4	4.9	
204DPT-03	4 - 6	5.0	204 DPT-03 (5')
204DPT-03	6 - 8	4.0	
204DPT-04	0 - 2	0.0	
204DPT-04	2 - 4	0.0	
204DPT-04	4 - 6	0.9	
204DPT-04	6 - 8	2.3	204 DPT-04 (6')

TABLE 2
SUMMARY OF SOIL LABORATORY RESULTS
ULTRA VIOLET FLUORESCENCE BY REDLAB QED™ ANALYZER

Andrea Lawrence
204 W. New Hope Rd., Goldsboro, North Carolina

Sample ID	Northing	Easting	Contaminant of Concern → / Date Collected	TPH GRO	TPH DRO
204DPT-01 (9')	598,365	2,321,089	12/10/2019	<0.49	<0.49
204DPT-02 (8')	598,364	2,321,052	12/10/2019	<0.5	<0.5
204DPT-03 (5')	598,375	2,321,041	12/10/2019	<0.47	<0.47
204DPT-04 (6')	598,386	2,321,002	12/10/2019	<0.51	<0.51
			STATE ACTION LEVELS	**50**	**100**

Sample depth provided in parantheses as part of the Sample ID.
All results in milligrams per kilogram (mg/Kg).
< = Less than method detection limit

TABLE 3
SUMMARY OF GROUNDWATER LABORATORY RESULTS
EPA Method 625 and Standard Method 6200B

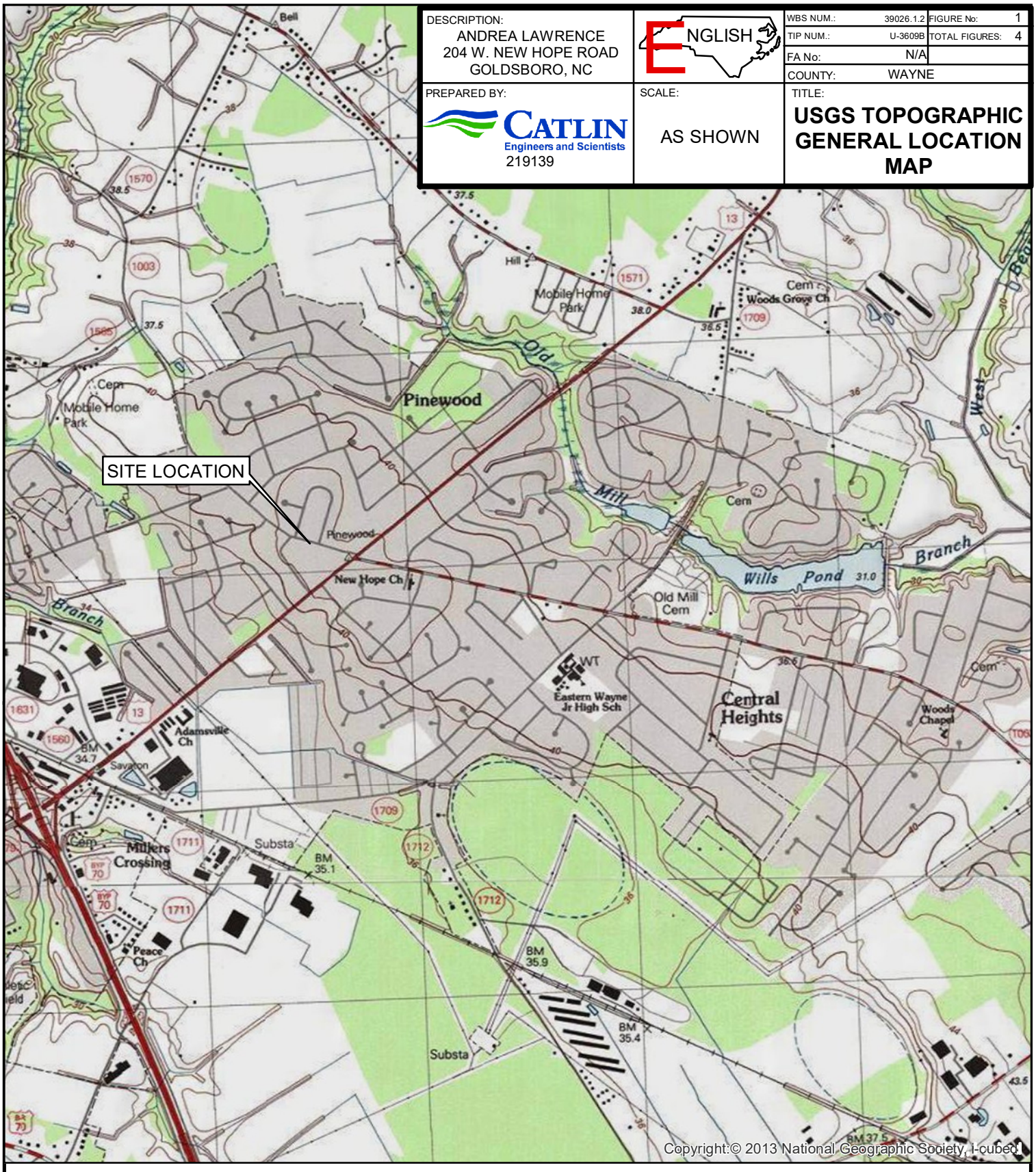
Andrea Lawrence
204 W. New Hope Rd., Goldsboro, North Carolina

Method →		EPA Method 625	Standard Method 6200B
Contaminant of Concern →		All Parameters	All Parameters
Sample ID	Date Collected		
204DPT-02	12/10/2019	BMDL	BMDL
GCL (µg/L)		Varies	Varies
2L GWQS (µg/L)		Varies	Varies

BMDL = Below Method Detection Limit. Refer to analytical report for a complete list of parameters and reporting limi
GCL = Gross Contaminant Level
2L GWQS = NCAC T15A:02L Groundwater Quality Standards

FIGURES

DESCRIPTION: ANDREA LAWRENCE 204 W. NEW HOPE ROAD GOLDSBORO, NC	ENGLISH	WBS NUM.: 39026.1.2	FIGURE No: 1
		TIP NUM.: U-3609B	TOTAL FIGURES: 4
		FA No: N/A	
		COUNTY: WAYNE	
PREPARED BY: CATLIN Engineers and Scientists 219139	SCALE: AS SHOWN	TITLE: **USGS TOPOGRAPHIC GENERAL LOCATION MAP**	



2,000 1,000 0 2,000 4,000 Feet

SCALE

N W E S

12/2/2016

PROJECT REFERENCE NO.	SHEET NO.
	2

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

Note: Not to Scale **S.U.E. = Subsurface Utility Engineering*

BOUNDARIES AND PROPERTY:

- State Line
- County Line
- Township Line
- City Line
- Reservation Line
- Property Line
- Existing Iron Pin — EIP
- Computed Property Corner
- Property Monument — CM
- Parcel/Sequence Number — 123
- Existing Fence Line
- Proposed Woven Wire Fence
- Proposed Chain Link Fence
- Proposed Barbed Wire Fence
- Existing Wetland Boundary — WLB
- Proposed Wetland Boundary — WLB
- Existing Endangered Animal Boundary — EAB
- Existing Endangered Plant Boundary — EPB
- Existing Historic Property Boundary — HPB
- Known Contamination Area: Soil — S
- Potential Contamination Area: Soil — S
- Known Contamination Area: Water — W
- Potential Contamination Area: Water — W
- Contaminated Site: Known or Potential

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

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

RAILROADS:

- Standard Gauge — CSX TRANSPORTATION
- RR Signal Milepost — MILEPOST 35
- Switch — SWITCH
- RR Abandoned
- RR Dismantled

RIGHT OF WAY & PROJECT CONTROL:

- Secondary Horiz and Vert Control Point
- Primary Horiz Control Point
- Primary Horiz and Vert Control Point
- Exist Permanent Easement Pin and Cap
- New Permanent Easement Pin and Cap
- Vertical Benchmark
- Existing Right of Way Marker
- Existing Right of Way Line
- New Right of Way Line — RW
- New Right of Way Line with Pin and Cap — RW
- New Right of Way Line with Concrete or Granite R/W Marker — RW
- New Control of Access Line with Concrete C/A Marker — RW CA
- Existing Control of Access — CA
- New Control of Access — CA
- Existing Easement Line — E
- New Temporary Construction Easement — E
- New Temporary Drainage Easement — TDE
- New Permanent Drainage Easement — PDE
- New Permanent Drainage / Utility Easement — DUE
- New Permanent Utility Easement — PUE
- New Temporary Utility Easement — TUE
- New Aerial Utility Easement — AUE

ROADS AND RELATED FEATURES:

- Existing Edge of Pavement
- Existing Curb
- Proposed Slope Stakes Cut — C
- Proposed Slope Stakes Fill — F
- Proposed Curb Ramp — CR
- 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 — Vineyard

EXISTING STRUCTURES:

MAJOR:

- Bridge, Tunnel or Box Culvert — CONC
- Bridge Wing Wall, Head Wall and End Wall — CONC WW

MINOR:

- Head and End Wall — CONC HW
- Pipe Culvert
- Footbridge
- Drainage Box: Catch Basin, DI or JB — CB
- Paved Ditch Gutter
- Storm Sewer Manhole — S
- Storm Sewer — S

UTILITIES:

POWER:

- Existing Power Pole
- Proposed Power Pole
- Existing Joint Use Pole
- Proposed Joint Use Pole
- Power Manhole — P
- Power Line Tower
- Power Transformer
- U/G Power Cable Hand Hole
- H-Frame Pole
- U/G Power Line LOS B (S.U.E.*) — P
- U/G Power Line LOS C (S.U.E.*) — P
- U/G Power Line LOS D (S.U.E.*) — P

TELEPHONE:

- Existing Telephone Pole
- Proposed Telephone Pole
- Telephone Manhole — T
- Telephone Pedestal — T
- Telephone Cell Tower
- U/G Telephone Cable Hand Hole — HH
- U/G Telephone Cable LOS B (S.U.E.*) — T
- U/G Telephone Cable LOS C (S.U.E.*) — T
- U/G Telephone Cable LOS D (S.U.E.*) — T
- U/G Telephone Conduit LOS B (S.U.E.*) — TC
- U/G Telephone Conduit LOS C (S.U.E.*) — TC
- U/G Telephone Conduit LOS D (S.U.E.*) — TC
- U/G Fiber Optics Cable LOS B (S.U.E.*) — T FO
- U/G Fiber Optics Cable LOS C (S.U.E.*) — T FO
- U/G Fiber Optics Cable LOS D (S.U.E.*) — T FO

WATER:

- Water Manhole — W
- Water Meter
- Water Valve
- Water Hydrant
- U/G Water Line LOS B (S.U.E*) — W
- U/G Water Line LOS C (S.U.E*) — W
- U/G Water Line LOS D (S.U.E*) — W
- Above Ground Water Line — A/G Water

TV:

- TV Pedestal — C
- TV Tower
- U/G TV Cable Hand Hole — HH
- U/G TV Cable LOS B (S.U.E.*) — TV
- U/G TV Cable LOS C (S.U.E.*) — TV
- U/G TV Cable LOS D (S.U.E.*) — TV
- U/G Fiber Optic Cable LOS B (S.U.E.*) — TV FO
- U/G Fiber Optic Cable LOS C (S.U.E.*) — TV FO
- U/G Fiber Optic Cable LOS D (S.U.E.*) — TV FO

GAS:

- Gas Valve
- Gas Meter
- U/G Gas Line LOS B (S.U.E.*) — G
- U/G Gas Line LOS C (S.U.E.*) — G
- U/G Gas Line LOS D (S.U.E.*) — G
- Above Ground Gas Line — A/G Gas

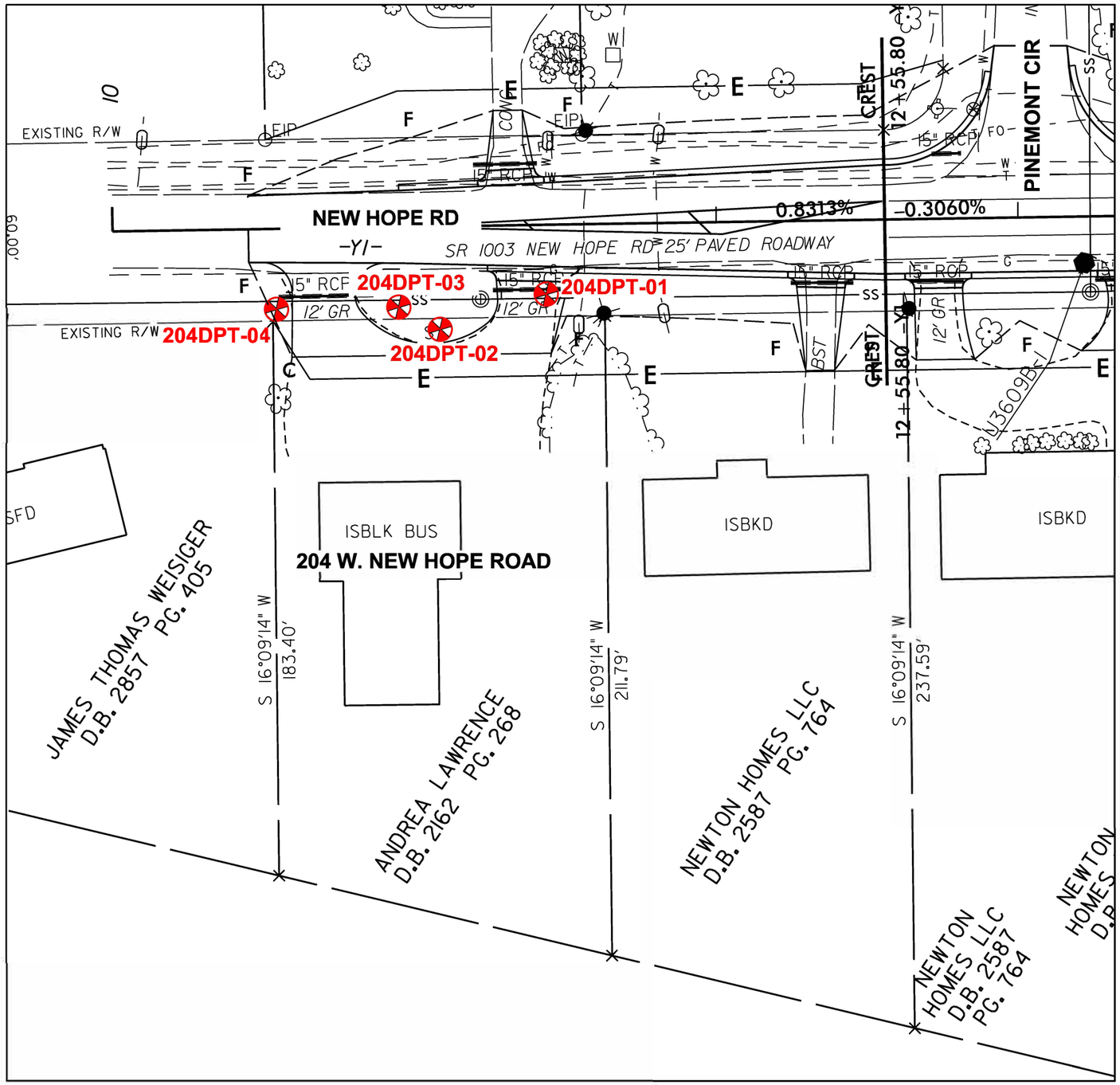
SANITARY SEWER:

- Sanitary Sewer Manhole
- Sanitary Sewer Cleanout
- U/G Sanitary Sewer Line — SS
- Above Ground Sanitary Sewer — A/G Sanitary Sewer
- SS Forced Main Line LOS B (S.U.E.*) — FSS
- SS Forced Main Line LOS C (S.U.E.*) — FSS
- SS Forced Main Line LOS D (S.U.E.*) — FSS

MISCELLANEOUS:

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

DESCRIPTION: ANDREA LAWRENCE 204 W. NEW HOPE ROAD GOLDSBORO, NC	ENGLISH	WBS NO.: 39026.1.2	FIGURE NO.: 3
		TIP NO.: U-3609B	TOTAL FIGURES: 4
		F.A. NO.: N/A	
		COUNTY: WAYNE	
PREPARED BY: CATLIN Engineers and Scientists Wilmington, North Carolina PROJ #: 219139	SCALE: 1" = 40'	TITLE: BORING LOCATIONS AND SUMMARIZED SOIL SAMPLE RESULTS	



ULTRA VIOLET FLUORESCENCE BY REDLAB QED™ ANALYZER

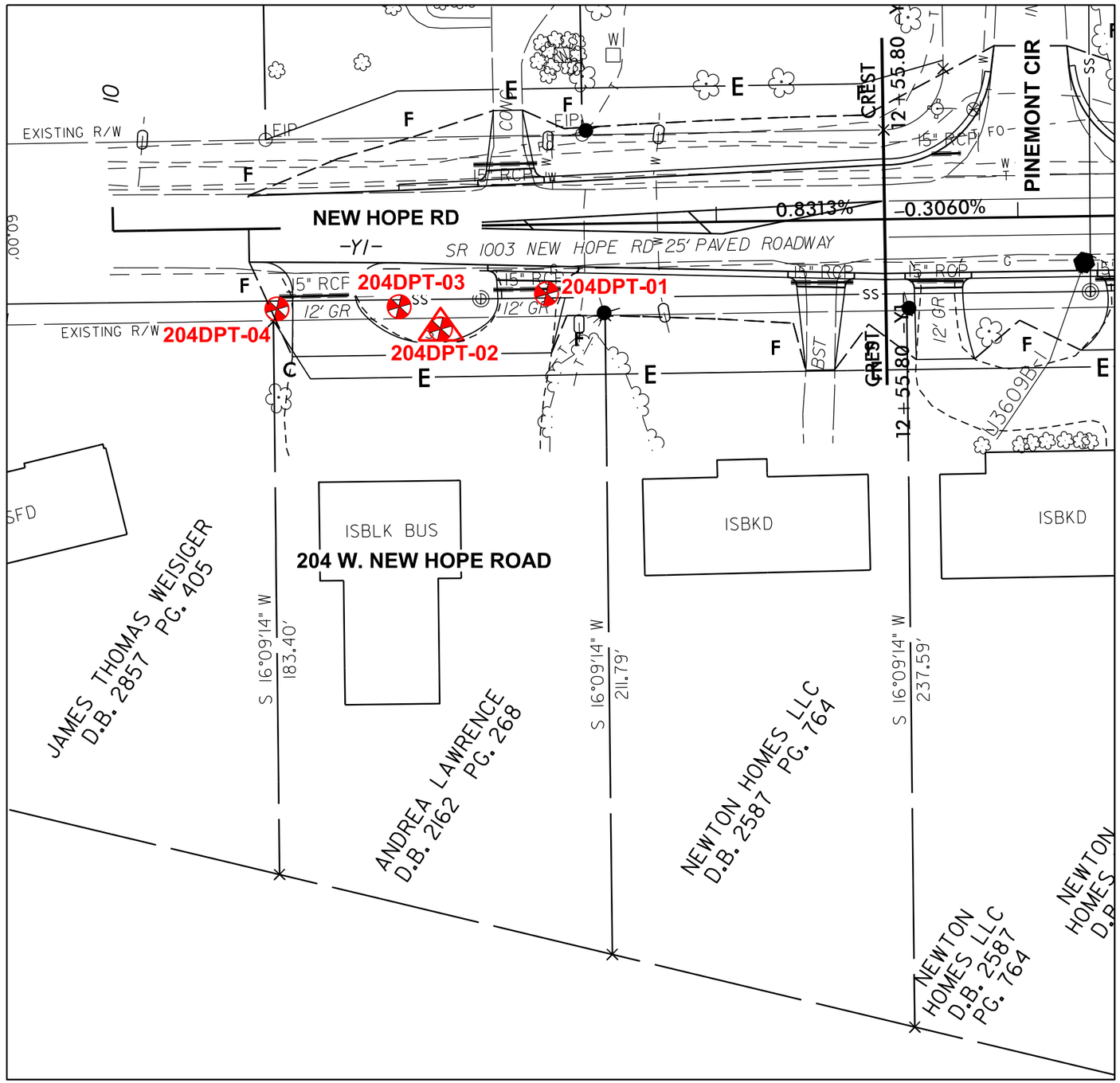
Sample ID	Contaminant of Concern → Date Collected	TPH GRO	TPH DRO
204DPT-01 (9')	12/10/2019	<0.49	<0.49
204DPT-02 (8')	12/10/2019	<0.5	<0.5
204DPT-03 (5')	12/10/2019	<0.47	<0.47
204DPT-04 (6')	12/10/2019	<0.51	<0.51
STATE ACTION LEVELS		**50**	**100**

Sample depth provided in parantheses as part of the Sample ID.
All results in milligrams per kilogram (mg/Kg).
< = Less than method detection limit

NOTE:
1. BASE MAP ADAPTED FROM NCDOT SUPPLIED DRAWING.

S:\wpmktg\PROJECT\219139NCDOT Goldsboro PSAs\Figures\Approved 25 Percent to Hydro\Roadway\Proj\Site Plans

DESCRIPTION: ANDREA LAWRENCE 204 W. NEW HOPE ROAD GOLDSBORO, NC	ENGLISH	WBS NO.: 39026.1.2	FIGURE NO.: 4
		TIP NO.: U-3609B	TOTAL FIGURES: 4
		F.A. NO.: N/A	
		COUNTY: WAYNE	
PREPARED BY: CATLIN Engineers and Scientists Wilmington, North Carolina PROJ #: 219139	SCALE: 1" = 40'	TITLE: BORING LOCATIONS AND SUMMARIZED GROUNDWATER SAMPLE RESULTS	



40 20 0 40

SCALE IN FEET

LEGEND

GROUNDWATER SAMPLE

SUMMARY OF GROUNDWATER LABORATORY RESULTS

Method →		EPA Method 625	Standard Method 6200B
Contaminant of Concern →		All Parameters	All Parameters
Sample ID	Date Collected		
204DPT-02	12/10/2019	BMDL	BMDL
	GCL (µg/L)	Varies	Varies
	2L GWQS (µg/L)	Varies	Varies

BMDL = Below Method Detection Limit. Refer to analytical report for a complete list of parameters and reporting limits.
GCL = Gross Contaminant Level
2L GWQS = NCAC T15A:02L Groundwater Quality Standards

NOTE:
1. BASE MAP ADAPTED FROM NCDOT SUPPLIED DRAWING.

S:\wpmktg\PROJECT\219139NCDOT Goldsboro PSAs\Figures\Approved 25 Percent to Hydro\Roadway\Proj\Site Plans

APPENDICES

APPENDIX A

PYRAMID GEOPHYSICAL SURVEY

PYRAMID GEOPHYSICAL SERVICES
(PROJECT 2019-359)

GEOPHYSICAL SURVEY

METALLIC UST INVESTIGATION:
204 W. NEW HOPE RD.
NCDOT PROJECT U-3609B (39026.1.2)

204 W. NEW HOPE RD., GOLDSBORO, NC

DECEMBER 20, 2019

Report prepared for: **Benjamin Ashba, P.G.**
Catlin Engineers & Scientists
220 Old Dairy Road
Wilmington, NC 28405

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

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

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

GEOPHYSICAL INVESTIGATION REPORT
204 W. New Hope Rd.
Goldsboro, Wayne County, North Carolina

Table of Contents

Figures

LIST OF ACRONYMS

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

EXECUTIVE SUMMARY

Project Description:

Pyramid Environmental conducted a geophysical investigation for Catlin Engineers & Scientists at 204 W. New Hope Rd. in Goldsboro, NC. The survey was part of an NCDOT Right-of-Way (ROW) investigation (NCDOT Project U-3609B). The survey was designed to extend from the existing edge of pavement into the proposed ROW and/or easements, whichever distance was greater. Conducted from December 4-5, 2019, the geophysical investigation was performed to determine if unknown, metallic underground storage tanks (USTs) were present beneath the survey area.

Geophysical Results:

The geophysical investigation consisted of electromagnetic (EM) induction-metal detection and ground penetrating radar (GPR) surveys. A total of six EM anomalies were identified. The majority of the EM anomalies were directly attributed to visible cultural features at the ground surface. EM and GPR recorded evidence of possible utilities or small metallic debris on the eastern portion of the site. Collectively, the geophysical data did not record any evidence of metallic USTs at the parcel.

INTRODUCTION

Pyramid Environmental conducted a geophysical investigation for Catlin Engineers & Scientists at 204 W. New Hope Rd. in Goldsboro, NC. The survey was part of an NCDOT Right-of-Way (ROW) investigation (NCDOT Project U-3609B). The survey was designed to extend from the existing edge of pavement into the proposed ROW and/or easements, whichever distance was greater. Conducted from December 4-5, 2019, the geophysical investigation was performed to determine if unknown, metallic underground storage tanks (USTs) were present beneath the survey area.

The site included a retail building surrounded by grass and asphalt surfaces. An aerial photograph showing the survey area boundaries and ground-level photographs are shown in **Figure 1**.

FIELD METHODOLOGY

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

According to the instrument specifications, the EM61 can detect a metal drum down to a maximum depth of approximately 8 feet. Smaller objects (1-foot or less in size) can be detected to a maximum depth of 4 to 5 feet. The EM61 data were digitally collected at approximately 0.8-foot intervals along north-south trending or east-west trending, generally parallel survey lines, spaced five feet apart. The data were downloaded to a

computer and reviewed in the field and office using the Geonics NAV61 and Surfer for Windows Version 15.0 software programs.

GPR data were acquired across select EM anomalies on December 5, 2019, using a Geophysical Survey Systems, Inc. (GSSI) SIR 4000 controller coupled to a 350 MHz HS antenna. Data were collected both in reconnaissance fashion as well as along formal transect lines across EM features. The GPR data were viewed in real-time using a vertical scan of 512 samples, at a rate of 48 scans per second. GPR data were viewed down to a maximum depth of approximately 6 feet, based on dielectric constants calculated by the DF unit in the field during the reconnaissance scans. GPR transects across specific anomalies were saved to the hard drive of the DF unit for post-processing and figure generation.

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

Geophysical Surveys for Underground Storage Tanks
on NCDOT Projects

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

DISCUSSION OF RESULTS

Discussion of EM Results

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

LIST OF METALLIC ANOMALIES IDENTIFIED BY EM SURVEY

Metallic Anomaly #	Cause of Anomaly	Investigated with GPR
1	Former Light/Sign Base	
2	Sign	
3	Manhole	
4	Reinforced Concrete Pipe	
5	Vehicle/Utility	✓
6	Utility	✓

The majority of the EM anomalies were directly attributed to visible cultural features at the ground surface, including a former light or sign base, a sign, a manhole, reinforced concrete pipe, and a vehicle. GPR was performed across EM Anomaly 5 to confirm that the metallic interference caused by the vehicle did not obscure any significant structures such as USTs. GPR was also performed across EM Anomaly 6 to confirm that anomaly was not a result of a larger significant structure such as a UST.

Discussion of GPR Results

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

GPR Transects 1-3 and 4-5 were performed across EM Anomalies 5 and 6, respectively. Discrete hyperbolic reflectors typical of buried utilities or small metallic objects were observed. No evidence of larger structures such as USTs was observed.

Collectively, the geophysical data did not record any evidence of metallic USTs at the parcel. **Figure 4** provides an overlay of the metal detection results on the NCDOT engineering plans for reference.

SUMMARY & CONCLUSIONS

Pyramid's evaluation of the EM61 and GPR data collected at 204 W. New Hope Rd. in Goldsboro, North Carolina, provides the following summary and conclusions:

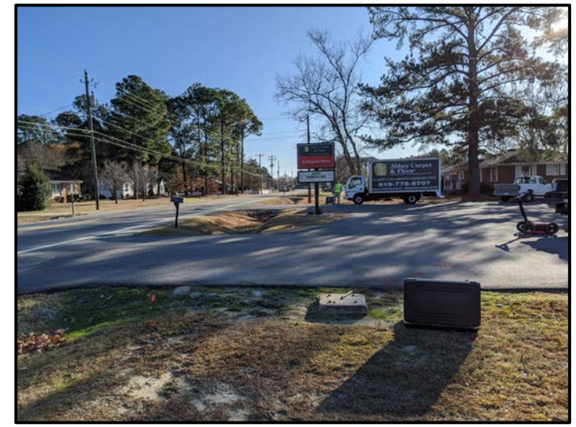
- The EM61 and GPR surveys provided reliable results for the detection of metallic USTs within the accessible portions of the geophysical survey area.
- The majority of the EM anomalies were directly attributed to visible cultural features at the ground surface.
- EM and GPR recorded evidence of possible utilities or small metallic debris.
- Collectively, the geophysical data did not record any evidence of metallic USTs at the parcel.

LIMITATIONS

Geophysical surveys have been performed and this report was 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 the evidence collected is sufficient to result in the conclusions made in this report. Additionally, it should be understood that areas containing extensive vegetation, reinforced concrete, or other restrictions to the accessibility of the geophysical instruments could not be fully investigated.

APPROXIMATE BOUNDARIES OF GEOPHYSICAL SURVEY AREA

View of Survey Area
(Facing Approximately West)



View of Survey Area
(Facing Approximately East)

N

PYRAMID GEOPHYSICS
503 INDUSTRIAL AVENUE
GREENSBORO, NC 27406
(336) 335-3174 (p) (336) 691-0648 (f)
License # C1251 Eng. / License # C257 Geology

PROJECT	204 W. NEW HOPE RD. GOLDSBORO, NORTH CAROLINA NCDOT PROJECT U-3609B	TITLE	204 W. NEW HOPE RD. - GEOPHYSICAL SURVEY BOUNDARIES AND SITE PHOTOGRAPHS	DATE	12/4/2019
				CLIENT	Catlin Engineers & Scientists
				PYRAMID PROJECT #:	2019-359
					FIGURE 1

EM61 METAL DETECTION RESULTS

NO EVIDENCE OF METALLIC USTs WAS OBSERVED.

The contour plot shows the differential results of the EM61 instrument in millivolts (mV). The differential results focus on larger metallic objects such as USTs and drums. The EM data were collected on December 4, 2019, using a Geonics EM61-MK2 instrument. Verification GPR data were collected using a GSSI SIR 4000 instrument with a 350 MHz HS antenna on December 5, 2019.

EM61 Metal Detection Response (millivolts)

N

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503 INDUSTRIAL AVENUE
GREENSBORO, NC 27406
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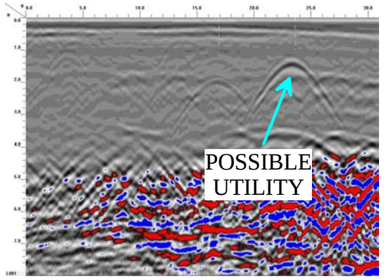
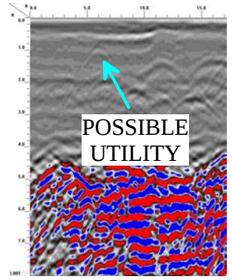
License # C1251 Eng. / License # C257 Geology

PROJECT	204 W. NEW HOPE RD. GOLDSBORO, NORTH CAROLINA NCDOT PROJECT U-3609B	TITLE	204 W. NEW HOPE RD. - EM61 METAL DETECTION CONTOUR MAP	DATE	12/4/2019
				PYRAMID PROJECT #:	2019-359
CLIENT	Catlin Engineers & Scientists				
	FIGURE 2				

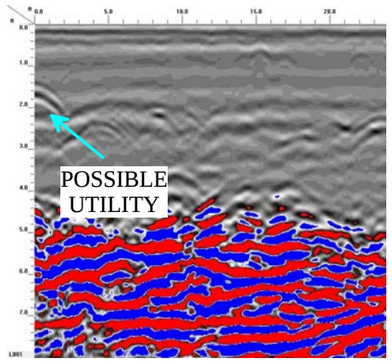
GPR TRANSECT LOCATIONS



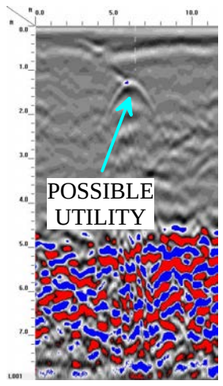
GPR TRANSECT 1 (T1)



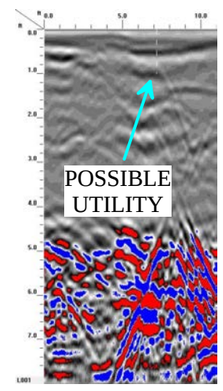
GPR TRANSECT 2 (T2)



GPR TRANSECT 3 (T3)



GPR TRANSECT 4 (T4)



GPR TRANSECT 5 (T5)

N

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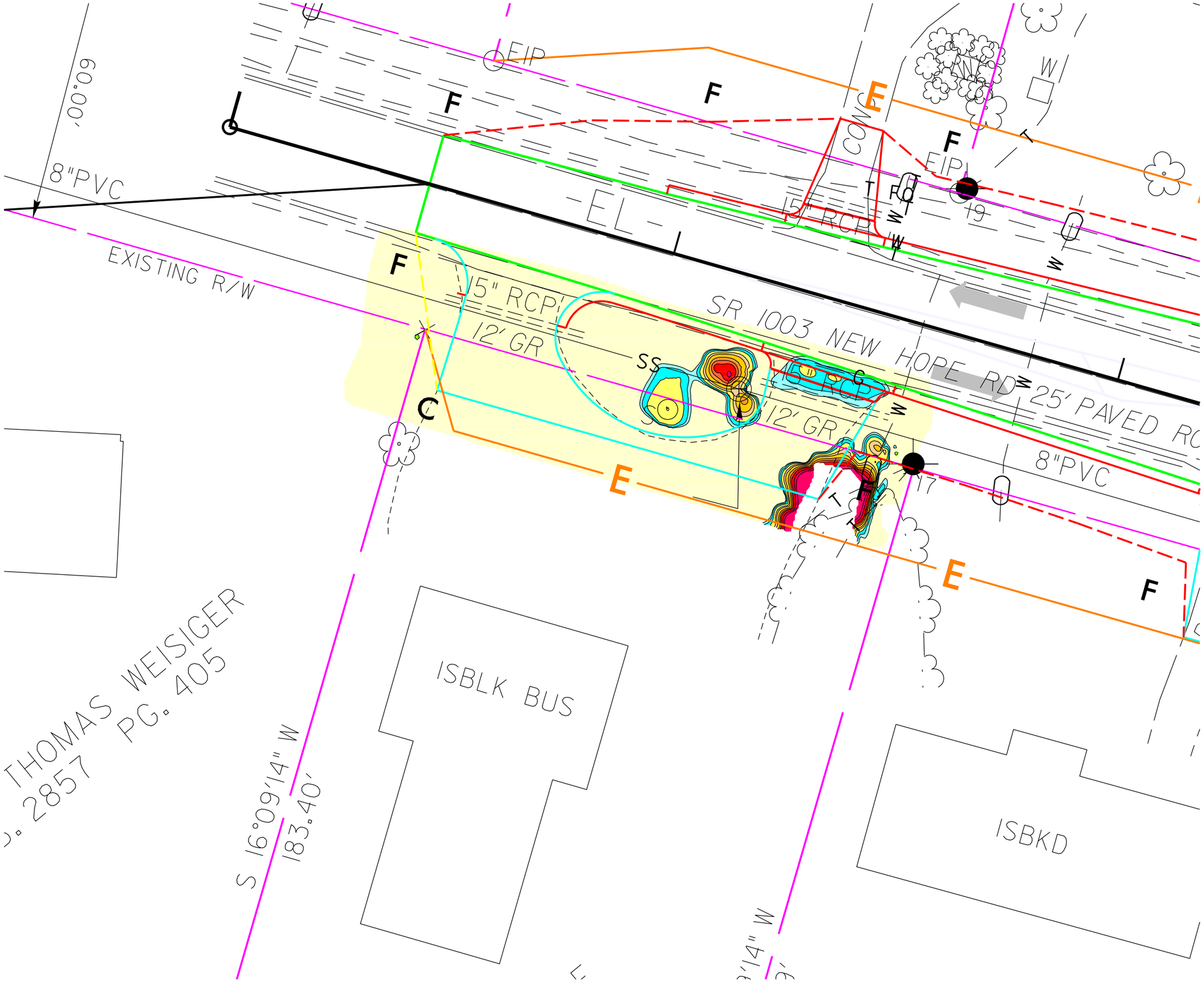
503 INDUSTRIAL AVENUE
GREENSBORO, NC 27406
(336) 335-3174 (p) (336) 691-0648 (f)
License # C1251 Eng. / License # C257 Geology

PROJECT	204 W. NEW HOPE RD. GOLDSBORO, NORTH CAROLINA NCDOT PROJECT U-3609B
TITLE	204 W. NEW HOPE RD. - GPR TRANSECT LOCATIONS AND IMAGES
DATE	12/5/2019
CLIENT	Catlin Engineers & Scientists
PYRAMID PROJECT #:	2019-359
	FIGURE 3



TITLE

OVERLAY OF METAL DETECTION RESULTS
ON NCDOT ENGINEERING PLANS

PROJECT

204 W. NEW HOPE RD.
GOLDSBORO, NORTH CAROLINA
NCDOT PROJECT U-3609B

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

DATE: 12-16-19	REVISION NO. 0
PYRAMID PROJECT NO. 2019-359	FIGURE NO. 4

APPENDIX B

BORING LOGS, WELL CONSTRUCTION AND ABANDONMENT RECORDS

BORING LOG

CATLIN Engineers and Scientists

219139 WBS #: 39026.1.2 TIP #: U-3609B

PROJECT NO.: 219139	**STATE:** N.C.	**COUNTY:** WAYNE	**LOCATION:** GOLDSBORO
PROJECT NAME: GOLDSBORO-US13 (BERKELEY BLVD) FROM SR 1003 (NEW HOPE RD) TO SR 1572 (SAULSTON RD)		**LOGGED BY:** Corey Futral	**BORING ID:** 204DPT-01
		DRILLER: E. Swain	
NORTHING: 598,365	**EASTING:** 2,321,089	**CREW:** CATLIN	
SYSTEM: NCSP NAD 83 (ft)	**BORING LOCATION:** 204 W. New Hope Rd		**LAND ELEV.:** NM
DRILL MACHINE: GeoProbe	**METHOD:** DPT	**0 HOUR DTW:** N/A	**BORING DEPTH:** 10.0
START DATE: 12/10/19	**FINISH DATE:** 12/10/19	**24 HOUR DTW:** N/A	**WATER DEPTH:** --

DEPTH	BLOW COUNT 0.5 0.5 0.5 0.5	MOI.	SCREENING RESULTS (ppm) 0 250 500 750 1,000	LAB. ID.	USCS	LOG	DEPTH	SOIL AND ROCK DESCRIPTION	ELEVATION
							0.0	LAND SURFACE	
0.0	Direct Push	D	▲4.4		SP			Brown to tan with tr.black streaks, F. SAND	
2.0	Direct Push	M	▲4.1				3.5		
					ML		4.0	Tan with orange, Sandy SILT	
4.0	Direct Push	M	▲5.1		SP		5.5	Tan with orange grading to lt. tan, F. SAND	
6.0	Direct Push	M	▲5.2		CL			Gray with orange and red mottling, Sandy and Silty mod. plastic CLAY	
8.0	Direct Push	M	▲6.3	204 DPT-01 (9')			9.0		
					SM		10.0	Tan with orange, Silty F. and CSE. SAND	
10.0								BORING TERMINATED AT DEPTH 10.0 ft in Silty F. to CSE. SAND	

▽ = 0hr. DTW ▼ = 24hr. DTW

CATLIN ENVIRO_LOG_219139_NCDOT_GOLDSBORO_PSAS.GPJ_CATLIN.GDT 12/18/19

BORING LOG

CATLIN Engineers and Scientists

219139

WBS #: 39026.1.2
TIP #: U-3609B

PROJECT NO.: 219139	**STATE:** N.C.	**COUNTY:** WAYNE	**LOCATION:** GOLDSBORO
PROJECT NAME: GOLDSBORO-US 13 (BERKELEY BLVD) FROM SR 1003 (NEW HOPE RD) TO SR 1572 (SALUSTON RD)		**LOGGED BY:** Corey Futral	**BORING ID:** 204DPT-02
		DRILLER: E. Swain	
NORTHING: 598,364	**EASTING:** 2,321,052	**CREW:** CATLIN	
SYSTEM: NCSP NAD 83 (ft)	**BORING LOCATION:** 204 W. New Hope Rd		**LAND ELEV.:** NM
DRILL MACHINE: GeoProbe	**METHOD:** DPT	**0 HOUR DTW:** N/A	**BORING DEPTH:** 16.0
START DATE: 12/10/19	**FINISH DATE:** 12/10/19	**24 HOUR DTW:** N/A	**WATER DEPTH:** --

DEPTH	BLOW COUNT 0.5 0.5 0.5 0.5	MOI.	SCREENING RESULTS (ppm) 0 250 500 750 1,000	LAB. ID.	USCS	LOG	DEPTH	SOIL AND ROCK DESCRIPTION	ELEVATION
							0.0	LAND SURFACE	
0.0	Direct Push	D	▲16.5		SP			Brown and gray grading to tan, F. SAND	
2.0	Direct Push	D	▲11.8						
4.0	Direct Push	D	▲13.1						
6.0	Direct Push	D	▲6.5				7.0		
8.0	Direct Push	M	▲7.0	Soil 204 DPT-02 (8')	CL			Orange, Sandy and Silty mod. plastic CLAY	
10.0	Direct Push	Sat.	▲4.1	Water 204 DPT-02	SP		9.0	Lt. gray, F. and CSE. SAND 12.0-16.0' sample was stuck in rods. Material was the same as the 9.0- 12.0' sample. Boring collapsed at 10.0' BLS when setting well.	
12.0	Direct Push	Sat.							
14.0	Direct Push	Sat.							
16.0							16.0	BORING TERMINATED AT DEPTH 16.0 ft in F. to CSE. SAND 1" PVC Well set to 10.0' BLS Sampled and Abandoned	

▽ = 0hr. DTW ▼ = 24hr. DTW

CATLIN ENVIRO_LOG_219139_NCDOT_GOLDSBORO_PSAS.GPJ_CATLIN.GDT_1/2/20

BORING LOG

CATLIN Engineers and Scientists

219139

WBS #: 39026.1.2
TIP #: U-3609B

PROJECT NO.: 219139	**STATE:** N.C.	**COUNTY:** WAYNE	**LOCATION:** GOLDSBORO
PROJECT NAME: GOLDSBORO-US13 (BERKELEY BLVD) FROM SR 1003 (NEW HOPE RD) TO SR 1572 (SAULSTON RD)		**LOGGED BY:** Corey Futral	**BORING ID:** 204DPT-03
		DRILLER: E. Swain	
NORTHING: 598,375	**EASTING:** 2,321,041	**CREW:** CATLIN	
SYSTEM: NCSP NAD 83 (ft)	**BORING LOCATION:** 204 W. New Hope Rd		**LAND ELEV.:** NM
DRILL MACHINE: GeoProbe	**METHOD:** DPT	**0 HOUR DTW:** N/A	**BORING DEPTH:** 8.0
START DATE: 12/10/19	**FINISH DATE:** 12/10/19	**24 HOUR DTW:** N/A	**WATER DEPTH:** --

DEPTH	BLOW COUNT 0.5 0.5 0.5 0.5	MOI.	SCREENING RESULTS (ppm) 0 250 500 750 1,000	LAB. ID.	USCS	LOG	DEPTH	SOIL AND ROCK DESCRIPTION	ELEVATION
							0.0	LAND SURFACE	
0.0	Direct Push	D	▲0.0		SP			Brown grading to tan and orange, F. SAND with tr. silt	
2.0	Direct Push	D	▲4.9						
4.0	Direct Push	D	▲5.0	204 DPT-03 (5')					
6.0	Direct Push	D	▲4.0		CH		6.0	Tan with orange and red mottling, Silty highly plastic CLAY	
8.0							8.0	BORING TERMINATED AT DEPTH 8.0 ft in Silty highly plastic CLAY	

▽ = 0hr. DTW ▼ = 24hr. DTW

CATLIN ENVIRO_LOG_219139_NCDOT_GOLDSBORO_PSAS.GPJ CATLIN.GDT 12/18/19

BORING LOG

CATLIN Engineers and Scientists

219139 WBS #: 39026.1.2 TIP #: U-3609B

PROJECT NO.: 219139	**STATE:** N.C.	**COUNTY:** WAYNE	**LOCATION:** GOLDSBORO
PROJECT NAME: GOLDSBORO-US13 (BERKELEY BLVD) FROM SR 1003 (NEW HOPE RD) TO SR 1572 (SAULSTON RD)		**LOGGED BY:** Corey Futral	**BORING ID:** 204DPT-04
		DRILLER: E. Swain	
NORTHING: 598,386	**EASTING:** 2,321,002	**CREW:** CATLIN	
SYSTEM: NCSP NAD 83 (ft)	**BORING LOCATION:** 204 W. New Hope Rd		**LAND ELEV.:** NM
DRILL MACHINE: GeoProbe	**METHOD:** DPT	**0 HOUR DTW:** N/A	**BORING DEPTH:** 8.0
START DATE: 12/10/19	**FINISH DATE:** 12/10/19	**24 HOUR DTW:** N/A	**WATER DEPTH:** --

DEPTH	BLOW COUNT 0.5 0.5 0.5 0.5	MOI.	SCREENING RESULTS (ppm) 0 250 500 750 1,000	LAB. ID.	USCS	LOG	DEPTH	SOIL AND ROCK DESCRIPTION	ELEVATION
							0.0	LAND SURFACE	
0.0	Direct Push	D	▲0.0		SP			Gray grading to tan, F. SAND	
2.0	Direct Push	D	▲0.0						
4.0	Direct Push	M	▲0.9				5.0		
6.0	Direct Push	M	▲2.3	204 DPT-04 (6')	CH			Tan with orange and red mottling, Sandy highly plastic CLAY	
8.0							8.0	BORING TERMINATED AT DEPTH 8.0 ft in Sandy highly plastic CLAY	

▽ = 0hr. DTW ▼ = 24hr. DTW

CATLIN ENVIRO_LOG_219139_NCDOT_GOLDSBORO_PSAS.GPJ_CATLIN.GDT_12/18/19

Print Form

WELL CONSTRUCTION RECORD (GW-1)

For Internal Use Only:

1. Well Contractor Information:

Corey Futral
Well Contractor Name

4330-B
NC Well Contractor Certification Number

CATLIN Engineers and Scientists
Company Name

2. Well Construction Permit #: _____
List all applicable well construction permits (i.e. UIC, County, State, Variance, etc.)

3. Well Use (check well use):

Water Supply Well:
- ☐ Agricultural
- ☐ Municipal/Public
- ☐ Geothermal (Heating/Cooling Supply)
- ☐ Residential Water Supply (single)
- ☐ Industrial/Commercial
- ☐ Residential Water Supply (shared)
- ☐ Irrigation

Non-Water Supply Well:
- ☒ Monitoring
- ☐ Recovery

Injection Well:
- ☐ Aquifer Recharge
- ☐ Groundwater Remediation
- ☐ Aquifer Storage and Recovery
- ☐ Salinity Barrier
- ☐ Aquifer Test
- ☐ Stormwater Drainage
- ☐ Experimental Technology
- ☐ Subsidence Control
- ☐ Geothermal (Closed Loop)
- ☐ Tracer
- ☐ Geothermal (Heating/Cooling Return)
- ☐ Other (explain under #21 Remarks)

4. Date Well(s) Completed: 12/10/19 **Well ID#** 204DPT-02

5a. Well Location:

NCDOT
Facility/Owner Name

Facility ID# (if applicable)

204 W. New Hope Rd. Goldsboro, NC 27534
Physical Address, City, and Zip

Wayne
County

Parcel Identification No. (PIN)

5b. Latitude and longitude in degrees/minutes/seconds or decimal degrees:
(if well field, one lat/long is sufficient)

35.389081 **N** -77.922871 **W**

6. Is(are) the well(s): ☐ **Permanent** or ☒ **Temporary**

7. Is this a repair to an existing well: ☐ **Yes** or ☐ **No**
If this is a repair, fill out known well construction information and explain the nature of the repair under #21 remarks section or on the back of this form.

8. **For Geoprobe/DPT or Closed-Loop Geothermal Wells** having the same construction, only 1 GW-1 is needed. Indicate TOTAL NUMBER of wells drilled: 1

9. Total well depth below land surface: 10.0 **(ft.)**
For multiple wells list all depths if different (example- 3@200' and 2@100')

10. Static water level below top of casing: ~10.0 **(ft.)**
If water level is above casing, use "+"

11. Borehole diameter: 2 **(in.)**

12. Well construction method: Direct Push
(i.e. auger, rotary, cable, direct push, etc.)

FOR WATER SUPPLY WELLS ONLY:

13a. Yield (gpm) _____ **Method of test:** _____

13b. Disinfection type: _____ **Amount:** _____

14. WATER ZONES

FROM	TO	DESCRIPTION
ft.	ft.	
ft.	ft.	

15. OUTER CASING (for multi-cased wells) OR LINER (if applicable)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
ft.	ft.	in.		

16. INNER CASING OR TUBING (geothermal closed-loop)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
ft.	ft.	in.		
ft.	ft.	in.		

17. SCREEN

FROM	TO	DIAMETER	SLOT SIZE	THICKNESS	MATERIAL
0 ft.	10 ft.	1 in.	.010	Sch 40	PVC
ft.	ft.	in.			

18. GROUT

FROM	TO	MATERIAL	EMPLACEMENT METHOD & AMOUNT
ft.	ft.		
ft.	ft.		
ft.	ft.		

19. SAND/GRAVEL PACK (if applicable)

FROM	TO	MATERIAL	EMPLACEMENT METHOD
0 ft.	10 ft.	Natrual Backfill	
ft.	ft.		

20. DRILLING LOG (attach additional sheets if necessary)

FROM	TO	DESCRIPTION (color, hardness, soil/rock type, grain size, etc.)
ft.	ft.	
ft.	ft.	
ft.	ft.	
ft.	ft.	
ft.	ft.	
ft.	ft.	
ft.	ft.	

21. REMARKS

22. Certification:

Corey D. Futral
Signature of Certified Well Contractor

1/24/20
Date

By signing this form, I hereby certify that the well(s) was (were) constructed in accordance with 15A NCAC 02C .0100 or 15A NCAC 02C .0200 Well Construction Standards and that a copy of this record has been provided to the well owner.

23. Site diagram or additional well details:
You may use the back of this page to provide additional well site details or well construction details. You may also attach additional pages if necessary.

SUBMITTAL INSTRUCTIONS

24a. For All Wells: Submit this form within 30 days of completion of well construction to the following:

Division of Water Resources, Information Processing Unit,
1617 Mail Service Center, Raleigh, NC 27699-1617

24b. For Injection Wells: In addition to sending the form to the address in 24a above, also submit one copy of this form within 30 days of completion of well construction to the following:

Division of Water Resources, Underground Injection Control Program,
1636 Mail Service Center, Raleigh, NC 27699-1636

24c. For Water Supply & Injection Wells: In addition to sending the form to the address(es) above, also submit one copy of this form within 30 days of completion of well construction to the county health department of the county where constructed.

WELL ABANDONMENT RECORD

For Internal Use ONLY:

1. Well Contractor Information:

Corey Futral

Well Contractor Name (or well owner personally abandoning well on his/her property)

4330-B

NC Well Contractor Certification Number

CATLIN Engineers and Scientists

Company Name

2. Well Construction Permit #: _____

List all applicable well construction permits (i.e. UIC, County, State, Variance, etc.) if known

3. Well use (check well use):

Water Supply Well:	
☐Agricultural	☐Municipal/Public
☐Geothermal (Heating/Cooling Supply)	☐Residential Water Supply (single)
☐Industrial/Commercial	☐Residential Water Supply (shared)
☐Irrigation	
Non-Water Supply Well:	
■Monitoring	☐Recovery
Injection Well:	
☐Aquifer Recharge	☐Groundwater Remediation
☐Aquifer Storage and Recovery	☐Salinity Barrier
☐Aquifer Test	☐Stormwater Drainage
☐Experimental Technology	☐Subsidence Control
☐Geothermal (Closed Loop)	☐Tracer
☐Geothermal (Heating/Cooling Return)	☐Other (explain under 7g)

4. Date well(s) abandoned: 12/10/19

5a. Well location:

NCDOT

Facility/Owner Name

Facility ID# (if applicable)

204 W. New Hope Rd., Goldsboro, NC 27534

Physical Address, City, and Zip

Wayne

County

Parcel Identification No. (PIN)

5b. Latitude and longitude in degrees/minutes/seconds or decimal degrees:
(if well field, one lat/long is sufficient)

35.389081 **N** -77.922871 **W**

CONSTRUCTION DETAILS OF WELL(S) BEING ABANDONED

*Attach well construction record(s) if available. For multiple injection or non-water supply wells **ONLY** with the same construction/abandonment, you can submit one form.*

6a. Well ID#: 204DPT-02

6b. Total well depth: 10 **(ft.)**

6c. Borehole diameter: 2 **(in.)**

6d. Water level below ground surface: ~10.0 **(ft.)**

6e. Outer casing length (if known): _____ **(ft.)**

6f. Inner casing/tubing length (if known): _____ **(ft.)**

6g. Screen length (if known): 10.0 **(ft.)**

WELL ABANDONMENT DETAILS

7a. For Geoprobe/DPT or Closed-Loop Geothermal Wells having the same well construction/depth, only 1 GW-30 is needed. Indicate TOTAL NUMBER of wells abandoned: 1

7b. Approximate volume of water remaining in well(s): _____ **(gal.)**

FOR WATER SUPPLY WELLS ONLY:

7c. Type of disinfectant used: _____

7d. Amount of disinfectant used: _____

7e. Sealing materials used (check all that apply):

☐ Neat Cement Grout	■ Bentonite Chips or Pellets
☐ Sand Cement Grout	☐ Dry Clay
☐ Concrete Grout	☐ Drill Cuttings
☐ Specialty Grout	☐ Gravel
☐ Bentonite Slurry	☐ Other (explain under 7g)

7f. For each material selected above, provide amount of materials used:

Bentonite Pellets	~16 lbs.

7g. Provide a brief description of the abandonment procedure:

All well material pulled, surface poured bentonite pellets and hydrated.

8. Certification:

Corey D. Futral — Signature of Certified Well Contractor or Well Owner

1/24/20 — Date

By signing this form, I hereby certify that the well(s) was (were) abandoned in accordance with 15A NCAC 02C .0100 or 2C .0200 Well Construction Standards and that a copy of this record has been provided to the well owner.

9. Site diagram or additional well details:
You may use the back of this page to provide additional well site details or well abandonment details. You may also attach additional pages if necessary.

SUBMITTAL INSTRUCTIONS

10a. For All Wells: Submit this form within 30 days of completion of well abandonment to the following:

Division of Water Resources, Information Processing Unit,
1617 Mail Service Center, Raleigh, NC 27699-1617

10b. For Injection Wells: In addition to sending the form to the address in 10a above, also submit one copy of this form within 30 days of completion of well abandonment to the following:

Division of Water Resources, Underground Injection Control Program,
1636 Mail Service Center, Raleigh, NC 27699-1636

10c. For Water Supply & Injection Wells: In addition to sending the form to the address(es) above, also submit one copy of this form within 30 days of completion of well abandonment to the county health department of the county where abandoned.

APPENDIX C

LABORATORY REPORTS AND CHAIN OF CUSTODY RECORDS

QED REDLAB RAPID ENVIRONMENTAL DIAGNOSTICS QROS

Hydrocarbon Analysis Results

Client: CATLIN
Address: WILMINGTON NC

Samples taken Tuesday, December 10, 2019
Samples extracted Tuesday, December 10, 2019
Samples analysed Tuesday, December 17, 2019

Contact: BEN ASHBA

Operator CAROLINE STEVENS

Project: 219139 (204)

F03640

Matrix	Sample ID	Dilution used	BTEX (C6 - C9)	GRO (C5 - C10)	DRO (C10 - C35)	TPH (C5 - C35)	Total Aromatics (C10-C35)	16 EPA PAHs	BaP	Ratios			HC Fingerprint Match
										% light	% mid	% heavy	
s	204DPT-01(9')	19.4	<0.49	<0.49	<0.49	<0.49	<0.1	<0.16	<0.019	0	0	0	PHC not detected
s	204DPT-02(8')	19.8	<0.5	<0.5	<0.5	<0.5	<0.1	<0.16	<0.02	0	0	0	PHC not detected
s	204DPT-03(5')	19.0	<0.47	<0.47	<0.47	<0.47	<0.09	<0.15	<0.019	0	0	0	PHC not detected,(BO)
s	204DPT-04(6')	20.5	<0.51	<0.51	<0.51	<0.51	<0.1	<0.16	<0.02	0	0	0	PHC not detected,(BO)

Initial Calibrator QC check OK Final FCM QC Check OK 102.2 %

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

QED Hydrocarbon Fingerprints

Project: 219319 (204) 12/17/19

204DPT-01(9') : PHC not detected

204DPT-02(8') : PHC not detected

204DPT-03(5') : PHC not detected,(BO)

204DPT-04(6') : PHC not detected,(BO)

Client Name:	CATLIN
Address:	220 OLD DAIRY RD. WILMINGTON, NC 28405
Contact:	BEN ASHBA
Project Ref.:	219039 (204)
Email:	ben.ashba@catlincusa.com
Phone #:	(910) 452-5861
Collected by:	COREY FUTRAL

P.O. # 191216-03

REDLAB™
RAPID ENVIRONMENTAL DIAGNOSTICS

CHAIN OF CUSTODY AND ANALYTICAL REQUEST FORM

RED Lab, LLC
5598 Marvin K Moss Lane
MARBIONC Bldg, Suite 2003
Wilmington, NC 28409

Each UVF sample will be analyzed for total BTEX, GRO, DRO, TPH, PAH total aromatics and BaP. Standard GC Analyses are for BTEX and Chlorinated Solvents: VC, 1,1 DCE, 1,2 cis DCE, 1,2 trans DCE, TCE, and PCE. Specify target analytes in the space provided below.

Sample Collection	TAT Requested		Analysis Type		Initials	Sample ID	Total Wt.	Tare Wt.	Sample Wt.
Date/Time	24 Hour	48 Hour	UVF	GC					
12/10/19@0900		✓	✓		CDF	204DPT-01 (9')	57.5	44.1	13.4
12/10/19@1000		✓	✓		CDF	204DPT-02 (8')	57.0	43.9	13.1
12/10/19@1015		✓	✓		CDF	204DPT-03 (5')	57.9	44.2	13.7
12/10/19@1030		✓	✓		CDF	204DPT-04 (6')	57.9	45.2	12.7

COMMENTS/REQUESTS:

TARGET GC/UVF ANALYTES:

Relinquished by		Accepted by	Date/Time
Corey D. Futral		CES	12/12/19 16:00
Relinquished by		Accepted by	Date/Time

RED Lab USE ONLY

(4)

Ref. No B148

ENCO Laboratories

Accurate. Timely. Responsive. Innovative.

102-A Woodwinds Industrial Court
Cary NC, 27511
Phone: 919.467.3090 FAX: 919.467.3515

Monday, January 6, 2020
Catlin Engineers & Scientists (CA038)
Attn: Ben Ashba
220 Old Dairy Road
Wimington, NC 28405

RE: Laboratory Results for
Project Number: [none], Project Name/Desc: NCDOT Goldsboro
ENCO Workorder(s): CC20427

Dear Ben Ashba,

Enclosed is a copy of your laboratory report for test samples received by our laboratory on Tuesday, December 17, 2019.

Unless otherwise noted in an attached project narrative, all samples were received in acceptable condition and processed in accordance with the referenced methods/procedures. Results for these procedures apply only to the samples as submitted.

The analytical results contained in this report are in compliance with NELAC standards, except as noted in the project narrative if applicable. This report shall not be reproduced except in full, without the written approval of the Laboratory.

This report contains only those analyses performed by Environmental Conservation Laboratories. Unless otherwise noted, all analyses were performed at ENCO Cary. Data from outside organizations will be reported under separate cover.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

Chuck Smith

Project Manager

Enclosure(s)

www.encolabs.com

PROJECT NARRATIVE

Client: Catlin Engineers & Scientists (CA038)
Project: NCDOT Goldsboro
Lab ID: CC20427

Overview

Environmental Conservation Laboratories, Inc. (ENCO) analyzed all submitted samples in accordance with the methods referenced in the laboratory report. Any particular difficulties encountered during sample handling by ENCO are discussed in the QC Remarks section below.

Quality Control Samples

No Comments

Quality Control Remarks

Due to failing QC, the original inhold extraction of method 625.1 was re-extracted outside of the hold time. Both sets of data have been reported.

Other Comments

The analytical data presented in this report are consistent with the methods as referenced in the analytical report. Any exceptions or deviations are noted in the QC remarks section of this narrative or in the Flags/Notes and Definitions section of the report.

Released By:
Environmental Conservation Laboratories, Inc.

Chuck Smith
Project Manager

SAMPLE SUMMARY/LABORATORY CHRONICLE

Client ID: 204DPT-02 **Lab ID: CC20427-03** **Sampled: 12/10/19 12:00** **Received: 12/17/19 11:00**

Parameter	Preparation	Hold Date/Time(s)		Prep Date/Time(s)		Analysis Date/Time(s)
EPA 625.1	EPA 3510C_MS	12/17/19	01/26/20	12/17/19	07:53	12/20/19 01:27
SM 6200B-2011	Same	12/24/19		12/18/19	10:21	12/18/19 19:03

Client ID: 204DPT-02 **Lab ID: CC20427-03RE1** **Sampled: 12/10/19 12:00** **Received: 12/17/19 11:00**

Parameter	Preparation	Hold Date/Time(s)		Prep Date/Time(s)		Analysis Date/Time(s)
EPA 625.1	EPA 3510C_MS	12/17/19	02/05/20	12/27/19	08:32	12/31/19 00:48

SAMPLE DETECTION SUMMARY

No positive results detected.

www.encolabs.com

ANALYTICAL RESULTS

Description: 204DPT-02 **Lab Sample ID:** CC20427-03 **Received:** 12/17/19 11:00

Matrix: Ground Water **Sampled:** 12/10/19 12:00 **Work Order:** CC20427

Project: NCDOT Goldsboro **Sampled By:** Corey Futral

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1,2-Tetrachloroethane [630-20-6]^	0.091	U	ug/L	1	0.091	1.0	9L18018	SM 6200B-2011	12/18/19 19:03	REF	
1,1,1-Trichloroethane [71-55-6]^	0.15	U	ug/L	1	0.15	1.0	9L18018	SM 6200B-2011	12/18/19 19:03	REF	
1,1,2,2-Tetrachloroethane [79-34-5]^	0.085	U	ug/L	1	0.085	1.0	9L18018	SM 6200B-2011	12/18/19 19:03	REF	
1,1,2-Trichloroethane [79-00-5]^	0.068	U	ug/L	1	0.068	1.0	9L18018	SM 6200B-2011	12/18/19 19:03	REF	
1,1-Dichloroethane [75-34-3]^	0.050	U	ug/L	1	0.050	1.0	9L18018	SM 6200B-2011	12/18/19 19:03	REF	
1,1-Dichloroethene [75-35-4]^	0.15	U	ug/L	1	0.15	1.0	9L18018	SM 6200B-2011	12/18/19 19:03	REF	
1,1-Dichloropropene [563-58-6]^	0.063	U	ug/L	1	0.063	1.0	9L18018	SM 6200B-2011	12/18/19 19:03	REF	
1,2,3-Trichlorobenzene [87-61-6]^	0.25	U	ug/L	1	0.25	1.0	9L18018	SM 6200B-2011	12/18/19 19:03	REF	
1,2,3-Trichloropropane [96-18-4]^	0.15	U	ug/L	1	0.15	1.0	9L18018	SM 6200B-2011	12/18/19 19:03	REF	
1,2,4-Trichlorobenzene [120-82-1]^	0.097	U	ug/L	1	0.097	1.0	9L18018	SM 6200B-2011	12/18/19 19:03	REF	
1,2,4-Trimethylbenzene [95-63-6]^	0.067	U	ug/L	1	0.067	1.0	9L18018	SM 6200B-2011	12/18/19 19:03	REF	
1,2-Dibromo-3-chloropropane [96-12-8]^	0.48	U	ug/L	1	0.48	1.0	9L18018	SM 6200B-2011	12/18/19 19:03	REF	
1,2-Dibromoethane [106-93-4]^	0.42	U	ug/L	1	0.42	1.0	9L18018	SM 6200B-2011	12/18/19 19:03	REF	
1,2-Dichlorobenzene [95-50-1]^	0.052	U	ug/L	1	0.052	1.0	9L18018	SM 6200B-2011	12/18/19 19:03	REF	
1,2-Dichloroethane [107-06-2]^	0.082	U	ug/L	1	0.082	1.0	9L18018	SM 6200B-2011	12/18/19 19:03	REF	
1,2-Dichloropropane [78-87-5]^	0.098	U	ug/L	1	0.098	1.0	9L18018	SM 6200B-2011	12/18/19 19:03	REF	
1,3,5-Trimethylbenzene [108-67-8]^	0.10	U	ug/L	1	0.10	1.0	9L18018	SM 6200B-2011	12/18/19 19:03	REF	
1,3-Dichlorobenzene [541-73-1]^	0.092	U	ug/L	1	0.092	1.0	9L18018	SM 6200B-2011	12/18/19 19:03	REF	
1,3-Dichloropropane [142-28-9]^	0.15	U	ug/L	1	0.15	1.0	9L18018	SM 6200B-2011	12/18/19 19:03	REF	
1,4-Dichlorobenzene [106-46-7]^	0.10	U	ug/L	1	0.10	1.0	9L18018	SM 6200B-2011	12/18/19 19:03	REF	
2,2-Dichloropropane [594-20-7]^	0.12	U	ug/L	1	0.12	1.0	9L18018	SM 6200B-2011	12/18/19 19:03	REF	
2-Chlorotoluene [95-49-8]^	0.10	U	ug/L	1	0.10	1.0	9L18018	SM 6200B-2011	12/18/19 19:03	REF	
4-Chlorotoluene [106-43-4]^	0.10	U	ug/L	1	0.10	1.0	9L18018	SM 6200B-2011	12/18/19 19:03	REF	
4-Isopropyltoluene [99-87-6]^	0.066	U	ug/L	1	0.066	1.0	9L18018	SM 6200B-2011	12/18/19 19:03	REF	
Benzene [71-43-2]^	0.050	U	ug/L	1	0.050	1.0	9L18018	SM 6200B-2011	12/18/19 19:03	REF	
Bromobenzene [108-86-1]^	0.13	U	ug/L	1	0.13	1.0	9L18018	SM 6200B-2011	12/18/19 19:03	REF	
Bromochloromethane [74-97-5]^	0.11	U	ug/L	1	0.11	1.0	9L18018	SM 6200B-2011	12/18/19 19:03	REF	
Bromodichloromethane [75-27-4]^	0.10	U	ug/L	1	0.10	1.0	9L18018	SM 6200B-2011	12/18/19 19:03	REF	
Bromoform [75-25-2]^	0.20	U	ug/L	1	0.20	1.0	9L18018	SM 6200B-2011	12/18/19 19:03	REF	
Bromomethane [74-83-9]^	0.28	U	ug/L	1	0.28	1.0	9L18018	SM 6200B-2011	12/18/19 19:03	REF	
Carbon Tetrachloride [56-23-5]^	0.082	U	ug/L	1	0.082	1.0	9L18018	SM 6200B-2011	12/18/19 19:03	REF	
Chlorobenzene [108-90-7]^	0.069	U	ug/L	1	0.069	1.0	9L18018	SM 6200B-2011	12/18/19 19:03	REF	
Chloroethane [75-00-3]^	0.18	U	ug/L	1	0.18	1.0	9L18018	SM 6200B-2011	12/18/19 19:03	REF	
Chloroform [67-66-3]^	0.083	U	ug/L	1	0.083	1.0	9L18018	SM 6200B-2011	12/18/19 19:03	REF	
Chloromethane [74-87-3]^	0.050	U	ug/L	1	0.050	1.0	9L18018	SM 6200B-2011	12/18/19 19:03	REF	
cis-1,2-Dichloroethene [156-59-2]^	0.075	U	ug/L	1	0.075	1.0	9L18018	SM 6200B-2011	12/18/19 19:03	REF	
cis-1,3-Dichloropropene [10061-01-5]^	0.073	U	ug/L	1	0.073	1.0	9L18018	SM 6200B-2011	12/18/19 19:03	REF	
Dibromochloromethane [124-48-1]^	0.067	U	ug/L	1	0.067	1.0	9L18018	SM 6200B-2011	12/18/19 19:03	REF	
Dibromomethane [74-95-3]^	0.13	U	ug/L	1	0.13	1.0	9L18018	SM 6200B-2011	12/18/19 19:03	REF	
Dichlorodifluoromethane [75-71-8]^	0.091	U	ug/L	1	0.091	1.0	9L18018	SM 6200B-2011	12/18/19 19:03	REF	
Ethylbenzene [100-41-4]^	0.10	U	ug/L	1	0.10	1.0	9L18018	SM 6200B-2011	12/18/19 19:03	REF	
Freon 113 [76-13-1]^	0.35	U	ug/L	1	0.35	1.0	9L18018	SM 6200B-2011	12/18/19 19:03	REF	
Hexachlorobutadiene [87-68-3]^	0.15	U	ug/L	1	0.15	1.0	9L18018	SM 6200B-2011	12/18/19 19:03	REF	
Isopropyl Ether [108-20-3]^	0.21	U	ug/L	1	0.21	1.0	9L18018	SM 6200B-2011	12/18/19 19:03	REF	
Isopropylbenzene [98-82-8]^	0.13	U	ug/L	1	0.13	1.0	9L18018	SM 6200B-2011	12/18/19 19:03	REF	
m,p-Xylenes [108-38-3/106-42-3]^	0.18	U	ug/L	1	0.18	2.0	9L18018	SM 6200B-2011	12/18/19 19:03	REF	
Methylene Chloride [75-09-2]^	0.070	U	ug/L	1	0.070	2.0	9L18018	SM 6200B-2011	12/18/19 19:03	REF	

ANALYTICAL RESULTS

Description: 204DPT-02 **Lab Sample ID:** CC20427-03 **Received:** 12/17/19 11:00

Matrix: Ground Water **Sampled:** 12/10/19 12:00 **Work Order:** CC20427

Project: NCDOT Goldsboro **Sampled By:** Corey Futral

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Methyl-tert-Butyl Ether [1634-04-4]^	0.12	U	ug/L	1	0.12	1.0	9L18018	SM 6200B-2011	12/18/19 19:03	REF	
Naphthalene [91-20-3]^	0.086	U	ug/L	1	0.086	1.0	9L18018	SM 6200B-2011	12/18/19 19:03	REF	
n-Butyl Benzene [104-51-8]^	0.074	U	ug/L	1	0.074	1.0	9L18018	SM 6200B-2011	12/18/19 19:03	REF	
n-Propyl Benzene [103-65-1]^	0.073	U	ug/L	1	0.073	1.0	9L18018	SM 6200B-2011	12/18/19 19:03	REF	
o-Xylene [95-47-6]^	0.088	U	ug/L	1	0.088	1.0	9L18018	SM 6200B-2011	12/18/19 19:03	REF	
sec-Butylbenzene [135-98-8]^	0.053	U	ug/L	1	0.053	1.0	9L18018	SM 6200B-2011	12/18/19 19:03	REF	
Styrene [100-42-5]^	0.082	U	ug/L	1	0.082	1.0	9L18018	SM 6200B-2011	12/18/19 19:03	REF	
tert-Butylbenzene [98-06-6]^	0.094	U	ug/L	1	0.094	1.0	9L18018	SM 6200B-2011	12/18/19 19:03	REF	
Tetrachloroethene [127-18-4]^	0.099	U	ug/L	1	0.099	1.0	9L18018	SM 6200B-2011	12/18/19 19:03	REF	
Toluene [108-88-3]^	0.053	U	ug/L	1	0.053	1.0	9L18018	SM 6200B-2011	12/18/19 19:03	REF	
trans-1,2-Dichloroethene [156-60-5]^	0.11	U	ug/L	1	0.11	1.0	9L18018	SM 6200B-2011	12/18/19 19:03	REF	
trans-1,3-Dichloropropene [10061-02-6]^	0.080	U	ug/L	1	0.080	1.0	9L18018	SM 6200B-2011	12/18/19 19:03	REF	
Trichloroethene [79-01-6]^	0.13	U	ug/L	1	0.13	1.0	9L18018	SM 6200B-2011	12/18/19 19:03	REF	
Trichlorofluoromethane [75-69-4]^	0.15	U	ug/L	1	0.15	1.0	9L18018	SM 6200B-2011	12/18/19 19:03	REF	
Vinyl chloride [75-01-4]^	0.083	U	ug/L	1	0.083	1.0	9L18018	SM 6200B-2011	12/18/19 19:03	REF	
Xylenes (Total) [1330-20-7]^	0.22	U	ug/L	1	0.22	1.0	9L18018	SM 6200B-2011	12/18/19 19:03	REF	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*46*	*1*	*50.0*	*92 %*	*70-130*	*9L18018*	*SM 6200B-2011*	*12/18/19 19:03*	*REF*	
Dibromofluoromethane	*37*	*1*	*50.0*	*74 %*	*70-130*	*9L18018*	*SM 6200B-2011*	*12/18/19 19:03*	*REF*	
Toluene-d8	*41*	*1*	*50.0*	*81 %*	*70-130*	*9L18018*	*SM 6200B-2011*	*12/18/19 19:03*	*REF*	

Semivolatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,2,4-Trichlorobenzene [120-82-1]^	3.3	U	ug/L	1	3.3	10	9L17003	EPA 625.1	12/20/19 01:27	DFM	
1,2,4-Trichlorobenzene [120-82-1]^	3.3	U	ug/L	1	3.3	10	9L27002	EPA 625.1	12/31/19 00:48	DFM	O-05
1,2-Dichlorobenzene [95-50-1]	3.2	U	ug/L	1	3.2	10	9L17003	EPA 625.1	12/20/19 01:27	DFM	
1,2-Dichlorobenzene [95-50-1]	3.2	U	ug/L	1	3.2	10	9L27002	EPA 625.1	12/31/19 00:48	DFM	O-05
1,3-Dichlorobenzene [541-73-1]	3.4	U	ug/L	1	3.4	10	9L17003	EPA 625.1	12/20/19 01:27	DFM	
1,3-Dichlorobenzene [541-73-1]	3.4	U	ug/L	1	3.4	10	9L27002	EPA 625.1	12/31/19 00:48	DFM	O-05
1,4-Dichlorobenzene [106-46-7]	3.2	U	ug/L	1	3.2	10	9L17003	EPA 625.1	12/20/19 01:27	DFM	
1,4-Dichlorobenzene [106-46-7]	3.2	U	ug/L	1	3.2	10	9L27002	EPA 625.1	12/31/19 00:48	DFM	O-05
2,4,6-Trichlorophenol [88-06-2]^	6.4	U	ug/L	1	6.4	10	9L17003	EPA 625.1	12/20/19 01:27	DFM	
2,4,6-Trichlorophenol [88-06-2]^	6.4	U	ug/L	1	6.4	10	9L27002	EPA 625.1	12/31/19 00:48	DFM	O-05
2,4-Dichlorophenol [120-83-2]^	6.5	U	ug/L	1	6.5	10	9L17003	EPA 625.1	12/20/19 01:27	DFM	
2,4-Dichlorophenol [120-83-2]^	6.5	U	ug/L	1	6.5	10	9L27002	EPA 625.1	12/31/19 00:48	DFM	O-05
2,4-Dimethylphenol [105-67-9]^	6.4	U	ug/L	1	6.4	10	9L17003	EPA 625.1	12/20/19 01:27	DFM	
2,4-Dimethylphenol [105-67-9]^	6.4	U	ug/L	1	6.4	10	9L27002	EPA 625.1	12/31/19 00:48	DFM	O-05
2,4-Dinitrophenol [51-28-5]^	7.7	U	ug/L	1	7.7	10	9L17003	EPA 625.1	12/20/19 01:27	DFM	
2,4-Dinitrophenol [51-28-5]^	7.7	U	ug/L	1	7.7	10	9L27002	EPA 625.1	12/31/19 00:48	DFM	O-05
2,4-Dinitrotoluene [121-14-2]^	3.2	U	ug/L	1	3.2	10	9L17003	EPA 625.1	12/20/19 01:27	DFM	
2,4-Dinitrotoluene [121-14-2]^	3.2	U	ug/L	1	3.2	10	9L27002	EPA 625.1	12/31/19 00:48	DFM	O-05
2,6-Dinitrotoluene [606-20-2]^	2.9	U	ug/L	1	2.9	10	9L17003	EPA 625.1	12/20/19 01:27	DFM	
2,6-Dinitrotoluene [606-20-2]^	2.9	U	ug/L	1	2.9	10	9L27002	EPA 625.1	12/31/19 00:48	DFM	O-05
2-Chloronaphthalene [91-58-7]^	3.2	U	ug/L	1	3.2	10	9L17003	EPA 625.1	12/20/19 01:27	DFM	
2-Chloronaphthalene [91-58-7]^	3.2	U	ug/L	1	3.2	10	9L27002	EPA 625.1	12/31/19 00:48	DFM	O-05
2-Chlorophenol [95-57-8]^	7.4	U	ug/L	1	7.4	10	9L17003	EPA 625.1	12/20/19 01:27	DFM	

ANALYTICAL RESULTS

Description: 204DPT-02 **Lab Sample ID:** CC20427-03 **Received:** 12/17/19 11:00

Matrix: Ground Water **Sampled:** 12/10/19 12:00 **Work Order:** CC20427

Project: NCDOT Goldsboro **Sampled By:** Corey Futral

Semivolatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
2-Chlorophenol [95-57-8]^	7.4	U	ug/L	1	7.4	10	9L27002	EPA 625.1	12/31/19 00:48	DFM	O-05
2-Methyl-4,6-dinitrophenol [534-52-1]^	6.0	U	ug/L	1	6.0	10	9L17003	EPA 625.1	12/20/19 01:27	DFM	
2-Methyl-4,6-dinitrophenol [534-52-1]^	6.0	U	ug/L	1	6.0	10	9L27002	EPA 625.1	12/31/19 00:48	DFM	O-05
2-Nitrophenol [88-75-5]^	5.2	U	ug/L	1	5.2	10	9L17003	EPA 625.1	12/20/19 01:27	DFM	
2-Nitrophenol [88-75-5]^	5.2	U	ug/L	1	5.2	10	9L27002	EPA 625.1	12/31/19 00:48	DFM	O-05
3,3'-Dichlorobenzidine [91-94-1]^	3.3	U	ug/L	1	3.3	10	9L17003	EPA 625.1	12/20/19 01:27	DFM	
3,3'-Dichlorobenzidine [91-94-1]^	3.3	U	ug/L	1	3.3	10	9L27002	EPA 625.1	12/31/19 00:48	DFM	O-05
4-Bromophenyl-phenylether [101-55-3]^	3.3	U	ug/L	1	3.3	10	9L17003	EPA 625.1	12/20/19 01:27	DFM	
4-Bromophenyl-phenylether [101-55-3]^	3.3	U	ug/L	1	3.3	10	9L27002	EPA 625.1	12/31/19 00:48	DFM	O-05
4-Chloro-3-methylphenol [59-50-7]^	7.3	U	ug/L	1	7.3	10	9L17003	EPA 625.1	12/20/19 01:27	DFM	
4-Chloro-3-methylphenol [59-50-7]^	7.3	U	ug/L	1	7.3	10	9L27002	EPA 625.1	12/31/19 00:48	DFM	O-05
4-Chlorophenyl-phenylether [7005-72-3]^	3.2	U	ug/L	1	3.2	10	9L17003	EPA 625.1	12/20/19 01:27	DFM	
4-Chlorophenyl-phenylether [7005-72-3]^	3.2	U	ug/L	1	3.2	10	9L27002	EPA 625.1	12/31/19 00:48	DFM	O-05
4-Nitrophenol [100-02-7]^	7.9	U	ug/L	1	7.9	10	9L17003	EPA 625.1	12/20/19 01:27	DFM	
4-Nitrophenol [100-02-7]^	7.9	U	ug/L	1	7.9	10	9L27002	EPA 625.1	12/31/19 00:48	DFM	O-05
Acenaphthene [83-32-9]^	3.0	U	ug/L	1	3.0	10	9L17003	EPA 625.1	12/20/19 01:27	DFM	
Acenaphthene [83-32-9]^	3.0	U	ug/L	1	3.0	10	9L27002	EPA 625.1	12/31/19 00:48	DFM	O-05
Acenaphthylene [208-96-8]^	9.6	U	ug/L	1	9.6	10	9L17003	EPA 625.1	12/20/19 01:27	DFM	
Acenaphthylene [208-96-8]^	9.6	U	ug/L	1	9.6	10	9L27002	EPA 625.1	12/31/19 00:48	DFM	O-05
Anthracene [120-12-7]^	3.0	U	ug/L	1	3.0	10	9L17003	EPA 625.1	12/20/19 01:27	DFM	
Anthracene [120-12-7]^	3.0	U	ug/L	1	3.0	10	9L27002	EPA 625.1	12/31/19 00:48	DFM	O-05
Benzidine [92-87-5]^	7.1	U	ug/L	1	7.1	10	9L17003	EPA 625.1	12/20/19 01:27	DFM	
Benzidine [92-87-5]^	7.1	U	ug/L	1	7.1	10	9L27002	EPA 625.1	12/31/19 00:48	DFM	O-05
Benzo(a)anthracene [56-55-3]^	3.2	U	ug/L	1	3.2	10	9L17003	EPA 625.1	12/20/19 01:27	DFM	
Benzo(a)anthracene [56-55-3]^	3.2	U	ug/L	1	3.2	10	9L27002	EPA 625.1	12/31/19 00:48	DFM	O-05
Benzo(a)pyrene [50-32-8]^	3.2	U	ug/L	1	3.2	10	9L17003	EPA 625.1	12/20/19 01:27	DFM	
Benzo(a)pyrene [50-32-8]^	3.2	U	ug/L	1	3.2	10	9L27002	EPA 625.1	12/31/19 00:48	DFM	O-05
Benzo(b)fluoranthene [205-99-2]^	3.4	U	ug/L	1	3.4	10	9L17003	EPA 625.1	12/20/19 01:27	DFM	
Benzo(b)fluoranthene [205-99-2]^	3.4	U	ug/L	1	3.4	10	9L27002	EPA 625.1	12/31/19 00:48	DFM	O-05
Benzo(g,h,i)perylene [191-24-2]^	3.7	U	ug/L	1	3.7	10	9L17003	EPA 625.1	12/20/19 01:27	DFM	
Benzo(g,h,i)perylene [191-24-2]^	3.7	U	ug/L	1	3.7	10	9L27002	EPA 625.1	12/31/19 00:48	DFM	O-05
Benzo(k)fluoranthene [207-08-9]^	3.8	U	ug/L	1	3.8	10	9L17003	EPA 625.1	12/20/19 01:27	DFM	
Benzo(k)fluoranthene [207-08-9]^	3.8	U	ug/L	1	3.8	10	9L27002	EPA 625.1	12/31/19 00:48	DFM	O-05
Bis(2-chloroethoxy)methane [111-91-1]^	3.3	U	ug/L	1	3.3	10	9L17003	EPA 625.1	12/20/19 01:27	DFM	
Bis(2-chloroethoxy)methane [111-91-1]^	3.3	U	ug/L	1	3.3	10	9L27002	EPA 625.1	12/31/19 00:48	DFM	O-05
Bis(2-chloroethyl)ether [111-44-4]^	3.8	U	ug/L	1	3.8	10	9L17003	EPA 625.1	12/20/19 01:27	DFM	
Bis(2-chloroethyl)ether [111-44-4]^	3.8	U	ug/L	1	3.8	10	9L27002	EPA 625.1	12/31/19 00:48	DFM	O-05
Bis(2-chloroisopropyl)ether [108-60-1]^	3.5	U	ug/L	1	3.5	10	9L17003	EPA 625.1	12/20/19 01:27	DFM	
Bis(2-chloroisopropyl)ether [108-60-1]^	3.5	U	ug/L	1	3.5	10	9L27002	EPA 625.1	12/31/19 00:48	DFM	O-05
Bis(2-ethylhexyl)phthalate [117-81-7]^	3.5	U	ug/L	1	3.5	5.0	9L17003	EPA 625.1	12/20/19 01:27	DFM	
Bis(2-ethylhexyl)phthalate [117-81-7]^	3.5	U	ug/L	1	3.5	5.0	9L27002	EPA 625.1	12/31/19 00:48	DFM	O-05
Butylbenzylphthalate [85-68-7]^	5.1	U	ug/L	1	5.1	10	9L17003	EPA 625.1	12/20/19 01:27	DFM	
Butylbenzylphthalate [85-68-7]^	5.1	U	ug/L	1	5.1	10	9L27002	EPA 625.1	12/31/19 00:48	DFM	O-05
Chrysene [218-01-9]^	3.0	U	ug/L	1	3.0	10	9L17003	EPA 625.1	12/20/19 01:27	DFM	
Chrysene [218-01-9]^	3.0	U	ug/L	1	3.0	10	9L27002	EPA 625.1	12/31/19 00:48	DFM	O-05
Dibenzo(a,h)anthracene [53-70-3]^	3.8	U	ug/L	1	3.8	10	9L17003	EPA 625.1	12/20/19 01:27	DFM	
Dibenzo(a,h)anthracene [53-70-3]^	3.8	U	ug/L	1	3.8	10	9L27002	EPA 625.1	12/31/19 00:48	DFM	O-05

ANALYTICAL RESULTS

Description: 204DPT-02 **Lab Sample ID:** CC20427-03 **Received:** 12/17/19 11:00

Matrix: Ground Water **Sampled:** 12/10/19 12:00 **Work Order:** CC20427

Project: NCDOT Goldsboro **Sampled By:** Corey Futral

Semivolatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Diethylphthalate [84-66-2]^	3.0	U	ug/L	1	3.0	10	9L17003	EPA 625.1	12/20/19 01:27	DFM	
Diethylphthalate [84-66-2]^	3.0	U	ug/L	1	3.0	10	9L27002	EPA 625.1	12/31/19 00:48	DFM	O-05
Dimethylphthalate [131-11-3]^	3.0	U	ug/L	1	3.0	10	9L17003	EPA 625.1	12/20/19 01:27	DFM	
Dimethylphthalate [131-11-3]^	3.0	U	ug/L	1	3.0	10	9L27002	EPA 625.1	12/31/19 00:48	DFM	O-05
Di-n-butylphthalate [84-74-2]^	3.2	U	ug/L	1	3.2	10	9L17003	EPA 625.1	12/20/19 01:27	DFM	
Di-n-butylphthalate [84-74-2]^	3.2	U	ug/L	1	3.2	10	9L27002	EPA 625.1	12/31/19 00:48	DFM	O-05
Di-n-octylphthalate [117-84-0]^	4.7	U	ug/L	1	4.7	10	9L17003	EPA 625.1	12/20/19 01:27	DFM	
Di-n-octylphthalate [117-84-0]^	4.7	U	ug/L	1	4.7	10	9L27002	EPA 625.1	12/31/19 00:48	DFM	O-05
Fluoranthene [206-44-0]^	4.0	U	ug/L	1	4.0	10	9L17003	EPA 625.1	12/20/19 01:27	DFM	
Fluoranthene [206-44-0]^	4.0	U	ug/L	1	4.0	10	9L27002	EPA 625.1	12/31/19 00:48	DFM	O-05
Fluorene [86-73-7]^	2.9	U	ug/L	1	2.9	10	9L17003	EPA 625.1	12/20/19 01:27	DFM	
Fluorene [86-73-7]^	2.9	U	ug/L	1	2.9	10	9L27002	EPA 625.1	12/31/19 00:48	DFM	O-05
Hexachlorobenzene [118-74-1]^	3.0	U	ug/L	1	3.0	10	9L17003	EPA 625.1	12/20/19 01:27	DFM	
Hexachlorobenzene [118-74-1]^	3.0	U	ug/L	1	3.0	10	9L27002	EPA 625.1	12/31/19 00:48	DFM	O-05
Hexachlorobutadiene [87-68-3]^	4.1	U	ug/L	1	4.1	10	9L17003	EPA 625.1	12/20/19 01:27	DFM	
Hexachlorobutadiene [87-68-3]^	4.1	U	ug/L	1	4.1	10	9L27002	EPA 625.1	12/31/19 00:48	DFM	O-05
Hexachlorocyclopentadiene [77-47-4]^	3.8	U	ug/L	1	3.8	10	9L17003	EPA 625.1	12/20/19 01:27	DFM	
Hexachlorocyclopentadiene [77-47-4]^	3.8	U	ug/L	1	3.8	10	9L27002	EPA 625.1	12/31/19 00:48	DFM	O-05
Hexachloroethane [67-72-1]^	3.0	U	ug/L	1	3.0	10	9L17003	EPA 625.1	12/20/19 01:27	DFM	
Hexachloroethane [67-72-1]^	3.0	U	ug/L	1	3.0	10	9L27002	EPA 625.1	12/31/19 00:48	DFM	O-05
Indeno(1,2,3-cd)pyrene [193-39-5]^	4.1	U	ug/L	1	4.1	10	9L17003	EPA 625.1	12/20/19 01:27	DFM	
Indeno(1,2,3-cd)pyrene [193-39-5]^	4.1	U	ug/L	1	4.1	10	9L27002	EPA 625.1	12/31/19 00:48	DFM	O-05
Isophorone [78-59-1]^	4.5	U	ug/L	1	4.5	10	9L17003	EPA 625.1	12/20/19 01:27	DFM	
Isophorone [78-59-1]^	4.5	U	ug/L	1	4.5	10	9L27002	EPA 625.1	12/31/19 00:48	DFM	O-05
Naphthalene [91-20-3]^	3.6	U	ug/L	1	3.6	10	9L17003	EPA 625.1	12/20/19 01:27	DFM	
Naphthalene [91-20-3]^	3.6	U	ug/L	1	3.6	10	9L27002	EPA 625.1	12/31/19 00:48	DFM	O-05
Nitrobenzene [98-95-3]^	3.2	U	ug/L	1	3.2	10	9L17003	EPA 625.1	12/20/19 01:27	DFM	
Nitrobenzene [98-95-3]^	3.2	U	ug/L	1	3.2	10	9L27002	EPA 625.1	12/31/19 00:48	DFM	O-05
N-Nitrosodimethylamine [62-75-9]^	3.8	U	ug/L	1	3.8	10	9L17003	EPA 625.1	12/20/19 01:27	DFM	
N-Nitrosodimethylamine [62-75-9]^	3.8	U	ug/L	1	3.8	10	9L27002	EPA 625.1	12/31/19 00:48	DFM	O-05
N-Nitroso-di-n-propylamine [621-64-7]^	4.5	U	ug/L	1	4.5	10	9L17003	EPA 625.1	12/20/19 01:27	DFM	
N-Nitroso-di-n-propylamine [621-64-7]^	4.5	U	ug/L	1	4.5	10	9L27002	EPA 625.1	12/31/19 00:48	DFM	O-05
N-nitrosodiphenylamine/Diphenylamine [86-30-6/122-39-4]^	5.4	U	ug/L	1	5.4	10	9L17003	EPA 625.1	12/20/19 01:27	DFM	
N-nitrosodiphenylamine/Diphenylamine [86-30-6/122-39-4]^	5.4	U	ug/L	1	5.4	10	9L27002	EPA 625.1	12/31/19 00:48	DFM	O-05
Pentachlorophenol [87-86-5]^	8.2	U	ug/L	1	8.2	10	9L17003	EPA 625.1	12/20/19 01:27	DFM	
Pentachlorophenol [87-86-5]^	8.2	U	ug/L	1	8.2	10	9L27002	EPA 625.1	12/31/19 00:48	DFM	O-05
Phenanthrene [85-01-8]^	2.8	U	ug/L	1	2.8	10	9L17003	EPA 625.1	12/20/19 01:27	DFM	
Phenanthrene [85-01-8]^	2.8	U	ug/L	1	2.8	10	9L27002	EPA 625.1	12/31/19 00:48	DFM	O-05
Phenol [108-95-2]^	5.6	U	ug/L	1	5.6	10	9L17003	EPA 625.1	12/20/19 01:27	DFM	
Phenol [108-95-2]^	5.6	U	ug/L	1	5.6	10	9L27002	EPA 625.1	12/31/19 00:48	DFM	O-05
Pyrene [129-00-0]^	4.1	U	ug/L	1	4.1	10	9L17003	EPA 625.1	12/20/19 01:27	DFM	
Pyrene [129-00-0]^	4.1	U	ug/L	1	4.1	10	9L27002	EPA 625.1	12/31/19 00:48	DFM	O-05

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
2,4,6-Tribromophenol	*38*	*1*	*100*	*38 %*	*47-128*	*9L17003*	*EPA 625.1*	*12/20/19 01:27*	*DFM*	*QS-03*
2,4,6-Tribromophenol	*73*	*1*	*100*	*73 %*	*47-128*	*9L27002*	*EPA 625.1*	*12/31/19 00:48*	*DFM*	*O-05*

ANALYTICAL RESULTS

Description: 204DPT-02 **Lab Sample ID:** CC20427-03 **Received:** 12/17/19 11:00

Matrix: Ground Water **Sampled:** 12/10/19 12:00 **Work Order:** CC20427

Project: NCDOT Goldsboro **Sampled By:** Corey Futral

Semivolatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
2-Fluorobiphenyl	*24*	*1*	*50.0*	*49 %*	*44-102*	*9L17003*	*EPA 625.1*	*12/20/19 01:27*	*DFM*	
2-Fluorobiphenyl	*46*	*1*	*50.0*	*91 %*	*44-102*	*9L27002*	*EPA 625.1*	*12/31/19 00:48*	*DFM*	*O-05*
2-Fluorophenol	*34*	*1*	*100*	*34 %*	*25-79*	*9L17003*	*EPA 625.1*	*12/20/19 01:27*	*DFM*	
2-Fluorophenol	*62*	*1*	*100*	*62 %*	*25-79*	*9L27002*	*EPA 625.1*	*12/31/19 00:48*	*DFM*	*O-05*
Nitrobenzene-d5	*20*	*1*	*50.0*	*41 %*	*43-112*	*9L17003*	*EPA 625.1*	*12/20/19 01:27*	*DFM*	*QS-03*
Nitrobenzene-d5	*36*	*1*	*50.0*	*73 %*	*43-112*	*9L27002*	*EPA 625.1*	*12/31/19 00:48*	*DFM*	*O-05*
Phenol-d5	*26*	*1*	*100*	*26 %*	*14-54*	*9L17003*	*EPA 625.1*	*12/20/19 01:27*	*DFM*	
Phenol-d5	*54*	*1*	*100*	*54 %*	*14-54*	*9L27002*	*EPA 625.1*	*12/31/19 00:48*	*DFM*	*O-05*
Terphenyl-d14	*25*	*1*	*50.0*	*50 %*	*65-122*	*9L17003*	*EPA 625.1*	*12/20/19 01:27*	*DFM*	*QS-03*
Terphenyl-d14	*47*	*1*	*50.0*	*94 %*	*65-122*	*9L27002*	*EPA 625.1*	*12/31/19 00:48*	*DFM*	*O-05*

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 9L18018 - EPA 5030B_MS

Blank (9L18018-BLK1) Prepared: 12/18/2019 10:24 Analyzed: 12/18/2019 13:40

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1,2-Tetrachloroethane	0.091	U	1.0	ug/L							
1,1,1-Trichloroethane	0.15	U	1.0	ug/L							
1,1,2,2-Tetrachloroethane	0.085	U	1.0	ug/L							
1,1,2-Trichloroethane	0.068	U	1.0	ug/L							
1,1-Dichloroethane	0.050	U	1.0	ug/L							
1,1-Dichloroethene	0.15	U	1.0	ug/L							
1,1-Dichloropropene	0.063	U	1.0	ug/L							
1,2,3-Trichlorobenzene	0.25	U	1.0	ug/L							
1,2,3-Trichloropropane	0.15	U	1.0	ug/L							
1,2,4-Trichlorobenzene	0.097	U	1.0	ug/L							
1,2,4-Trimethylbenzene	0.067	U	1.0	ug/L							
1,2-Dibromo-3-chloropropane	0.48	U	1.0	ug/L							
1,2-Dibromoethane	0.42	U	1.0	ug/L							
1,2-Dichlorobenzene	0.052	U	1.0	ug/L							
1,2-Dichloroethane	0.082	U	1.0	ug/L							
1,2-Dichloropropane	0.098	U	1.0	ug/L							
1,3,5-Trimethylbenzene	0.10	U	1.0	ug/L							
1,3-Dichlorobenzene	0.092	U	1.0	ug/L							
1,3-Dichloropropane	0.15	U	1.0	ug/L							
1,4-Dichlorobenzene	0.10	U	1.0	ug/L							
2,2-Dichloropropane	0.12	U	1.0	ug/L							
2-Chlorotoluene	0.10	U	1.0	ug/L							
4-Chlorotoluene	0.10	U	1.0	ug/L							
4-Isopropyltoluene	0.066	U	1.0	ug/L							
Benzene	0.050	U	1.0	ug/L							
Bromobenzene	0.13	U	1.0	ug/L							
Bromochloromethane	0.11	U	1.0	ug/L							
Bromodichloromethane	0.10	U	1.0	ug/L							
Bromoform	0.20	U	1.0	ug/L							
Bromomethane	0.28	U	1.0	ug/L							
Carbon Tetrachloride	0.082	U	1.0	ug/L							
Chlorobenzene	0.069	U	1.0	ug/L							
Chloroethane	0.18	U	1.0	ug/L							
Chloroform	0.083	U	1.0	ug/L							
Chloromethane	0.050	U	1.0	ug/L							
cis-1,2-Dichloroethene	0.075	U	1.0	ug/L							
cis-1,3-Dichloropropene	0.073	U	1.0	ug/L							
Dibromochloromethane	0.067	U	1.0	ug/L							
Dibromomethane	0.13	U	1.0	ug/L							
Dichlorodifluoromethane	0.091	U	1.0	ug/L							
Ethylbenzene	0.10	U	1.0	ug/L							
Freon 113	0.35	U	1.0	ug/L							
Hexachlorobutadiene	0.15	U	1.0	ug/L							
Isopropyl Ether	0.21	U	1.0	ug/L							
Isopropylbenzene	0.13	U	1.0	ug/L							
m,p-Xylenes	0.18	U	2.0	ug/L							
Methylene Chloride	0.070	U	2.0	ug/L							
Methyl-tert-Butyl Ether	0.12	U	1.0	ug/L							
Naphthalene	0.086	U	1.0	ug/L							

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 9L18018 - EPA 5030B_MS - Continued

Blank (9L18018-BLK1) Continued Prepared: 12/18/2019 10:24 Analyzed: 12/18/2019 13:40

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
n-Butyl Benzene	0.074	U	1.0	ug/L							
n-Propyl Benzene	0.073	U	1.0	ug/L							
o-Xylene	0.088	U	1.0	ug/L							
sec-Butylbenzene	0.053	U	1.0	ug/L							
Styrene	0.082	U	1.0	ug/L							
tert-Butylbenzene	0.094	U	1.0	ug/L							
Tetrachloroethene	0.099	U	1.0	ug/L							
Toluene	0.053	U	1.0	ug/L							
trans-1,2-Dichloroethene	0.11	U	1.0	ug/L							
trans-1,3-Dichloropropene	0.080	U	1.0	ug/L							
Trichloroethene	0.13	U	1.0	ug/L							
Trichlorofluoromethane	0.15	U	1.0	ug/L							
Vinyl chloride	0.083	U	1.0	ug/L							
Xylenes (Total)	0.22	U	1.0	ug/L							
4-Bromofluorobenzene	*46*			*ug/L*	*50.0*		*92*	*70-130*			
Dibromofluoromethane	*38*			*ug/L*	*50.0*		*76*	*70-130*			
Toluene-d8	*42*			*ug/L*	*50.0*		*84*	*70-130*			

LCS (9L18018-BS1) Prepared: 12/18/2019 10:24 Analyzed: 12/18/2019 11:23

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1,2-Tetrachloroethane	17		1.0	ug/L	20.0		87	70-130			
1,1,1-Trichloroethane	18		1.0	ug/L	20.0		92	70-130			
1,1,2,2-Tetrachloroethane	17		1.0	ug/L	20.0		87	70-130			
1,1,2-Trichloroethane	18		1.0	ug/L	20.0		88	70-130			
1,1-Dichloroethane	17		1.0	ug/L	20.0		86	70-130			
1,1-Dichloroethene	17		1.0	ug/L	20.0		87	70-130			
1,1-Dichloropropene	18		1.0	ug/L	20.0		88	70-130			
1,2,3-Trichlorobenzene	19		1.0	ug/L	20.0		94	70-130			
1,2,3-Trichloropropane	15		1.0	ug/L	20.0		75	70-130			
1,2,4-Trichlorobenzene	18		1.0	ug/L	20.0		92	70-130			
1,2,4-Trimethylbenzene	16		1.0	ug/L	20.0		78	70-130			
1,2-Dibromo-3-chloropropane	14		1.0	ug/L	20.0		68	70-130			
1,2-Dibromoethane	16		1.0	ug/L	20.0		82	70-130			
1,2-Dichlorobenzene	17		1.0	ug/L	20.0		85	70-130			
1,2-Dichloroethane	18		1.0	ug/L	20.0		92	70-130			
1,2-Dichloropropane	18		1.0	ug/L	20.0		91	70-130			
1,3,5-Trimethylbenzene	15		1.0	ug/L	20.0		76	70-130			
1,3-Dichlorobenzene	17		1.0	ug/L	20.0		83	70-130			
1,3-Dichloropropane	16		1.0	ug/L	20.0		81	70-130			
1,4-Dichlorobenzene	16		1.0	ug/L	20.0		81	70-130			
2,2-Dichloropropane	22		1.0	ug/L	20.0		109	70-130			
2-Chlorotoluene	15		1.0	ug/L	20.0		76	70-130			
4-Chlorotoluene	15		1.0	ug/L	20.0		77	70-130			
4-Isopropyltoluene	16		1.0	ug/L	20.0		80	70-130			
Benzene	19		1.0	ug/L	20.0		96	70-130			
Bromobenzene	19		1.0	ug/L	20.0		95	70-130			
Bromochloromethane	19		1.0	ug/L	20.0		97	70-130			
Bromodichloromethane	17		1.0	ug/L	20.0		84	70-130			

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 9L18018 - EPA 5030B_MS - Continued

LCS (9L18018-BS1) Continued Prepared: 12/18/2019 10:24 Analyzed: 12/18/2019 11:23

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Bromoform	16		1.0	ug/L	20.0		78	70-130			
Bromomethane	21		1.0	ug/L	20.0		105	60-140			
Carbon Tetrachloride	17		1.0	ug/L	20.0		86	70-130			
Chlorobenzene	17		1.0	ug/L	20.0		85	70-130			
Chloroethane	20		1.0	ug/L	20.0		101	60-140			
Chloroform	17		1.0	ug/L	20.0		86	70-130			
Chloromethane	18		1.0	ug/L	20.0		89	60-140			
cis-1,2-Dichloroethene	18		1.0	ug/L	20.0		91	70-130			
cis-1,3-Dichloropropene	18		1.0	ug/L	20.0		92	70-130			
Dibromochloromethane	16		1.0	ug/L	20.0		82	70-130			
Dibromomethane	17		1.0	ug/L	20.0		86	70-130			
Dichlorodifluoromethane	18		1.0	ug/L	20.0		88	60-140			
Ethylbenzene	17		1.0	ug/L	20.0		84	70-130			
Freon 113	44		1.0	ug/L	40.0		110	70-130			
Hexachlorobutadiene	20		1.0	ug/L	20.0		99	70-130			
Isopropyl Ether	16		1.0	ug/L	20.0		80	70-130			
Isopropylbenzene	17		1.0	ug/L	20.0		87	70-130			
m,p-Xylenes	31		2.0	ug/L	40.0		77	70-130			
Methylene Chloride	17		2.0	ug/L	20.0		87	70-130			
Methyl-tert-Butyl Ether	16		1.0	ug/L	20.0		82	70-130			
Naphthalene	17		1.0	ug/L	20.0		84	70-130			
n-Butyl Benzene	16		1.0	ug/L	20.0		80	70-130			
n-Propyl Benzene	17		1.0	ug/L	20.0		86	70-130			
o-Xylene	16		1.0	ug/L	20.0		82	70-130			
sec-Butylbenzene	16		1.0	ug/L	20.0		79	70-130			
Styrene	17		1.0	ug/L	20.0		84	70-130			
tert-Butylbenzene	16		1.0	ug/L	20.0		79	70-130			
Tetrachloroethene	19		1.0	ug/L	20.0		94	70-130			
Toluene	19		1.0	ug/L	20.0		93	70-130			
trans-1,2-Dichloroethene	17		1.0	ug/L	20.0		85	70-130			
trans-1,3-Dichloropropene	17		1.0	ug/L	20.0		85	70-130			
Trichloroethene	20		1.0	ug/L	20.0		100	70-130			
Trichlorofluoromethane	18		1.0	ug/L	20.0		92	60-140			
Vinyl chloride	19		1.0	ug/L	20.0		93	60-140			
Xylenes (Total)	47		1.0	ug/L	60.0		79	70-130			
4-Bromofluorobenzene	*47*			*ug/L*	*50.0*		*93*	*70-130*			
Dibromofluoromethane	*39*			*ug/L*	*50.0*		*77*	*70-130*			
Toluene-d8	*41*			*ug/L*	*50.0*		*83*	*70-130*			

Matrix Spike (9L18018-MS1) Prepared: 12/18/2019 10:24 Analyzed: 12/18/2019 12:02

Source: CC21287-05

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1,2-Tetrachloroethane	16		1.0	ug/L	20.0	0.091 U	81	71-117			
1,1,1-Trichloroethane	18		1.0	ug/L	20.0	0.15 U	89	72-143			
1,1,2,2-Tetrachloroethane	17		1.0	ug/L	20.0	0.085 U	84	59-133			
1,1,2-Trichloroethane	17		1.0	ug/L	20.0	0.068 U	85	67-118			
1,1-Dichloroethane	17		1.0	ug/L	20.0	0.050 U	85	79-141			
1,1-Dichloroethene	17		1.0	ug/L	20.0	0.15 U	85	75-133			
1,1-Dichloropropene	17		1.0	ug/L	20.0	0.063 U	85	70-129			

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 9L18018 - EPA 5030B_MS - Continued

Matrix Spike (9L18018-MS1) Continued Prepared: 12/18/2019 10:24 Analyzed: 12/18/2019 12:02

Source: CC21287-05

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,2,3-Trichlorobenzene	18		1.0	ug/L	20.0	0.45	85	62-117			
1,2,3-Trichloropropane	13		1.0	ug/L	20.0	0.15 U	67	58-140			
1,2,4-Trichlorobenzene	17		1.0	ug/L	20.0	0.097 U	85	59-122			
1,2,4-Trimethylbenzene	15		1.0	ug/L	20.0	0.067 U	75	74-123			
1,2-Dibromo-3-chloropropane	11		1.0	ug/L	20.0	0.48 U	53	37-157			
1,2-Dibromoethane	17		1.0	ug/L	20.0	0.42 U	85	66-123			
1,2-Dichlorobenzene	17		1.0	ug/L	20.0	0.052 U	84	76-116			
1,2-Dichloroethane	16		1.0	ug/L	20.0	0.082 U	82	72-151			
1,2-Dichloropropane	17		1.0	ug/L	20.0	0.098 U	86	78-125			
1,3,5-Trimethylbenzene	15		1.0	ug/L	20.0	0.10 U	75	77-129			QM-07
1,3-Dichlorobenzene	16		1.0	ug/L	20.0	0.092 U	78	76-119			
1,3-Dichloropropane	16		1.0	ug/L	20.0	0.15 U	82	60-129			
1,4-Dichlorobenzene	16		1.0	ug/L	20.0	0.10 U	81	76-122			
2,2-Dichloropropane	20		1.0	ug/L	20.0	0.12 U	101	21-167			
2-Chlorotoluene	14		1.0	ug/L	20.0	0.10 U	71	73-135			QM-07
4-Chlorotoluene	15		1.0	ug/L	20.0	0.10 U	73	76-134			QM-07
4-Isopropyltoluene	16		1.0	ug/L	20.0	0.066 U	80	75-127			
Benzene	19		1.0	ug/L	20.0	0.050 U	95	81-134			
Bromobenzene	18		1.0	ug/L	20.0	0.13 U	88	72-115			
Bromochloromethane	19		1.0	ug/L	20.0	0.11 U	95	74-128			
Bromodichloromethane	16		1.0	ug/L	20.0	0.10 U	81	72-129			
Bromoform	17		1.0	ug/L	20.0	0.20 U	83	73-119			
Bromomethane	21		1.0	ug/L	20.0	0.28 U	107	38-189			
Carbon Tetrachloride	15		1.0	ug/L	20.0	0.082 U	77	68-142			
Chlorobenzene	17		1.0	ug/L	20.0	0.069 U	83	83-117			
Chloroethane	21		1.0	ug/L	20.0	0.18 U	104	45-213			
Chloroform	17		1.0	ug/L	20.0	0.083 U	84	78-138			
Chloromethane	18		1.0	ug/L	20.0	0.050 U	88	56-171			
cis-1,2-Dichloroethene	18		1.0	ug/L	20.0	0.075 U	92	69-120			
cis-1,3-Dichloropropene	18		1.0	ug/L	20.0	0.073 U	92	63-125			
Dibromochloromethane	16		1.0	ug/L	20.0	0.067 U	80	73-117			
Dibromomethane	16		1.0	ug/L	20.0	0.13 U	81	76-124			
Dichlorodifluoromethane	17		1.0	ug/L	20.0	0.091 U	86	25-161			
Ethylbenzene	16		1.0	ug/L	20.0	0.10 U	80	68-124			
Freon 113	44		1.0	ug/L	40.0	0.35 U	109	0-200			
Hexachlorobutadiene	17		1.0	ug/L	20.0	0.15 U	87	63-114			
Isopropyl Ether	16		1.0	ug/L	20.0	0.21 U	78	70-130			
Isopropylbenzene	17		1.0	ug/L	20.0	0.13 U	85	81-136			
m,p-Xylenes	31		2.0	ug/L	40.0	0.18 U	78	79-121			QM-07
Methylene Chloride	18		2.0	ug/L	20.0	0.070 U	89	68-128			
Methyl-tert-Butyl Ether	17		1.0	ug/L	20.0	0.12 U	84	10-127			
Naphthalene	16		1.0	ug/L	20.0	0.086 U	78	50-127			
n-Butyl Benzene	15		1.0	ug/L	20.0	0.074 U	77	68-126			
n-Propyl Benzene	17		1.0	ug/L	20.0	0.073 U	84	76-125			
o-Xylene	16		1.0	ug/L	20.0	0.088 U	81	71-125			
sec-Butylbenzene	15		1.0	ug/L	20.0	0.053 U	76	75-122			
Styrene	17		1.0	ug/L	20.0	0.082 U	84	73-120			
tert-Butylbenzene	15		1.0	ug/L	20.0	0.094 U	73	70-137			
Tetrachloroethene	18		1.0	ug/L	20.0	0.099 U	91	40-181			

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 9L18018 - EPA 5030B_MS - Continued

Matrix Spike (9L18018-MS1) Continued Prepared: 12/18/2019 10:24 Analyzed: 12/18/2019 12:02

Source: CC21287-05

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Toluene	18		1.0	ug/L	20.0	0.053 U	89	71-118			
trans-1,2-Dichloroethene	17		1.0	ug/L	20.0	0.11 U	86	75-139			
trans-1,3-Dichloropropene	17		1.0	ug/L	20.0	0.080 U	83	62-152			
Trichloroethene	18		1.0	ug/L	20.0	0.13 U	90	75-115			
Trichlorofluoromethane	17		1.0	ug/L	20.0	0.15 U	85	68-183			
Vinyl chloride	17		1.0	ug/L	20.0	0.083 U	83	49-150			
Xylenes (Total)	47		1.0	ug/L	60.0	0.22 U	79	77-121			
4-Bromofluorobenzene	*47*			*ug/L*	*50.0*		*95*	*70-130*			
Dibromofluoromethane	*38*			*ug/L*	*50.0*		*77*	*70-130*			
Toluene-d8	*41*			*ug/L*	*50.0*		*82*	*70-130*			

Matrix Spike Dup (9L18018-MSD1) Prepared: 12/18/2019 10:24 Analyzed: 12/18/2019 12:35

Source: CC21287-05

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1,2-Tetrachloroethane	15		1.0	ug/L	20.0	0.091 U	77	71-117	5	16	
1,1,1-Trichloroethane	16		1.0	ug/L	20.0	0.15 U	78	72-143	13	18	
1,1,2,2-Tetrachloroethane	17		1.0	ug/L	20.0	0.085 U	83	59-133	2	16	
1,1,2-Trichloroethane	18		1.0	ug/L	20.0	0.068 U	89	67-118	4	18	
1,1-Dichloroethane	16		1.0	ug/L	20.0	0.050 U	78	79-141	9	19	QM-07
1,1-Dichloroethene	15		1.0	ug/L	20.0	0.15 U	76	75-133	11	20	
1,1-Dichloropropene	15		1.0	ug/L	20.0	0.063 U	76	70-129	12	17	
1,2,3-Trichlorobenzene	17		1.0	ug/L	20.0	0.45	80	62-117	6	17	
1,2,3-Trichloropropane	15		1.0	ug/L	20.0	0.15 U	74	58-140	10	17	
1,2,4-Trichlorobenzene	17		1.0	ug/L	20.0	0.097 U	84	59-122	1	17	
1,2,4-Trimethylbenzene	14		1.0	ug/L	20.0	0.067 U	69	74-123	9	18	QM-07
1,2-Dibromo-3-chloropropane	14		1.0	ug/L	20.0	0.48 U	68	37-157	26	18	QM-11
1,2-Dibromoethane	16		1.0	ug/L	20.0	0.42 U	80	66-123	6	15	
1,2-Dichlorobenzene	16		1.0	ug/L	20.0	0.052 U	78	76-116	8	16	
1,2-Dichloroethane	16		1.0	ug/L	20.0	0.082 U	81	72-151	2	16	
1,2-Dichloropropane	18		1.0	ug/L	20.0	0.098 U	88	78-125	2	19	
1,3,5-Trimethylbenzene	14		1.0	ug/L	20.0	0.10 U	70	77-129	7	16	QM-07
1,3-Dichlorobenzene	15		1.0	ug/L	20.0	0.092 U	76	76-119	3	17	
1,3-Dichloropropane	16		1.0	ug/L	20.0	0.15 U	79	60-129	3	16	
1,4-Dichlorobenzene	14		1.0	ug/L	20.0	0.10 U	72	76-122	12	16	QM-07
2,2-Dichloropropane	19		1.0	ug/L	20.0	0.12 U	93	21-167	8	20	
2-Chlorotoluene	14		1.0	ug/L	20.0	0.10 U	70	73-135	2	16	QM-07
4-Chlorotoluene	14		1.0	ug/L	20.0	0.10 U	68	76-134	7	16	QM-07
4-Isopropyltoluene	14		1.0	ug/L	20.0	0.066 U	71	75-127	12	17	QM-07
Benzene	18		1.0	ug/L	20.0	0.050 U	89	81-134	6	17	
Bromobenzene	17		1.0	ug/L	20.0	0.13 U	85	72-115	4	17	
Bromochloromethane	17		1.0	ug/L	20.0	0.11 U	86	74-128	10	18	
Bromodichloromethane	17		1.0	ug/L	20.0	0.10 U	83	72-129	2	16	
Bromoform	16		1.0	ug/L	20.0	0.20 U	82	73-119	2	44	
Bromomethane	18		1.0	ug/L	20.0	0.28 U	91	38-189	16	27	
Carbon Tetrachloride	14		1.0	ug/L	20.0	0.082 U	70	68-142	10	17	
Chlorobenzene	16		1.0	ug/L	20.0	0.069 U	79	83-117	5	16	QM-07
Chloroethane	19		1.0	ug/L	20.0	0.18 U	93	45-213	11	26	
Chloroform	15		1.0	ug/L	20.0	0.083 U	76	78-138	9	17	QM-07
Chloromethane	15		1.0	ug/L	20.0	0.050 U	77	56-171	13	28	

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 9L18018 - EPA 5030B_MS - Continued

Matrix Spike Dup (9L18018-MSD1) Continued Prepared: 12/18/2019 10:24 Analyzed: 12/18/2019 12:35

Source: CC21287-05

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
cis-1,2-Dichloroethene	17		1.0	ug/L	20.0	0.075 U	84	69-120	10	18	
cis-1,3-Dichloropropene	17		1.0	ug/L	20.0	0.073 U	86	63-125	6	17	
Dibromochloromethane	15		1.0	ug/L	20.0	0.067 U	73	73-117	9	16	
Dibromomethane	17		1.0	ug/L	20.0	0.13 U	83	76-124	3	15	
Dichlorodifluoromethane	14		1.0	ug/L	20.0	0.091 U	71	25-161	19	48	
Ethylbenzene	15		1.0	ug/L	20.0	0.10 U	75	68-124	7	16	
Freon 113	37		1.0	ug/L	40.0	0.35 U	94	0-200	15	25	
Hexachlorobutadiene	14		1.0	ug/L	20.0	0.15 U	72	63-114	19	19	
Isopropyl Ether	14		1.0	ug/L	20.0	0.21 U	71	70-130	9	30	
Isopropylbenzene	16		1.0	ug/L	20.0	0.13 U	78	81-136	8	16	QM-07
m,p-Xylenes	28		2.0	ug/L	40.0	0.18 U	71	79-121	9	16	QM-07
Methylene Chloride	16		2.0	ug/L	20.0	0.070 U	80	68-128	11	17	
Methyl-tert-Butyl Ether	16		1.0	ug/L	20.0	0.12 U	79	10-127	6	21	
Naphthalene	15		1.0	ug/L	20.0	0.086 U	76	50-127	2	19	
n-Butyl Benzene	14		1.0	ug/L	20.0	0.074 U	70	68-126	9	15	
n-Propyl Benzene	16		1.0	ug/L	20.0	0.073 U	78	76-125	7	16	
o-Xylene	15		1.0	ug/L	20.0	0.088 U	75	71-125	8	15	
sec-Butylbenzene	14		1.0	ug/L	20.0	0.053 U	70	75-122	8	17	QM-07
Styrene	16		1.0	ug/L	20.0	0.082 U	82	73-120	3	23	
tert-Butylbenzene	13		1.0	ug/L	20.0	0.094 U	67	70-137	9	22	QM-07
Tetrachloroethene	16		1.0	ug/L	20.0	0.099 U	81	40-181	11	26	
Toluene	17		1.0	ug/L	20.0	0.053 U	83	71-118	7	17	
trans-1,2-Dichloroethene	16		1.0	ug/L	20.0	0.11 U	79	75-139	8	19	
trans-1,3-Dichloropropene	16		1.0	ug/L	20.0	0.080 U	82	62-152	0.4	16	
Trichloroethene	17		1.0	ug/L	20.0	0.13 U	86	75-115	5	18	
Trichlorofluoromethane	15		1.0	ug/L	20.0	0.15 U	74	68-183	14	22	
Vinyl chloride	15		1.0	ug/L	20.0	0.083 U	76	49-150	9	27	
Xylenes (Total)	43		1.0	ug/L	60.0	0.22 U	72	77-121	8	16	QM-07
4-Bromofluorobenzene	*47*			*ug/L*	*50.0*		*94*	*70-130*			
Dibromofluoromethane	*37*			*ug/L*	*50.0*		*74*	*70-130*			
Toluene-d8	*42*			*ug/L*	*50.0*		*84*	*70-130*			

Semivolatile Organic Compounds by GCMS - Quality Control

Batch 9L17003 - EPA 3510C_MS

Blank (9L17003-BLK1) Prepared: 12/17/2019 07:53 Analyzed: 12/19/2019 15:49

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,2,4-Trichlorobenzene	3.3	U	10	ug/L							
1,2-Dichlorobenzene	3.2	U	10	ug/L							
1,3-Dichlorobenzene	3.4	U	10	ug/L							
1,4-Dichlorobenzene	3.2	U	10	ug/L							
2,4,6-Trichlorophenol	6.4	U	10	ug/L							
2,4-Dichlorophenol	6.5	U	10	ug/L							
2,4-Dimethylphenol	6.4	U	10	ug/L							
2,4-Dinitrophenol	7.7	U	10	ug/L							
2,4-Dinitrotoluene	3.2	U	10	ug/L							
2,6-Dinitrotoluene	2.9	U	10	ug/L							

QUALITY CONTROL DATA

Semivolatile Organic Compounds by GCMS - Quality Control

Batch 9L17003 - EPA 3510C_MS - Continued

Blank (9L17003-BLK1) Continued Prepared: 12/17/2019 07:53 Analyzed: 12/19/2019 15:49

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
2-Chloronaphthalene	3.2	U	10	ug/L							
2-Chlorophenol	7.4	U	10	ug/L							
2-Methyl-4,6-dinitrophenol	6.0	U	10	ug/L							
2-Nitrophenol	5.2	U	10	ug/L							
3,3'-Dichlorobenzidine	3.3	U	10	ug/L							
4-Bromophenyl-phenylether	3.3	U	10	ug/L							
4-Chloro-3-methylphenol	7.3	U	10	ug/L							
4-Chlorophenyl-phenylether	3.2	U	10	ug/L							
4-Nitrophenol	7.9	U	10	ug/L							
Acenaphthene	3.0	U	10	ug/L							
Acenaphthylene	9.6	U	10	ug/L							
Anthracene	3.0	U	10	ug/L							
Benzidine	7.1	U	10	ug/L							
Benzo(a)anthracene	3.2	U	10	ug/L							
Benzo(a)pyrene	3.2	U	10	ug/L							
Benzo(b)fluoranthene	3.4	U	10	ug/L							
Benzo(g,h,i)perylene	3.7	U	10	ug/L							
Benzo(k)fluoranthene	3.8	U	10	ug/L							
Bis(2-chloroethoxy)methane	3.3	U	10	ug/L							
Bis(2-chloroethyl)ether	3.8	U	10	ug/L							
Bis(2-chloroisopropyl)ether	3.5	U	10	ug/L							
Bis(2-ethylhexyl)phthalate	3.5	U	5.0	ug/L							
Butylbenzylphthalate	5.1	U	10	ug/L							
Chrysene	3.0	U	10	ug/L							
Dibenzo(a,h)anthracene	3.8	U	10	ug/L							
Diethylphthalate	3.0	U	10	ug/L							
Dimethylphthalate	3.0	U	10	ug/L							
Di-n-butylphthalate	3.2	U	10	ug/L							
Di-n-octylphthalate	4.7	U	10	ug/L							
Fluoranthene	4.0	U	10	ug/L							
Fluorene	2.9	U	10	ug/L							
Hexachlorobenzene	3.0	U	10	ug/L							
Hexachlorobutadiene	4.1	U	10	ug/L							
Hexachlorocyclopentadiene	3.8	U	10	ug/L							
Hexachloroethane	3.0	U	10	ug/L							
Indeno(1,2,3-cd)pyrene	4.1	U	10	ug/L							
Isophorone	4.5	U	10	ug/L							
Naphthalene	3.6	U	10	ug/L							
Nitrobenzene	3.2	U	10	ug/L							
N-Nitrosodimethylamine	3.8	U	10	ug/L							
N-Nitroso-di-n-propylamine	4.5	U	10	ug/L							
N-nitrosodiphenylamine/Diphenylamine	5.4	U	10	ug/L							
Pentachlorophenol	8.2	U	10	ug/L							
Phenanthrene	2.8	U	10	ug/L							
Phenol	5.6	U	10	ug/L							
Pyrene	4.1	U	10	ug/L							
2,4,6-Tribromophenol	*35*			*ug/L*	*100*		*35*	*47-128*			*QS-03*
2-Fluorobiphenyl	*15*			*ug/L*	*50.0*		*29*	*44-102*			*QS-03*
2-Fluorophenol	*21*			*ug/L*	*100*		*21*	*25-79*			*QS-03*

QUALITY CONTROL DATA

Semivolatile Organic Compounds by GCMS - Quality Control

Batch 9L17003 - EPA 3510C_MS - Continued

Blank (9L17003-BLK1) Continued Prepared: 12/17/2019 07:53 Analyzed: 12/19/2019 15:49

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Nitrobenzene-d5	*13*			*ug/L*	*50.0*		*26*	*43-112*			*QS-03*
Phenol-d5	*16*			*ug/L*	*100*		*16*	*14-54*			
Terphenyl-d14	*27*			*ug/L*	*50.0*		*54*	*65-122*			*QS-03*

LCS (9L17003-BS1) Prepared: 12/17/2019 07:53 Analyzed: 12/19/2019 16:18

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,2,4-Trichlorobenzene	20		10	ug/L	50.0		40	57-130			J-06
1,2-Dichlorobenzene	20		10	ug/L	50.0		41	32-129			
1,3-Dichlorobenzene	20		10	ug/L	50.0		40	10-172			
1,4-Dichlorobenzene	20		10	ug/L	50.0		41	20-124			
2,4,6-Trichlorophenol	21		10	ug/L	50.0		43	52-129			J-06
2,4-Dichlorophenol	21		10	ug/L	50.0		43	53-122			J-06
2,4-Dimethylphenol	21		10	ug/L	50.0		42	42-120			
2,4-Dinitrophenol	29		10	ug/L	50.0		58	5-173			
2,4-Dinitrotoluene	25		10	ug/L	50.0		49	48-127			
2,6-Dinitrotoluene	23		10	ug/L	50.0		46	68-137			J-06
2-Chloronaphthalene	21		10	ug/L	50.0		42	65-120			J-06
2-Chlorophenol	21		10	ug/L	50.0		43	36-120			
2-Methyl-4,6-dinitrophenol	27		10	ug/L	50.0		55	53-130			
2-Nitrophenol	20		10	ug/L	50.0		40	45-167			J-06
3,3'-Dichlorobenzidine	25		10	ug/L	50.0		49	8-213			
4-Bromophenyl-phenylether	21		10	ug/L	50.0		42	65-120			J-06
4-Chloro-3-methylphenol	22		10	ug/L	50.0		44	41-128			
4-Chlorophenyl-phenylether	23		10	ug/L	50.0		46	38-145			
4-Nitrophenol	17		10	ug/L	50.0		34	13-129			
Acenaphthene	23		10	ug/L	50.0		45	60-132			J-06
Acenaphthylene	22		10	ug/L	50.0		45	54-126			J-06
Anthracene	26		10	ug/L	50.0		52	43-120			
Benzidine	7.1	U	10	ug/L	50.0			10-136			J-06
Benzo(a)anthracene	23		10	ug/L	50.0		47	42-133			
Benzo(a)pyrene	25		10	ug/L	50.0		50	32-148			
Benzo(b)fluoranthene	24		10	ug/L	50.0		49	42-140			
Benzo(g,h,i)perylene	24		10	ug/L	50.0		48	5-195			
Benzo(k)fluoranthene	28		10	ug/L	50.0		56	25-146			
Bis(2-chloroethoxy)methane	21		10	ug/L	50.0		42	49-165			J-06
Bis(2-chloroethyl)ether	24		10	ug/L	50.0		48	43-126			
Bis(2-chloroisopropyl)ether	20		10	ug/L	50.0		39	63-139			J-06
Bis(2-ethylhexyl)phthalate	25		5.0	ug/L	50.0		50	29-137			
Butylbenzylphthalate	29		10	ug/L	50.0		58	5-140			
Chrysene	23		10	ug/L	50.0		47	44-140			
Dibenzo(a,h)anthracene	23		10	ug/L	50.0		47	5-200			
Diethylphthalate	25		10	ug/L	50.0		51	5-120			
Dimethylphthalate	23		10	ug/L	50.0		47	10-120			
Di-n-butylphthalate	29		10	ug/L	50.0		59	8-120			
Di-n-octylphthalate	25		10	ug/L	50.0		49	19-132			
Fluoranthene	28		10	ug/L	50.0		56	43-121			
Fluorene	23		10	ug/L	50.0		45	70-120			J-06
Hexachlorobenzene	22		10	ug/L	50.0		45	8-142			

QUALITY CONTROL DATA

Semivolatile Organic Compounds by GCMS - Quality Control

Batch 9L17003 - EPA 3510C_MS - Continued

LCS (9L17003-BS1) Continued Prepared: 12/17/2019 07:53 Analyzed: 12/19/2019 16:18

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Hexachlorobutadiene	19		10	ug/L	50.0		38	24-120			
Hexachlorocyclopentadiene	22		10	ug/L	50.0		43	38-120			
Hexachloroethane	19		10	ug/L	50.0		39	55-120			J-06
Indeno(1,2,3-cd)pyrene	24		10	ug/L	50.0		47	5-151			
Isophorone	21		10	ug/L	50.0		41	47-180			J-06
Naphthalene	21		10	ug/L	50.0		43	36-120			
Nitrobenzene	21		10	ug/L	50.0		43	54-158			J-06
N-Nitrosodimethylamine	19		10	ug/L	50.0		38	24-94			
N-Nitroso-di-n-propylamine	20		10	ug/L	50.0		41	14-198			
Pentachlorophenol	25		10	ug/L	50.0		51	38-152			
Phenanthrene	25		10	ug/L	50.0		51	65-120			J-06
Phenol	13		10	ug/L	50.0		26	17-120			
Pyrene	28		10	ug/L	50.0		56	70-120			J-06
2,4,6-Tribromophenol	*40*			*ug/L*	*100*		*40*	*47-128*			*QS-03*
2-Fluorobiphenyl	*17*			*ug/L*	*50.0*		*35*	*44-102*			*QS-03*
2-Fluorophenol	*29*			*ug/L*	*100*		*29*	*25-79*			
Nitrobenzene-d5	*19*			*ug/L*	*50.0*		*38*	*43-112*			*QS-03*
Phenol-d5	*22*			*ug/L*	*100*		*22*	*14-54*			
Terphenyl-d14	*26*			*ug/L*	*50.0*		*53*	*65-122*			*QS-03*

Matrix Spike (9L17003-MS1) Prepared: 12/17/2019 07:53 Analyzed: 12/19/2019 16:47

Source: CC21388-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,2,4-Trichlorobenzene	13		10	ug/L	50.0	3.3 U	26	44-142			
1,2-Dichlorobenzene	14		10	ug/L	50.0	3.2 U	28	32-129			
1,3-Dichlorobenzene	14		10	ug/L	50.0	3.4 U	28	10-172			
1,4-Dichlorobenzene	14		10	ug/L	50.0	3.2 U	28	20-124			
2,4,6-Trichlorophenol	16		10	ug/L	50.0	6.4 U	32	37-144			
2,4-Dichlorophenol	15		10	ug/L	50.0	6.5 U	29	39-135			
2,4-Dimethylphenol	8.4	J	10	ug/L	50.0	6.4 U	17	32-120			
2,4-Dinitrophenol	16		10	ug/L	50.0	7.7 U	32	5-191			
2,4-Dinitrotoluene	17		10	ug/L	50.0	3.2 U	34	53-130			
2,6-Dinitrotoluene	18		10	ug/L	50.0	2.9 U	35	50-158			
2-Chloronaphthalene	17		10	ug/L	50.0	3.2 U	33	60-120			
2-Chlorophenol	14		10	ug/L	50.0	7.4 U	28	23-134			
2-Methyl-4,6-dinitrophenol	16		10	ug/L	50.0	6.0 U	32	5-181			
2-Nitrophenol	15		10	ug/L	50.0	5.2 U	30	29-182			
3,3'-Dichlorobenzidine	8.9	J	10	ug/L	50.0	3.3 U	18	5-262			
4-Bromophenyl-phenylether	17		10	ug/L	50.0	3.3 U	33	53-127			
4-Chloro-3-methylphenol	14		10	ug/L	50.0	7.3 U	28	22-147			
4-Chlorophenyl-phenylether	18		10	ug/L	50.0	3.2 U	35	25-158			
4-Nitrophenol	7.9	U	10	ug/L	50.0	7.9 U		5-132			
Acenaphthene	15		10	ug/L	50.0	3.0 U	31	47-145			
Acenaphthylene	9.6	U	10	ug/L	50.0	9.6 U		33-145			
Anthracene	17		10	ug/L	50.0	3.0 U	34	27-133			
Benzidine	7.1	U	10	ug/L	50.0	7.1 U		10-136			
Benzo(a)anthracene	18		10	ug/L	50.0	3.2 U	36	33-143			
Benzo(a)pyrene	17		10	ug/L	50.0	3.2 U	35	17-163			
Benzo(b)fluoranthene	18		10	ug/L	50.0	3.4 U	36	24-159			

QUALITY CONTROL DATA

Semivolatile Organic Compounds by GCMS - Quality Control

Batch 9L17003 - EPA 3510C_MS - Continued

Matrix Spike (9L17003-MS1) Continued Prepared: 12/17/2019 07:53 Analyzed: 12/19/2019 16:47

Source: CC21388-01

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Benzo(g,h,i)perylene	19		10	ug/L	50.0	3.7 U	38	5-219			
Benzo(k)fluoranthene	19		10	ug/L	50.0	3.8 U	38	11-162			
Bis(2-chloroethoxy)methane	16		10	ug/L	50.0	3.3 U	32	33-184			
Bis(2-chloroethyl)ether	18		10	ug/L	50.0	3.8 U	36	12-158			
Bis(2-chloroisopropyl)ether	15		10	ug/L	50.0	3.5 U	29	36-166			
Bis(2-ethylhexyl)phthalate	19		5.0	ug/L	50.0	3.5 U	37	8-158			
Butylbenzylphthalate	22		10	ug/L	50.0	5.1 U	43	5-152			
Chrysene	18		10	ug/L	50.0	3.0 U	36	17-168			
Dibenzo(a,h)anthracene	18		10	ug/L	50.0	3.8 U	36	5-227			
Diethylphthalate	19		10	ug/L	50.0	3.0 U	39	5-120			
Dimethylphthalate	19		10	ug/L	50.0	3.0 U	38	5-120			
Di-n-butylphthalate	23		10	ug/L	50.0	3.2 U	45	1-120			
Di-n-octylphthalate	20		10	ug/L	50.0	4.7 U	39	4-146			
Fluoranthene	20		10	ug/L	50.0	4.0 U	40	26-137			
Fluorene	17		10	ug/L	50.0	2.9 U	34	59-121			
Hexachlorobenzene	18		10	ug/L	50.0	3.0 U	36	5-152			
Hexachlorobutadiene	13		10	ug/L	50.0	4.1 U	26	24-120			
Hexachlorocyclopentadiene	15		10	ug/L	50.0	3.8 U	31	10-99			
Hexachloroethane	13		10	ug/L	50.0	3.0 U	26	40-120			
Indeno(1,2,3-cd)pyrene	19		10	ug/L	50.0	4.1 U	37	5-171			
Isophorone	16		10	ug/L	50.0	4.5 U	32	21-196			
Naphthalene	15		10	ug/L	50.0	3.6 U	31	21-133			
Nitrobenzene	16		10	ug/L	50.0	3.2 U	33	35-180			
N-Nitrosodimethylamine	13		10	ug/L	50.0	3.8 U	27	24-94			
N-Nitroso-di-n-propylamine	15		10	ug/L	50.0	4.5 U	30	5-230			
Pentachlorophenol	16		10	ug/L	50.0	8.2 U	33	14-176			
Phenanthrene	20		10	ug/L	50.0	2.8 U	40	54-120			
Phenol	6.8	J	10	ug/L	50.0	5.6 U	14	5-120			
Pyrene	20		10	ug/L	50.0	4.1 U	39	52-120			
2,4,6-Tribromophenol	*29*			*ug/L*	*100*		*29*	*47-128*			*QS-03*
2-Fluorobiphenyl	*16*			*ug/L*	*50.0*		*33*	*44-102*			*QS-03*
2-Fluorophenol	*18*			*ug/L*	*100*		*18*	*25-79*			*QS-03*
Nitrobenzene-d5	*15*			*ug/L*	*50.0*		*30*	*43-112*			*QS-03*
Phenol-d5	*12*			*ug/L*	*100*		*12*	*14-54*			*QS-03*
Terphenyl-d14	*19*			*ug/L*	*50.0*		*38*	*65-122*			*QS-03*

Matrix Spike Dup (9L17003-MSD1) Prepared: 12/17/2019 07:53 Analyzed: 12/19/2019 17:15

Source: CC21388-01

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,2,4-Trichlorobenzene	17		10	ug/L	50.0	3.3 U	33	44-142	24	50	
1,2-Dichlorobenzene	17		10	ug/L	50.0	3.2 U	33	32-129	17	25	
1,3-Dichlorobenzene	16		10	ug/L	50.0	3.4 U	32	10-172	16	25	
1,4-Dichlorobenzene	16		10	ug/L	50.0	3.2 U	33	20-124	16	25	
2,4,6-Trichlorophenol	22		10	ug/L	50.0	6.4 U	44	37-144	31	58	
2,4-Dichlorophenol	20		10	ug/L	50.0	6.5 U	40	39-135	32	50	
2,4-Dimethylphenol	19		10	ug/L	50.0	6.4 U	37	32-120	76	58	
2,4-Dinitrophenol	24		10	ug/L	50.0	7.7 U	49	5-191	41	132	
2,4-Dinitrotoluene	24		10	ug/L	50.0	3.2 U	47	53-130	33	42	
2,6-Dinitrotoluene	23		10	ug/L	50.0	2.9 U	47	50-158	28	48	

QUALITY CONTROL DATA

Semivolatile Organic Compounds by GCMS - Quality Control

Batch 9L17003 - EPA 3510C_MS - Continued

Matrix Spike Dup (9L17003-MSD1) Continued Prepared: 12/17/2019 07:53 Analyzed: 12/19/2019 17:15

Source: CC21388-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
2-Chloronaphthalene	21		10	ug/L	50.0	3.2 U	42	60-120	24	24	
2-Chlorophenol	19		10	ug/L	50.0	7.4 U	37	23-134	29	61	
2-Methyl-4,6-dinitrophenol	24		10	ug/L	50.0	6.0 U	48	5-181	38	203	
2-Nitrophenol	19		10	ug/L	50.0	5.2 U	38	29-182	23	55	
3,3'-Dichlorobenzidine	15		10	ug/L	50.0	3.3 U	30	5-262	50	108	
4-Bromophenyl-phenylether	21		10	ug/L	50.0	3.3 U	43	53-127	25	43	
4-Chloro-3-methylphenol	22		10	ug/L	50.0	7.3 U	43	22-147	42	73	
4-Chlorophenyl-phenylether	23		10	ug/L	50.0	3.2 U	46	25-158	27	61	
4-Nitrophenol	15		10	ug/L	50.0	7.9 U	29	5-132		131	
Acenaphthene	22		10	ug/L	50.0	3.0 U	45	47-145	37	48	
Acenaphthylene	19		10	ug/L	50.0	9.6 U	38	33-145		74	
Anthracene	25		10	ug/L	50.0	3.0 U	50	27-133	38	66	
Benzidine	7.1	U	10	ug/L	50.0	7.1 U		10-136		25	
Benzo(a)anthracene	23		10	ug/L	50.0	3.2 U	46	33-143	25	53	
Benzo(a)pyrene	25		10	ug/L	50.0	3.2 U	49	17-163	35	72	
Benzo(b)fluoranthene	24		10	ug/L	50.0	3.4 U	47	24-159	27	71	
Benzo(g,h,i)perylene	24		10	ug/L	50.0	3.7 U	47	5-219	21	97	
Benzo(k)fluoranthene	27		10	ug/L	50.0	3.8 U	54	11-162	34	63	
Bis(2-chloroethoxy)methane	20		10	ug/L	50.0	3.3 U	40	33-184	23	54	
Bis(2-chloroethyl)ether	21		10	ug/L	50.0	3.8 U	42	12-158	16	108	
Bis(2-chloroisopropyl)ether	17		10	ug/L	50.0	3.5 U	34	36-166	14	76	
Bis(2-ethylhexyl)phthalate	24		5.0	ug/L	50.0	3.5 U	48	8-158	25	82	
Butylbenzylphthalate	29		10	ug/L	50.0	5.1 U	58	5-152	29	60	
Chrysene	23		10	ug/L	50.0	3.0 U	47	17-168	27	87	
Dibenzo(a,h)anthracene	23		10	ug/L	50.0	3.8 U	47	5-227	25	126	
Diethylphthalate	25		10	ug/L	50.0	3.0 U	51	5-120	27	100	
Dimethylphthalate	24		10	ug/L	50.0	3.0 U	49	5-120	26	183	
Di-n-butylphthalate	29		10	ug/L	50.0	3.2 U	58	1-120	25	47	
Di-n-octylphthalate	26		10	ug/L	50.0	4.7 U	51	4-146	26	69	
Fluoranthene	27		10	ug/L	50.0	4.0 U	53	26-137	28	66	
Fluorene	22		10	ug/L	50.0	2.9 U	45	59-121	28	38	
Hexachlorobenzene	22		10	ug/L	50.0	3.0 U	45	5-152	23	55	
Hexachlorobutadiene	16		10	ug/L	50.0	4.1 U	33	24-120	25	62	
Hexachlorocyclopentadiene	19		10	ug/L	50.0	3.8 U	37	10-99	19	25	
Hexachloroethane	15		10	ug/L	50.0	3.0 U	31	40-120	18	52	
Indeno(1,2,3-cd)pyrene	24		10	ug/L	50.0	4.1 U	48	5-171	25	99	
Isophorone	20		10	ug/L	50.0	4.5 U	40	21-196	22	93	
Naphthalene	18		10	ug/L	50.0	3.6 U	37	21-133	18	65	
Nitrobenzene	19		10	ug/L	50.0	3.2 U	39	35-180	17	62	
N-Nitrosodimethylamine	16		10	ug/L	50.0	3.8 U	32	24-94	18	25	
N-Nitroso-di-n-propylamine	19		10	ug/L	50.0	4.5 U	37	5-230	21	87	
Pentachlorophenol	23		10	ug/L	50.0	8.2 U	47	14-176	35	86	
Phenanthrene	25		10	ug/L	50.0	2.8 U	51	54-120	24	39	
Phenol	16		10	ug/L	50.0	5.6 U	32	5-120	79	64	
Pyrene	27		10	ug/L	50.0	4.1 U	53	52-120	31	49	
2,4,6-Tribromophenol	*44*			*ug/L*	*100*		*44*	*47-128*			*QS-03*
2-Fluorobiphenyl	*24*			*ug/L*	*50.0*		*47*	*44-102*			
2-Fluorophenol	*31*			*ug/L*	*100*		*31*	*25-79*			
Nitrobenzene-d5	*19*			*ug/L*	*50.0*		*38*	*43-112*			*QS-03*

QUALITY CONTROL DATA

Semivolatile Organic Compounds by GCMS - Quality Control

Batch 9L17003 - EPA 3510C_MS - Continued

Matrix Spike Dup (9L17003-MSD1) Continued Prepared: 12/17/2019 07:53 Analyzed: 12/19/2019 17:15

Source: CC21388-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Phenol-d5	*30*			*ug/L*	*100*		*30*	*14-54*			
Terphenyl-d14	*33*			*ug/L*	*50.0*		*65*	*65-122*			

Batch 9L27002 - EPA 3510C_MS

Blank (9L27002-BLK1) Prepared: 12/27/2019 08:32 Analyzed: 12/30/2019 12:51

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,2,4-Trichlorobenzene	3.3	U	10	ug/L							
1,2-Dichlorobenzene	3.2	U	10	ug/L							
1,3-Dichlorobenzene	3.4	U	10	ug/L							
1,4-Dichlorobenzene	3.2	U	10	ug/L							
2,4,6-Trichlorophenol	6.4	U	10	ug/L							
2,4-Dichlorophenol	6.5	U	10	ug/L							
2,4-Dimethylphenol	6.4	U	10	ug/L							
2,4-Dinitrophenol	7.7	U	10	ug/L							
2,4-Dinitrotoluene	3.2	U	10	ug/L							
2,6-Dinitrotoluene	2.9	U	10	ug/L							
2-Chloronaphthalene	3.2	U	10	ug/L							
2-Chlorophenol	7.4	U	10	ug/L							
2-Methyl-4,6-dinitrophenol	6.0	U	10	ug/L							
2-Nitrophenol	5.2	U	10	ug/L							
3,3'-Dichlorobenzidine	3.3	U	10	ug/L							
4-Bromophenyl-phenylether	3.3	U	10	ug/L							
4-Chloro-3-methylphenol	7.3	U	10	ug/L							
4-Chlorophenyl-phenylether	3.2	U	10	ug/L							
4-Nitrophenol	7.9	U	10	ug/L							
Acenaphthene	3.0	U	10	ug/L							
Acenaphthylene	9.6	U	10	ug/L							
Anthracene	3.0	U	10	ug/L							
Benzidine	7.1	U	10	ug/L							
Benzo(a)anthracene	3.2	U	10	ug/L							
Benzo(a)pyrene	3.2	U	10	ug/L							
Benzo(b)fluoranthene	3.4	U	10	ug/L							
Benzo(g,h,i)perylene	3.7	U	10	ug/L							
Benzo(k)fluoranthene	3.8	U	10	ug/L							
Bis(2-chloroethoxy)methane	3.3	U	10	ug/L							
Bis(2-chloroethyl)ether	3.8	U	10	ug/L							
Bis(2-chloroisopropyl)ether	3.5	U	10	ug/L							
Bis(2-ethylhexyl)phthalate	3.5	U	5.0	ug/L							
Butylbenzylphthalate	5.1	U	10	ug/L							
Chrysene	3.0	U	10	ug/L							
Dibenzo(a,h)anthracene	3.8	U	10	ug/L							
Diethylphthalate	3.0	U	10	ug/L							
Dimethylphthalate	3.0	U	10	ug/L							
Di-n-butylphthalate	3.2	U	10	ug/L							
Di-n-octylphthalate	4.7	U	10	ug/L							
Fluoranthene	4.0	U	10	ug/L							
Fluorene	2.9	U	10	ug/L							

QUALITY CONTROL DATA

Semivolatile Organic Compounds by GCMS - Quality Control

Batch 9L27002 - EPA 3510C_MS - Continued

Blank (9L27002-BLK1) Continued Prepared: 12/27/2019 08:32 Analyzed: 12/30/2019 12:51

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Hexachlorobenzene	3.0	U	10	ug/L							
Hexachlorobutadiene	4.1	U	10	ug/L							
Hexachlorocyclopentadiene	3.8	U	10	ug/L							
Hexachloroethane	3.0	U	10	ug/L							
Indeno(1,2,3-cd)pyrene	4.1	U	10	ug/L							
Isophorone	4.5	U	10	ug/L							
Naphthalene	3.6	U	10	ug/L							
Nitrobenzene	3.2	U	10	ug/L							
N-Nitrosodimethylamine	3.8	U	10	ug/L							
N-Nitroso-di-n-propylamine	4.5	U	10	ug/L							
N-nitrosodiphenylamine/Diphenylamine	5.4	U	10	ug/L							
Pentachlorophenol	8.2	U	10	ug/L							
Phenanthrene	2.8	U	10	ug/L							
Phenol	5.6	U	10	ug/L							
Pyrene	4.1	U	10	ug/L							
2,4,6-Tribromophenol	*76*			*ug/L*	*100*		*76*	*47-128*			
2-Fluorobiphenyl	*45*			*ug/L*	*50.0*		*90*	*44-102*			
2-Fluorophenol	*58*			*ug/L*	*100*		*58*	*25-79*			
Nitrobenzene-d5	*38*			*ug/L*	*50.0*		*75*	*43-112*			
Phenol-d5	*47*			*ug/L*	*100*		*47*	*14-54*			
Terphenyl-d14	*49*			*ug/L*	*50.0*		*99*	*65-122*			

LCS (9L27002-BS1) Prepared: 12/27/2019 08:32 Analyzed: 12/30/2019 13:23

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,2,4-Trichlorobenzene	43		10	ug/L	50.0		87	57-130			
1,2-Dichlorobenzene	41		10	ug/L	50.0		83	32-129			
1,3-Dichlorobenzene	39		10	ug/L	50.0		79	10-172			
1,4-Dichlorobenzene	41		10	ug/L	50.0		82	20-124			
2,4,6-Trichlorophenol	52		10	ug/L	50.0		104	52-129			
2,4-Dichlorophenol	49		10	ug/L	50.0		97	53-122			
2,4-Dimethylphenol	47		10	ug/L	50.0		95	42-120			
2,4-Dinitrophenol	51		10	ug/L	50.0		102	5-173			
2,4-Dinitrotoluene	50		10	ug/L	50.0		100	48-127			
2,6-Dinitrotoluene	51		10	ug/L	50.0		103	68-137			
2-Chloronaphthalene	48		10	ug/L	50.0		96	65-120			
2-Chlorophenol	45		10	ug/L	50.0		90	36-120			
2-Methyl-4,6-dinitrophenol	52		10	ug/L	50.0		103	53-130			
2-Nitrophenol	49		10	ug/L	50.0		98	45-167			
3,3'-Dichlorobenzidine	49		10	ug/L	50.0		98	8-213			
4-Bromophenyl-phenylether	51		10	ug/L	50.0		102	65-120			
4-Chloro-3-methylphenol	48		10	ug/L	50.0		96	41-128			
4-Chlorophenyl-phenylether	50		10	ug/L	50.0		101	38-145			
4-Nitrophenol	34		10	ug/L	50.0		69	13-129			
Acenaphthene	50		10	ug/L	50.0		100	60-132			
Acenaphthylene	50		10	ug/L	50.0		100	54-126			
Anthracene	51		10	ug/L	50.0		102	43-120			
Benzidine	17		10	ug/L	50.0		34	10-136			
Benzo(a)anthracene	50		10	ug/L	50.0		101	42-133			

QUALITY CONTROL DATA

Semivolatile Organic Compounds by GCMS - Quality Control

Batch 9L27002 - EPA 3510C_MS - Continued

LCS (9L27002-BS1) Continued Prepared: 12/27/2019 08:32 Analyzed: 12/30/2019 13:23

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Benzo(a)pyrene	52		10	ug/L	50.0		104	32-148			
Benzo(b)fluoranthene	49		10	ug/L	50.0		98	42-140			
Benzo(g,h,i)perylene	60		10	ug/L	50.0		119	5-195			
Benzo(k)fluoranthene	52		10	ug/L	50.0		103	25-146			
Bis(2-chloroethoxy)methane	46		10	ug/L	50.0		92	49-165			
Bis(2-chloroethyl)ether	50		10	ug/L	50.0		101	43-126			
Bis(2-chloroisopropyl)ether	46		10	ug/L	50.0		92	63-139			
Bis(2-ethylhexyl)phthalate	49		5.0	ug/L	50.0		99	29-137			
Butylbenzylphthalate	41		10	ug/L	50.0		83	5-140			
Chrysene	52		10	ug/L	50.0		103	44-140			
Dibenzo(a,h)anthracene	59		10	ug/L	50.0		118	5-200			
Diethylphthalate	51		10	ug/L	50.0		102	5-120			
Dimethylphthalate	51		10	ug/L	50.0		102	10-120			
Di-n-butylphthalate	48		10	ug/L	50.0		96	8-120			
Di-n-octylphthalate	46		10	ug/L	50.0		92	19-132			
Fluoranthene	47		10	ug/L	50.0		95	43-121			
Fluorene	49		10	ug/L	50.0		99	70-120			
Hexachlorobenzene	50		10	ug/L	50.0		100	8-142			
Hexachlorobutadiene	45		10	ug/L	50.0		89	24-120			
Hexachlorocyclopentadiene	42		10	ug/L	50.0		85	38-120			
Hexachloroethane	39		10	ug/L	50.0		78	55-120			
Indeno(1,2,3-cd)pyrene	59		10	ug/L	50.0		117	5-151			
Isophorone	46		10	ug/L	50.0		92	47-180			
Naphthalene	45		10	ug/L	50.0		90	36-120			
Nitrobenzene	46		10	ug/L	50.0		91	54-158			
N-Nitrosodimethylamine	36		10	ug/L	50.0		73	24-94			
N-Nitroso-di-n-propylamine	44		10	ug/L	50.0		87	14-198			
Pentachlorophenol	54		10	ug/L	50.0		107	38-152			
Phenanthrene	51		10	ug/L	50.0		102	65-120			
Phenol	30		10	ug/L	50.0		61	17-120			
Pyrene	47		10	ug/L	50.0		93	70-120			
2,4,6-Tribromophenol	*91*			*ug/L*	*100*		*91*	*47-128*			
2-Fluorobiphenyl	*49*			*ug/L*	*50.0*		*98*	*44-102*			
2-Fluorophenol	*67*			*ug/L*	*100*		*67*	*25-79*			
Nitrobenzene-d5	*45*			*ug/L*	*50.0*		*90*	*43-112*			
Phenol-d5	*56*			*ug/L*	*100*		*56*	*14-54*			*QS-03*
Terphenyl-d14	*47*			*ug/L*	*50.0*		*95*	*65-122*			

Matrix Spike (9L27002-MS1) Prepared: 12/27/2019 08:32 Analyzed: 12/30/2019 13:54

Source: CC21739-04

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,2,4-Trichlorobenzene	39		10	ug/L	50.0	3.3 U	79	44-142			
1,2-Dichlorobenzene	38		10	ug/L	50.0	3.2 U	75	32-129			
1,3-Dichlorobenzene	36		10	ug/L	50.0	3.4 U	73	10-172			
1,4-Dichlorobenzene	38		10	ug/L	50.0	3.2 U	76	20-124			
2,4,6-Trichlorophenol	48		10	ug/L	50.0	6.4 U	97	37-144			
2,4-Dichlorophenol	44		10	ug/L	50.0	6.5 U	88	39-135			
2,4-Dimethylphenol	16		10	ug/L	50.0	6.4 U	31	32-120			QM-07
2,4-Dinitrophenol	52		10	ug/L	50.0	7.7 U	103	5-191			

QUALITY CONTROL DATA

Semivolatile Organic Compounds by GCMS - Quality Control

Batch 9L27002 - EPA 3510C_MS - Continued

Matrix Spike (9L27002-MS1) Continued Prepared: 12/27/2019 08:32 Analyzed: 12/30/2019 13:54

Source: CC21739-04

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
2,4-Dinitrotoluene	47		10	ug/L	50.0	3.2 U	94	53-130			
2,6-Dinitrotoluene	47		10	ug/L	50.0	2.9 U	93	50-158			
2-Chloronaphthalene	42		10	ug/L	50.0	3.2 U	85	60-120			
2-Chlorophenol	40		10	ug/L	50.0	7.4 U	80	23-134			
2-Methyl-4,6-dinitrophenol	52		10	ug/L	50.0	6.0 U	105	5-181			
2-Nitrophenol	46		10	ug/L	50.0	5.2 U	91	29-182			
3,3'-Dichlorobenzidine	32		10	ug/L	50.0	3.3 U	64	5-262			
4-Bromophenyl-phenylether	47		10	ug/L	50.0	3.3 U	95	53-127			
4-Chloro-3-methylphenol	44		10	ug/L	50.0	7.3 U	88	22-147			
4-Chlorophenyl-phenylether	47		10	ug/L	50.0	3.2 U	93	25-158			
4-Nitrophenol	32		10	ug/L	50.0	7.9 U	65	5-132			
Acenaphthene	44		10	ug/L	50.0	3.0 U	89	47-145			
Acenaphthylene	36		10	ug/L	50.0	9.6 U	73	33-145			
Anthracene	45		10	ug/L	50.0	3.0 U	90	27-133			
Benzidine	7.1	U	10	ug/L	50.0	7.1 U		10-136			QM-07
Benzo(a)anthracene	47		10	ug/L	50.0	3.2 U	94	33-143			
Benzo(a)pyrene	46		10	ug/L	50.0	3.2 U	92	17-163			
Benzo(b)fluoranthene	50		10	ug/L	50.0	3.4 U	100	24-159			
Benzo(g,h,i)perylene	49		10	ug/L	50.0	3.7 U	99	5-219			
Benzo(k)fluoranthene	49		10	ug/L	50.0	3.8 U	99	11-162			
Bis(2-chloroethoxy)methane	42		10	ug/L	50.0	3.3 U	84	33-184			
Bis(2-chloroethyl)ether	49		10	ug/L	50.0	3.8 U	97	12-158			
Bis(2-chloroisopropyl)ether	42		10	ug/L	50.0	3.5 U	84	36-166			
Bis(2-ethylhexyl)phthalate	47		5.0	ug/L	50.0	3.5 U	94	8-158			
Butylbenzylphthalate	47		10	ug/L	50.0	5.1 U	93	5-152			
Chrysene	49		10	ug/L	50.0	3.0 U	97	17-168			
Dibenzo(a,h)anthracene	50		10	ug/L	50.0	3.8 U	101	5-227			
Diethylphthalate	47		10	ug/L	50.0	3.0 U	95	5-120			
Dimethylphthalate	47		10	ug/L	50.0	3.0 U	94	5-120			
Di-n-butylphthalate	47		10	ug/L	50.0	3.2 U	94	1-120			
Di-n-octylphthalate	48		10	ug/L	50.0	4.7 U	95	4-146			
Fluoranthene	47		10	ug/L	50.0	4.0 U	93	26-137			
Fluorene	45		10	ug/L	50.0	2.9 U	90	59-121			
Hexachlorobenzene	46		10	ug/L	50.0	3.0 U	92	5-152			
Hexachlorobutadiene	40		10	ug/L	50.0	4.1 U	80	24-120			
Hexachlorocyclopentadiene	43		10	ug/L	50.0	3.8 U	87	10-99			
Hexachloroethane	36		10	ug/L	50.0	3.0 U	72	40-120			
Indeno(1,2,3-cd)pyrene	50		10	ug/L	50.0	4.1 U	100	5-171			
Isophorone	42		10	ug/L	50.0	4.5 U	83	21-196			
Naphthalene	41		10	ug/L	50.0	3.6 U	82	21-133			
Nitrobenzene	42		10	ug/L	50.0	3.2 U	83	35-180			
N-Nitrosodimethylamine	31		10	ug/L	50.0	3.8 U	61	24-94			
N-Nitroso-di-n-propylamine	40		10	ug/L	50.0	4.5 U	80	5-230			
Pentachlorophenol	53		10	ug/L	50.0	8.2 U	107	14-176			
Phenanthrene	47		10	ug/L	50.0	2.8 U	95	54-120			
Phenol	26		10	ug/L	50.0	5.6 U	53	5-120			
Pyrene	47		10	ug/L	50.0	4.1 U	93	52-120			
2,4,6-Tribromophenol	*84*			*ug/L*	*100*		*84*	*47-128*			
2-Fluorobiphenyl	*43*			*ug/L*	*50.0*		*86*	*44-102*			

QUALITY CONTROL DATA

Semivolatile Organic Compounds by GCMS - Quality Control

Batch 9L27002 - EPA 3510C_MS - Continued

Matrix Spike (9L27002-MS1) Continued Prepared: 12/27/2019 08:32 Analyzed: 12/30/2019 13:54

Source: CC21739-04

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
2-Fluorophenol	*58*			*ug/L*	*100*		*58*	*25-79*			
Nitrobenzene-d5	*40*			*ug/L*	*50.0*		*81*	*43-112*			
Phenol-d5	*47*			*ug/L*	*100*		*47*	*14-54*			
Terphenyl-d14	*49*			*ug/L*	*50.0*		*98*	*65-122*			

Matrix Spike Dup (9L27002-MSD1) Prepared: 12/27/2019 08:32 Analyzed: 12/30/2019 14:26

Source: CC21739-04

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,2,4-Trichlorobenzene	39		10	ug/L	50.0	3.3 U	77	44-142	2	50	
1,2-Dichlorobenzene	36		10	ug/L	50.0	3.2 U	73	32-129	3	25	
1,3-Dichlorobenzene	35		10	ug/L	50.0	3.4 U	71	10-172	2	25	
1,4-Dichlorobenzene	37		10	ug/L	50.0	3.2 U	74	20-124	2	25	
2,4,6-Trichlorophenol	48		10	ug/L	50.0	6.4 U	95	37-144	2	58	
2,4-Dichlorophenol	43		10	ug/L	50.0	6.5 U	85	39-135	3	50	
2,4-Dimethylphenol	9.7	J	10	ug/L	50.0	6.4 U	19	32-120	46	58	QM-07
2,4-Dinitrophenol	48		10	ug/L	50.0	7.7 U	97	5-191	7	132	
2,4-Dinitrotoluene	44		10	ug/L	50.0	3.2 U	88	53-130	6	42	
2,6-Dinitrotoluene	45		10	ug/L	50.0	2.9 U	90	50-158	4	48	
2-Chloronaphthalene	42		10	ug/L	50.0	3.2 U	85	60-120	0.4	24	
2-Chlorophenol	39		10	ug/L	50.0	7.4 U	78	23-134	3	61	
2-Methyl-4,6-dinitrophenol	48		10	ug/L	50.0	6.0 U	97	5-181	8	203	
2-Nitrophenol	45		10	ug/L	50.0	5.2 U	90	29-182	2	55	
3,3'-Dichlorobenzidine	26		10	ug/L	50.0	3.3 U	52	5-262	22	108	
4-Bromophenyl-phenylether	47		10	ug/L	50.0	3.3 U	93	53-127	2	43	
4-Chloro-3-methylphenol	41		10	ug/L	50.0	7.3 U	82	22-147	7	73	
4-Chlorophenyl-phenylether	45		10	ug/L	50.0	3.2 U	90	25-158	3	61	
4-Nitrophenol	30		10	ug/L	50.0	7.9 U	59	5-132	8	131	
Acenaphthene	44		10	ug/L	50.0	3.0 U	88	47-145	0.6	48	
Acenaphthylene	36		10	ug/L	50.0	9.6 U	71	33-145	2	74	
Anthracene	43		10	ug/L	50.0	3.0 U	86	27-133	4	66	
Benzidine	7.1	U	10	ug/L	50.0	7.1 U		10-136		25	QM-07
Benzo(a)anthracene	47		10	ug/L	50.0	3.2 U	94	33-143	0.5	53	
Benzo(a)pyrene	43		10	ug/L	50.0	3.2 U	85	17-163	8	72	
Benzo(b)fluoranthene	46		10	ug/L	50.0	3.4 U	92	24-159	9	71	
Benzo(g,h,i)perylene	54		10	ug/L	50.0	3.7 U	107	5-219	8	97	
Benzo(k)fluoranthene	47		10	ug/L	50.0	3.8 U	94	11-162	5	63	
Bis(2-chloroethoxy)methane	41		10	ug/L	50.0	3.3 U	82	33-184	2	54	
Bis(2-chloroethyl)ether	46		10	ug/L	50.0	3.8 U	92	12-158	5	108	
Bis(2-chloroisopropyl)ether	41		10	ug/L	50.0	3.5 U	82	36-166	2	76	
Bis(2-ethylhexyl)phthalate	45		5.0	ug/L	50.0	3.5 U	91	8-158	3	82	
Butylbenzylphthalate	41		10	ug/L	50.0	5.1 U	83	5-152	11	60	
Chrysene	47		10	ug/L	50.0	3.0 U	94	17-168	3	87	
Dibenzo(a,h)anthracene	55		10	ug/L	50.0	3.8 U	110	5-227	9	126	
Diethylphthalate	45		10	ug/L	50.0	3.0 U	90	5-120	5	100	
Dimethylphthalate	45		10	ug/L	50.0	3.0 U	90	5-120	4	183	
Di-n-butylphthalate	45		10	ug/L	50.0	3.2 U	89	1-120	5	47	
Di-n-octylphthalate	46		10	ug/L	50.0	4.7 U	92	4-146	4	69	
Fluoranthene	45		10	ug/L	50.0	4.0 U	89	26-137	4	66	
Fluorene	44		10	ug/L	50.0	2.9 U	89	59-121	1	38	

QUALITY CONTROL DATA

Semivolatile Organic Compounds by GCMS - Quality Control

Batch 9L27002 - EPA 3510C_MS - Continued

Matrix Spike Dup (9L27002-MSD1) Continued Prepared: 12/27/2019 08:32 Analyzed: 12/30/2019 14:26

Source: CC21739-04

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Hexachlorobenzene	46		10	ug/L	50.0	3.0 U	91	5-152	1	55	
Hexachlorobutadiene	40		10	ug/L	50.0	4.1 U	79	24-120	0.8	62	
Hexachlorocyclopentadiene	42		10	ug/L	50.0	3.8 U	84	10-99	3	25	
Hexachloroethane	35		10	ug/L	50.0	3.0 U	70	40-120	3	52	
Indeno(1,2,3-cd)pyrene	55		10	ug/L	50.0	4.1 U	109	5-171	9	99	
Isophorone	40		10	ug/L	50.0	4.5 U	80	21-196	4	93	
Naphthalene	40		10	ug/L	50.0	3.6 U	81	21-133	0.9	65	
Nitrobenzene	41		10	ug/L	50.0	3.2 U	82	35-180	1	62	
N-Nitrosodimethylamine	30		10	ug/L	50.0	3.8 U	61	24-94	0.3	25	
N-Nitroso-di-n-propylamine	38		10	ug/L	50.0	4.5 U	77	5-230	4	87	
Pentachlorophenol	50		10	ug/L	50.0	8.2 U	99	14-176	7	86	
Phenanthrene	47		10	ug/L	50.0	2.8 U	94	54-120	0.9	39	
Phenol	26		10	ug/L	50.0	5.6 U	52	5-120	1	64	
Pyrene	44		10	ug/L	50.0	4.1 U	88	52-120	5	49	
2,4,6-Tribromophenol	*82*			*ug/L*	*100*		*82*	*47-128*			
2-Fluorobiphenyl	*44*			*ug/L*	*50.0*		*88*	*44-102*			
2-Fluorophenol	*59*			*ug/L*	*100*		*59*	*25-79*			
Nitrobenzene-d5	*41*			*ug/L*	*50.0*		*82*	*43-112*			
Phenol-d5	*48*			*ug/L*	*100*		*48*	*14-54*			
Terphenyl-d14	*47*			*ug/L*	*50.0*		*93*	*65-122*			

FLAGS/NOTES AND DEFINITIONS

B	The analyte was detected in the associated method blank.
D	The sample was analyzed at dilution.
J	The reported value is between the laboratory method detection limit (MDL) and the laboratory method reporting limit (MRL), adjusted for actual sample preparation data and moisture content, where applicable.
U	The analyte was analyzed for but not detected to the level shown, adjusted for actual sample preparation data and moisture content, where applicable.
E	The concentration indicated for this analyte is an estimated value above the calibration range of the instrument. This value is considered an estimate.
MRL	Method Reporting Limit. The MRL is roughly equivalent to the practical quantitation limit (PQL) and is based on the low point of the calibration curve, when applicable, sample preparation factor, dilution factor, and, in the case of soil samples, moisture content.
PQL	PQL: Practical Quantitation Limit. The PQL presented is the laboratory MRL.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence (85% or greater confidence) to make a "tentative identification".
P	Greater than 25% concentration difference was observed between the primary and secondary GC column. The lower concentration is reported.
[CALC]	Calculated analyte - MDL/MRL reported to the highest reporting limit of the component analyses.
J-06	The associated laboratory control sample exhibited low bias; the reported result should be considered to be a minimum estimate.
O-05	This sample was extracted outside of the EPA recommended holding time.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
QM-11	Precision between duplicate matrix spikes of the same sample was outside acceptance limits.
QS-03	Surrogate recovery outside acceptance limits
QV-01	The associated continuing calibration verification standard exhibited high bias; since the result is ND, there is no impact.
QV-02	The associated continuing calibration verification standard exhibited low bias; the reported result should be considered to be a minimum estimate.

ENVIRONMENTAL CONSERVATION LABORATORIES CHAIN-OF-CUSTODY RECORD

www.encolabs.com

10775 Central Port Dr.
Orlando, FL 32824
(407) 826-5314 Fax (407) 850-6945

4810 Executive Park Court, Suite 111
Jacksonville, FL 32216-6069
(904) 296-3007 Fax (904) 296-6210

102-A Woodwinds Industrial Ct.
Cary, NC 27511
(919) 467-3090 Fax (919) 467-3515

Client Name: Catlin Engineers & Scientists (CA038)	Project Number: [none]
Address: 220 Old Dairy Road	Project Name/Desc: NCDOT Goldsboro
City/ST/Zip: Wimington, NC 28405	PO # / Billing Info: ~~190724-3~~ 191216-04
Tel: (910) 452-5861 / Fax:	Reporting Contact: Ben Ashba
Sampler(s) Name, Affiliation (Print): COREY FUTRAL	Billing Contact: A/P
Sampler(s) Signature: Corey D. Futral	Site Location / Time Zone

Requested Turnaround Times

Note : Rush requests subject to acceptance by the facility

✓ Standard

___ Expedited

Due ___/___/___

Lab Workorder: CC20427

Item #	Sample ID (Field Identification)	Collection Date	Collection Time	Comp / Grab	Matrix (see codes)	Total # of Containers	Requested Analyses: 6200B	625.1	Sample Comments
	1816DPT-04	12/9/19	1615	G	GW	4	X	X	* PLEASE REPORT
	1813DPT-03	12/10/19	1230	G	GW	4	X	X	EACH SAMPLE
	204DPT-02	12/10/19	1200	G	GW	4	X	X	ON SEPERATE
	1903DPT-02	12/10/19	1530	G	GW	4	X	X	REPORT; TOTAL
	2305DPT-02	12/11/19	0945	G	GW	4	X	X	OF NINE (9).
	2394DPT-06	12/12/19	1645	G	GW	4	X	X	
	2436DPT-04	12/11/19	1345	G	GW	4	X	X	
	2495DPT-05	12/12/19	1145	G	GW	4	X	X	
	2502DPT-05	12/13/19	0945	G	GW	4	X	X	

Preservation (See Codes) (Combine as necessary)

<-- Total # of Containers

Sample Kit Prepared By:	Date/Time: 12/3/19	Relinquished By: Corey D. Futral	Date/Time: 12/16/19 @ 1145	Received By:	Date/Time: 12/17/19 1100
Comments/Special Reporting Requirements		Relinquished By	Date/Time	Received By	Date/Time
		Relinquished By	Date/Time	Received By	Date/Time
		Cooler #'s & Temps on Receipt: C-100, C-3048 2.8°		Condition Upon Receipt: ✓ Acceptable ___ Unacceptable	

Matrix : **GW**-Groundwater **SO**-Soil **DW**-Drinking Water **SE**-Sediment **SW**-Surface Water **WW**-Wastewater **A**-Air **O**-Other (detail in comments)

Preservation: **I**-Ice **H**-HCl **N**-HNO3 **S**-H2SO4 **NO**-NaOH **O**-Other (detail in comments)

Note : All samples submitted to ENCO Labs are in accordance with the terms and conditions listed on the reverse of this form, unless prior written agreements exist

ECS SOUTHEAST, LLC
NC Engineering License No. F-1519
Geotechnical • Construction Materials • Environmental • Facilities

February 28, 2025

Matthew J. Alexander, P.E.
Assistant State Geotechnical Engineer
Geotechnical Engineering Unit
1589 Mail Service Center
Raleigh, NC. 27699-1589

Reference: **Potential UST Investigation Letter Report**
ECS Project: 49-24760
TIP No.: U-3609B
WSB No.: 39026.1.2
County: Wayne
Description: US 13 (Berkley Blvd) from SR 1003 (New Hope Rd) to US 70 Bypass. With intersection improvements at SR 1572 (Saulston Rd)
Site:

Parcel # Plan Sheet	Owner	Site Address
001 PSH 4	N.S. Holdings LLC	1813 N. Berkeley Blvd Goldsboro, NC 27534

Dear Mr. Alexander:

ECS Southeast, LLC (ECS) has prepared a summary letter report to document the findings and observations for the two (2) potential underground storage tanks (USTs) previously identified at the above-referenced site. This letter report includes a description of the work performed, findings, and observations as authorized by your acceptance of ECS Proposal No. 49-48184P (dated December 10, 2024) with a Notice to Proceed (dated December 17, 2024) under Limited Services Contract Number 7000022001, P.O. Number 6300078250.

To facilitate construction within the right of way (ROW) and/or easement for the US 13 improvements (including drainage) in Goldsboro, North Carolina. The North Carolina Department of Transportation (NCDOT) indicated UST closure by removal was necessary to for roadway construction.

In response to a request for proposal by Mr. Matthew Alexander, P.E. dated December 4, 2024 and subsequent work scope discussions with Mr. Craig Haden, L.G., ECS Southeast, LLC (ECS) submitted a proposal for conducting UST removal activities along the NCDOT Project "Goldsboro – US 13 (Berkeley Blvd.) from SR 1003 (New Hope Rd.) to SR 1572 (Saulston Rd.)" in Goldsboro, North Carolina at 1813 N. Berkley Boulevard – former N.S. Holdings, LLC property (Site). **Figure 1** illustrates the general Site location. The NCDOT Conventional Plan Sheet Symbols are provided on **Figure 2** and the Site is illustrated on **Figure 3**.

Background

Historical soil and groundwater sample results (8 soil, 1 groundwater) reported by others (CATLIN Engineers and Scientist's [CATLIN] *Geoenvironmental Phase II Investigation Report* dated January 27, 2020) did not indicate petroleum impacts to soil or groundwater at the Site. One (1) probable UST and one (1) no confidence anomaly were identified within the proposed ROW and/or easement during site geophysical surveying. The Site is identified on the NCDEQ Division of Waste Management Site Locator Tool as "Site ID: AST Incident #95750, UST Number: WA-89303 and WA-27682". No associated Laserfiche documents were linked to the Site.

UST Investigation

Evo Corporation, Inc. (Evo) was subcontracted by ECS to provide equipment and personnel for UST removal activities. ECS submitted A Notice of Intent for Permanent Closure or Change-In Service (UST-3) form for the two (2) 2,000-gallon (assumed) capacity USTs to the North Carolina Department of Environmental Quality (NCDEQ) UST Section on December 20, 2024.

Before field activities, ECS contacted 811 to locate/mark public underground utilities at the Site. Required separation distances between subsurface activities and marked utilities (typically 30-inches) were maintained during the field activities. Evo contacted the local authorities, and a UST removal permit was obtained from the Wayne County fire marshal.

Additionally, ECS prepared a site-specific health and safety plan (HASP). The HASP documented the known or suspected hazards, applicable personal protective equipment for site personnel, and emergency response procedures. ECS, its subcontractors, and applicable site personnel reviewed the site-specific HASP.

On January 20, 2025, ECS and Evo mobilized to the Site. ECS observed and documented the findings during excavation activities conducted Evo. Large concrete slabs and various construction debris were encountered at approximately 1 foot below ground surface (ft. bgs). Evo continued excavating to a maximum depth of 5 ft. bgs and no USTs were encountered. The excavated soil was periodically collected by hand and placed in sealable polyethylene bags. The soil headspace in the bags was screened for volatile organic vapors with a photo-ionization detector (PID). Elevated PID readings were not observed. Soils were stockpiled beside the eastern sidewall of the suspected UST excavation area. Site photographs documenting the findings and observations during excavation activities are provided as an attachment.

The excavation was backfilled with the stockpiled overburden (emplaced in approximately 12-inch lifts and bucket tamped) and capped with approximately 6 inches of ABC stone. The backfilling and Site restoration activities were completed by Evo on January 20, 2025.

Summary, Conclusions, and Recommendations

On January 20th, 2025, ECS documented no indications USTs were present on at the Site. Groundwater was not observed in the excavation basin at its maximum depth of approximately 5 ft bgs.

Based on the finding and observations, CATLIN's historical soil and groundwater sample results, and the

current NCDEQ regulations, it is ECS' opinion that no further action at the Site is required. ECS recommends a copy of this letter report be submitted to Ms. Allison Ward (Allison.Ward@deq.nc.gov) at the NCDEQ Washington Regional Office.

If you have any questions or need additional services, please feel free to contact us at the e-mail and phone numbers below.

Respectfully,

ECS SOUTHEAST, LLC

Signed by:
Benjamin J Ashba, PG
9F56798A088342...

NORTH CAROLINA LICENSED SEAL 2328 GEOLOGIST BENJAMIN J. ASHBA

Samantha M. Szakasits, P.G.
Staff Project Manager
sszakasits@ecslimited.com
919-616-2679

Benjamin J. Ashba, P.G.
Associate Principal
bashba@ecslimited.com
910-602-8902

Scott M. Werley, P.G.
Environmental Principal
swerley@ecslimited.com
984-297-7285

Attachments: Figures – Site Vicinity, NCDOT Conventional Plan Sheet Symbols, Site Plan
Site Photographs

SITE VICINITY

SOURCE: USGS TOPOGRAPHIC QUADRANGLE MAPS
- (A) NORTHEAST GOLDSBORO, NC 2022
- (B) JASON, NC 2022
- (C) SOUTHEAST GOLDSBORO, NC 2022
- (D) LAGRANGE, NC 2022

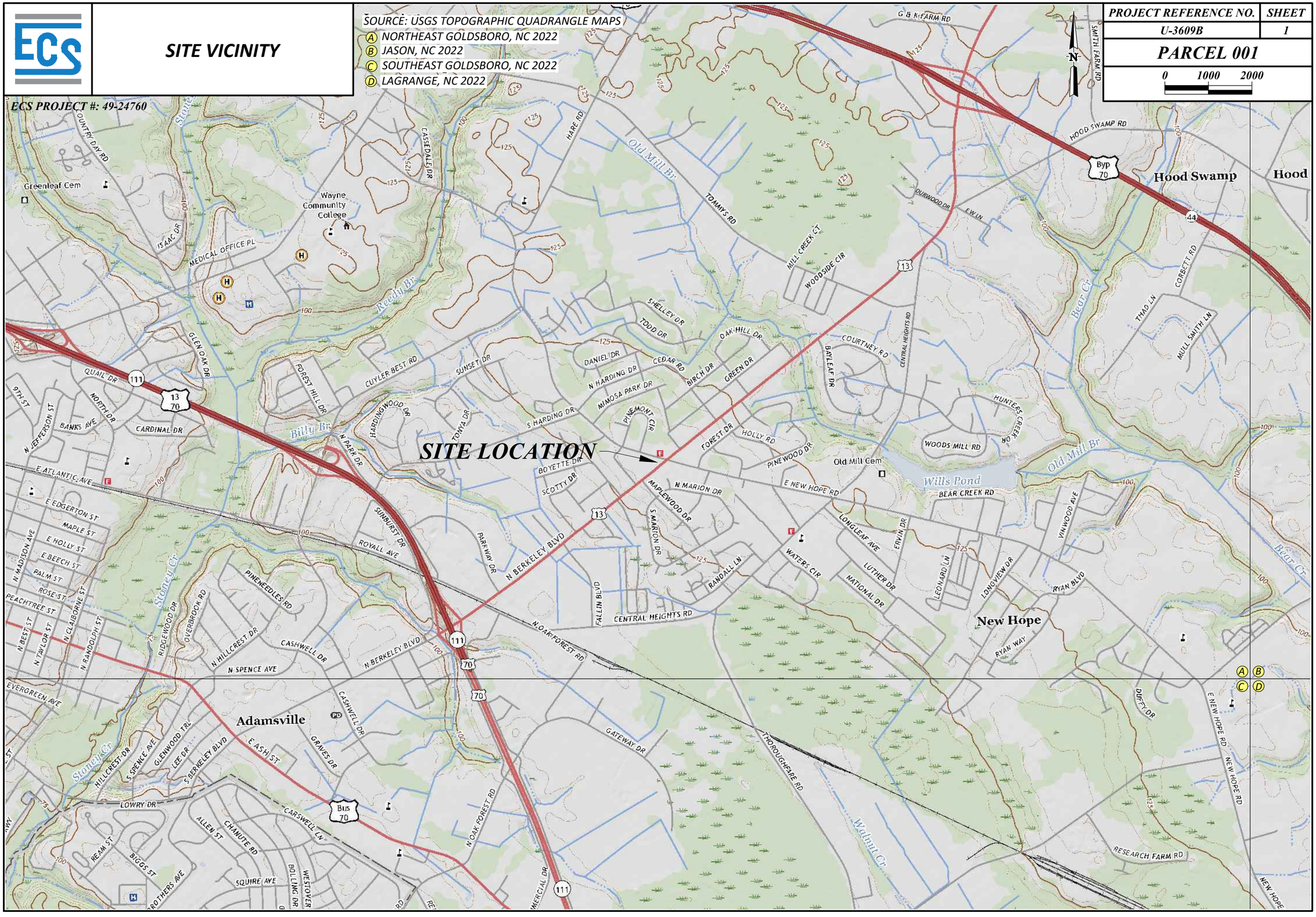
PROJECT REFERENCE NO.	SHEET
U-3609B	1

PARCEL 001

0 1000 2000

ECS PROJECT #: 49-24760

SITE LOCATION



04/06/15

PROJECT REFERENCE NO.	FIGURE NO.
U-3609B	2

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

Note: Not to Scale **S.U.E. = Subsurface Utility Engineering*

BOUNDARIES AND PROPERTY:

- State Line
- County Line
- Township Line
- City Line
- Reservation Line
- Property Line
- Existing Iron Pin — EIP
- Property Corner
- Property Monument — ECM
- Parcel/Sequence Number — 123
- Existing Fence Line
- Proposed Woven Wire Fence
- Proposed Chain Link Fence
- Proposed Barbed Wire Fence
- Existing Wetland Boundary — WLB
- Proposed Wetland Boundary — WLB
- Existing Endangered Animal Boundary — EAB
- Existing Endangered Plant Boundary — EPB
- Existing Historic Property Boundary — HPB
- Known Contamination Area: Soil — S
- Potential Contamination Area: Soil — S
- Known Contamination Area: Water — W
- Potential Contamination Area: Water — W
- Contaminated Site: Known or Potential

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

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

RAILROADS:

- Standard Gauge — CSX TRANSPORTATION
- RR Signal Milepost — MILEPOST 35
- Switch — 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 — RW
- Proposed Right of Way Line with Iron Pin and Cap Marker — RW
- Proposed Right of Way Line with Concrete or Granite R/W Marker — RW
- Proposed Control of Access Line with Concrete C/A Marker — CA
- Existing Control of Access — CA
- Proposed Control of Access — CA
- Existing Easement Line — E
- Proposed Temporary Construction Easement — E
- Proposed Temporary Drainage Easement — TDE
- Proposed Permanent Drainage Easement — PDE
- Proposed Permanent Drainage / Utility Easement — DUE
- Proposed Permanent Utility Easement — PUE
- Proposed Temporary Utility Easement — TUE
- Proposed Aerial Utility Easement — AUE
- Proposed Permanent Easement with Iron Pin and Cap Marker

ROADS AND RELATED FEATURES:

- Existing Edge of Pavement
- Existing Curb
- Proposed Slope Stakes Cut — C
- Proposed Slope Stakes Fill — F
- Proposed Curb Ramp — CR
- 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 — Vineyard

EXISTING STRUCTURES:

MAJOR:

- Bridge, Tunnel or Box Culvert — CONC
- Bridge Wing Wall, Head Wall and End Wall — CONC WW

MINOR:

- Head and End Wall — CONC HW
- Pipe Culvert
- Footbridge
- Drainage Box: Catch Basin, DI or JB — CB
- Paved Ditch Gutter
- Storm Sewer Manhole — S
- Storm Sewer — S

UTILITIES:

POWER:

- Existing Power Pole
- Proposed Power Pole
- Existing Joint Use Pole
- Proposed Joint Use Pole
- Power Manhole — P
- Power Line Tower
- Power Transformer
- U/G Power Cable Hand Hole
- H-Frame Pole
- U/G Power Line LOS B (S.U.E.*) — P
- U/G Power Line LOS C (S.U.E.*) — P
- U/G Power Line LOS D (S.U.E.*) — P

TELEPHONE:

- Existing Telephone Pole
- Proposed Telephone Pole
- Telephone Manhole — T
- Telephone Pedestal — T
- Telephone Cell Tower
- U/G Telephone Cable Hand Hole — HH
- U/G Telephone Cable LOS B (S.U.E.*) — T
- U/G Telephone Cable LOS C (S.U.E.*) — T
- U/G Telephone Cable LOS D (S.U.E.*) — T
- U/G Telephone Conduit LOS B (S.U.E.*) — TC
- U/G Telephone Conduit LOS C (S.U.E.*) — TC
- U/G Telephone Conduit LOS D (S.U.E.*) — TC
- U/G Fiber Optics Cable LOS B (S.U.E.*) — T FO
- U/G Fiber Optics Cable LOS C (S.U.E.*) — T FO
- U/G Fiber Optics Cable LOS D (S.U.E.*) — T FO

WATER:

- Water Manhole — W
- Water Meter
- Water Valve
- Water Hydrant
- U/G Water Line LOS B (S.U.E*) — W
- U/G Water Line LOS C (S.U.E*) — W
- U/G Water Line LOS D (S.U.E*) — W
- Above Ground Water Line — A/G Water

TV:

- TV Pedestal — C
- TV Tower
- U/G TV Cable Hand Hole — HH
- U/G TV Cable LOS B (S.U.E.*) — TV
- U/G TV Cable LOS C (S.U.E.*) — TV
- U/G TV Cable LOS D (S.U.E.*) — TV
- U/G Fiber Optic Cable LOS B (S.U.E.*) — TV FO
- U/G Fiber Optic Cable LOS C (S.U.E.*) — TV FO
- U/G Fiber Optic Cable LOS D (S.U.E.*) — TV FO

GAS:

- Gas Valve
- Gas Meter
- U/G Gas Line LOS B (S.U.E.*) — G
- U/G Gas Line LOS C (S.U.E.*) — G
- U/G Gas Line LOS D (S.U.E.*) — G
- Above Ground Gas Line — A/G Gas

SANITARY SEWER:

- Sanitary Sewer Manhole
- Sanitary Sewer Cleanout
- U/G Sanitary Sewer Line — SS
- Above Ground Sanitary Sewer — A/G Sanitary Sewer
- SS Forced Main Line LOS B (S.U.E.*) — FSS
- SS Forced Main Line LOS C (S.U.E.*) — FSS
- SS Forced Main Line LOS D (S.U.E.*) — FSS

MISCELLANEOUS:

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

ECS PROJECT #: 49-24760

SITE PLAN

NOTE: HISTORICAL GEOPHYSICAL ANOMALY LOCATIONS WERE EXCAVATED ON 01/17/2025. NO USTs WERE ENCOUNTERED

PROJECT REFERENCE NO.	FIGURE
U-3609B	3

PARCEL 001

0 40 80
FEET

N

16+00

15+00

20+00

EXISTING R/W

BST

CONC

F

OS

S

NO CONFIDENCE ANOMALY

PROBABLE METALLIC UST

APPROXIMATE EXCAVATION LIMITS

N. S. HOLDINGS LLC
D.B. 2617 PG. 778

ISBLK BUS

1813 N. BERKELEY BLVD.

BERKELEY BLVD 60' PAVED ROADWAY

EXISTING R/W

MW

CIRCLE K STORES, INC.
D.B. 3215
PG. 464

CIRCLE K STORE
D.B. 3217

6 GAS PUMPS
2-ISLAND
U/MTL CANOPY

Photo 1 – View of the heavy equipment moved to and staged at the Site on 1/17/2025.

Photo 2 – Additional view of the heavy equipment moved to and staged at the Site on 1/17/2025.

Photo 3 – View of the excavation revealing tan sand fill material, concrete, and construction debris on 1/20/2025.

Photo 4 – Another view of the excavation revealing tan sand fill material, concrete, and construction debris on 1/20/2025.

Photo 5 –View of the excavation revealing concrete and other construction debris on 1/20/2025.

Photo 2 – Detailed view of the concrete blocks observed in the excavation on 1/20/2025

Photo 7 – View of the excavation area on its southern sidewall excavated to 5 ft bgs.

Photo 8 – Another view of the excavation area on its southern sidewall excavated to 5 ft bgs.

Photo 9 – View of the excavated extended another 3-4 feet to the south in an effort to locate the potential USTs.

Photo 10 – View of the extended portion of the excavation advanced down to 4 ft. bgs.

Photo 11 – View of the center and northern portions of the excavation at 5 ft. bgs.

Photo 12 – Another view of the center and northern portions of the excavation at 5 ft. bgs.

Photo 13 – View of the concrete debris and stockpiled excavated material placed back in the excavation.

Photo 14 – View of the excavation backfilled with the stockpiled excavated material.

Photo 15 – View of the excavated area capped with approximately 6 inches of ABC stone.

Photo 16 – Another view of the excavated area capped with approximately 6 inches of ABC stone.