

**PRELIMINARY SITE ASSESSMENT
FOR
PARCEL 196, JOSHUA JOHNSON PROPERTY
1023 EVANS STREET
GREENVILLE, PITT COUNTY, NORTH CAROLINA**

**STATE PROJECT: U-3315
WBS ELEMENT: 35781.1.2**

PREPARED FOR:



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

NOVEMBER 20, 2012

PREPARED BY:

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CATLIN PROJECT NO. 212077

**CORPORATE GEOLOGY LICENSE CERTIFICATION NO. C-118
CORPORATE LICENSURE NO. FOR ENGINEERING SERVICES C-0585**

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**STATE PROJECT: U-3315
WBS ELEMENT: 35781.1.2**

NOVEMBER 20, 2012

1.0 PURPOSE OF INVESTIGATION AND DESCRIPTION

CATLIN Engineers and Scientists (CATLIN) was retained by the North Carolina Department of Transportation (NCDOT) Geotechnical Engineering Unit to provide a field investigation concluding with a Preliminary Site Assessment (PSA) for the above site. In response to a June 19, 2012 Request for Proposal (RFP) (Updated July 10, 2012) and subsequent work scope clarifications with Mr. Gordon Box, LG and Mr. Cyrus Parker, PE, LG, CATLIN submitted a proposal for conducting an investigation at the Parcel 196, Joshua Johnson Property. The parcel/property is located at 1023 Evans Street along the NCDOT Project "Stantonsburg Road/Tenth Street Connector from Memorial Drive (US 13) to Evans Street" in Greenville, North Carolina. Sheet 1 illustrates the general location.

The following specific parcel information was provided by NCDOT:

... what appears to be a former pump island was observed adjacent to Evans Street.

According to NCDOT acquisition of the right of way (ROW) is necessary for roadway construction (State Project U-3315) and specifically at the above referenced parcel (Parcel 196). A site investigation is requested before ROW acquisition and roadway construction. Underground storage tanks (USTs) and/or associated piping are suspected in the proposed ROW and/or easement(s).

The work scope as requested includes:

- Communicate progress reports to the GeoEnvironmental Section.
- Determine if contaminated soils or USTs are present within the NCDOT ROW, controlled access boundary (CA), or easement with particular emphasis on the vicinity of proposed excavations for drainage, utilities, and slope stake cuts.
- Estimate the quantity of impacted soils. Estimate the volume of impacted soils across the study area and the volume that will require excavation during construction. Indicate the approximate area of soil contamination on a site map and CADD file.
- Research the site for past uses and possible releases and include findings in final report.
- Report the depth to groundwater and obtain one groundwater sample from the site with emphasis on the vicinity of proposed drainage features. Test groundwater sample for contaminants relevant to the site's past use and/or possible releases.
- Provide a MicroStation file with the boring locations and estimated extent of impacted soils (if any).
- Prepare a report including field activities, findings, and recommendations and submit in triplicate and electronically to the NCDOT GeoEnvironmental Section.

This report documents our activities and findings at Parcel 196, Joshua Johnson Property (currently Tech Shop), 1023 Evans Street, Greenville, North Carolina. According to the RFP, Parcel 196 is two (2) properties addressed as 1023 and 1025 Evans Street. This investigation was conducted only on the portion addressed as 1023 Evans Street. The site is illustrated on Sheet 2.

2.0 METHODS

Approximate proposed boring locations were discussed with NCDOT personnel before final Workplan submittal. There were no slope stake cuts identified within the subject site. Per NCDOT request, borings (soil samples) were located near proposed drainage features (as indicated on NCDOT provided plan sheets). The NCDOT Conventional Plan Sheet Symbols are provided on Sheet 1A. Accessible proposed drainage features at the site include drainage piping.

North Carolina Department of Environment and Natural Resources (NCDENR) UST Section personnel were interviewed and the NCDENR UST database was reviewed. NCDENR Dry-cleaning Solvent Cleanup Act (DSCA) Program personnel were also interviewed and the DSCA site list was reviewed.

CATLIN coordinated geophysical activities concurrently with soil boring and

sampling. The geophysical investigation methods are detailed in the SCHNABEL ENGINEERING SOUTH, PC (Schnabel) geophysical report provided in Appendix A. Final boring/sample location was determined based on proposed drainage feature location (and elevation), geophysical results, file review information, field observations, and discussion with NCDOT personnel. CATLIN's field activities began and concluded at the site on July 25, 2012.

Based on review of geophysical information, file review information, discussions with knowledgeable locals, and groundwater analytical results from nearby parcels, groundwater contamination was not suspected and a groundwater sample was not collected at the site.

2.1 FIELD METHODS

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

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

CATLIN personnel gathered subsurface soil data at the site by Direct Push Technology (DPT) boring advancement using an AMS PowerProbe™ 9600D (PowerProbe). A boring was identified by the parcel number 196 followed by "DPT" and boring number (example: 196DPT-01). One boring was located near proposed drainage catch basin 1108. The boring was advanced to depth by static force and a 90-pound hydraulic percussion hammer. Two and one-quarter inch diameter by four-foot length steel is used as casing. Soil samples were continuously collected in four-foot long and one and one-half inch diameter 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). Soils were collected continuously from near the surface to boring termination. The boring for soil sample collection was terminated at six (6) feet below land surface (BLS). Half of the soils from the liners were removed in two-foot intervals and placed in sealable polyethylene bags for organic vapor analysis (OVA) headspace screening utilizing a photo ionization detector (PID). The USCS, OVA/PID reading, and any indication of petroleum impact were recorded on the field log and has been transferred to the Boring Log provided in Appendix B. As illustrated on Sheet 2, one (1) boring was advanced for soil sample collection.

Soil samples for laboratory analysis were collected from the sample

interval above the water table with the highest OVA/PID reading and/or the sample interval near the bottom of the proposed drainage feature installation elevation. The sample interval was included with the boring identification as part of the soil sample identification [196DPT-01(5-5.5 ft)]. The sample identification is included on the Boring Log in Appendix B and the laboratory analytical Chain of Custody in Appendix C.

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

The borehole was abandoned to just below the surface using three-eighth inch bentonite chips. Bentonite and water were poured into the borehole simultaneously to facilitate hydration. Final borehole and sample locations were surveyed utilizing a Trimble® GPS survey instrument.

2.2 LABORATORY TESTING

Following boring advancement, selected soils were placed in the appropriately labeled glassware. In an attempt to provide information regarding possible petroleum and/or dry cleaning solvent impact to soils, a sample was analyzed for volatile and semi-volatile organics by Environmental Protection Agency (EPA) Methods 8260B and 8270D Base Neutral (BN).

One (1) soil sample was submitted to SGS Analytical Perspectives (NC Certification #481). Chain of Custody documentation is included in Appendix C.

3.0 RESULTS

NCDENR File Review and Interviews

NCDENR Washington Regional Office personnel were not aware of any releases on record for the site. The NCDENR UST database does not list any tanks registered at the site. NCDENR DSCA Program personnel were also interviewed. The site does not appear on the NCDENR DSCA site list. There are no UST or DSCA sites adjacent to the subject site.

Historical aerial photographs were also reviewed and local "historians" were interviewed. Based on review of the historical aerial photographs and locals with knowledge of the area, there is no indication the site was previously

utilized as a gas/service station. The existing structure at the site was initially a drive thru car wash. The concrete pad identified previously by NCDOT personnel as a possible gasoline dispenser pad was determined to be associated with a building related to the former car wash.

Geophysical Investigation

The complete geophysical investigation report by Schnabel is included in Appendix A and indicates that metallic USTs are unlikely to be encountered within 8 feet of the ground surface in the areas surveyed on the subject property.

Site Reconnaissance

CATLIN personnel identified the proposed drainage feature locations. Photographs of the site are provided in Appendix D. Additional photographs are included in the Schnabel report provided in Appendix A.

Soil and Groundwater

Sandy clay / clayey sand and clay was encountered at boring 196DPT-01. No petroleum hydrocarbon odor was noted in any soils. The complete boring log including OVA/PID results are provided in Appendix B.

Summarized soil sample analytical results are provided on Table 1. The soil sample location and summarized soil analytical results are illustrated on Sheet 2. As indicated on Table 1 and Sheet 2, no compound concentrations were reported above the laboratory quantitation limits or UST Section Soil-To-Groundwater (STGW) Maximum Soil Contaminant Concentrations (MSCCs). The complete laboratory analytical report is provided in Appendix C.

Depth to groundwater was not measured but is estimated at approximately nine (9) feet BLS.

4.0 SUMMARY AND RECOMMENDATIONS

A preliminary site assessment was conducted at the subject site as requested by NCDOT. NCDOT is planning roadway construction including utility installation and ROW acquisition at the site.

No impacted soils were revealed in a sample collected from the proposed construction area (Catch Basin Number 1108). Based on geophysical survey results, site reconnaissance, and NCDENR file review information, there are no indications of any USTs located at the site. It is not anticipated that groundwater will be encountered during construction activities and groundwater contamination is not suspected at the site.

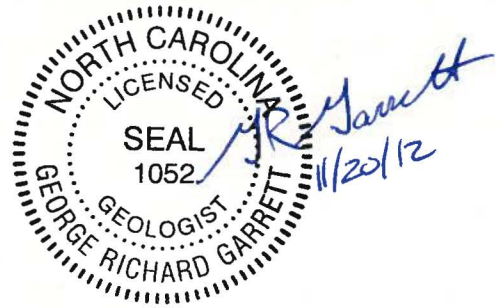
5.0 LIMITATIONS

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.

6.0 SIGNATURES



Benjamin J. Ashba, P.G.
Project Manager



G. Richard Garrett, P.G.
Senior Project Manager

TABLES

TABLE 1
SUMMARY OF SOIL LABORATORY RESULTS
- EPA METHODS 8260B AND 8270D BASE NEUTRAL

Parcel 196, Joshua Johnson – Former Car Wash, currently Tech Shop
1023 Evans Street

Sample ID	Method →		EPA Method 8260B		EPA Method 8270D Base Neutral
	Contaminant of Concern →		Methylene chloride	All other EPA Method 8260B Parameters	All EPA Method 8270D Base Neutral Parameters
	Date Collected	Location			
196DPT01 (5-5.5ft)	7/25/12	@ CB 1108	0.693 J	BMDL	BMDL
Residential MSCC (ug/kg)			85,000	Varies	Varies
Industrial/Commercial MSCC (ug/kg)			763,000	Varies	Varies
STGW MSCC (ug/kg)			20	Varies	Varies

All results in micrograms per kilogram (ug/kg).

Sample depth below land surface provided in parenthesis as part of the sample identification.

CB = Proposed Catch Basin

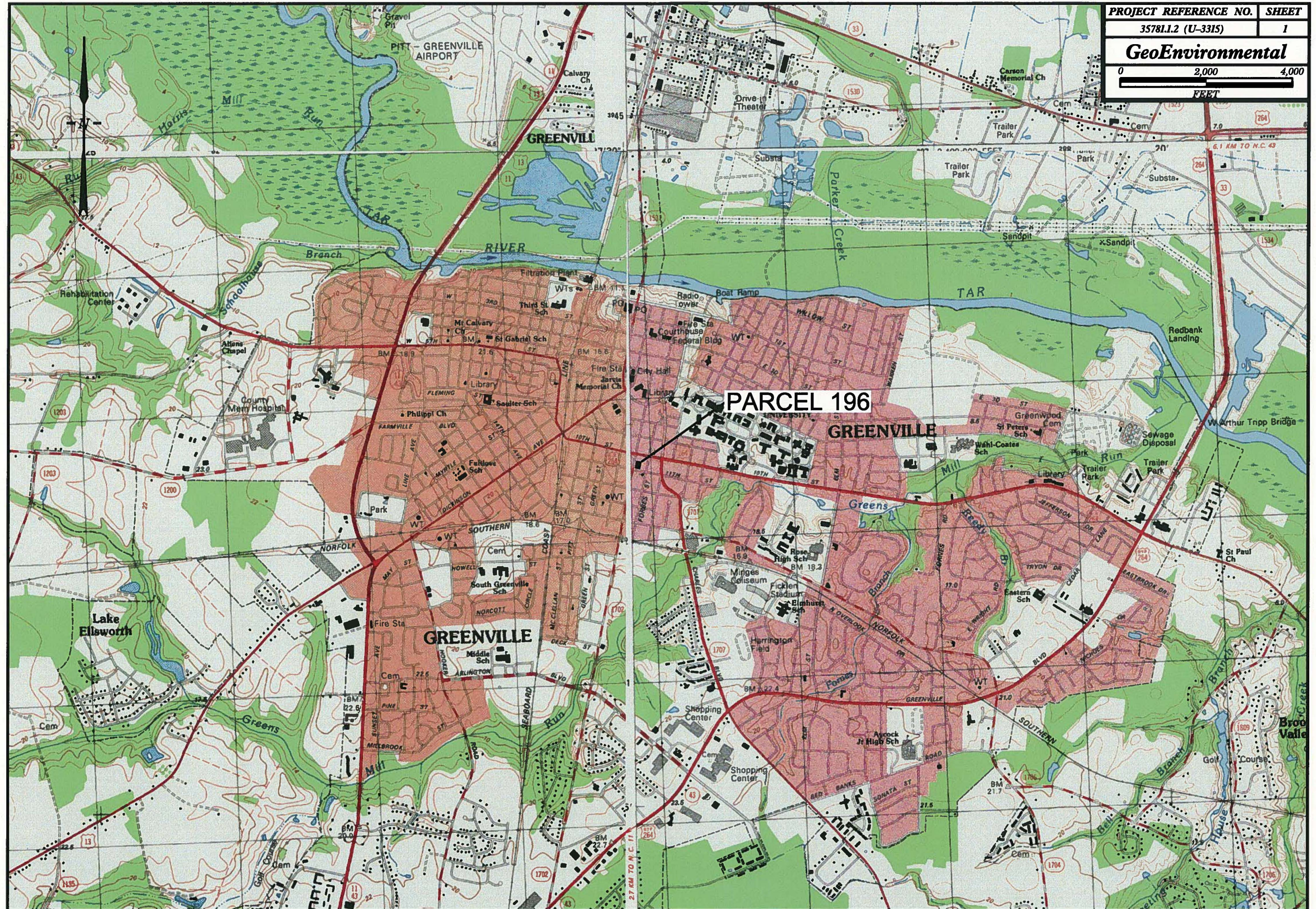
BMDL = Below Method Detection Limit, refer to analytical report for a complete list of parameters and detection limits

J = Estimated Concentration

MSCC = Maximum Soil Contaminant Concentration

STGW = Soil To Groundwater

SHEETS



Note: Not to Scale

*S.U.E. = Subsurface Utility Engineering

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

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

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

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

RAILROADS:

Standard Gauge	
RR Signal Milepost	
Switch	
RR Abandoned	
RR Dismantled	

RIGHT OF WAY:

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

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	
Existing Curb	
Proposed Slope Stakes Cut	
Proposed Slope Stakes Fill	
Proposed Curb Ramp	
Curb Cut Future Ramp	
Existing Metal Guardrail	
Proposed Guardrail	
Existing Cable Guiderail	
Proposed Cable Guiderail	
Equality Symbol	
Pavement Removal	

VEGETATION:

Single Tree	
Single Shrub	
Hedge	
Woods Line	

Orchard	
Vineyard	

EXISTING STRUCTURES:

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

UTILITIES:

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

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

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

SANITARY SEWER:

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

MISCELLANEOUS:

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

AATUR
E.O.I.

SUMMARY OF SOIL LABORATORY RESULTS
 - EPA METHODS 8260B AND 8270D BASE NEUTRAL

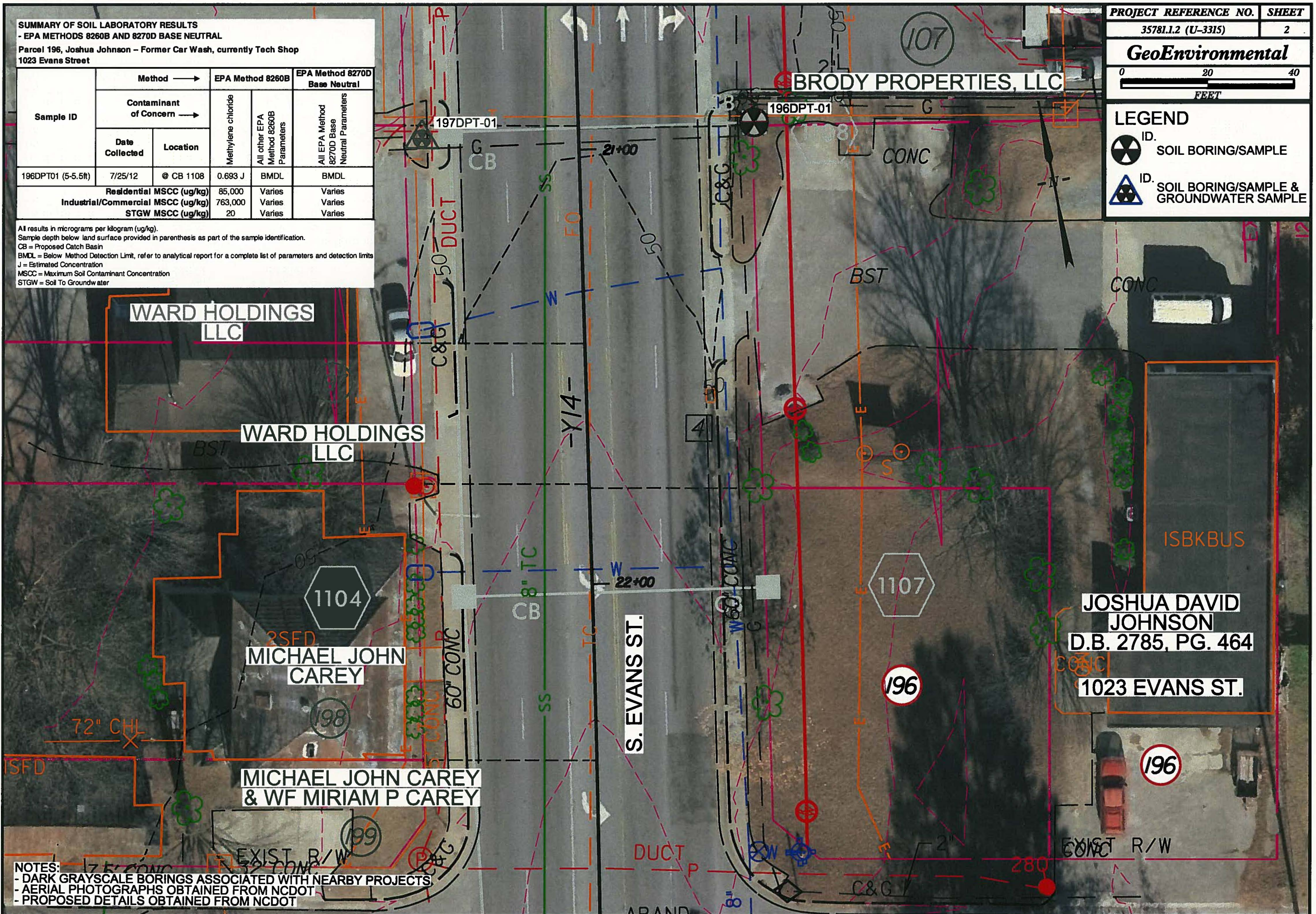
Parcel 196, Joshua Johnson - Former Car Wash, currently Tech Shop
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196DPT01 (5-5.5ft)	7/25/12	@ CB 1108	0.693 J	BMDL	BMDL
	Residential MSCC (ug/kg)		85,000	Varies	Varies
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All results in micrograms per kilogram (ug/kg).
 Sample depth below land surface provided in parenthesis as part of the sample identification.
 CB = Proposed Catch Basin
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 J = Estimated Concentration
 MSCC = Maximum Soil Contaminant Concentration
 STGW = Soil To Groundwater

LEGEND

- ⊗ ID. SOIL BORING/SAMPLE
- ⊕ ID. SOIL BORING/SAMPLE & GROUNDWATER SAMPLE



NOTES:
 - DARK GRAYSCALE BORINGS ASSOCIATED WITH NEARBY PROJECTS
 - AERIAL PHOTOGRAPHS OBTAINED FROM NCDOT
 - PROPOSED DETAILS OBTAINED FROM NCDOT

APPENDICES

APPENDIX A
SCHNABEL GEOPHYSICAL REPORT



August 15, 2012

Mr. Richard Garrett, LG, Project Manager
Catlin Engineers and Scientists, Inc.
P.O. Box 10279
Wilmington, NC 28404-0279

RE: State Project: U-3315
 WBS Element: 35781.1.2
 County: Pitt
 Description: Stantonsburg Road/Tenth Street Connector from Memorial Drive (US 13)
 to Evans Street

**Subject: Project 11821014.17, Report on Geophysical Surveys
 Parcel 196, Ward Holdings LLC Property, Greenville, North Carolina**

Dear Mr. Garrett:

SCHNABEL ENGINEERING SOUTH, PC (Schnabel) is pleased to present this report on the geophysical surveys we performed on the subject property. The report includes two 11x17 color figures and two 8.5x11 color figures.

INTRODUCTION

The work described in this report was performed on July 31 and August 1, 2012, by Schnabel under our 2011 contract with the NCDOT. The surveys were performed over the accessible areas of the property as indicated by the NCDOT to support their environmental assessment of the subject property. Photographs of the property are included on Figure 1. The property contains two parcels which are located approximately 270 feet south of the Evans Street and W 10th Street intersection (on the east side of Evans Street) in Greenville, NC. The purpose of the geophysical surveys was to investigate the presence of metal underground storage tanks (USTs) in the accessible areas of the right-of-way and/or easement.

The geophysical surveys consisted of an electromagnetic (EM) induction survey and a ground penetrating radar (GPR) survey. The EM survey was performed using a Geonics EM61-MK2 instrument. The EM61 is a time domain metal detector that is used to locate metal objects buried up to about eight feet below ground surface. When collecting EM61 data, three or four time gates are recorded of the response decay rate. The GPR survey was performed over selected EM61 anomalies, including areas of reinforced

concrete, using a Geophysical Survey Systems SIR-3000 system equipped with a 400 MHz antenna. Photographs of the equipment used are shown on Figure 2.

FIELD METHODOLOGY

Locations of geophysical data points were obtained using a sub-meter Trimble Pro-XRS DGPS system. References to direction and location in this report are based on the US State Plane 1983 System, North Carolina 3200 Zone, using the NAD 83 datum, with units in US survey feet. We recorded the locations of existing site features (monitoring wells, signs, etc.) with the Trimble system for later correlation with the geophysical data and locations provided by the NCDOT.

The EM61 data were collected along parallel survey lines spaced approximately 2.5 feet apart. The EM61 and DGPS data were recorded digitally using a field computer and later transferred to a desktop computer for data processing. The GPR data were collected along survey lines spaced one to two feet apart in orthogonal directions over areas of reinforced concrete and anomalous EM readings not attributed to cultural features. The GPR data were reviewed in the field to evaluate the possible presence of USTs. The GPR data also were recorded digitally and later transferred to a desktop computer for further review.

DISCUSSION OF RESULTS

The contoured EM61 data collected over Parcel 196 are shown on Figures 3 and 4. The EM61 early time gate data are plotted on Figure 3. The early time gate data provide a more sensitive detection of metal objects than the later time gate data. Figure 4 shows the differential response between the top and bottom coils of the EM61 instrument. The differential response data filters out the effect of surface and very shallowly buried metallic objects. Typically, the differential response emphasizes anomalies from deeper and larger objects such as USTs.

The early time gate and differential results show anomalies of unknown cause, in addition to those apparently caused by buried utilities or known site features (Figures 3 and 4). The GPR data indicate that the EM anomalies of unknown cause are probably caused by reinforced concrete and buried utilities. The GPR data collected at the site do not indicate the presence of metallic USTs within the areas surveyed.

CONCLUSIONS

Our evaluation of the geophysical data collected on the subject property on Project U-3315 in Greenville, NC indicates that metallic USTs are unlikely to be encountered within 8 feet of the ground surface in the areas surveyed on the subject property.

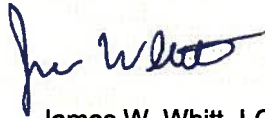
LIMITATIONS

These services have been performed and this report prepared for Catlin Engineers and Scientists, Inc. and the North Carolina Department of Transportation in accordance with generally accepted guidelines for conducting geophysical surveys. It is generally recognized that the results of geophysical surveys are non-unique and may not represent actual subsurface conditions.

We appreciate the opportunity to have provided these services. Please call if you need additional information or have any questions.

Sincerely,

SCHNABEL ENGINEERING SOUTH, PC



James W. Whitt, LG
Senior Staff Geophysicist



Jeremy S. Strohmeyer, LG
Project Manager

JW:JS

Attachments: Figures (4)

CC: NCDOT, Gordon Box

FILE: G:\2011-SDE-JOBS\11821014_00_NCDOT_2011_GEOTECHNICAL_UNIT_SERVICES\11821014_17_U-3315_PITT_COUNTYREPORT\PARCEL 196\SCHNABEL GEOPHYSICAL REPORT ON PARCEL 196 (U-3315).DOCX



Parcel 196 (Ward Holdings LLC Property), looking northeast



Parcel 196 (Ward Holdings LLC Property), looking east



Schnabel
ENGINEERING

STATE PROJECT U-3315
NC DEPT. OF TRANSPORTATION
PITT COUNTY, NORTH CAROLINA
PROJECT NO. 11821014.17

PARCEL 196
SITE PHOTOS

FIGURE 1



Geonics EM61-MK2 Metal Detector with Trimble DGPS Unit



GSSI SIR-3000 Ground-Penetrating Radar with 400 MHz Antenna

Note: Stock photographs – not taken on site.



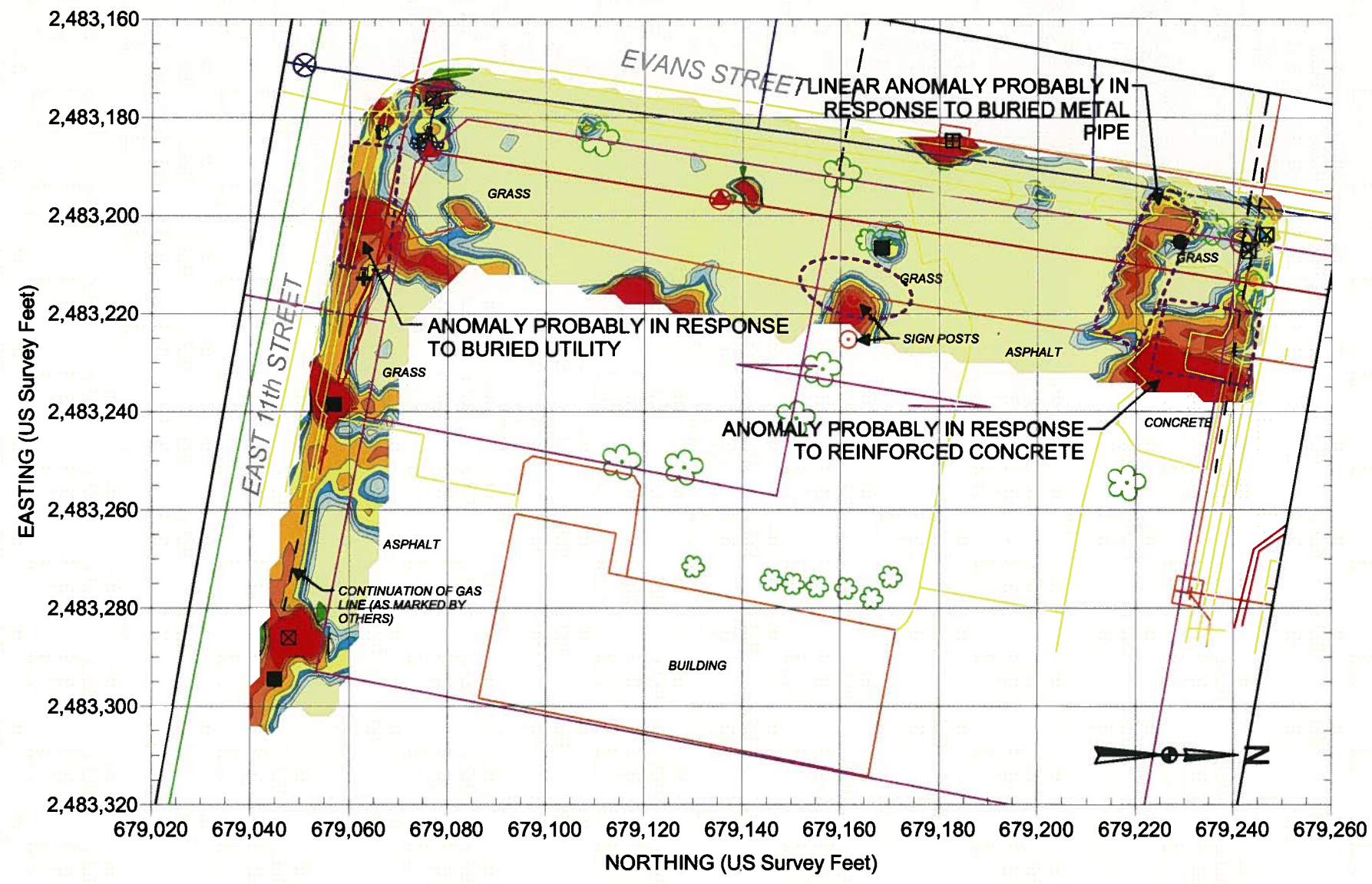
Schnabel
ENGINEERING

STATE PROJECT U-3315
NC DEPT. OF TRANSPORTATION
PITT COUNTY, NORTH CAROLINA
PROJECT NO. 11821014.17

PHOTOS OF
GEOPHYSICAL
EQUIPMENT USED

FIGURE 2

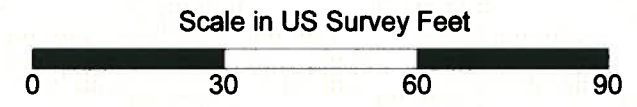
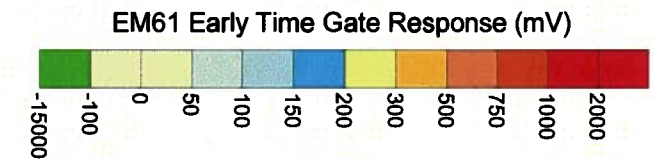
PARCEL 196



EXPLANATION

- ⊕ SIGN
- MISCELLANEOUS METALLIC OBJECT
- ⊠ UTILITY MANHOLE, METER, BOX, ETC.
- ⊞ STORMSEWER INLET
- ⊕ GUY WIRE
- ⊙ EDGE OF NCDOT PROPOSED RW
- PROPERTY LINE
- ⋯ GPR SURVEY AREA

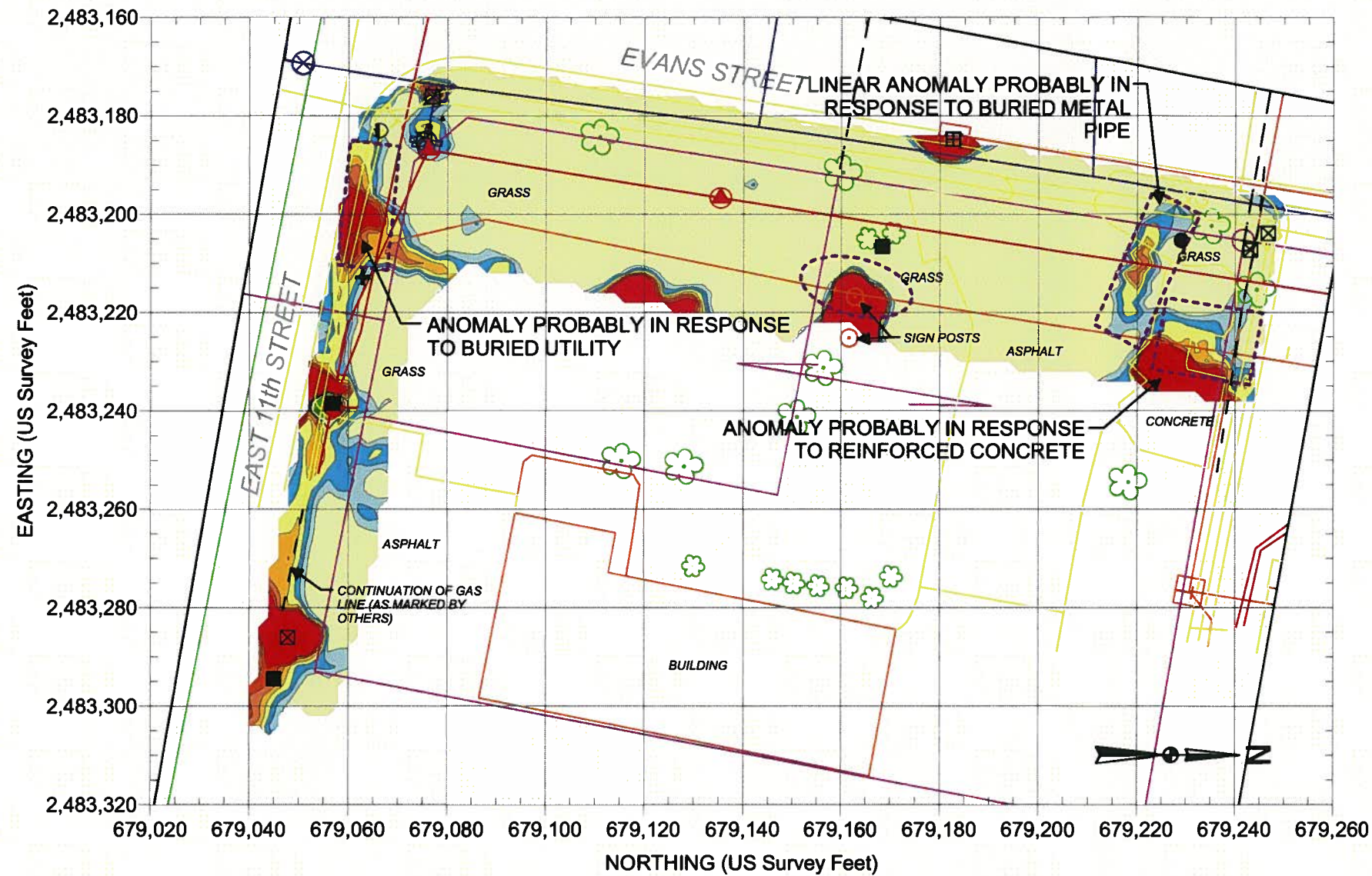
REF.: NCDOT FILE: u3315_rdy_psh11.dgn
(FOR SOME SITE FEATURES)



Note: The contour plot shows the earliest and more sensitive time gate of the EM61 bottom coil/channel in millivolts (mV). The EM data were collected on July 31, 2012, using a Geonics EM61-MK2 instrument. Positioning for the EM61 survey was provided using a submeter Trimble ProXRS DGPS system. Coordinates are in the US State Plane 1983 System, North Carolina Zone 3200, using the NAD 1983 datum. GPR data were acquired on August 1, 2012, using a Geophysical Survey Systems SIR 3000 equipped with a 400 MHz antenna.

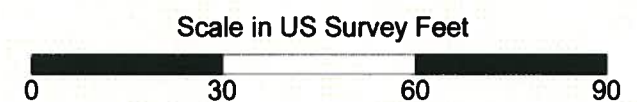
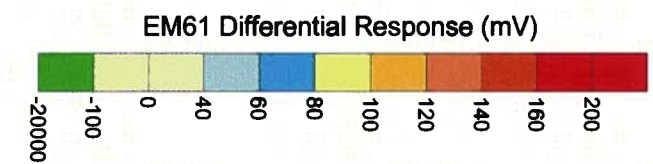
	<p>STATE PROJECT U-3315 NC DEPARTMENT OF TRANSPORTATION PITT COUNTY, NORTH CAROLINA PROJECT NO. 11821014.17</p>	<p>EM61 EARLY TIME GATE RESPONSE</p> <p>FIGURE 3</p>
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PARCEL 196



EXPLANATION	
	SIGN
	MISCELLANEOUS METALLIC OBJECT
	UTILITY MANHOLE, METER, BOX, ETC.
	STORMSEWER INLET
	GUY WIRE
	EDGE OF NCDOT PROPOSED RW
	PROPERTY LINE
	GPR SURVEY AREA

REF.: NCDOT FILE: u3315_rdy_psh11.dgn
(FOR SOME SITE FEATURES)



Note: The contour plot shows the difference, in millivolts (mV), between the readings from the top and bottom coils of the EM61. The difference is taken to reduce the effect of shallow metal objects and emphasize anomalies caused by deeper metallic objects, such as drums and tanks. The EM data were collected on July 31, 2012, using a Geonics EM61-MK2 instrument. Positioning for the EM61 survey was provided using a submeter Trimble ProXRS DGPS system. Coordinates are in the US State Plane 1983 System, North Carolina 3200 Zone, using the NAD 1983 datum. GPR data were acquired on August 1, 2012, using a Geophysical Survey Systems SIR 3000 equipped with a 400 MHz antenna.

	STATE PROJECT U-3315	EM61 DIFFERENTIAL RESPONSE FIGURE 4
	NC DEPARTMENT OF TRANSPORTATION	
	PITT COUNTY, NORTH CAROLINA PROJECT NO. 11821014.17	

APPENDIX B
BORING LOG

BORING LOG



WBS Element: 35781.1.2
State Project: U-3315

PROJECT NO.: 212077	STATE: NC	COUNTY: Pitt	LOCATION: Greenville
PROJECT NAME: Parcel 196 - Joshua Johnson - Residence (Possible Gas Station)		LOGGED BY: Ben Ashba	BORING ID: 196DPT-01
NORTHING: 679,242.00	EASTING: 2,483,206.00	DRILLER: William J. Miller	CREW: Corey Futral
SYSTEM: NCSP NAD 83 (USft)		BORING LOCATION: @ CB 1108	
DRILL MACHINE: Power Probe	METHOD: CPT / DPT	0 HOUR DTW: N/A	BORING DEPTH: 6.0
START DATE: 07/25/12	FINISH DATE: 07/25/12	24 HOUR DTW: N/A	ROCK DEPTH: --
LAND ELEV.: NM			

DEPTH	BLOW COUNT				MOI.	PID RESULTS (ppm)					LAB.	U S C S	L O G	DEPTH	SOIL AND ROCK DESCRIPTION	ELEVATION
	0.5	0.5	0.5	0.5		0	250	500	750	1,000						
0.0														0.0	LAND SURFACE	
													SM	0.3	TOPSOIL	
2.0													SC/ CL		Orangish brown, Sandy CLAY to Clayey SAND. Clay content increases w/depth.	
4.0																
5.0														5.0		
5.5													CL		CLAY. Tannish light gray w/orange mottling.	
6.0														6.0	Boring Terminated at Depth 6.0 ft	

CATLIN\ENV\BIO\LOG_212077_GREENVILLE.PSAS_U3315.GPJ_CATLIN.GDT_11/20/12

▽ = 0hr. DTW

▼ = 24hr. DTW

APPENDIX C
LABORATORY REPORT AND CHAIN OF CUSTODY RECORD

Laboratory Report of Analysis

To: Ben Ashba
RICHARD CATLIN & ASSOCIATES
P.O. Box 10279
Wilmington, NC 28404

Report Number: 31202359

Client Project: NCDOT Parcel 196

Dear Ben Ashba,

Enclosed are the results of the analytical services performed under the referenced project for the received samples and associated QC as applicable. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of five years in the event they are required for future reference. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. Any samples submitted to our laboratory will be retained for a maximum of thirty (30) days from the date of this report unless other arrangements are requested.

If there are any questions about the report or services performed during this project, please call Barbara A. Hager at (910) 350-1903. We will be happy to answer any questions or concerns which you may have.

Thank you for using SGS North America Inc. for your analytical services. We look forward to working with you again on any additional analytical needs.

Sincerely,
SGS North America Inc.

Barbara A. Hager
2012.07.31 14:16:40 -05'00'

Barbara A. Hager
Project Manager
barbara.hager@sgs.com

Date

ANALYTICAL PERSPECTIVES IS NOW PART OF SGS, THE WORLD'S LEADING INSPECTION, VERIFICATION, TESTING AND CERTIFICATION COMPANY.

Laboratory Qualifiers

Report Definitions

DL	Method, Instrument, or Estimated Detection Limit per Analytical Method
CL	Control Limits for the recovery result of a parameter
LOQ	Reporting Limit
DF	Dilution Factor
RPD	Relative Percent Difference
LCS(D)	Laboratory Control Spike (Duplicate)
MS(D)	Matrix Spike (Duplicate)
MB	Method Blank

Qualifier Definitions

*	Recovery or RPD outside of control limits
B	Analyte was detected in the Lab Method Blank at a level above the LOQ
U	Undetected (Reported as ND or < DL)
V	Recovery is below quality control limit. The data has been validated based on a favorable signal-to-noise and detection limit
A	Amount detected is less than the Lower Method Calibration Limit
J	Estimated Concentration.
O	The recovery of this analyte in the OPR is above the Method QC Limits and the reported concentration in the sample may be biased high
E	Amount detected is greater than the Upper Calibration Limit
S	The amount of analyte present has saturated the detector. This situation results in an underestimation of the affected analyte(s)
Q	Indicates the presence of a quantitative interference. This situation may result in an underestimation of the affected analyte(s)
I	Indicates the presence of a qualitative interference that could cause a false positive or an overestimation of the affected analyte(s)
DPE	Indicates the presence of a peak in the polychlorinated diphenylether channel that could cause a false positive or an overestimation of the affected analyte(s)
TIC	Tentatively Identified Compound
EMPC	Estimated Maximum possible Concentration due to ion ratio failure
ND	Not Detected
K	Result is estimated due to ion ratio failure in High Resolution PCB Analysis
P	RPD > 40% between results of dual columns
D	Spike or surrogate was diluted out in order to achieve a parameter result within instrument calibration range

Samples requiring manual integrations for various congeners and/or standards are marked and dated by the analyst. A code definition is provided below:

M1	Mis-identified peak
M2	Software did not integrate peak
M3	Incorrect baseline construction (i.e. not all of peak included; two peaks integrated as one)
M4	Pattern integration required (i.e. DRO, GRO, PCB, Toxaphene and Technical Chlordane)
M5	Other - Explained in case narrative

Note Results pages that include a value for "Solids (%)" have been adjusted for moisture content.

Sample Summary

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Collected</u>	<u>Received</u>	<u>Matrix</u>
196DPT-01 (5-5.5ft)	31202359001	07/25/2012 13:30	07/26/2012 16:42	Soil-Solid as dry weight

Detectable Results Summary

Client Sample ID: **196DPT-01 (5-5.5ft)**

Lab Sample ID: 31202359001-A

SW-846 8260B

<u>Parameter</u>	<u>Result</u>	<u>Units</u>	
Methylene chloride	0.693	ug/Kg	J

Quality Control Samples

Client Sample ID: **MB-S for HBN 26131 [VXX/3717]**

Lab Sample ID: 82391

SW-846 8260B

<u>Parameter</u>	<u>Result</u>	<u>Units</u>	
Methylene chloride	0.930	ug/Kg	J

Results of 196DPT-01 (5-5.5ft)

Client Sample ID: 196DPT-01 (5-5.5ft)
 Client Project ID: NCDOT Parcel 196
 Lab Sample ID: 31202359001-A
 Lab Project ID: 31202359

Collection Date: 07/25/2012 13:30
 Received Date: 07/26/2012 16:42
 Matrix: Soil-Solid as dry weight
 Solids (%): 84.20

Results by SW-846 8260B

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
1,1,1,2-Tetrachloroethane	ND	U	0.886	4.18	ug/Kg	1	07/27/2012 12:54
1,1,1-Trichloroethane	ND	U	0.650	4.18	ug/Kg	1	07/27/2012 12:54
1,1,2,2-Tetrachloroethane	ND	U	0.944	4.18	ug/Kg	1	07/27/2012 12:54
1,1,2-Trichloroethane	ND	U	0.869	4.18	ug/Kg	1	07/27/2012 12:54
1,1-Dichloroethane	ND	U	0.721	4.18	ug/Kg	1	07/27/2012 12:54
1,1-Dichloroethene	ND	U	0.754	4.18	ug/Kg	1	07/27/2012 12:54
1,1-Dichloropropene	ND	U	0.770	4.18	ug/Kg	1	07/27/2012 12:54
1,2,3-Trichlorobenzene	ND	U	1.16	4.18	ug/Kg	1	07/27/2012 12:54
1,2,3-Trichloropropane	ND	U	0.927	4.18	ug/Kg	1	07/27/2012 12:54
1,2,4-Trichlorobenzene	ND	U	0.994	4.18	ug/Kg	1	07/27/2012 12:54
1,2,4-Trimethylbenzene	ND	U	0.894	4.18	ug/Kg	1	07/27/2012 12:54
1,2-Dibromo-3-chloropropane	ND	U	4.85	25.1	ug/Kg	1	07/27/2012 12:54
1,2-Dibromoethane	ND	U	0.633	4.18	ug/Kg	1	07/27/2012 12:54
1,2-Dichlorobenzene	ND	U	1.08	4.18	ug/Kg	1	07/27/2012 12:54
1,2-Dichloroethane	ND	U	0.740	4.18	ug/Kg	1	07/27/2012 12:54
1,2-Dichloropropane	ND	U	0.673	4.18	ug/Kg	1	07/27/2012 12:54
1,3,5-Trimethylbenzene	ND	U	0.822	4.18	ug/Kg	1	07/27/2012 12:54
1,3-Dichlorobenzene	ND	U	0.969	4.18	ug/Kg	1	07/27/2012 12:54
1,3-Dichloropropane	ND	U	0.673	4.18	ug/Kg	1	07/27/2012 12:54
1,4-Dichlorobenzene	ND	U	0.919	4.18	ug/Kg	1	07/27/2012 12:54
2,2-Dichloropropane	ND	U	0.697	4.18	ug/Kg	1	07/27/2012 12:54
2-Butanone	ND	U	1.30	20.9	ug/Kg	1	07/27/2012 12:54
2-Chlorotoluene	ND	U	0.936	4.18	ug/Kg	1	07/27/2012 12:54
2-Hexanone	ND	U	1.63	10.4	ug/Kg	1	07/27/2012 12:54
4-Chlorotoluene	ND	U	0.927	4.18	ug/Kg	1	07/27/2012 12:54
4-Isopropyltoluene	ND	U	0.869	4.18	ug/Kg	1	07/27/2012 12:54
4-Methyl-2-pentanone	ND	U	2.68	10.4	ug/Kg	1	07/27/2012 12:54
Acetone	ND	U	1.04	41.8	ug/Kg	1	07/27/2012 12:54
Benzene	ND	U	0.746	4.18	ug/Kg	1	07/27/2012 12:54
Bromobenzene	ND	U	0.824	4.18	ug/Kg	1	07/27/2012 12:54
Bromochloromethane	ND	U	0.729	4.18	ug/Kg	1	07/27/2012 12:54
Bromodichloromethane	ND	U	0.679	4.18	ug/Kg	1	07/27/2012 12:54
Bromoform	ND	U	0.559	4.18	ug/Kg	1	07/27/2012 12:54
Bromomethane	ND	U	1.47	4.18	ug/Kg	1	07/27/2012 12:54
n-Butylbenzene	ND	U	0.902	4.18	ug/Kg	1	07/27/2012 12:54
Carbon disulfide	ND	U	0.722	4.18	ug/Kg	1	07/27/2012 12:54
Carbon tetrachloride	ND	U	0.727	4.18	ug/Kg	1	07/27/2012 12:54
Chlorobenzene	ND	U	0.647	4.18	ug/Kg	1	07/27/2012 12:54
Chloroethane	ND	U	0.384	4.18	ug/Kg	1	07/27/2012 12:54
Chloroform	ND	U	0.678	4.18	ug/Kg	1	07/27/2012 12:54
Chloromethane	ND	U	0.606	4.18	ug/Kg	1	07/27/2012 12:54
Dibromochloromethane	ND	U	0.708	4.18	ug/Kg	1	07/27/2012 12:54
Dibromomethane	ND	U	0.678	4.18	ug/Kg	1	07/27/2012 12:54
Dichlorodifluoromethane	ND	U	0.607	4.18	ug/Kg	1	07/27/2012 12:54

Results of 196DPT-01 (5-5.5ft)

Client Sample ID: 196DPT-01 (5-5.5ft)
 Client Project ID: NCDOT Parcel 196
 Lab Sample ID: 31202359001-A
 Lab Project ID: 31202359

Collection Date: 07/25/2012 13:30
 Received Date: 07/26/2012 16:42
 Matrix: Soil-Solid as dry weight
 Solids (%): 84.20

Results by SW-846 8260B

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
cis-1,3-Dichloropropene	ND	U	0.719	4.18	ug/Kg	1	07/27/2012 12:54
trans-1,3-Dichloropropene	ND	U	0.749	4.18	ug/Kg	1	07/27/2012 12:54
Diisopropyl Ether	ND	U	0.750	4.18	ug/Kg	1	07/27/2012 12:54
Ethyl Benzene	ND	U	0.691	4.18	ug/Kg	1	07/27/2012 12:54
Hexachlorobutadiene	ND	U	1.14	4.18	ug/Kg	1	07/27/2012 12:54
Isopropylbenzene (Cumene)	ND	U	0.805	4.18	ug/Kg	1	07/27/2012 12:54
Methyl iodide	ND	U	0.707	4.18	ug/Kg	1	07/27/2012 12:54
Methylene chloride	0.693	J	0.583	16.7	ug/Kg	1	07/27/2012 12:54
Naphthalene	ND	U	1.01	4.18	ug/Kg	1	07/27/2012 12:54
Styrene	ND	U	0.824	4.18	ug/Kg	1	07/27/2012 12:54
Tetrachloroethene	ND	U	0.628	4.18	ug/Kg	1	07/27/2012 12:54
Toluene	ND	U	0.677	4.18	ug/Kg	1	07/27/2012 12:54
Trichloroethene	ND	U	0.699	4.18	ug/Kg	1	07/27/2012 12:54
Trichlorofluoromethane	ND	U	0.630	4.18	ug/Kg	1	07/27/2012 12:54
Vinyl chloride	ND	U	0.615	4.18	ug/Kg	1	07/27/2012 12:54
Xylene (total)	ND	U	1.48	8.36	ug/Kg	1	07/27/2012 12:54
cis-1,2-Dichloroethene	ND	U	0.648	4.18	ug/Kg	1	07/27/2012 12:54
m,p-Xylene	ND	U	1.48	8.36	ug/Kg	1	07/27/2012 12:54
n-Propylbenzene	ND	U	0.815	4.18	ug/Kg	1	07/27/2012 12:54
o-Xylene	ND	U	0.844	4.18	ug/Kg	1	07/27/2012 12:54
sec-Butylbenzene	ND	U	0.869	4.18	ug/Kg	1	07/27/2012 12:54
tert-Butyl methyl ether (MTBE)	ND	U	0.712	4.18	ug/Kg	1	07/27/2012 12:54
tert-Butylbenzene	ND	U	0.757	4.18	ug/Kg	1	07/27/2012 12:54
trans-1,2-Dichloroethene	ND	U	0.719	4.18	ug/Kg	1	07/27/2012 12:54
trans-1,4-Dichloro-2-butene	ND	U	4.52	20.9	ug/Kg	1	07/27/2012 12:54

Surrogates

1,2-Dichloroethane-d4	105			55.0-173	%	1	07/27/2012 12:54
4-Bromofluorobenzene	101			23.0-141	%	1	07/27/2012 12:54
Toluene d8	98.0			57.0-134	%	1	07/27/2012 12:54

Batch Information

Analytical Batch: VMS2418
 Analytical Method: SW-846 8260B
 Instrument: MSD2
 Analyst: DVO
 Analytical Date/Time: 07/27/2012 12:54

Prep Batch: VXX3717
 Prep Method: SW-846 5035 SL
 Prep Date/Time: 07/27/2012 10:20
 Prep Initial Wt./Vol.: 7.11 g
 Prep Extract Vol: 5 mL

Results of 196DPT-01 (5-5.5ft)

Client Sample ID: 196DPT-01 (5-5.5ft)
 Client Project ID: NCDOT Parcel 196
 Lab Sample ID: 31202359001-E
 Lab Project ID: 31202359

Collection Date: 07/25/2012 13:30
 Received Date: 07/26/2012 16:42
 Matrix: Soil-Solid as dry weight
 Solids (%): 84.20

Results by SW-846 8270D

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
1,2,4-Trichlorobenzene	ND	U	34.3	389	ug/Kg	1	07/30/2012 16:41
1,2-Dichlorobenzene	ND	U	19.4	389	ug/Kg	1	07/30/2012 16:41
1,3-Dichlorobenzene	ND	U	26.2	389	ug/Kg	1	07/30/2012 16:41
1,4-Dichlorobenzene	ND	U	27.5	389	ug/Kg	1	07/30/2012 16:41
2,4,5-Trichlorophenol	ND	U	26.0	389	ug/Kg	1	07/30/2012 16:41
2,4,6-Trichlorophenol	ND	U	26.4	389	ug/Kg	1	07/30/2012 16:41
2,4-Dichlorophenol	ND	U	22.5	389	ug/Kg	1	07/30/2012 16:41
2,4-Dinitrophenol	ND	U	36.1	777	ug/Kg	1	07/30/2012 16:41
2,4-Dinitrotoluene	ND	U	19.7	389	ug/Kg	1	07/30/2012 16:41
2,6-Dinitrotoluene	ND	U	27.9	389	ug/Kg	1	07/30/2012 16:41
2-Chloronaphthalene	ND	U	22.9	389	ug/Kg	1	07/30/2012 16:41
2-Chlorophenol	ND	U	20.6	389	ug/Kg	1	07/30/2012 16:41
2-Methylnaphthalene	ND	U	31.5	389	ug/Kg	1	07/30/2012 16:41
2-Methylphenol	ND	U	21.5	389	ug/Kg	1	07/30/2012 16:41
2-Nitroaniline	ND	U	25.6	389	ug/Kg	1	07/30/2012 16:41
2-Nitrophenol	ND	U	18.7	389	ug/Kg	1	07/30/2012 16:41
3 and/or 4-Methylphenol	ND	U	25.2	389	ug/Kg	1	07/30/2012 16:41
3,3'-Dichlorobenzidine	ND	U	18.7	389	ug/Kg	1	07/30/2012 16:41
3-Nitroaniline	ND	U	17.5	389	ug/Kg	1	07/30/2012 16:41
4,6-Dinitro-2-methylphenol	ND	U	18.3	389	ug/Kg	1	07/30/2012 16:41
4-Chloro-3-methylphenol	ND	U	19.4	389	ug/Kg	1	07/30/2012 16:41
4-Chloroaniline	ND	U	31.1	389	ug/Kg	1	07/30/2012 16:41
4-Chlorophenyl phenyl ether	ND	U	41.5	389	ug/Kg	1	07/30/2012 16:41
Acenaphthene	ND	U	17.7	389	ug/Kg	1	07/30/2012 16:41
Acenaphthylene	ND	U	16.4	389	ug/Kg	1	07/30/2012 16:41
Anthracene	ND	U	17.3	389	ug/Kg	1	07/30/2012 16:41
Benzo(a)anthracene	ND	U	21.4	389	ug/Kg	1	07/30/2012 16:41
Benzo(a)pyrene	ND	U	22.0	389	ug/Kg	1	07/30/2012 16:41
Benzo(b)fluoranthene	ND	U	22.4	389	ug/Kg	1	07/30/2012 16:41
Benzo(g,h,i)perylene	ND	U	61.9	389	ug/Kg	1	07/30/2012 16:41
Benzo(k)fluoranthene	ND	U	46.6	389	ug/Kg	1	07/30/2012 16:41
Benzoic acid	ND	U	8.63	389	ug/Kg	1	07/30/2012 16:41
Bis(2-Chloroethoxy)methane	ND	U	17.5	389	ug/Kg	1	07/30/2012 16:41
Bis(2-Chloroethyl)ether	ND	U	36.3	389	ug/Kg	1	07/30/2012 16:41
Bis(2-Chloroisopropyl)ether	ND	U	34.0	389	ug/Kg	1	07/30/2012 16:41
Bis(2-Ethylhexyl)phthalate	ND	U	18.7	389	ug/Kg	1	07/30/2012 16:41
4-Bromophenyl phenyl ether	ND	U	25.6	389	ug/Kg	1	07/30/2012 16:41
Butyl benzyl phthalate	ND	U	33.8	389	ug/Kg	1	07/30/2012 16:41
Chrysene	ND	U	45.3	389	ug/Kg	1	07/30/2012 16:41
Di-n-butyl phthalate	ND	U	18.4	389	ug/Kg	1	07/30/2012 16:41
Di-n-octyl phthalate	ND	U	21.5	389	ug/Kg	1	07/30/2012 16:41
Dibenz(a,h)anthracene	ND	U	17.5	389	ug/Kg	1	07/30/2012 16:41
Dibenzofuran	ND	U	30.5	389	ug/Kg	1	07/30/2012 16:41
Diethyl phthalate	ND	U	21.0	389	ug/Kg	1	07/30/2012 16:41

Results of 196DPT-01 (5-5.5ft)

Client Sample ID: **196DPT-01 (5-5.5ft)**
 Client Project ID: **NCDOT Parcel 196**
 Lab Sample ID: **31202359001-E**
 Lab Project ID: **31202359**

Collection Date: **07/25/2012 13:30**
 Received Date: **07/26/2012 16:42**
 Matrix: **Soil-Solid as dry weight**
 Solids (%): **84.20**

Results by SW-846 8270D

<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	<u>DL</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Date Analyzed</u>
Dimethyl phthalate	ND	U	29.8	389	ug/Kg	1	07/30/2012 16:41
2,4-Dimethylphenol	ND	U	28.5	389	ug/Kg	1	07/30/2012 16:41
Diphenylamine	ND	U	17.5	389	ug/Kg	1	07/30/2012 16:41
Fluoranthene	ND	U	36.6	389	ug/Kg	1	07/30/2012 16:41
Fluorene	ND	U	20.6	389	ug/Kg	1	07/30/2012 16:41
Hexachlorobenzene	ND	U	36.8	389	ug/Kg	1	07/30/2012 16:41
Hexachlorobutadiene	ND	U	23.3	389	ug/Kg	1	07/30/2012 16:41
Hexachlorocyclopentadiene	ND	U	118	389	ug/Kg	1	07/30/2012 16:41
Hexachloroethane	ND	U	22.4	389	ug/Kg	1	07/30/2012 16:41
Indeno(1,2,3-cd)pyrene	ND	U	30.3	389	ug/Kg	1	07/30/2012 16:41
Isophorone	ND	U	17.7	389	ug/Kg	1	07/30/2012 16:41
Naphthalene	ND	U	33.6	389	ug/Kg	1	07/30/2012 16:41
4-Nitroaniline	ND	U	22.4	389	ug/Kg	1	07/30/2012 16:41
Nitrobenzene	ND	U	22.4	389	ug/Kg	1	07/30/2012 16:41
4-Nitrophenol	ND	U	38.3	389	ug/Kg	1	07/30/2012 16:41
Pentachlorophenol	ND	U	31.1	389	ug/Kg	1	07/30/2012 16:41
Phenanthrene	ND	U	25.6	389	ug/Kg	1	07/30/2012 16:41
Phenol	ND	U	36.3	389	ug/Kg	1	07/30/2012 16:41
Pyrene	ND	U	16.4	389	ug/Kg	1	07/30/2012 16:41
n-Nitrosodi-n-propylamine	ND	U	111	389	ug/Kg	1	07/30/2012 16:41

Surrogates

2,4,6-Tribromophenol	97.0			41.0-129	%	1	07/30/2012 16:41
2-Fluorobiphenyl	80.0			48.0-123	%	1	07/30/2012 16:41
2-Fluorophenol	77.0			42.0-123	%	1	07/30/2012 16:41
Nitrobenzene-d5	83.0			46.0-117	%	1	07/30/2012 16:41
Phenol-d6	89.0			48.0-125	%	1	07/30/2012 16:41
Terphenyl-d14	99.0			44.0-140	%	1	07/30/2012 16:41

Batch Information

Analytical Batch: **XMS1614**
 Analytical Method: **SW-846 8270D**
 Instrument: **MSD10**
 Analyst: **CMP**
 Analytical Date/Time: **07/30/2012 16:41**

Prep Batch: **XXX2863**
 Prep Method: **SW-846 3541**
 Prep Date/Time: **07/27/2012 10:01**
 Prep Initial Wt./Vol.: **30.57 g**
 Prep Extract Vol: **10 mL**

Batch Summary

Analytical Method: SW-846 8260B

Prep Method: SW-846 5035 SL

Prep Batch: VXX3717

Prep Date: 07/27/2012 10:10

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Analysis Date</u>	<u>Analytical Batch</u>	<u>Instrument</u>	<u>Analyst</u>
LCS-S for HBN 26131 [VXX/3717]	82389	07/27/2012 11:20	VMS2418	MSD2	DVO
LCSD-S for HBN 26131 [VXX/3717]	82390	07/27/2012 11:44	VMS2418	MSD2	DVO
MB-S for HBN 26131 [VXX/3717]	82391	07/27/2012 12:31	VMS2418	MSD2	DVO
196DPT-01 (5-5.5ft)	31202359001	07/27/2012 12:54	VMS2418	MSD2	DVO
107DPT-01 (4.5-5ft)(82319DUP)	82697	07/27/2012 17:13	VMS2418	MSD2	DVO
107DPT-02 (5-5.7ft)(82320MS)	82698	07/27/2012 17:37	VMS2418	MSD2	DVO

Method Blank

Blank ID: MB-S for HBN 26131 [VXX/3717]

Blank Lab ID: 82391

QC for Samples:

31202359001

Matrix: Soil-Solid as dry weight

Results by SW-846 8260B

<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	<u>DL</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>
Dichlorodifluoromethane	ND	U	0.727	5.00	ug/Kg	1
Chloromethane	ND	U	0.725	5.00	ug/Kg	1
Vinyl chloride	ND	U	0.736	5.00	ug/Kg	1
Bromomethane	ND	U	1.76	5.00	ug/Kg	1
Chloroethane	ND	U	0.460	5.00	ug/Kg	1
Trichlorofluoromethane	ND	U	0.754	5.00	ug/Kg	1
1,1-Dichloroethene	ND	U	0.903	5.00	ug/Kg	1
Acetone	ND	U	1.24	50.0	ug/Kg	1
Methylene chloride	0.930	J	0.698	20.0	ug/Kg	1
trans-1,2-Dichloroethene	ND	U	0.861	5.00	ug/Kg	1
tert-Butyl methyl ether (MTBE)	ND	U	0.852	5.00	ug/Kg	1
1,1-Dichloroethane	ND	U	0.863	5.00	ug/Kg	1
Diisopropyl Ether	ND	U	0.898	5.00	ug/Kg	1
2,2-Dichloropropane	ND	U	0.834	5.00	ug/Kg	1
cis-1,2-Dichloroethene	ND	U	0.775	5.00	ug/Kg	1
2-Butanone	ND	U	1.56	25.0	ug/Kg	1
Bromochloromethane	ND	U	0.873	5.00	ug/Kg	1
Chloroform	ND	U	0.812	5.00	ug/Kg	1
1,1,1-Trichloroethane	ND	U	0.778	5.00	ug/Kg	1
Carbon tetrachloride	ND	U	0.870	5.00	ug/Kg	1
1,1-Dichloropropene	ND	U	0.922	5.00	ug/Kg	1
Benzene	ND	U	0.893	5.00	ug/Kg	1
1,2-Dichloroethane	ND	U	0.886	5.00	ug/Kg	1
Trichloroethene	ND	U	0.837	5.00	ug/Kg	1
1,2-Dichloropropane	ND	U	0.805	5.00	ug/Kg	1
Dibromomethane	ND	U	0.812	5.00	ug/Kg	1
Bromodichloromethane	ND	U	0.813	5.00	ug/Kg	1
cis-1,3-Dichloropropene	ND	U	0.861	5.00	ug/Kg	1
4-Methyl-2-pentanone	ND	U	3.21	12.5	ug/Kg	1
Toluene	ND	U	0.810	5.00	ug/Kg	1
Methyl iodide	ND	U	0.846	5.00	ug/Kg	1
trans-1,3-Dichloropropene	ND	U	0.896	5.00	ug/Kg	1
Carbon disulfide	ND	U	0.864	5.00	ug/Kg	1
1,1,2-Trichloroethane	ND	U	1.04	5.00	ug/Kg	1
Tetrachloroethene	ND	U	0.752	5.00	ug/Kg	1
1,3-Dichloropropane	ND	U	0.806	5.00	ug/Kg	1
2-Hexanone	ND	U	1.95	12.5	ug/Kg	1
Dibromochloromethane	ND	U	0.847	5.00	ug/Kg	1
1,2-Dibromoethane	ND	U	0.758	5.00	ug/Kg	1
Chlorobenzene	ND	U	0.774	5.00	ug/Kg	1
1,1,1,2-Tetrachloroethane	ND	U	1.06	5.00	ug/Kg	1
Bromoform	ND	U	0.669	5.00	ug/Kg	1

Method Blank

Blank ID: MB-S for HBN 26131 [VXX/3717]
 Blank Lab ID: 82391
 QC for Samples:
 31202359001

Matrix: Soil-Solid as dry weight

Results by SW-846 8260B

<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	<u>DL</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>
Bromobenzene	ND	U	0.986	5.00	ug/Kg	1
1,1,2,2-Tetrachloroethane	ND	U	1.13	5.00	ug/Kg	1
1,2,3-Trichloropropane	ND	U	1.11	5.00	ug/Kg	1
Ethyl Benzene	ND	U	0.827	5.00	ug/Kg	1
m,p-Xylene	ND	U	1.77	10.0	ug/Kg	1
Styrene	ND	U	0.986	5.00	ug/Kg	1
o-Xylene	ND	U	1.01	5.00	ug/Kg	1
Xylene (total)	ND	U	1.77	10.0	ug/Kg	1
Isopropylbenzene (Cumene)	ND	U	0.963	5.00	ug/Kg	1
n-Propylbenzene	ND	U	0.975	5.00	ug/Kg	1
2-Chlorotoluene	ND	U	1.12	5.00	ug/Kg	1
4-Chlorotoluene	ND	U	1.11	5.00	ug/Kg	1
1,3,5-Trimethylbenzene	ND	U	0.984	5.00	ug/Kg	1
tert-Butylbenzene	ND	U	0.906	5.00	ug/Kg	1
1,2,4-Trimethylbenzene	ND	U	1.07	5.00	ug/Kg	1
sec-Butylbenzene	ND	U	1.04	5.00	ug/Kg	1
1,3-Dichlorobenzene	ND	U	1.16	5.00	ug/Kg	1
4-Isopropyltoluene	ND	U	1.04	5.00	ug/Kg	1
1,4-Dichlorobenzene	ND	U	1.10	5.00	ug/Kg	1
1,2-Dichlorobenzene	ND	U	1.29	5.00	ug/Kg	1
n-Butylbenzene	ND	U	1.08	5.00	ug/Kg	1
1,2-Dibromo-3-chloropropane	ND	U	5.81	30.0	ug/Kg	1
1,2,4-Trichlorobenzene	ND	U	1.19	5.00	ug/Kg	1
Hexachlorobutadiene	ND	U	1.37	5.00	ug/Kg	1
Naphthalene	ND	U	1.21	5.00	ug/Kg	1
trans-1,4-Dichloro-2-butene	ND	U	5.41	25.0	ug/Kg	1
1,2,3-Trichlorobenzene	ND	U	1.39	5.00	ug/Kg	1
Surrogates						
1,2-Dichloroethane-d4	100			55.0-173	%	1
Toluene d8	101			57.0-134	%	1
4-Bromofluorobenzene	102			23.0-141	%	1

Batch Information

Analytical Batch: VMS2418
 Analytical Method: SW-846 8260B
 Instrument: MSD2
 Analyst: DVO
 Analytical Date/Time: 7/27/2012 12:31:00PM

Prep Batch: VXX3717
 Prep Method: SW-846 5035 SL
 Prep Date/Time: 7/27/2012 10:10:34AM
 Prep Initial Wt./Vol.: 5 g
 Prep Extract Vol: 5 mL

Blank Spike Summary

Blank Spike ID: LCS-S for HBN 26131 [VXX/3717]
 Blank Spike Lab ID: 82389
 Date Analyzed: 07/27/2012 11:20

Spike Duplicate ID: LCSD-S for HBN 26131 [VXX/3717]
 Spike Duplicate Lab ID: 82390
 Matrix: Soil-Solid as dry weight

QC for Samples: 31202359001

Results by SW-846 8260B

Parameter	Blank Spike (ug/Kg)			Spike Duplicate (ug/Kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Dichlorodifluoromethane	30.0	25.0	83	30.0	24.0	80	52.0-133	4.1	30.00
Chloromethane	30.0	27.8	93	30.0	25.9	86	64.0-126	7.1	30.00
Vinyl chloride	30.0	28.2	94	30.0	26.2	87	69.0-120	7.4	30.00
Bromomethane	30.0	28.8	96	30.0	27.1	90	41.0-160	6.1	30.00
Chloroethane	30.0	30.4	101	30.0	27.4	91	69.0-126	10	30.00
Trichlorofluoromethane	30.0	28.5	95	30.0	26.3	88	72.0-123	8.0	30.00
1,1-Dichloroethene	30.0	31.8	106	30.0	28.9	96	78.0-113	9.6	30.00
Acetone	75.0	86.5	115	75.0	92.6	123	0.00-243	6.8	30.00
Methylene chloride	30.0	27.9	93	30.0	24.6	82	40.0-156	13	30.00
trans-1,2-Dichloroethene	30.0	29.1	97	30.0	29.1	97	78.0-111	0.0	30.00
tert-Butyl methyl ether (MTBE)	30.0	28.4	95	30.0	28.7	96	68.0-138	1.1	30.00
1,1-Dichloroethane	30.0	28.6	95	30.0	28.5	95	71.0-121	0.35	30.00
Diisopropyl Ether	30.0	28.4	95	30.0	28.7	96	60.0-141	1.1	30.00
2,2-Dichloropropane	30.0	29.2	97	30.0	28.5	95	79.0-127	2.4	30.00
cis-1,2-Dichloroethene	30.0	28.7	96	30.0	29.6	99	80.0-114	3.1	30.00
2-Butanone	75.0	83.0	111	75.0	90.1	120	31.0-189	8.2	30.00
Bromochloromethane	30.0	30.5	102	30.0	32.3	108	81.0-115	5.7	30.00
Chloroform	30.0	27.4	91	30.0	28.4	95	76.0-114	3.6	30.00
1,1,1-Trichloroethane	30.0	27.6	92	30.0	27.4	91	79.0-117	0.73	30.00
Carbon tetrachloride	30.0	28.4	95	30.0	28.1	94	82.0-119	1.1	30.00
1,1-Dichloropropene	30.0	28.7	96	30.0	28.6	95	82.0-114	0.35	30.00
Benzene	30.0	28.4	95	30.0	28.9	96	82.0-113	1.7	30.00
1,2-Dichloroethane	30.0	28.1	94	30.0	29.1	97	72.0-126	3.5	30.00
Trichloroethene	30.0	28.5	95	30.0	29.0	97	82.0-108	1.7	30.00
1,2-Dichloropropane	30.0	28.5	95	30.0	29.2	97	78.0-116	2.4	30.00
Dibromomethane	30.0	30.9	103	30.0	30.8	103	79.0-125	0.32	30.00
Bromodichloromethane	30.0	27.9	93	30.0	27.8	93	79.0-122	0.36	30.00
cis-1,3-Dichloropropene	30.0	30.6	102	30.0	30.4	101	75.0-127	0.66	30.00
4-Methyl-2-pentanone	75.0	84.0	112	75.0	87.9	117	57.0-159	4.5	30.00
Toluene	30.0	29.7	99	30.0	29.9	100	83.0-111	0.67	30.00
Methyl iodide	30.0	29.0	97	30.0	29.7	99	63.0-137	2.4	30.00
trans-1,3-Dichloropropene	30.0	30.2	101	30.0	30.3	101	75.0-134	0.33	30.00
Carbon disulfide	30.0	26.2	87	30.0	26.6	89	72.0-116	1.5	30.00
1,1,2-Trichloroethane	30.0	31.5	105	30.0	31.6	105	73.0-121	0.32	30.00

Blank Spike Summary

Blank Spike ID: LCS-S for HBN 26131 [VXX/3717]
 Blank Spike Lab ID: 82389
 Date Analyzed: 07/27/2012 11:20

Spike Duplicate ID: LCSD-S for HBN 26131 [VXX/3717]
 Spike Duplicate Lab ID: 82390
 Matrix: Soil-Solid as dry weight

QC for Samples: 31202359001

Results by SW-846 8260B

Parameter	Blank Spike (ug/Kg)			Spike Duplicate (ug/Kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Tetrachloroethene	30.0	28.9	96	30.0	29.5	98	60.0-118	2.1	30.00
1,3-Dichloropropane	30.0	30.7	102	30.0	30.8	103	76.0-121	0.33	30.00
2-Hexanone	75.0	86.4	115	75.0	93.0	124	41.0-171	7.4	30.00
Dibromochloromethane	30.0	29.8	99	30.0	31.2	104	77.0-126	4.6	30.00
1,2-Dibromoethane	30.0	30.2	101	30.0	32.8	109	76.0-125	8.3	30.00
Chlorobenzene	30.0	29.6	99	30.0	30.2	101	78.0-109	2.0	30.00
1,1,1,2-Tetrachloroethane	30.0	28.4	95	30.0	29.6	99	81.0-117	4.1	30.00
Bromoform	30.0	31.6	105	30.0	33.9	113	72.0-134	7.0	30.00
Bromobenzene	30.0	28.8	96	30.0	28.9	96	76.0-113	0.35	30.00
1,1,2,2-Tetrachloroethane	30.0	31.4	105	30.0	33.6	112	76.0-129	6.8	30.00
1,2,3-Trichloropropane	30.0	32.2	107	30.0	34.1	114	70.0-145	5.7	30.00
Ethyl Benzene	30.0	29.0	97	30.0	28.8	96	72.0-115	0.69	30.00
m,p-Xylene	60.0	58.2	97	60.0	57.8	96	73.0-114	0.69	30.00
Styrene	30.0	28.9	96	30.0	28.6	95	74.0-114	1.0	30.00
o-Xylene	30.0	29.3	98	30.0	28.8	96	74.0-113	1.7	30.00
Isopropylbenzene (Cumene)	30.0	29.3	98	30.0	28.8	96	72.0-115	1.7	30.00
n-Propylbenzene	30.0	30.1	100	30.0	29.7	99	71.0-117	1.3	30.00
2-Chlorotoluene	30.0	30.3	101	30.0	29.4	98	76.0-111	3.0	30.00
4-Chlorotoluene	30.0	28.8	96	30.0	28.7	96	75.0-113	0.35	30.00
1,3,5-Trimethylbenzene	30.0	29.4	98	30.0	28.9	96	72.0-115	1.7	30.00
tert-Butylbenzene	30.0	29.0	97	30.0	28.7	96	74.0-112	1.0	30.00
1,2,4-Trimethylbenzene	30.0	29.6	99	30.0	29.1	97	73.0-114	1.7	30.00
sec-Butylbenzene	30.0	28.9	96	30.0	28.4	95	72.0-115	1.7	30.00
1,3-Dichlorobenzene	30.0	29.4	98	30.0	29.8	99	75.0-110	1.4	30.00
4-Isopropyltoluene	30.0	29.2	97	30.0	28.7	96	73.0-114	1.7	30.00
1,4-Dichlorobenzene	30.0	29.4	98	30.0	29.7	99	76.0-110	1.0	30.00
1,2-Dichlorobenzene	30.0	29.6	99	30.0	29.7	99	77.0-109	0.34	30.00
n-Butylbenzene	30.0	29.4	98	30.0	29.4	98	72.0-118	0.0	30.00
1,2-Dibromo-3-chloropropane	180	206	114	180	223	124	54.0-166	7.9	30.00
1,2,4-Trichlorobenzene	30.0	27.9	93	30.0	28.4	95	76.0-115	1.8	30.00
Hexachlorobutadiene	30.0	27.5	92	30.0	26.8	89	70.0-111	2.6	30.00
Naphthalene	30.0	32.2	107	30.0	32.9	110	71.0-129	2.2	30.00
trans-1,4-Dichloro-2-butene	150	159	106	150	164	109	62.0-164	3.1	30.00
1,2,3-Trichlorobenzene	30.0	30.0	100	30.0	29.9	100	78.0-115	0.33	30.00

Blank Spike Summary

Blank Spike ID: LCS-S for HBN 26131 [VXX/3717]
 Blank Spike Lab ID: 82389
 Date Analyzed: 07/27/2012 11:20

Spike Duplicate ID: LCSD-S for HBN 26131 [VXX/3717]
 Spike Duplicate Lab ID: 82390
 Matrix: Soil-Solid as dry weight

QC for Samples: 31202359001

Results by SW-846 8260B

Parameter	Blank Spike (%)			Spike Duplicate (%)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Surrogates									
1,2-Dichloroethane-d4			101			102	55.0-173		
Toluene d8			99			100	57.0-134		
4-Bromofluorobenzene			102			103	23.0-141		

Batch Information

Analytical Batch: VMS2418
 Analytical Method: SW-846 8260B
 Instrument: MSD2
 Analyst: DVO

Prep Batch: VXX3717
 Prep Method: SW-846 5035 SL
 Prep Date/Time: 07/27/2012 10:10
 Spike Init Wt./Vol.: 5 g Extract Vol: 5 mL
 Dupe Init Wt./Vol.: 5 g Extract Vol: 5 mL

Batch Summary

Analytical Method: SW-846 8270D

Prep Method: SW-846 3541

Prep Batch: XXX2863

Prep Date: 07/27/2012 10:01

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Analysis Date</u>	<u>Analytical Batch</u>	<u>Instrument</u>	<u>Analyst</u>
MB for HBN 26126 [XXX/2863]	82374	07/30/2012 15:09	XMS1614	MSD10	CMP
LCS for HBN 26126 [XXX/2863]	82375	07/30/2012 15:55	XMS1614	MSD10	CMP
196DPT-01 (5-5.5ft)	31202359001	07/30/2012 16:41	XMS1614	MSD10	CMP
107DPT-01 (4.5-5ft)(82319MS)	82376	07/30/2012 17:27	XMS1614	MSD10	CMP
107DPT-01 (4.5-5ft)(82319MSD)	82377	07/30/2012 17:50	XMS1614	MSD10	CMP

Method Blank

Blank ID: MB for HBN 26126 [XXX/2863]

Blank Lab ID: 82374

QC for Samples:

31202359001

Matrix: Soil-Solid as dry weight

Results by SW-846 8270D

<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	<u>DL</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>
Phenol	ND	U	29.2	313	ug/Kg	1
Bis(2-Chloroethyl)ether	ND	U	29.2	313	ug/Kg	1
2-Chlorophenol	ND	U	16.6	313	ug/Kg	1
1,3-Dichlorobenzene	ND	U	21.1	313	ug/Kg	1
1,4-Dichlorobenzene	ND	U	22.1	313	ug/Kg	1
1,2-Dichlorobenzene	ND	U	15.6	313	ug/Kg	1
2-Methylphenol	ND	U	17.3	313	ug/Kg	1
3 and/or 4-Methylphenol	ND	U	20.3	313	ug/Kg	1
Bis(2-Chloroisopropyl)ether	ND	U	27.3	313	ug/Kg	1
n-Nitrosodi-n-propylamine	ND	U	89.6	313	ug/Kg	1
Hexachloroethane	ND	U	18.0	313	ug/Kg	1
Nitrobenzene	ND	U	18.0	313	ug/Kg	1
Isophorone	ND	U	14.2	313	ug/Kg	1
2-Nitrophenol	ND	U	15.0	313	ug/Kg	1
2,4-Dimethylphenol	ND	U	22.9	313	ug/Kg	1
Bis(2-Chloroethoxy)methane	ND	U	14.1	313	ug/Kg	1
2,4-Dichlorophenol	ND	U	18.1	313	ug/Kg	1
1,2,4-Trichlorobenzene	ND	U	27.6	313	ug/Kg	1
Naphthalene	ND	U	27.0	313	ug/Kg	1
4-Chloroaniline	ND	U	25.0	313	ug/Kg	1
Hexachlorobutadiene	ND	U	18.7	313	ug/Kg	1
4-Chloro-3-methylphenol	ND	U	15.6	313	ug/Kg	1
2-Methylnaphthalene	ND	U	25.3	313	ug/Kg	1
Hexachlorocyclopentadiene	ND	U	94.7	313	ug/Kg	1
2,4,5-Trichlorophenol	ND	U	20.9	313	ug/Kg	1
2,4,6-Trichlorophenol	ND	U	21.2	313	ug/Kg	1
2-Chloronaphthalene	ND	U	18.4	313	ug/Kg	1
2-Nitroaniline	ND	U	20.6	313	ug/Kg	1
3-Nitroaniline	ND	U	14.1	313	ug/Kg	1
Dimethyl phthalate	ND	U	24.0	313	ug/Kg	1
2,6-Dinitrotoluene	ND	U	22.4	313	ug/Kg	1
Acenaphthene	ND	U	14.2	313	ug/Kg	1
2,4-Dinitrophenol	ND	U	29.0	625	ug/Kg	1
4-Nitrophenol	ND	U	30.8	313	ug/Kg	1
Dibenzofuran	ND	U	24.5	313	ug/Kg	1
2,4-Dinitrotoluene	ND	U	15.8	313	ug/Kg	1
Fluorene	ND	U	16.6	313	ug/Kg	1
Diethyl phthalate	ND	U	16.9	313	ug/Kg	1
4-Chlorophenyl phenyl ether	ND	U	33.4	313	ug/Kg	1
4-Nitroaniline	ND	U	18.0	313	ug/Kg	1
4,6-Dinitro-2-methylphenol	ND	U	14.7	313	ug/Kg	1
Diphenylamine	ND	U	14.1	313	ug/Kg	1

Method Blank

Blank ID: MB for HBN 26126 [XXX/2863]
 Blank Lab ID: 82374
 QC for Samples:
 31202359001

Matrix: Soil-Solid as dry weight

Results by SW-846 8270D

Parameter	Result	Qual	DL	LOQ/CL	Units	DF
4-Bromophenyl phenyl ether	ND	U	20.6	313	ug/Kg	1
Hexachlorobenzene	ND	U	29.6	313	ug/Kg	1
Pentachlorophenol	ND	U	25.0	313	ug/Kg	1
Phenanthrene	ND	U	20.6	313	ug/Kg	1
Anthracene	ND	U	13.9	313	ug/Kg	1
Di-n-butyl phthalate	ND	U	14.8	313	ug/Kg	1
Fluoranthene	ND	U	29.4	313	ug/Kg	1
Pyrene	ND	U	13.2	313	ug/Kg	1
Butyl benzyl phthalate	ND	U	27.2	313	ug/Kg	1
Benzo(a)anthracene	ND	U	17.2	313	ug/Kg	1
3,3'-Dichlorobenzidine	ND	U	15.0	313	ug/Kg	1
Chrysene	ND	U	36.4	313	ug/Kg	1
Bis(2-Ethylhexyl)phthalate	ND	U	15.0	313	ug/Kg	1
Di-n-octyl phthalate	ND	U	17.3	313	ug/Kg	1
Benzo(b)fluoranthene	ND	U	18.0	313	ug/Kg	1
Benzo(k)fluoranthene	ND	U	37.5	313	ug/Kg	1
Benzo(a)pyrene	ND	U	17.7	313	ug/Kg	1
Indeno(1,2,3-cd)pyrene	ND	U	24.4	313	ug/Kg	1
Dibenz(a,h)anthracene	ND	U	14.1	313	ug/Kg	1
Benzo(g,h,i)perylene	ND	U	49.8	313	ug/Kg	1
Benzoic acid	ND	U	6.94	313	ug/Kg	1
Acenaphthylene	ND	U	13.2	313	ug/Kg	1
Surrogates						
2-Fluorophenol	62.0			42.0-123	%	1
Phenol-d6	74.0			48.0-125	%	1
Nitrobenzene-d5	73.0			46.0-117	%	1
2-Fluorobiphenyl	83.0			48.0-123	%	1
2,4,6-Tribromophenol	90.0			41.0-129	%	1
Terphenyl-d14	113			44.0-140	%	1

Batch Information

Analytical Batch: XMS1614
 Analytical Method: SW-846 8270D
 Instrument: MSD10
 Analyst: CMP
 Analytical Date/Time: 7/30/2012 3:09:00PM

Prep Batch: XXX2863
 Prep Method: SW-846 3541
 Prep Date/Time: 7/27/2012 10:01:47AM
 Prep Initial Wt./Vol.: 32 g
 Prep Extract Vol: 10 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 26126 [XXX/2863]

Blank Spike Lab ID: 82375

Date Analyzed: 07/30/2012 15:55

Matrix: Soil-Solid as dry weight

QC for Samples: 31202359001

Results by SW-846 8270D

Parameter	Blank Spike (ug/Kg)			CL
	Spike	Result	Rec (%)	
Phenol	3130	2870	92	67.0-112
Bis(2-Chloroethyl)ether	3130	2690	86	63.0-116
2-Chlorophenol	3130	2850	91	67.0-109
1,3-Dichlorobenzene	3130	2770	89	66.0-109
1,4-Dichlorobenzene	3130	2790	89	65.0-112
1,2-Dichlorobenzene	3130	2820	90	67.0-110
2-Methylphenol	3130	2890	93	68.0-110
3 and/or 4-Methylphenol	6250	6020	96	66.0-113
Bis(2-Chloroisopropyl)ether	3130	2610	84	64.0-114
n-Nitrosodi-n-propylamine	3130	2720	87	66.0-111
Hexachloroethane	3130	2680	86	64.0-110
Nitrobenzene	3130	2770	88	69.0-112
Isophorone	3130	2990	96	69.0-108
2-Nitrophenol	3130	3060	98	65.0-117
2,4-Dimethylphenol	3130	2880	92	69.0-112
Bis(2-Chloroethoxy)methane	3130	2970	95	68.0-112
Benzoic acid	3130	1550	50	0.00-203
2,4-Dichlorophenol	3130	3080	99	67.0-118
1,2,4-Trichlorobenzene	3130	3030	97	65.0-114
Naphthalene	3130	3060	98	70.0-111
4-Chloroaniline	3130	2340	75	41.0-93.0
Hexachlorobutadiene	3130	2970	95	63.0-124
4-Chloro-3-methylphenol	3130	2990	96	70.0-114
2-Methylnaphthalene	3130	3080	98	69.0-110
Hexachlorocyclopentadiene	3130	3070	98	0.00-1080
2,4,5-Trichlorophenol	3130	3340	107	66.0-119
2,4,6-Trichlorophenol	3130	3250	104	67.0-119
2-Chloronaphthalene	3130	2810	90	57.0-96.0
2-Nitroaniline	3130	2380	76	61.0-100
3-Nitroaniline	3130	2520	81	48.0-103
Dimethyl phthalate	3130	2990	96	69.0-118
2,6-Dinitrotoluene	3130	3070	98	69.0-122
Acenaphthene	3130	3010	96	68.0-111
2,4-Dinitrophenol	3130	3070	98	12.0-125

Blank Spike Summary

Blank Spike ID: LCS for HBN 26126 [XXX/2863]
 Blank Spike Lab ID: 82375
 Date Analyzed: 07/30/2012 15:55

Matrix: Soil-Solid as dry weight

QC for Samples: 31202359001

Results by SW-846 8270D

Parameter	Blank Spike (ug/Kg)			CL
	Spike	Result	Rec (%)	
4-Nitrophenol	3130	2330	75	45.0-120
Dibenzofuran	3130	3080	98	71.0-114
2,4-Dinitrotoluene	3130	3140	101	68.0-123
Fluorene	3130	3020	97	66.0-116
Diethyl phthalate	3130	2990	96	68.0-114
4-Chlorophenyl phenyl ether	3130	3060	98	66.0-120
4-Nitroaniline	3130	2730	87	66.0-114
4,6-Dinitro-2-methylphenol	3130	4020	129*	24.0-123
Diphenylamine	3130	3340	107	60.0-118
4-Bromophenyl phenyl ether	3130	3420	110	63.0-118
Hexachlorobenzene	3130	3090	99	62.0-112
Pentachlorophenol	3130	4030	129*	34.0-125
Phenanthrene	3130	3450	110	60.0-122
Anthracene	3130	3440	110	63.0-113
Di-n-butyl phthalate	3130	3490	112	64.0-121
Fluoranthene	3130	3500	112	64.0-118
Pyrene	3130	3200	102	67.0-116
Butyl benzyl phthalate	3130	2900	93	68.0-118
Benzo(a)anthracene	3130	3150	101	65.0-118
3,3'-Dichlorobenzidine	3130	2720	87	54.0-118
Chrysene	3130	3200	102	66.0-118
Bis(2-Ethylhexyl)phthalate	3130	2900	93	67.0-123
Di-n-octyl phthalate	3130	3020	97	62.0-131
Benzo(b)fluoranthene	3130	2790	89	63.0-119
Benzo(k)fluoranthene	3130	3360	107	69.0-118
Benzo(a)pyrene	3130	3230	103	69.0-113
Indeno(1,2,3-cd)pyrene	3130	3310	106	64.0-123
Dibenz(a,h)anthracene	3130	3250	104	64.0-123
Benzo(g,h,i)perylene	3130	3390	108	57.0-128
Acenaphthylene	3130	3200	102	72.0-115

Surrogates

2-Fluorophenol	78	42.0-123
Phenol-d6	93	48.0-125
Nitrobenzene-d5	89	46.0-117

Blank Spike Summary

Blank Spike ID: LCS for HBN 26126 [XXX/2863]
 Blank Spike Lab ID: 82375
 Date Analyzed: 07/30/2012 15:55

Matrix: Soil-Solid as dry weight

QC for Samples: 31202359001

Results by SW-846 8270D

<u>Parameter</u>	<u>Blank Spike (%)</u>		<u>CL</u>
	<u>Spike</u>	<u>Result</u>	
2-Fluorobiphenyl		98	48.0-123
2,4,6-Tribromophenol		119	41.0-129
Terphenyl-d14		98	44.0-140

Batch Information

Analytical Batch: XMS1614
 Analytical Method: SW-846 8270D
 Instrument: MSD10
 Analyst: CMP

Prep Batch: XXX2863
 Prep Method: SW-846 3541
 Prep Date/Time: 07/27/2012 10:01
 Spike Init Wt./Vol.: 32 g Extract Vol: 10 mL
 Dupe Init Wt./Vol.: Extract Vol:

SGS North America Inc.

Sample Receipt Checklist (SRC)

Client: NCDOT-Catlin

Work Order No.: 31202359

- | | |
|--|--|
| <ol style="list-style-type: none"> 1. <input type="checkbox"/> Shipped
<input checked="" type="checkbox"/> Hand Delivered 2. <input checked="" type="checkbox"/> COC Present on Receipt
<input type="checkbox"/> No COC
<input type="checkbox"/> Additional Transmittal Forms 3. <input type="checkbox"/> Custody Tape on Container
<input checked="" type="checkbox"/> No Custody Tape 4. <input checked="" type="checkbox"/> Samples Intact
<input type="checkbox"/> Samples Broken / Leaking 5. <input checked="" type="checkbox"/> Chilled on Receipt Actual Temp.(s) in °C: <u>0.8</u>
<input type="checkbox"/> Ambient on Receipt
<input type="checkbox"/> Walk-in on Ice; Coming down to temp.
<input type="checkbox"/> Received Outside of Temperature Specifications 6. <input checked="" type="checkbox"/> Sufficient Sample Submitted
<input type="checkbox"/> Insufficient Sample Submitted 7. <input type="checkbox"/> Chlorine absent
<input type="checkbox"/> HNO₃ < 2
<input type="checkbox"/> HCL < 2
<input type="checkbox"/> Additional Preservatives verified (see notes) 8. <input checked="" type="checkbox"/> Received Within Holding Time
<input type="checkbox"/> Not Received Within Holding Time 9. <input checked="" type="checkbox"/> No Discrepancies Noted
<input type="checkbox"/> Discrepancies Noted
<input type="checkbox"/> NCDENR notified of Discrepancies* 10. <input type="checkbox"/> No Headspace present in VOC vials
<input type="checkbox"/> Headspace present in VOC vials >6mm | <p>Notes: _____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> |
|--|--|

Comments: _____

Inspected and Logged in by: JJ
Date: Thu-7/26/12 00:00

APPENDIX D
PHOTOGRAPHS

**PARCEL 196, JOSHUA JOHNSON PROPERTY
1023 EVANS STREET**



From near Northwest property corner and Evans Street looking South-southwest, boring 196DPT-01 near proposed catch basin 1108 in foreground.



From across Evans Street looking East, former car wash building, currently Tech Shop.