PRELIMINARY SITE ASSESSMENT
FOR
PARCEL 93, SAM POLLARD AND SON PLUMB AND AC, INC.
400 W. 10TH STREET
GREENVILLE, 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

SEPTEMBER 5, 2012

PREPARED BY:

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

CATLIN PROJECT NO. 212077

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

TABLE OF CONTENTS

TABLES

SHEETS

APPENDICES

PRELIMINARY SITE ASSESSMENT
FOR
PARCEL 93, SAM POLLARD AND SON PLUMB AND AC, INC.
400 W. 10TH STREET
GREENVILLE, NORTH CAROLINA

STATE PROJECT: U-3315
WBS ELEMENT: 35781.1.2

September 5, 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 June 29, 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 93, Sam Pollard and Son Plumb and AC, Inc. property. The parcel/property is located along the NCDOT Project "*Stantonsburg Road/Tenth Street Connector from Memorial Drive (US 13) to Evans Street*". Sheet 1 illustrates the general location.

The following specific parcel information was provided by NCDOT:

> *This site currently operates as a commercial store front for a plumbing and air conditioner repair. The site is located on the northwest quadrant of the intersection of W 10th Ave and Pitt St. According to NCDENR's UST Section Registry one (1) UST was removed in 1995. Based on the appearance of new concrete, the UST may have been located in the middle of the parking lot. Groundwater incident #14136 has been assigned to this facility.*

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 93). A site investigation is requested before ROW acquisition and roadway construction. Suspected underground storage tanks (USTs) and a North Carolina Department of Environment and Natural Resources (NCDENR) groundwater incident has been identified 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 (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 each 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 93, Sam Pollard and Son Plumb and AC, Inc. property, 400 W. 10th Street, Greenville, North Carolina. 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 known or suspect UST systems and proposed drainage features (as indicated on NCDOT provided plan sheets). Accessible proposed drainage features at the site include drainage piping and catch basin numbers 1001, 1002, 1008, and 1027.

A NCDENR UST file review was conducted at the NCDENR Washington Regional Office. File review information was utilized to determine the need and location of borings/samples and pertinent file review documents are provided in Appendix A.

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 B. Final boring/sample locations were determined based on proposed drainage feature locations and elevations, geophysical results, file review information, field observations, and discussion with NCDOT personnel. CATLIN's field activities at the site began and concluded on July 17, 2012.

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). Borings were identified by the parcel number (as indicated by NCDOT) followed by "DPT" and consecutive numbers starting with "01" at each parcel (example: 93-DPT-01). Borings were located at proposed catch basins and along the proposed drainage feature line. The borings were 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. Borings for soil sample collection were terminated near the approximate proposed drainage feature installation elevation or eight (8) 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 field logs and have been transferred to the Boring Logs provided in Appendix C. As illustrated on Sheet 2, six (6) borings were advanced for soil sample collection.

Soil samples for laboratory analysis were collected from the sample interval 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 [example: 93DPT-01(4-5 ft)]. The sample identifications are included on the Boring Logs in Appendix C and the

laboratory analytical Chain of Custody in Appendix D. Six (6) soil samples were submitted for laboratory analysis.

Five (5) of the six (6) borings were terminated at approximately eight (8) feet BLS. The 93DPT-06 boring was terminated at 12 feet BLS for approximate depth to water (DTW) determination and groundwater sample collection. Following removal of the PowerProbe tooling, groundwater was pumped directly into the appropriate laboratory provided glassware utilizing new polypropylene tubing and a peristaltic pump.

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 D.

Boreholes were abandoned to just below the surface using three-eighth inch bentonite chips. Bentonite and water were poured into the borehole simultaneously to facilitate hydration. Borings located in asphalt or gravel were topped with asphalt cold patch. 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 compound impact to soils and groundwater with reasonable analytical expense, soil samples were analyzed for total petroleum hydrocarbon (TPH) diesel and gasoline range organics (DRO and GRO) by Environmental Protection Agency (EPA) Method 8015 and the groundwater sample was analyzed for volatile and semi-volatile organics per Standard Method (SM) 6200B and EPA Method 625 Base Neutral (BN).

A total of six (6) soil samples and one (1) groundwater sample were submitted to SGS Analytical Perspectives (NC Certification # 481). Chain of Custody documentation is included in Appendix D.

3.0 RESULTS

NCDENR File Review

NCDENR file review information provided in Appendix A indicates a 1,000 gallon gasoline UST utilized at the site from 1970 until removal in April 2005. Soil samples collected during tank closure activities revealed petroleum impacts. A Limited Site Assessment was conducted by Fuss & O'Neill, Incorporated in February 2004 and the report dated March 5, 2004 is provided in Appendix A. A monitoring well (MW-1) was installed adjacent to the former UST location and a soil sample collected during monitoring well boring advancement revealed soil contamination above the lowest Risk Based Maximum Soil Contaminant Concentrations (MSCCs). The soil sample results for volatile petroleum hydrocarbon (VPH) C9-C22 Aromatics per the Massachusetts Department of Environmental Protection (MADEP) method were the only results above the Residential MSCCs. No soil sample results were above the Industrial Commercial MSCCs. The groundwater sample results were above the 2L Groundwater Quality Standards (2L) but below the Gross Contaminant Levels (GCLs) established in the North Carolina Administrative Code (NCAC). The depth to groundwater at monitoring well MW-1 was seven (7) feet BLS. The Pollard & Son site was assigned UST Incident Number 14136, Low Risk Classification, and Commercial Land Use. Recent review of the NCDENR Incident Database indicates the site is classified as Residential Land Use.

A Soil Assessment Report by Fuss & O'Neill, Incorporated and dated June 2004 (see Appendix A) provides details of seven (7) soil samples collected for soil contamination delineation. Fuss & O'Neill recommended excavating approximately 1,166 cubic yards of soil from around the former UST location. The proposed excavation dimensions were 33 feet by 15 feet by 7 feet deep. NCDENR recommended a Notice of Residual Petroleum (NRP) deed recordation for soil and groundwater. At this time it is unknown if the NRP has been completed. Review of the NCDENR UST Incident Database shows the site has not been closed or received a Notice of No Further Action.

Geophysical Investigation

The complete geophysical investigation report by Schnabel is included in Appendix B 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 interviewed Sam Pollard and Son employees and the former UST and monitoring well locations were identified (see Sheet 2). The monitoring well (MW-1) well shield cover was opened and the well was found abandoned/filled with concrete. Photographs of the abandoned monitoring well and site are provided in Appendix E. Additional photographs are included Schnabel report provided in Appendix B.

Soil and Groundwater

Sandy clay / clayey sand soils with varying amounts of silt and clean sands were encountered across the project site. Generally, clay content increased with depth. No petroleum odor was noted at any of the boring locations. The OVA/PID headspace screening/readings ranged from 0 to 9 parts per million. Wet soils were noted approximately four (4) feet deep. Complete boring logs including OVA/PID results are provided in Appendix C.

Summarized soil sample analytical results are provided on Table 1. Soil sample locations and summarized soil analytical results are illustrated on Sheet 2. As indicated on Table 1 and Sheet 2, no TPH concentrations were reported above the laboratory reporting limits.

Summarized groundwater sample analytical results are provided on Table 2 and Sheet 2. No SM 6200B or EPA Method 625 BN parameters were detected above the analytical method detection limits except an estimated concentration ("J" value) of Toluene at 0.270 micrograms per liter (ug/l), which is well below the 2L GWQS of 600 ug/l. Depth to groundwater at the 93DPT-06 boring was measured at approximately 3.8 feet BLS. The complete laboratory analytical report is provided in Appendix D.

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.

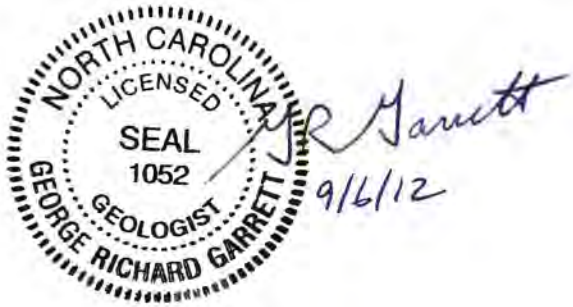
No impacted soils or groundwater were revealed in samples collected from the proposed construction area. Based on NCDENR file review information, gasoline impacted soils and groundwater associated with a 1,000 gallon gasoline UST utilized at the site from 1970 to April 1995 may be found behind the Sam Pollard and Son building but outside the proposed construction area. There are no indications of any USTs remaining 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 - TPH DRO AND GRO
Parcel 93, Sam Pollard and Son Plumbing and AC, Inc.
400 W. 10th Street

Sample ID	Contaminant of Concern →		Diesel Range Organics (DRO)	Gasoline Range Organics (GRO)
	Date Collected	Location		
93 DPT-01 (4-5ft)	7/17/12	Near CB 1008	<6.98	<3.61
93 DPT-02 (4-5ft)	7/17/12	Along proposed drainage, between CB 1008 and CB 1002	<7.32	<3.38
93 DPT-03 (4-5ft)	7/17/12	Along proposed drainage, ≈25' West of CB 1008	<7.49	<3.38
93 DPT-04 (4-5ft)	7/17/12	@ CB 1027	<8.13	<3.53
93 DPT-05 (3-4ft)	7/17/12	@ CB 1002	<7.29	<3.34
93 DPT-06 (3-4ft)	7/17/12	@ CB 1001	<6.81	<3.23
		State Action Level (mg/kg)	**10**	**10**

TPH = Total Petroleum Hydrocarbon
All results in milligrams per kilogram (mg/kg).
Sample depth below land surface provided in parenthesis as part of the sample identification.
BMDL = Below Method Detection Limit
ft. BLS = Feet Below Land Surface
CB = Proposed Catch Basin

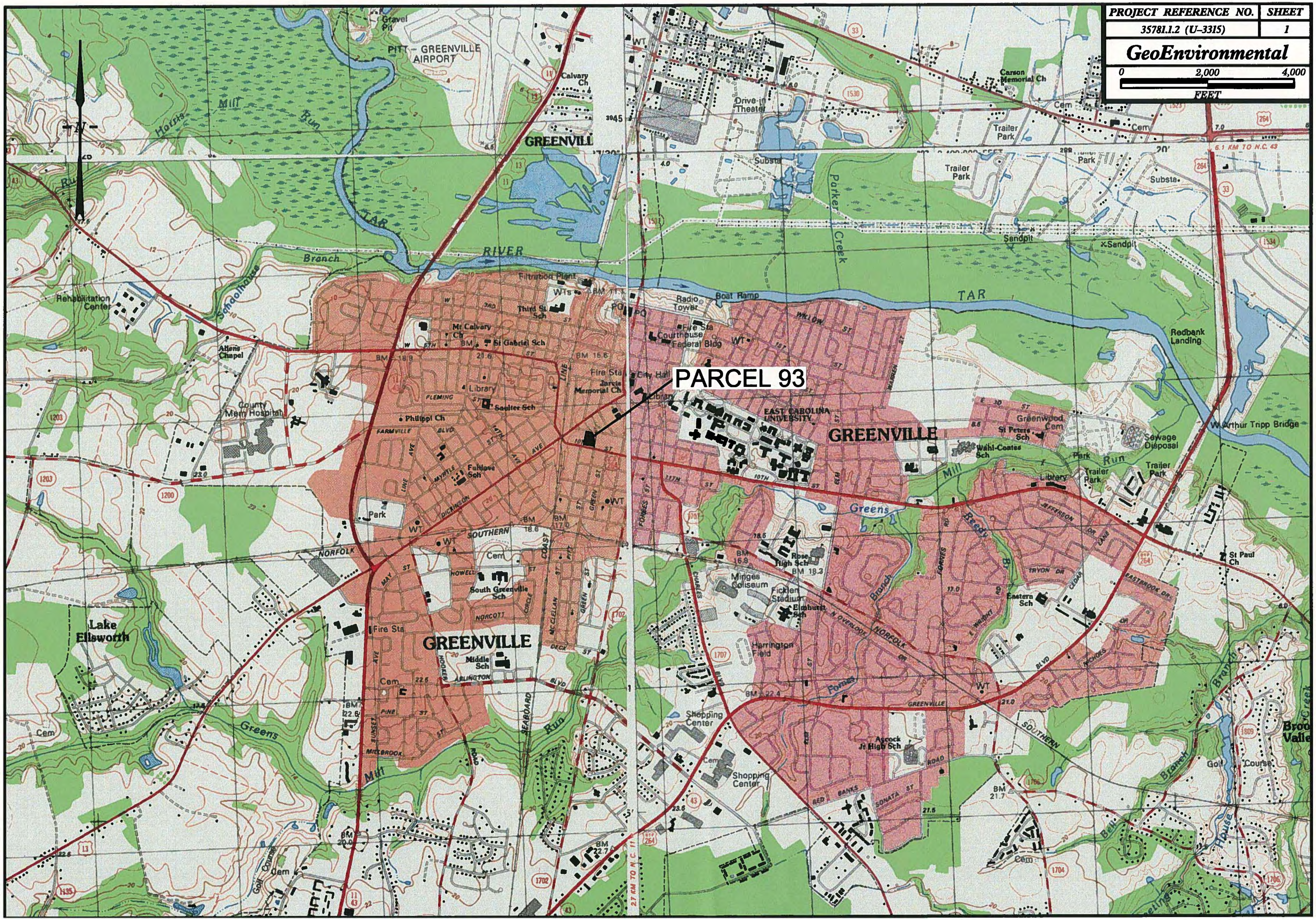
TABLE 2
SUMMARY OF GROUNDWATER LABORATORY RESULTS
- STANDARD METHOD 6200B AND EPA METHOD 625 BASE NEUTRAL

Parcel 93, Sam Pollard and Son Plumbing and AC, Inc.
400 W. 10th Street

Sample ID	Method →		Standard Method 6200B		EPA Method 625 Base Neutral
	Contaminant of Concern →		Toluene	All other Standard Method 6200B Parameters	All EPA Method 625 Base Neutral Parameters
	Date Collected	Location			
93 DPT-06	7/17/12	@ CB 1001	0.270 J	BMDL	BMDL
2L GWQS (ug/L)			600	Varies	Varies

All results in micrograms per liter (ug/L).
BMDL = Below Method Detection Limit
CB = Proposed Catch Basin
Refer to analytical report for a complete list of parameters and detection limits.
J = Estimated Concentration
< = Less than method detection limit

SHEETS


PROJECT REFERENCE NO.
SHEET
35781.1.2 (U-3315)
1
GeoEnvironmental
0
2,000
4,000
FEET
PARCEL 93
GREENVILLE
PITT - GREENVILLE AIRPORT
TAR RIVER
EAST CAROLINA UNIVERSITY
Lake Ellsworth
Rehabilitation Center
County Mem Hospital
Filtration Plant
Boat Ramp
Radio Tower
Courthouse
Federal Bldg
City Hall
Library
Minges Coliseum
Ficklen Stadium
Harrington Field
Shopping Center
Redbank Landing
Sewage Disposal
Arthur Tripp Bridge
Trailer Park
Drive-in Theater
Carson Memorial Ch
Greens Mill Run
Parker Creek
Schoolhouse Branch
Harris Mill Run
Fornes Branch
Reedy Branch
South Greenville Sch
Middle Sch
Rose High Sch
Elmhurst Sch
Aycock Jr High Sch
Eastern Sch
Wahl-Coates Sch
St Peters Sch
Sadler Sch
Fire Sta
Greenwood Cem
Park

PROJECT REFERENCE NO.	SHEET NO.
U-3[illegible]	1-A

Note: Not to Scale

****S.U.E. = Subsurface Utility Engineering***

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

BOUNDARIES AND PROPERTY:

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

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

- Stream or Body of Water
- Hydro, Pool or Reservoir
- Jurisdictional Stream (JS)
- Buffer Zone 1 (BZ 1)
- Buffer Zone 2 (BZ 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 (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
- Proposed Slope Stakes Fill
- Proposed Curb Ramp
- Curb Cut Future Ramp
- Existing Metal Guardrail
- Proposed Guardrail
- Existing Cable Guiderail
- Proposed Cable Guiderail
- Equality Symbol
- Pavement Removal

VEGETATION:

- Single Tree
- Single Shrub
- Hedge
- Woods Line
- Orchard
- Vineyard

EXISTING STRUCTURES:

MAJOR:
- Bridge, Tunnel or Box Culvert
- Bridge Wing Wall, Head Wall and End Wall

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

UTILITIES:

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

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

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

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

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

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

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

PROJECT REFERENCE NO.	SHEET
35781.1.2 (U-3315)	2

GeoEnvironmental

0 20 40 FEET

SUMMARY OF SOIL LABORATORY RESULTS - TPH DRO AND GRO
Parcel 93, Sam Pollard and Son Plumbing and AC, Inc.
400 W. 10th Street

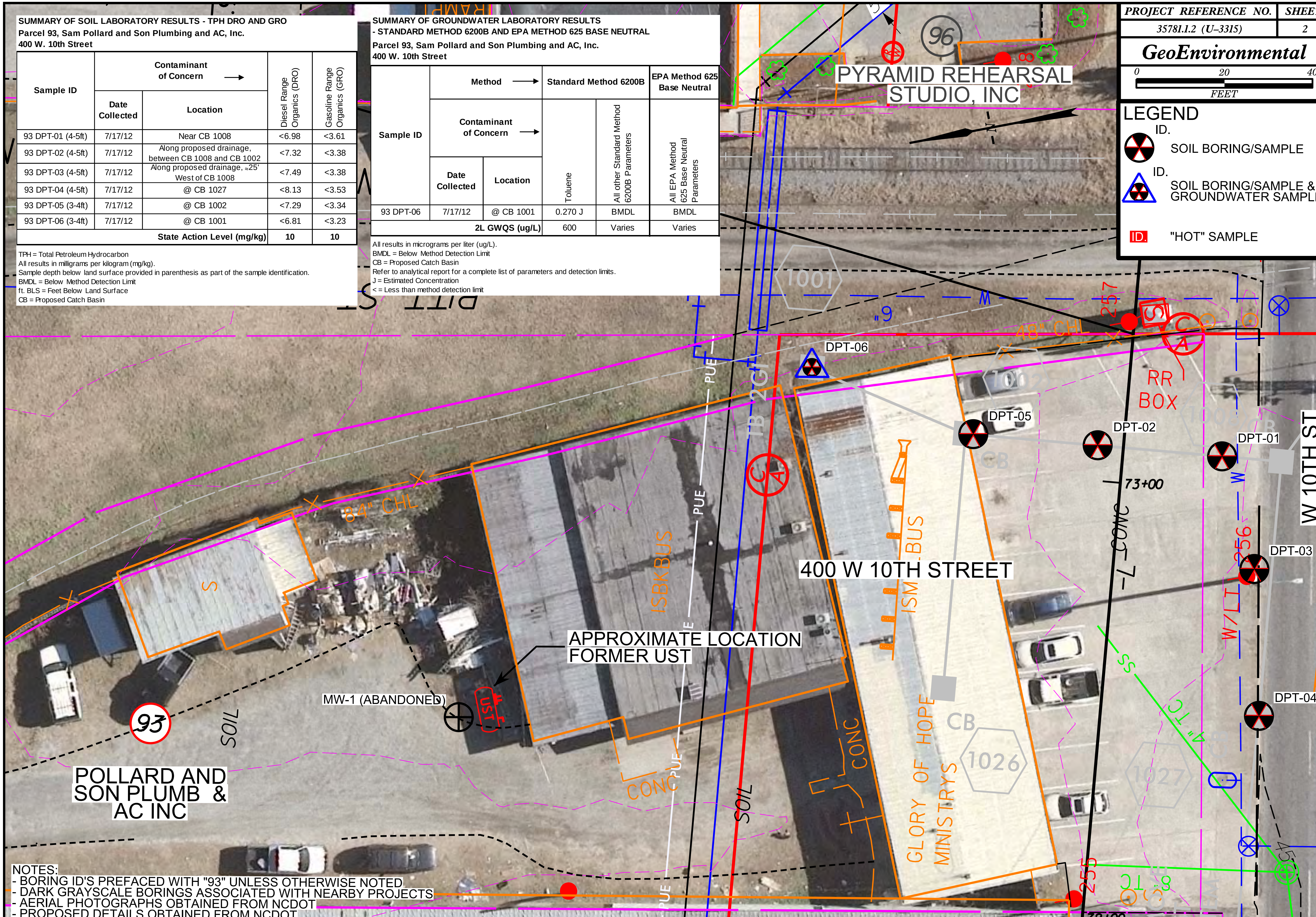
Sample ID	Contaminant of Concern →		Diesel Range Organics (DRO)	Gasoline Range Organics (GRO)
	Date Collected	Location		
93 DPT-01 (4-5ft)	7/17/12	Near CB 1008	<6.98	<3.61
93 DPT-02 (4-5ft)	7/17/12	Along proposed drainage, between CB 1008 and CB 1002	<7.32	<3.38
93 DPT-03 (4-5ft)	7/17/12	Along proposed drainage, ≈25' West of CB 1008	<7.49	<3.38
93 DPT-04 (4-5ft)	7/17/12	@ CB 1027	<8.13	<3.53
93 DPT-05 (3-4ft)	7/17/12	@ CB 1002	<7.29	<3.34
93 DPT-06 (3-4ft)	7/17/12	@ CB 1001	<6.81	<3.23
		State Action Level (mg/kg)	**10**	**10**

TPH = Total Petroleum Hydrocarbon
All results in milligrams per kilogram (mg/kg).
Sample depth below land surface provided in parenthesis as part of the sample identification.
BMDL = Below Method Detection Limit
ft. BLS = Feet Below Land Surface
CB = Proposed Catch Basin

SUMMARY OF GROUNDWATER LABORATORY RESULTS
- STANDARD METHOD 6200B AND EPA METHOD 625 BASE NEUTRAL
Parcel 93, Sam Pollard and Son Plumbing and AC, Inc.
400 W. 10th Street

Sample ID	Method →		Standard Method 6200B		EPA Method 625 Base Neutral
	Contaminant of Concern →		Toluene	All other Standard Method 6200B Parameters	All EPA Method 625 Base Neutral Parameters
	Date Collected	Location			
93 DPT-06	7/17/12	@ CB 1001	0.270 J	BMDL	BMDL
		2L GWQS (ug/L)	600	Varies	Varies

All results in micrograms per liter (ug/L).
BMDL = Below Method Detection Limit
CB = Proposed Catch Basin
Refer to analytical report for a complete list of parameters and detection limits.
J = Estimated Concentration
< = Less than method detection limit



LEGEND
ID. SOIL BORING/SAMPLE
ID. SOIL BORING/SAMPLE & GROUNDWATER SAMPLE
ID. "HOT" SAMPLE

NOTES:
- BORING ID'S PREFACED WITH "93" UNLESS OTHERWISE NOTED
- DARK GRAYSCALE BORINGS ASSOCIATED WITH NEARBY PROJECTS
- AERIAL PHOTOGRAPHS OBTAINED FROM NCDOT
- PROPOSED DETAILS OBTAINED FROM NCDOT

APPENDICES

APPENDIX A

FILE REVIEW INFORMATION

NCDENR

North Carolina Department of Environment and Natural Resources

Beverly Eaves Perdue, Governor

Division of Waste Management
UST Section

Dee Freeman, Secretary
Dexter R. Matthews, Director

February 23, 2012

Mr. Sam Pollard
Sam Pollard & Son, Inc.
400 West 10th Street
Greenville, NC 27834

Re: Notice of Regulatory Requirements
NCGS 143B-279.9 and 143B-279.11
Notice of Residual Petroleum

Sam Pollard & Son
400 West 10th Street, Greenville, NC
Pitt County
Incident Number: 14136
Risk Classification: Low

Dear Mr. Pollard:

North Carolina General Statute (NCGS) 143B279.9 and 143B-279.11 require a Notice of Residual Petroleum (Notice) to be filed with the Register of Deeds in Pitt County, where the release is located, when a release from an underground storage tank has not been remediated to below "unrestricted use standards". The Notice is required either prior to conveyance of a contaminated property or prior to receiving a Notice of No Further Action. "Unrestricted use standards" for groundwater are the groundwater quality standards and interim standards contained in Title 15A NCAC 2L .0202, and "unrestricted use standards" for soil are the residential maximum soil contaminant concentrations (MSCCs) established in Title 15A NCAC 2L .0411. **The Notice must be filed for both soil and groundwater.**

The Notice must be prepared in accordance with the attached instructions and format. It must contain a legal description of the property containing the source of contamination and legal descriptions of any other properties which you own (or control) which are contaminated by the release. The Notice must also include appropriate land use restrictions for these properties. In addition, the Notice must identify all other properties (adjacent, adjoining, downgradient, etc.) on which contamination is known to exist at the time the Notice is prepared.

The Notice must be sent to this regional office of the UST Section within 30 days of the date of this letter for approval and notarization. The approved and notarized Notice must then be filed by you with the Register of Deeds, and a certified copy of the filed Notice must be submitted to this office within 30 days of its return to you.

Effective October 1, 2004, the Department requires that all work following the submittal of the Limited Site Assessment Report (Title 15A NCAC 2L .0405) be preapproved if State Trust Fund reimbursement is anticipated. To comply with this requirement, a completed Preapproval/Claim Authorization Form, encompassing the required remedial activities, must be received in this office within

14 days of the date of this letter. Upon completion of the preapproved activities, you should submit your claim promptly. Reimbursement funds are budgeted based on completed preapprovals, but lengthy delays in reimbursement can occur if claims are not submitted immediately following work completion.

Failure to comply with this letter is a violation of North Carolina law and may result in the assessment of civil penalties and/or the use of other enforcement mechanisms available to the state. If you have any questions regarding this letter, please contact me at the address or telephone number listed below.

Sincerely,

Scott Bullock

Scott Bullock, L.G.
Regional Supervisor
Washington Regional Office

Attachment: Instructions for Preparing Notice of Residual Petroleum

cc: Allied Environmental Services, P.O. Box 59, Greenville, NC 27835

UST Regional Offices

Asheville (ARO) – 2090 US Highway 70, Swannanoa, NC 28778 **(828) 296-4500**

Fayetteville (FAY) – 225 Green Street, Suite 714, Systel Building, Fayetteville, NC 28301 **(910) 433-3300**

Mooresville (MOR) – 610 East Center Avenue, Suite 301, Mooresville, NC 28115 **(704) 663-1699**

Raleigh (RRO) – 1628 Mail Service Center, Raleigh, NC 27699 **(919) 791-4200**

Washington (WAS) – 943 Washington Square Mall, Washington, NC 27889 **(252) 946-6481**

Wilmington (WIL) – 127 Cardinal Drive Extension, Wilmington, NC 28405 **(910) 796-7215**

Winston-Salem (WS) – 585 Waughtown Street, Winston-Salem, NC 27107 **(336) 771-5000**

Guilford County Environmental Health, 400 West Market Street, Suite 300, Greensboro, NC 27401, **(336) 641-3771**

.1566

LIMITED SITE ASSESSMENT REPORT
TITLE 15A NCAC 2N .0115(c)(4)

Site:

SAM POLLARD & SON,
PLUMBING, HEATING, & AIR CONDITIONING, INC.
400 West 10th Street
Greenville, Pitt Co., NC
Facility ID No.: 0-032478
Incident No: 14136
Site Ranking: Intermediate
Latitude: 35° 36' 23" N
Longitude: 77° 22' 41" W

Prepared For:

Mr. Sam Pollard
400 West 10th Street
Greenville, NC 27834
(252) 752-3661

Prepared By:

Fuss & O'Neill, Inc.
610 Lynndale Ct., Suite E
Greenville, NC 27858
(252) 355-1370

Job No. 20040122.A10

Gregory L. Aumann
Scientist II

Susan A. Laughinghouse, L.G.
Senior Geologist/ Project Manager

March 2004

Limited Site Assessment Report

A. Site Identification

DATE OF REPORT: 3/5/04
Facility I.D. 0-032478 UST Incident Number (if known): 14136
Site Name: Sam Pollard & Son, Plumbing, Heating, & Air Conditioning, Inc.
Site Location: 400 West 10th Street
Nearest City/Town: Greenville County: Pitt

UST Owner: Sam Pollard & Son, Plumbing, Heating, & Air Conditioning, Inc.
Address: 400 West 10th Street, Greenville, NC 27834 Phone: (252) 752-3661

UST Operator: Sam Pollard & Son, Plumbing, Heating, & Air Conditioning, Inc.
Address: 400 West 10th Street, Greenville, NC 27834 Phone: (252) 752-3661

Property Owner: Sam Pollard & Son, Plumbing, Heating, & Air Conditioning, Inc.
Address: 400 West 10th Street, Greenville, NC 27834 Phone: (252) 752-3661

Property Occupant: Sam Pollard & Son, Plumbing, Heating, & Air Conditioning, Inc.
Address: 400 West 10th Street, Greenville, NC 27834 Phone: (252) 752-3661

Consultant/Contractor: Fuss & O'Neill, Inc.
Address: 610 Lynndale Ct., Suite E, Greenville, NC 27858 Phone: (252)-355-1370

Release Information
Date Discovered: June 1995
Latitude: 35° 36' 23" N **Longitude:** 77° 22' 41" W
Estimated Quantity of Release: Unknown
Cause of Release: Unknown
Source of Release (e.g., Piping/UST): UST System

Sizes and contents of UST system(s) from which the release occurred):
(1) 1,000-gallon gasoline

Complete and include in report items B through J in the order listed.

I, Susan A. Laughinghouse, LG. Licensed Geologist for Fuss & O'Neill, Inc., do certify that the information contained in this report is correct and accurate to the best of my knowledge.

(Please Affix Seal and Signature)

B. Risk Characterization

Submit the following questionnaire in its entirety. Answer all questions completely. Attach additional pages as needed to fully explain answers. Base answers/explanations on information known or required to be obtained during the Limited Site Assessment.

NOTE: *Source area means point of release from a UST system*

Limited Site Assessment Risk Classification and Land Use Form

Part I – Groundwater/Surface Water/Vapor Impacts

High Risk

1. Has the release contaminated any water supply well including any well used for non-drinking purposes? **NO. There were no active water supply wells located within 1,000 feet.**

2. Is a water supply well used for drinking water located within 1,000 feet of the source area of the release? **NO**

3. Is a water supply well not used for drinking water (e.g., irrigation, washing cars, industrial cooling water, filling swimming pools) located within 250 feet of the source area of the release? **NO**

4. Does groundwater within 500 feet of the source area of the release have the potential for future use (there is no other source of water supply other than the groundwater)? **NO**
   The City of Greenville is supplied with municipal water from surface water from the Tar River and groundwater from the Black Creek Aquifer.

5. Do vapors from the release pose a threat of explosion because of accumulation of the vapors in a confined space or pose any other serious threat to public health, public safety or the environment? **NO**

   If yes, describe.

   _____
   _____
   _____

6. Are there any other factors that would cause the release to pose an imminent danger to public health, public safety, or the environment? **NO**
   If yes, describe.

   _____
   _____

Intermediate Risk

7. Is a surface water body located within 500 feet of the source area of the release? **NO**

   If **YES**, does the maximum groundwater contaminant concentration exceed the surface water quality standards and criteria found in 15A NCAC 2B .0200 by a factor of 10?

8. Is the source area of the release located within an approved or planned wellhead protection area as defined in 42 USC 300h-7(e)? **YES**
   If yes, describe.
   The source area at Sam Pollard & Sons, Inc. is located on the border of the City of Greenville's Washington Street Approved Wellhead Protection Plan (PWSID #04-74-010) according to the map provided by Mr. Gale Johnson with the North Carolina Department of Environment and Natural Resources, Environmental Health Division, Public Water Section, Wellhead Protection Manager.

9. Is the release located in the Coastal Plain physiographic region as designated on a map entitled "Geology of North Carolina" published by the Department in 1985? **YES**

   If **YES**, is the source area of the release located in an area in which there is recharge to an unconfined or semi-confined deeper aquifer that is being used or may be used as a source of drinking water? **YES**
   If **YES**, describe.

   The area of discharge may be in an area of recharge.

10. Do the levels of groundwater contamination for any contaminant exceed the gross contamination levels (see Table 9) established by the Department?

    NO

Part II - Land Use

Property Containing Source Area of Release

The questions below pertain to the property containing the source area of the release.

1. Does the property contain one or more primary or secondary residences (permanent or temporary)? Describe. **NO**
   The site is a commercial business.

2. Does the property contain a school, daycare center, hospital, playground, park, recreation area, church, nursing home, or other place of public assembly? Describe. **NO**

3. Does the property contain a commercial (e.g., retail, warehouse, office/business space, etc.) or industrial (e.g., manufacturing, utilities, industrial research and development, chemical/petroleum bulk storage, etc.) enterprise, an inactive commercial or industrial enterprise, or is the land undeveloped? Describe. **YES**
   The property is occupied by a plumbing, heating, and air-conditioning business.

4. Do children visit the property? Explain. **YES**
   There is no restriction on children visiting the property.

5. Is access to the property reliably restricted consistent with its use (e.g., by fences, security personnel or both)? **YES**
   Explain.
   There is a security fence around a portion of the property that is locked at night.

6. Do pavement, buildings, or other structures cap the contaminated soil? **NO**
   Describe.
   The area of concern in overlain by dirt/gravel .

   If yes, what mechanisms are in place or can be put into place to ensure that the contaminated soil will remain capped in the foreseeable future?

7. What is the zoning status of the property?
   The property is zoned Commercial.

8. Is the use of the property likely to change in the next 20 years? **NO**
   Explain.
   The property is located in the downtown/business area of Greenville. The zoning may be subject to change due to the recent purchases by East Carolina University across the street, zoning in the area may change to Industrial and Institutional.

Property Surrounding Source Area of Release

The questions below pertain to the area within 1,500 feet of the source area of the release (excludes property containing source area of the release):

1. What is the distance from the source area of the release to the **nearest** primary or secondary residence (permanent or temporary)?
   The nearest primary residence is approximately 830 feet southeast of the site at the intersection of 11th Street and Evans Street.

2. What is the distance from the source area of the release to the **nearest** school, daycare center, hospital, playground, park, recreation area, church, nursing home or other place of public assembly? **The Beach Party BINGO is located approximately 230 feet west of the site at the intersection of West 10th Street and Clark Street. St. Jude Missionary Baptist Church is located approximately 350 feet northwest of the site at the intersection of 8th Street and Dickinson Avenue. Mattie Lee Pate operates the MLP Child Daycare, located at 607 W. 12th Street, approximately 1,000 feet southeast of the site.**

3. What is the zoning status of properties in the surrounding area?
   The surrounding property is primarily zoned Commercial or Industrial. There is some Residential zoning approximately 800 feet from the site.

4. Briefly characterize the use and activities of the land in the surrounding area.
   This is primarily commercial businesses and some retail businesses.

C. Receptor Information

1. Water Supply Wells

No water supply wells were observed or located within a 1,000-foot radius during this site reconnaissance survey.

2. Public Water Supplies

Are public water supplies available within 1,500 feet of the source area of the release? **YES**
If yes, where is the location of the nearest public water lines and the source(s) of the public water supply. Describe:
Greenville Utilities Commission provides water to the City of Greenville from the Tar River (surface water) and the Black Creek Aquifer (groundwater).

3. Surface Water

Identify all surface water bodies (e.g., ditch, pond, stream, lake, river) within 1500 feet of the source area of the release. This information must be shown on the USGS topographic map.
There were no surface water bodies observed within 1,500 feet of the source area.

4. Wellhead Protection Areas

Identify all planned or approved wellhead protection areas (e.g., ditch, pond, stream, lake, river) with in 1500 feet of the source area of the release. This information must be shown on the USGS topographical map. Wellhead protection areas are defined in 42 USC 300h-7(e)
The source area is located approximately on the edge of the Greenville Utilities Commission Wellhead Protection Plan, PWSID #04-74-010 (the Washington Street well). The figure labeled Wellhead Protection Area Map shows the location of the wellhead protection area and the monitor well (MW-1) location for the referenced site.

5. Describe Deep Aquifers in the Coastal Plain Physiographic Region

NOTE: *This requirement only pertains to releases in the Coastal Plain physiographic region as designated on a map entitled "Geology of North Carolina" published by the Department in 1985.*

Sam Pollard & Son, Plumbing, Heating, & Air Conditioning, Inc. (Sam Pollard & Sons), located at 400 West 10th Street, Greenville, Pitt County, North Carolina, is located in the Coastal Plain Physiographic Province (Geologic Map of North Carolina, 1985).

Pitt County is located in the Coastal Plain Physiographic Province. The surficial aquifer averages 35 feet thick and consists mainly of fine sand, silt, clay, shell, and some scattered deposits of coarser grained material. These sediments were deposited under shallow marine or estuarine conditions. The surficial aquifer is important in that infiltration from rainfall is the bulk of the recharge to the Coastal Plain aquifer system.

The Yorktown confining unit is approximately 15 feet thick in the area according to maps provided by the United Stated Geological Survey (USGS). It is composed mainly of clay and sandy clay with lenses of fine sand or shell. This unit is underlain by the Yorktown aquifer which is composed mainly of fine sand, silty and clayey sand and clay. Shells and shell beds are found throughout the aquifer. The average hydraulic conductivity is 22 ft/day. The unit is approximately 20 to 30 feet thick in the referenced area based on maps provided by the USGS. The Yorktown aquifer and confining unit receive recharge from the surficial aquifer (Hydrogeologic Framework of the North Carolina Coastal Plain, Winner, M.D.).

The Black Creek confining unit underlies the Yorktown aquifer. It is approximately 20 feet thick in the referenced area according to USGS maps. It is underlain by the Black Creek aquifer which is lagoonal to marine and consists of interbedded gray to black and gray to tan sands. The average hydraulic conductivity is 20 ft/day. From maps provided by the USGS, the Black Creek aquifer is approximately 240 feet thick in the referenced area (Hydrogeologic Framework of the North Carolina Coastal Plain, Winner, M.D.).

The Upper Cape Fear confining unit underlies the Black Creek aquifer and is approximately 20 to 30 feet thick. The confining unit overlies the Upper Cape Fear aquifer which consists of alternating beds of sand and clay, other beds have a thin conglomerate of quartz pebble or mudstone fragments. The average hydraulic conductivity is 30 ft/day (Hydrogeologic Framework of the North Carolina Coastal Plain, Winner, M.D.).

6. Describe Subsurface Structures

Municipal water and sewer utilities run along the site property on the edge of 9th and 10th Streets. Natural gas lines enter the property from 9th Street.

7. Property Owners and Occupants

Adjacent property owners obtained from the City of Greenville Tax Office website and are included in Table 1.

TABLE 1
Adjacent Property Owners/ Occupants
Date: 3/8/04 **Incident No. and Name:** 14136 Sam Pollard & Sons, Inc. **Facility ID No.** 0-032478

Tax Parcel Number/ Map ID	Owner/ Occupant Name (Last, First MI)	Address	Phone Number
07373 01872	State of North Carolina	c/o State Property Office 116 West James St. PO Box 629, Raleigh, NC 27602	919-733-4346
016122 019449	M.C.B Limited	PO Box 1783 Winterville, NC 28590	-
02759	Kenneth Walker Brown, Jr.	PO Box 444 Nags Head, NC 27959	-
029124	Norfolk Southern Railroad Co.	Property Tax Department 110 Franklin Rd., SE Roanoke, VA 24052	-
013741	Jerry Wayne Huggins	PO Box 3918 Greenville, NC 27836	-

D. Site Geology

Sam Pollard & Sons, Greenville, Pitt County, NC is located in the Coastal Plain Physiographic province. Based on the soil boring advanced during the installation of the on-site monitor well MW-1, the site geology consists of approximately 6.5 feet of gray, fine, clayey sand, underlain by 11.5 feet of gray to brown, fine, sandy clay. Boring logs are included in the well construction records. Table 2 summarizes all pertinent monitor well information.

TABLE 2
Well Construction Information

Date: 3/8/04 **Incident No. and Name:** 14136 Sam Pollard & Sons, Inc. **Facility ID No.** 0-032478

Well ID	Date Installed (m/dd/yy)	Date Water Level Measured (m/dd/yy)	Well Casing Depth (ft. BGS)	Screened Interval (x to y ft. BGS)	Bottom of Well (ft. BGS)	Top of Casing Elevation* (ft.) assumed	Depth to Water from Top of Casing (ft.)	Free Product Thickness** (ft.)	Groundwater Elevation* (ft.)	Comments
MW1	2/17/04	2/19/04	17	2-17	17	-	6.59	-	-	-

* Reference Point for Elevation Measurements NA, Assumed Elevation: NA.

** If free product is present in a well, ground water elevation should be calculated by: [Top of Casing Elevation – Depth to Water] + [free product thickness x 0.8581]

ft. BGS = feet below ground surface.

E. Sampling Results

One soil sample was collected from the soil boring advanced during the installation of monitor well MW-1 on February 17, 2004. The soil sample was collected from a depth of five to six feet below ground surface (bgs) and analyzed for volatile organic compounds using EPA Method 8260 with a 5035 standard preparation and aliphatics/aromatics using MADEP VPH. Table 3 summarizes the February 17, 2004 soil laboratory analytical results.

A groundwater sample was collected on February 19, 2004 from monitor well MW-1. The sample was analyzed for purgeable halocarbons using EPA Method 601, purgeable aromatics using EPA Method 602 plus methyl *tert* butyl ether (MTBE), diisopropyl ether (IPE), ethylene dibromide (EDB) using EPA Method 504.1, aliphatics/aromatics using MADEP VPH, and lead using standard preparation 3030C. Depth to groundwater measured 6.59 feet below top of casing. Table 4 summarizes the February 19, 2004 groundwater laboratory analytical results.

TABLE 3
Summary of Soil Sampling Results (2/17/04)

Date: 3/8/04 Incident No. and Name: 14136 Sam Pollard & Sons, Inc. Facility ID No. 0-032478

Analytical Method (e.g., VOC by EPA 8260)			EPA 8260	EPA 8260	EPA 8260	EPA 8260	EPA 8260	EPA 8260	EPA 8260	EPA 8260	EPA 8260
Sample ID	**Contaminant of Concern**		**Ethylbenzene**	**Isopropyl benzene**	**Naphthalene**	**n-Propyl benzene**	**Toluene**	**1,2,4-Trimethylbenzene**	**1,3,5-Trimethylbenzene**	**n-butylbenzene**	**sec-butylbenzene**
	Date Collected (m/dd/yy)	**Sample Depth (All Depths Approximate)** (ft. BGS)									
MW-1 @ 5'	2/17/04	(5 – 6)	**37.1**	**6.26**	**26.3**	**29.2**	**55.6**	**128**	**38.6**	**20**	**2.92**
Soil to groundwater MSCC (mg/kg)			0.24	2	0.58	2	7	8	7	4	3
Residential MSCC (mg/kg)			1,560	1,564	63	156	3,200	782	782	156	156
Industrial/Commercial MSCC (mg/kg)			40,000	40,880	1,635	4,088	82,000	20,440	20,440	4,088	4,088

- MSCC = Maximum Soil Contaminant Concentration
- Ft. BGS = feet below ground surface
- Mg/kg = milligrams per kilogram

TABLE 4 (continued)
Summary of Soil Sampling Results (2/17/04)

Date: 3/8/04 Incident No. and Name: 14136 Sam Pollard & Sons, Inc. Facility ID No. 0-032478

Analytical Method (e.g., VOC by EPA 8260)			EPA 8260	MADEP VPH	MADEP VPH
Sample ID	Contaminant of Concern				
	Date Collected (m/dd/yy)	Sample Depth (All Depths Approximate) (ft. BGS)	Xylenes	C5-C8 Aliphatics	C9-C22 Aromatics
MW-1 @ 5'	2/17/04	5 – 6	178	1,430	886
Soil to groundwater MSCC (mg/kg)			5	3,255	34
Residential MSCC (mg/kg)			32,000	9,386	469
Industrial/Commercial MSCC (mg/kg)			200,000	245,280	12,264

MSCC = Maximum Soil Contaminant Concentration
Ft. BGS = feet below ground surface

TABLE 4
Summary of Groundwater Sampling Results

Date: 3/8/04 Incident No. and Name: 14136 Sam Pollard & Sons, Inc. Facility ID No. 0-032478

Analytical Method (e.g., VOC by EPA 601) →			EPA 601	EPA 601	EPA 601	EPA 602	EPA 602	EPA 602	EPA 504.1	MADEP VPH	MADEP VPH	MADEP VPH
Contaminant of Concern →			Benzene	Ethylbenzene	Toluene	Xylenes	MTBE	IPE	EDB	C5-C8 Aliphatics	C9-C18 Aliphatics	C9-C22 Aromatics
Well ID	Sample ID	Date Collected (m/dd/yy)										
MW-1	MW-1	2/19/04	35	912	1,515	3,765	4.5	115	0.021	7,380	6,220	3,490
2L Standard (µg/l)			1	29	1,000	530	200	70	4E-4	420	4,200	210
GCL (µg/l)			5,000	29,000	257,500	87,500	200,000	70,000	50	-	-	-

µg/L =micrograms per liter
GCL = Gross Contaminant Levels

E. Conclusions and Recommendations

Discuss the risk criteria that apply to the release and identify any other site-specific factors related to the release that may pose a risk to human health and the environment. Also, discuss any site-specific conditions or possible actions that could result in lowering the level of risk posed by the release.

Fuss & O'Neill, Inc., has performed the Limited Site Assessment per the requirements of the North Carolina Department of Environment and Natural Resources (NCDENR). The February 17, 2004 soil laboratory analytical data indicate that the following compounds were above the Soil-to-Groundwater Maximum Soil Contaminant Concentrations (MSCCs): ethylbenzene; isopropyl benzene; naphthalene; n-propylbenzene; toluene; 1,2,4-trimethylbenzene; 1,3,5-trimethylbenzene; n-butylbenzene; sec-butylbenzene; xylenes; C5-C8 aliphatics; and C9-C22 aromatics. All analyzed constituents were below the Residential MSCCs.

The February 19, 2004, groundwater laboratory analytical data indicate that the following constituents were present in monitor well MW-1 above the 15A NCAC 2L groundwater standards: benzene, ethylbenzene, toluene, xylenes, MTBE, IPE, EDB, C5-C8 aliphatics, C9-C18 aliphatics, C9-C22 aliphatics, and lead. All analyzed constituents were below the Gross Contaminant Levels (GCLs).

We recommend that the Sam Pollard & Sons, Inc. site be ranked as Low Risk. We also recommend that the site be issued a No Further Action pending a Notice of Petroleum for groundwater.

H. Site History:

Tables 5 and 6 summarize the information known regarding the USTs located at the subject site.

TABLE 5
SITE HISTORY
UST System Information
Sam Pollard & Sons, Inc., Greenville, Pitt County, NC

UST ID Number	Product (gasoline, diesel, jet fuel, etc.)	Capacity (gallons)	Date Installed (m/dd/yy)	Date Permanently Closed (P), or Still in Use* (C) (m/dd/yy)	Was Release Associated With UST System? (Yes / No)
1	gasoline	1,000	1970	4/14/95 (P)	Yes

TABLE 6
SITE HISTORY
UST Owner/Operator Information (most recent first)
Sam Pollard & Sons, Inc., Greenville, Pitt County, NC

UST ID Number	Name of Owner or Operator	Dates of Ownership / Operation [(m/dd/yy) to (m/dd/yy)]			Owner or Operator?
1	Sam Pollard & Sons, Inc.	1970	To	4/1995	Operator
Address					**Telephone Number**
400 West Tenth Street, Greenville, NC 27834					252-752-3661
UST ID Number	**Name of Owner or Operator**	**Dates of Ownership / Operation [(m/dd/yy) to (m/dd/yy)]**			**Owner or Operator?**
1	Clark Oil Company	1970	To	?	Owner
Address					**Telephone Number**
Defunct					-

WELL CONSTRUCTION RECORD

North Carolina – Department of Environmental and Natural Resources – Division of Water Quality – Groundwater Section

WELL CONTRACTOR (INDIVIDUAL) NAME (print) MARK GETTYS CERTIFICATION # 2345

WELL CONTRACTOR COMPANY NAME GEOLOGIC EXPLORATION, INC. PHONE # (704) 872-7686

STATE WELL CONSTRUCTION PERMIT# (if applicable) _____ ASSOCIATED WQ PERMIT# (if applicable) _____

1. WELL USE (Check Applicable Box): Residential ☐ Municipal/Public ☐ Industrial ☐ Agricultural ☐
Monitoring ☒ Recovery ☐ Heat Pump Water Injection ☐ Other ☐ If Other, list Use _____

2. WELL LOCATION:
Nearest Town: GREENVILLE County PITT
400 WEST 10TH STREET
(Street Name, Numbers, Community, Subdivision, Lot No., Zip Code)

Topographic/Land setting
☐ Ridge ☐ Slope ☐ Valley ☒ Flat
(check appropriate box)
Latitude/longitude of well location
_____
(degrees/minutes/seconds)
Latitude/longitude source: ☐ GPS ☐ Topographic map
(check box)

3. OWNER: SAM POLLART
Address 400 WEST 10TH STREET
(Street or Route No.)
GREENVILLE NC
City or Town State Zip Code
( )
Area Code – Phone Number

4. DATE DRILLED 02/17/04
5. TOTAL DEPTH: 17.0 FEET
6. DOES WELL REPLACE EXISTING WELL? YES ☐ NO ☒
7. STATIC WATER LEVEL Below Top of Casing: 6.59 FT.
(Use "+" if Above Top of Casing)
8. TOP OF CASING IS 0.0 FT. Above Land Surface*
*Top of casing terminated at/or below land surface requires a variance in accordance with 15A NCAC 2C .0118.
9. YIELD (gpm): N/A METHOD OF TEST N/A
10. WATER ZONES (depth): N/A
11. DISINFECTION: Type N/A Amount _____
12. CASING:

	Depth			Diameter	Wall Thickness or Weight/Ft.	Material
From	0.0	To 2.0	Ft	2 INCH	SCH 40	PVC
From		To	Ft.			
From		To	Ft.			

13. Grout:

	Depth			Material	Method
From	0.0	To 1.0	Ft.	Portland Bentonite	Slurry
From		To	Ft.		

14. SCREEN:

	Depth			Diameter		Slot Size		Material
From	2.0	To 17.0	Ft.	2.0	in.	.010	in	PVC
From		To	Ft.		in.		in	

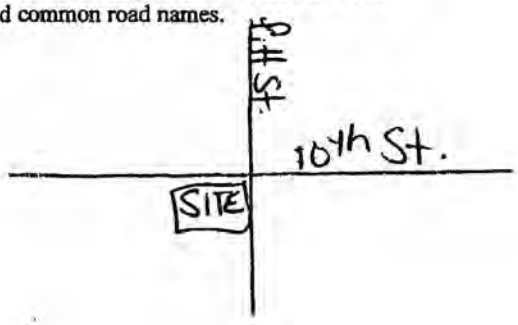
15. SAND/GRAVEL PACK:

	Depth			Size	Material
From	1.5	To 17.0	Ft.	20-40	FINE SILICA SAND
From		To	Ft.		

From	To	Formation Description
0.0	6.5	GRAY FINE CLAYEY SAND
6.5	11.5	GRAY/BROWN FINE SANDY CLAY
11.5	17.0	GRAY SANDY CLAY

DEPTH / DRILLING LOG

LOCATION SKETCH
Show direction and distance in miles from at least two State Roads or County Roads, inculed the road numbers and common road names.



16. REMARKS: MW-1 BENTONITE SEAL FROM 1.0 TO 1.5 FEET

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

Mark K. Gettys 3/2/04

SIGNATURE OF PERSON CONSTRUCTING THE WELL DATE

Submit the original to the Division of Water Quality, Groundwater Section, 1636 Mail Service Center – Raleigh, NC 27699-1636 Phone No. (919) 733-3221, within 30 days.

GW-1 REV. 07/2001

2040

SOIL ASSESSMENT REPORT

SAM POLLARD & SON, PLUMBING, HEATING, & AIR CONDITIONING, INC. GROUNDWATER INCIDENT NO. 14136

SAMPLING PERIOD:

APRIL 2004

SITE INFORMATION
400 West 10th Street
Greenville, Pitt Co., NC
Risk Classification: Low
Land Use: Commercial
Facility ID No. 0-032478
Latitude: 35°36'23" N
Longitude: 077°22'41" W

RELEASE INFORMATION
Discovered:
June 1995

Source of Release:
(1) 1,000 gallon gasoline UST

Estimated Quantity of Release:
Unknown

RESPONSIBLE PARTY
FORMER UST OWNER
Sam Pollard & Son, Inc.
400 West 10th Street
Greenville, Pitt Co., NC
(252) 752-3661

CURRENT UST
OWNER/OPERATOR
Sam Pollard & Son, Inc.
400 West 10th Street
Greenville, Pitt Co., NC
(252) 752-3661

PREPARED BY:

Fuss & O'Neill, Inc.
610 Lynndale Ct., Suite E
Greenville, NC 27858
(252) 355-1370

NORTH CAROLINA LICENSED SEAL 1857 6/4/04 GEOLOGIST SUSAN A. LAUGHINGHOUSE

Job No. 20040122.A11
Pre-Approval Authorization No. 14136-02

Gregory L. Aumann
Scientist II

Susan A. Laughinghouse, L.G.
Senior Geologist II/Project Manager

June 2004

EXECUTIVE SUMMARY

Sam Pollard & Son, Plumbing, Heating, and Air Conditioning, Inc. (Sam Pollard & Son), is currently operating as a commercial pumbing, heating, and air conditioning service business. Soil samples collected during the June 1995 Underground Storage Tank (UST) closure of the 1,000 gallon gasoline UST indicated that a release had occurred.

The site geology consists of approximately 6.5 feet of gray, fine, clayey sand, underlain by 11.5 feet of gray to brown, fine, sandy clay.

One soil sample was collected on February 19, 2004 during the installation of monitoring well MW-1. The soil sample was analyzed for volatiles using EPA Method 846, 8260 with a standard preparation and aliphatics/aromatics using MADEP VPH.

Four soil samples, B-1 through B-4, were collected on March 26, 2004. Three additional soil borings, B-5 through B-7, were collected on April 16, 2004. The soil samples were analyzed for aliphatics/aromatics using MADEP VPH.

The soil analytical results indicate that the Residential Maximum Soil Concentrations (MSCC) standards have been exceeded in soil borings MW-1 and B2 for one or more of the following: C5-C8 Aliphatics and C9-C10 Aromatics.

Fuss & O'Neill proposes excavation of the source area. The proposed extent of excavation is approximately 33 feet by 15 feet. Excavation will continue until the water table is encountered (approximately 7 feet below ground surface). Approximately 1,166 cubic yards will be excavated from the source area at Sam Pollard and Son.

Excavated soil will be transported offsite and properly disposed of at a permitted land farm.

Post remediation sampling will include five samples collected from below the excavation. Proposed sampling locations will be at the corners of the excavation and a location in the center of the excavation area. Samples will be analyzed for aliphatics/aromatics using MADEP VPH.

TABLE OF CONTENTS

TABLES

FIGURES

APPENDICES

1.0 INTRODUCTION

Fuss & O'Neill, Inc. is pleased to submit the Soil Assessment Report at Sam Pollard & Son, Plumbing, Heating, and Air Conditioning, Inc. (Sam Pollard & Son), Greenville, Pitt County, North Carolina. A vicinity map is included as Figure 1.

1.1 Site History

Sam Pollard & Son is currently operating as a commercial pumbing, heating, and air conditioning service business. A site map is included as Figure 2. Soil samples collected during the June 1995 UST closure of the 1,000 gallon gasoline UST indicated that a release had occurred. Table 1 summarizes the UST system information. Table 2 summarizes the UST owner/operator information.

2.0 SURVEY OF POTENTIAL RECEPTORS

2.1 Land Use

The property is occupied by a commercial plumbing, heating, and air conditioning business. There is a security fence around the property that can be locked at night. The area of concern is overlain by dirt and gravel.

The property is zoned commercial. The property is located in the downtown/business area of Greenville, Pitt County, North Carolina. The zoning may be changed to Industrial or Institutional due to the recent purchases of adjacent properties by East Carolina University.

There are no water supply wells within a 1,000 foot radius of the source area. Greenville Utility Commision provides water to Pollard and Son, and the surrounding properties. There are no surface water bodies within 1,500 feet of the source area.

The source area is located on the edge of the Greenville Utilites Commision Wellhead Protection Plan, PWSID #04-74-010 (Washington Street Well). A wellhead protection map is included as Figure 3.

2.2 Potentially Affected Property Owners and Occupants

The nearest primary residence is approximately 830 feet southeast of the site at the intersection of 11th Street and Evans Street. The Beach Party Bingo Center is located approximately 230 feet west of the site at the intersection of West 10th Street and Clark Street. St. Jude Missionary Baptist Church is located approximately 350 feet northwest of the site at the intersection of 8th Street and Dickinson Avenue. Mattie Lee Pate operates the MLP Child Daycare, located at 607 West 12th Street, approximately 1,000

feet southeast of the site. The surrounding property is zoned Commercial or Industrial. The nearest residential zoning is approximately 800 feet from the site.

3.0 SITE GEOLOGY

Sam Pollard & Son, Greenville, Pitt County, North Carolina is located in the Coastal Plain Physiographic province. Based on the soil boring advanced during the installation of the on-site monitoring well MW-1, and the soil borings installed on March 26 and April 16, 2004, the site geology consists of approximately 6.5 feet of gray, fine, clayey sand, underlain by 11.5 feet of gray to brown, fine, sandy clay. A geologic cross sectional area map is included as Figure 4. A geologic cross section is included as Figure 5. Boring logs are included in the Appendix A.

4.0 SOIL INVESTIGATION

One soil sample was collected on February 19, 2004 during the installation of monitoring well MW-1. The sample was collected from a depth of 5 feet below ground surface (feet bgs). The samples was analyzed for volatiles using EPA Method SW 846 8260 with a 5035 standard preparation and aliphatics/aromatics using MADEP VPH. The soil sample collected from monitoring well MW-1 exceeds the Residential Maximum Contaminant Concentration (MSCC) for C9-C10 aromatics. Table 4 summarizes the February 19, 2004 soil sampling analytical results. Table 5 summarizes the February 19, 2004 MADEP VPH soil sampling analytical results.

Four soil samples were collected on March 26, 2004. Borings B-1 through B-4 were advanced to a depth of 6 feet bgs. One soil sample was collected from each boring location at a depth of 6 feet bgs. The soil samples were analyzed for aliphatics/aromatics using MADEP VPH. On April 16, 2004, three additional soil borings, B-5 through B-7, were advanced to depth of 6.5 feet bgs. Samples were collected from each boring location at 6.5 feet bgs. The soil samples were analyzed for aliphatics/aromatics using MADEP VPH. Table 6 summarizes the March 26, 2004 and April 16, 2004 soil sampling analytical results. A soil boring location map is included as Figure 6. The sample collected on March 26, 2004 from soil boring B-2 exceeds the Residential MSCC for C5-C8 aliphatics and C9-C10 aromatics.

A C5-C8 aliphatic concentration map is included as Figure 7. A C9-C10 aromatic concentration map is included as Figure 8.

5.0 CONCLUSIONS AND RECOMMENDATIONS

Fuss & O'Neill has performed the soil assessment event at Sam Pollard & Son per the requirements of the North Carolina Department of Environmental and Natural Resources

(NCDENR). The soil analytical results indicate that the Residential MSCC have been exceeded in soil borings MW-1 and B2 for one or more of the following: C5-C8 Aliphatics and C9-C10 Aromatics.

5.1 Proposed Remediation

Fuss & O'Neill proposes excavation of the source area. The proposed extent of excavation is approximately 33 feet by 15 feet. Excavation will continue until the water table is encountered (approximately 7 feet below ground surface). Approximately 1,166 cubic yards will be excavated from the source area at Sam Pollard and Son. A map showing the proposed area of excavation is included in Figure 9.

Excavated soil will be transported offsite and properly disposed of at a permitted land farm. A task authorization will be submitted for the transport and disposal of the excavated soil, and the subsequent post-remediation soil sampling and analysis.

Post remediation sampling will include five soil samples collected below the excavation. Sampling locations will be at the corners of the excavation and a location in the center of the excavation area. Samples will be analyzed for aliphatics/aromatics using MADEP VPH. A map showing the proposed post remediation sampling locations is included as Figure 10.

Fuss & O'Neill is pleased to submit this Soil Assessment Report on behalf of Sam Pollard & Son. If you have any questions or desire additional information, please contact our office at your earliest convenience.

TABLE 1
UST SYSTEM INFORMATION
Sam Pollard & Son, Greenville, Pitt Co., North Carolina
Facility ID No. 0-032478

UST ID Number	Product (gasoline, diesel, jet fuel, etc.)	Capacity (gallons)	Date Installed (mm/dd/yy)	Date Permanently Closed (P), or Still in Use*(C) (mm/dd/yy)	Was Release Associated With UST System? (Yes/No)
1	gasoline	1,000	1970	4/14/95 (P)	Yes

*Still in use means not permanently closed.

TABLE 2
UST OWNER/OPERATION INFORMATION
Sam Pollard & Son, Greenville, Pitt Co., North Carolina
Facility ID No. 0-032478

UST ID Number	Name of Owner or Operator	Dates of Ownership / Operation [(m/dd/yy) to (m/dd/yy)]			Owner or Operator?
1	Sam Pollard & Sons, Inc.	1970	to	4/1995	Operator
Address				**Telephone Number**	
400 West 10th Street, Greenville, NC 27834				(252) 752-3661	
UST ID Number	**Name of Owner or Operator**	**Dates of Ownership / Operation** [(m/dd/yy) to (m/dd/yy)]			**Owner or Operator?**
1	Clark Oil Company	1970	to	?	Owner
Address				**Telephone Number**	
Defunct				-	

TABLE 3
Adjacent Property Owners/Occupants

Date: 3/8/04 **Incident No. and Name:** 14136 Sam Pollard & Son **Facility ID No.:** 0-032478

Tax Parcel Number/ Map ID	Owner/ Occupant Name (Last, First MI)	Address	Phone Number
07373 01872	State of North Carolina	c/o State Property Office 116 West James St. PO Box 629, Raleigh, NC 27602	919-733-4346
016122 019449	M.C.B Limited	PO Box 1783 Winterville, NC 28590	-
02759	Kenneth Walker Brown, Jr.	PO Box 444 Nags Head, NC 27959	-
029124	Norfolk Southern Railroad Co.	Property Tax Department 110 Franklin Rd., SE Roanoke, VA 24052	-
013741	Jerry Wayne Huggins	PO Box 3918 Greenville, NC 27836	-

TABLE 4
Summary of 2/19/04 Soil Sampling Results

Date: 3/8/04 **Incident No. and Name:** 14136 Sam Pollard & Son **Facility ID No.** 0-032478

Analytical Method (e.g., VOC by EPA 8260)			**EPA 8260**	**EPA 8260**	**EPA 8260**	**EPA 8260**	**EPA 8260**	**EPA 8260**	**EPA 8260**	**EPA 8260**	**EPA 8260**
Sample ID	**Contaminant of Concern**		**n-butylbenzene**	**sec-butylbenzene**	**Ethylbenzene**	**Isopropyl benzene**	**Naphthalene**	**n-Propyl benzene**	**Toluene**	**1,2,4-Trimethylbenzene**	**1,3,5-Trimethylbenzene**
	Date Collected (m/dd/yy)	**Sample Depth (All Depths Approximate)** (ft. BGS)									
MW-1@5'	2/19/04	(5 – 6)	20	2.92	6.26	26.3	29.2	55.6	128	38.6	2.92
Residential MSCC (mg/kg)			156	156	63	1,560	1,564	63	156	3,200	782

- MSCC = Maximum Soil Contaminant Concentration
- Ft. BGS = feet below ground surface
- Mg/kg = milligrams per kilogram

TABLE 5
Summary of 2/19/04 MADEP VPH Soil Sampling Results

Date: 5/13/04 **Incident No. and Name:** 14136 Sam Pollard & Son **Facility ID No.** 0-032478

Analytical Method (e.g., VOC by EPA 8260)			MADEP VPH	MADEP VPH	MADEP VPH
Sample ID	Contaminant of Concern				
	Date Collected (m/dd/yy)	Sample Depth (All Depths Approximate) (ft. BGS)	C5-C8 Aliphatics	C9-C12 Aliphatics	C9-C10 Aromatics
MW-1@5'	2/19/04	5	1,430	< 400	886
Residential MSCC (mg/kg)			939	9,386	469

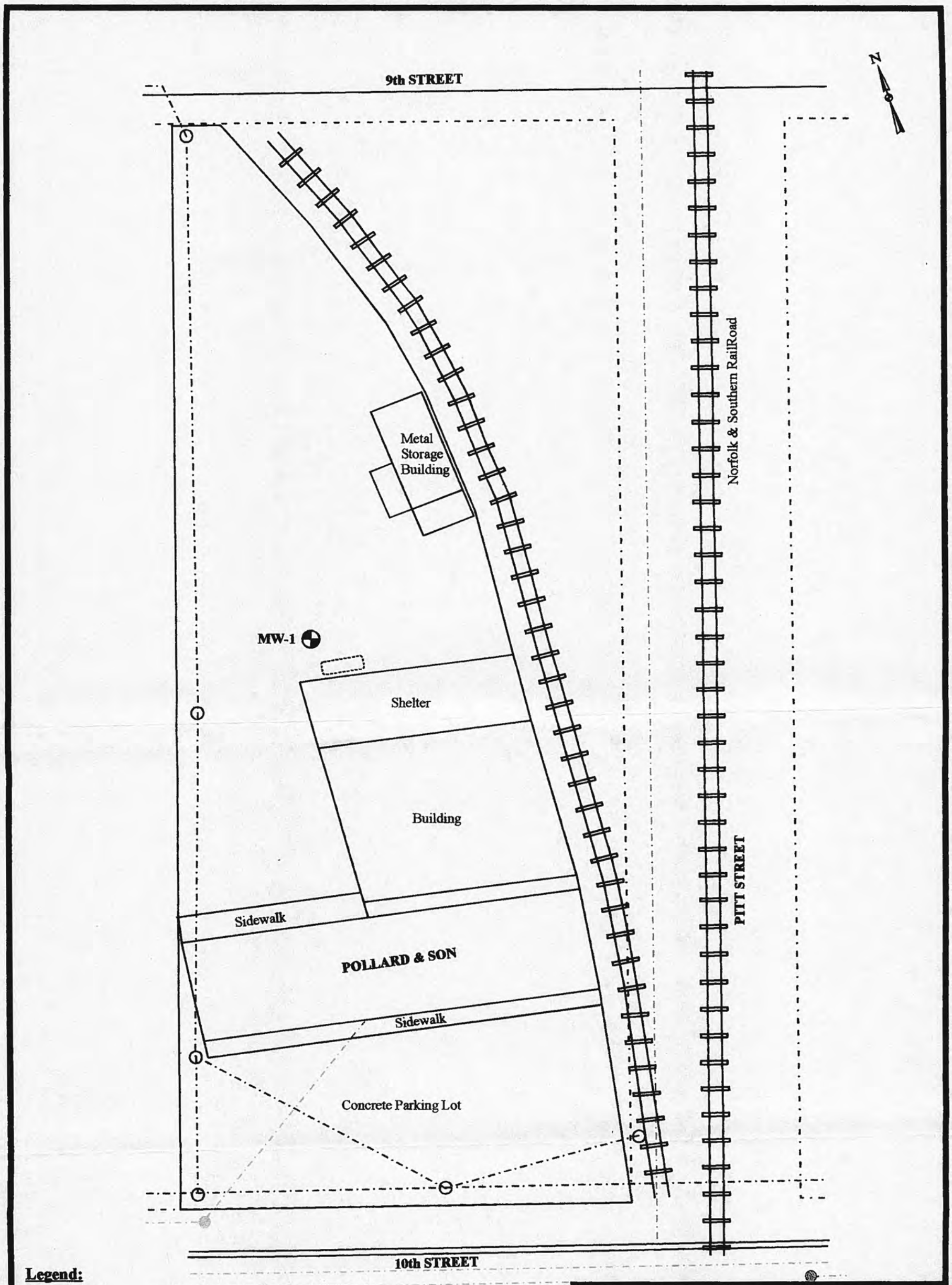
TABLE 6
Summary of 3/26/04 and 4/16/04 Soil Sampling Results

Date: 5/13/04 **Incident No. and Name:** 14136 Sam Pollard & Son **Facility ID No.** 0-032478

Analytical Method (e.g., VOC by EPA 8260)			MADEP VPH	MADEP VPH	MADEP VPH
Sample ID	Contaminant of Concern		C5-C8 Aliphatics	C9-C12 Aliphatics	C9-C10 Aromatics
	Date Collected (m/dd/yy)	Sample Depth (All Depths Approximate) (ft. BGS)			
B-1	3/26/04	5 – 6	< 10	< 10	< 10
B-2	3/26/04	5 – 6	**4,190**	1,470	**2,540**
B-3	3/26/04	5 – 6	14.2	< 10	19.1
B-4	3/26/04	5 – 6	< 10	< 10	< 10
B-5	4/16/04	6 – 6.5	< 10	< 10	< 10
B-6	4/16/04	6 – 6.5	< 10	< 10	< 10
B-7	4/16/04	6 – 6.5	< 10	< 10	< 10
Residential MSCC (mg/kg)			**939**	**9,386**	**469**

Name: GREENVILLE SW
Date: 6/3/2004
Scale: 1 inch equals 2000 feet

Location: 035° 36' 23.4" N 077° 22' 41.0" W
Caption: Figure 1
Sam Pollard Son
Greenville, Pitt Co., NC



Legend:

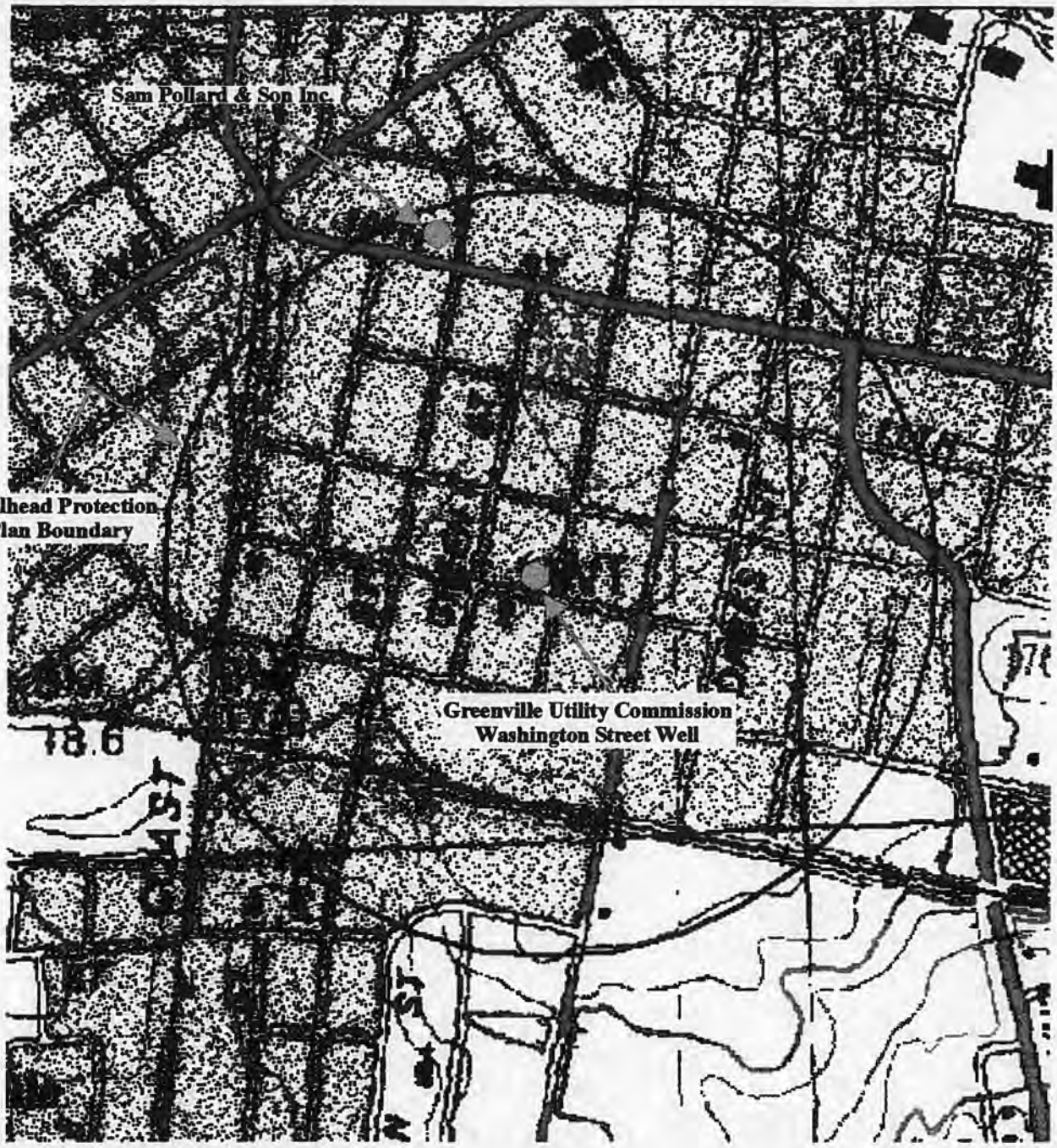
- Monitor Well
- Power Pole
- Sewer Manhole
- Sewer Line
- Water Line
- Natural Gas Line
- Overhead Electric Line
- Right of Way
- Former UST

All site features and well locations are approximate.

FUSS & O'NEILL INC. *Consulting Engineers*
610 LYNNDALE COURT - SUITE E, GREENVILLE, NC 27858
(252) 355-1370

FIGURE 2
SITE MAP WITH UTILITIES
SAM POLLARD & SON, INC.
400 WEST 10 TH STREET
GREENVILLE, PITT CO.,NC

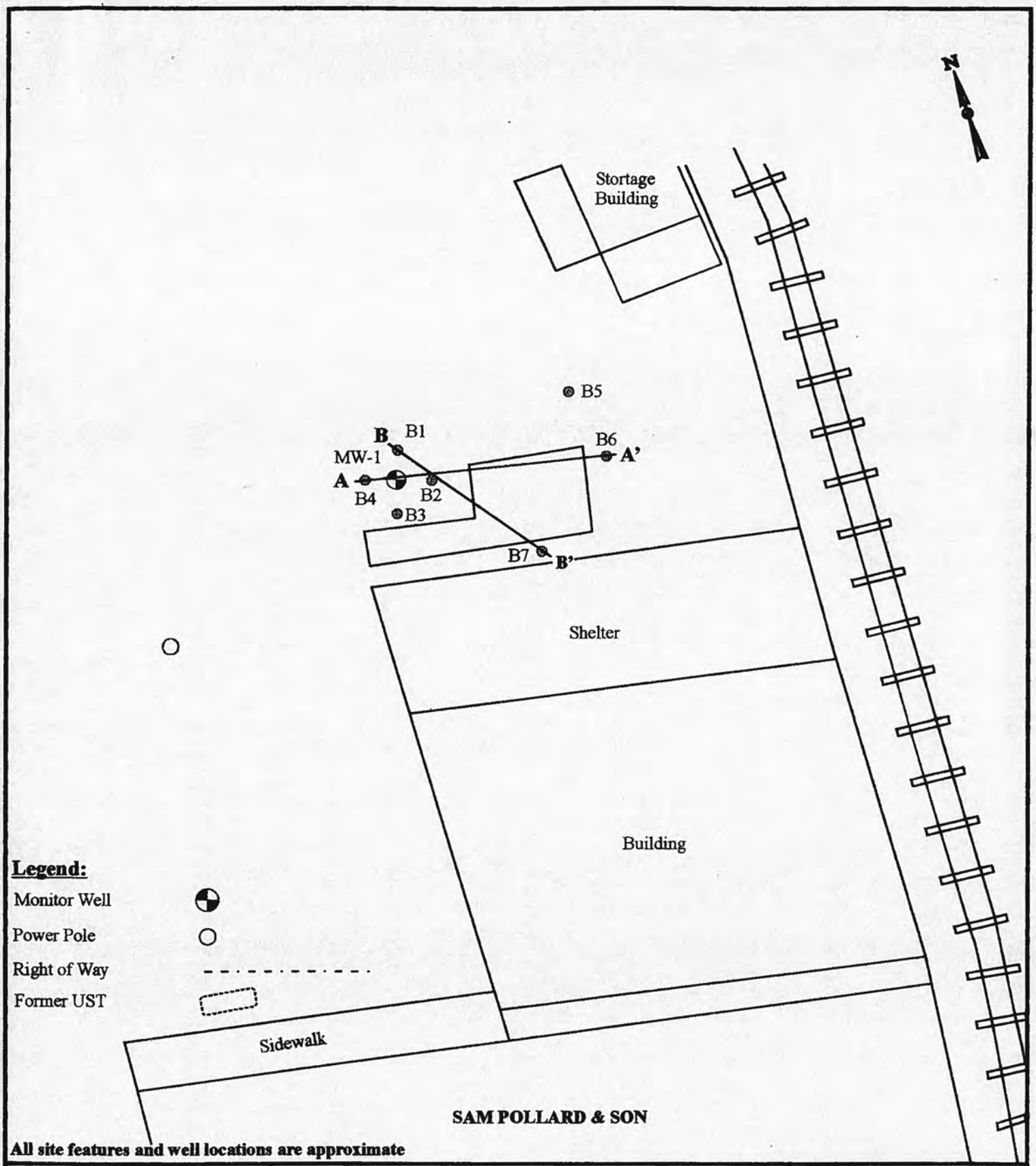
Date: 5/27/04	Scale: 1" = 30'
Project No: 20040122.A11	0 15 30 Graphic Scale



Site Features and Well Locations Approximate

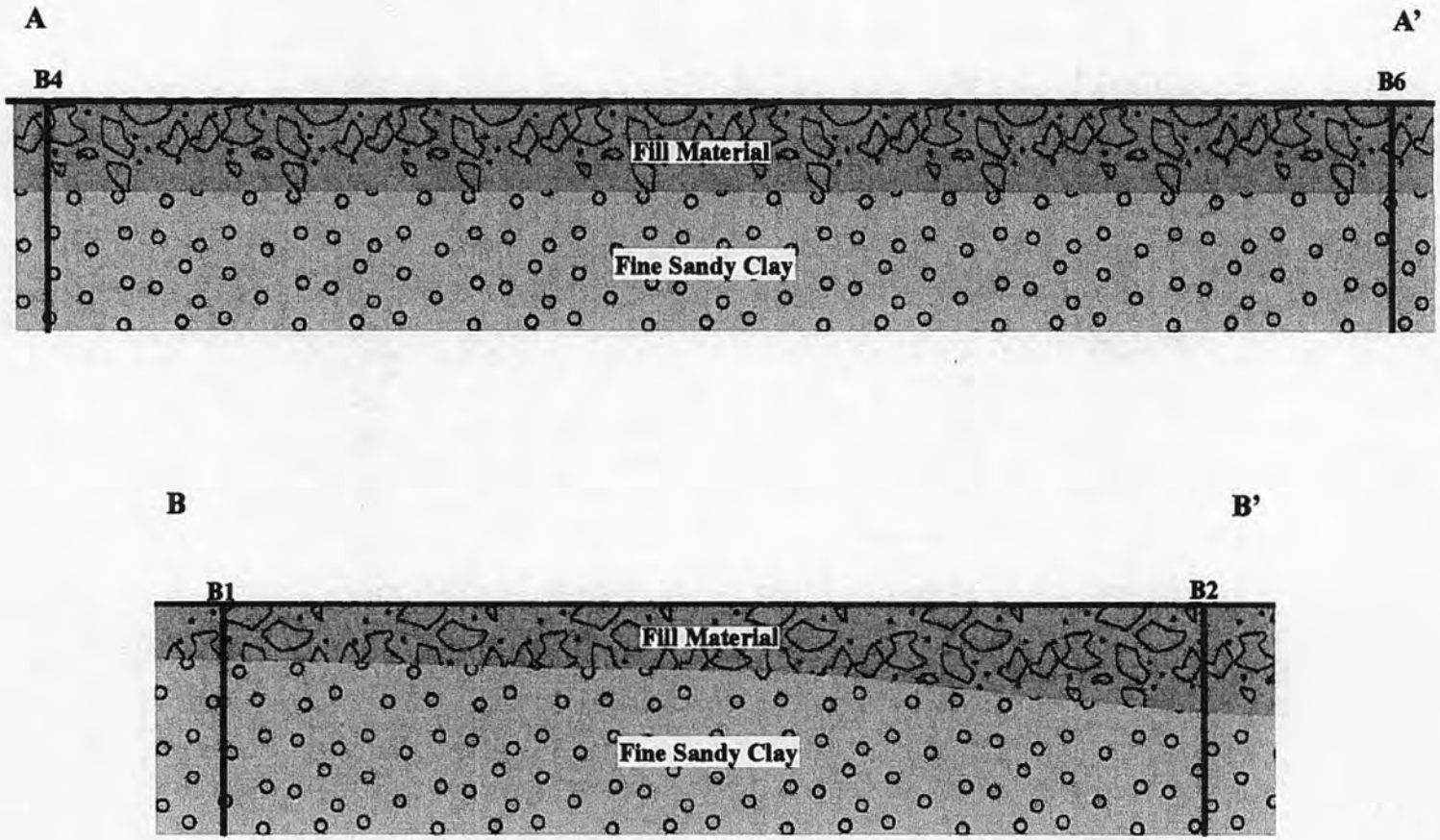
Wellhead Protection Plan Boundary provided by the North Carolina Department of Environment and Natural Resources, Environmental Health Division, Public Water Section

Date: 5/27/04	FUSS & O'NEILL INC. *Consulting Engineers* 610 LYNNDALE COURT - SUITE E, GREENVILLE, NC 27858 (252) 355-1370	**FIGURE 3** **WELLHEAD PROTECTION AREA MAP** **SAM POLLARD & SON, INC.** **400 WEST 10 TH STREET** **GREENVILLE, PITT CO., NC**
Scale: Not to Scale		
		Project No: 20040122.A11



All site features and well locations are approximate

Date: 5/27/04	**FUSS & O'NEILL INC.** *Consulting Engineers* 610 LYNNDALE COURT - SUITE E, GREENVILLE, NC 27858 (252) 355-1370	**FIGURE 4** **CROSS SECTIONAL AREA MAP** **SAM POLLARD & SON, INC.** **400 WEST 10TH STREET** **GREENVILLE, PITT CO.; NC**
Scale: 1" = 20'		
0 20 40 Graphic Scale		Project No: 020040122.A11



Date:	5/27/04
Scale:	1" = 5'

0 2.5 5.0

Graphic Scale

FUSS & O'NEILL INC. *Consulting Engineers*
610 LYNNDALE COURT - SUITE E, GREENVILLE, NC 27858
(252) 355-1370

FIGURE 5
CROSS SECTION MAP
SAM POLLARD & SON, INC.
400 WEST 10TH STREET
GREENVILLE, PITT CO. NC

Project No: 020040122.A11

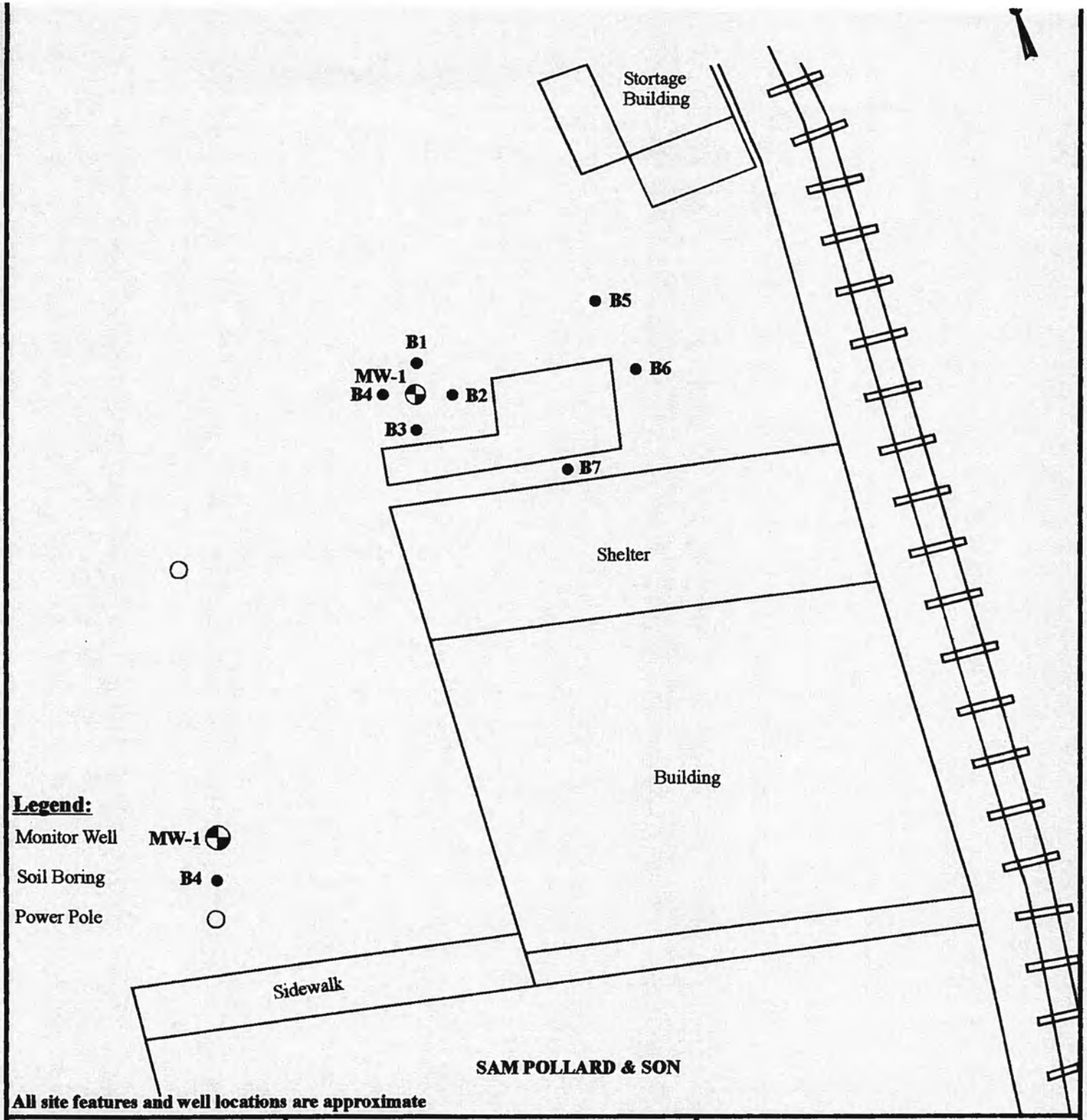
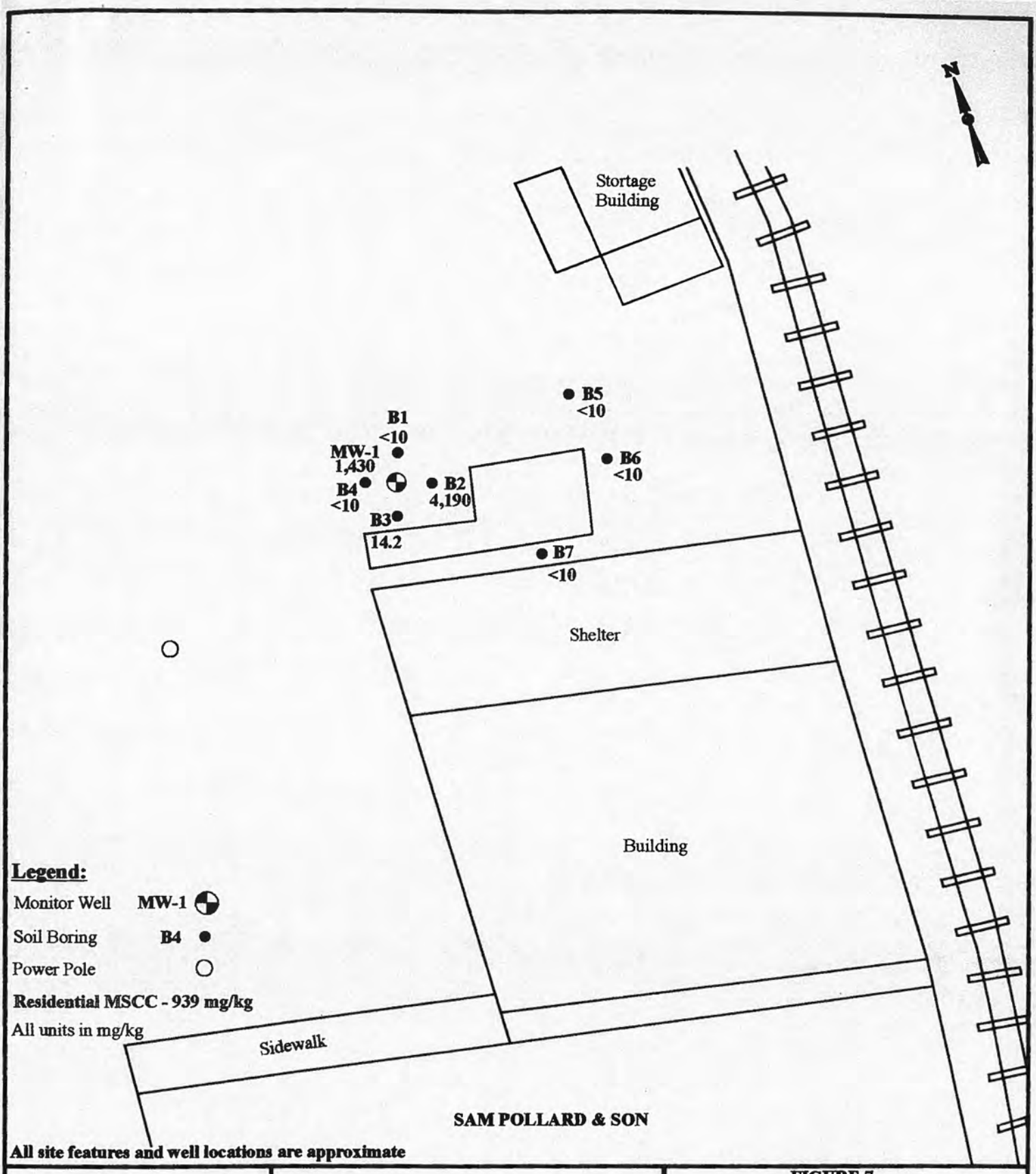
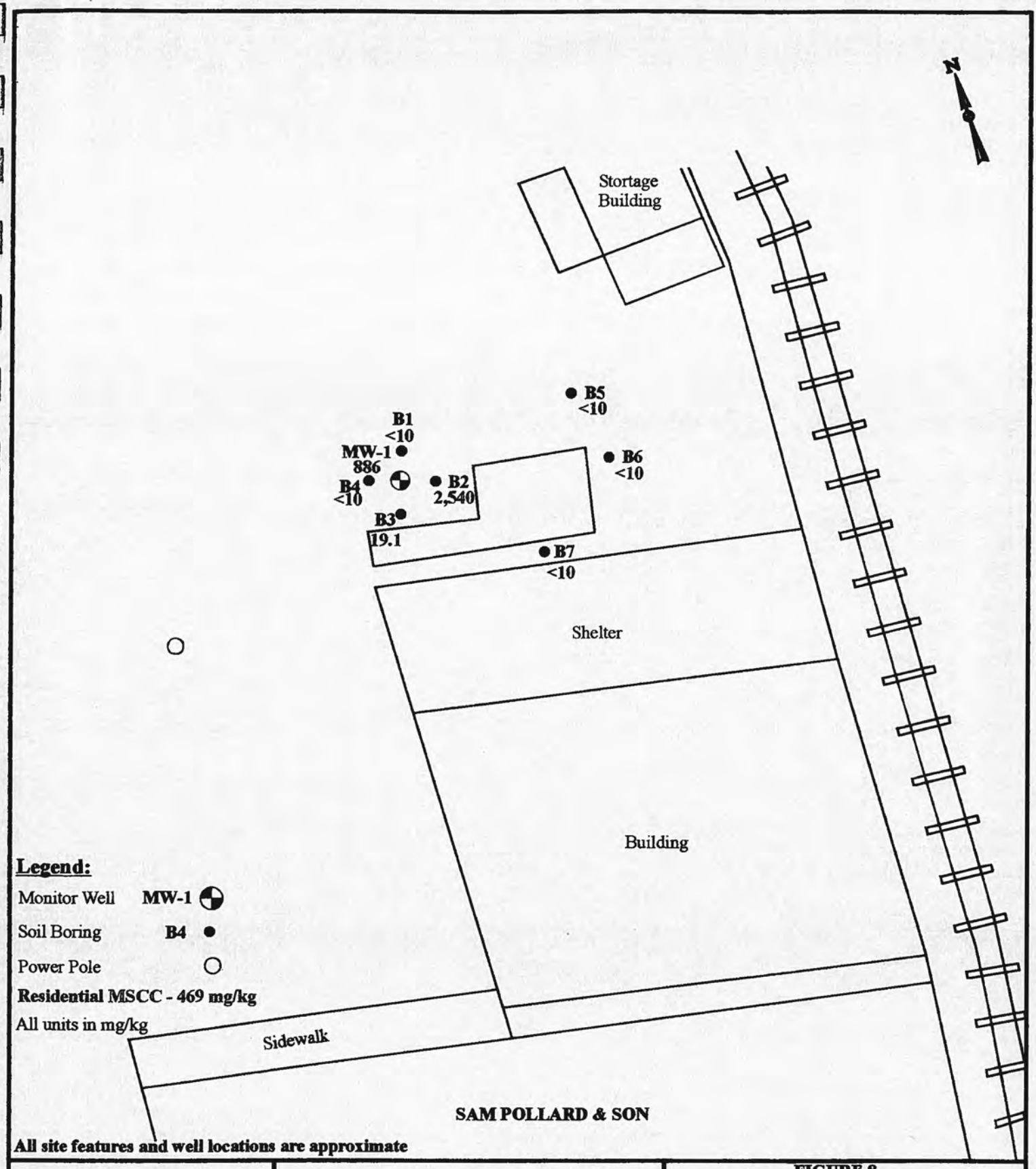

Stortage Building
B5
B1
MW-1
B4
B2
B6
B3
B7
Shelter
Building
Sidewalk
SAM POLLARD & SON
Legend:
Monitor Well MW-1
Soil Boring B4
Power Pole
All site features and well locations are approximate

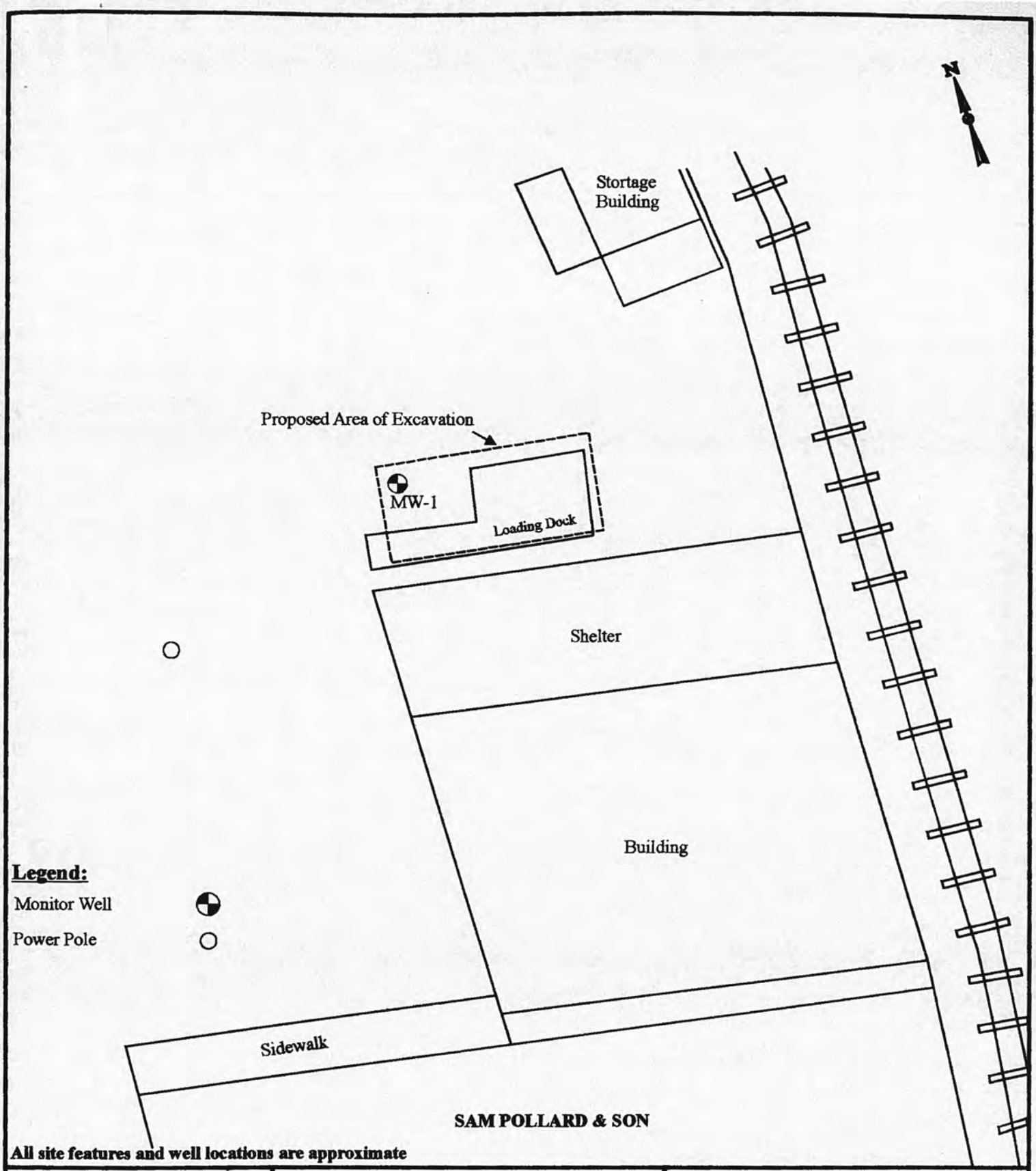
FIGURE 6



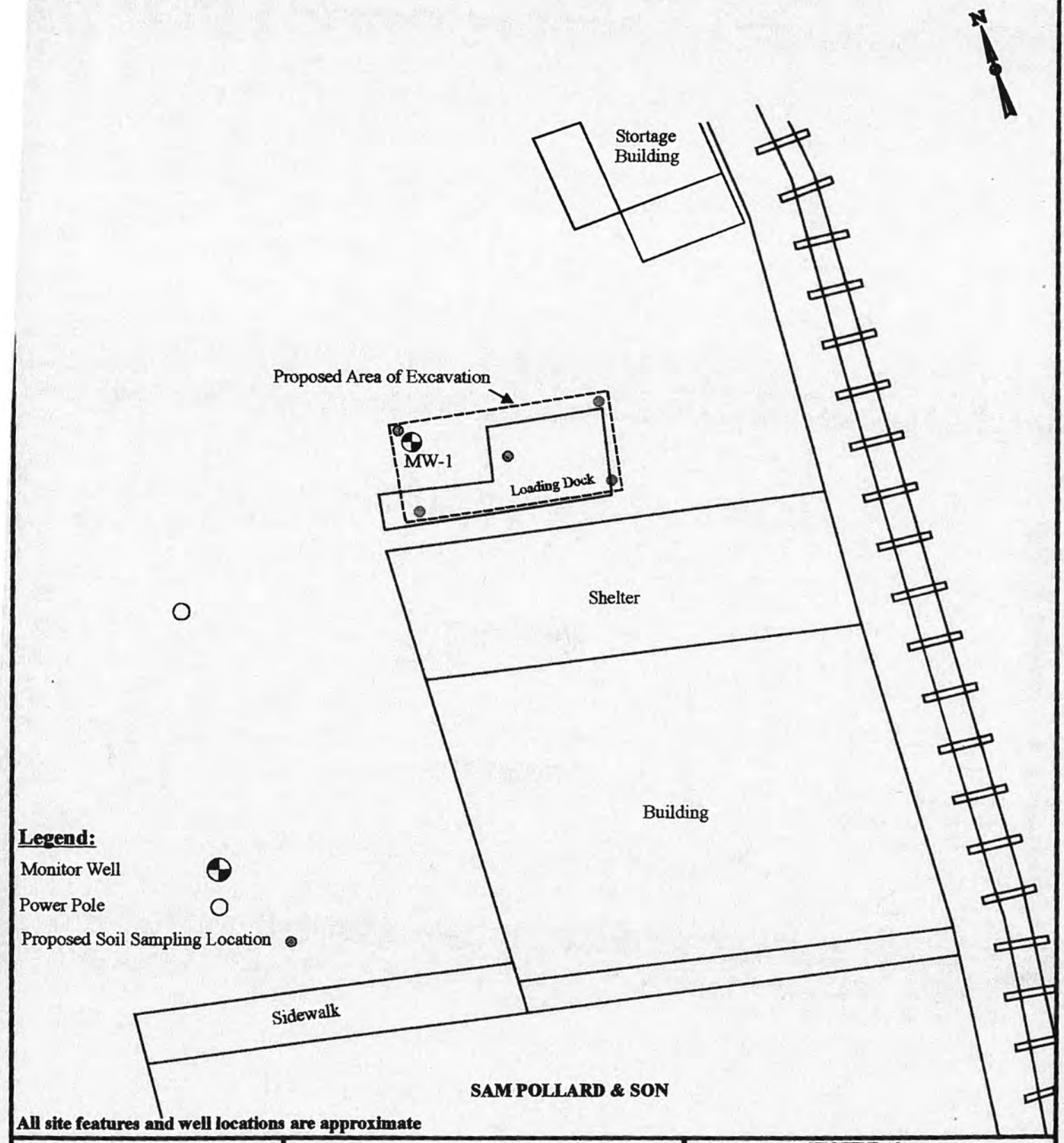
Date: 5/27/04	FUSS & O'NEILL INC. *Consulting Engineers* 610 LYNNDALE COURT - SUITE E, GREENVILLE, NC 27858 (252) 355-1370	**FIGURE 7** **C5-C8 ALIPHATICS CONCENTRATION MAP** **SAM POLLARD & SON, INC.** **400 WEST 10TH STREET** **GREENVILLE, PITT CO.; NC**
Scale: 1" = 20'		
0 20 40 Graphic Scale		Project No: 020040122.A11



Date: 5/27/04	FUSS & O'NEILL INC. *Consulting Engineers* 610 LYNNDALE COURT - SUITE E, GREENVILLE, NC 27858 (252) 355-1370	**FIGURE 8** **C9-C10 ALIPHATICS CONCENTRATION MAP** **SAM POLLARD & SON, INC.** **400 WEST 10TH STREET** **GREENVILLE, PITT CO.; NC**
Scale: 1" = 20' 0 20 40 Graphic Scale		Project No: 020040122.A11

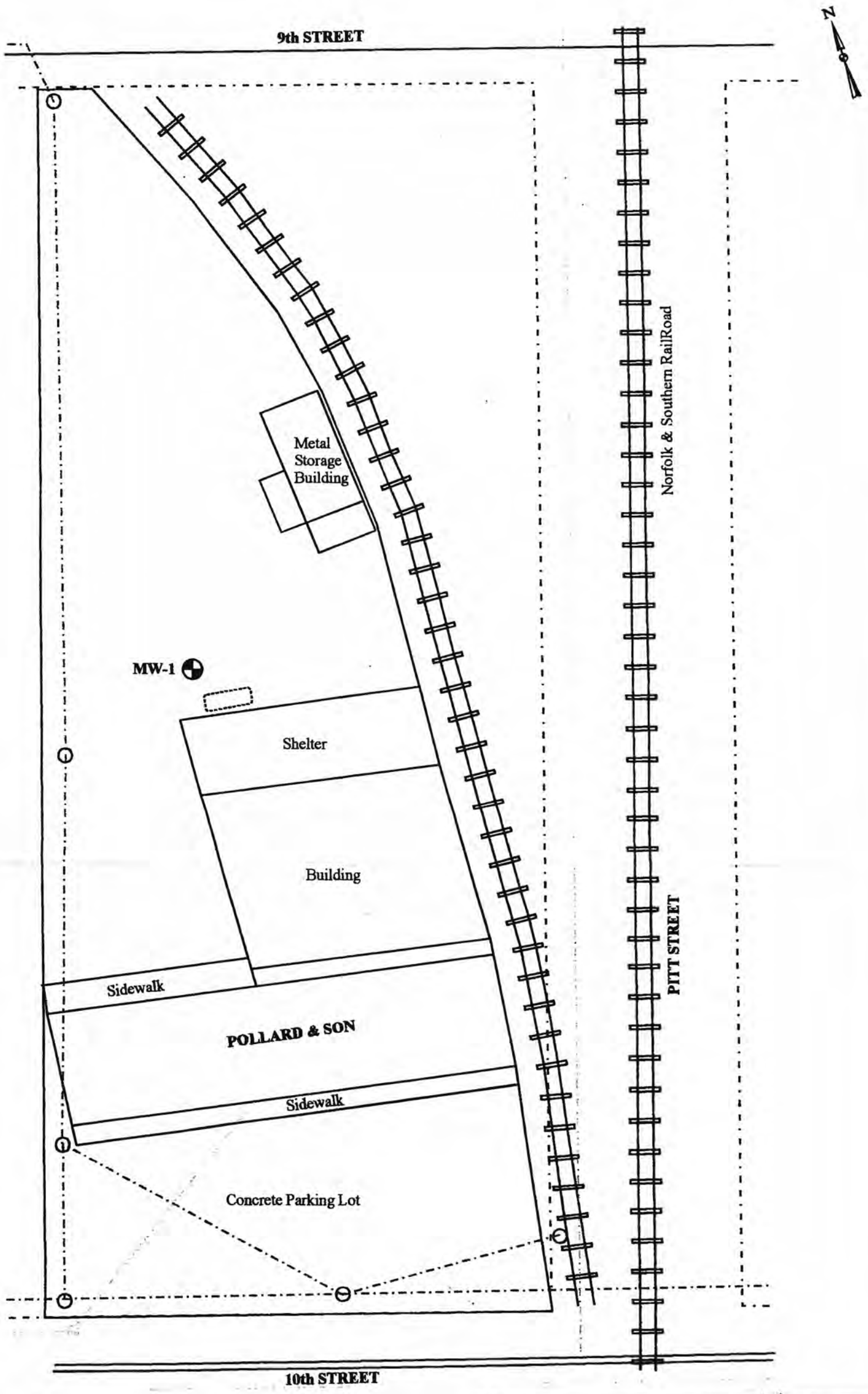


Date: 5/27/04	FUSS & O'NEILL INC. *Consulting Engineers* 610 LYNNDALE COURT - SUITE E, GREENVILLE, NC 27858 (252) 355-1370	**FIGURE 9** **PROPOSED AREA OF EXCAVATION MAP** **POLLARD & SON, INC.** **400 WEST 10TH STREET** **GREENVILLE, PITT CO.; NC**
Scale: 1" = 20'		
0 20 40 Graphic Scale		Project No: 020040122.A11



All site features and well locations are approximate

Date: 5/27/04	**FUSS & O'NEILL INC.** *Consulting Engineers* 610 LYNNDALE COURT - SUITE E, GREENVILLE, NC 27858 (252) 355-1370	**FIGURE 10** **PROPOSED POST REMEDIATION SOIL SAMPLING LOCATION MAP** **POLLARD & SON, INC.** **400 WEST 10TH STREET** **GREENVILLE, PITT CO., NC**
Scale: 1" = 20'		Project No: 020040122.A11
0 20 40 Graphic Scale		



Legend:

- Monitor Well
- Power Pole
- Sewer Manhole
- Sewer Line
- Water Line
- Natural Gas Line
- Overhead Electric Line
- Right of Way
- Former UST

All site features and well locations are approximate.

FUSS & O'NEILL INC. *Consulting Engineers*
610 LYNNDALE COURT - SUITE E, GREENVILLE, NC 27858
(252) 355-1370

SITE MAP WITH UTILITIES
SAM POLLARD & SON, INC.
400 WEST 10 TH STREET
GREENVILLE, PITT CO.,NC

Date: 02-27-04	Scale: 1" = 30'
Project No: 20040122.A10	0 15 30 Graphic Scale

APPENDIX B
SCHNABEL GEOPHYSICAL REPORT

Schnabel
ENGINEERING

August 15, 2012

Mr. Richard Garrett, LG
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 93, Sam Pollard and Son 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 9, 10, and 26, 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 is located on the northwest quadrant of W 10th Street and Pitt 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 93 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 known site features (Figures 3 and 4). The GPR data indicate that the EM anomalies of unknown cause are probably caused by reinforced concrete. 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_COUNTY\REPORT\PARCEL 93\SCHNABEL GEOPHYSICAL REPORT ON PARCEL 93 (U-3315).DOCX

Parcel 93 (Sam Pollard and Son Property), looking northeast

Parcel 93 (Sam Pollard and Son Property), looking northwest

Schnabel ENGINEERING

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

PARCEL 93
SITE PHOTOS

FIGURE 1

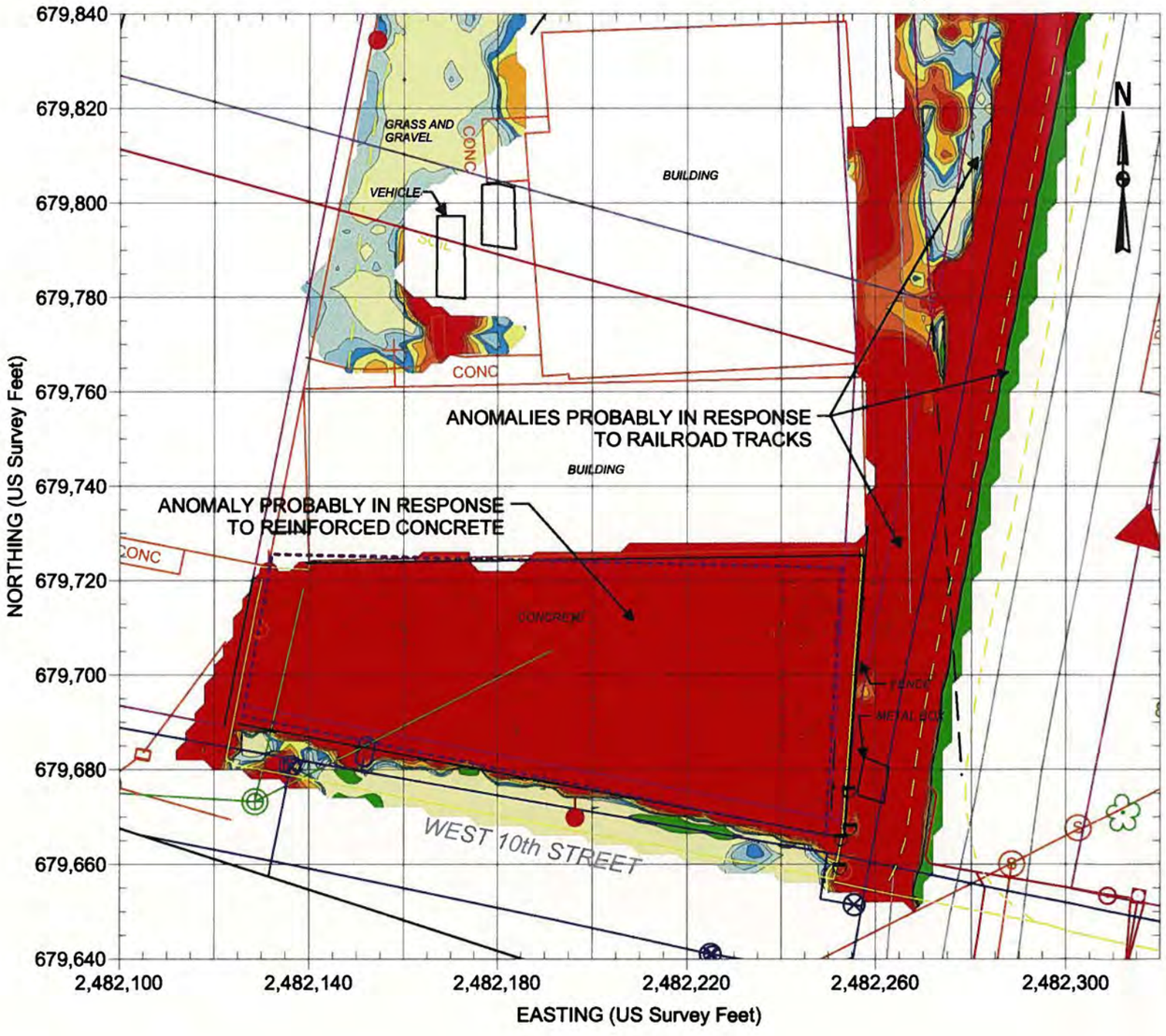
Geonics EM61-MK2 Metal Detector with Trimble DGPS Unit

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 93



EM61 Early Time Gate Response (mV)

-15000 -100 0 50 100 150 200 300 500 750 1000 2000

Scale in US Survey Feet

0 30 60 90

EXPLANATION

- SIGN
- MISCELLANEOUS METALLIC OBJECT
- UTILITY MANHOLE, METER, BOX, ETC.
- GPR SURVEY AREA
- EDGE OF NCDOT PROPOSED R/W
- PROPERTY LINE

REF.: NCDOT FILE: u3315_rdy_psh10.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 9 and July 10, 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 July 26, 2012, using a Geophysical Survey Systems SIR 3000 equipped with a 400 MHz antenna.

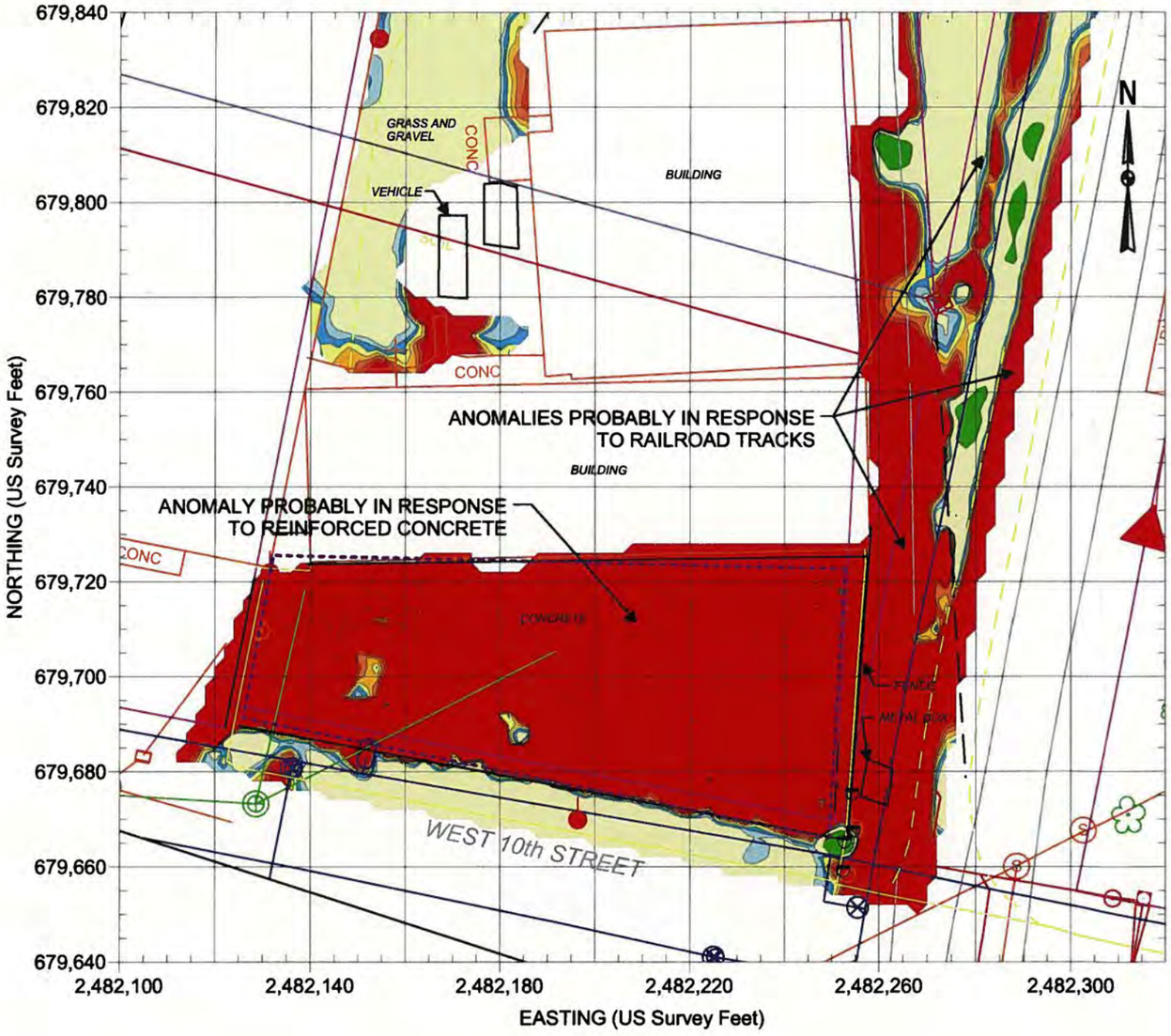
Schnabel ENGINEERING

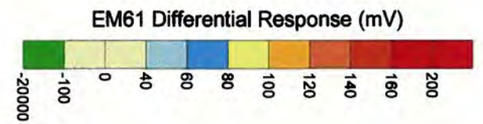
STATE PROJECT U-3315
NC DEPARTMENT OF TRANSPORTATION
PITT COUNTY, NORTH CAROLINA
PROJECT NO. 11821014.17

EM61
EARLY TIME GATE
RESPONSE

FIGURE 3

PARCEL 93





EXPLANATION

- SIGN
- MISCELLANEOUS METALLIC OBJECT
- UTILITY MANHOLE, METER, BOX, ETC.
- GPR SURVEY AREA
- EDGE OF NCDOT PROPOSED R/W
- PROPERTY LINE

REF.: NCDOT FILE: u3315_rdy_psh10.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 9 and July 10, 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 July 26, 2012, using a Geophysical Survey Systems SIR 3000 equipped with a 400 MHz antenna.

Schnabel ENGINEERING

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

EM61
DIFFERENTIAL
RESPONSE

FIGURE 4

APPENDIX C
BORING LOGS

BORING LOG

CATLIN Engineers and Scientists
Wilmington, NC
WBS Element: 35781.1.2
State Project: U-3315

PROJECT NO.: 212077	STATE: NC	COUNTY: Pitt		LOCATION: Greenville	
PROJECT NAME: Parcel 93 - Sam Pollard and Son Plumb and AC, Inc.		LOGGED BY: Ben Ashba		BORING ID: 93DPT-01	
		DRILLER: William J. Miller			
NORTHING: 679,670.00	EASTING: 2,482,224.00	CREW: Corey Futral			
SYSTEM: NCSP NAD 83 (USft)	BORING LOCATION: Near CB 1008 - in concrete.			LAND ELEV.: NM	
DRILL MACHINE: Power Probe	METHOD: CPT / DPT		0 HOUR DTW: N/A	BORING DEPTH: 8.0	
START DATE: 7/17/12	FINISH DATE: 7/17/12		24 HOUR DTW: N/A	ROCK DEPTH: --	

DEPTH	BLOW COUNT 0.5 0.5 0.5 0.5	MOI.	PID RESULTS (ppm) 0 250 500 750 1,000	LAB.	USCS	LOG	DEPTH	SOIL AND ROCK DESCRIPTION	ELEVATION
							0.0	LAND SURFACE	
0.0					GW		0.4	GRAVEL fill.	
		W	▲1		SC			Dk gray grading to black, Clayey f. SAND. Uniform.	
2.0									
		W	▲7				3.0		
4.0									
		Sat.	▲7	DPT- 01 (4-5')	SC/ CL			Lt gray to brown, Clayey f. SAND to Sandy CLAY. Uniform. Low plasticity.	
5.0									
			▲7						
6.0							6.5		
		W	▲7		CL			Gray w/orange, CLAY w/tr. f. sand. Uniform. Med. plasticity.	
8.0							8.0		
								Boring Terminated at Depth 8.0 ft	

▽ = 0hr. DTW ▼ = 24hr. DTW

BORING LOG

CATLIN Engineers and Scientists
Wilmington, NC

WBS Element: 35781.1.2
State Project: U-3315

PROJECT NO.: 212077	STATE: NC	COUNTY: Pitt		LOCATION: Greenville	
PROJECT NAME: Parcel 93 - Sam Pollard and Son Plumb and AC, Inc.		LOGGED BY: Ben Ashba		BORING ID: 93DPT-02	
		DRILLER: William J. Miller			
NORTHING: 679,698.00	EASTING: 2,482,232.00	CREW: Corey Futral			
SYSTEM: NCSP NAD 83 (USft)	BORING LOCATION: B/w CB 1008 & 1002 - in concrete.			LAND ELEV.: NM	
DRILL MACHINE: Power Probe	METHOD: CPT / DPT		0 HOUR DTW: N/A	BORING DEPTH: 8.0	
START DATE: 7/17/12	FINISH DATE: 7/17/12		24 HOUR DTW: N/A	ROCK DEPTH: --	

DEPTH	BLOW COUNT 0.5 0.5 0.5 0.5	MOI.	PID RESULTS (ppm) 0 250 500 750 1,000	LAB.	USCS	LOG	DEPTH	SOIL AND ROCK DESCRIPTION	ELEVATION
							0.0	LAND SURFACE	
0.0					GW			GRAVEL fill.	
			▲2				1.0		
2.0					SC			Dk brown and black, f. SAND w/tr. silt and clay.	
			▲6						
4.0				DPT-02 (4-5')			4.0		
			▲8						
5.0									
			▲8						
6.0					SC/CL			Orange-brown, Clayey SAND grading to Sandy CLAY. Moist from 4-5.5' BLS.	
8.0							8.0		
								Boring Terminated at Depth 8.0 ft	

▽ = 0hr. DTW ▼ = 24hr. DTW

CATLIN ENVIRO.LOG 212077 GREENVILLE-PSAS U3315.GPJ CATLIN.GDT 8/31/12

BORING LOG

CATLIN Engineers and Scientists
Wilmington, NC

WBS Element: 35781.1.2
State Project: U-3315

PROJECT NO.: 212077	STATE: NC	COUNTY: Pitt		LOCATION: Greenville	
PROJECT NAME: Parcel 93 - Sam Pollard and Son Plumb and AC, Inc.		LOGGED BY: Ben Ashba		BORING ID: 93DPT-03	
		DRILLER: William J. Miller			
NORTHING: 679,668.00	EASTING: 2,482,198.00	CREW: Corey Futral			
SYSTEM: NCSP NAD 83 (USft)	BORING LOCATION: B/w CB 1008 & 1027 - In concrete			LAND ELEV.: NM	
DRILL MACHINE: Power Probe	METHOD: CPT / DPT		0 HOUR DTW: N/A	BORING DEPTH: 8.0	
START DATE: 7/17/12	FINISH DATE: 7/17/12		24 HOUR DTW: N/A	ROCK DEPTH: --	

DEPTH	BLOW COUNT 0.5 0.5 0.5 0.5	MOI.	PID RESULTS (ppm) 0 250 500 750 1,000	LAB.	USCS	LOG	DEPTH	SOIL AND ROCK DESCRIPTION	ELEVATION
							0.0	LAND SURFACE	
0.0			▲2		SC			Brown and gray, Clayey f. SAND.	
2.0			▲8						
4.0		W	▲9	DPT-03 (4-5')					
5.0			▲9		SC/CL		5.0	Clayey, f. SAND w/Clay content increasing w/depth. Orange mottling. Gradational contact w/below.	
6.0		M			CL		7.0	Sandy CLAY.	
8.0							8.0	Boring Terminated at Depth 8.0 ft	

▽ = 0hr. DTW ▼ = 24hr. DTW

CATLIN ENVIRO LOG 212077 GREENVILLE-PSAS U3315.GPJ CATLIN.GDT 8/31/12

BORING LOG

CATLIN Engineers and Scientists
Wilmington, NC
WBS Element: 35781.1.2
State Project: U-3315

PROJECT NO.: 212077	STATE: NC	COUNTY: Pitt		LOCATION: Greenville	
PROJECT NAME: Parcel 93 - Sam Pollard and Son Plumb and AC, Inc.		LOGGED BY: Ben Ashba		BORING ID: 93DPT-04	
		DRILLER: William J. Miller			
NORTHING: 679,673.00	EASTING: 2,482,165.00	CREW: Corey Futral			
SYSTEM: NCSP NAD 83 (USft)	BORING LOCATION: @ CB 1027			LAND ELEV.: NM	
DRILL MACHINE: Power Probe	METHOD: CPT / DPT		0 HOUR DTW: N/A	BORING DEPTH: 8.0	
START DATE: 7/17/12	FINISH DATE: 7/17/12		24 HOUR DTW: N/A	ROCK DEPTH: --	

DEPTH	BLOW COUNT 0.5 0.5 0.5 0.5	MOI.	PID RESULTS (ppm) 0 250 500 750 1,000	LAB.	USCS	LOG	DEPTH	SOIL AND ROCK DESCRIPTION	ELEVATION
							0.0	LAND SURFACE	
0.0			▲6		SC/CL			Clayey SAND. Clay content increases w/depth. Gradational contact w/below.	
2.0			▲7				3.0		
4.0			▲8	DPT- 04 (4-5')					
5.0			▲8		CL			Sandy CLAY ~3' BLS. Tan and gray shifting to mottled oranges, brown, and gray ~4' BLS.	
6.0									
8.0							8.0	Boring Terminated at Depth 8.0 ft	

▽ = 0hr. DTW ▼ = 24hr. DTW

CATLIN ENVIRO LOG 212077 GREENVILLE-PSAS U3315.GPJ CATLIN.GDT 8/31/12

BORING LOG

CATLIN Engineers and Scientists
Wilmington, NC
WBS Element: 35781.1.2
State Project: U-3315

PROJECT NO.: 212077	**STATE:** NC	**COUNTY:** Pitt		**LOCATION:** Greenville	
PROJECT NAME: Parcel 93 - Sam Pollard and Son Plumb and AC, Inc.		**LOGGED BY:** Ben Ashba		**BORING ID:** 93DPT-05	
		DRILLER: William J. Miller			
NORTHING: 679,725.00	**EASTING:** 2,482,240.00	**CREW:** Corey Futral			
SYSTEM: NCSP NAD 83 (USft)	**BORING LOCATION:** @ CB 1002 in concrete.			**LAND ELEV.:** NM	
DRILL MACHINE: Power Probe	**METHOD:** CPT / DPT		**0 HOUR DTW:** N/A	**BORING DEPTH:** 8.0	
START DATE: 7/17/12	**FINISH DATE:** 7/17/12		**24 HOUR DTW:** N/A	**ROCK DEPTH:** --	

DEPTH	BLOW COUNT 0.5 0.5 0.5 0.5	MOI.	PID RESULTS (ppm) 0 250 500 750 1,000	LAB.	USCS	LOG	DEPTH	SOIL AND ROCK DESCRIPTION	ELEVATION
							0.0	LAND SURFACE	
0.0			▲5						
2.0			▲6						
3.0			▲6	DPT- 05 (3-4')	SC/ CL			Orange-brown, Clayey f. to med. SAND. Color change ~ 1-2' to dk gray and black. Grades to Sandy CLAY. Grayish-brown w/mottling ~6' BLS.	
4.0									
			▲6						
6.0					CL		6.0		
8.0							8.0	Boring Terminated at Depth 8.0 ft	

▽ = 0hr. DTW ▼ = 24hr. DTW

CATLIN ENVIRO LOG 212077 GREENVILLE-PSAS U3315.GPJ CATLIN.GDT 8/31/12

BORING LOG

CATLIN Engineers and Scientists
Wilmington, NC
WBS Element: 35781.1.2
State Project: U-3315

PROJECT NO.: 212077	STATE: NC	COUNTY: Pitt		LOCATION: Greenville	
PROJECT NAME: Parcel 93 - Sam Pollard and Son Plumb and AC, Inc.		LOGGED BY: Ben Ashba		BORING ID: 93DPT-06	
		DRILLER: William J. Miller			
NORTHING: 679,758.00	EASTING: 2,482,261.00	CREW: Corey Futral			
SYSTEM: NCSP NAD 83 (USft)	BORING LOCATION: @ CB 1001 - Grass b/w RR tracks			LAND ELEV.: NM	
DRILL MACHINE: Power Probe	METHOD: CPT / DPT		0 HOUR DTW: 3.8	BORING DEPTH: 12.0	
START DATE: 7/17/12	FINISH DATE: 7/17/12		24 HOUR DTW: N/A	ROCK DEPTH: --	

DEPTH	BLOW COUNT 0.5 0.5 0.5 0.5	MOI.	PID RESULTS (ppm) 0 250 500 750 1,000	LAB.	USCS	LOG	SOIL AND ROCK DESCRIPTION	DEPTH	ELEVATION
							LAND SURFACE	0.0	
0.0					SM		TOPSOIL.	0.3	
			▲4		GW		Black, Silty/Sandy GRAVEL. Fill from rail line.	1.5	
2.0			▲4						
3.0			▲4	DPT-06 (3-4')	SC/CL		Sandy CLAY to Clayey SAND. Orange-tan, mottling, grays, and browns.	5.0	
4.0									
			▲5						
6.0									
12.0							Boring Terminated at Depth 12.0 ft		

▽ = 0hr. DTW ▼ = 24hr. DTW

CATLIN ENVIRO LOG 212077 GREENVILLE-PSAS U3315.GPJ CATLIN.GDT 8/31/12

APPENDIX D

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: **31202263**

Client Project: **NCDOT Parcel 93**

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 14:01:59 -05'00'

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

Date

Print Date: 07/31/2012

N.C. Certification # 481

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

Client Sample ID	Lab Sample ID	Collected	Received	Matrix
93 DPT-01 (4-5ft)	31202263001	07/17/2012 11:15	07/18/2012 16:30	Soil-Solid as dry weight
93 DPT-02 (4-5ft)	31202263002	07/17/2012 11:40	07/18/2012 16:30	Soil-Solid as dry weight
93 DPT-03 (4-5ft)	31202263003	07/17/2012 12:40	07/18/2012 16:30	Soil-Solid as dry weight
93 DPT-04 (4-5ft)	31202263004	07/17/2012 13:00	07/18/2012 16:30	Soil-Solid as dry weight
93 DPT-05 (3-4ft)	31202263005	07/17/2012 16:40	07/18/2012 16:30	Soil-Solid as dry weight
93 DPT-06 (3-4ft)	31202263006	07/17/2012 17:35	07/18/2012 16:30	Soil-Solid as dry weight
93 DPT-06	31202263007	07/17/2012 17:45	07/18/2012 16:30	Water
Trip Blank (Not on COC)	31202263008	07/17/2012 00:00	07/18/2012 16:30	Soil-Solid as dry weight

Case Narrative

93 DPT-01 (4-5ft)
8015 GRO - An MS/MSD was not analyzed due to the parent sample requiring a reanalysis.

93 DPT-02 (4-5ft)
8015 GRO - An MS/MSD was not analyzed due to the parent sample requiring a reanalysis.

93 DPT-03 (4-5ft)
8015 GRO - An MS/MSD was not analyzed due to the parent sample requiring a reanalysis.

93 DPT-04 (4-5ft)
8015 GRO - An MS/MSD was not analyzed due to the parent sample requiring a reanalysis.

93 DPT-05 (3-4ft)
8015 GRO - An MS/MSD was not analyzed due to the parent sample requiring a reanalysis.

93 DPT-06 (3-4ft)
8015 GRO - An MS/MSD was not analyzed due to the parent sample requiring a reanalysis.

LCS for HBN 25813 [VXX/3668]
8015 GRO - An MS/MSD was not analyzed due to the parent sample requiring a reanalysis.

LCSD for HBN 25813 [VXX/3668]
8015 GRO - An MS/MSD was not analyzed due to the parent sample requiring a reanalysis.

MB for HBN 25813 [VXX/3668]
8015 GRO - An MS/MSD was not analyzed due to the parent sample requiring a reanalysis.

Trip Blank (Not on COC)
8015 GRO - An MS/MSD was not analyzed due to the parent sample requiring a reanalysis.

Detectable Results Summary

Client Sample ID: **93 DPT-06**
Lab Sample ID: 31202263007-A

	Parameter	Result	Units	
SM 6200-B	Toluene	0.270	ug/L	J

Print Date: 07/31/2012

N.C. Certification # 481

Results of 93 DPT-01 (4-5ft)

Client Sample ID: **93 DPT-01 (4-5ft)**
Client Project ID: **NCDOT Parcel 93**
Lab Sample ID: 31202263001-A
Lab Project ID: 31202263

Collection Date: 07/17/2012 11:15
Received Date: 07/18/2012 16:30
Matrix: Soil-Solid as dry weight
Solids (%): 83.70

Results by SW-846 8015C GRO

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Gasoline Range Organics (GRO)	ND	U	3.61	3.61	mg/kg	1	07/19/2012 14:45
Surrogates							
4-Bromofluorobenzene	112			70.0-130	%	1	07/19/2012 14:45

Batch Information

Analytical Batch: **VGC2025**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC7**
Analyst: **MDY**
Analytical Date/Time: **07/19/2012 14:45**

Prep Batch: **VXX3668**
Prep Method: **SW-846 5035**
Prep Date/Time: **07/19/2012 13:11**
Prep Initial Wt./Vol.: **6.63 g**
Prep Extract Vol: **5 mL**

Print Date: 07/31/2012

N.C. Certification # 481

Results of 93 DPT-01 (4-5ft)

Client Sample ID: **93 DPT-01 (4-5ft)**
Client Project ID: **NCDOT Parcel 93**
Lab Sample ID: 31202263001-C
Lab Project ID: 31202263

Collection Date: 07/17/2012 11:15
Received Date: 07/18/2012 16:30
Matrix: Soil-Solid as dry weight
Solids (%): 83.70

Results by SW-846 8015C DRO

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	ND	U	6.98	6.98	mg/kg	1	07/25/2012 18:11
Surrogates							
o-Terphenyl	84.3			40.0-140	%	1	07/25/2012 18:11

Batch Information

Analytical Batch: **XGC2393**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**
Analytical Date/Time: **07/25/2012 18:11**

Prep Batch: **XXX2848**
Prep Method: **SW-846 3541**
Prep Date/Time: **07/24/2012 15:08**
Prep Initial Wt./Vol.: **34.25 g**
Prep Extract Vol: **10 mL**

Print Date: 07/31/2012

N.C. Certification # 481

Results of 93 DPT-02 (4-5ft)

Client Sample ID: **93 DPT-02 (4-5ft)**
Client Project ID: **NCDOT Parcel 93**
Lab Sample ID: 31202263002-A
Lab Project ID: 31202263

Collection Date: 07/17/2012 11:40
Received Date: 07/18/2012 16:30
Matrix: Soil-Solid as dry weight
Solids (%): 84.00

Results by SW-846 8015C GRO

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Gasoline Range Organics (GRO)	ND	U	3.38	3.38	mg/kg	1	07/19/2012 15:11
Surrogates							
4-Bromofluorobenzene	109			70.0-130	%	1	07/19/2012 15:11

Batch Information

Analytical Batch: **VGC2025**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC7**
Analyst: **MDY**
Analytical Date/Time: **07/19/2012 15:11**

Prep Batch: **VXX3668**
Prep Method: **SW-846 5035**
Prep Date/Time: **07/19/2012 13:12**
Prep Initial Wt./Vol.: **7.05 g**
Prep Extract Vol: **5 mL**

Print Date: 07/31/2012

N.C. Certification # 481

Results of 93 DPT-02 (4-5ft)

Client Sample ID: **93 DPT-02 (4-5ft)**
Client Project ID: **NCDOT Parcel 93**
Lab Sample ID: 31202263002-C
Lab Project ID: 31202263

Collection Date: 07/17/2012 11:40
Received Date: 07/18/2012 16:30
Matrix: Soil-Solid as dry weight
Solids (%): 84.00

Results by SW-846 8015C DRO

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	ND	U	7.32	7.32	mg/kg	1	07/25/2012 19:36
Surrogates							
o-Terphenyl	82.3			40.0-140	%	1	07/25/2012 19:36

Batch Information

Analytical Batch: **XGC2393**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**
Analytical Date/Time: **07/25/2012 19:36**

Prep Batch: **XXX2848**
Prep Method: **SW-846 3541**
Prep Date/Time: **07/24/2012 15:08**
Prep Initial Wt./Vol.: **32.52 g**
Prep Extract Vol: **10 mL**

Print Date: 07/31/2012

N.C. Certification # 481

Results of 93 DPT-03 (4-5ft)

Client Sample ID: **93 DPT-03 (4-5ft)**
Client Project ID: **NCDOT Parcel 93**
Lab Sample ID: 31202263003-A
Lab Project ID: 31202263

Collection Date: 07/17/2012 12:40
Received Date: 07/18/2012 16:30
Matrix: Soil-Solid as dry weight
Solids (%): 83.60

Results by SW-846 8015C GRO

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Gasoline Range Organics (GRO)	ND	U	3.38	3.38	mg/kg	1	07/19/2012 15:36
Surrogates							
4-Bromofluorobenzene	111			70.0-130	%	1	07/19/2012 15:36

Batch Information

Analytical Batch: **VGC2025**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC7**
Analyst: **MDY**
Analytical Date/Time: **07/19/2012 15:36**

Prep Batch: **VXX3668**
Prep Method: **SW-846 5035**
Prep Date/Time: **07/19/2012 13:12**
Prep Initial Wt./Vol.: **7.07 g**
Prep Extract Vol: **5 mL**

Print Date: 07/31/2012

N.C. Certification # 481

Results of 93 DPT-03 (4-5ft)

Client Sample ID: **93 DPT-03 (4-5ft)**
Client Project ID: **NCDOT Parcel 93**
Lab Sample ID: 31202263003-C
Lab Project ID: 31202263

Collection Date: 07/17/2012 12:40
Received Date: 07/18/2012 16:30
Matrix: Soil-Solid as dry weight
Solids (%): 83.60

Results by SW-846 8015C DRO

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	ND	U	7.49	7.49	mg/kg	1	07/25/2012 20:04
Surrogates							
o-Terphenyl	88.0			40.0-140	%	1	07/25/2012 20:04

Batch Information

Analytical Batch: **XGC2393**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**
Analytical Date/Time: **07/25/2012 20:04**

Prep Batch: **XXX2848**
Prep Method: **SW-846 3541**
Prep Date/Time: **07/24/2012 15:08**
Prep Initial Wt./Vol.: **31.93 g**
Prep Extract Vol: **10 mL**

Print Date: 07/31/2012

N.C. Certification # 481

Results of 93 DPT-04 (4-5ft)

Client Sample ID: **93 DPT-04 (4-5ft)**
Client Project ID: **NCDOT Parcel 93**
Lab Sample ID: 31202263004-A
Lab Project ID: 31202263

Collection Date: 07/17/2012 13:00
Received Date: 07/18/2012 16:30
Matrix: Soil-Solid as dry weight
Solids (%): 77.20

Results by SW-846 8015C GRO

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Gasoline Range Organics (GRO)	ND	U	3.53	3.53	mg/kg	1	07/19/2012 16:02
Surrogates							
4-Bromofluorobenzene	111			70.0-130	%	1	07/19/2012 16:02

Batch Information

Analytical Batch: **VGC2025**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC7**
Analyst: **MDY**
Analytical Date/Time: **07/19/2012 16:02**

Prep Batch: **VXX3668**
Prep Method: **SW-846 5035**
Prep Date/Time: **07/19/2012 13:13**
Prep Initial Wt./Vol.: **7.34 g**
Prep Extract Vol: **5 mL**

Print Date: 07/31/2012

N.C. Certification # 481

Results of 93 DPT-04 (4-5ft)

Client Sample ID: **93 DPT-04 (4-5ft)**
Client Project ID: **NCDOT Parcel 93**
Lab Sample ID: 31202263004-C
Lab Project ID: 31202263

Collection Date: 07/17/2012 13:00
Received Date: 07/18/2012 16:30
Matrix: Soil-Solid as dry weight
Solids (%): 77.20

Results by SW-846 8015C DRO

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	ND	U	8.13	8.13	mg/kg	1	07/25/2012 20:32
Surrogates							
o-Terphenyl	76.7			40.0-140	%	1	07/25/2012 20:32

Batch Information

Analytical Batch: **XGC2393**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**
Analytical Date/Time: **07/25/2012 20:32**

Prep Batch: **XXX2848**
Prep Method: **SW-846 3541**
Prep Date/Time: **07/24/2012 15:08**
Prep Initial Wt./Vol.: **31.88 g**
Prep Extract Vol: **10 mL**

Print Date: 07/31/2012

N.C. Certification # 481

Results of 93 DPT-05 (3-4ft)

Client Sample ID: **93 DPT-05 (3-4ft)**
Client Project ID: **NCDOT Parcel 93**
Lab Sample ID: 31202263005-A
Lab Project ID: 31202263

Collection Date: 07/17/2012 16:40
Received Date: 07/18/2012 16:30
Matrix: Soil-Solid as dry weight
Solids (%): 87.00

Results by SW-846 8015C GRO

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Gasoline Range Organics (GRO)	ND	U	3.34	3.34	mg/kg	1	07/19/2012 16:27
Surrogates							
4-Bromofluorobenzene	109			70.0-130	%	1	07/19/2012 16:27

Batch Information

Analytical Batch: **VGC2025**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC7**
Analyst: **MDY**
Analytical Date/Time: **07/19/2012 16:27**

Prep Batch: **VXX3668**
Prep Method: **SW-846 5035**
Prep Date/Time: **07/19/2012 13:14**
Prep Initial Wt./Vol.: **6.89 g**
Prep Extract Vol: **5 mL**

Print Date: 07/31/2012

N.C. Certification # 481

Results of 93 DPT-05 (3-4ft)

Client Sample ID: **93 DPT-05 (3-4ft)**
Client Project ID: **NCDOT Parcel 93**
Lab Sample ID: 31202263005-C
Lab Project ID: 31202263

Collection Date: 07/17/2012 16:40
Received Date: 07/18/2012 16:30
Matrix: Soil-Solid as dry weight
Solids (%): 87.00

Results by SW-846 8015C DRO

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	ND	U	7.29	7.29	mg/kg	1	07/25/2012 21:01
Surrogates							
o-Terphenyl	87.6			40.0-140	%	1	07/25/2012 21:01

Batch Information

Analytical Batch: **XGC2393**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**
Analytical Date/Time: **07/25/2012 21:01**

Prep Batch: **XXX2848**
Prep Method: **SW-846 3541**
Prep Date/Time: **07/24/2012 15:08**
Prep Initial Wt./Vol.: **31.52 g**
Prep Extract Vol: **10 mL**

Print Date: 07/31/2012

N.C. Certification # 481

Results of 93 DPT-06 (3-4ft)

Client Sample ID: **93 DPT-06 (3-4ft)**
Client Project ID: **NCDOT Parcel 93**
Lab Sample ID: 31202263006-A
Lab Project ID: 31202263

Collection Date: 07/17/2012 17:35
Received Date: 07/18/2012 16:30
Matrix: Soil-Solid as dry weight
Solids (%): 86.00

Results by SW-846 8015C GRO

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Gasoline Range Organics (GRO)	ND	U	3.23	3.23	mg/kg	1	07/19/2012 16:53
Surrogates							
4-Bromofluorobenzene	110			70.0-130	%	1	07/19/2012 16:53

Batch Information

Analytical Batch: **VGC2025**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC7**
Analyst: **MDY**
Analytical Date/Time: **07/19/2012 16:53**

Prep Batch: **VXX3668**
Prep Method: **SW-846 5035**
Prep Date/Time: **07/19/2012 13:24**
Prep Initial Wt./Vol.: **7.19 g**
Prep Extract Vol: **5 mL**

Print Date: 07/31/2012

N.C. Certification # 481

Results of 93 DPT-06 (3-4ft)

Client Sample ID: **93 DPT-06 (3-4ft)**
Client Project ID: **NCDOT Parcel 93**
Lab Sample ID: 31202263006-C
Lab Project ID: 31202263

Collection Date: 07/17/2012 17:35
Received Date: 07/18/2012 16:30
Matrix: Soil-Solid as dry weight
Solids (%): 86.00

Results by SW-846 8015C DRO

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	ND	U	6.81	6.81	mg/kg	1	07/25/2012 21:30
Surrogates							
o-Terphenyl	70.8			40.0-140	%	1	07/25/2012 21:30

Batch Information

Analytical Batch: **XGC2393**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**
Analytical Date/Time: **07/25/2012 21:30**

Prep Batch: **XXX2848**
Prep Method: **SW-846 3541**
Prep Date/Time: **07/24/2012 15:08**
Prep Initial Wt./Vol.: **34.12 g**
Prep Extract Vol: **10 mL**

Print Date: 07/31/2012

N.C. Certification # 481

SGS ANALYTICAL PERSPECTIVES

Results of 93 DPT-06

Client Sample ID: **93 DPT-06**
Client Project ID: **NCDOT Parcel 93**
Lab Sample ID: 31202263007-A
Lab Project ID: 31202263

Collection Date: 07/17/2012 17:45
Received Date: 07/18/2012 16:30
Matrix: Water

Results by SM 6200-B

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
1,1,1,2-Tetrachloroethane	ND	U	0.104	0.500	ug/L	1	07/23/2012 13:47
1,1,1-Trichloroethane	ND	U	0.123	0.500	ug/L	1	07/23/2012 13:47
1,1,2,2-Tetrachloroethane	ND	U	0.156	0.500	ug/L	1	07/23/2012 13:47
1,1,2-Trichloroethane	ND	U	0.126	0.500	ug/L	1	07/23/2012 13:47
1,1-Dichloroethane	ND	U	0.165	0.500	ug/L	1	07/23/2012 13:47
1,1-Dichloroethene	ND	U	0.212	0.500	ug/L	1	07/23/2012 13:47
1,1-Dichloropropene	ND	U	0.112	0.500	ug/L	1	07/23/2012 13:47
1,2,3-Trichlorobenzene	ND	U	0.110	0.500	ug/L	1	07/23/2012 13:47
1,2,3-Trichloropropane	ND	U	0.212	0.500	ug/L	1	07/23/2012 13:47
1,2,4-Trichlorobenzene	ND	U	0.0913	0.500	ug/L	1	07/23/2012 13:47
1,2,4-Trimethylbenzene	ND	U	0.0961	0.500	ug/L	1	07/23/2012 13:47
1,2-Dibromo-3-chloropropane	ND	U	0.748	5.00	ug/L	1	07/23/2012 13:47
1,2-Dibromoethane	ND	U	0.120	0.500	ug/L	1	07/23/2012 13:47
1,2-Dichlorobenzene	ND	U	0.137	0.500	ug/L	1	07/23/2012 13:47
1,2-Dichloroethane	ND	U	0.167	0.500	ug/L	1	07/23/2012 13:47
1,2-Dichloropropane	ND	U	0.163	0.500	ug/L	1	07/23/2012 13:47
1,3,5-Trimethylbenzene	ND	U	0.113	0.500	ug/L	1	07/23/2012 13:47
1,3-Dichlorobenzene	ND	U	0.103	0.500	ug/L	1	07/23/2012 13:47
1,3-Dichloropropane	ND	U	0.189	0.500	ug/L	1	07/23/2012 13:47
1,4-Dichlorobenzene	ND	U	0.130	0.500	ug/L	1	07/23/2012 13:47
2,2-Dichloropropane	ND	U	0.393	0.500	ug/L	1	07/23/2012 13:47
2-Chlorotoluene	ND	U	0.113	0.500	ug/L	1	07/23/2012 13:47
4-Chlorotoluene	ND	U	0.125	0.500	ug/L	1	07/23/2012 13:47
4-Isopropyltoluene	ND	U	0.0769	0.500	ug/L	1	07/23/2012 13:47
Benzene	ND	U	0.113	0.500	ug/L	1	07/23/2012 13:47
Bromobenzene	ND	U	0.110	0.500	ug/L	1	07/23/2012 13:47
Bromochloromethane	ND	U	0.211	0.500	ug/L	1	07/23/2012 13:47
Bromodichloromethane	ND	U	0.110	0.500	ug/L	1	07/23/2012 13:47
Bromoform	ND	U	0.0974	0.500	ug/L	1	07/23/2012 13:47
Bromomethane	ND	U	0.237	0.500	ug/L	1	07/23/2012 13:47
n-Butylbenzene	ND	U	0.0769	0.500	ug/L	1	07/23/2012 13:47
Carbon tetrachloride	ND	U	0.101	0.500	ug/L	1	07/23/2012 13:47
Chlorobenzene	ND	U	0.116	0.500	ug/L	1	07/23/2012 13:47
Chloroethane	ND	U	0.311	0.500	ug/L	1	07/23/2012 13:47
Chloroform	ND	U	0.139	0.500	ug/L	1	07/23/2012 13:47
Chloromethane	ND	U	0.448	0.500	ug/L	1	07/23/2012 13:47
Dibromochloromethane	ND	U	0.134	0.500	ug/L	1	07/23/2012 13:47
Dibromomethane	ND	U	0.168	0.500	ug/L	1	07/23/2012 13:47
Dichlorodifluoromethane	ND	U	0.171	5.00	ug/L	1	07/23/2012 13:47
cis-1,3-Dichloropropene	ND	U	0.0767	0.500	ug/L	1	07/23/2012 13:47
trans-1,3-Dichloropropene	ND	U	0.0862	0.500	ug/L	1	07/23/2012 13:47
Diisopropyl Ether	ND	U	0.155	0.500	ug/L	1	07/23/2012 13:47
Ethyl Benzene	ND	U	0.0877	0.500	ug/L	1	07/23/2012 13:47
Hexachlorobutadiene	ND	U	0.0792	0.500	ug/L	1	07/23/2012 13:47

Print Date: 07/31/2012

N.C. Certification # 481

Results of 93 DPT-06

Client Sample ID: **93 DPT-06**
Client Project ID: **NCDOT Parcel 93**
Lab Sample ID: 31202263007-A
Lab Project ID: 31202263

Collection Date: 07/17/2012 17:45
Received Date: 07/18/2012 16:30
Matrix: Water

Results by SM 6200-B

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Isopropylbenzene (Cumene)	ND	U	0.0869	0.500	ug/L	1	07/23/2012 13:47
Methylene chloride	ND	U	0.152	5.00	ug/L	1	07/23/2012 13:47
Naphthalene	ND	U	0.0855	0.500	ug/L	1	07/23/2012 13:47
Styrene	ND	U	0.102	0.500	ug/L	1	07/23/2012 13:47
Tetrachloroethene	ND	U	0.155	0.500	ug/L	1	07/23/2012 13:47
Toluene	**0.270**	J	0.133	0.500	ug/L	1	07/23/2012 13:47
Trichloroethene	ND	U	0.125	0.500	ug/L	1	07/23/2012 13:47
Trichlorofluoromethane	ND	U	0.137	0.500	ug/L	1	07/23/2012 13:47
Vinyl chloride	ND	U	0.124	0.500	ug/L	1	07/23/2012 13:47
Xylene (total)	ND	U	0.269	1.50	ug/L	1	07/23/2012 13:47
cis-1,2-Dichloroethene	ND	U	0.136	0.500	ug/L	1	07/23/2012 13:47
m,p-Xylene	ND	U	0.182	1.00	ug/L	1	07/23/2012 13:47
n-Propylbenzene	ND	U	0.113	0.500	ug/L	1	07/23/2012 13:47
o-Xylene	ND	U	0.0874	0.500	ug/L	1	07/23/2012 13:47
sec-Butylbenzene	ND	U	0.112	0.500	ug/L	1	07/23/2012 13:47
tert-Butyl methyl ether (MTBE)	ND	U	0.144	0.500	ug/L	1	07/23/2012 13:47
tert-Butylbenzene	ND	U	0.0855	0.500	ug/L	1	07/23/2012 13:47
trans-1,2-Dichloroethene	ND	U	0.223	0.500	ug/L	1	07/23/2012 13:47
Surrogates							
1,2-Dichloroethane-d4	96.8			64.0-140	%	1	07/23/2012 13:47
4-Bromofluorobenzene	99.8			85.0-115	%	1	07/23/2012 13:47
Toluene d8	98.7			82.0-117	%	1	07/23/2012 13:47

Batch Information

Analytical Batch: **VMS2399**
Analytical Method: **SM 6200-B**
Instrument: **MSD4**
Analyst: **DVO**
Analytical Date/Time: **07/23/2012 13:47**

Prep Batch: **VXX3682**
Prep Method: **SM 6200-B Prep**
Prep Date/Time: **07/23/2012 08:00**
Prep Initial Wt./Vol.: **40 mL**
Prep Extract Vol: **40 mL**

Print Date: 07/31/2012

N.C. Certification # 481

SGS ANALYTICAL PERSPECTIVES

Results of 93 DPT-06

Client Sample ID: **93 DPT-06**
Client Project ID: **NCDOT Parcel 93**
Lab Sample ID: 31202263007-D
Lab Project ID: 31202263

Collection Date: 07/17/2012 17:45
Received Date: 07/18/2012 16:30
Matrix: Water

Results by EPA 625

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
1,2,4-Trichlorobenzene	ND	U	1.89	5.48	ug/L	1	07/27/2012 17:55
2,4-Dinitrotoluene	ND	U	2.02	5.48	ug/L	1	07/27/2012 17:55
2,6-Dinitrotoluene	ND	U	2.06	5.48	ug/L	1	07/27/2012 17:55
2-Chloronaphthalene	ND	U	2.19	5.48	ug/L	1	07/27/2012 17:55
3,3'-Dichlorobenzidine	ND	U	1.92	11.0	ug/L	1	07/27/2012 17:55
4-Chlorophenyl phenyl ether	ND	U	2.69	5.48	ug/L	1	07/27/2012 17:55
Acenaphthene	ND	U	2.26	5.48	ug/L	1	07/27/2012 17:55
Acenaphthylene	ND	U	2.19	5.48	ug/L	1	07/27/2012 17:55
Anthracene	ND	U	2.11	5.48	ug/L	1	07/27/2012 17:55
Benzo(a)anthracene	ND	U	2.15	5.48	ug/L	1	07/27/2012 17:55
Benzo(a)pyrene	ND	U	2.04	5.48	ug/L	1	07/27/2012 17:55
Benzo(b)fluoranthene	ND	U	2.15	5.48	ug/L	1	07/27/2012 17:55
Benzo(g,h,i)perylene	ND	U	2.35	5.48	ug/L	1	07/27/2012 17:55
Benzo(k)fluoranthene	ND	U	2.53	5.48	ug/L	1	07/27/2012 17:55
Bis(2-Chloroethoxy)methane	ND	U	2.32	5.48	ug/L	1	07/27/2012 17:55
Bis(2-Chloroethyl)ether	ND	U	2.42	5.48	ug/L	1	07/27/2012 17:55
Bis(2-Chloroisopropyl)ether	ND	U	2.23	5.48	ug/L	1	07/27/2012 17:55
Bis(2-Ethylhexyl)phthalate	ND	U	2.14	5.48	ug/L	1	07/27/2012 17:55
4-Bromophenyl phenyl ether	ND	U	2.23	5.48	ug/L	1	07/27/2012 17:55
Butyl benzyl phthalate	ND	U	2.07	5.48	ug/L	1	07/27/2012 17:55
Chrysene	ND	U	2.41	5.48	ug/L	1	07/27/2012 17:55
Di-n-butyl phthalate	ND	U	2.09	5.48	ug/L	1	07/27/2012 17:55
Di-n-octyl phthalate	ND	U	1.60	5.48	ug/L	1	07/27/2012 17:55
Dibenz(a,h)anthracene	ND	U	2.21	5.48	ug/L	1	07/27/2012 17:55
Diethyl phthalate	ND	U	2.30	5.48	ug/L	1	07/27/2012 17:55
Dimethyl phthalate	ND	U	2.34	5.48	ug/L	1	07/27/2012 17:55
Diphenylamine	ND	U	2.21	5.48	ug/L	1	07/27/2012 17:55
Fluoranthene	ND	U	2.21	5.48	ug/L	1	07/27/2012 17:55
Fluorene	ND	U	2.67	5.48	ug/L	1	07/27/2012 17:55
Hexachlorobenzene	ND	U	2.11	5.48	ug/L	1	07/27/2012 17:55
Hexachlorobutadiene	ND	U	1.66	5.48	ug/L	1	07/27/2012 17:55
Hexachlorocyclopentadiene	ND	U	0.863	11.0	ug/L	1	07/27/2012 17:55
Hexachloroethane	ND	U	1.53	5.48	ug/L	1	07/27/2012 17:55
Indeno(1,2,3-cd)pyrene	ND	U	2.21	5.48	ug/L	1	07/27/2012 17:55
Isophorone	ND	U	2.29	5.48	ug/L	1	07/27/2012 17:55
Naphthalene	ND	U	2.12	5.48	ug/L	1	07/27/2012 17:55
Nitrobenzene	ND	U	2.40	5.48	ug/L	1	07/27/2012 17:55
Phenanthrene	ND	U	2.18	5.48	ug/L	1	07/27/2012 17:55
Pyrene	ND	U	2.20	5.48	ug/L	1	07/27/2012 17:55
n-Nitrosodi-n-propylamine	ND	U	2.44	5.48	ug/L	1	07/27/2012 17:55
Surrogates							
2-Fluorobiphenyl	109*			50.0-107	%	1	07/27/2012 17:55
Nitrobenzene-d5	105			46.0-118	%	1	07/27/2012 17:55

Print Date: 07/31/2012

N.C. Certification # 481

Results of 93 DPT-06

Client Sample ID: **93 DPT-06**
Client Project ID: **NCDOT Parcel 93**
Lab Sample ID: 31202263007-D
Lab Project ID: 31202263

Collection Date: 07/17/2012 17:45
Received Date: 07/18/2012 16:30
Matrix: Water

Results by EPA 625

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Terphenyl-d14	127			22.1-142	%	1	07/27/2012 17:55

Batch Information

Analytical Batch: **XMS1613**
Analytical Method: **EPA 625**
Instrument: **MSD10**
Analyst: **CMP**
Analytical Date/Time: **07/27/2012 17:55**

Prep Batch: **XXX2850**
Prep Method: **EPA 625**
Prep Date/Time: **07/24/2012 16:32**
Prep Initial Wt./Vol.: **913 mL**
Prep Extract Vol: **5 mL**

Print Date: 07/31/2012

N.C. Certification # 481

Results of Trip Blank (Not on COC)

Client Sample ID: **Trip Blank (Not on COC)**
Client Project ID: **NCDOT Parcel 93**
Lab Sample ID: 31202263008-A
Lab Project ID: 31202263

Collection Date: 07/17/2012 00:00
Received Date: 07/18/2012 16:30
Matrix: Soil-Solid as dry weight
Solids (%): 100.00

Results by SW-846 8015C GRO

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Gasoline Range Organics (GRO)	ND	U	4.00	4.00	mg/kg	1	07/19/2012 17:44
Surrogates							
4-Bromofluorobenzene	108			70.0-130	%	1	07/19/2012 17:44

Batch Information

Analytical Batch: **VGC2025**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC7**
Analyst: **MDY**
Analytical Date/Time: **07/19/2012 17:44**

Prep Batch: **VXX3668**
Prep Method: **SW-846 5035**
Prep Date/Time: **07/19/2012 13:24**
Prep Initial Wt./Vol.: **5 g**
Prep Extract Vol: **5 mL**

Print Date: 07/31/2012

N.C. Certification # 481

Batch Summary

Analytical Method: SM 6200-B

Prep Method: SW-846 5030B
Prep Batch: VXX3682
Prep Date: 07/23/2012 08:20

Client Sample ID	Lab Sample ID	Analysis Date	Analytical Batch	Instrument	Analyst
LCS for HBN 25951 [VXX/3682]	81672	07/23/2012 09:19	VMS2399	MSD4	DVO
LCSD for HBN 25951 [VXX/3682]	81673	07/23/2012 09:43	VMS2399	MSD4	DVO
MB for HBN 25951 [VXX/3682]	81674	07/23/2012 10:56	VMS2399	MSD4	DVO
93 DPT-06	31202263007	07/23/2012 13:47	VMS2399	MSD4	DVO

Method Blank

Blank ID: MB for HBN 25951 [VXX/3682]
Blank Lab ID: 81674
QC for Samples:
31202263007

Matrix: Water

Results by SM 6200-B

Parameter	Result	Qual	DL	LOQ/CL	Units	DF
Dichlorodifluoromethane	ND	U	0.171	5.00	ug/L	1
Chloromethane	ND	U	0.448	0.500	ug/L	1
Vinyl chloride	ND	U	0.124	0.500	ug/L	1
Bromomethane	ND	U	0.237	0.500	ug/L	1
Chloroethane	ND	U	0.311	0.500	ug/L	1
Trichlorofluoromethane	ND	U	0.137	0.500	ug/L	1
1,1-Dichloroethene	ND	U	0.212	0.500	ug/L	1
Methylene chloride	ND	U	0.152	5.00	ug/L	1
trans-1,2-Dichloroethene	ND	U	0.223	0.500	ug/L	1
tert-Butyl methyl ether (MTBE)	ND	U	0.144	0.500	ug/L	1
1,1-Dichloroethane	ND	U	0.165	0.500	ug/L	1
Diisopropyl Ether	ND	U	0.155	0.500	ug/L	1
2,2-Dichloropropane	ND	U	0.393	0.500	ug/L	1
cis-1,2-Dichloroethene	ND	U	0.136	0.500	ug/L	1
Bromochloromethane	ND	U	0.211	0.500	ug/L	1
Chloroform	ND	U	0.139	0.500	ug/L	1
1,1,1-Trichloroethane	ND	U	0.123	0.500	ug/L	1
Carbon tetrachloride	ND	U	0.101	0.500	ug/L	1
1,1-Dichloropropene	ND	U	0.112	0.500	ug/L	1
Benzene	ND	U	0.113	0.500	ug/L	1
1,2-Dichloroethane	ND	U	0.167	0.500	ug/L	1
Trichloroethene	ND	U	0.125	0.500	ug/L	1
1,2-Dichloropropane	ND	U	0.163	0.500	ug/L	1
Dibromomethane	ND	U	0.168	0.500	ug/L	1
Bromodichloromethane	ND	U	0.110	0.500	ug/L	1
cis-1,3-Dichloropropene	ND	U	0.0767	0.500	ug/L	1
Toluene	ND	U	0.133	0.500	ug/L	1
trans-1,3-Dichloropropene	ND	U	0.0862	0.500	ug/L	1
1,1,2-Trichloroethane	ND	U	0.126	0.500	ug/L	1
Tetrachloroethene	ND	U	0.155	0.500	ug/L	1
1,3-Dichloropropane	ND	U	0.189	0.500	ug/L	1
Dibromochloromethane	ND	U	0.134	0.500	ug/L	1
1,2-Dibromoethane	ND	U	0.120	0.500	ug/L	1
Chlorobenzene	ND	U	0.116	0.500	ug/L	1
1,1,1,2-Tetrachloroethane	ND	U	0.104	0.500	ug/L	1
Bromoform	ND	U	0.0974	0.500	ug/L	1
Bromobenzene	ND	U	0.110	0.500	ug/L	1
1,1,2,2-Tetrachloroethane	ND	U	0.156	0.500	ug/L	1
1,2,3-Trichloropropane	ND	U	0.212	0.500	ug/L	1
Ethyl Benzene	ND	U	0.0877	0.500	ug/L	1
m,p-Xylene	ND	U	0.182	1.00	ug/L	1
Styrene	ND	U	0.102	0.500	ug/L	1

Print Date: 07/31/2012

N.C. Certification # 481

Method Blank

Blank ID: MB for HBN 25951 [VXX/3682]
Blank Lab ID: 81674
QC for Samples:
31202263007

Matrix: Water

Results by SM 6200-B

Parameter	Result	Qual	DL	LOQ/CL	Units	DF
o-Xylene	ND	U	0.0874	0.500	ug/L	1
Xylene (total)	ND	U	0.269	1.50	ug/L	1
Isopropylbenzene (Cumene)	ND	U	0.0869	0.500	ug/L	1
n-Propylbenzene	ND	U	0.113	0.500	ug/L	1
2-Chlorotoluene	ND	U	0.113	0.500	ug/L	1
4-Chlorotoluene	ND	U	0.125	0.500	ug/L	1
1,3,5-Trimethylbenzene	ND	U	0.113	0.500	ug/L	1
tert-Butylbenzene	ND	U	0.0855	0.500	ug/L	1
1,2,4-Trimethylbenzene	ND	U	0.0961	0.500	ug/L	1
sec-Butylbenzene	ND	U	0.112	0.500	ug/L	1
1,3-Dichlorobenzene	ND	U	0.103	0.500	ug/L	1
4-Isopropyltoluene	ND	U	0.0769	0.500	ug/L	1
1,4-Dichlorobenzene	ND	U	0.130	0.500	ug/L	1
1,2-Dichlorobenzene	ND	U	0.137	0.500	ug/L	1
n-Butylbenzene	ND	U	0.0769	0.500	ug/L	1
1,2-Dibromo-3-chloropropane	ND	U	0.748	5.00	ug/L	1
1,2,4-Trichlorobenzene	ND	U	0.0913	0.500	ug/L	1
Hexachlorobutadiene	ND	U	0.0792	0.500	ug/L	1
Naphthalene	ND	U	0.0855	0.500	ug/L	1
1,2,3-Trichlorobenzene	ND	U	0.110	0.500	ug/L	1
Surrogates						
1,2-Dichloroethane-d4	97.2			64.0-140	%	1
Toluene d8	98.2			82.0-117	%	1
4-Bromofluorobenzene	101			85.0-115	%	1

Batch Information

Analytical Batch: VMS2399
Analytical Method: SM 6200-B
Instrument: MSD4
Analyst: DVO
Analytical Date/Time: 7/23/2012 10:56:00AM

Prep Batch: VXX3682
Prep Method: SW-846 5030B
Prep Date/Time: 7/23/2012 8:20:10AM
Prep Initial Wt./Vol.: 40 mL
Prep Extract Vol: 40 mL

Print Date: 07/31/2012

N.C. Certification # 481

Blank Spike Summary

Blank Spike ID: LCS for HBN 25951 [VXX/3682]
Blank Spike Lab ID: 81672
Date Analyzed: 07/23/2012 09:19

Spike Duplicate ID: LCSD for HBN 25951 [VXX/3682]
Spike Duplicate Lab ID: 81673
Date Analyzed: 07/23/2012 09:43
Matrix: Water

QC for Samples: 31202263007

Results by SM 6200-B

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Dichlorodifluoromethane	5.00	4.37	87	5.00	4.80	96	33.0-170	9.4	30.00
Chloromethane	5.00	5.07	101	5.00	5.53	111	57.0-132	8.7	30.00
Vinyl chloride	5.00	4.37	87	5.00	4.93	99	59.0-138	12	30.00
Bromomethane	5.00	5.96	119	5.00	6.57	131	51.0-134	9.7	30.00
Chloroethane	5.00	4.98	100	5.00	5.36	107	64.0-145	7.4	30.00
Trichlorofluoromethane	5.00	4.46	89	5.00	5.02	100	64.0-133	12	30.00
1,1-Dichloroethene	5.00	4.86	97	5.00	5.16	103	71.0-128	6.0	30.00
Methylene chloride	5.00	4.75	95	5.00	4.84	97	70.0-113	1.9	30.00
trans-1,2-Dichloroethene	5.00	4.94	99	5.00	4.98	100	57.0-138	0.81	30.00
tert-Butyl methyl ether (MTBE)	5.00	4.79	96	5.00	4.86	97	47.0-142	1.5	30.00
1,1-Dichloroethane	5.00	4.73	95	5.00	4.91	98	68.0-133	3.7	30.00
Diisopropyl Ether	5.00	4.69	94	5.00	4.85	97	66.0-132	3.4	30.00
2,2-Dichloropropane	5.00	4.33	87	5.00	4.61	92	74.0-125	6.3	30.00
cis-1,2-Dichloroethene	5.00	4.81	96	5.00	4.98	100	73.0-128	3.5	30.00
Bromochloromethane	5.00	4.91	98	5.00	4.86	97	73.0-128	1.0	30.00
Chloroform	5.00	4.87	97	5.00	5.08	102	74.0-124	4.2	30.00
1,1,1-Trichloroethane	5.00	4.53	91	5.00	4.75	95	76.0-119	4.7	30.00
Carbon tetrachloride	5.00	4.41	88	5.00	4.71	94	75.0-120	6.6	30.00
1,1-Dichloropropene	5.00	4.89	98	5.00	5.17	103	76.0-124	5.6	30.00
Benzene	5.00	4.88	98	5.00	5.08	102	76.0-124	4.0	30.00
1,2-Dichloroethane	5.00	4.70	94	5.00	4.84	97	76.0-119	2.9	30.00
Trichloroethene	5.00	4.74	95	5.00	4.90	98	74.0-121	3.3	30.00
1,2-Dichloropropane	5.00	4.85	97	5.00	4.98	100	74.0-124	2.6	30.00
Dibromomethane	5.00	4.73	95	5.00	4.90	98	71.0-128	3.5	30.00
Bromodichloromethane	5.00	4.47	89	5.00	4.60	92	72.0-120	2.9	30.00
cis-1,3-Dichloropropene	5.00	4.91	98	5.00	5.09	102	73.0-122	3.6	30.00
Toluene	5.00	4.97	99	5.00	5.08	102	75.0-123	2.2	30.00
trans-1,3-Dichloropropene	5.00	4.34	87	5.00	4.48	90	70.0-125	3.2	30.00
1,1,2-Trichloroethane	5.00	5.01	100	5.00	5.07	101	76.0-121	1.2	30.00
Tetrachloroethene	5.00	4.94	99	5.00	5.07	101	59.0-112	2.6	30.00
1,3-Dichloropropane	5.00	4.96	99	5.00	5.06	101	74.0-120	2.0	30.00
Dibromochloromethane	5.00	4.36	87	5.00	4.57	91	67.0-122	4.7	30.00
1,2-Dibromoethane	5.00	4.83	97	5.00	4.97	99	74.0-119	2.9	30.00
Chlorobenzene	5.00	5.06	101	5.00	5.09	102	74.0-120	0.59	30.00

Blank Spike Summary

Blank Spike ID: LCS for HBN 25951 [VXX/3682]
Blank Spike Lab ID: 81672
Date Analyzed: 07/23/2012 09:19

Spike Duplicate ID: LCSD for HBN 25951 [VXX/3682]
Spike Duplicate Lab ID: 81673
Date Analyzed: 07/23/2012 09:43
Matrix: Water

QC for Samples: 31202263007

Results by SM 6200-B

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
1,1,1,2-Tetrachloroethane	5.00	4.19	84	5.00	4.31	86	73.0-119	2.8	30.00
Bromoform	5.00	4.37	87	5.00	4.42	88	62.0-127	1.1	30.00
Bromobenzene	5.00	4.90	98	5.00	5.02	100	75.0-120	2.4	30.00
1,1,2,2-Tetrachloroethane	5.00	5.07	101	5.00	5.19	104	68.0-129	2.3	30.00
1,2,3-Trichloropropane	5.00	5.00	100	5.00	5.03	101	67.0-126	0.60	30.00
Ethyl Benzene	5.00	4.83	97	5.00	4.89	98	76.0-123	1.2	30.00
m,p-Xylene	10.0	9.97	100	10.0	9.97	100	76.0-124	0.0	30.00
Styrene	5.00	4.94	99	5.00	4.94	99	76.0-121	0.0	30.00
o-Xylene	5.00	5.04	101	5.00	5.11	102	75.0-124	1.4	30.00
Isopropylbenzene (Cumene)	5.00	4.99	100	5.00	5.05	101	77.0-120	1.2	30.00
n-Propylbenzene	5.00	4.98	100	5.00	5.03	101	77.0-123	1.0	30.00
2-Chlorotoluene	5.00	5.08	102	5.00	5.04	101	74.0-127	0.79	30.00
4-Chlorotoluene	5.00	4.87	97	5.00	4.83	97	77.0-123	0.82	30.00
1,3,5-Trimethylbenzene	5.00	4.95	99	5.00	5.01	100	76.0-122	1.2	30.00
tert-Butylbenzene	5.00	4.86	97	5.00	5.09	102	67.0-122	4.6	30.00
1,2,4-Trimethylbenzene	5.00	5.02	100	5.00	5.11	102	76.0-124	1.8	30.00
sec-Butylbenzene	5.00	4.92	98	5.00	4.95	99	78.0-121	0.61	30.00
1,3-Dichlorobenzene	5.00	5.00	100	5.00	5.04	101	75.0-120	0.80	30.00
4-Isopropyltoluene	5.00	4.92	98	5.00	5.00	100	77.0-120	1.6	30.00
1,4-Dichlorobenzene	5.00	5.04	101	5.00	5.18	104	70.0-125	2.7	30.00
1,2-Dichlorobenzene	5.00	4.99	100	5.00	5.04	101	76.0-118	1.0	30.00
n-Butylbenzene	5.00	5.06	101	5.00	5.19	104	78.0-118	2.5	30.00
1,2-Dibromo-3-chloropropane	30.0	23.5	78	30.0	25.6	85	62.0-130	8.6	30.00
1,2,4-Trichlorobenzene	5.00	4.62	92	5.00	4.68	94	72.0-119	1.3	30.00
Hexachlorobutadiene	5.00	5.17	103	5.00	5.14	103	69.0-121	0.58	30.00
Naphthalene	5.00	4.95	99	5.00	5.00	100	67.0-122	1.0	30.00
1,2,3-Trichlorobenzene	5.00	4.89	98	5.00	4.92	98	21.0-193	0.61	30.00
Surrogates									
1,2-Dichloroethane-d4			96.8			97.2	64.0-140		
Toluene d8			100			101	82.0-117		
4-Bromofluorobenzene			101			101	85.0-115		

Print Date: 07/31/2012

N.C. Certification # 481

Blank Spike Summary

Blank Spike ID: LCS for HBN 25951 [VXX/3682]
Blank Spike Lab ID: 81672
Date Analyzed: 07/23/2012 09:19

Spike Duplicate ID: LCSD for HBN 25951 [VXX/3682]
Spike Duplicate Lab ID: 81673
Date Analyzed: 07/23/2012 09:43
Matrix: Water

QC for Samples: 31202263007

Results by SM 6200-B

	Blank Spike (%)			Spike Duplicate (%)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL

Batch Information

Analytical Batch: VMS2399
Analytical Method: SM 6200-B
Instrument: MSD4
Analyst: DVO

Prep Batch: VXX3682
Prep Method: SW-846 5030B
Prep Date/Time: 07/23/2012 08:20
Spike Init Wt./Vol.: 40 mL Extract Vol: 40 mL
Dupe Init Wt./Vol.: 40 mL Extract Vol: 40 mL

Print Date: 07/31/2012

N.C. Certification # 481

Batch Summary

Analytical Method: SW-846 8015C GRO

Prep Method: SW-846 5035
Prep Batch: VXX3668
Prep Date: 07/19/2012 08:57

Client Sample ID	Lab Sample ID	Analysis Date	Analytical Batch	Instrument	Analyst
LCS for HBN 25813 [VXX/3668]	81178	07/19/2012 11:04	VGC2025	GC7	MDY
LCSD for HBN 25813 [VXX/3668]	81179	07/19/2012 11:29	VGC2025	GC7	MDY
MB for HBN 25813 [VXX/3668]	81180	07/19/2012 11:55	VGC2025	GC7	MDY
93 DPT-01 (4-5ft)	31202263001	07/19/2012 14:45	VGC2025	GC7	MDY
93 DPT-02 (4-5ft)	31202263002	07/19/2012 15:11	VGC2025	GC7	MDY
93 DPT-03 (4-5ft)	31202263003	07/19/2012 15:36	VGC2025	GC7	MDY
93 DPT-04 (4-5ft)	31202263004	07/19/2012 16:02	VGC2025	GC7	MDY
93 DPT-05 (3-4ft)	31202263005	07/19/2012 16:27	VGC2025	GC7	MDY
93 DPT-06 (3-4ft)	31202263006	07/19/2012 16:53	VGC2025	GC7	MDY
Trip Blank (Not on COC)	31202263008	07/19/2012 17:44	VGC2025	GC7	MDY

Method Blank

Blank ID: MB for HBN 25813 [VXX/3668]
Blank Lab ID: 81180
Matrix: Soil-Solid as dry weight
QC for Samples:
31202263001, 31202263002, 31202263003, 31202263004, 31202263005, 31202263006, 31202263008

Results by SW-846 8015C GRO

Parameter	Result	Qual	DL	LOQ/CL	Units	DF
Gasoline Range Organics (GRO)	ND	U	4.00	4.00	mg/kg	1
Surrogates						
4-Bromofluorobenzene	106			70.0-130	%	1

Batch Information

Analytical Batch: VGC2025
Analytical Method: SW-846 8015C GRO
Instrument: GC7
Analyst: MDY
Analytical Date/Time: 7/19/2012 11:55:00AM

Prep Batch: VXX3668
Prep Method: SW-846 5035
Prep Date/Time: 7/19/2012 8:57:48AM
Prep Initial Wt./Vol.: 5 g
Prep Extract Vol: 5 mL

Print Date: 07/31/2012

N.C. Certification # 481

Blank Spike Summary

Blank Spike ID: LCS for HBN 25813 [VXX/3668]
Blank Spike Lab ID: 81178
Date Analyzed: 07/19/2012 11:04

Spike Duplicate ID: LCSD for HBN 25813 [VXX/3668]
Spike Duplicate Lab ID: 81179
Date Analyzed: 07/19/2012 11:29
Matrix: Soil-Solid as dry weight

QC for Samples: 31202263001, 31202263002, 31202263003, 31202263004, 31202263005, 31202263006, 31202263008

Results by SW-846 8015C GRO

	Blank Spike (mg/kg)			Spike Duplicate (mg/kg)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Gasoline Range Organics (GRO)	16.0	18.1	113	16.0	18.0	112	70.0-130	0.55	30.00
Surrogates									
4-Bromofluorobenzene			105			104	70.0-130		

Batch Information

Analytical Batch: VGC2025
Analytical Method: SW-846 8015C GRO
Instrument: GC7
Analyst: MDY

Prep Batch: VXX3668
Prep Method: SW-846 5035
Prep Date/Time: 07/19/2012 08:57
Spike Init Wt./Vol.: 5 g Extract Vol: 5 mL
Dupe Init Wt./Vol.: 5 g Extract Vol: 5 mL

Batch Summary

Analytical Method: EPA 625

Prep Method: EPA 625
Prep Batch: XXX2850
Prep Date: 07/24/2012 16:32

Client Sample ID	Lab Sample ID	Analysis Date	Analytical Batch	Instrument	Analyst
MB for HBN 26026 [XXX/2850]	82009	07/27/2012 16:46	XMS1613	MSD10	CMP
LCS for HBN 26026 [XXX/2850]	82010	07/27/2012 17:09	XMS1613	MSD10	CMP
LCSD for HBN 26026 [XXX/2850]	82011	07/27/2012 17:32	XMS1613	MSD10	CMP
93 DPT-06	31202263007	07/27/2012 17:55	XMS1613	MSD10	CMP

Print Date: 07/31/2012

N.C. Certification # 481

Method Blank

Blank ID: MB for HBN 26026 [XXX/2850]
Blank Lab ID: 82009
QC for Samples:
31202263007

Matrix: Water

Results by **EPA 625**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF
Bis(2-Chloroethyl)ether	ND	U	2.21	5.00	ug/L	1
Bis(2-Chloroisopropyl)ether	ND	U	2.04	5.00	ug/L	1
n-Nitrosodi-n-propylamine	ND	U	2.23	5.00	ug/L	1
Hexachloroethane	ND	U	1.40	5.00	ug/L	1
Nitrobenzene	ND	U	2.19	5.00	ug/L	1
Isophorone	ND	U	2.09	5.00	ug/L	1
Bis(2-Chloroethoxy)methane	ND	U	2.12	5.00	ug/L	1
1,2,4-Trichlorobenzene	ND	U	1.73	5.00	ug/L	1
Naphthalene	ND	U	1.94	5.00	ug/L	1
Hexachlorobutadiene	ND	U	1.52	5.00	ug/L	1
Hexachlorocyclopentadiene	ND	U	0.788	10.0	ug/L	1
2-Chloronaphthalene	ND	U	2.00	5.00	ug/L	1
Dimethyl phthalate	ND	U	2.14	5.00	ug/L	1
2,6-Dinitrotoluene	ND	U	1.88	5.00	ug/L	1
Acenaphthene	ND	U	2.06	5.00	ug/L	1
2,4-Dinitrotoluene	ND	U	1.84	5.00	ug/L	1
Fluorene	ND	U	2.44	5.00	ug/L	1
Diethyl phthalate	ND	U	2.10	5.00	ug/L	1
4-Chlorophenyl phenyl ether	ND	U	2.46	5.00	ug/L	1
Diphenylamine	ND	U	2.02	5.00	ug/L	1
4-Bromophenyl phenyl ether	ND	U	2.04	5.00	ug/L	1
Hexachlorobenzene	ND	U	1.93	5.00	ug/L	1
Phenanthrene	ND	U	1.99	5.00	ug/L	1
Anthracene	ND	U	1.93	5.00	ug/L	1
Di-n-butyl phthalate	ND	U	1.91	5.00	ug/L	1
Fluoranthene	ND	U	2.02	5.00	ug/L	1
Pyrene	ND	U	2.01	5.00	ug/L	1
Butyl benzyl phthalate	ND	U	1.89	5.00	ug/L	1
Benzo(a)anthracene	ND	U	1.96	5.00	ug/L	1
3,3'-Dichlorobenzidine	ND	U	1.75	10.0	ug/L	1
Chrysene	ND	U	2.20	5.00	ug/L	1
Bis(2-Ethylhexyl)phthalate	ND	U	1.95	5.00	ug/L	1
Benzo(b)fluoranthene	ND	U	1.96	5.00	ug/L	1
Benzo(k)fluoranthene	ND	U	2.31	5.00	ug/L	1
Benzo(a)pyrene	ND	U	1.86	5.00	ug/L	1
Indeno(1,2,3-cd)pyrene	ND	U	2.02	5.00	ug/L	1
Dibenz(a,h)anthracene	ND	U	2.02	5.00	ug/L	1
Benzo(g,h,i)perylene	ND	U	2.15	5.00	ug/L	1
Acenaphthylene	ND	U	2.00	5.00	ug/L	1
Di-n-octyl phthalate	ND	U	1.46	5.00	ug/L	1
Surrogates						
2-Fluorophenol	82.2			33.1-118	%	1

Print Date: 07/31/2012

N.C. Certification # 481

Method Blank

Blank ID: MB for HBN 26026 [XXX/2850]
Blank Lab ID: 82009
QC for Samples:
31202263007

Matrix: Water

Results by EPA 625

Parameter	Result	Qual	DL	LOQ/CL	Units	DF
Phenol-d6	96.3			49.0-120	%	1
Nitrobenzene-d5	92.6			46.0-118	%	1
2-Fluorobiphenyl	91.7			50.0-107	%	1
2,4,6-Tribromophenol	96.6			29.3-152	%	1
Terphenyl-d14	120			22.1-142	%	1

Batch Information

Analytical Batch: XMS1613
Analytical Method: EPA 625
Instrument: MSD10
Analyst: CMP
Analytical Date/Time: 7/27/2012 4:46:00PM

Prep Batch: XXX2850
Prep Method: EPA 625
Prep Date/Time: 7/24/2012 4:32:55PM
Prep Initial Wt./Vol.: 1000 mL
Prep Extract Vol: 5 mL

Print Date: 07/31/2012

N.C. Certification # 481

SGS ANALYTICAL PERSPECTIVES

Blank Spike Summary

Blank Spike ID: LCS for HBN 26026 [XXX/2850]
Blank Spike Lab ID: 82010
Date Analyzed: 07/27/2012 17:09

Spike Duplicate ID: LCSD for HBN 26026 [XXX/2850]
Spike Duplicate Lab ID: 82011
Date Analyzed: 07/27/2012 17:32
Matrix: Water

QC for Samples: 31202263007

Results by EPA 625

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Bis(2-Chloroethyl)ether	50.0	45.7	91	50.0	48.5	97	12.0-158	5.9	30.00
Bis(2-Chloroisopropyl)ether	50.0	43.6	87	50.0	44.6	89	36.0-166	2.3	30.00
n-Nitrosodi-n-propylamine	50.0	42.4	85	50.0	43.7	87	0.0100-230	3.0	30.00
Hexachloroethane	50.0	29.6	59	50.0	31.0	62	40.0-113	4.6	30.00
Nitrobenzene	50.0	46.5	93	50.0	48.7	97	35.0-180	4.6	30.00
Isophorone	50.0	49.5	99	50.0	52.7	105	21.0-196	6.3	30.00
Bis(2-Chloroethoxy)methane	50.0	48.9	98	50.0	51.9	104	33.0-184	6.0	30.00
1,2,4-Trichlorobenzene	50.0	42.8	86	50.0	44.9	90	44.0-142	4.8	30.00
Naphthalene	50.0	46.8	94	50.0	48.7	97	21.0-133	4.0	30.00
Hexachlorobutadiene	50.0	40.9	82	50.0	42.1	84	24.0-116	2.9	30.00
Hexachlorocyclopentadiene	50.0	51.6	103	50.0	55.8	112	0.0100-417	7.8	30.00
2-Chloronaphthalene	50.0	46.0	92	50.0	48.5	97	60.0-118	5.3	30.00
Dimethyl phthalate	50.0	50.7	101	50.0	53.3	107	0.0100-112	5.0	30.00
2,6-Dinitrotoluene	50.0	51.3	103	50.0	53.9	108	50.0-158	4.9	30.00
Acenaphthene	50.0	48.5	97	50.0	52.3	105	47.0-145	7.5	30.00
2,4-Dinitrotoluene	50.0	51.8	104	50.0	56.0	112	39.0-139	7.8	30.00
Fluorene	50.0	50.9	102	50.0	53.1	106	59.0-121	4.2	30.00
Diethyl phthalate	50.0	49.6	99	50.0	52.5	105	0.0100-114	5.7	30.00
4-Chlorophenyl phenyl ether	50.0	52.1	104	50.0	53.7	107	25.0-158	3.0	30.00
Diphenylamine	50.0	50.9	102*	50.0	54.8	110*	63.8-100	7.4	30.00
4-Bromophenyl phenyl ether	50.0	55.4	111	50.0	59.0	118	53.0-127	6.3	30.00
Hexachlorobenzene	50.0	51.0	102	50.0	53.7	107	0.0100-152	5.2	30.00
Phenanthrene	50.0	55.5	111	50.0	60.0	120	54.0-120	7.8	30.00
Anthracene	50.0	49.7	99	50.0	54.5	109	27.0-133	9.2	30.00
Di-n-butyl phthalate	50.0	55.7	111	50.0	61.5	123*	1.00-118	9.9	30.00
Fluoranthene	50.0	55.4	111	50.0	61.5	123	26.0-137	10	30.00
Pyrene	50.0	51.0	102	50.0	56.2	112	52.0-115	9.7	30.00
Butyl benzyl phthalate	50.0	47.4	95	50.0	51.2	102	0.0100-152	7.7	30.00
Benzo(a)anthracene	50.0	50.1	100	50.0	54.2	108	33.0-143	7.9	30.00
3,3'-Dichlorobenzidine	50.0	35.5	71	50.0	45.9	92	0.0100-262	26	30.00
Chrysene	50.0	50.4	101	50.0	56.0	112	17.0-168	11	30.00
Bis(2-Ethylhexyl)phthalate	50.0	48.9	98	50.0	51.9	104	8.00-158	6.0	30.00
Benzo(b)fluoranthene	50.0	46.0	92	50.0	50.1	100	24.0-159	8.5	30.00
Benzo(k)fluoranthene	50.0	52.5	105	50.0	57.2	114	11.0-162	8.6	30.00

Blank Spike Summary

Blank Spike ID: LCS for HBN 26026 [XXX/2850]
Blank Spike Lab ID: 82010
Date Analyzed: 07/27/2012 17:09

Spike Duplicate ID: LCSD for HBN 26026 [XXX/2850]
Spike Duplicate Lab ID: 82011
Date Analyzed: 07/27/2012 17:32
Matrix: Water

QC for Samples: 31202263007

Results by EPA 625

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Benzo(a)pyrene	50.0	46.1	92	50.0	50.1	100	17.0-163	8.3	30.00
Indeno(1,2,3-cd)pyrene	50.0	54.4	109	50.0	57.4	115	0.0100-171	5.4	30.00
Dibenz(a,h)anthracene	50.0	54.3	109	50.0	56.8	114	0.0100-227	4.5	30.00
Benzo(g,h,i)perylene	50.0	55.6	111	50.0	57.7	115	0.0100-219	3.7	30.00
Acenaphthylene	50.0	49.2	98	50.0	53.2	106	33.0-145	7.8	30.00
Di-n-octyl phthalate	50.0	50.3	101	50.0	54.7	109	-	8.4	
Surrogates									
2-Fluorophenol			84.9			91.9	33.1-118		
Phenol-d6			104			108	49.0-120		
Nitrobenzene-d5			96.4			103	46.0-118		
2-Fluorobiphenyl			101			109*	50.0-107		
2,4,6-Tribromophenol			116			124	29.3-152		
Terphenyl-d14			101			108	22.1-142		

Batch Information

Analytical Batch: XMS1613
Analytical Method: EPA 625
Instrument: MSD10
Analyst: CMP

Prep Batch: XXX2850
Prep Method: EPA 625
Prep Date/Time: 07/24/2012 16:32
Spike Init Wt./Vol.: 1000 mL Extract Vol: 5 mL
Dupe Init Wt./Vol.: 1000 mL Extract Vol: 5 mL

Batch Summary

Analytical Method: SW-846 8015C DRO

Prep Method: SW-846 3541
Prep Batch: XXX2848
Prep Date: 07/24/2012 15:08

Client Sample ID	Lab Sample ID	Analysis Date	Analytical Batch	Instrument	Analyst
MB for HBN 26022 [XXX/2848]	81985	07/25/2012 17:14	XGC2393	GC6	DTF
LCS for HBN 26022 [XXX/2848]	81986	07/25/2012 17:42	XGC2393	GC6	DTF
93 DPT-01 (4-5ft)	31202263001	07/25/2012 18:11	XGC2393	GC6	DTF
93 DPT-01 (4-5ft)(81167MS)	81987	07/25/2012 18:39	XGC2393	GC6	DTF
93 DPT-01 (4-5ft)(81167MSD)	81988	07/25/2012 19:07	XGC2393	GC6	DTF
93 DPT-02 (4-5ft)	31202263002	07/25/2012 19:36	XGC2393	GC6	DTF
93 DPT-03 (4-5ft)	31202263003	07/25/2012 20:04	XGC2393	GC6	DTF
93 DPT-04 (4-5ft)	31202263004	07/25/2012 20:32	XGC2393	GC6	DTF
93 DPT-05 (3-4ft)	31202263005	07/25/2012 21:01	XGC2393	GC6	DTF
93 DPT-06 (3-4ft)	31202263006	07/25/2012 21:30	XGC2393	GC6	DTF

Method Blank

Blank ID: MB for HBN 26022 [XXX/2848]
Blank Lab ID: 81985
Matrix: Soil-Solid as dry weight
QC for Samples:
31202263001, 31202263002, 31202263003, 31202263004, 31202263005, 31202263006

Results by SW-846 8015C DRO

Parameter	Result	Qual	DL	LOQ/CL	Units	DF
Diesel Range Organics (DRO)	ND	U	6.25	6.25	mg/kg	1
Surrogates						
o-Terphenyl	87.7			40.0-140	%	1

Batch Information

Analytical Batch: XGC2393
Analytical Method: SW-846 8015C DRO
Instrument: GC6
Analyst: DTF
Analytical Date/Time: 7/25/2012 5:14:00PM

Prep Batch: XXX2848
Prep Method: SW-846 3541
Prep Date/Time: 7/24/2012 3:08:05PM
Prep Initial Wt./Vol.: 32 g
Prep Extract Vol: 10 mL

Print Date: 07/31/2012

N.C. Certification # 481

Blank Spike Summary

Blank Spike ID: LCS for HBN 26022 [XXX/2848]
Blank Spike Lab ID: 81986
Date Analyzed: 07/25/2012 17:42

Matrix: Soil-Solid as dry weight

QC for Samples: 31202263001, 31202263002, 31202263003, 31202263004, 31202263005, 31202263006

Results by SW-846 8015C DRO

Blank Spike (mg/kg)

Parameter	Spike	Result	Rec (%)	CL
Diesel Range Organics (DRO)	62.5	58.8	94	55.0-137
Surrogates				
o-Terphenyl			94.3	40.0-140

Batch Information

Analytical Batch: XGC2393
Analytical Method: SW-846 8015C DRO
Instrument: GC6
Analyst: DTF

Prep Batch: XXX2848
Prep Method: SW-846 3541
Prep Date/Time: 07/24/2012 15:08
Spike Init Wt./Vol.: 32 g Extract Vol: 10 mL
Dupe Init Wt./Vol.: Extract Vol:

Print Date: 07/31/2012

N.C. Certification # 481

Matrix Spike Summary

Original Sample ID: 31202263001 (93 DPT-01 (4-5ft))
MS Sample ID: 81987
MSD Sample ID: 81988

Analysis Date: 07/25/2012 18:11
Analysis Date: 07/25/2012 18:39
Analysis Date: 07/25/2012 19:07
Matrix: Soil-Solid as dry weight

QC for Samples: 31202263001, 31202263002, 31202263003, 31202263004, 31202263005, 31202263006

Results by SW-846 8015C DRO

		Matrix Spike (mg/kg)			Spike Duplicate (mg/kg)					
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Diesel Range Organics (DRO)	ND	78.0	70.2	90	73.0	51.8	71	40.0-140	30	30.00
Surrogates										
o-Terphenyl				88.1			75.2	40.0-140		

Batch Information

Analytical Batch: XGC2393
Analytical Method: SW-846 8015C DRO
Instrument: GC6
Analyst: DTF

Prep Batch: XXX2848
Prep Method: SW-846 3541
Prep Date/Time: 07/24/2012 15:08
MS Init Wt./Vol.: 30.63 g Extract Vol.: 10 mL
MSD Init Wt./Vol.: 32.74 g Extract Vol.: 10 mL

Print Date: 07/31/2012

N.C. Certification # 481

SGS | **ANALYTICAL PERSPECTIVES**

CHAIN OF CUSTODY

SGS ANALYTICAL PERSPECTIVES
5500 Business Drive
Wilmington, NC 28405
+1 910 350 1903
WWW.SGS.COM

CLIENT: CATLIN / NCDOT

CONTACT: Ben Ashba **PHONE NO:** (910) 452-5861

PROJECT: NCDOT Parcel 93 **SITE / PWSID / WBS #:** 35781.1.2

REPORTS TO: Ben @ CATLIN — Pitt County U-3315

EMAIL: ben.ashba@catlinusa.com

INVOICE TO: NCDOT **QUOTE #** **P.O. NUMBER** NCDOT

SGS Reference #: 3120226 3

PAGE 1 **OF** 1

Preservatives used: MeOH (TPH DRO&GRO); HCl (6200D)

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	# CONTAINERS	SAMPLE TYPE (C= COMP, G= GRAB)	TPH DRO&GRO	625 BN	6200D							REMARKS
	93 DPT-01 (4-5')	7.17.12	1115	SOIL	3	G	✓									near CB1008
	93 DPT-02 (4-5')	↓	1140	↓	↓	↓	↓									
	93 DPT-03 (4-5')	↓	1240	↓	↓	↓	↓									
	93 DPT-04 (4-5')	↓	1300	↓	↓	↓	↓									
	93 DPT-05 (3-4')	↓	1640	↓	↓	↓	↓									@ CB1002
	93 DPT-06 (3-4')	↓	1735	↓	↓	↓	↓									@ CB1001
	93 DPT-06	7.17.12	1745	H2O				✓	✓							''

COLLECTED/RELINQUISHED BY: (1)	DATE	TIME	RECEIVED BY:
Ben Ashba	7.18.12	1630	Ali V[illegible]
Relinquished By: (2)	Date	Time	Received By:
Relinquished By: (3)	Date	Time	Received By:
Received For Laboratory By:	Date	Time	CoC Seal: INTACT BROKEN ~~ABSENT~~ — Sample Receipt Temp: C 7.8

REPORT LEVEL: ☐ Level I ☒ Level II ☐ Level IV

REQUESTED TURNAROUND TIME: ☐ Rush: ____ ☒ Standard

SPECIAL DELIVERABLES: State of Origin: NC ☐ Trust Fund

☐ DoD ☒ EDD: Summary Other: ____

SPECIAL INSTRUCTIONS:

Shipping Carrier:
Shipping Ticket No:

Notes:

SGS-00055 (06/12)

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

White - Retained by Lab
Yellow - Retained by Client

SGS North America Inc.

Sample Receipt Checklist (SRC)

Client: **NCDOT - Catlin** Work Order No.: **31202263**

1. ___ Shipped
   X Hand Delivered
2. X COC Present on Receipt
   ___ No COC
   ___ Additional Transmittal Forms
3. ___ Custody Tape on Container
   X No Custody Tape
4. X Samples Intact
   ___ Samples Broken / Leaking
5. X Chilled on Receipt Actual Temp.(s) in °C: 1
   ___ Ambient on Receipt
   ___ Walk-in on Ice; Coming down to temp.
   ___ Received Outside of Temperature Specifications
6. X Sufficient Sample Submitted
   ___ Insufficient Sample Submitted
7. ___ Chlorine absent
   ___ HNO3 < 2
   ___ HCL < 2
   ___ Additional Preservatives verified (see notes)
8. X Received Within Holding Time
   ___ Not Received Within Holding Time
9. X No Discrepancies Noted
   ___ Discrepancies Noted
   ___ NCDENR notified of Discrepancies*
10. X No Headspace present in VOC vials
    ___ Headspace present in VOC vials >6mm

Notes:

Comments:

Inspected and Logged in by: AV

Date: Thu-7/19/12 00:00

*NCDENR must be notified when collection, holding time or preservation requirements are not met. MI_11.6

APPENDIX E
PHOTOGRAPHS

Parcel 93, Sam Pollard and Son Plumb and AC, Inc.
400 W. 10th Street

From Southwest portion of property looking East.

From Southwest portion of property looking Northeast.

Parcel 93, Sam Pollard and Son Plumb and AC, Inc.
400 W. 10th Street

From Eastern portion of property looking West. Soil and Groundwater samples collected at proposed Catch Basin 1001 location under hard-hat in foreground.

From behind building looking South across MW-1 (abandoned) in foreground and former UST location.