ATC ASSOCIATES OF NORTH CAROLINA, P.C.
Engineering Individual Solutions

2725 East Millbrook Road
Suite 121
Raleigh, NC 27604
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N.C. Engineering License No. C-1598

November 1, 2012

Mr. Gordon Box
NC Department of Transportation
GeoEnvironmental Section
1589 Mail Service Center
Raleigh, North Carolina, 27699-1589

Reference: Preliminary Site Assessment
Parcel 173
1301 W 14th Avenue, Greenville, NC 27834
State Project: U-3315
WBS Element 35781.1.2
ATC Project No. 45.19873.0007

Dear Mr. Box:

ATC Associates of North Carolina, P.C. (ATC) has prepared this report to document the results of a preliminary site assessment (PSA) conducted at the above referenced site. The assessment was conducted in accordance with the Technical and Cost Proposal submitted to the North Carolina Department of Transportation (NCDOT) on July 27, 2012, and a Notice to Proceed letter issued by the NCDOT on August 16, 2012. This report describes field activities, laboratory results, and conclusions based on the collected data.

1.0 BACKGROUND INFORMATION

According to the request for technical and cost proposal (RFP) dated July 10, 2012, parcel 173 (site) is located at 1301 West 14th Avenue in Greenville, North Carolina. However, Pitt County's online parcel information system indicates that the site is composed of two adjacent county parcels with addresses of 1301 West 14th Avenue and 1301 Myrtle Street. Due to the location of proposed construction activities per the NCDOT, only the county parcel along 14th Avenue was investigated. The site is currently a paved parking area for adjacent commercial spaces including a barber shop (referenced as the site function in the RFP). The site and surrounding parcels are zoned commercial; historic land use is unknown for the site.

The site lies within the coastal plain of North Carolina and is underlain by the Yorktown formation, which generally consists of fossiliferous clays and sands. The site lies in the Tar-Pamlico river basin and groundwater flows generally to the northeast across the site. A groundwater gradient map for the site and surrounding parcels is included as ***Figure 1.***

Due to the partial take status of the site, a soil and groundwater assessment was completed only for the area within the proposed NCDOT right-of-way and/or easement as indicated on the construction plans. A parcel identification map is included as ***Figure 2***.

As per the Technical and Cost Proposal, ATC obtained a report provided by Environmental Data Resources, Inc. (EDR) of Milford, Connecticut. The report was reviewed for information regarding reported releases of hazardous substances and petroleum products on or near the site. ATC also reviewed the "unmappable" (also referred to as "orphan") listings within the database report, cross-referencing available address information and facility names. Unmappable sites are listings that could not be plotted with confidence, but are potentially in the general area of the property in question based on the partial street address, city, or zip code. No unmappable sites were identified by ATC as being within the approximate minimum search distance from Parcel 173 based on the site reconnaissance and/or cross-referencing to mapped listings. In addition, Parcel 173 was not listed on any federal/state/local databases reviewed for this part of the historical assessment. The 1923, 1929, 1946, and 1958 Sanborn Maps depict a residential dwelling at the subject property. The 1977 and 1993 aerial photographs appear to depict the property as vacant. The current building appears in the 2005 aerial photograph. The remaining photographs were either unclear or at such a scale that the property detail could not be discerned. The complete EDR report is included in ***Appendix A***.

2.0 FIELD ACTIVITIES

2.1 Geophysical Survey

Prior to performing assessment activities, ATC contracted Stantec Consulting Services, Inc. (Stantec) to perform a geophysical survey of the site. The purpose of the survey was to locate USTs and/or other buried structures on the parcel. This was to be done in the area of the proposed NCDOT right of way and included proposed excavations for drainage lines, utilities, and slope stake cuts. The survey was conducted on July 18 through 19, 2012 and included electromagnetic (EM) induction-magnetic detection and ground penetrating radar (GPR) surveys. According to Stantec's survey, no USTs and/or other buried structures were present on the parcel. The complete geophysical report is provided in ***Appendix B.*** Based on the findings of the survey and proposed construction details, ATC performed a drilling event to assess soil and groundwater conditions only in areas within the proposed (by NCDOT) right-of-way and/or easement. Details of the soil and groundwater assessment are included in ***Sections 2.2*** and ***2.3***.

2.2 Soil Assessment

Based on the results of the geophysical survey and in anticipation of a partial take by the NCDOT, a soil assessment was completed on-site. On July 31, 2012, ATC mobilized to the site with South Atlantic Environmental Drilling and Construction Company (SAEDACCO) to conduct sampling activities. Over the course of the event, eight borings (SB173-1 through SB173-7 and TW173-1) were advanced using direct-push technology (DPT) drilling techniques. Prior to the drilling, Stantec was contracted to conduct utility clearance in conjunction with the geophysical survey investigation. The NCDOT and North Carolina's 811 service were also notified prior to field activities.

The locations of the borings are shown on the attached ***Figure 3***. Each boring was advanced to a depth of five feet below ground surface (bgs) via hand auger prior to utilizing DPT drilling techniques to complete the sampling. Soil samples were collected every 1 to 3 feet and screened with a photo-ionization detector (PID). Soils encountered consisted primarily of moist, tan to gray silty sands and clays. The highest PID reading collected during the soil assessment was 2.6 parts per million (ppm) in the 5-6 feet bgs interval of SB173-3. Boring logs are included in ***Appendix C***.

One soil sample from each boring was submitted for laboratory analysis. This was determined by either submitting the interval with the highest PID reading, or, if not applicable, the deepest interval at which proposed construction would take place. Samples were submitted to SGS Analytical Perspectives (SGS) in Wilmington, North Carolina. Following proper chain-of-custody protocol, the samples were placed in laboratory supplied containers in an ice filled cooler for analysis of Total Petroleum Hydrocarbons – Gasoline Range Organics (TPH-GRO) and Diesel Range Organics (TPH-DRO) by EPA Method 8015 Modified. A discussion of the laboratory results is provided in ***Section 3.0***.

2.3 Groundwater Assessment

ATC supervised SAEDACCO during the installation of temporary well TW173-1 on August 1, 2012. The boring was advanced to a depth of five feet bgs via hand auger prior to utilizing DPT drilling techniques to complete the well installation activities. Temporary well TW173-1 was installed to a depth of 12 feet bgs using 10 feet of 0.010-inch machine slotted 1-inch poly vinyl chloride (PVC) well screen and solid PVC riser. The annular space of the boring was filled with washed silica sand to an approximate depth of 2 feet bgs. The location of the temporary well is shown on the attached ***Figure 3*** and a boring log is included in ***Appendix C***.

Following the temporary well installation, ATC gauged an approximate depth to water level of 4.77 feet below the top of well casing. A peristaltic pump and dedicated polyethylene tubing were used to purge approximately one gallon prior to collecting a groundwater sample. The sample was submitted to SGS under chain-of-custody protocol for analysis of VOCs by EPA Method 8260B. Following sampling, the top of well casing was surveyed for vertical elevation using standard surveying practices from a temporary benchmark with an arbitrary, assumed elevation of 100.00 feet. This was done in conjunction with adjacent temporary wells installed on the surrounding parcels. Following surveying, the borings were filled with native soil and finished to approximately 6 inches below surface grade with bentonite. The remainder of the boring was then filled using material to match the surrounding surface.

3.0 LABORATORY RESULTS

The results of the laboratory analyses for soil samples collected on-site indicated no detectable concentrations of VOCs, TPH-GRO, and/or TPH-DRO.

The results of laboratory analyses for groundwater sample TW173-1 did not indicate any compounds at concentrations above NC Title 15A NCAC 2L .0202 Groundwater Standards (2L Standards). Only one compound, MTBE, was detected above laboratory detection limits but below 2L Standards. The laboratory analytical report is included in ***Appendix D*** and a summary

of the laboratory results for the soil and groundwater sampling are provided in ***Tables 1*** and ***2***, respectively.

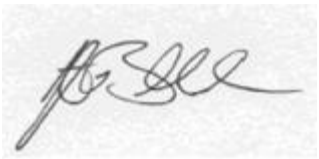
4.0 CONCLUSIONS

ATC has completed PSA activities at the Parcel 173 site in Greenville, North Carolina. The results of the assessment indicate that soil and groundwater at the site have not been impacted above applicable standards. Based on a review of the site's historical data, geophysical investigation, and field assessment, ATC does not anticipate construction activities to come into contact with impacted soil and/or groundwater. However, if impacted soil or groundwater is encountered during construction activities, appropriate measures should be taken to ensure worker safety. In addition, any impacted soil or groundwater disturbed during construction should be handled and disposed of in accordance with applicable regulations.

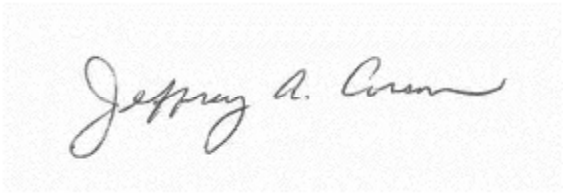
ATC appreciates the opportunity to assist the NCDOT with this project. If you have questions or require additional information, please do not hesitate to contact us at (919) 871-0999.

Sincerely,
ATC Associates of North Carolina, P.C.

Corey M. Scheip
Staff Scientist



Justin C. Ballard, P.G.
Project Geologist



Jeffrey A. Corson
Project Manager

Attachments:

1. Table 1 – Soil Analytical Data
2. Table 2 – Groundwater Analytical Data
3. Figure 1 – Project Groundwater Gradient Map
4. Figure 2 – Parcel Identification Map
5. Figure 3 – Sample Location Map
6. Figure 4 – Soil Analytical Data Map
7. Figure 5 – Groundwater Analytical Data Map
8. Appendix A – EDR Report
9. Appendix B – Geophysical Investigation Report
10. Appendix C – Boring Logs
11. Appendix D – Laboratory Analytical Report

TABLES

TABLE 1

PSA
SOIL ANALYTICAL DATA

PARCEL 173
GREENVILLE, PITT COUNTY, NORTH CAROLINA
ATC PROJECT NO. 45.19873.0007
WBS ELEMENT NO. 35781.1.2

EPA Method:				5030/8015	3550/8015
Boring I.D.	**Depth (feet)**	**Sampling Date**	**PID Reading (ppm)**	**TPH-GRO**	**TPH-DRO**
SB173-1	6-8	08/02/2012	0	<3.58	<8.08
SB173-2	2.5-5	07/31/2012	0.2	<3.72	<7.73
SB173-3	5-6	07/31/2012	2.6	<3.2	<7.27
SB173-4	6-8	07/31/2012	1.6	<3.93	<7.97
SB173-5	2.5-5	08/02/2012	0.1	<3.7	<7.29
SB173-6	6-8	08/02/2012	0	<3.85	<7.93
SB173-7	6-8	08/02/2012	0	<3.72	<8.08
TW173-1	6-8	08/01/2012	0	<3.75	<7.85
NCDENR Action Level				**10**	**10**
Soil-to-Groundwater MSCC				--	--
Residential MSCC				--	--
Industrial/Commercial MSCC				--	--

Notes:
1. TPH = Total petroleum hydrocarbons.
2. GRO = Gasoline range organics.
3. DRO = Diesel range organics.
4. Concentrations reported in milligrams per kilogram (mg/kg).
5. "<" = not detected at or above the laboratory detection limit.
6. MSCC = Maximum Soil Contaminant Concentration Levels.
7. NE = Not established.
8. NA = Not analyzed.
9. MTBE = Methyl tertiary butyl ether.
10. Values in **BOLD** indicate levels above Soil-to-Groundwater MSCCs and/or the NCDENR Action Level.
11. # = Health based level > 100%.

TABLE 2

PSA
GROUNDWATER ANALYTICAL DATA

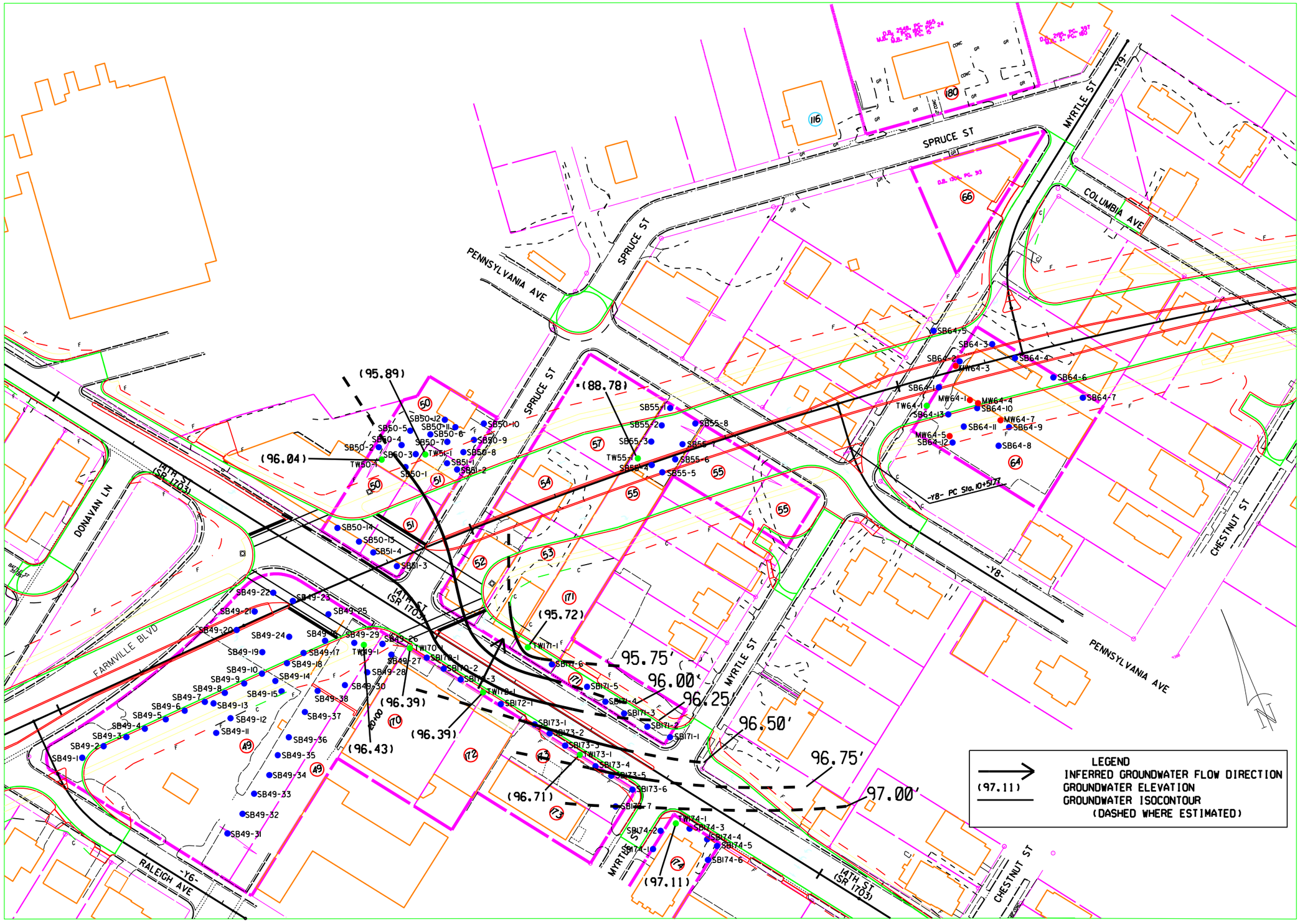
PARCEL 173
GREENVILLE, PITT COUNTY, NORTH CAROLINA
ATC PROJECT NO. 45.19873.0007
WBS ELEMENT NO. 35781.1.2

Analytical Method		EPA Method 8260B						
Contaminant of Concern		Benzene	Toluene	Ethylbenzene	Total Xylenes	Total BTEX	MTBE	Naphthalene
Well ID	Date Collected							
TW173-1	08/01/2012	<1.0	<1.0	<1.0	<2.0	NE	1.44	<1.0
2L Standard (µg/l)		**1**	**600**	**600**	**500**	**NE**	**20**	**6**
GCL (µg/l)		**5,000**	**260,000**	**84,500**	**85,500**	**NE**	**20,000**	**6,000**

Notes:

1. "<" or ND = Not detected at or above the laboratory detection limit.
2. Concentrations are reported in micrograms per liter (µg/l) = parts per billion.
3. Concentrations in bold print equal or exceed the NCDENR 2L Standard (2L).
4. NCDENR = North Carolina Department of Environment and Natural Resources.
5. GCL = Gross Contaminantion Level.
6. NE = Not Established.
7. MTBE = Methyl Tertiary Butyl Ether.
8. Gross Contamination Levels for Groundwater are referenced in the Guidelines for Assessment and Corrective Action, November 2008, updated January 2010.
9. BTEX = Benzene, Toluene, Ethylbenzene, Total Xylenes
10. Temporary well TW173-1 was installed, sampled, and abandoned on 8/1/2012.

FIGURES



ATC Associates of North Carolina, P.C.
RALEIGH, NORTH CAROLINA (919) 871-0999 FAX (919) 871-0335

SCALE	DATE	PROJECT NO.
1"= 100'	10-31-2012	45.19873.0007

PREP. BY	REV. BY
CS	JB

WBS ELEMENT 35781.1.2

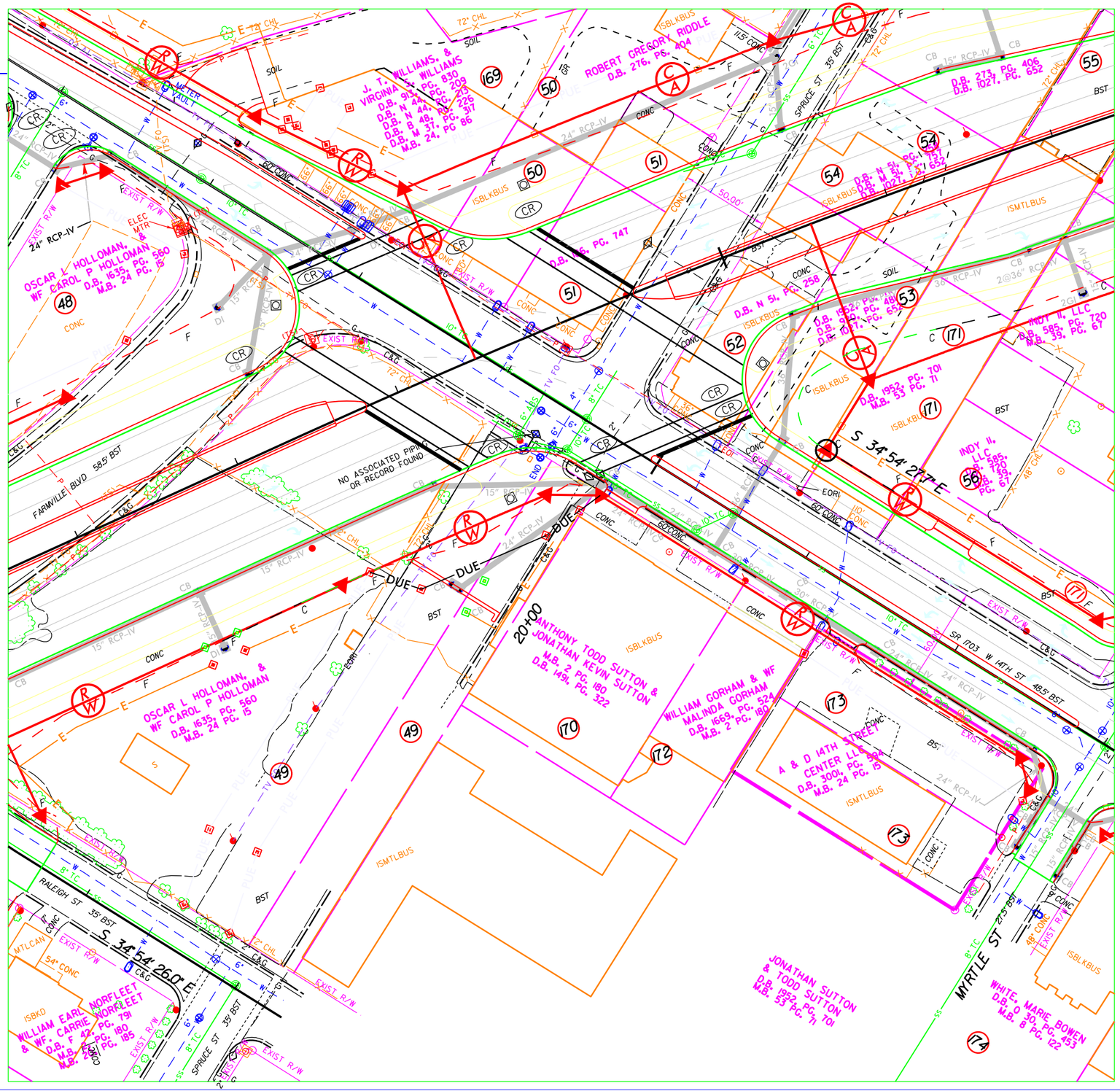
CAD FILE

TITLE FIGURE 1
PROJECT GROUNDWATER GRADIENT MAP
STANTONSBURG ROAD/TENTH STREET CONNECTOR FROM
MEMORIAL DRIVE (US13) TO EVAN STREET
GREENVILLE, NC
NCDOT PROJECT U-3315

LEGEND

- EXISTING RIGHT OF WAY
- PROPOSED RIGHT OF WAY
- PROPERTY LINE
- U/G CABLE TV
- U/G CABLE TELEPHONE
- U/G CABLE TELEPHONE FIBER OPTIC
- EXISTING HYDRO
- U/G CABLE TV FIBER OPTIC
- PERMINATE UTILITY EASEMENT
- FILL LINE
- CUT LINE

CHL	CHAIN LINK
CB	CATCH BASIN
RCP	REINFORCED CONCRETE PIPE
EOT	EDGE OF TRAVEL
MH	MANHOLE
TC	TERRA COTTA PIPE
◙	TRAFFIC SIGNAL POLE



NOTES:

TITLE FIGURE 2
PARCEL IDENTIFICATION MAP
A & D 14TH STREET CENTER LLC PROPERTY -
PARCEL 173
1301 WEST 14TH AVE
GREENVILLE NC 27834

CAD FILE	WBS ELEMENT	PREP. BY	REV. BY
	35781.1.2	JB	KN

SCALE	DATE	PROJECT NO.
1"=60'-0"	10-31-2012	45.19873.0007

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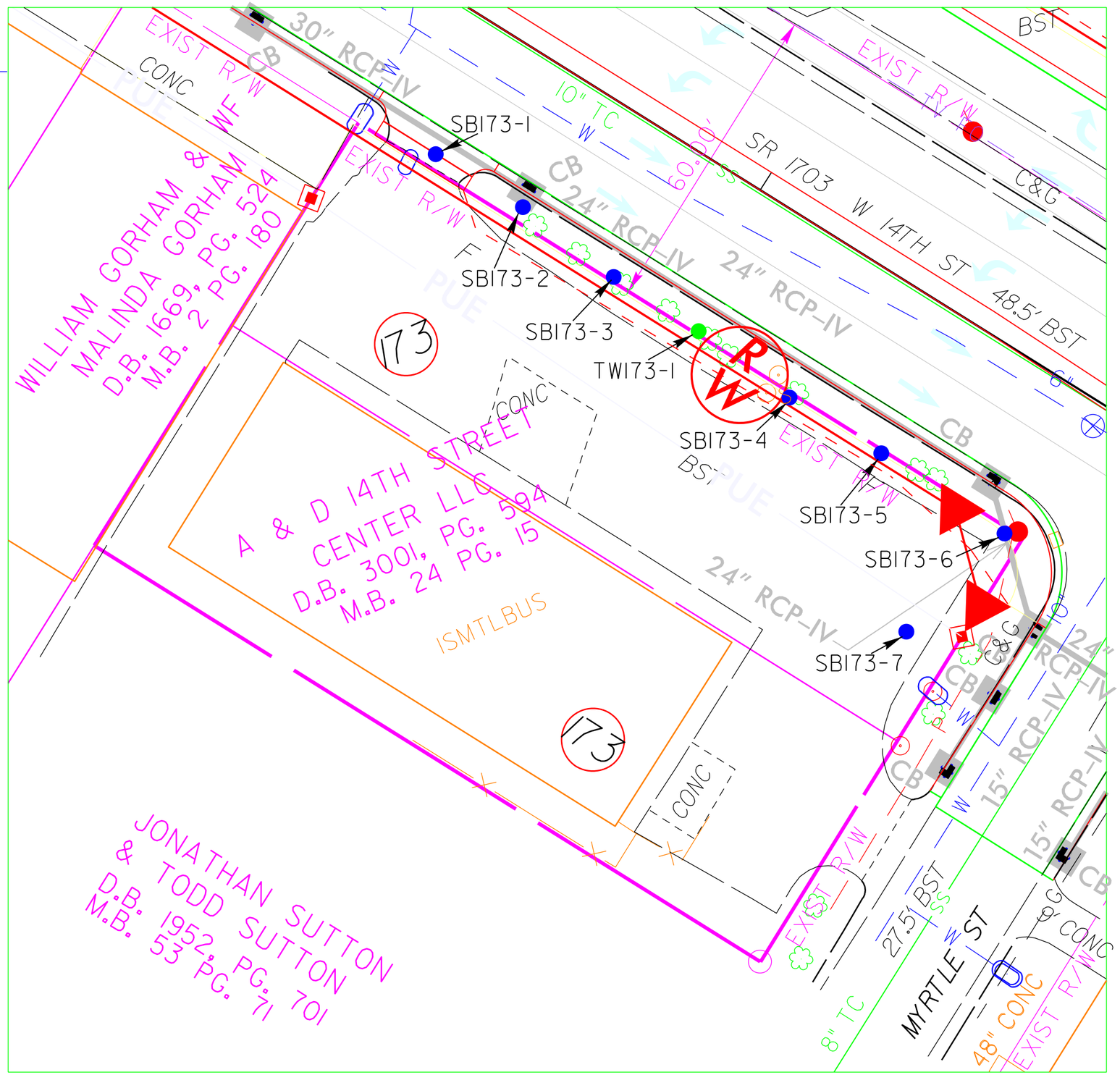
RALEIGH, NORTH CAROLINA (919) 871-0999 FAX (919) 871-0335

LEGEND

- EXISTING RIGHT OF WAY
- PROPOSED RIGHT OF WAY
- PROPERTY LINE
- U/G CABLE TV
- U/G CABLE TELEPHONE
- U/G CABLE TELEPHONE FIBER OPTIC
- U/G ELECTRIC
- EXISTING HYDRO
- U/G CABLE TV FIBER OPTIC
- PERMINATE UTILITY EASEMENT
- FILL LINE
- CUT LINE

CHL	CHAIN LINK
CB	CATCH BASIN
RCP	REINFORCED CONCRETE PIPE
EOT	EDGE OF TRAVEL
MH	MANHOLE
TC	TERRA COTTA PIPE
	TRAFFIC SIGNAL POLE
	UTILITY POLE
L	LIGHT POLE
	SOIL BORING LOCATION
	TEMPORARY WELL LOCATION



N

NOTES:

TITLE FIGURE 3
SAMPLE LOCATION MAP
A & D 14TH STREET CENTER LLC PROPERTY -
PARCEL 173
1301 WEST 14TH AVE
GREENVILLE NC 27858

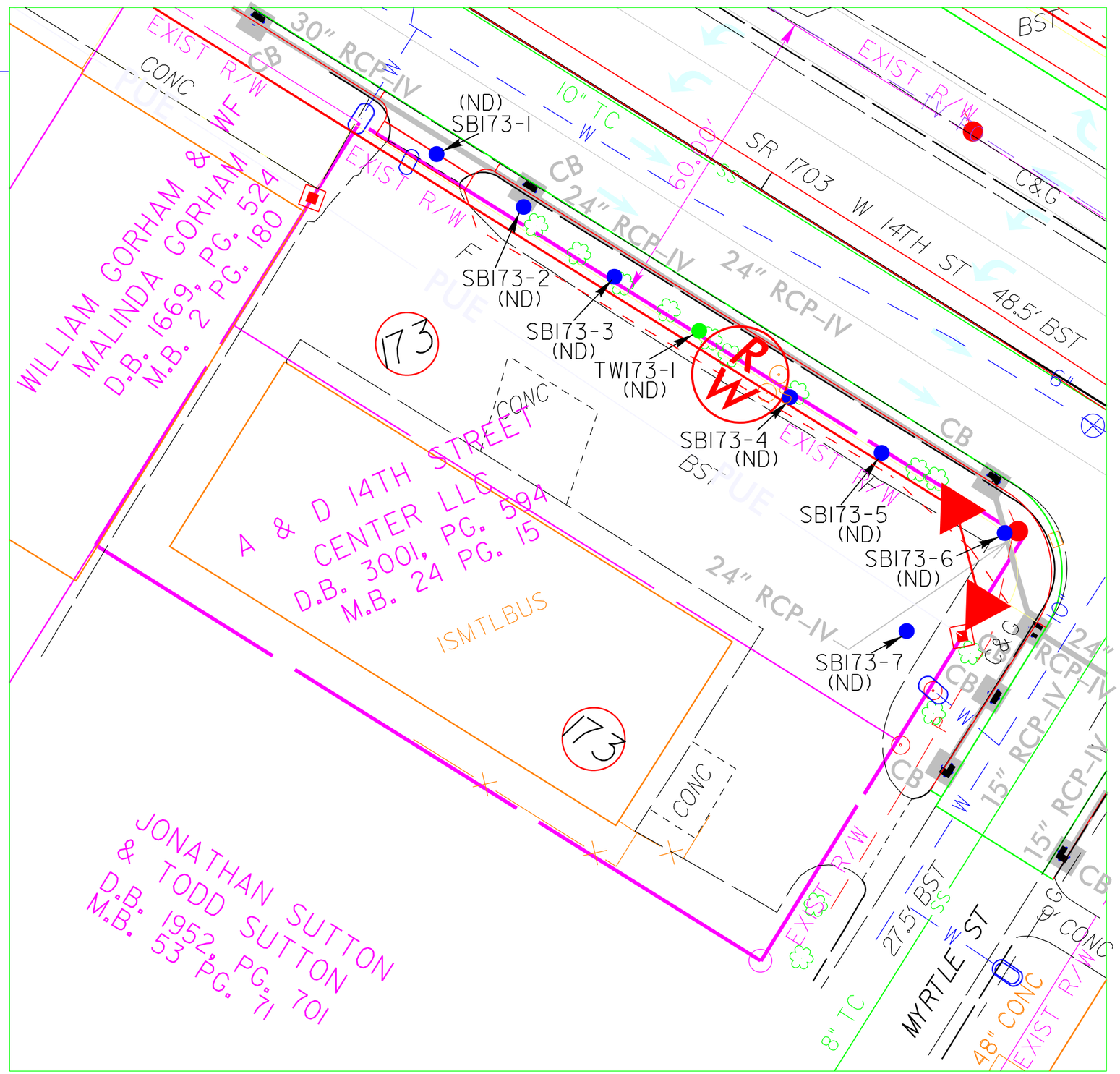
CAD FILE | WBS ELEMENT 35781.1.2 | PREP. BY JB | REV. BY KN | SCALE 1"=20'-0" | DATE 10-31-2012 | PROJECT NO. 45.19873.0007

ATC Associates of North Carolina, P.C.
RALEIGH, NORTH CAROLINA (919) 871-0999 FAX (919) 871-0335

LEGEND

- EXISTING RIGHT OF WAY
- PROPOSED RIGHT OF WAY
- PROPERTY LINE
- U/G CABLE TV
- U/G CABLE TELEPHONE
- U/G CABLE TELEPHONE FIBER OPTIC
- U/G ELECTRIC
- EXISTING HYDRO
- U/G CABLE TV FIBER OPTIC
- PERMANENT UTILITY EASEMENT
- FILL LINE
- CUT LINE

CHL	CHAIN LINK
CB	CATCH BASIN
RCP	REINFORCED CONCRETE PIPE
EOT	EDGE OF TRAVEL
MH	MANHOLE
TC	TERRA COTTA PIPE
	TRAFFIC SIGNAL POLE
	UTILITY POLE
L	LIGHT POLE
	SOIL BORING LOCATION
	TEMPORARY WELL LOCATION
ND	NO ANALYZED COMPOUNDS DETECTED AT OR ABOVE MSCCS AND/OR NCDENR ACTION LEVELS



NOTES:
1) VALUES IN BOLD INDICATE LEVELS ABOVE SOIL-TO-GROUNDWATER MAXIMUM SOIL CONTAMINANT CONCENTRATIONS (MSCC) AND/OR NCDENR ACTION LEVELS.

TITLE FIGURE 4
SOIL ANALYTICAL DATA MAP
A & D 14TH STREET CENTER LLC PROPERTY -
PARCEL 173
1301 WEST 14TH AVE
GREENVILLE NC 27858

CAD FILE

WBS ELEMENT 35781.1.2

PREP. BY CS

REV. BY JB

SCALE 1"=20'-0"

DATE 10-31-2012

PROJECT NO. 45.19873.0007

ATC Associates of North Carolina, P.C.
RALEIGH, NORTH CAROLINA (919) 871-0999 FAX (919) 871-0335

LEGEND

- EXISTING RIGHT OF WAY
- PROPOSED RIGHT OF WAY
- PROPERTY LINE
- U/G CABLE TV
- U/G CABLE TELEPHONE
- U/G CABLE TELEPHONE FIBER OPTIC
- U/G ELECTRIC
- EXISTING HYDRO
- U/G CABLE TV FIBER OPTIC
- PERMANENT UTILITY EASEMENT
- FILL LINE
- CUT LINE

CHL	CHAIN LINK
CB	CATCH BASIN
RCP	REINFORCED CONCRETE PIPE
EOT	EDGE OF TRAVEL
MH	MANHOLE
TC	TERRA COTTA PIPE
	TRAFFIC SIGNAL POLE
	UTILITY POLE
L	LIGHT POLE
	SOIL BORING LOCATION
	TEMPORARY WELL LOCATION

		DATE COLLECTED
TW173-1		08/01/12
BENZENE	µg/L	<1.0
TOLUENE	µg/L	<1.0
ETHYLBENZENE	µg/L	<1.0
TOTAL XYLENES	µg/L	<2.0
MTBE	µg/L	1.44
NAPHTHALENE	µg/L	<1.0

ATC Associates of North Carolina, P.C.
RALEIGH, NORTH CAROLINA (919) 871-0999 FAX (919) 871-0335

SCALE	DATE	PROJECT NO.
1"=20'-0"	10-31-2012	45.19873.0007

PREP. BY	REV. BY
CS	JB

CAD FILE	WBS ELEMENT
	3578.1.2

TITLE FIGURE 5
GROUNDWATER ANALYTICAL DATA MAP
A & D 14TH STREET CENTER LLC PROPERTY -
PARCEL 173
1301 WEST 14TH AVE
GREENVILLE NC 27858

NOTES:
1) VALUES IN BOLD INDICATE LEVELS AT OR ABOVE NC 2L STANDARDS.
2) TW173-1 SET AT 12' BELOW GROUND SURFACE (BGS) WITH A SCREENED INTERVAL OF 2-12' BGS.

APPENDIX A

EDR REPORT

U-3315
West 14th Street
Greenville, NC 27834

Inquiry Number: 3363129.5
July 10, 2012

The EDR Aerial Photo Decade Package

EDR® Environmental Data Resources Inc

440 Wheelers Farms Road
Milford, CT 06461
800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

When delivered electronically by EDR, the aerial photo images included with this report are for ONE TIME USE ONLY. Further reproduction of these aerial photo images is prohibited without permission from EDR. For more information contact your EDR Account Executive.

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

Date EDR Searched Historical Sources:

Aerial Photography July 10, 2012

Target Property:

West 14th Street

Greenville, NC 27834

Year	***Scale***	***Details***	***Source***
1957	Aerial Photograph. Scale: 1"=500'	Panel #: 35077-E4, Greenville SW, NC;/Flight Date: March 10, 1957	EDR
1961	Aerial Photograph. Scale: 1"=1000'	Panel #: 35077-E4, Greenville SW, NC;/Flight Date: October 16, 1961	EDR
1974	Aerial Photograph. Scale: 1"=1000'	Panel #: 35077-E4, Greenville SW, NC;/Flight Date: April 10, 1974	EDR
1977	Aerial Photograph. Scale: 1"=750'	Panel #: 35077-E4, Greenville SW, NC;/Flight Date: January 30, 1977	EDR
1982	Aerial Photograph. Scale: 1"=1000'	Panel #: 35077-E4, Greenville SW, NC;/Flight Date: March 29, 1982	EDR
1993	Aerial Photograph. Scale: 1"=500'	Panel #: 35077-E4, Greenville SW, NC;/Composite DOQQ - acquisition dates: March 08, 1993	EDR
1999	Aerial Photograph. Scale: 1"=1000'	Panel #: 35077-E4, Greenville SW, NC;/Flight Date: September 23, 1999	EDR
2005	Aerial Photograph. Scale: 1"=500'	Panel #: 35077-E4, Greenville SW, NC;/Flight Year: 2005	EDR
2006	Aerial Photograph. Scale: 1"=500'	Panel #: 35077-E4, Greenville SW, NC;/Flight Year: 2006	EDR
2008	Aerial Photograph. Scale: 1"=500'	Panel #: 35077-E4, Greenville SW, NC;/Flight Year: 2008	EDR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= 500'
N


INQUIRY #: 3363129.5
YEAR: 1961
= 1000'
N


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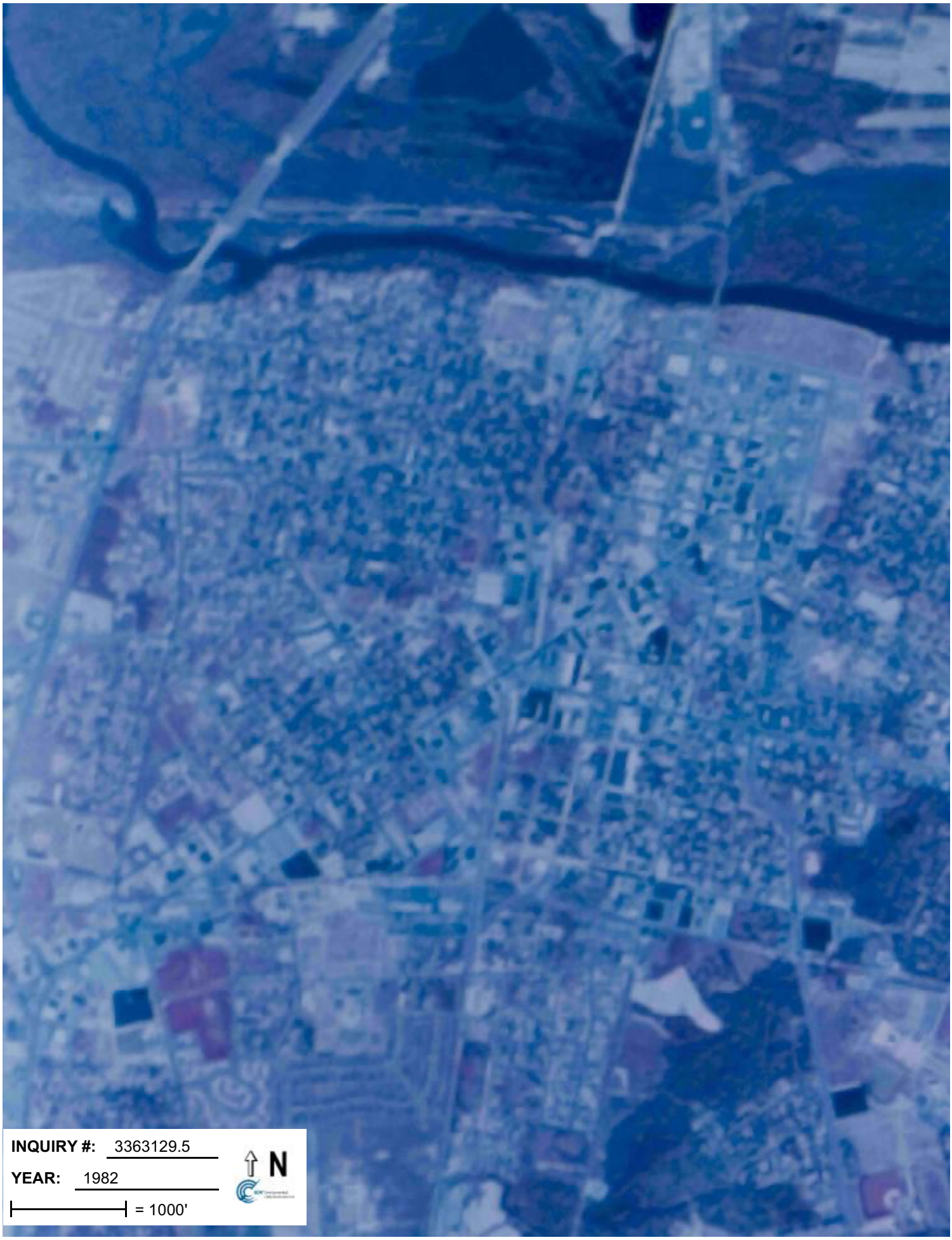
YEAR: 1974
= 1000'
N


INQUIRY #: 3363129.5
YEAR: 1977
= 750'
N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YEAR: 1999
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INQUIRY #: 3363129.5
YEAR: 2006
= 500'
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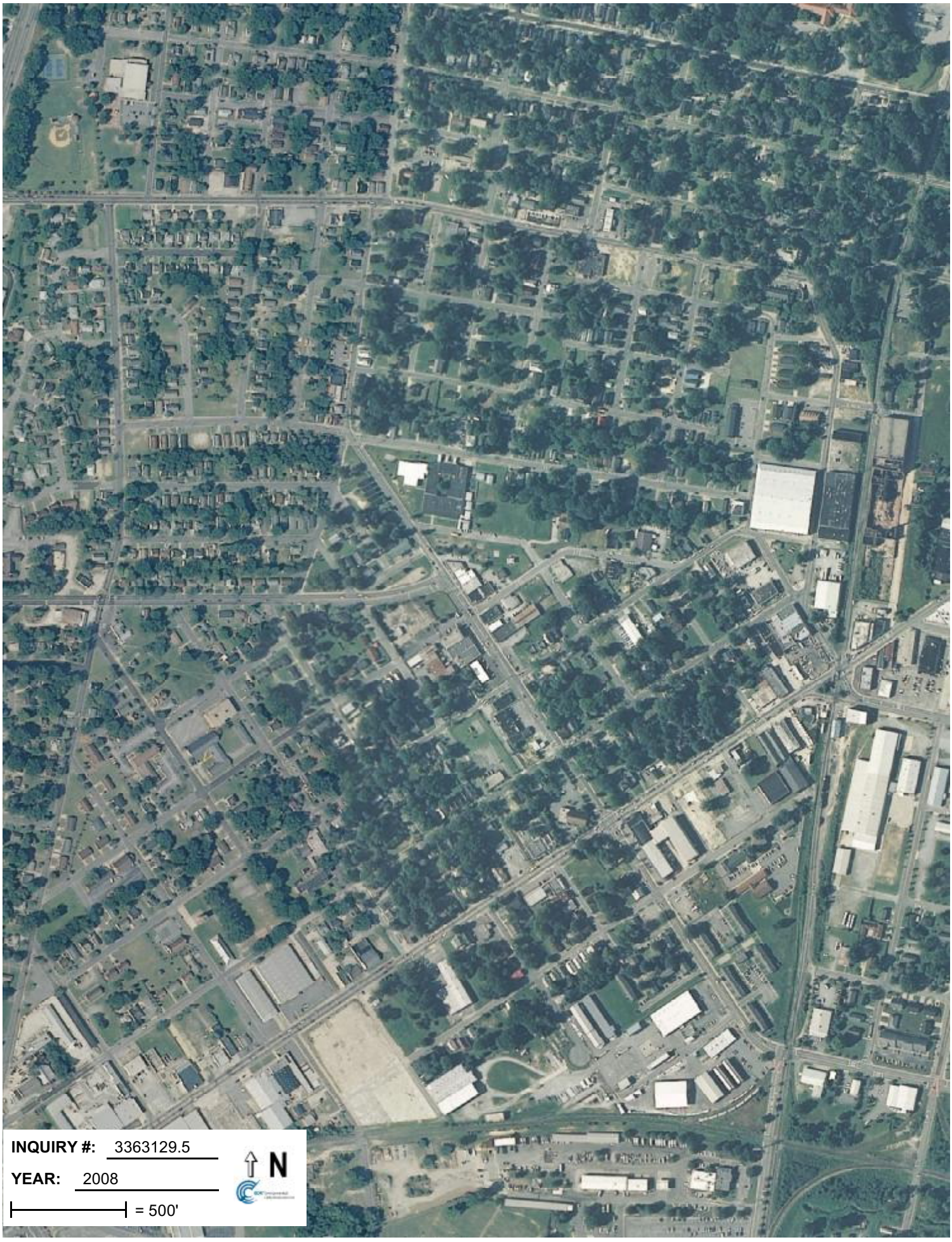

INQUIRY #: 3363129.5
YEAR: 2008
= 500'
N

U-3315
West 14th Street
Greenville, NC 27834

Inquiry Number: 3363129.3
July 10, 2012

Certified Sanborn® Map Report

EDR® Environmental Data Resources Inc

440 Wheelers Farms Road
Milford, CT 06461
800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

7/10/12

Site Name:
U-3315
West 14th Street
Greenville, NC 27834

Client Name:
ATC Associates Inc. #45
2725 East Millbrook Road
Raleigh, NC 27604

EDR Inquiry # 3363129.3

Contact: Jeff Corson

The complete Sanborn Library collection has been searched by EDR, and fire insurance maps covering the target property location provided by ATC Associates Inc. #45 were identified for the years listed below. The certified Sanborn Library search results in this report can be authenticated by visiting www.edrnet.com/sanborn and entering the certification number. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by Sanborn Library LLC, the copyright holder for the collection.

Certified Sanborn Results:

Site Name: U-3315
Address: West 14th Street
City, State, Zip: Greenville, NC 27834
Cross Street:
P.O. # NA
Project: NA
Certification # D067-4C5F-9194

Maps Provided:

1958
1946
1929
1923

Sanborn® Library search results
Certification # D067-4C5F-9194

The Sanborn Library includes more than 1.2 million Sanborn fire insurance maps, which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

- ✔ Library of Congress
- ✔ University Publications of America
- ✔ EDR Private Collection

The Sanborn Library LLC Since 1866™

Limited Permission To Make Copies

ATC Associates Inc. #45 (the client) is permitted to make up to THREE photocopies of this Sanborn Map transmittal and each fire insurance map accompanying this report solely for the limited use of its customer. No one other than the client is authorized to make copies. Upon request made directly to an EDR Account Executive, the client may be permitted to make a limited number of additional photocopies. This permission is conditioned upon compliance by the client, its customer and their agents with EDR's copyright policy; a copy of which is available upon request.

Sanborn Sheet Thumbnails

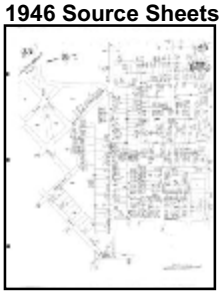
This Certified Sanborn Map Report is based upon the following Sanborn Fire Insurance map sheets.

1958 Source Sheets

Volume 1, Sheet 23

Volume 1, Sheet 25

1946 Source Sheets



Volume 1, Sheet 23

Volume 1, Sheet 25

1929 Source Sheets

Volume 1, Sheet 23

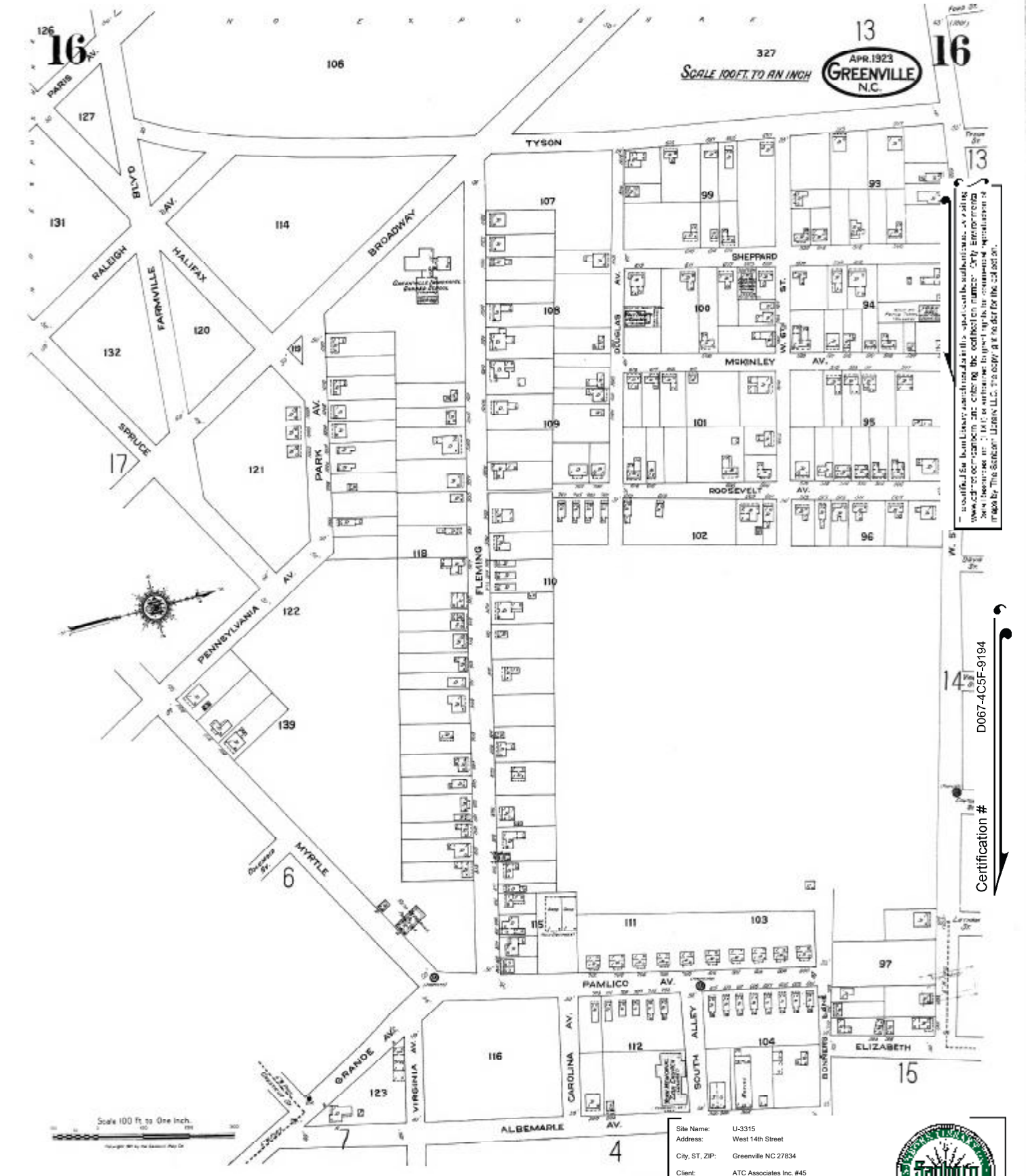
Volume 1, Sheet 25

1923 Source Sheets

Volume 1, Sheet 16

Volume 1, Sheet 17

1923 Certified Sanborn Map



Certification # D067-4C5F-9194

Site Name:	U-3315
Address:	West 14th Street
City, ST, ZIP:	Greenville NC 27834
Client:	ATC Associates Inc. #45
EDR Inquiry:	3363129.3
Order Date:	7/10/2012 9:52:03 AM
Certification #	D067-4C5F-9194
Copyright:	1923

1923 Certified Sanborn Map

Certification # D067-4C5F-9194

Site Name:	U-3315
Address:	West 14th Street
City, ST, ZIP:	Greenville NC 27834
Client:	ATC Associates Inc. #45
EDR Inquiry:	3363129.3
Order Date:	7/10/2012 9:52:03 AM
Certification #	D067-4C5F-9194
Copyright:	1923

1929 Certified Sanborn Map

Scale 100 Ft. to One Inch

Site Name:	U-3315
Address:	West 14th Street
City, ST, ZIP:	Greenville NC 27834
Client:	ATC Associates Inc. #45
EDR Inquiry:	3363129.3
Order Date:	7/10/2012 9:52:03 AM
Certification #	D067-4C5F-9194

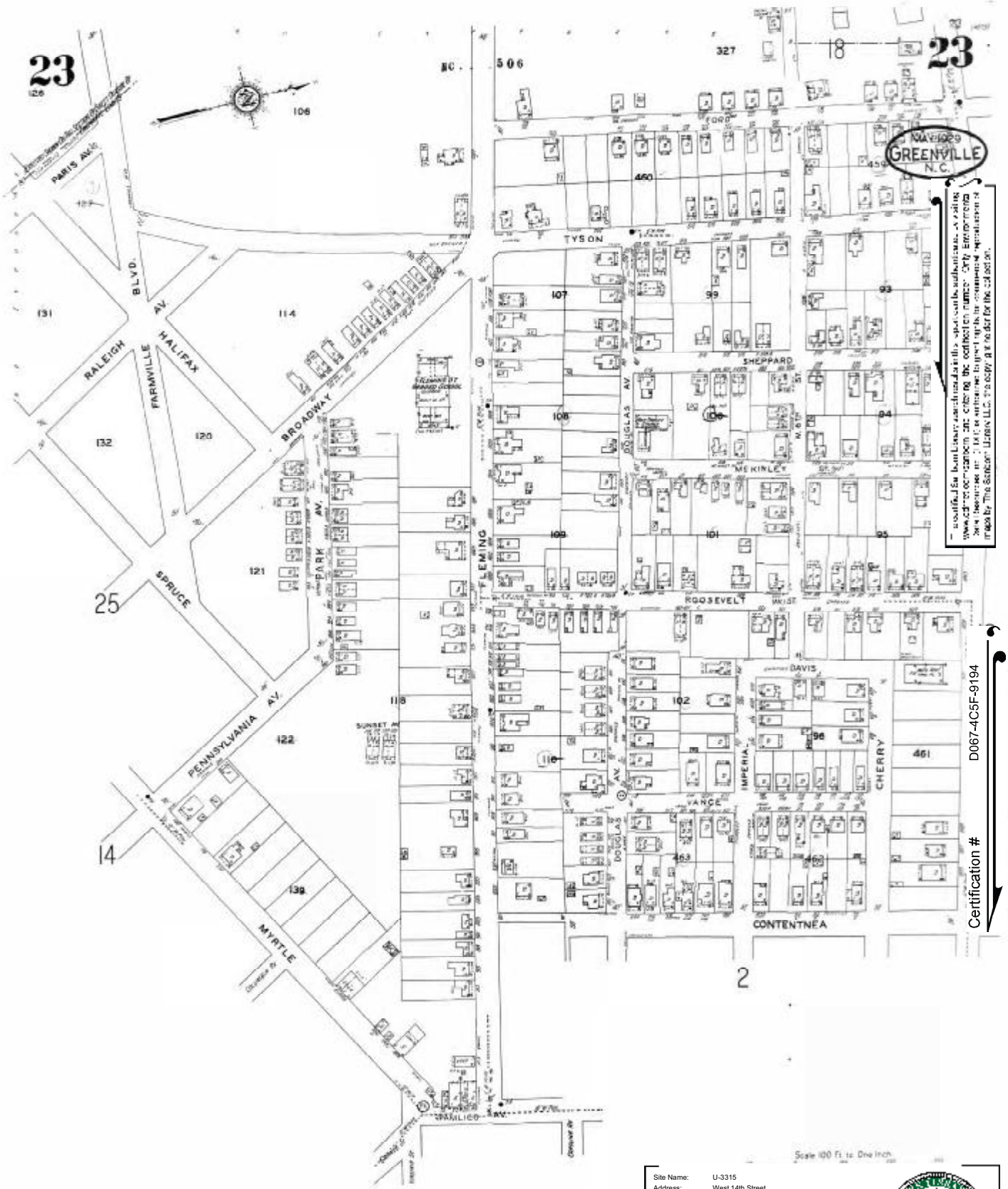
1929 Certified Sanborn Map

Certification # D067-4C5F-9194

Site Name:	U-3315
Address:	West 14th Street
City, ST, ZIP:	Greenville NC 27834
Client:	ATC Associates Inc. #45
EDR Inquiry:	3363129.3
Order Date:	7/10/2012 9:52:03 AM
Certification #	D067-4C5F-9194

Copyright: 1929

1946 Certified Sanborn Map



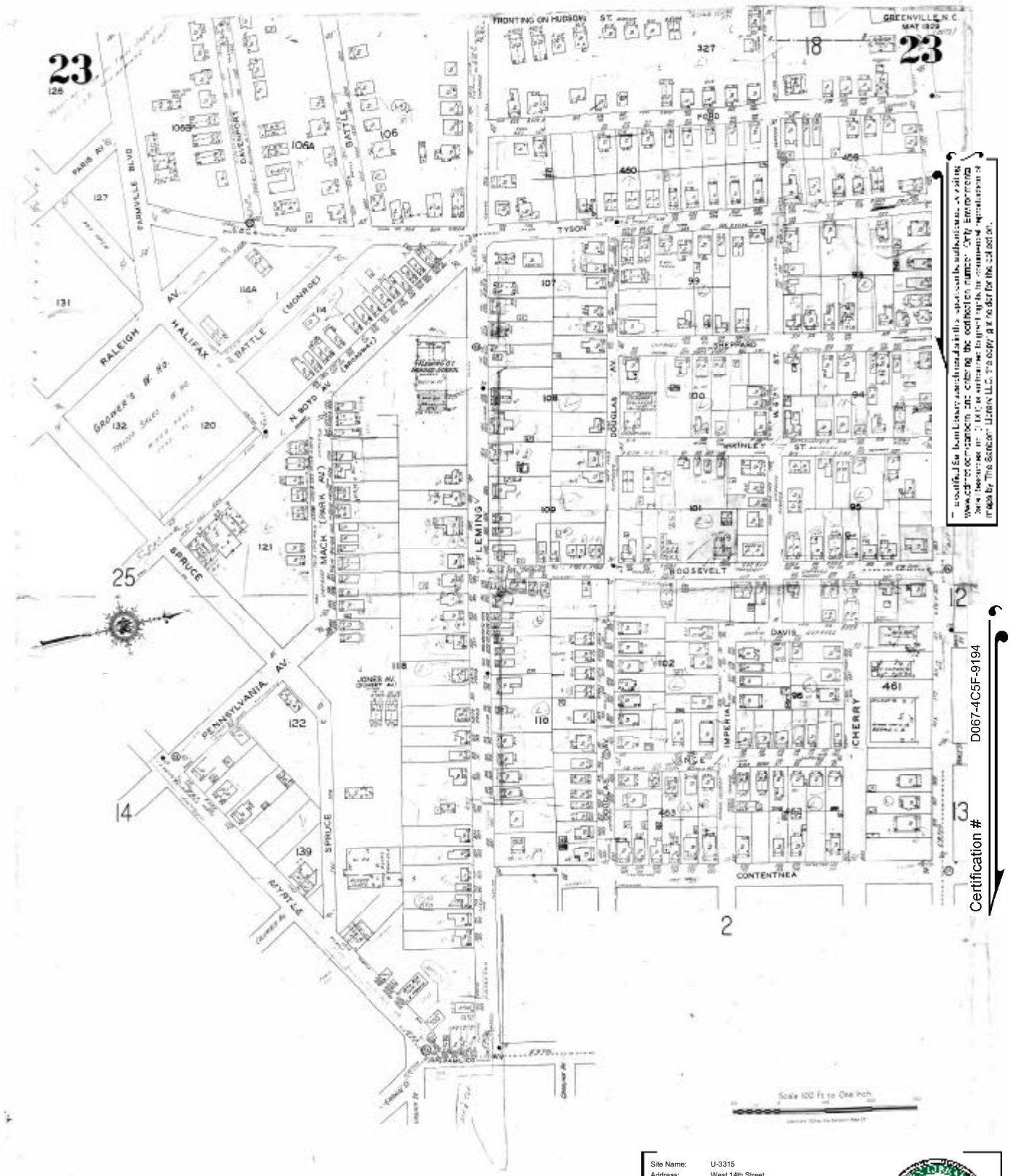
Site Name: U-3315
Address: West 14th Street
City, ST, ZIP: Greenville NC 27834
Client: ATC Associates Inc. #45
EDR Inquiry: 3363129.3
Order Date: 7/10/2012 9:52:03 AM
Certification # D067-4C5F-9194
Copyright: 1946

1946 Certified Sanborn Map

Certification # D067-4C5F-9194

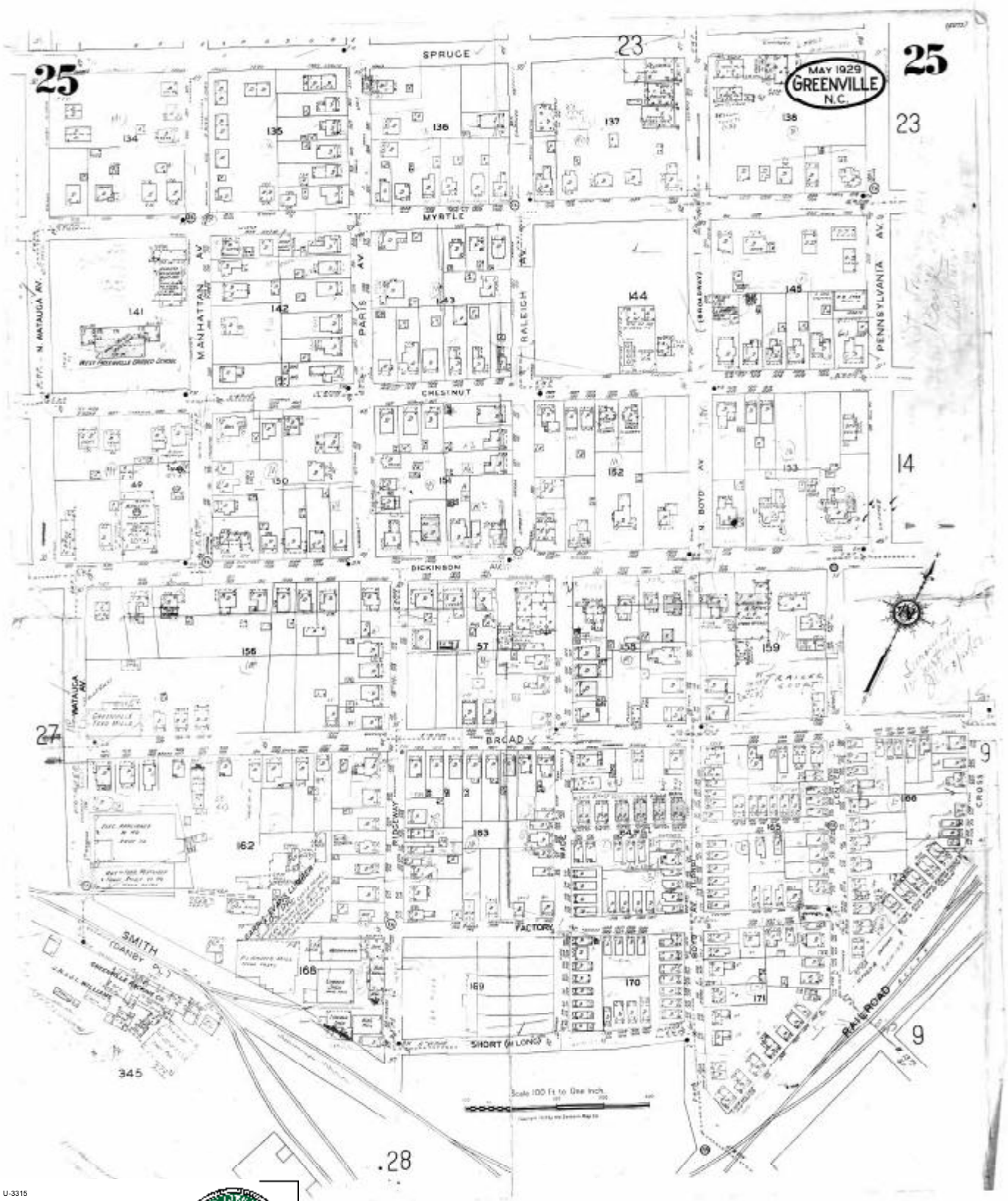
Site Name: U-3315
Address: West 14th Street
City, ST, ZIP: Greenville NC 27834
Client: ATC Associates Inc. #45
EDR Inquiry: 3363129.3
Order Date: 7/10/2012 9:52:03 AM
Certification # D067-4C5F-9194

1958 Certified Sanborn Map



Site Name:	U-3315
Address:	West 14th Street
City, ST, ZIP:	Greenville NC 27834
Client:	ATC Associates Inc. #45
EDR Inquiry:	3363129.3
Order Date:	7/10/2012 9:52:03 AM
Certification #	D067-4C5F-9194
Copyright:	1958

1958 Certified Sanborn Map



Certification # D067-4C5F-9194

Site Name: U-3315
Address: West 14th Street
City, ST, ZIP: Greenville NC 27834
Client: ATC Associates Inc. #45
EDR Inquiry: 3363129.3
Order Date: 7/10/2012 9:52:03 AM
Certification # D067-4C5F-9194
Copyright: 1958

APPENDIX B

GEOPHYSICAL REPORT

SUBSURFACE INVESTIGATION REPORT

Electromagnetic Induction, Magnetic Detection *& GPR Survey*

Samir, Abed Ashraf Property (Parcel 173)
1301 West 14th Street
Greenville, North Carolina

July 19, 2012

Report prepared for:
Justin C. Ballard, P.G.
ATC Associates of North Carolina
2725 Millbrook Road, Suite 121
Raleigh, North Carolina 27604

Investigative Team: Shane Haniford, Joe Chiocca

Reviewed by: Bruce Beavers P.L.S. and Alex Baldwin L.S.S.

Stantec Consulting Services Inc.
801 Jones Franklin Road, Suite 300
Raleigh, NC 27606
(919) 851-6866

ATC Associates of North Carolina
Subsurface Investigation Report
Samir, Abed Ashraf Property (Parcel 173)
1301 West 14th Street
Greenville, North Carolina

1.0 PURPOSE

Stantec Consulting Services Inc. performed a subsurface investigation utilizing surface Ground Penetrating Radar (GPR), Magnetic Detection and Electromagnetic Induction (EM) to survey the subject site located at 1301 West 14th Street in the city of Greenville, North Carolina and is located in the west quadrant of Myrtle Street and West 14th Avenue.

This site is currently a barber shop. Previous functions of the building are unclear and may have been industrial.

ATC Associates representative Mr. Justin C. Ballard, P.G. provided information and maps identifying the geophysical survey area to Stantec personnel prior to conducting the investigation.

Survey was conducted at the request of Justin C. Ballard, P.G. on July 18th to 19th 2012.

The purpose of this investigation was to:

- Survey for detectable structures (UST) and other subsurface anomalies.

The specified survey area was described as 1301 West 14th Street in the city of Greenville, North Carolina and is located in the west quadrant of Myrtle Street and West 14th Avenue.

A map depicting this area is included herein.

1.1 LIMITING CONDITIONS

In the event portions of the subject site were not accessible due to obstructions and/or stored items, those areas will be noted as inaccessible. An attempt was made to be as thorough as possible in the survey process. The surveyed area was defined, at the time of the investigation,

by the Client. Client representative on site was Aaron Leff with ATC Associates of North Carolina.

In order to accurately conduct a radar survey, linear scans were made across the target area. Confined, obstructed or non-level areas which restrict the scanning pattern can impede the data collected and reduce the accuracy of the desired results.

The assessment of this site is based on our professional evaluation of the data gathered, and our experience with the properties with surface ground penetrating radar within this setting and scope. The evaluation rendered in this report meets the standards of our profession and was conducted in accordance with generally accepted guidelines for EM, Magnetic Detection and GPR surveys. It is generally recognized that the results of the EM, Magnetic Detection and GPR are non-unique and may not represent actual subsurface conditions.

Note: A diligent effort has been made to obtain the highest quality data and make useful interpretations.

Analysis of data was accomplished by visual inspection in the field and then recording the data for post processing.

1.2 APPROACH

Multiple tools involving differing technologies were used in this investigation.

For the GPR analysis, the entire subject survey area was divided logistically into manageable/workable sections.

These isometric sections represent the arrangement of the survey scans. Within these sections, scans were made in an orthogonal pattern on two foot centers. This provided two separate data sets for each section.

For Magnetic Detection and Electromagnetic Induction the area was systematically scanned in such a pattern so to cover over 100% of the accessible portions of the site. This is possible due to the size and shape of the resulting fields produced from the sensors thus resulting in an “overlapping” of each transect covered.

2.0 METHODOLOGY

2.1 EQUIPMENT

Ground Penetrating Radar (GPR)

The GPR method transmits electromagnetic waves, which are pulsed at discrete distance/ time intervals.

The transmitted pulse radiates through the earth whereby a portion of the energy is reflected from interfaces of contrasting electrical properties (e.g. pavement and soil interface, soil stratigraphic changes and buried metallic objects) while the remaining energy continues until reaching additional reflectors where the process is repeated.

Reflected energy is received by the antennae and recorded for later processing and interpretation. Factors such as soil moisture, clay content, and variations in the dielectric constants of materials control the effectiveness of the GPR method. Wet conductive soils severely attenuate GPR signals and thus the effective depth of exploration.

The presence of foreign products leeched into the soil can eschew the data collected thereby affecting the images.

GPR energy cannot transmit through ferrous objects since metal acts as a pure reflector.

Stantec employed a MALA X3M/GPR digital radar unit with a 250 MHz center frequency, bistatic antenna to survey the site. The instrument was configured to detect moderately shallow reflectors within the geologic strata. The chosen instrument configuration facilitates the analysis. The GPR system unit was configured for data collection as follows:

- Trigger Source: Cart
- Range: 0-66 ns
- Samples per Scan: 250-512
- Sampling Frequency: 10852.27 to 7234.85 MHz
- Vertical High Pass Filter: 15 Samples
- Vertical Low Pass Filter: 5 Samples
- Point Interval: 0.669 to 0.906 in
- Pulses/Ft: 108.48

Software utilized for the collection and analysis of these data included:
RAMAC Ground Vision GPR Software version 3. 1. 19. (5).

2.2 EQUIPMENT

Electromagnetic (EM) and Magnetic Detection

The magnetic detection method is a LF (30 to 300 kHz) or VLF (below 30 kHz) receiver for detecting electromagnetic fields which radiate off of metallic objects. Magnetic locators operate on a simple principal.

An electronic transmitter and receiving antennae are mounted on a support structure. The two antennae are mounted a fixed distance apart aligned opposing so that the magnetic field measured by one sensor is negative of the magnetic field measured by the other. Each measures the average magnetic field component along their axis i.e. the magnetic field component along the longitudinal axis between the antennae.

This is calibrated in the field to a position (setting) which is neutral to the earth's natural magnetic field. When a metallic object is introduced within this field, it is detected as a differing field. This differing magnetic field is the field of interest.

Stantec employed this method of locating buried metallic objects as a compliment to GPR for the subject site.

Stantec selected the following instruments for this particular task:

- Subsurface Magnetic Locator ML-1M
- Schonstedt GA-52Cx. HeliFlux magnetic field sensors—drive frequency 7.5 KHz.
- RadioDetection 8000 T-10 model utilizing 512 hertz, 8 KHz, 33 KHz, 65 KHz, 50/60 hertz, long wave radio frequencies

3.0 DATA PROCESSING AND ANALYSIS-GPR

Stantec calculated the average radar propagation velocity for the subject sites. This procedure is necessary to provide reasonably accurate depth estimates for reflection events in the subsurface strata.

The average radar velocity for the site was estimated. It should be noted that the dielectric constants and hence the corresponding radar propagation velocities did vary by an order of degree(s) of magnitude across the surveyed area. Additionally, radar propagation velocity decreases with depth in most geologic sections.

Data processing of the GPR data prior to interpretation included band pass filtering, background removal, horizontal smoothing, trace editing, and time gain adjustments. After processing, the data profiles were reviewed for analysis. These processing techniques were applied to the GPR data to provide the highest quality data and therefore facilitate the overall interpretation process.

4.0 RESULTS & CONCLUSIONS

Stantec Consulting Services Inc. has completed a subsurface investigation of the subject site.

Multiple methods and technologies were used where permitted by the environment.

Survey scans were made throughout the targeted area.

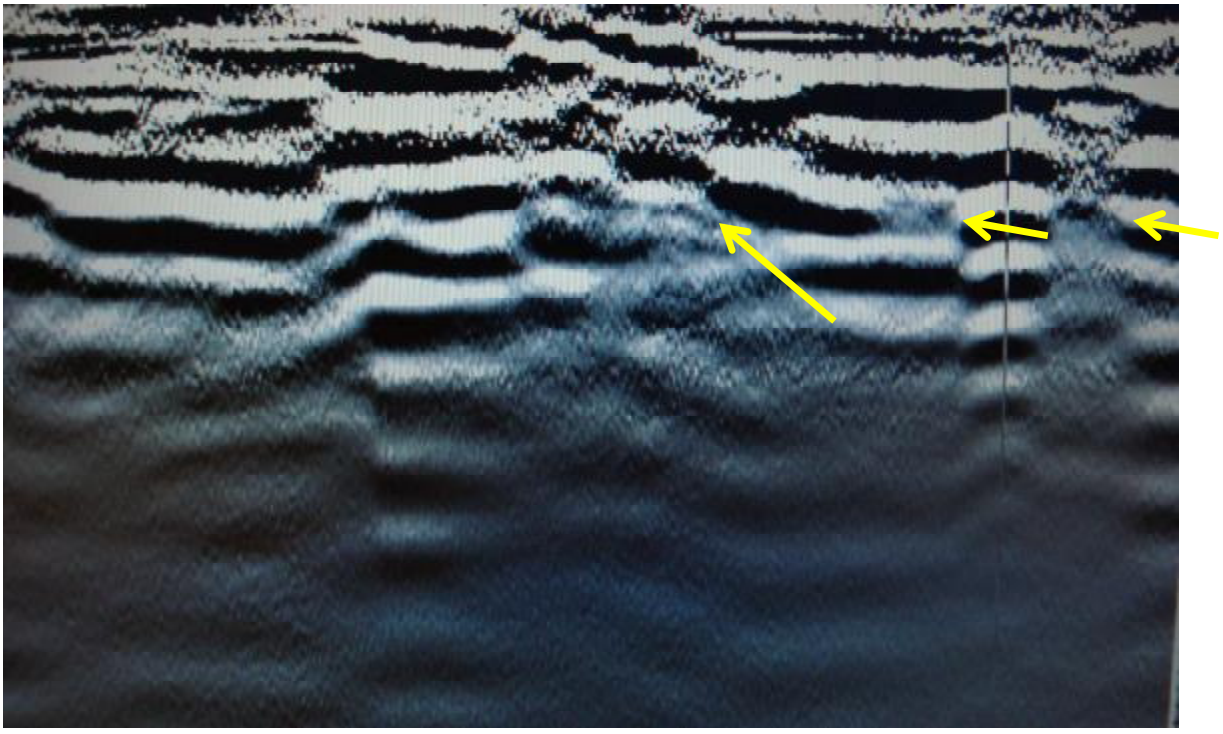
The survey revealed anomalies within the subject site.

Target A: An area approximately six (6) foot by eight (8) foot in size was noted. This discovery was made using Surface Ground Penetrating Radar. The radar data collected was not indicative as a solid object, but appeared to be more indicative as disturbed ground (subsurface). No magnetic objects were detected here. This is likely an area which may have contained a storage tank which was later pulled. There is No Confidence of a UST in this Target. A sketch of this area is included on page 9.

1. An electric cable was detected in rear of building parallel to building. Electromagnetic Induction was used with 8 kHz and 50/60 Hz to detect the power cable. A sketch of this area is included on page 9.
2. A telephone cable was detected in rear of building parallel to building. Electromagnetic Induction was used with 8 kHz and 50/60 Hz to detect the telephone line. A sketch of this area is included on page 9.
3. An electric cable, two (2) telephone lines and a television cable were detected along the edge of Myrtle Street from a utility pole to the service meters at the rear of building. Electromagnetic Induction was used with 8 and 33 kHz and 50/60 Hz to detect the utilities. A sketch of this area is included on page 9.

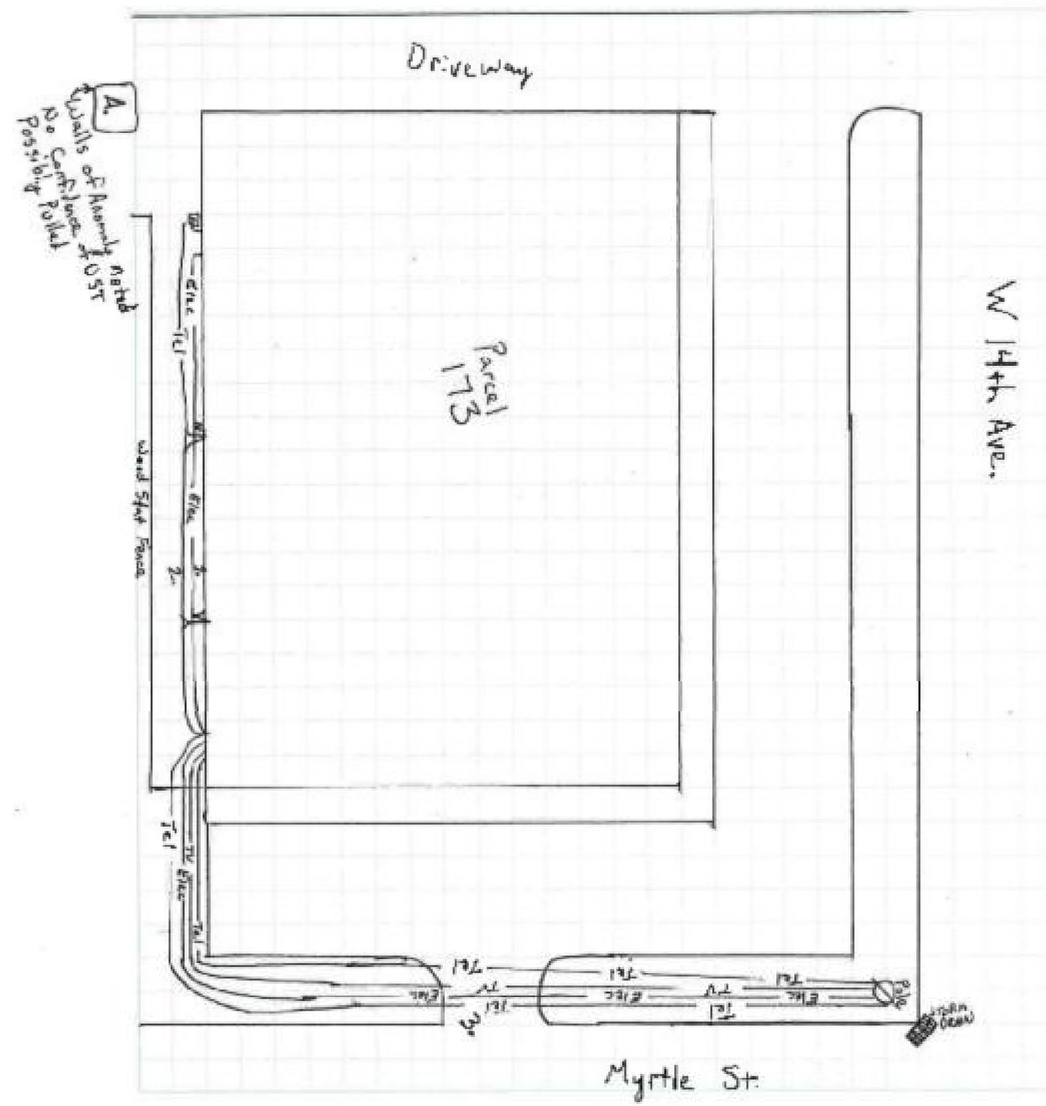
Facing 1301 West 14th Avenue from intersection of W 14th Ave and Myrtle Street

Telephone pedestal and electric meters at rear of 1301 West 14th Avenue



Soil differentiations noted in walls over Target A

Stantec



Designed by

Checked by

Parcel 173
Geophysical Project Map

Pitt County, NC
July 2012

Target Delineation

Study Area

Stantec

APPENDIX C

BORING LOGS

BORING LOG: SB173-1

Client: NCDOT
Project: U-3315 Parcel 173
Greenville, Pitt County, North Carolina
WBS Element 35781.1.2

ATC Project No. 45.19873.0007

Date(s) Drilled	: 8/2/2012	Boring Diameter	: 2.25 Inches
Driller	: SAEDACCO	Sampling Method	: Macrocore
Drilling Method	: Direct Push	Sampling Interval	: Continuous
		Logged By	: Aaron Leff

Depth In Feet	USCS	GRAPHIC	DESCRIPTION	PID VOC (ppm)	Sample
0	CG		Asphalt and subbase		
1	SW		Gray and light brown, silty, fine grained SAND	0.0	
2					
3	ML		Orangish tan and gray, clayey, sandy SILT	0.0	x
4					
5				0.0	
6					
7	SW		Tan, SAND, wet	0.0	
8	ML		Tan, sandy SILT, wet		
			End of boring at 8' bgs (sampler wet in bottom 2")		

Soil sample was collected from 2.5'-5' bgs interval.

BORING LOG: SB173-2

Client: NCDOT
Project: U-3315 Parcel 173
Greenville, Pitt County, North Carolina
WBS Element 35781.1.2

ATC Project No. 45.19873.0007

Date(s) Drilled	: 7/31/2012	Boring Diameter	: 2.25 Inches
Driller	: SAEDACCO	Sampling Method	: Macrocore
Drilling Method	: Direct Push	Sampling Interval	: Continuous
		Logged By	: Aaron Leff

Depth In Feet	USCS	GRAPHIC	DESCRIPTION	PID VOC (ppm)	Sample
0–2	CG		Tan, silty SAND, moist	0.0	
2–5	CL		Tan and gray, silty CLAY	0.2	x
5–7	CL		Tan, silty, sandy CLAY	0.0 0.0	
7–8	SW		Tan, clayey, silty SAND		
8–12	SW		Grayish tan, silty SAND, wet	wet wet	
12			End of boring at 12' bgs		

Soil sample was collected from 2.5'-5' bgs interval.

BORING LOG: SB173-3

Client: NCDOT
Project: U-3315 Parcel 173
Greenville, Pitt County, North Carolina
WBS Element 35781.1.2

ATC Project No. 45.19873.0007

Date(s) Drilled	: 7/31/2012	Boring Diameter	: 2.25 Inches
Driller	: SAEDACCO	Sampling Method	: Macrocore
Drilling Method	: Direct Push	Sampling Interval	: Continuous
		Logged By	: Aaron Leff

Depth In Feet	USCS	GRAPHIC	DESCRIPTION	PID VOC (ppm)	Sample
0			Grass and gravelly topsoil		
1	SW		Grayish tan, silty, fine grained SAND, moist	0.1	
2					
3	ML		Gray and orangish tan, sandy, clayey SILT	0.9	
4					
5	SW		Tan, silty SAND, moist	2.6	x
6					
7				0.2	
8			End of boring at 8' bgs (sampler wet in bottom 1.5")		

Soil sample was collected from 5'-6' bgs interval.

BORING LOG: SB173-4

Client: NCDOT
Project: U-3315 Parcel 173
Greenville, Pitt County, North Carolina
WBS Element 35781.1.2

ATC Project No. 45.19873.0007

Date(s) Drilled	: 7/31/2012	Boring Diameter	: 2.25 Inches
Driller	: SAEDACCO	Sampling Method	: Macrocore
Drilling Method	: Direct Push	Sampling Interval	: Continuous
		Logged By	: Aaron Leff

Depth In Feet	USCS	GRAPHIC	DESCRIPTION	PID VOC (ppm)	Sample
0			Grass and gravelly topsoil		
1	ML		Brown, sandy SILT, moist	1.6	
2					
3					
4				1.1	
5	CL		Gray, tan and red mottled, CLAY	0.2	
6					
7	SW		Brown, silty SAND	1.6	x
8			End of boring at 8' bgs (sampler wet in bottom 2")		

Soil sample was collected from 6'-8' bgs interval.

BORING LOG: SB173-5

Client: NCDOT
Project: U-3315 Parcel 173
Greenville, Pitt County, North Carolina
WBS Element 35781.1.2

ATC Project No. 45.19873.0007

Date(s) Drilled	: 8/2/2012	Boring Diameter	: 2.25 Inches
Driller	: SAEDACCO	Sampling Method	: Macrocore
Drilling Method	: Direct Push	Sampling Interval	: Continuous
		Logged By	: Aaron Leff

Depth In Feet	USCS	GRAPHIC	DESCRIPTION	PID VOC (ppm)	Sample
0			Grass and gravelly topsoil		
1	ML		Tan, sandy SILT, moist	0.0	
2					
3	ML		Tan, brown, and gray mottled, clayey SILT	0.1	x
4					
5				0.0	
6					
7	SW		Tan, silty SAND, wet	wet	
8			End of boring at 8' bgs (sampler wet in bottom 2")		

Soil sample was collected from 2.5'-5' bgs interval.

BORING LOG: SB173-6

Client: NCDOT
Project: U-3315 Parcel 173
Greenville, Pitt County, North Carolina
WBS Element 35781.1.2

ATC Project No. 45.19873.0007

Date(s) Drilled	: 8/2/2012	Boring Diameter	: 2.25 Inches
Driller	: SAEDACCO	Sampling Method	: Macrocore
Drilling Method	: Direct Push	Sampling Interval	: Continuous
		Logged By	: Aaron Leff

Depth In Feet	USCS	GRAPHIC	DESCRIPTION	PID VOC (ppm)	Sample
0			Grass and gravelly topsoil		
1	ML		Grayish tan, silty SAND, moist	0.0	
2					
3					
4				0.0	
5	SW		Gray, tan, and brown mottled, sandy, clayey SILT	0.0	
6					
7	SW		Grayish tan, silty SAND, wet	0.0	x
8			End of boring at 8' bgs (sampler wet in bottom 2")		

Soil sample was collected from 6'-8' bgs interval.

BORING LOG: SB173-7

Client: NCDOT
Project: U-3315 Parcel 173
Greenville, Pitt County, North Carolina
WBS Element 35781.1.2

ATC Project No. 45.19873.0007

Date(s) Drilled	: 8/2/2012	Boring Diameter	: 2.25 Inches
Driller	: SAEDACCO	Sampling Method	: Macrocore
Drilling Method	: Direct Push	Sampling Interval	: Continuous
		Logged By	: Aaron Leff

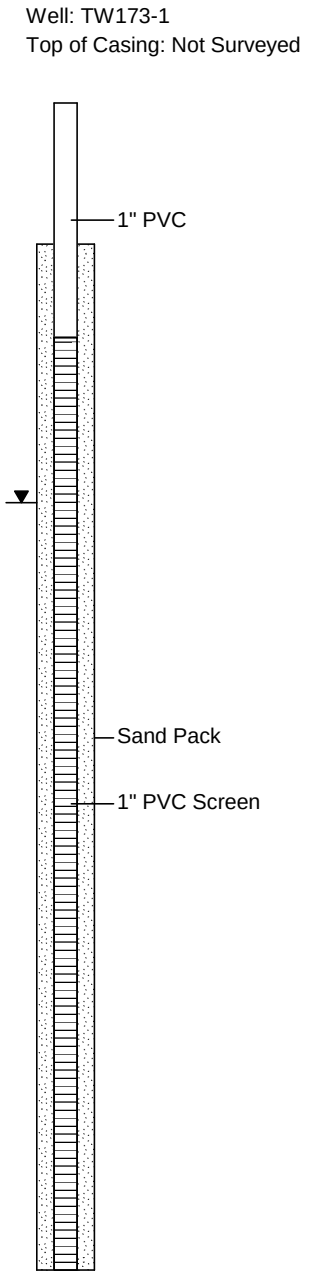
Depth In Feet	USCS	GRAPHIC	DESCRIPTION	PID VOC (ppm)	Sample
0	CG		Asphalt and subbase		
1	ML		Gray and tan, sandy SILT, with brick fragments	0.0	
2					
3	SW		Gray, tan, and brown mottled, clayey, silty SAND.	0.0	
4					
5				0.0	
6					
7				0.0	x
8	SW		Tan and gray, silty SAND, wet		
9				wet	
10					
11				wet	
12			End of boring at 12' bgs		

Soil sample was collected from 6'-8' bgs interval.

WELL LOG: TW173-1

Client: NCDOT Project: U-3315 Parcel 173 Greenville, Pitt County, North Carolina		Date Drilled Drilling Company Drilling Method	: 8/1/2012 : SAEDACCO : Direct-Push	Boring Diameter Sampling Method Sampling Interval	: 2.25 inches : Macrocore : Continuous
WBS Element 35784.1.1.2					
ATC Project No. 45.19873.0007				Logged By	: Aaron Leff

DEPTH	USCS	GRAPHIC	DESCRIPTION	PID (ppm)
0			Grass and gravelly topsoil	
1	SW		Gray and tan, silty SAND, saturated	0.0
2				
3	CL		Orangish tan, silty sandy CLAY, moist	0.0
4				
5				
6				0.0
7				
7	SW		Gray, silty SAND, saturated	
8	SW		End of sampling at 8' bgs	
9				
10				
11				
12			Temporary well TW173-1 set at 12' bgs	



Temporary well TW173-1 set at 12 feet bgs and screened from 2-12 feet bgs.
Soil sample taken at 6-8 feet bgs.
Depth to water approximately 4.77 feet from top of casing (TOC).
TOC is approximately 1 foot above ground surface.

APPENDIX D

LABORATORY ANALYTICAL REPORTS

Laboratory Report of Analysis

To: Justin Ballard
ATC Associates
2725 E. Millbrook Rd
Suite 121
Raleigh, NC 27604

Report Number: **31202431**

Client Project: **NCDOT**

Dear Justin Ballard,

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 Michael D. Page 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.

Digitally signed by: Michael Page
Date: 2012.10.03 15:18:36 -04'00'

Michael D. Page — Date
Project Manager
michael.page@sgs.com

Print Date: 08/09/2012 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
SB173-2 (2.5-5)	31202431012	07/31/2012 14:50	08/01/2012 16:55	Soil-Solid as dry weight
SB173-3 (5-6)	31202431013	07/31/2012 15:25	08/01/2012 16:55	Soil-Solid as dry weight
SB173-4 (6-8)	31202431014	07/31/2012 15:45	08/01/2012 16:55	Soil-Solid as dry weight

Results of **SB173-2 (2.5-5)**

Client Sample ID: **SB173-2 (2.5-5)**
Client Project ID: **NCDOT**
Lab Sample ID: 31202431012-A
Lab Project ID: 31202431

Collection Date: 07/31/2012 14:50
Received Date: 08/01/2012 16:55
Matrix: Soil-Solid as dry weight
Solids (%): 80.80

Results by **SW-846 8015C GRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Gasoline Range Organics (GRO)	ND		3.72	mg/kg	1	08/7/2012 17:57
Surrogates						
4-Bromofluorobenzene	106		70.0-130	%	1	08/7/2012 17:57

Batch Information

Analytical Batch: **VGC2052**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC7**
Analyst: **MDY**
Analytical Date/Time: **08/07/2012 17:57**

Prep Batch: **VXX3772**
Prep Method: **SW-846 5035**
Prep Date/Time: **08/02/2012 13:44**
Prep Initial Wt./Vol.: **6.648 g**
Prep Extract Vol: **5 mL**

Print Date: 08/09/2012

N.C. Certification # 481

Results of **SB173-2 (2.5-5)**

Client Sample ID: **SB173-2 (2.5-5)**
Client Project ID: **NCDOT**
Lab Sample ID: 31202431012-C
Lab Project ID: 31202431

Collection Date: 07/31/2012 14:50
Received Date: 08/01/2012 16:55
Matrix: Soil-Solid as dry weight
Solids (%): 80.80

Results by **SW-846 8015C DRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	ND		7.73	mg/kg	1	08/4/2012 2:29
Surrogates						
o-Terphenyl	93.4		40.0-140	%	1	08/4/2012 2:29

Batch Information

Analytical Batch: **XGC2420**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**
Analytical Date/Time: **08/04/2012 02:29**

Prep Batch: **XXX2880**
Prep Method: **SW-846 3541**
Prep Date/Time: **08/02/2012 10:40**
Prep Initial Wt./Vol.: **32.04 g**
Prep Extract Vol: **10 mL**

Print Date: 08/09/2012

N.C. Certification # 481

Results of **SB173-3 (5-6)**

Client Sample ID: **SB173-3 (5-6)**
Client Project ID: **NCDOT**
Lab Sample ID: 31202431013-A
Lab Project ID: 31202431

Collection Date: 07/31/2012 15:25
Received Date: 08/01/2012 16:55
Matrix: Soil-Solid as dry weight
Solids (%): 86.00

Results by **SW-846 8015C GRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Gasoline Range Organics (GRO)	ND		3.20	mg/kg	1	08/7/2012 18:23
Surrogates						
4-Bromofluorobenzene	105		70.0-130	%	1	08/7/2012 18:23

Batch Information

Analytical Batch: **VGC2052**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC7**
Analyst: **MDY**
Analytical Date/Time: **08/07/2012 18:23**

Prep Batch: **VXX3772**
Prep Method: **SW-846 5035**
Prep Date/Time: **08/02/2012 13:45**
Prep Initial Wt./Vol.: **7.264 g**
Prep Extract Vol: **5 mL**

Results of **SB173-3 (5-6)**

Client Sample ID: **SB173-3 (5-6)**
Client Project ID: **NCDOT**
Lab Sample ID: 31202431013-C
Lab Project ID: 31202431

Collection Date: 07/31/2012 15:25
Received Date: 08/01/2012 16:55
Matrix: Soil-Solid as dry weight
Solids (%): 86.00

Results by **SW-846 8015C DRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	ND		7.27	mg/kg	1	08/4/2012 2:57
Surrogates						
o-Terphenyl	92.6		40.0-140	%	1	08/4/2012 2:57

Batch Information

Analytical Batch: **XGC2420**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**
Analytical Date/Time: **08/04/2012 02:57**

Prep Batch: **XXX2880**
Prep Method: **SW-846 3541**
Prep Date/Time: **08/02/2012 10:40**
Prep Initial Wt./Vol.: **31.99 g**
Prep Extract Vol: **10 mL**

Print Date: 08/09/2012

N.C. Certification # 481

Results of **SB173-4 (6-8)**

Client Sample ID: **SB173-4 (6-8)**
Client Project ID: **NCDOT**
Lab Sample ID: 31202431014-A
Lab Project ID: 31202431

Collection Date: 07/31/2012 15:45
Received Date: 08/01/2012 16:55
Matrix: Soil-Solid as dry weight
Solids (%): 77.80

Results by **SW-846 8015C GRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Gasoline Range Organics (GRO)	ND		3.93	mg/kg	1	08/7/2012 18:48
Surrogates						
4-Bromofluorobenzene	106		70.0-130	%	1	08/7/2012 18:48

Batch Information

Analytical Batch: **VGC2052**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC7**
Analyst: **MDY**
Analytical Date/Time: **08/07/2012 18:48**

Prep Batch: **VXX3772**
Prep Method: **SW-846 5035**
Prep Date/Time: **08/02/2012 13:46**
Prep Initial Wt./Vol.: **6.549 g**
Prep Extract Vol: **5 mL**

Print Date: 08/09/2012

N.C. Certification # 481

Results of **SB173-4 (6-8)**

Client Sample ID: **SB173-4 (6-8)**
Client Project ID: **NCDOT**
Lab Sample ID: 31202431014-C
Lab Project ID: 31202431

Collection Date: 07/31/2012 15:45
Received Date: 08/01/2012 16:55
Matrix: Soil-Solid as dry weight
Solids (%): 77.80

Results by **SW-846 8015C DRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	ND		7.97	mg/kg	1	08/4/2012 4:21
Surrogates						
o-Terphenyl	85.1		40.0-140	%	1	08/4/2012 4:21

Batch Information

Analytical Batch: **XGC2420**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**
Analytical Date/Time: **08/04/2012 04:21**

Prep Batch: **XXX2880**
Prep Method: **SW-846 3541**
Prep Date/Time: **08/02/2012 10:40**
Prep Initial Wt./Vol.: **32.26 g**
Prep Extract Vol: **10 mL**

Print Date: 08/09/2012

N.C. Certification # 481

CHAIN OF CUSTODY RECORD
SGS North America Inc.

Locations Nationwide
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- New Jersey
- New York
- North Carolina
- Ohio

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(1)
CLIENT: ATC ASSOCIATES
CONTACT: JUSTIN BALLARD PHONE NO: (919) 871-0999
PROJECT: NCDOT SITE/PWSID#: U-3315
REPORTS TO: JUSTIN BALLARD FAX NO.: (919) 871-0335
INVOICE TO: QUOTE #:
P.O. NUMBER:

SGS Reference: 320243 PAGE 1 OF 2

(2)

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	No CONTAINERS	SAMPLE TYPE (C=COMP, G=GRAB)	Preservatives Used	Analysis Required (3) GRO	DRO	8260	REMARKS
-2 mislabeled as B33	SB49-31 (2.5-5)	7/30/12	1635	SOIL	3	G		X	X		
	SB49-32 (2.5-5)	↓	1745								
	SB49-36 (2.5-5)	7/31/12	0650								
	SB49-34 (2.5-5)		0750								
	SB49-33 (2.5-5)		0820								
	SB49-37 (2.5-5)		0935								
	SB49-38 (2.5-5)		1030		↓						
	SB170-1 (6-8)		1110		7				X		
	SB170-2 (6-8)		1130								
	SB170-3 (0-2.5)	↓	1320	↓	↓	↓		↓	↓	↓	

(5)

	Date	Time	
Collected/Relinquished By:(1) Aaron P.	8/1/12	1430	Received By:
Relinquished By: (2)	8/1/12	1655	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received By:

(4)

Shipping Carrier:
Shipping Ticket No:
Samples Received Cold? (Circle) YES NO
Temperature°C: 0.8
Special Deliverable Requirements:
Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT
Special Instructions:
Requested Turnaround Time:
☐ RUSH _____ (Date Needed) ☐ STD

❑ 200 W. Potter Drive **Anchorage, AK 99518** Tel: (907) 562-2343 Fax: (907) 561-5301
❑ 5500 Business Drive **Wilmington, NC 28405** Tel: (910) 350-1903 Fax: (910) 350-1557

White - Retained by Lab
Pink - Retained by Client

CHAIN OF CUSTODY RECORD
SGS North America Inc.

Locations Nationwide
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CLIENT: ATC ASSOCIATES
CONTACT: JUSTIN BALLARD PHONE NO: (919) 871-0999
PROJECT: NCDOT SITE/PWSID#: U-3315
REPORTS TO: JUSTIN BALLARD FAX NO.: (919) 871-0335
INVOICE TO: QUOTE #:
P.O. NUMBER:

SGS Reference: 31202431
PAGE 2 OF 2

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	No CONTAINERS	SAMPLE TYPE (C= COMP, G= GRAB)	GRO	DRO	8260								REMARKS
[illegible] MeOH	SB172-1 (6-8)	7/31/12	1350	Soil	7	G	X	X	X								
	SB173-2 (2.5-5.0)	↓	1450	↓	3	↓	X	X									
	SB173-3 (5-6)	↓	1525	↓	↓	↓	X	X									
	SB173-4 (6-8)	↓	1545	↓	↓	↓	X	X									

Preservatives Used / Analysis Required

1430 AV 8/1/12

Collected/Relinquished By: (1)	Date	Time	Received By:
[signature]	8/1/12	~~1400~~	[signature]
Relinquished By: (2) [signature]	8/1/12	1655	[signature]
Relinquished By: (3)			
Relinquished By: (4)			

Shipping Carrier:
Shipping Ticket No:
Samples Received Cold? (Circle) **YES** NO
Temperature°C: 0.8
Special Deliverable Requirements:
Chain of Custody Seal: (Circle) INTACT BROKEN **ABSENT**
Special Instructions:
Requested Turnaround Time: ☐ RUSH ______ Date Needed ☐ STD

❑ 200 W. Potter Drive **Anchorage, AK 99518** Tel: (907) 562-2343 Fax: (907) 561-5301
❑ 5500 Business Drive **Wilmington, NC 28405** Tel: (910) 350-1903 Fax: (910) 350-1557

White - Retained by Lab
Pink - Retained by Client

SGS North America Inc.

Sample Receipt Checklist (SRC)

Client: **NCDOT-ATC** Work Order No.: **31202431**

1. ___ Shipped
   X Hand Delivered
   Notes:

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: 0.8
   ___ 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. ___ No Discrepancies Noted
   X Discrepancies Noted
   ___ NCDENR notified of Discrepancies*

10. X No Headspace present in VOC vials
    ___ Headspace present in VOC vials >6mm

Comments: One SB49-31 (2.5-5) vial was mislabeled as Sb49-33 (2.5-5), but was identified by its collection date and time. The Methanol vials for the SB172-1 (6-8) samples were not labeled, but were in the same vial foam block as the rest of that sample.

Inspected and Logged in by: AV
Date: Thu-8/2/12 00:00

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

Laboratory Report of Analysis

To: Justin Ballard
ATC Associates
2725 E. Millbrook Rd
Suite 121
Raleigh, NC 27604

Report Number: **31202495**

Client Project: **NCDOT U-3315**

Dear Justin Ballard,

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 Michael D. Page 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.

Digitally signed by: Michael Page
Date: 2012.10.03 15:31:46 -04'00'

Michael D. Page — Date
Project Manager
michael.page@sgs.com

Print Date: 08/20/2012 N.C. Certification # 481

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
TW173-1 (6-8)	31202495002	08/01/2012 11:25	08/06/2012 15:30	Soil-Solid as dry weight
TW173-1	31202495009	08/01/2012 15:15	08/06/2012 15:30	Water
SB173-1 (6-8)	31202495011	08/02/2012 07:15	08/06/2012 15:30	Soil-Solid as dry weight
SB173-5 (2.5-5.0)	31202495012	08/02/2012 07:45	08/06/2012 15:30	Soil-Solid as dry weight
SB173-6 (6-8)	31202495013	08/02/2012 08:05	08/06/2012 15:30	Soil-Solid as dry weight
SB173-7 (6-8)	31202495014	08/02/2012 09:05	08/06/2012 15:30	Soil-Solid as dry weight

Results of **TW173-1 (6-8)**

Client Sample ID: **TW173-1 (6-8)**
Client Project ID: **NCDOT U-3315**
Lab Sample ID: 31202495002-A
Lab Project ID: 31202495

Collection Date: 08/01/2012 11:25
Received Date: 08/06/2012 15:30
Matrix: Soil-Solid as dry weight
Solids (%): 80.30

Results by **SW-846 8015C GRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Gasoline Range Organics (GRO)	ND		3.75	mg/kg	1	08/15/2012 15:27
Surrogates						
4-Bromofluorobenzene	106		70.0-130	%	1	08/15/2012 15:27

Batch Information

Analytical Batch: **VGC2069**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC7**
Analyst: **MDY**
Analytical Date/Time: **08/15/2012 15:27**

Prep Batch: **VXX3829**
Prep Method: **SW-846 5035**
Prep Date/Time: **08/07/2012 11:19**
Prep Initial Wt./Vol.: **6.632 g**
Prep Extract Vol: **5 mL**

Print Date: 08/20/2012

N.C. Certification # 481

Results of **TW173-1 (6-8)**

Client Sample ID: **TW173-1 (6-8)**
Client Project ID: **NCDOT U-3315**
Lab Sample ID: 31202495002-C
Lab Project ID: 31202495

Collection Date: 08/01/2012 11:25
Received Date: 08/06/2012 15:30
Matrix: Soil-Solid as dry weight
Solids (%): 80.30

Results by **SW-846 8015C DRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	ND		7.85	mg/kg	1	08/13/2012 23:47
Surrogates						
o-Terphenyl	74.0		40.0-140	%	1	08/13/2012 23:47

Batch Information

Analytical Batch: **XGC2443**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**
Analytical Date/Time: **08/13/2012 23:47**

Prep Batch: **XXX2914**
Prep Method: **SW-846 3541**
Prep Date/Time: **08/13/2012 10:02**
Prep Initial Wt./Vol.: **31.7 g**
Prep Extract Vol: **10 mL**

Print Date: 08/20/2012

N.C. Certification # 481

Results of **TW173-1**

Client Sample ID: **TW173-1**
Client Project ID: **NCDOT U-3315**
Lab Sample ID: 31202495009-A
Lab Project ID: 31202495

Collection Date: 08/01/2012 15:15
Received Date: 08/06/2012 15:30
Matrix: Water

Results by **SW-846 8260B**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
1,1,1,2-Tetrachloroethane	ND		1.00	ug/L	1	08/9/2012 15:39
1,1,1-Trichloroethane	ND		1.00	ug/L	1	08/9/2012 15:39
1,1,2,2-Tetrachloroethane	ND		1.00	ug/L	1	08/9/2012 15:39
1,1,2-Trichloroethane	ND		1.00	ug/L	1	08/9/2012 15:39
1,1-Dichloroethane	ND		1.00	ug/L	1	08/9/2012 15:39
1,1-Dichloroethene	ND		1.00	ug/L	1	08/9/2012 15:39
1,1-Dichloropropene	ND		1.00	ug/L	1	08/9/2012 15:39
1,2,3-Trichlorobenzene	ND		1.00	ug/L	1	08/9/2012 15:39
1,2,3-Trichloropropane	ND		1.00	ug/L	1	08/9/2012 15:39
1,2,4-Trichlorobenzene	ND		1.00	ug/L	1	08/9/2012 15:39
1,2,4-Trimethylbenzene	ND		1.00	ug/L	1	08/9/2012 15:39
1,2-Dibromo-3-chloropropane	ND		5.00	ug/L	1	08/9/2012 15:39
1,2-Dibromoethane	ND		1.00	ug/L	1	08/9/2012 15:39
1,2-Dichlorobenzene	ND		1.00	ug/L	1	08/9/2012 15:39
1,2-Dichloroethane	ND		1.00	ug/L	1	08/9/2012 15:39
1,2-Dichloropropane	ND		1.00	ug/L	1	08/9/2012 15:39
1,3,5-Trimethylbenzene	ND		1.00	ug/L	1	08/9/2012 15:39
1,3-Dichlorobenzene	ND		1.00	ug/L	1	08/9/2012 15:39
1,3-Dichloropropane	ND		1.00	ug/L	1	08/9/2012 15:39
1,4-Dichlorobenzene	ND		1.00	ug/L	1	08/9/2012 15:39
2,2-Dichloropropane	ND		1.00	ug/L	1	08/9/2012 15:39
2-Butanone	ND		25.0	ug/L	1	08/9/2012 15:39
2-Chlorotoluene	ND		1.00	ug/L	1	08/9/2012 15:39
2-Hexanone	ND		5.00	ug/L	1	08/9/2012 15:39
4-Chlorotoluene	ND		1.00	ug/L	1	08/9/2012 15:39
4-Isopropyltoluene	ND		1.00	ug/L	1	08/9/2012 15:39
4-Methyl-2-pentanone	ND		5.00	ug/L	1	08/9/2012 15:39
Acetone	ND		25.0	ug/L	1	08/9/2012 15:39
Benzene	ND		1.00	ug/L	1	08/9/2012 15:39
Bromobenzene	ND		1.00	ug/L	1	08/9/2012 15:39
Bromochloromethane	ND		1.00	ug/L	1	08/9/2012 15:39
Bromodichloromethane	ND		1.00	ug/L	1	08/9/2012 15:39
Bromoform	ND		1.00	ug/L	1	08/9/2012 15:39
Bromomethane	ND		1.00	ug/L	1	08/9/2012 15:39
n-Butylbenzene	ND		1.00	ug/L	1	08/9/2012 15:39
Carbon disulfide	ND		1.00	ug/L	1	08/9/2012 15:39
Carbon tetrachloride	ND		1.00	ug/L	1	08/9/2012 15:39
Chlorobenzene	ND		1.00	ug/L	1	08/9/2012 15:39
Chloroethane	ND		1.00	ug/L	1	08/9/2012 15:39
Chloroform	ND		1.00	ug/L	1	08/9/2012 15:39
Chloromethane	ND		1.00	ug/L	1	08/9/2012 15:39
Dibromochloromethane	ND		1.00	ug/L	1	08/9/2012 15:39
Dibromomethane	ND		1.00	ug/L	1	08/9/2012 15:39
Dichlorodifluoromethane	ND		5.00	ug/L	1	08/9/2012 15:39

Print Date: 08/20/2012

N.C. Certification # 481

Results of **TW173-1**

Client Sample ID: **TW173-1**
Client Project ID: **NCDOT U-3315**
Lab Sample ID: 31202495009-A
Lab Project ID: 31202495

Collection Date: 08/01/2012 15:15
Received Date: 08/06/2012 15:30
Matrix: Water

Results by **SW-846 8260B**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
cis-1,3-Dichloropropene	ND		1.00	ug/L	1	08/9/2012 15:39
trans-1,3-Dichloropropene	ND		1.00	ug/L	1	08/9/2012 15:39
Diisopropyl Ether	ND		1.00	ug/L	1	08/9/2012 15:39
Ethyl Benzene	ND		1.00	ug/L	1	08/9/2012 15:39
Hexachlorobutadiene	ND		1.00	ug/L	1	08/9/2012 15:39
Isopropylbenzene (Cumene)	ND		1.00	ug/L	1	08/9/2012 15:39
Methyl iodide	ND		1.00	ug/L	1	08/9/2012 15:39
Methylene chloride	ND		5.00	ug/L	1	08/9/2012 15:39
Naphthalene	ND		1.00	ug/L	1	08/9/2012 15:39
Styrene	ND		1.00	ug/L	1	08/9/2012 15:39
Tetrachloroethene	ND		1.00	ug/L	1	08/9/2012 15:39
Toluene	ND		1.00	ug/L	1	08/9/2012 15:39
Trichloroethene	ND		1.00	ug/L	1	08/9/2012 15:39
Trichlorofluoromethane	ND		1.00	ug/L	1	08/9/2012 15:39
Vinyl chloride	ND		1.00	ug/L	1	08/9/2012 15:39
Xylene (total)	ND		2.00	ug/L	1	08/9/2012 15:39
cis-1,2-Dichloroethene	ND		1.00	ug/L	1	08/9/2012 15:39
m,p-Xylene	ND		2.00	ug/L	1	08/9/2012 15:39
n-Propylbenzene	ND		1.00	ug/L	1	08/9/2012 15:39
o-Xylene	ND		1.00	ug/L	1	08/9/2012 15:39
sec-Butylbenzene	ND		1.00	ug/L	1	08/9/2012 15:39
tert-Butyl methyl ether (MTBE)	**1.44**		1.00	ug/L	1	08/9/2012 15:39
tert-Butylbenzene	ND		1.00	ug/L	1	08/9/2012 15:39
trans-1,2-Dichloroethene	ND		1.00	ug/L	1	08/9/2012 15:39
trans-1,4-Dichloro-2-butene	ND		5.00	ug/L	1	08/9/2012 15:39
Surrogates						
1,2-Dichloroethane-d4	98.0		64.0-140	%	1	08/9/2012 15:39
4-Bromofluorobenzene	101		85.0-115	%	1	08/9/2012 15:39
Toluene d8	103		82.0-117	%	1	08/9/2012 15:39

Batch Information

Analytical Batch: **VMS2461**
Analytical Method: **SW-846 8260B**
Instrument: **MSD3**
Analyst: **BWS**
Analytical Date/Time: **08/09/2012 15:39**

Prep Batch: **VXX3789**
Prep Method: **SW-846 5030B**
Prep Date/Time: **08/09/2012 08:11**
Prep Initial Wt./Vol.: **40 mL**
Prep Extract Vol: **40 mL**

Print Date: 08/20/2012

N.C. Certification # 481

Results of **SB173-1 (6-8)**

Client Sample ID: **SB173-1 (6-8)**
Client Project ID: **NCDOT U-3315**
Lab Sample ID: 31202495011-A
Lab Project ID: 31202495

Collection Date: 08/02/2012 07:15
Received Date: 08/06/2012 15:30
Matrix: Soil-Solid as dry weight
Solids (%): 81.70

Results by **SW-846 8015C GRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Gasoline Range Organics (GRO)	ND		3.58	mg/kg	1	08/15/2012 15:52
Surrogates						
4-Bromofluorobenzene	110		70.0-130	%	1	08/15/2012 15:52

Batch Information

Analytical Batch: **VGC2069**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC7**
Analyst: **MDY**
Analytical Date/Time: **08/15/2012 15:52**

Prep Batch: **VXX3829**
Prep Method: **SW-846 5035**
Prep Date/Time: **08/07/2012 11:27**
Prep Initial Wt./Vol.: **6.842 g**
Prep Extract Vol: **5 mL**

Print Date: 08/20/2012

N.C. Certification # 481

Results of **SB173-1 (6-8)**

Client Sample ID: **SB173-1 (6-8)**
Client Project ID: **NCDOT U-3315**
Lab Sample ID: 31202495011-C
Lab Project ID: 31202495

Collection Date: 08/02/2012 07:15
Received Date: 08/06/2012 15:30
Matrix: Soil-Solid as dry weight
Solids (%): 81.70

Results by **SW-846 8015C DRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	ND		8.08	mg/kg	1	08/14/2012 1:40
Surrogates						
o-Terphenyl	90.7		40.0-140	%	1	08/14/2012 1:40

Batch Information

Analytical Batch: **XGC2443**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**
Analytical Date/Time: **08/14/2012 01:40**

Prep Batch: **XXX2914**
Prep Method: **SW-846 3541**
Prep Date/Time: **08/13/2012 10:02**
Prep Initial Wt./Vol.: **30.27 g**
Prep Extract Vol: **10 mL**

Print Date: 08/20/2012

N.C. Certification # 481

Results of **SB173-5 (2.5-5.0)**

Client Sample ID: **SB173-5 (2.5-5.0)**
Client Project ID: **NCDOT U-3315**
Lab Sample ID: 31202495012-A
Lab Project ID: 31202495

Collection Date: 08/02/2012 07:45
Received Date: 08/06/2012 15:30
Matrix: Soil-Solid as dry weight
Solids (%): 82.60

Results by **SW-846 8015C GRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Gasoline Range Organics (GRO)	ND		3.70	mg/kg	1	08/15/2012 16:17
Surrogates						
4-Bromofluorobenzene	107		70.0-130	%	1	08/15/2012 16:17

Batch Information

Analytical Batch: **VGC2069**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC7**
Analyst: **MDY**
Analytical Date/Time: **08/15/2012 16:17**

Prep Batch: **VXX3829**
Prep Method: **SW-846 5035**
Prep Date/Time: **08/07/2012 11:27**
Prep Initial Wt./Vol.: **6.533 g**
Prep Extract Vol: **5 mL**

Print Date: 08/20/2012

N.C. Certification # 481

Results of **SB173-5 (2.5-5.0)**

Client Sample ID: **SB173-5 (2.5-5.0)**
Client Project ID: **NCDOT U-3315**
Lab Sample ID: 31202495012-C
Lab Project ID: 31202495

Collection Date: 08/02/2012 07:45
Received Date: 08/06/2012 15:30
Matrix: Soil-Solid as dry weight
Solids (%): 82.60

Results by **SW-846 8015C DRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	ND		7.29	mg/kg	1	08/14/2012 2:08
Surrogates						
o-Terphenyl	82.3		40.0-140	%	1	08/14/2012 2:08

Batch Information

Analytical Batch: **XGC2443**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**
Analytical Date/Time: **08/14/2012 02:08**

Prep Batch: **XXX2914**
Prep Method: **SW-846 3541**
Prep Date/Time: **08/13/2012 10:02**
Prep Initial Wt./Vol.: **33.18 g**
Prep Extract Vol: **10 mL**

Print Date: 08/20/2012

N.C. Certification # 481

Results of **SB173-6 (6-8)**

Client Sample ID: **SB173-6 (6-8)**
Client Project ID: **NCDOT U-3315**
Lab Sample ID: 31202495013-A
Lab Project ID: 31202495

Collection Date: 08/02/2012 08:05
Received Date: 08/06/2012 15:30
Matrix: Soil-Solid as dry weight
Solids (%): 81.30

Results by **SW-846 8015C GRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Gasoline Range Organics (GRO)	ND		3.85	mg/kg	1	08/15/2012 16:43
Surrogates						
4-Bromofluorobenzene	110		70.0-130	%	1	08/15/2012 16:43

Batch Information

Analytical Batch: **VGC2069**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC7**
Analyst: **MDY**
Analytical Date/Time: **08/15/2012 16:43**

Prep Batch: **VXX3829**
Prep Method: **SW-846 5035**
Prep Date/Time: **08/07/2012 11:29**
Prep Initial Wt./Vol.: **6.399 g**
Prep Extract Vol: **5 mL**

Print Date: 08/20/2012

N.C. Certification # 481

Results of **SB173-6 (6-8)**

Client Sample ID: **SB173-6 (6-8)**
Client Project ID: **NCDOT U-3315**
Lab Sample ID: 31202495013-C
Lab Project ID: 31202495

Collection Date: 08/02/2012 08:05
Received Date: 08/06/2012 15:30
Matrix: Soil-Solid as dry weight
Solids (%): 81.30

Results by **SW-846 8015C DRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	ND		7.93	mg/kg	1	08/14/2012 2:37
Surrogates						
o-Terphenyl	73.8		40.0-140	%	1	08/14/2012 2:37

Batch Information

Analytical Batch: **XGC2443**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**
Analytical Date/Time: **08/14/2012 02:37**

Prep Batch: **XXX2914**
Prep Method: **SW-846 3541**
Prep Date/Time: **08/13/2012 10:02**
Prep Initial Wt./Vol.: **31.02 g**
Prep Extract Vol: **10 mL**

Print Date: 08/20/2012

N.C. Certification # 481

Results of **SB173-7 (6-8)**

Client Sample ID: **SB173-7 (6-8)**
Client Project ID: **NCDOT U-3315**
Lab Sample ID: 31202495014-A
Lab Project ID: 31202495

Collection Date: 08/02/2012 09:05
Received Date: 08/06/2012 15:30
Matrix: Soil-Solid as dry weight
Solids (%): 82.10

Results by **SW-846 8015C GRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Gasoline Range Organics (GRO)	ND		3.72	mg/kg	1	08/15/2012 17:08
Surrogates						
4-Bromofluorobenzene	107		70.0-130	%	1	08/15/2012 17:08

Batch Information

Analytical Batch: **VGC2069**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC7**
Analyst: **MDY**
Analytical Date/Time: **08/15/2012 17:08**

Prep Batch: **VXX3829**
Prep Method: **SW-846 5035**
Prep Date/Time: **08/07/2012 11:30**
Prep Initial Wt./Vol.: **6.559 g**
Prep Extract Vol: **5 mL**

Print Date: 08/20/2012

N.C. Certification # 481

Results of **SB173-7 (6-8)**

Client Sample ID: **SB173-7 (6-8)**
Client Project ID: **NCDOT U-3315**
Lab Sample ID: 31202495014-C
Lab Project ID: 31202495

Collection Date: 08/02/2012 09:05
Received Date: 08/06/2012 15:30
Matrix: Soil-Solid as dry weight
Solids (%): 82.10

Results by **SW-846 8015C DRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	ND		8.08	mg/kg	1	08/14/2012 3:05
Surrogates						
o-Terphenyl	80.7		40.0-140	%	1	08/14/2012 3:05

Batch Information

Analytical Batch: **XGC2443**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**
Analytical Date/Time: **08/14/2012 03:05**

Prep Batch: **XXX2914**
Prep Method: **SW-846 3541**
Prep Date/Time: **08/13/2012 10:02**
Prep Initial Wt./Vol.: **30.18 g**
Prep Extract Vol: **10 mL**

Print Date: 08/20/2012

N.C. Certification # 481

CHAIN OF CUSTODY RECORD
SGS North America Inc.

Locations Nationwide
- Alaska
- Maryland
- New Jersey
- New York
- North Carolina
- Ohio

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104638

(1)

CLIENT: ATC ASSOCIATES

CONTACT: JUSTIN BALLARD PHONE NO:(919 871-0999

PROJECT: NCDOT U-3715 SITE/PWSID#: ~~U-3715~~ 35781.2

REPORTS TO:

JUSTIN BALLARD FAX NO.:(919) 871-0335

INVOICE TO: NCDOT QUOTE #:

P.O. NUMBER:

SGS Reference: 320295

PAGE 1 OF 1

(2)

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	No CONTAINERS	SAMPLE TYPE (C=COMP G=GRAB)	Preservatives Used	Analysis Required (3): GRO	DRO	8260 no 8/7/12	8270	REMARKS
	TW172-1 (6-8)	8/1/12	1045	S	7	G		X	X	X		
	TW173-1 (6-8)		1125	S	3			X	X			
	TW170-1 (6-8)		0930	S	7			X	X	X		
	TW49-1 (2.5-5)		0735	S	8			X	X	X	X	
	TW174-1 (6-8)		1255	S	3			X	X			
	TW49-1		1430	GW	5					X	X	
	TW170-1		1445	GW	3					X		
	TW172-1		1500	GW	3					X		
	TW173-1		1515	GW	3					X		
	TW174-1		1530	GW	3					X		

(5)

Collected/Relinquished By:(1)	Date 8/6/12	Time 1030	Received By:
Relinquished By: (2)	Date 8/6/12	Time 1230	Received By:
Relinquished By: (3)	Date 8/6/12	Time 1530	Received By:
Relinquished By: (4)	Date	Time	Received By:

(4)

Shipping Carrier:

Shipping Ticket No:

Samples Received Cold? (Circle) YES NO

Temperature°C: 0.7 . 4.2

Special Deliverable Requirements:

Chain of Custody Seal: (Circle)

INTACT BROKEN ABSENT

Special Instructions:

Requested Turnaround Time:

☐ RUSH _____ Date Needed ☑ STD

❑ 200 W. Potter Drive **Anchorage, AK 99518** Tel: (907) 562-2343 Fax: (907) 561-5301
❑ 5500 Business Drive **Wilmington, NC 28405** Tel: (910) 350-1903 Fax: (910) 350-1557

White - Retained by Lab
Pink - Retained by Client

CHAIN OF CUSTODY RECORD
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Locations Nationwide
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- New York
- North Carolina
- Ohio

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(1)

CLIENT: ATC Associates

CONTACT: Justin Ballard PHONE NO:(919) 871-0999

PROJECT: NCDOT U3315 SITE/PWSID#: 35781.1.2

REPORTS TO:

Justin Ballard FAX NO.:(919) 871-0335

INVOICE TO: NCDOT QUOTE #:

P.O. NUMBER:

SGS Reference: 31202495

PAGE 1 OF 1

(2)

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	No CONTAINERS	SAMPLE TYPE (C=COMP G=GRAB)	Preservatives Used	Analysis Required (3) GRO	DRO	REMARKS
	SB173-1 (6-8)	8/2/12	0715	S	3	G		X	X	
	SB173-5 (2.5-5.0)		0745							
	SB173-6 (6-8)		0805							
	SB173-7 (6-8)		0905							
	SB174-2 (0-2.5)		1020							
	SB174-1 (5-6)		1040							
	SB174-3 (6-8)		1110							
	SB174-4 (5-6)		1140							
	SB174-5 (0-2.5)		1300							
	SB174-6 (5-6)		1450							

(5)

Collected/Relinquished By:(1)	Date 8/6/12	Time 1080	Received By:
Relinquished By: (2)	Date 8/6/12	Time 1200	Received By:
Relinquished By: (3)	Date 8/6/12	Time 1530	Received By:
Relinquished By: (4)	Date	Time	Received By:

(4)

Shipping Carrier:

Shipping Ticket No:

Samples Received Cold? (Circle) YES NO

Temperature°C: 0.7 4.2

Special Deliverable Requirements:

Chain of Custody Seal: (Circle)

INTACT BROKEN ABSENT

Special Instructions:

Requested Turnaround Time:

☐ RUSH _____ Date Needed ☒ STD

☐ 200 W. Potter Drive **Anchorage, AK 99518** Tel: (907) 562-2343 Fax: (907) 561-5301
☐ 5500 Business Drive **Wilmington, NC 28405** Tel: (910) 350-1903 Fax: (910) 350-1557

White - Retained by Lab
Pink - Retained by Client

CHAIN OF CUSTODY RECORD
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104619

(1)

CLIENT: ATC ASSOCIATES

CONTACT: JUSTIN BALLARD PHONE NO:(919) 871-0999

PROJECT: NDOT U-3315 SITE/PWSID#: 35781.1.2

REPORTS TO: JUSTIN BALLARD FAX NO.:(919) 871-0375

INVOICE TO: NCDOT QUOTE #:

P.O. NUMBER:

SGS Reference: 3120295

PAGE 1 OF 1

(2)

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	No CONTAINERS	SAMPLE TYPE (C=COMP G=GRAB)	Preservatives Used	Analysis Required (3) GRO	DRO	REMARKS
	SB171-1 (0-2.5)	8/3/12	0730	S	3	G		X	X	
	SB171-2 (0-2.5)	"	0750	"	"	"		"	"	
	SB171-3 (0-2.5)	"	0810	"	"	"		"	"	
	SB171-4 (0-2.5)	"	0900	"	"	"		"	"	
	SB171-5 (0-2.5)	"	0920	"	"	"		"	"	
	SB171-6 (0-2.5)	"	0940	"	"	"		"	"	

(5)

Collected/Relinquished By:(1)	Date	Time	Received By:
	8/6/12	1030	
Relinquished By: (2)	Date	Time	Received By:
	8/6/12	1200	
Relinquished By: (3)	Date	Time	Received By:
	8/6/12	1530	
Relinquished By: (4)	Date	Time	Received By:

(4)

Shipping Carrier:

Shipping Ticket No:

Samples Received Cold? (Circle) YES NO

Temperature°C: 0.7 4.2

Special Deliverable Requirements:

Chain of Custody Seal: (Circle)

INTACT BROKEN ABSENT

Special Instructions:

Requested Turnaround Time:

☐ RUSH _____ Date Needed ☒ STD

❑ 200 W. Potter Drive **Anchorage, AK 99518** Tel: (907) 562-2343 Fax: (907) 561-5301
❑ 5500 Business Drive **Wilmington, NC 28405** Tel: (910) 350-1903 Fax: (910) 350-1557

White - Retained by Lab
Pink - Retained by Client

SGS North America Inc.

Sample Receipt Checklist (SRC)

Client: **NCDOT-ATC** Work Order No.: **31202495**

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: 0.7, 4.2
   ___ Ambient on Receipt
   X 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. ___ No Discrepancies Noted
   X Discrepancies Noted
   ___ NCDENR notified of Discrepancies*

10. X No Headspace present in VOC vials
    ___ Headspace present in VOC vials >6mm

Notes:

Comments: Received two MEOH vials with no sample id or label.

Did not received vials for TW172-1 (6-8), only one 4oz amber jar.

Inspected and Logged in by: JJ

Date: Mon-8/6/12 00:00

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