

DUNCKLEE  
& DUNHAM

ENVIRONMENTAL GEOLOGISTS & ENGINEERS  
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VIA EMAIL TO: [dave.brown@ncdenr.gov](mailto:dave.brown@ncdenr.gov)

July 27, 2012

Mr. David Brown, L.G.  
Inactive Hazardous Sites Branch  
Superfund Section  
Division of Waste Management  
225 Green Street, Suite 714  
Fayetteville, North Carolina 28301

Reference: **Request for Closure  
North Carolina Veterans Park  
Fayetteville, North Carolina**

Dear Mr. Brown:

As requested by the City of Fayetteville, Duncklee & Dunham, P.C. submits this Request for Closure of a release incident for the North Carolina Veterans Park at 401 Bragg Boulevard in Fayetteville, North Carolina (Figure 1). Duncklee & Dunham submitted to your office a Soil Abatement Report dated January 12, 2012, in which we documented removal of soil that contained pine-tar rosin on a lot adjacent to the park. Since that time, a groundwater monitoring well has been constructed and sampled, and the test results show contaminants of concern were not detected at concentrations above applicable standards.

Our January 2012 report documented the removal of 556 tons of soil impacted with rosin derived from pine trees. After excavation, Duncklee & Dunham collected 10 soil samples from the base of the excavation and had the samples tested in the laboratory for volatile organic compounds (VOCs). The laboratory detected:

- 4-isopropyltoluene in five samples, and the concentrations detected in three of these samples exceeded the protection-of-groundwater regional screening level (RSL);
- 1,1,2,2-tetrachloroethane in one sample at a concentration that exceeded the protection-of-groundwater RSL;

- acetone in three samples, but the concentrations did not exceed the protection-of-groundwater RSL; and
- methylene chloride in several samples. However, the laboratory reported that methylene chloride was also detected in the associated method blank, which suggests the presence of methylene chloride was due to cross-contamination in the laboratory.

Next, at the request of Duncklee & Dunham, the laboratory extracted leachate from three of the 10 soil samples and tested the leachate for VOCs by synthetic precipitation leaching procedure. The laboratory detected 4-isopropyltoluene in one of the three leachate samples at a concentration that exceeded the North Carolina groundwater quality standard promulgated in Title 15A, Subchapter 2L, Section .0202 of the North Carolina Administrative Code. The laboratory detected methylene chloride in the extract from each of the three leachate samples, as noted above, and is believed to be a laboratory artifact.

The City of Fayetteville received a Notice of Regulatory Requirements (NoRR) for Contaminant Assessment and Cleanup, dated February 26, 2012. You referenced the section's voluntary cleanup program in this notice, and wrote that the City of Fayetteville (the City) could formally request to conduct the cleanup in this program by making a written request and submitting a Site Cleanup Questionnaire. You also noted that groundwater may have been adversely affected by the constituents of pine-tar rosin. Subsequent to receipt of the NoRR, the City executed the notification form for the voluntary cleanup program on March 29, 2012 and submitted it to your office. The Site Cleanup Questionnaire, executed by the City, is attached. The nearest residence, noted in this questionnaire, is shown on Figure 1.

As you may be aware, the City and CSX Real Property, Inc. (CSX) are in negotiation to swap land adjacent to Veterans Park. As part of this land swap, AMEC Environment and Infrastructure (AMEC), as contractor to CSX, constructed temporary monitoring well CFB-1 on the parcel that CSX will receive from the City, shown as blue hachures on AMEC's Figure 2 (attached). We have also shown the location of this well on our Figure 2 (attached), which was included without the well in our January 2012 report and shows CFB-1 approximately 40 feet from the area of soil we excavated. This parcel is adjacent to the east of that part of Veterans Park where the soil with pine-tar rosin was excavated; it is shown as graded and under construction on AMEC's Figure 2. We expect CFB-1 is immediately hydraulically downgradient of the Veterans Park parcel based on the flow of the adjacent Cross Creek, and as such, the groundwater sample from that well is representative of groundwater beneath the Veterans Park parcel. The groundwater sample from CFB-1 did not exhibit VOCs. Benzoic acid was the only semivolatile organic compound detected, and the concentration did not exceed the North Carolina groundwater quality standard. Therefore, the groundwater data show that groundwater quality at the Veterans Park parcel has not been adversely affected by the constituents of pine-tar rosin.

Based on these test results, the City requests regulatory closure of the parcel with pine-tar rosin. Test results show groundwater in the vicinity of this parcel does not exhibit 4-isopropyltoluene and 1,1,2,2-tetrachloroethane at concentrations that exceed the laboratory's detection limit. As documented earlier, soil with pine-tar that could pose a threat to groundwater quality has been removed from the site.



Please call Dave Duncklee at (919) 858-9898 or send an email to [dave@dunckleedunham.com](mailto:dave@dunckleedunham.com) if you have any questions or need additional information.

Sincerely,

**Duncklee & Dunham, P.C.**



Richard A. Kolb, L.G.  
Senior Geologist



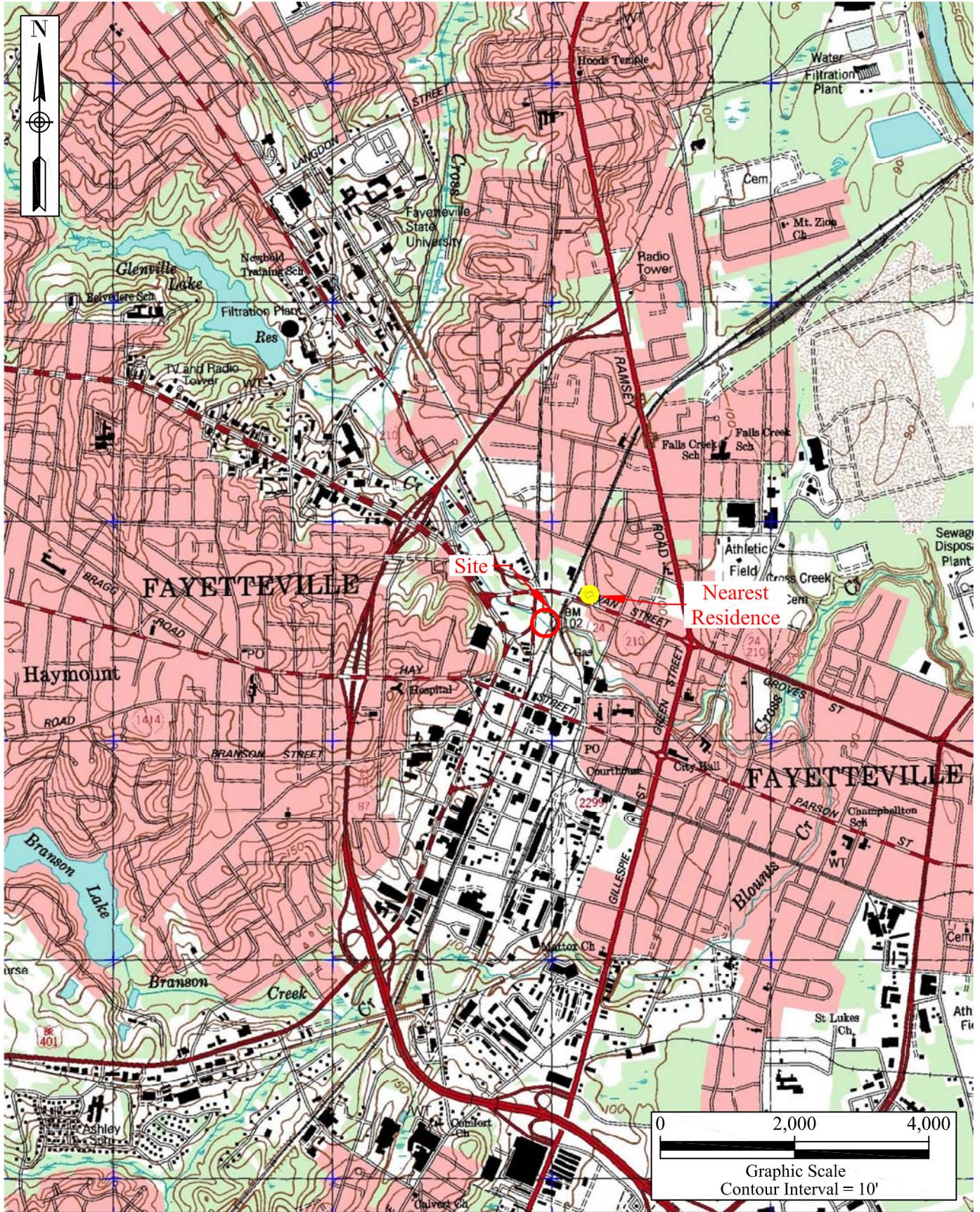
David L. Duncklee, P.G., R.S.M.  
Senior Hydrogeologist

Attachments: Figures 1 and 2  
Parts of AMEC report  
Site Cleanup Questionnaire

P:\Fayetteville\Veterans Park - 201053\Correspondence\Request for Closure - Veterans Park - 12232.docx



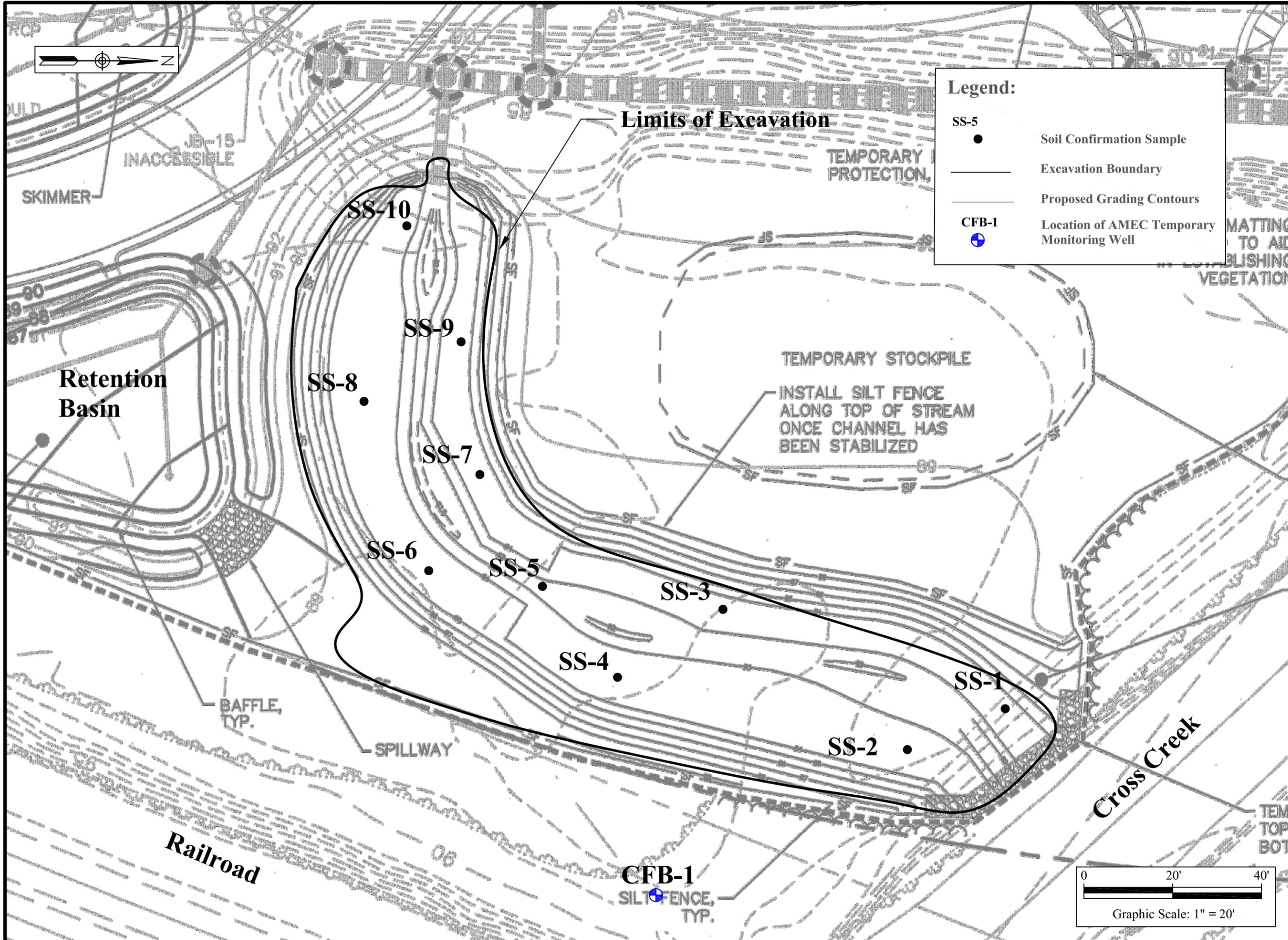
# Figures



**Site Topographic Map**

North Carolina Veterans Park  
 Fayetteville, North Carolina

Drawn By: wmf	Checked By: RAC	Project Number: 201053	Date: June 2012	References: Map Card: Fayetteville, 1997
Scale: 1" = 2,000'	Size: 8.5" x 11"	Layers: 0,1,21,22	Filename: P:\Fayetteville\Veterans Park - 201053\CAD\Figure 1	

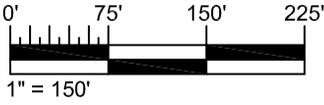


<b>Location of Soil Samples</b> North Carolina Veterans Park Fayetteville, North Carolina			
Drawn By:	Checked By:	Project Number:	References:
wmf	PAC	201053	August Field Notes, City of Fayetteville Grading and Drainage Plan
Scale:	Size:	Layers:	Filename:
1" = 20'	11" x 17"	0, 1, 2, 3	P:\Fayetteville\Veterans Park-201053\Figures\CAD\Erosion Plan
Date: September 2011			

Figure  
2

Divider  
Page



 <p>2801 Yorkmont Rd., Suite 100 Charlotte, NC 282018 Ph: (704) 357-8600</p>	<p>CLIENT: NC Department of Transportation Geotechnical Unit WBS Element: 41068.1.1 TIP# P-4901</p>		<p>SCALE:</p> 	
<p>TITLE: <b>Site Vicinity Map</b> Downtown Fayetteville Land Swap Site Fayetteville, North Carolina</p>	<p>DR: TLH</p> <p>CHK: HPC</p>	<p>REV: N/A</p> <p>DATE: 4/2/2012</p>	<p>PROJ. NO.: 566774901</p> <p>FIGURE: <b>2</b></p>	



## Laboratory Report of Analysis

To: Mike McKenna  
AMEC Environment & Infrastructure, Inc.  
2200 Gateway Centre Blvd.  
Morrisville, NC 27560

Report Number: **31200635**

Client Project: **Fayetteville**

Dear Mike McKenna,

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: 2012.03.26 13:36:02 -05'00'

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

Date

## Laboratory Qualifiers

### Report Definitions

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

### Qualifier Definitions

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

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

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

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

## Sample Summary

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Collected</u>	<u>Received</u>	<u>Matrix</u>
CFB-1-4	31200635001	03/09/2012 10:53	03/12/2012 08:00	Soil-Solid as dry weight
CFB-1	31200635002	03/09/2012 13:21	03/12/2012 08:00	Water



**Results of CFB-1-4**

Client Sample ID: **CFB-1-4**  
Client Project ID: **Fayetteville**  
Lab Sample ID: 31200635001-A  
Lab Project ID: 31200635

Collection Date: 03/09/2012 10:53  
Received Date: 03/12/2012 08:00  
Matrix: Soil-Solid as dry weight  
Solids (%): 79.40

**Results by MADEP VPH**

<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Date Analyzed</u>
C5-C8 Aliphatics	ND		3.81	mg/kg	1	03/15/2012 11:47
C9-C10 Aromatics	ND		3.81	mg/kg	1	03/15/2012 11:47
C9-C12 Aliphatics	ND		3.81	mg/kg	1	03/15/2012 11:47

**Surrogates**

FID - 4-Bromofluorobenzene	99.0		70.0-130	%	1	03/15/2012 11:47
PID - 4-Bromofluorobenzene	93.0		70.0-130	%	1	03/15/2012 11:47

**Batch Information**

Analytical Batch: **VGC1737**  
Analytical Method: **MADEP VPH**  
Instrument: **GC4**  
Analyst: **MDY**  
Analytical Date/Time: **03/15/2012 11:47**

Prep Batch: **VXX2948**  
Prep Method: **SW-846 5035 VPH prep**  
Prep Date/Time: **03/12/2012 13:31**  
Prep Initial Wt./Vol.: **8.263 g**  
Prep Extract Vol: **5 mL**



### Results of CFB-1-4

Client Sample ID: **CFB-1-4**  
Client Project ID: **Fayetteville**  
Lab Sample ID: 31200635001-D  
Lab Project ID: 31200635

Collection Date: 03/09/2012 10:53  
Received Date: 03/12/2012 08:00  
Matrix: Soil-Solid as dry weight  
Solids (%): 79.40

### Results by MADEP EPH

<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Date Analyzed</u>
C11-C22 Aromatics	<b>31.0</b>		15.7	mg/kg	1	03/25/2012 18:22
C19-C36 Aliphatics	<b>21.8</b>		8.07	mg/kg	1	03/25/2012 17:54
C9-C18 Aliphatics	ND		6.99	mg/kg	1	03/25/2012 17:54

### Surrogates

2-Bromonaphthalene	124		40.0-140	%	1	03/25/2012 18:22
2-Fluorobiphenyl	111		40.0-140	%	1	03/25/2012 18:22
n-Tricosane	120		40.0-140	%	1	03/25/2012 17:54
o-Terphenyl	111		40.0-140	%	1	03/25/2012 18:22

### Batch Information

Analytical Batch: **XGC2027**  
Analytical Method: **MADEP EPH**  
Instrument: **GC6**  
Analyst: **DTF**  
Analytical Date/Time: **03/25/2012 18:22**

Prep Batch: **XXX2364**  
Prep Method: **SW-846 3541/8015 EPH**  
Prep Date/Time: **03/21/2012 10:56**  
Prep Initial Wt./Vol.: **12.55 g**  
Prep Extract Vol: **10 mL**



**Results of CFB-1-4**

Client Sample ID: **CFB-1-4**  
Client Project ID: **Fayetteville**  
Lab Sample ID: 31200635001-E  
Lab Project ID: 31200635

Collection Date: 03/09/2012 10:53  
Received Date: 03/12/2012 08:00  
Matrix: Soil-Solid as dry weight  
Solids (%): 79.40

**Results by SW-846 7196A**

<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Date Analyzed</u>
Chromium (VI)	ND		4.92	mg/kg	1	03/14/2012 10:07

**Batch Information**

Analytical Batch: **INO1522**  
Analytical Method: **SW-846 7196A**  
Instrument: **SPEC1**  
Analyst: **PSW**  
Analytical Date/Time: **03/14/2012 10:07**

Prep Batch: **IXX1053**  
Prep Method: **SW-846 3060A**  
Prep Date/Time: **03/13/2012 09:01**  
Prep Initial Wt./Vol.: **2.56 g**  
Prep Extract Vol: **100 mL**



### Results of CFB-1

Client Sample ID: CFB-1  
Client Project ID: Fayetteville  
Lab Sample ID: 31200635002-A  
Lab Project ID: 31200635

Collection Date: 03/09/2012 13:21  
Received Date: 03/12/2012 08:00  
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	03/13/2012 17:56
1,1,1-Trichloroethane	ND		1.00	ug/L	1	03/13/2012 17:56
1,1,2,2-Tetrachloroethane	ND		1.00	ug/L	1	03/13/2012 17:56
1,1,2-Trichloroethane	ND		1.00	ug/L	1	03/13/2012 17:56
1,1-Dichloroethane	ND		1.00	ug/L	1	03/13/2012 17:56
1,1-Dichloroethene	ND		1.00	ug/L	1	03/13/2012 17:56
1,1-Dichloropropene	ND		1.00	ug/L	1	03/13/2012 17:56
1,2,3-Trichlorobenzene	ND		1.00	ug/L	1	03/13/2012 17:56
1,2,3-Trichloropropane	ND		1.00	ug/L	1	03/13/2012 17:56
1,2,4-Trichlorobenzene	ND		1.00	ug/L	1	03/13/2012 17:56
1,2,4-Trimethylbenzene	ND		1.00	ug/L	1	03/13/2012 17:56
1,2-Dibromo-3-chloropropane	ND		5.00	ug/L	1	03/13/2012 17:56
1,2-Dibromoethane	ND		1.00	ug/L	1	03/13/2012 17:56
1,2-Dichlorobenzene	ND		1.00	ug/L	1	03/13/2012 17:56
1,2-Dichloroethane	ND		1.00	ug/L	1	03/13/2012 17:56
1,2-Dichloropropane	ND		1.00	ug/L	1	03/13/2012 17:56
1,3,5-Trimethylbenzene	ND		1.00	ug/L	1	03/13/2012 17:56
1,3-Dichlorobenzene	ND		1.00	ug/L	1	03/13/2012 17:56
1,3-Dichloropropane	ND		1.00	ug/L	1	03/13/2012 17:56
1,4-Dichlorobenzene	ND		1.00	ug/L	1	03/13/2012 17:56
2,2-Dichloropropane	ND		1.00	ug/L	1	03/13/2012 17:56
2-Butanone	ND		25.0	ug/L	1	03/13/2012 17:56
2-Chlorotoluene	ND		1.00	ug/L	1	03/13/2012 17:56
2-Hexanone	ND		5.00	ug/L	1	03/13/2012 17:56
4-Chlorotoluene	ND		1.00	ug/L	1	03/13/2012 17:56
4-Isopropyltoluene	ND		1.00	ug/L	1	03/13/2012 17:56
4-Methyl-2-pentanone	ND		5.00	ug/L	1	03/13/2012 17:56
Acetone	ND		25.0	ug/L	1	03/13/2012 17:56
Benzene	ND		1.00	ug/L	1	03/13/2012 17:56
Bromobenzene	ND		1.00	ug/L	1	03/13/2012 17:56
Bromochloromethane	ND		1.00	ug/L	1	03/13/2012 17:56
Bromodichloromethane	ND		1.00	ug/L	1	03/13/2012 17:56
Bromoform	ND		1.00	ug/L	1	03/13/2012 17:56
Bromomethane	ND		1.00	ug/L	1	03/13/2012 17:56
n-Butylbenzene	ND		1.00	ug/L	1	03/13/2012 17:56
Carbon disulfide	ND		1.00	ug/L	1	03/13/2012 17:56
Carbon tetrachloride	ND		1.00	ug/L	1	03/13/2012 17:56
Chlorobenzene	ND		1.00	ug/L	1	03/13/2012 17:56
Chloroethane	ND		1.00	ug/L	1	03/13/2012 17:56
Chloroform	ND		1.00	ug/L	1	03/13/2012 17:56
Chloromethane	ND		1.00	ug/L	1	03/13/2012 17:56
Dibromochloromethane	ND		1.00	ug/L	1	03/13/2012 17:56
Dibromomethane	ND		1.00	ug/L	1	03/13/2012 17:56

Print Date: 03/26/2012

N.C. Certification # 481

SGS North America Inc.

5500 Business Drive, Wilmington, NC 28405  
t 910.350.1903 f 910.350.1557 www.us.sgs.com

Member of SGS Group



Results of CFB-1

Client Sample ID: CFB-1
Client Project ID: Fayetteville
Lab Sample ID: 31200635002-A
Lab Project ID: 31200635

Collection Date: 03/09/2012 13:21
Received Date: 03/12/2012 08:00
Matrix: Water

Results by SW-846 8260B

Table with 7 columns: Parameter, Result, Qual, LOQ/CL, Units, DF, Date Analyzed. Lists various chemical compounds and their detection results.

Surrogates

Table with 7 columns: Parameter, Result, Qual, LOQ/CL, Units, DF, Date Analyzed. Lists surrogate compounds like 1,2-Dichloroethane-d4.

Batch Information

Analytical Batch: VMS2014
Analytical Method: SW-846 8260B
Instrument: MSD8
Analyst: BWS
Analytical Date/Time: 03/13/2012 17:56

Prep Batch: VXX2923
Prep Method: SW-846 5030B
Prep Date/Time: 03/13/2012 10:00
Prep Initial Wt./Vol.: 40 mL
Prep Extract Vol: 40 mL



**Results of CFB-1**

Client Sample ID: **CFB-1**  
Client Project ID: **Fayetteville**  
Lab Sample ID: 31200635002-D  
Lab Project ID: 31200635

Collection Date: 03/09/2012 13:21  
Received Date: 03/12/2012 08:00  
Matrix: Water

**Results by MADEP VPH**

<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Date Analyzed</u>
C5-C8 Aliphatics	ND		100	ug/L	1	03/13/2012 14:49
C9-C10 Aromatics	ND		100	ug/L	1	03/13/2012 14:49
C9-C12 Aliphatics	ND		100	ug/L	1	03/13/2012 14:49

**Surrogates**

FID - 4-Bromofluorobenzene	100		70.0-130	%	1	03/13/2012 14:49
PID - 4-Bromofluorobenzene	97.0		70.0-130	%	1	03/13/2012 14:49

**Batch Information**

Analytical Batch: **VGC1726**  
Analytical Method: **MADEP VPH**  
Instrument: **GC4**  
Analyst: **MDY**  
Analytical Date/Time: **03/13/2012 14:49**

Prep Batch: **VXX2924**  
Prep Method: **SW-846 5030B**  
Prep Date/Time: **03/13/2012 10:46**  
Prep Initial Wt./Vol.: **40 mL**  
Prep Extract Vol: **40 mL**



Results of CFB-1

Client Sample ID: CFB-1  
Client Project ID: Fayetteville  
Lab Sample ID: 31200635002-F  
Lab Project ID: 31200635

Collection Date: 03/09/2012 13:21  
Received Date: 03/12/2012 08:00  
Matrix: Water

Results by SW-846 8270D

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
1,2,4-Trichlorobenzene	ND		5.85	ug/L	1	03/18/2012 5:50
1,2-Dichlorobenzene	ND		5.85	ug/L	1	03/18/2012 5:50
1,3-Dichlorobenzene	ND		5.85	ug/L	1	03/18/2012 5:50
1,4-Dichlorobenzene	ND		5.85	ug/L	1	03/18/2012 5:50
2,4,5-Trichlorophenol	ND		5.85	ug/L	1	03/18/2012 5:50
2,4,6-Trichlorophenol	ND		5.85	ug/L	1	03/18/2012 5:50
2,4-Dichlorophenol	ND		5.85	ug/L	1	03/18/2012 5:50
2,4-Dinitrophenol	ND		29.3	ug/L	1	03/18/2012 5:50
2,4-Dinitrotoluene	ND		5.85	ug/L	1	03/18/2012 5:50
2,6-Dinitrotoluene	ND		5.85	ug/L	1	03/18/2012 5:50
2-Chloronaphthalene	ND		5.85	ug/L	1	03/18/2012 5:50
2-Chlorophenol	ND		5.85	ug/L	1	03/18/2012 5:50
2-Methylnaphthalene	ND		5.85	ug/L	1	03/18/2012 5:50
2-Methylphenol	ND		5.85	ug/L	1	03/18/2012 5:50
2-Nitroaniline	ND		5.85	ug/L	1	03/18/2012 5:50
2-Nitrophenol	ND		5.85	ug/L	1	03/18/2012 5:50
3 and/or 4-Methylphenol	ND		5.85	ug/L	1	03/18/2012 5:50
3,3'-Dichlorobenzidine	ND		11.7	ug/L	1	03/18/2012 5:50
3-Nitroaniline	ND		29.3	ug/L	1	03/18/2012 5:50
4,6-Dinitro-2-methylphenol	ND		29.3	ug/L	1	03/18/2012 5:50
4-Chloro-3-methylphenol	ND		5.85	ug/L	1	03/18/2012 5:50
4-Chloroaniline	ND		29.3	ug/L	1	03/18/2012 5:50
4-Chlorophenyl phenyl ether	ND		5.85	ug/L	1	03/18/2012 5:50
Acenaphthene	ND		5.85	ug/L	1	03/18/2012 5:50
Acenaphthylene	ND		5.85	ug/L	1	03/18/2012 5:50
Anthracene	ND		5.85	ug/L	1	03/18/2012 5:50
Benzo(a)anthracene	ND		5.85	ug/L	1	03/18/2012 5:50
Benzo(a)pyrene	ND		5.85	ug/L	1	03/18/2012 5:50
Benzo(b)fluoranthene	ND		5.85	ug/L	1	03/18/2012 5:50
Benzo(g,h,i)perylene	ND		5.85	ug/L	1	03/18/2012 5:50
Benzo(k)fluoranthene	ND		5.85	ug/L	1	03/18/2012 5:50
Benzoic acid	7.03		5.85	ug/L	1	03/18/2012 5:50
Bis(2-Chloroethoxy)methane	ND		5.85	ug/L	1	03/18/2012 5:50
Bis(2-Chloroethyl)ether	ND		5.85	ug/L	1	03/18/2012 5:50
Bis(2-Chloroisopropyl)ether	ND		5.85	ug/L	1	03/18/2012 5:50
Bis(2-Ethylhexyl)phthalate	ND		5.85	ug/L	1	03/18/2012 5:50
4-Bromophenyl phenyl ether	ND		5.85	ug/L	1	03/18/2012 5:50
Butyl benzyl phthalate	ND		5.85	ug/L	1	03/18/2012 5:50
Chrysene	ND		5.85	ug/L	1	03/18/2012 5:50
Di-n-butyl phthalate	ND		5.85	ug/L	1	03/18/2012 5:50
Di-n-octyl phthalate	ND		5.85	ug/L	1	03/18/2012 5:50
Dibenz(a,h)anthracene	ND		5.85	ug/L	1	03/18/2012 5:50
Dibenzofuran	ND		5.85	ug/L	1	03/18/2012 5:50

Print Date: 03/26/2012

N.C. Certification # 481

SGS North America Inc.

5500 Business Drive, Wilmington, NC 28405  
f 910.350.1903 f 910.350.1557 www.us.sgs.com

Member of SGS Group



**Results of CFB-1**

Client Sample ID: **CFB-1**  
Client Project ID: **Fayetteville**  
Lab Sample ID: 31200635002-F  
Lab Project ID: 31200635

Collection Date: 03/09/2012 13:21  
Received Date: 03/12/2012 08:00  
Matrix: Water

**Results by SW-846 8270D**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Diethyl phthalate	ND		5.85	ug/L	1	03/18/2012 5:50
Dimethyl phthalate	ND		5.85	ug/L	1	03/18/2012 5:50
2,4-Dimethylphenol	ND		5.85	ug/L	1	03/18/2012 5:50
Diphenylamine	ND		5.85	ug/L	1	03/18/2012 5:50
Fluoranthene	ND		5.85	ug/L	1	03/18/2012 5:50
Fluorene	ND		5.85	ug/L	1	03/18/2012 5:50
Hexachlorobenzene	ND		5.85	ug/L	1	03/18/2012 5:50
Hexachlorobutadiene	ND		5.85	ug/L	1	03/18/2012 5:50
Hexachlorocyclopentadiene	ND		11.7	ug/L	1	03/18/2012 5:50
Hexachloroethane	ND		5.85	ug/L	1	03/18/2012 5:50
Indeno(1,2,3-cd)pyrene	ND		5.85	ug/L	1	03/18/2012 5:50
Isophorone	ND		5.85	ug/L	1	03/18/2012 5:50
Naphthalene	ND		5.85	ug/L	1	03/18/2012 5:50
4-Nitroaniline	ND		29.3	ug/L	1	03/18/2012 5:50
Nitrobenzene	ND		5.85	ug/L	1	03/18/2012 5:50
4-Nitrophenol	ND		29.3	ug/L	1	03/18/2012 5:50
Pentachlorophenol	ND		29.3	ug/L	1	03/18/2012 5:50
Phenanthrene	ND		5.85	ug/L	1	03/18/2012 5:50
Phenol	ND		5.85	ug/L	1	03/18/2012 5:50
Pyrene	ND		5.85	ug/L	1	03/18/2012 5:50
n-Nitrosodi-n-propylamine	ND		5.85	ug/L	1	03/18/2012 5:50
<b>Surrogates</b>						
2,4,6-Tribromophenol	96.0		29.3-152	%	1	03/18/2012 5:50
2-Fluorobiphenyl	91.0		50.0-107	%	1	03/18/2012 5:50
2-Fluorophenol	77.0		33.1-118	%	1	03/18/2012 5:50
Nitrobenzene-d5	87.0		46.0-118	%	1	03/18/2012 5:50
Phenol-d6	89.0		49.0-120	%	1	03/18/2012 5:50
Terphenyl-d14	101		22.1-142	%	1	03/18/2012 5:50

**Batch Information**

Analytical Batch: **XMS1444**  
Analytical Method: **SW-846 8270D**  
Instrument: **MSD6**  
Analyst: **CMP**  
Analytical Date/Time: **03/18/2012 05:50**

Prep Batch: **XXX2341**  
Prep Method: **SW-846 3520C**  
Prep Date/Time: **03/14/2012 11:13**  
Prep Initial Wt./Vol.: **854 mL**  
Prep Extract Vol: **5 mL**



**Results of CFB-1**

Client Sample ID: **CFB-1**  
Client Project ID: **Fayetteville**  
Lab Sample ID: 31200635002-J  
Lab Project ID: 31200635

Collection Date: 03/09/2012 13:21  
Received Date: 03/12/2012 08:00  
Matrix: Water

**Results by SW-846 6010C**

<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Date Analyzed</u>
Chromium	ND		0.0100	mg/L	1	03/13/2012 13:35

**Batch Information**

Analytical Batch: **MIP1459**  
Analytical Method: **SW-846 6010C**  
Instrument: **ICP1**  
Analyst: **NTM**  
Analytical Date/Time: **03/13/2012 13:35**

Prep Batch: **MX1862**  
Prep Method: **SW-846 3010A**  
Prep Date/Time: **03/13/2012 08:34**  
Prep Initial Wt./Vol.: **50 mL**  
Prep Extract Vol: **50 mL**



### Results of CFB-1

Client Sample ID: **CFB-1**  
Client Project ID: **Fayetteville**  
Lab Sample ID: 31200635002-H  
Lab Project ID: 31200635

Collection Date: 03/09/2012 13:21  
Received Date: 03/12/2012 08:00  
Matrix: Water

### Results by MADEP EPH

<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Date Analyzed</u>
C11-C22 Aromatics	ND		0.0956	mg/L	1	03/21/2012 13:30
C19-C36 Aliphatics	ND		0.0450	mg/L	1	03/21/2012 13:02
C9-C18 Aliphatics	ND		0.0337	mg/L	1	03/21/2012 13:02

### Surrogates

2-Bromonaphthalene	68.1		40.0-140	%	1	03/21/2012 13:30
2-Fluorobiphenyl	63.0		40.0-140	%	1	03/21/2012 13:30
n-Tricosane	96.0		40.0-140	%	1	03/21/2012 13:02
o-Terphenyl	60.0		40.0-140	%	1	03/21/2012 13:30

### Batch Information

Analytical Batch: **XGC2011**  
Analytical Method: **MADEP EPH**  
Instrument: **GC6**  
Analyst: **DTF**  
Analytical Date/Time: **03/21/2012 13:30**

Prep Batch: **XXX2349**  
Prep Method: **SW-846 3520C**  
Prep Date/Time: **03/15/2012 16:09**  
Prep Initial Wt./Vol.: **889 mL**  
Prep Extract Vol: **5 mL**



SGS North America Inc.

Sample Receipt Checklist (SRC)

Client: NCDOT-AMEC Work Order No.: 31200635

- |     |                                                                          |                        |            |
|-----|--------------------------------------------------------------------------|------------------------|------------|
| 1.  | <input type="checkbox"/> Shipped                                         | Notes:                 | _____      |
|     | <input checked="" type="checkbox"/> Hand Delivered                       |                        | _____      |
| 2.  | <input checked="" type="checkbox"/> COC Present on Receipt               |                        | _____      |
|     | <input type="checkbox"/> No COC                                          |                        | _____      |
|     | <input type="checkbox"/> Additional Transmittal Forms                    |                        | _____      |
| 3.  | <input type="checkbox"/> Custody Tape on Container                       |                        | _____      |
|     | <input checked="" type="checkbox"/> No Custody Tape                      |                        | _____      |
| 4.  | <input checked="" type="checkbox"/> Samples Intact                       |                        | _____      |
|     | <input type="checkbox"/> Samples Broken / Leaking                        |                        | _____      |
| 5.  | <input checked="" type="checkbox"/> Chilled on Receipt                   | Actual Temp.(s) in °C: | <u>2.1</u> |
|     | <input type="checkbox"/> Ambient on Receipt                              |                        | _____      |
|     | <input checked="" type="checkbox"/> Walk-in on Ice; Coming down to temp. |                        | _____      |
|     | <input type="checkbox"/> Received Outside of Temperature Specifications  |                        | _____      |
| 6.  | <input checked="" type="checkbox"/> Sufficient Sample Submitted          |                        | _____      |
|     | <input type="checkbox"/> Insufficient Sample Submitted                   |                        | _____      |
| 7.  | <input type="checkbox"/> Chlorine absent                                 |                        | _____      |
|     | <input checked="" type="checkbox"/> HNO3 < 2                             |                        | _____      |
|     | <input checked="" type="checkbox"/> HCL < 2                              |                        | _____      |
|     | <input type="checkbox"/> Additional Preservatives verified (see notes)   |                        | _____      |
| 8.  | <input checked="" type="checkbox"/> Received Within Holding Time         |                        | _____      |
|     | <input type="checkbox"/> Not Received Within Holding Time                |                        | _____      |
| 9.  | <input checked="" type="checkbox"/> No Discrepancies Noted               |                        | _____      |
|     | <input type="checkbox"/> Discrepancies Noted                             |                        | _____      |
|     | <input type="checkbox"/> NCDENR notified of Descrepancies*               |                        | _____      |
| 10. | <input checked="" type="checkbox"/> No Headspace present in VOC vials    |                        | _____      |
|     | <input type="checkbox"/> Headspace present in VOC vials >6mm             |                        | _____      |

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Inspected and Logged in by: JJ  
Date: Mon-3/12/12 00:00

Divider  
Page

## Site Cleanup Questionnaire

Remediating parties interested in volunteering should prepare this form with the assistance of an environmental consultant. All cooperative parties are eligible for Branch-approved remedial actions. Answer all questions, based on current information, and provide written descriptions where needed.

NCDENR Site Name, City and County North Carolina Veterans Park

1. Is the site located on or immediately adjacent to residential property, schools, day-care centers or other sensitive populations?  Y  N  
If yes, please explain on a separate page.
2. What is the distance (from site property line) to the nearest residence, school or day-care center? Please attach a map showing the site and nearest residence, school or daycare center. ~960 feet
3. Is the site completely surrounded by a locked fence?  Y  N  
If no, please explain security measures at the site on a separate page.
4. Are site surface soils known to be contaminated?  Y  N  
If yes, or unknown, describe briefly on a separate page.
5. Is site groundwater known to be contaminated?  Y  N  
If yes, or unknown, describe briefly on a separate page.
6. Is site sediment or surface water known to be contaminated?  Y  N  
If yes, or unknown, describe briefly on a separate page.
7. Has groundwater contamination affected any drinking water wells?  Y  N  
If yes, or unknown, please explain on a separate page.
8. What is the distance to the nearest downgradient drinking water well? Wells not permitted in city per code
9. What is the distance to the nearest downstream surface water intake? 25 miles SE
10. Are hazardous vapors, air emissions or contaminated dust migrating into occupied residential, commercial or industrial areas?  Y  N  
If yes, or unknown, please explain on a separate page.
11. Have hazardous substances known to have migrated off property at concentrations in excess of Branch unrestricted-use remediation goals?  Y  N  
If yes, or unknown, please explain on a separate page.
12. Has the local community expressed concerns about contamination at the site?  Y  N  
If yes, or unknown, please explain on a separate page.
13. Based on current information, are there any sensitive environments located on the property (sensitive environments are identified in the Remedial Investigation Work Plans section of the IHSB " Guidelines for Assessment and Cleanup" at <http://portal.ncdenr.org/web/wm/sf/sfavailabledocs>)?  Y  N  
If yes, or unknown, please explain on a separate page.

14. Based on current information, has contamination from the site migrated into any sensitive environments?  Y  N

If yes, or unknown, please explain on a separate page.

15. Do site contaminants include radioactive or mixed radioactive and chemical wastes?  Y  N

If yes, or unknown, please explain on a separate page.

### Remediating Party Certification Statement

After first being duly sworn or affirmed, I, Richard Craig Hampton, hereby state that: I am over the age of eighteen, I am competent to make this certification based upon my own personal knowledge and belief, and, to the best of my knowledge and belief, after thorough investigation, the information contained herein is accurate and complete. I am aware that there are significant penalties for willfully submitting false, inaccurate or incomplete information.

Richard Craig Hampton

(Signature of Remediating Party Representative)

July 25, 2012

(Date)

Richard Craig Hampton, Special Projects Director

(Printed Name and Title of Remediating Party Representative)

City of Fayetteville

(Printed Name of Company)

STATE OF North Carolina

COUNTY OF Cumberland

I, Brandy R. Bishop, a Notary Public of said County and State, do hereby certify that Richard Craig Hampton personally appeared before me this day, produced proper identification in the form of NC DL # 246018, was duly sworn and/or affirmed, and declared that he or she is the owner of the property referenced above or is a duly authorized agent of said owner and that, to the best of his or her knowledge and belief, after thorough investigation, the information contained in the above certification is accurate and complete, and he or she then signed this Certification in my presence.

WITNESS my hand and official seal the 25<sup>th</sup> day of July, 2012.

Brandy R. Bishop  
Notary Public (signature)



My commission expires: 4-12-14

Environmental Consultant Certification Statement

After first being duly sworn or affirmed, I, David L. Duncklee, hereby state that: I am over the age of eighteen, I am competent to make this certification based upon my own personal knowledge and belief, and, to the best of my knowledge and belief, after thorough investigation, the information contained herein is accurate and complete. I am aware that there are significant penalties for willfully submitting false, inaccurate or incomplete information.

David L. Duncklee  
(Signature)

7/27/12  
(Date)

David L. Duncklee  
(Printed Name)

Duncklee & Dunham, P.C.  
(Printed Name of Environmental Consultant)

STATE OF North Carolina

COUNTY OF Wake

I, Matthew Ganzert, a Notary Public of said County and State, do hereby certify that David L. Duncklee personally appeared before me this day, produced proper identification in the form of NCDL # 5410294, was duly sworn and/or affirmed, and declared that he or she is an environmental consultant for the property referenced above and that, to the best of his or her knowledge and belief, after thorough investigation, the information contained in the above certification is accurate and complete, and he or she then signed this Certification in my presence.

WITNESS my hand and official seal the 27<sup>th</sup> day of July, 2012.

Matthew Ganzert  
Notary Public (signature)



My commission expires: 6/24/15