

July 14, 2006

Michael J. Hinton, P.E. Division of Environmental Remediation New York State Department of Environmental Conservation 270 Michigan Avenue Buffalo, NY 14203-2999

Subject: Quarterly Groundwater Gauging Report Booth Oil Site North Tonawanda, New York NYSDEC Site No. 9-32-100

Mr. Hinton:

On behalf of the Booth Oil Site Administrative Group (BOSAG), AMEC Earth and Environmental, Inc. (AMEC) presents this *Quarterly Groundwater Gauging Report* for the above referenced site (Figure 1). The groundwater gauging event was performed on June 27, 2006. Work was performed according to the approved site Operations and Maintenance Plan. The following sections of this report discuss the observations and activities completed during the gauging event.

#### **GROUNDWATER GAUGING**

Shallow overburden monitoring wells MW-101 through MW-104 were gauged for depth-to-water and light non-aqueous phase liquid (LNAPL) during the June 27, 2006 site visit. A summary of the gauging results is presented in **Table 1**.

The depth-to-water results of the gauging event were utilized to develop a groundwater contour map (**Figure 2**). As illustrated on **Figure 2**, groundwater during the June 2006 monitoring event was projected to flow towards the south.

No LNAPL was observed in any of the wells.

#### SURFACE SITE CONDITIONS

An inspection of the surface conditions at the Site was conducted during the June 27, 2006 gauging event.

Prior to the site inspection, AMEC had coordinated the installation of new sediment control devices such as erosion control mats and seeding in the drainage ditches. In addition, new silt fencing that was placed around the catch basin at the southern end of the ditch. This work was

completed on May 2, 2006 and conducted to repair those E&S controls around the catch basin that had fallen into disrepair and improve the quality of the ditch line.

No significant signs of erosion were noted and the grass was well maintained. A photographic log of the Site conditions has been included as **Attachment 1**.

#### SURFACE WATER SAMPLING

Surface water runoff was collected and sampled on April 4, 2006. The sample was collected following a rain event and analyzed for poly-aromatic hydrocarbons (PAHs), poly-chlorinated biphenyls (PCBs) and total suspended solids (TSS). There were no detections for PAHs, PCBs, or TSS. Samples were analyzed by Severn Trent Laboratories of Amherst, NY. The analytical report has been included as **Attachment 2**.

#### **SUMMARY**

The groundwater elevation data indicates groundwater flow is to the south. This is consistent with previous groundwater flow directions which generally range from southwest to northwest. No LNAPL was present in any of the wells gauged.

During the gauging event, no new erosional features were noted. In general, the Site appeared well maintained. New erosion mats and silt fencing were installed at the site to prevent significant erosion from occurring within the ditch line and around the catch basin.

Surface Water samples collected at the Site had no detections for PAHs, PCBs or TSS.

Should you have any questions or comments concerning this report, please contact me or Tim Ahrens at (518) 372-0905. I can also be contacted by email at <u>Jeffrey.LaRock@amec.com</u> and Tim Ahrens can be contacted by email at <u>Tim.Ahrens@amec.com</u>.

Sincerely, **AMEC Earth and Environmental Inc.** 

Jeffrey W. LaRock Project Geologist

Morie) Dood

Marie T. Dowd, P.E. Environmental Engineer

P:\CSX Remediation\Booth Oil\O&M\Quarterly Reports\June 2006 Quarterly\7 11 2006 Groundwater Monitoring Report.doc

cc: BOSAG Steering Committee BOSAG Technical Committee Paul J. Kurzanski, CSXT Gary Litwin, NYSDOH Matthew J. Forcucci, NYSDOH TABLES

## GROUNDWATER GAUGING RESULTS TABLE 1

	Units	MW-101	MW-102	MW-103	MW-104
Top of Casing Elevation	ft-msl	579.2	579.66	579.84	580.6
Ground Surface Elevation	ft-msl	576.5	576.6	576.9	577.7
Stickup	feet	2.72	3.02	2.9	2.9
Depth to Top of Screen	ft-bgs	2.5	3	4.1	3.7
Top of Screen Elevation	ft-msl	574	573.6	572.8	574
Depth to Top of Clay	ft-bgs	4.9	6	6.5	5.9
Top of Clay Elevation	ft-msl	571.6	570.6	570.4	571.8
Depth to Bottom of Screen	ft-bgs	7.5	8	9.1	8.7
Bottom of Screen Elevation	ft-msl	569	568.6	567.8	569
18-Oct-04					
Depth to Groundwater	ft-toc	Dry	Dry	Dry	Dry
Groundwater Elevation	ft-msl	Dry	Dry	Dry	Dry
Depth to Groundwater	ft-bgs	Dry	Dry	Dry	Dry
Was LNAPL Present?		No	No	No	No
Was Groundwater Table within					
Screened Interval?					
Saturated Thickness above Clay	feet	0	0	0	0
13-Dec-04					
Depth to Groundwater	ft-toc	5.34	10.1	8.48	5.48
Groundwater Elevation	ft-msl	573.86	569.56	571.36	575.12
Depth to Groundwater	ft-bgs	2.62	7.08	5.58	2.58
Was LNAPL Present?		No	No	No	No
Was Groundwater Table within					
Screened Interval?		Yes	Yes	Yes	No, High
Saturated Thickness above Clay	feet	2.28	-1.08	0.92	3.32
30-Mar-05					
Depth to Groundwater	ft-toc	4.51	8.39	Dry	Dry
Groundwater Elevation	ft-msl	574.69	571.27	Dry	Dry
Depth to Groundwater	ft-bgs	1.79	5.37	Dry	Dry
Was LNAPL Present?		No	No	No	No
Was Groundwater Table within					
Screened Interval?		No, High	Yes		
Saturated Thickness above Clay	feet	3.09	0.67	0	0
22-Jun-05					
Depth to Groundwater	ft-toc	6.77	6.75	8.5	8.59
Groundwater Elevation	ft-msl	572.43	572.91	571.34	572.01
Depth to Groundwater	ft-bgs	4.07	3.69	5.56	5.69
Was LNAPL Present?		No	No	No	No
Was Groundwater Table within					
Screened Interval?		Yes	Yes	Yes	Yes
Saturated Thickness above Clay	feet	0.83	2.31	0.94	0.21
14-Sep-05					
Depth to Groundwater	ft-toc	6.69	10.37	8.76	9.63
Groundwater Elevation	ft-msl	572.51	569.29	571.08	570.97
Depth to Groundwater	ft-bgs	3.99	7.31	5.82	6.73
Was LNAPL Present?		No	No	No	No
Was Groundwater Table within					
Screened Interval?		Yes	Yes	Yes	Yes
Saturated Thickness above Clay	feet	0.91	-1.31	0.68	-0.83

## GROUNDWATER GAUGING RESULTS TABLE 1

01-Dec-05					
Depth to Groundwater	ft-toc	4.55	10.6	8.55	6.35
Groundwater Elevation	ft-msl	574.65	569.06	571.29	574.25
Depth to Groundwater	ft-bgs	1.85	7.54	5.61	3.45
Was LNAPL Present?		No	No	No	No
Was Groundwater Table within					
Screened Interval?		No, High	Yes	Yes	No, High
Saturated Thickness above Clay	feet	3.05	-1.54	0.89	2.45
23-Mar-06					
Depth to Groundwater	ft-toc	5.36	6.84	8.49	5.42
Groundwater Elevation	ft-msl	573.84	572.82	571.35	575.18
Depth to Groundwater	ft-bgs	2.66	3.78	5.55	2.52
Was LNAPL Present?		No	No	No	No
Was Groundwater Table within					
Screened Interval?		Yes	Yes	Yes	No, High
Saturated Thickness above Clay	feet	2.24	2.22	0.95	3.38
27-Jun-06					
Depth to Groundwater	ft-toc	6.92	7.54	8.59	9.12
Groundwater Elevation	ft-msl	572.28	572.12	571.25	571.48
Depth to Groundwater	ft-bgs	4.22	4.48	5.65	6.22
Was LNAPL Present?		No	No	No	No
Was Groundwater Table within					
Screened Interval?		Yes	Yes	Yes	Yes
Saturated Thickness above Clay	feet	0.68	1.52	0.85	-0.32

**FIGURES** 









# QUARTERLY GROUNDWATER GAUGING REPORT N.Y.S.D.E.C. SPILL NO. 0375504

ter	Elevati	on Histo	orical D	ata
nits	MW-101	MW-102	MW-103	MW-104
-msl	Dry	Dry	Dry	Dry
-msl	573.86	569.56	571.36	575.12
-msl	574.69	571.27	Dry	Dry
-msl	572.43	572.91	571.34	572.01
-msl	572.51	569.29	571.08	570,97
-msl	574.65	569.06	571.29	574.25
-msl	573.84	572.82	571.35	575.18
-msl	572.28	572.12	571.25	571.48

<ul> <li>Limit of Topsoli Placement</li> <li>Catch Basin</li> <li>Catch Basin</li></ul>
ater contour lines are inferred from four (4) ir elevations points documented during the 2006 quarterly groundwater monitoring event. Ins shown refer to NAVD 88 vertical datum.

**ATTACHMENTS** 



#### Photo #1

**Booth Oil Site, Facing** Southwest towards **Robinson Street.** 



#### Photo # 2

**Booth Oil Site, Facing** West

**BOOTH OIL** SITE RECONNAISSANCE BUFFALO, NY CSX TRANSPORTATION

155 Erie Blvd. Edison Plaza Schenectady, New York 12305 W.O. 64300-8553 PROCESSED JWL DATE June 2006 PAGE 1

PHOTOGRAPH LOG

P:\CSX Remediation\Booth Oil\O&M\Pictures\Q2-June 2006\Booth Oil Q-2 2006 Photo Log



#### Photo # 3

Booth Oil Site, Facing North



#### Photo # 4

View of Site facing East.

amec®

155 Erie Blvd. Edison Plaza Schenectady, New York 12305

W.O.	64300-8553
PROCESSED	JWL
DATE	June 2006
PAGE	2

BOOTH OIL SITE RECONNAISSANCE BUFFALO, NY CSX TRANSPORTATION PHOTOGRAPH LOG

P:\CSX Remediation\Booth Oil\O&M\Pictures\Q2-June 2006\Booth Oil Q-2 2006 Photo Log



Photo # 5 View of the drainage ditch. New erosion matting visible on left side of the picture.



Photo # 6

View of the Site, Facing Southeast.

amec®

155 Erie Blvd. Edison Plaza Schenectady, New York 12305

W.O.	64300-8553
PROCESSED	JWL
DATE	June 2006
PAGE	3

BOOTH OIL SITE RECONNAISSANCE BUFFALO, NY CSX TRANSPORTATION PHOTOGRAPH LOG

P:\CSX Remediation\Booth Oil\O&M\Pictures\Q2-June 2006\Booth Oil Q-2 2006 Photo Log



STL Buffalo 10 Hazelwood Drive, Suite 106 Amherst, NY 14228

Tel: 716 691 2600 Fax: 716 691 7991 www.stl-inc.com

ANALYTICAL REPORT

Job#: A06-3493

DECEIVE APR 19 2003 BY:

STL Project#: NY3A9047 Site Name: <u>AMEC-CSXT</u> Task: 9734605/ENV000005096/Booth Oil Site, N.Tonawanda

> Tim Ahrens AMEC 155 Erie Blvd. Schenectady, NY 12305

STL Buffalo

Candace L. Fox

Project Manager

04/13/2006

Leaders in Environmental Testing

**-** '

Severn Trent Laboratories, Inc.

· · · · ·

- .

## STL Buffalo Current Certifications

As of 3/15/2006

STATE	Program	Cert # / Lab ID
	AFCEE	
Arkansas	SDWA, CWA, RCRA, SOIL	03-054-D/88-0686
California	NELAP CWA, RCRA	01169CA
Connecticut	SDWA, CWA, RCRA, SOIL	PH-0568
Elorida	NELAP CWA, RCRA	E87672
Georgia	SDWA	956
Ulinois	NELAP SDWA, CWA, RCRA	200003
lowa	SW/CS	374
Kancas	NELAP SDWA, CWA, RCRA	E-10187
Kontucky	SDWA	90029
Kentucky	UST	30
Leuisiana	NELAP CWA, RCRA	2031
Louisiana	SDWA, CWA	NY044
Manuland	SDWA	294
Massachusetts	SDWA, CWA	M-NY044
Michigan	SDWA	9937
Minnocota	SDWA.CWA, RCRA	036-999-337
New Hempshire	NELAP SDWA, CWA	233701
New Hampshire	SDWA, CWA, RCRA, CLP	NY455
New Jersey	NELAP AIR SDWA CWA RCRAASP	10026
New York	CWA RCRA	9421
Okianoma	Env Lab Reg.	68-281
Pennsylvania	RCRA	91013
South Carolina	SDWA	02970
Tennessee		
USACE	EOREIGN SOIL PERMIT	S-41579
USDA	Department of Energy	DOECAP-STB
USDOE	SDW/A	278
Virginia	CWA BCBA	252
West Virginia		998310390
Wisconsin	UWA	

•

۰,

### SAMPLE SUMMARY

-

			SAMPI	ED	RECEIVE	Ð
LAB SAMPLE ID	CLIENT SAMPLE ID	<u>MATRIX</u>	DATE	<u>TIME</u>	DATE	<u>TIME</u>
A6349301	BOOTH 0.1 CB-1	SW	04/04/2006	08:30	04/04/2006	12:20

#### METHODS SUMMARY

#### Job#: <u>A06-3493</u>

STL Project#: <u>NY3A9047</u> Site Name: <u>AMEC-CSXT</u>

DADAMETTER	ANALYTICAL METHOD
METHOD 625 - PAH's	CFR136 625
METHOD 608 - POLYCHLORINATED BIPHENYLS	CFR136 608
Total Suspended Solids	MCAWW 160.2

- CFR136 Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act, and Appendix A-C; 40 CFR Part 136, USEPA Office of Water.
- MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA/600/4-79-020 (Mar 1983) with updates and supplements EPA/600/4-91-010 (Jun 1991), EPA/600/R-92-129 (Aug 1992) and EPA/600/R-93-100 (Aug 1993)

#### NON-CONFORMANCE SUMMARY

#### Job#: A06-3493

#### STL Project#: <u>NY3A9047</u> Site Name: <u>AMEC-CSXT</u>

#### <u>General Comments</u>

The enclosed data may or may not have been reported utilizing data qualifiers (Q) as defined on the Data Comment Page.

Soil, sediment and sludge sample results are reported on "dry weight" basis unless otherwise noted in this data package.

According to 40CFR Part 136.3, pH, Chlorine Residual, Dissolved Oxygen, Sulfite, and Temperature analyses are to be performed immediately after aqueous sample collection. When these parameters are not indicated as field (e.g. pH-Field), they were not analyzed immediately, but as soon as possible after laboratory receipt.

Sample dilutions were performed as indicated on the attached Dilution Log. The rationale for dilution is specified by the 3-digit code and definition.

#### Sample Receipt Comments

#### A06-3493

Sample Cooler(s) were received at the following temperature(s); 2.0 °C All samples were received in good condition.

#### GC/MS Semivolatile Data

No deviations from protocol were encountered during the analytical procedures.

#### GC Extractable Data

For method 608, the Matrix Spike Blank Duplicate recovery for Aroclor 1260 is above quality control limits. However, since target analytes were non-detect in the samples and the high recoveries would yield a high bias, no further corrective action was necessary.

#### Wet Chemistry Data

No deviations from protocol were encountered during the analytical procedures.

The results presented in this report relate only to the analytical testing and condition of the sample at receipt. This report pertains to only those samples actually tested. All pages of this report are integral parts of the analytical data. Therefore, this report should be reproduced only in its entirety.



#### DATA QUALIFIER PAGE

These definitions are provided in the event the data in this report requires the use of one or more of the qualifiers. Not all qualifiers defined below are necessarily used in the accompanying data package.

#### ORGANIC DATA QUALIFIERS

ND or U Indicates compound was analyzed for, but not detected.

- J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed, or when the data indicates the presence of a compound that meets the identification criteria but the result is less than the sample quantitation limit but greater than zero.
- C This flag applies to pesticide results where the identification has been confirmed by GC/MS.
- B This flag is used when the analyte is found in the associated blank, as well as in the sample.
- E This flag identifies compounds whose concentrations exceed the calibration range of the instrument for that specific analysis.
- D This flag identifies all compounds identified in an analysis at the secondary dilution factor.
- N Indicates presumptive evidence of a compound. This flag is used only for tentatively identified compounds, where the identification is based on the Mass Spectral library search. It is applied to all TIC results.
- P This flag is used for CLP methodology only. For Pesticide/Aroclor target analytes, when a difference for detected concentrations between the two GC columns is greater than 25%, the lower of the two values is reported on the data page and flagged with a "P".
- A This flag indicates that a TIC is a suspected aldol-condensation product.
- Indicates coelution.
- Indicates analysis is not within the quality control limits.

#### INORGANIC DATA QUALIFIERS

- ND or U Indicates element was analyzed for, but not detected. Report with the detection limit value.
- J or B Indicates a value greater than or equal to the instrument detection limit, but less than the quantitation limit.
- N Indicates spike sample recovery is not within the quality control limits.
- S Indicates value determined by the Method of Standard Addition.
- E Indicates a value estimated or not reported due to the presence of interferences.
- H Indicates analytical holding time exceedance. The value obtained should be considered an estimate.
- Indicates the spike or duplicate analysis is not within the quality control limits.
- + Indicates the correlation coefficient for the Method of Standard Addition is less than 0.995.

STL Buffalo Data Qualifier Page Revision 1, 9/21/2005

6/28

ate: 04/13/2006 ime: 12:01:07			9734605/EN	AMEC-CS. IV000005096/Booth METHOD 625 -	XT n Oil Site, N.Tona - PAH'S	wanda			Kept: Awara
		BOOTH 0 1 CB-							
lient ID Lob No Lab ID Lample Date		A06-3493 04/04/2006	A6349301						
Analyte	Units	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit
- ananh thene	UG/L	ND	9.4	NA		AN A		AN AN	
cenaphthy lene	UG/L	QN	9.4	NA		4 V V		NA	
othracene 	UG/L	D DN	6	NA		NA		AN	
enzo(b)fluoranthene	ng/L	QN	9.4 0 /	AN		A N		NA	
enzo(k)fluoranthene	UG/L	QN QN	4.6	NA		NA		NA	
enzo(a)pyrene	UG/L	ND	9.4	NA		A N A N		NA	
hrysene	1/90 116/1	Q Q	4.4 9.4	A A		NA		NA	
thoranthene	UG/L	Ŋ	9.4	NA		NA		AN	
luorene	N6/L	ON C	9.4 0 4	AN		A N		NA	
ndeno(1,2,3-cd)pyrene		QN QN	9.4	NA		NA		NA	
and the light in the light of t		ND	6.4	NA		AN A		NA	
henanthrene	06/L	Q	9.4 0	NA		NA		NA	
yrene	UG/ L		-		_				
IS SURVOGALE (S)	~~	66	50-200	NA	•	NA		AN NO	
aphthalene-D8	. 26	98	50-200	NA		A N		NA	
erylene-D12	*	101	50-200	AN AN		AN AN		NA	
1,4-Dichlorobenzene-D4	~ ;	101	002-05	A N		NA		NA	
Acenaphthene-D10	× >	96 88	50-200	NA		NA		NA	
Chrysene-UIZ Wittochenzene-D5		22	47-120	NA		NA		AN AN	
2- Fluorohinhenvl	*	82	45-120	NA		AN .		NA N	
p-Terphenyl-d14	*	26	36-141	NN		AN AN		NA	
Phenol-D5	*	22	10-120	A N N		AN		NA	
2-Fluorophenol	* ;	39	55-124	A N		NA		NA	
2,4,6-Tribromophenol	۰-								

Rept: AN0326

ND = Not Detected NA = Not Applicable

7/28

STL Buffalo

.

Tuesday, July 11, 2006 (5).max

04/13/2006	12:01:10	
Date:	Time:	

9734605/ENV000005096/Booth oil site, N.Tonawanda METHOD 608 - POLYCHLORINATED BIPHENYLS AMEC-CSXT

Rept: AN0326

ſ~	T	T	T
		Reporting Limit	
		sample Value	4 4 4 4 4 4 4 7 7 7 7 7 7 7 7 7 7 7 7 7
		Reporting Limit	
		Sample Value	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 7 7 7 7 7
		Reporting Limit	
		Sample Value	A N N N N N N N N N N N N N N N N N N N
	A6349301	Reporting Limit	240.0 740.0 740.0 740.0 740.0 740.0 740.0 740.0
	B00TH 0.1 CB-1 A06-3493 04/04/2006	Sample Value	9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9
		Units	//90 1/90 1/90 1/90 1/90
	Client ID Job No Lab ID Sample Date	Analyte	Aroclor 1016 Aroclor 1221 Aroclor 1232 Aroclor 1248 Aroclor 1248 Aroclor 1254 Aroclor 1254

-

A N A N

A N A N

N N N A

22-119 30-135

82 78

\* \*

Tetrachloro-m-xylene Decachlorobiphenyl

		Reporting Limit	
		Sample Value	NA
		Reporting Limit	
vanda		sample Value	NA
Jil Site, N.Tonaw NALYSIS		Reporting Limit	
000005096/Booth WET CHEMISTRY A		Sample Value	NA
9734605/ENV	A6349301	Reporting Limit	4.0
	BOOTH 0.1 CB-1 A06-3493 04/04/2006	sample Value	QN
		Units	MG/L
ite: 04/13/2006 me: 12:01:14	jent ID Lab ID	ample Date Analyte	tal Suspended Solids

9/28

٠,

STL Buffalo

Chronology and QC Summary Package 10/28

Titert 10         S=0.4MK         S=0.14MK	ate: 04/15/2000 ime: 12:01:23			9734605/EN	V000005096/Booth METHOD 625 -	oil Site, N.Tona PAH'S	wanda			
apple Date         sample date         constring         sample rate         Reporting         sample rate         Repor	lient ID ob No Lab ID		S-BLANK A06-3493	A6B1650903						
state         US/L         ND         10         NA         NA <t< th=""><th>ample Date Analyte</th><th>Units</th><th>Sample Value</th><th>Reporting Limit</th><th>Sample Value</th><th>Reporting Limit</th><th>Sample Value</th><th>Reporting Limit</th><th>sample Value</th><th>Reporting Limit</th></t<>	ample Date Analyte	Units	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	sample Value	Reporting Limit
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	tenaphthene	ne/r	Q Q	10	AN AN		NA		A N N A	
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	senaphthylene othracene	U6/L	2 Q	2 0 3	NA		NA		A N A N	
mission         mission <t< td=""><td>anzo(a)anthracene</td><td>UG/L</td><td>QN CN</td><td>10</td><td>A N A N</td><td></td><td>NA</td><td></td><td>NA</td><td></td></t<>	anzo(a)anthracene	UG/L	QN CN	10	A N A N		NA		NA	
matrix         under         under <t< td=""><td><pre>&gt;nzo(b)fluoranthene &gt;nzo(k)fluoranthene</pre></td><td>ue/L</td><td>QN</td><td>10</td><td>NA</td><td></td><td>A N</td><td></td><td>N N N N</td><td></td></t<>	<pre>&gt;nzo(b)fluoranthene &gt;nzo(k)fluoranthene</pre>	ue/L	QN	10	NA		A N		N N N N	
Typene         Unit         ND         TO         ND         ND         ND         ND           Typene         Up/L         ND         TO         ND         ND         ND         ND         ND           Typene         Up/L         ND         TO         ND         ND         ND         ND         ND           Theracityene         Up/L         ND         TO         ND         ND         ND         ND         ND           Uprene         Up/L         ND         TO         ND	snzo(ghi)perylene	06/L	QN M	10	NA NA		AN		NA	
Instraction         Ug/L         ND         10         NM	enzo(a)pyrene	UG/L	QN	10	NA		NA		NA	
Lucrantere         UG/L         ND         TO         TO         TO         ND	ibenzo(a,h)anthracene	uG/L	QN N	6 6	NA NA		A N		AN AN	<del></del>
Matrix         Matrix<	luoranthene		QN QN	2 2	NA		NA		NA	
-methylinaphthalene         UG/L         ND         TO         NM         NM </td <td>ndeno(1,2,3-cd)pyrene</td> <td>UG/L</td> <td>DN</td> <td>10</td> <td>NA</td> <td></td> <td>A N A A</td> <td></td> <td>K N</td> <td></td>	ndeno(1,2,3-cd)pyrene	UG/L	DN	10	NA		A N A A		K N	
aphthalene heanthrene UG/L ND 10 NA NA NA NA NA heanthrene UG/L ND 10 NA NA NA NA NA heanthrene-10 X 101 55-200 NA NA NA NA heanthrene-10 X 116 55-200 NA NA heanthrene-10 X 116 55-200 NA NA heanthrene-10 X 100 55-200 NA NA heanthrene-10 X 10 10 55-200 NA NA heanthrene-10 NA NA NA NA heanthrene-10 NA NA NA heanthrene-10 NA NA NA NA heanthrene-10 NA NA NA NA heanthrene-10 NA NA NA NA NA NA heanthrene-10 NA	-Methylnaphthalene	UG/L	Q Q	0	AN		NA		NA	
menantretie         UG/L         ND         TO         NA         NA         NA           Yrene         UG/L         ND         TO         NA         NA         NA         NA           Yrene         UG/L         ND         TO         NA         NA         NA         NA           thenarthrene-D10         X         TO         TO         50-200         NA         NA         NA           thenarthrene-D12         X         T16         50-200         NA         NA         NA           tepthtalene-D12         X         T10         50-200         NA         NA         NA           tepthtalene-D12         X         T10         50-200         NA         NA         NA           tertylene-D12         X         T10         50-200         NA         NA         NA           tertylene-D12         X         T10         50-200         NA         NA         NA           tertylene-D12         X         T10         50-200         NA         NA         NA           tertohothazene-D13         X         T10         50-200         NA         NA         NA           teronobibenyl         X         T110	aphthalene	06/L	N N	2 0	NA		NA		AN	
Imanthrene-D10     X     101     50-200     NA     NA       thenanthrene-D10     X     101     50-200     NA     NA       thenanthrene-D10     X     116     50-200     NA     NA       terylene-D4     X     110     50-200     NA     NA       terylene-D4     X     110     50-200     NA     NA       terylene-D4     X     110     50-200     NA     NA       tersphtheter-D4     X     110     50-200     NA     NA       tersphtheter-D4     X     110     50-200     NA     NA       tersphthene-D10     X     110     50-200     NA     NA       triprobenzene-D4     X     110     50-200     NA     NA       triprobenzene-D4     X     110     50-200     NA     NA       triprobenzene-D12     X     112     50-200     NA     NA       triprobenzene-D12     X     115     36-141     NA     NA       triprobenzene-D5     X     115     36-141     NA       triprobenzene-D5     X     115     36-141     NA       terphenyl-d14     X     27     10-120     NA       terphenyl-d14     X	yrene	06/L	N	10	NA		NA		ΥN Y	
Implementation     NA     NA       Implementation     106     50-200     NA     NA       Implementation     116     50-200     NA     NA       Implementation     110     50-200     NA     NA       Implementation     100     50-200     NA     NA       Implementation     100     50-200     NA     NA       Implementation     102     50-200     NA     NA       Implementation     115     50-200     NA     NA       Implementation     115     56-141     NA     NA       Implementation     115     36-141     NA     NA       Implementation     115     10-12	IS/SURROGATE(S)		101	50-200	NA		NA		NA	
arplinateries     716     50-200     NA     NA       i erplinateries     x     110     50-200     NA       i erplinateries     x     110     50-200     NA       i erplinateries     x     110     50-200     NA       i erplinateries     x     100     50-200     NA       i erplinateries     x     100     50-200     NA       i ricobenzene-D4     x     102     50-200     NA       i ricobenzene-D10     x     73     47-120     NA       i ricobenzene-D5     x     101     55-120     NA       i ricobenzene-D5     x     101     55-124     NA       NA     NA     NA     NA     NA       i ricophenol     x     101     55-124     NA       2, 4, 6-1 ribromophenol     x     NA     NA	henanthrene-D1U	و بح	106	50-200	NA		NA		A N	
1,4-0ichlorebenzene-D4     x     110     50-200     NA     NA       1,4-0ichlorebenzene-D4     x     100     50-200     NA     NA       100     x     102     50-200     NA     NA       101     50-200     NA     NA     NA       102     50-200     NA     NA       102     50-200     NA     NA       102     50-200     NA     NA       102     50-200     NA     NA       112     X     73     45-120       115     36-141     NA     NA       0-120     NA     NA       0     101     55-124       0     NA     NA       0	lapititatene vo varviana-012	*	116	50-200	NA		N		AN AN	
icenspittene-D10     x     100     50-200     NA     NA       irrysene-D12     x     73     47-120     NA     NA       irrobenzene-D5     x     73     47-120     NA     NA       2-Fulorobiphenyl     x     73     45-120     NA     NA       0-Fruorobiphenyl     x     73     45-120     NA     NA       0-Fruorobiphenyl     x     73     45-120     NA     NA       0-Fruorobiphenyl     x     73     45-120     NA     NA       0-120     NA     NA     NA     NA       2-Fruorobiphenol     x     10-120     NA     NA       2, 4, 6-Tribromophenol     x     101     55-124     NA     NA	1.4-Dichlorobenzene-D4	*	110	50-200	NA				NA	
Typese-D12     X     T02     50-200     MA     NA       vitroberzene-D5     X     73     47-120     NA     NA       vitroberzene-D5     X     73     47-120     NA     NA       2-Fluorobiphenyl     X     78     45-120     NA     NA       2-Fluorobiphenyl     X     76     47-120     NA     NA       2-Fluorobiphenyl     X     76     115     36-141     NA       2-Fluorobiphenyl     X     70-120     NA     NA       29     10-120     NA     NA     NA       2-Fluorophenol     X     19-120     NA     NA       2,4,6-Tribromophenol     X     55-124     NA     NA	icenaphthene-D10	ж	100	50-200	A N		d N		NA	
vitrobenzene-D5 X 78 45-120 NA NA NA 2-Fluorobiphenyl X 78 45-120 NA NA D-Terphenyl 115 36-141 NA NA NA D-Terphenyl-d14 X 29 10-120 NA NA NA Phenol-D5 X 41 19-120 NA NA NA 2-Fluorophenol X 79,4,6-Tribromophenol X 7,4,6-Tribromophenol X 7,4,6-Tribromoph	hrysene-D12	<u>22</u>	102	007-05	A N		NA		NA	
Z-F F Lor of Dipensive     Z     36-141     NA     NA       J = T = F Lor of Dipensive     X     115     36-141     NA     NA       J = T = C = C = C = C = C = C = C = C = C	Jitrobenzene-D5	* *	C 22	45-120	NA		NA		NA	
D-Terpineiry und Na	2-F (uorobiphenyi 7-2-2-6-2-2-1-2-14		115	36-141	NA		NA	<u></u>	AN A	
Z = Fluorophenol         X         41         19-120         NA         NA           2,4,6-Tribromophenol         X         101         55-124         NA         NA	3-lerpnenyt-ut+ shoool-05	. *	29	10-120	NA		NA			
2,4,6-Tribromophenol % 101 55-124 NA MA	2-Fluorophenol	*	41	19-120	NA		A N N		AN NA	
	2,4,6-Tribromophenol	*	101	55-124	NA		AN			

Tuesday, July 11, 2006 (5).max

STL Buffalo

٠,

,

Rept: AN0326

AMEC-CSXT

ND = Not Detected VA = Not Applicable

# 11/28

-

Date: 04/13/2006 Time: 12:01:23			9734605/EN	AMEC-CSX V000005096/Booth METHOD 625 -	T Oil Site, N.Tonav PAH'S	wanda			Rept: ANUS20
client ID Job No Lab ID		Matrix Spike B A06-3493	lank A6B1650901	Matrix Spike B A06-3493	1Lk Dup A6B1650902				
sample vale Analyte	Units	Sample Value	Reporting Limit	Sample Value	Reporting Limit	sample Value	Reporting Limit	Sample Value	Reporting Limit
Acenaphthene	1/90 1/90	46 45	10	40 39	10	NA Na		NA NA	
Acenaphthylene	UG/L	512	10	97	ē ;	A N		A N A N	
Benzo(a) anthracene	ng/L	52	<u>5</u> 5	87	2.0	N N N		NA	
Benzo(b)fluoranthene	UG/L	- 02	20	77	2 <del>0</del>	NA		A N	
Benzokkytkuutantuuene Benzo(ghi)perylene	1/90	63	10	58	ō ć	A N A N		A N	
Benzo(a)pyrene	1/90	50	0.0	47	<u>5</u> 6	NA		NA	
Chrysene Stratche Nanthracene	06/L	09	201	54	0	NA		NA	
Dipensiona, II) and it is a series	NG/L	84	10	27	<u></u>	A N A N		AN AN	
Fluorene	106/L	DC 73	0	56	9 0	NA		NA	
Indeno(1,2,3-cd)pyrene  mothylnarhthalene	06/L	07	9.0	35	10	NA		NA	
Nach tha lene	Ju6∕L	38	10	33	00	A N A N		A N	
Phenanthrene	uG/L	49 59	10	55	20	AN		NA	
Pyrene IS/SURROGATE(S)						N N		NA	
Phenanthrene-D10	×	108	50-200	701	002-02			NA	
Naph tha lene-D8	2	108	20-200	113	50-200	NA		NA	
Perylene-D12	* 3	105	50-200	105	50-200	NA	_	AN	
1,4-Dichlorobenzene-U4	٤ ،	107	50-200	104	50-200	NA		NA	
Acenaphthene-UIU	٤ ٢	86	50-200	103	50-200	NA		NA	
Chrysene-UIZ	8 24	12	47-120	61	47-120	NA		A N	
NITrobentene-us	. 24	80	45-120	66	45-120	NA			
Z-F LUOF OU IPHENT	. 24	118	36-141	109	36-141	NA			
	*	30	10-120	26	10-120	NA		C M	
	*	41	19-120	36	12-120			AN AN	
2,4,6-Tribromophenol	74	103	55-124	76	+31-CC	C E			

NA = Not Applicable ND = Not Detected

STL Buffalo

- 12/28

ate: 04/13/2006 ime: 12:01:26			9734605/Er METHC	AMEC-CSX VV000005096/Booth 00 608 - POLYCHLOI	T 0il Site, N.Tonav RINATED BIPHENYLS	vanda			Rept: ANU520
lient ID ob No Lab ID ample Date		Method Blank A06-3493	A6B1651004						
Analyte	Units	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Lîmit	Sample Value	Reporting Limit
octor 1016 octor 1221 octor 1223 octor 1242 octor 1248 octor 1248	06/L UG/L UG/L UG/L UG/L UG/L UG/L	<u>5 5 5 5 5 5 5 5</u>	0.050 0.050 0.050 0.050 0.050 0.050	A A A A A A A A		A A A A A A A A A A A A A A A A A A A		8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	
etrachloro-m-xylene etrachloro-m-xylene ecachlorobiphenyl	* *	102 84	22-119 30-135	AA		NA NA		A A A A	

-

.

# Rept: AN0326

Date: 04/13/2006 Time: 12:01:26

9734605/ENV00005096 METHOD 608 - PO

AMEC-CSXT	5096/Booth Oil Site, N.Tonawanda	<ul> <li>POLYCHLORINATED BIPHENYLS</li> </ul>	

Rept: AN0326

Lab ID nalyte Units uG/L UG/L UG/L UG/L UG/L	Matrix Spike A06-3493 Sample Value ND ND ND ND ND ND ND ND ND ND ND ND ND	Blank A6B1651001 A6B1651001 Limit 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050	Matrix Spike E A06-3493 Sample Value ND ND ND ND ND ND O 0.66	Blk Dup A6B1651003 A6B1651003 Limit 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050	Sample Sample Value NA NA NA NA NA NA NA	Reporting Limit	Sample Value NA NA NA NA NA NA NA NA	Reporting Limit	
xylene %	98 75	22-119 30-135	103 92	22-119 30-135	A N A N		SN AN		<u> </u>

STL Buffalo

•

		·······	•
		Reporting Limit	
		Sample Value	NA
		Reporting Limit	
anda		Sample Value	AN
il Site, N.Tonaw ALYSIS		Reporting Limit	
000005096/Booth ( WET CHEMISTRY AN		Sample Value	NA
9734605/ENVC	A6B1655302	Reporting Limit	4.0
	Method Blank A06-3493	sample Value	QN
		Units	MG/L
ite: 04/13/2006 me: 12:01:31	ient ID b No Lab ID mole Date	ampre care Analyte	tal Suspended Solids

۰.

15/28

Tuesday, July 11, 2006 (5).max

900	<i>~</i> -
04/13/2	12:01:3
Date:	Time:

# AMEC-CSXT 9734605/ENV000005096/Booth Oil Site, N.Tonawanda WET CHEMISTRY ANALYSIS

AN0326	
Rept:	

client ID Job No Lab ID Sample Date		LCS A06-3493	A6B1655301						
	1 1 1 1 1 1 1 1 1	Sample	Reporting	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit
Analyte	61110								
Total Suspended Solids	MG/L	539	4.0	AN		NA		NA	

•

Rept: AN0364

ite : 04/13/2006 12:01:38

AMEC

ient Sample ID: S-BLANK Lab Sample ID: A6B1650903	Matrix Spike A6B1650901	Blank Matrix A6B165	Spike Blk Dup 0902								
		Concen	tration			%	Recovery	_			
	Units of	snike Blank	snike Blank Dun	spike sn	Amount SBD	SB	SBD	AVG	х КРD	ac LI RPD	MITS REC.
Analyte	Licasul e		מהוצר הנתוצ במה	3				-++			
THAD 625 - PAH'S											
Acenaphthene	1/90	46.0	40.2	50.0	50.0	92	80	86	14	25.0	47-12
A contact that and	uG/L	44.8	39.2	50.0	50.0	90	78	84	14	22.0	35-12
Accuaption concentration of the second se		50.9	46.4	50.0	50.0	102	93	98	6	15.0	49-13
Donao(a) anthracene		51.9	47.7	50.0	50.0	104	95	100	6	15.0	50-12
Denizo(d)flinranthene		50.9	48.3	50.0	50.0	102	56	100	ŝ	17.0	59-13
Delizo(b)flucranthene		49.8	47.3	50.0	50.0	100	95	98	5	19.0	50-1
Denzo(nhi)nervlene		63.2	58.3	50.0	50.0	126	117	122	2	19.0	44-1
	ng/L	50.5	46.8	50.0	50.0	101	94	98	2	15.0	57-1
Chrysene Chrysene		51.3	47.3	50.0	50.0	103	95	66	80	15.0	55-1,
bibeoro(a b)anthracene	NG/L	59.6	53.6	50.0	50.0	119	107	113	1	18.0	45-1
Fluoranthene	UG/L	48.4	47.4	50.0	50.0	97	95	96	2	15.0	46-1
. Fluctone	UG/L	49.5	43.9	50.0	50.0	66	88	94	12	18.0	59-1
L rudeno(1 2 3-cd)nvrene	UG/L	61.1	56.2	50.0	50.0	122	112	117	80	17.0	50-1
D Interior (the second se	ng/L	37.8	32.8	50.0	50.0	76	66	12	14	31.0	33-1
Dhonon thread	116/1	49.4	44.7	50.0	50.0	66	89	94	11	16.0	56-1
	ng/L	59.3	54.8	50.0	50.0	119	110	115	80	15.0	52-1
2-Methylnaphthalene		40.1	35.0	50.0	50.0	80	20	75	13	30.0	40-1
			<u></u>								

47-120 35-129 50-143 50-143 59-143 44-153 55-146 55-146 55-146 55-146 55-146 55-147 46-137 55-147 55-120 55-120 55-120 55-120 55-120

17/28

۰,

STL Buffalo

Rept: AN0364

\*

Date : 04/13/2006 12:01:41

AMEC

		AC LIMIIS RPD REC.	30.0 40-130 30.0 40-130
		RP0	27
	رح اح	Avg	110
	Recove	SBD	131 *
	~ ~	SB	100
		Amount SBD	0.500
		Spike SB	0.500
Spike Blk Dup 003	ration	Spike Blank Dup	0.656 0.650
Blank Matrix A6B1651	Concent	Spike Blank	0. 498 0. 537
atrix Spike 681651001		Units of Measure	uG/L UG/L
Client Sample ID: Method Blank M: Lab Sample ID: A6B1651004 A		Analyte	METHOD 608 - POLYCHLORINATED BIPHENYLS Aroclor 1260 Aroclor 1016

STL Buffalo

\* Indicates Result is outside QC Limits NC = Not Calculated ND = Not Detected

:e : 04/13/2006 12:01:48

AMEC

Rept: AN0364

	ration	Amount		570.0
	Concenti	Snike		539.0
S B1655301		Measure	2 0000	MG/L
ant Sample ID: Method Blank LC .ab Sample ID: A6B1655302 A6			lnalyte	T CHEMISTRY ANALYSIS 4ETHOD 160.2 - TOTAL SUSPENDED SOLIDS

88-110

94

% Recovery QC Blank Spike LIMITS ٠

STL Buffalo

-				
Rept: A Page:				
AMEC SAMPLE CHRONOLOGY				
			B-1 6349301	2006 08:30 2006 12:20 2006 07:00 2006 03:49 2006 03:49
			BOOTH 0.1 CE A06-3493 A6	04/04/2 04/04/2 04/05/2 04/07/3 YES YES SW 1.06 1.06
ate: 04/13/2006	Ime: 12:0:10	1ETHOD 625 - PAH'S	Client Sample ID Job No & Lab Sample ID	ample Date ecceived Date atraction Date nalysis Date xtraction HT Met? nalytical HT Met? ample Marrix ilution Factor ample wt/vol Dry

•

STL Buffalo

04/13/2006	12:01:55
e	¢
بد	8

•

· ,

5				-	2
• ) ) ] ]					
AC ON					
		s 56 00			
	A6B1650903	5/2006 07: 7/2006 03: EER 0 LITER			
	S-BLANK A06-3493	04/00 04/01  1.1.0			
5	PAH'S it Sample ID b Sample ID	le Met? Met?			
rime: 12:01:5	AETHOD 625 - Clien Job No & La	ample Date eceived Date varraction Dat nalysis Date Xtraction HT nalytical HT ample Matrix ilution Facto ample wt/vol	Dry		

STL Buffalo

23/28

STL Buffalo

.

2			-			24/2
Page:						
QC SAMPLE CHRONOLOGY		up 03	07:00 01:28 01:58 :TERS			
		Matrix Spike Blk D A06-3493 A6B16510	04/05/2006 04/07/2006 - - 1.0 1.0 LI			
	ED BIPHENYLS	Matrix Spike Blank A06-3493 A6B1651001	04/05/2006 07:00 04/07/2006 01:09 - - MATER 1.0 1.0 LITERS			
Time: 12:01:58	METHOD 608 - POLYCHLORINAT	Client Sample ID Job No & Lab Sample ID	<pre>sample Date Received Date Received Date Extraction Date Analysis Date Analysis Date Analytical HT Met? Sample Matrix Dilution Factor Sample wt/vol % Dry</pre>			

**BIPHENYLS** DUT ON 00

EIHOD OUG - FULLUTION		
Client Sample ID Job No & Lab Sample ID	Method Blank A06-3493 A6B1651004	
<pre>mple Date sceived Date itraction Date alysis Date itraction HT Met? palytical HT Met? ample Matrix ilution Factor ample wt/vol Dry</pre>	04/05/2006 07:00 04/07/2006 01:46 - MATER 1.0 1.0 LITERS	

•

STL Buffalo,

-	latr ix	
	AHT M	Yes S
	Analysis Date	
	THT	NA 0
	TCLP Date	NA
	Receive Date	04/04 12:20
	Sample Date	4/04/2006 08:30
	Dilution Factor	1.00 0
SAMPLE CHRONOLOGY	Method	[160.2
	Analyte	Total currended colide
	Units	Mc/I
13/2006 12:02:02 -3493	Sample ID	DOTH 0 1 CB-1
ate: 04/ obno: A06	Lab ID	6349301

# AHT = Analysis Holding Time Met THT = TCLP Holding Time Met NA = Not Applicable

STL Buffalo

ate: 04/13/2006 12:02:02 obno: A06-3493			AMEC QC CHRONOLOGY						Rept	t: ANO3(
										-
Lab ID Sample ID	Units	Analyte	Method	Dilution Factor	Sample Date	Receive Date	TCLP Date	THT And	alysis ate Al	HT Matr
B1655302 Method Blank B1655301 LCS	M6/L M6/L	Total Suspended Solids Total Suspended Solids	160.2 160.2	1.00	11	- 12:20 - 12:20	NA NA	NA 04/0 NA 04/0	13:45 Ye	es water es water
HT = Analysis Holding Time HT = TcLP Holding Time Met A = Not Apolicable	Met								ST S	rL Buffa

-

				CHAIN	OF (	.Snc	rod	<b>`</b>			Page:	14		
CT PROJECT INFORMA	NOIL						0	ONSULTANT	INFORMAT	NO				
(I Project Name: 97	ATTER RIG	# 0:1	CHY: R. P. VI	4 Tana	when	Ŕ	ŭ	Ansultant Con	žied ()					
T Project Number	4605		State: NU			f	31	Me Institute	heart					
I Contact Dul	KUrzansk		TWON:				¥	1551	EPIE	BIND	Sche	hucter	424	12
ice Address:							-	itephone:	372-0	ووير	112.1	-372	701-	N
UPLE INFORMATION								lethods for /	ualysis, Pro	servatives	, and Contal	ners		
Sample (D	Client Sample (D	Date Sampled	Time	Depth	(_S21) ##& ¥	(हरुग) दुर	$C = B^{\frac{1}{2}} \wedge C C I$						0814.814	8311108#
orth A.108-1	(2 Sarder)	4-4-06	830	ζ.	ک ر									
	11 52-4	4-4-06	830	<u>,</u> אָ	-	$\mathbf{k}$								
	< 1/ same	4-4-06	800	-7 -7		$\times$								
														_
										_				
									+					_
											-			
							Fort				Commen			
	Hun	2	70-7-	8 34	0 80 5	OC match s	mples:	5		VHV	1.000	10 0	112	
			Data Time	2	Bicken	Container		ه ۲	7	ĒĒ	the second	4000		
			104 July			ed within nox		8 		2	112			
the part of the second		50 7 25	90-20-	12:20	Gree C	voblems:		5 8 - >-						
squitehed By:			Deete Time		Client o	contected: wheeted:		b ~ ≻						
Wed By (LAB):	*		Oate Time		Coole	Temperature	at receipt:		o					
a Copy-CSX/Client, Yallow C	20py- Lab, Pink Copy-Field Crew													
										о -	)			
									1					

28/28

ア

~

1

Tuesday, July 11, 2006 (5).max

. .

-

• • •