N62269.AR.000482
NAWC WARMINSTER
5090.3a

AMERICAN ENVIRONMENTAL NETWORK, INC.
9151 Rumsey Road Suite 150, Columbia, MD 21045-1992
(410) 730-8525 Fax (410) 997-2586

February 13, 1998

Carl Dannenberger
Foster Wheeler Environmental Corporation
One Oxford Valley
2300 Lincoln Highway East
Suite 200
Langhorne, PA 19047

Dear Mr. Dannenberger:

Enclosed please find results of analyses performed on a sample received 1/19/98.

The sample was analyzed in accordance with EPA-approved methods.

Please feel free to call me at (410) 730-8525 if you have any questions about this report.

Sincerely,

John C. Ermatinger
Project Manager

9801049
Enclosures
jce

CONTRACTOR DRAWINGS & INFORMATION SUBMITTAL
NORTHNAVFACENGCOM 4335/3 (Rev. 6/80)

Prepare in quintuplicate (original and 4 copies)
CONTROL NO. 48

CONTRACT NO.	DELIVERY ORDER #	ACTIVITY LOCATION
N62472-94-D-0398	0018	Warminster, PA

PROJECT TITLE:
Various Remedial Action at NAWC

FROM:	DATE
Foster Wheeler Environmental Corp. - Program QCM: Akram Aziz	February 17, 1998
TO:	DATE
S. Lehman (3 copies)	February 17, 1998

1. THE CONTRACTOR SUBMITTALS LISTED BELOW ARE FORWARDED FOR YOUR REVIEW AND RECOMMENDATIONS.
   (a) APPLY APPROPRIATE STAMP IMPRINT TO EACH SUBMITTAL AND INDICATE REVIEW COMMENTS, AS REQUIRED.
   (b) RETAIN ONE (1) COPY OF THIS TRANSMITTAL FORM AND RETURN REMAINING COPIES WITH REVIEWED SUBMITTALS TO ROICC.
2. THESE SUBMITTALS SHOULD BE RETURNED TO THIS OFFICE BY _____
3. _____

COPY TO: **M. HUNTER (2)**

[X] ROICC [ ] RPM [ ] CSO

E. Beatty (2 copies)

2/17/98
SIGNATURE AND DATE

FROM. DESIGNER	DATE
TO: ROICC	DATE

1. THE SUBMITTALS LISTED BELOW HAVE BEEN REVIEWED AND ARE RETURNED, WITH ACTION TAKEN AS INDICATED.
2. _____

COPY TO:

[ ] ROICC [ ] DESIGNER

SIGNATURE AND DATE

FROM: ROICC	DATE
TO: CONTRACTOR	DATE

1. THE SUBMITTALS LISTED BELOW HAVE BEEN REVIEWED AND ARE APPROVED/DISAPPROVED AS SHOWN BELOW AND ON EACH STAMP IMPRINT.

COPY TO:
[ ] ROICC [ ] OTHER

FOR COMMANDING OFFICER, NORTHERN DIVISION NAVAL FACILITIES ENGINEERING COMMAND — DATE

ITEM NO.	SUBMITTAL DESCRIPTION	PREPARED/ SUBMITTED BY	APPROVED	DISAPPROVED	REMARKS
48	SD-10, Test Reports	A. Aziz			
	WWTP Lab Analysis for January				
	1998				

MISC\96-184.DOC

AMERICAN ENVIRONMENTAL NETWORK, INC.

9151 Rumsey Road, Columbia, MD 21045 Phone (410) 730-8525 Fax (410) 997-2586

CHAIN OF CUSTODY RECORD

GREY SHADED AREAS FOR AEN LAB USE

AEN # S801043 Quote # _____ Scope Q / M

Client Name: Foster Wheeler

Project Name: NAWC Warminster

Site Location: City, State Warminster, PA

# of Contain r												
Container Type												
Preservative Used	—	—	H_2SO_4	HCL	-	HNO_3	NaOH					
Type of Analysis	TSS	pH, TSS	TOC	TCL - VOA	Chromium x 6	Metals	CN					

LAB #	SAMPLE - ID	DATE	TIME	MATRIX	TSS	pH, TSS	TOC	TCL - VOA	Chromium x 6	Metals	CN				REMARKS
1	D0-0018-06-001	1/19/98	1105	H_2O		1									
2	D0-0018-06-002	1/19/98	1045	H_2O		1	1	3	1	1	1				
3	D0-0018-06-003	1/19/98	1041	H_2O	1										
4	D0-0018-06-004	1/19/98	1037	H_2O		1			1	1	1				
5	D0-0018-06-005	1/19/98	1031	H_2O				3							
6	D0-0018-06-006	1/19/98	1027	H_2O			1	3							
7	D0-0018-06-007	1/19/98	1019	H_2O		1	1	3	1	1	1				
8	D0-0018-06 Field Blank	1/19/98	1015	H_2O				3							

Relinquished by: (Signature) ①	Date / Time	Received by: (Signature)	Received by Laboratory: (Signature)	Date / Time	Shipped via: Shipping Ticket No.
Charles W. Rogers	1/19/98		Ray Polanski	1/19/98 16:15	
Relinquished by: (Signature) ②	Date / Time	Received by: (Signature)	Remarks:		
Relinquished by: (Signature) ③	Date / Time	Received by: (Signature)	Sampling By:	Sampler's Signature	
	1/19/98	Rosine	Charles W. Rogers	Charles W. Rogers	

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

American Environmental Network, Inc.

Case Number: L9801049
Client Name: Foster Wheeler Environmental Corp.
Project Name: FWE-WARMINSTER
Method: 8260(A)

Client ID	AEN ID	Matrix	Date Sampled	Date Received	Date Analyzed
DO-0018-06-002	L9801049-002	Water	01/19/98	01/19/98	01/29/98
DO-0018-06-005	L9801049-005	Water	01/19/98	01/19/98	01/29/98
DO-0018-06-006	L9801049-006	Water	01/19/98	01/19/98	01/29/98
DO-0018-06-007	L9801049-007	Water	01/19/98	01/19/98	01/29/98
DO-0018-06-FIELD BLK	L9801049-008	Water	01/19/98	01/19/98	01/29/98

Five Ground Water samples were analyzed for the volatile organic compounds in the TCL list by method 8260(A). This package consists of the tabulated results of the sample(s), method blank(s), and the QC forms II, III, IV, V, VI, VII, and VIII.

Form I (Tabulated Results):
All sample analyses were performed within the holding time requirement.

Form II (Surrogate Recovery):
All surrogate recoveries were within specified limits, except for toluene-d8.

Form III (Matrix Spike/Matrix Spike Duplicate (MS/MSD):
The MS/MSD analysis was performed on DO-0018-06-002. All recoveries and %RPDs were within specified limits.

Form IV (Method Blank Summary):
Each method blank was free of target analytes, except for methylene chloride

Form V (Tuning and Mass Calibration):
All analyses were performed within the specified mass calibration and tune time criteria.

Form VI (Initial Calibration):
Each initial calibration was within the specified minimum mean RRF and maximum %RSD.

Form VII (Continuing Calibration):
Each continuing calibration standard was within the specified minimum RRF and maximum %DIFF.

Form VIII (Internal Standard Summary):
All internal standard areas and retention times were within specified criteria, except for samples DO-0018-06-007 and DO-0018-06-FIELD BLK.

Analyst: _____ Date 2/13/98

Released by: _____ Date 2/13/98

2A

WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: AENI Contract: FOS60

Project No.: 9801049 Site: _____ Location: _____ Group: _____

	SAMPLE NO.	SMC1 #	SMC2 #	SMC3 #	OTHER #	TOT OUT
01	VBLK01	101	98	103		
02	D0-0018-06-002	100	81 *	92		1
03	D0-0018-06-005	104	93	98		
04	D0-0018-06-006	92	83 *	91		1
05	D0-0018-06-007	105	82 *	104		1
06	D0-0018-06-FIEL	95	77 *	89		1
07	D0-0018-06-002	110	85 *	96		1
08	D0-0018-06-002	100	95	95		
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		QC LIMITS
SMC1	= Dibromofluoromethane	(79-122)
SMC2	= Toluene-d8	(86-112)
SMC3	= Bromofluorobenzene	(76-118)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

3A

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: AENI Contract: FOS60

Project No.: 9801049 Site: _____ Location: _____ Group: _____

Matrix Spike - Sample No.: D0-0018-06-002

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
1,1-Dichloroethene	50	0	47	94	(61-145)
Benzene	50	0	47	94	(76-127)
Trichloroethene	50	0	42	84	(71-120)
Toluene	50	0	47	94	(76-125)
Chlorobenzene	50	0	42	84	(75-130)

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MS % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1-Dichloroethene	50	46	92	2	14	(61-145)
Benzene	50	50	100	6	11	(76-127)
Trichloroethene	50	46	92	9	14	(71-120)
Toluene	50	50	100	6	13	(76-125)
Chlorobenzene	50	45	90	7	13	(75-130)

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits
Spike Recovery: 0 out of 10 outside limits

Comments: _____

4A

VOLATILE METHOD BLANK SUMMARY

SAMPLE NO.

VBLK01

Lab Name: AENI Contract: FOS60

Project No.: 9801049 Site: Location: Group:

Lab File ID: FA203.D Lab Sample ID: 980129FW

Date Analyzed: 1/29/98 Time Analyzed: 1659

GC Column: CAP ID: 0.53 (mm) Heated Purge: (Y/N) N

Instrument ID: F7200

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	D0-0018-06-002	#002	FA204.D	1/29/98
02	D0-0018-06-005	#005	FA205.D	1/29/98
03	D0-0018-06-006	#006	FA206.D	1/29/98
04	D0-0018-06-007	#007	FA207.D	1/29/98
05	D0-0018-06-FIELD BLK	#008	FA208.D	1/29/98
06	D0-0018-06-002MS	#002 MS	FA211.D	1/29/98
07	D0-0018-06-002MSD	#002 MSD	FA212.D	1/29/98
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COMMENTS:

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: AENI Contract: 8260WFD1

Project No.: _____ Site: _____ Location: _____ Group: _____

Lab File ID: FD200.D BFB Injection Date: 4/25/97

Instrument ID: F7200 BFB Injection Time: 1411

GC Column: CAP ID: 0.53 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	%RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	16.0
75	30.0 - 60.0% of mass 95	50.0
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.0
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 100.0% of mass 95	73.0
175	5.0 - 9.0% of mass 174	6.0 (8.2)1
176	95.0 - 101.0% of mass 174	73.0 (100.0)1
177	5.0 - 9.0% of mass 176	5.0 (6.8)2

1-Value is % mass 174 2-Value is % mass 176

This check applies to the following SAMPLES, MS, MSD, BLANKS and STANDARDS:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD020	STD#2734	FD210.D	4/25/97	1934
02	VSTD050	STD#2735	FD211.D	4/25/97	2011
03	VSTD100	STD#2736	FD212.D	4/25/97	2050
04	VSTD150	STD#2737	FD213.D	4/25/97	2124
05	VSTD200	STD#2738	FD214.D	4/25/97	2200
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5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name : AENI Contract: FOS60

Project No.: 9801049 Site: _____ Location: _____ Group: _____

Lab File ID: FA201.D BFB Injection Date: 1/29/98

Instrument ID: F7200 BFB Injection Time: 1416

GC Column: CAP ID: 0.53 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	%RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	18.8
75	30.0 - 60.0% of mass 95	42.0
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.4
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 100.0% of mass 95	64.3
175	5.0 - 9.0% of mass 174	4.8 (7.4)1
176	95.0 - 101.0% of mass 174	62.1 (96.6)1
177	5.0 - 9.0% of mass 176	4.5 (7.3)2

1-Value is % mass 174 2-Value is % mass 176

This check applies to the following SAMPLES, MS, MSD, BLANKS and STANDARDS:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD050	STD#3219	FA202.D	1/29/98	1625
02	VBLK01	980129FW	FA203.D	1/29/98	1659
03	DO-0018-06-002	#002	FA204.D	1/29/98	1733
04	DO-0018-06-005	#005	FA205.D	1/29/98	1807
05	DO-0018-06-006	#006	FA206.D	1/29/98	1841
06	DO-0018-06-007	#007	FA207.D	1/29/98	1915
07	DO-0018-06-FIEL	#008	FA208.D	1/29/98	1949
08	DO-0018-06-002	#002 MS	FA211.D	1/29/98	2131
09	DO-0018-06-002	#002 MSD	FA212.D	1/29/98	2206
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6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: AENI Contract: 8260WFD1

Project No.: Site: Location: Group:

Instrument ID: F7200 Calibration Date(s): 4/25/97 4/25/97

Heated Purge: (Y/N) N Calibration Times: 1934 2200

GC Column: CAP ID: 0.53 (mm)

Lab File ID: RRF20 - FD210.D RRF50 - FD211.D
RRF100 - FD212.D RRF150 - FD213.D RRF200 - FD214.D

COMPOUND		RRF20	RRF50	RRF100	RRF150	RRF200	$\overline{RRF}$	% RSD	
Dichlorodifluoromethane		0.154	0.148	0.133	0.126	0.138	0.140	8.1	
Chloromethane	#	0.142	0.144	0.125	0.102	0.130	0.128	13.0	#
Vinyl Chloride	*	0.141	0.138	0.128	0.113	0.132	0.130	8.4	*
Bromomethane		0.137	0.129	0.123	0.128	0.129	0.129	4.1	
Chloroethane		0.062	0.057	0.059	0.058	0.059	0.059	3.1	
Trichlorofluoromethane		0.406	0.407	0.387	0.374	0.417	0.398	4.4	
1,1-Dichloroethene	*	0.183	0.178	0.160	0.156	0.180	0.171	7.3	*
Methylene Chloride		0.235	0.219	0.210	0.197	0.221	0.216	6.6	
trans-1,2-Dichloroethene		0.195	0.195	0.186	0.175	0.196	0.189	4.8	
1,1-Dichloroethane	#	0.414	0.348	0.344	0.341	0.350	0.360	8.6	#
2,2-Dichloropropane		0.332	0.355	0.335	0.313	0.349	0.337	4.9	
cis-1,2-Dichloroethene		0.251	0.236	0.230	0.230	0.236	0.237	3.6	
Chloroform	*	0.542	0.517	0.514	0.522	0.512	0.521	2.4	*
Bromochloromethane		0.289	0.278	0.267	0.265	0.266	0.273	3.7	
1,1,1-Trichloroethane		0.495	0.499	0.472	0.448	0.491	0.481	4.3	
1,1-Dichloropropene		0.449	0.425	0.415	0.406	0.427	0.424	3.9	
Carbon Tetrachloride		0.471	0.445	0.448	0.454	0.458	0.455	2.3	
1,2-Dichloroethane		0.361	0.349	0.349	0.359	0.334	0.350	3.1	
Benzene		0.792	0.777	0.748	0.758	0.755	0.766	2.4	
Trichloroethene		0.455	0.437	0.430	0.430	0.428	0.436	2.5	
1,2-Dichloropropane	*	0.418	0.404	0.391	0.391	0.378	0.396	3.8	*
Bromodichloromethane		0.704	0.681	0.678	0.679	0.638	0.676	3.5	
Dibromomethane		0.445	0.420	0.412	0.427	0.392	0.419	4.7	
trans-1,3-Dichloropropene		2.818	2.777	2.807	2.823	2.613	2.768	3.2	
Toluene	*	3.316	3.230	3.220	3.137	3.146	3.210	2.3	*
cis-1,3-Dichloropropene		0.589	0.554	0.561	0.565	0.527	0.559	4.0	
1,1,2-Trichloroethane		2.375	2.222	2.225	2.209	2.001	2.207	6.0	
1,2-Dibromoethane		3.909	3.763	3.698	3.674	3.325	3.674	5.9	
1,3-Dichloropropane		3.308	3.230	3.212	3.220	2.918	3.178	4.7	
Tetrachloroethene		3.401	3.081	3.155	2.843	3.143	3.125	6.4	
Dibromochloromethane		4.331	4.146	4.207	4.156	3.835	4.135	4.4	
Chlorobenzene	#	4.826	4.670	4.611	4.512	4.402	4.604	3.5	#
Ethylbenzene	*	2.097	2.066	2.026	1.923	1.974	2.017	3.5	*
1,1,1,2-Tetrachloroethane		2.547	2.415	2.406	2.321	2.355	2.409	3.6	
m + p-Xylene		2.351	2.303	2.300	2.232	2.290	2.295	1.9	
o-Xylene		2.447	2.381	2.407	2.248	2.318	2.360	3.3	

Min RRF for SPCC(#) = 0.1
Max %RSD for CCC (*) = 30%

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: AENI Contract: 8260WFD1

Project No.: Site: Location: Group:

Instrument ID: F7200 Calibration Date(s): 4/25/97 4/25/97

Heated Purge: (Y/N) N Calibration Times: 4/25/97 4/25/97

GC Column: CAP ID: 0.53 (mm)

Lab File ID: RRF20 - FD210.D RRF50 - FD211.D
RRF100 - FD212.D RRF150 - FD213.D RRF200 - FD214.D

COMPOUND	RRF20	RRF50	RRF100	RRF150	RRF200	$\overline{RRF}$	% RSD	
Styrene	4.400	4.258	4.344	4.158	4.255	4.283	2.2	
Bromoform #	3.953	3.920	3.889	3.745	3.465	3.794	5.3	#
Isopropylbenzene	6.770	6.512	6.526	6.138	6.436	6.476	3.5	
1,1,2,2-Tetrachloroethane #	3.865	3.806	3.682	3.530	3.207	3.618	7.3	#
1,2,3-Trichloropropane	0.361	0.351	0.311	0.310	0.262	0.319	12.4	
n-Propylbenzene	3.146	3.019	2.868	2.899	2.794	2.945	4.7	
Bromobenzene	1.068	1.035	0.970	0.995	0.909	0.996	6.2	
1,3,5-Trimethylbenzene	1.907	1.836	1.717	1.728	1.681	1.774	5.3	
4-Chlorotoluene	2.212	2.084	2.000	2.046	1.953	2.059	4.8	
2-Chlorotoluene	2.198	2.132	2.009	2.057	1.951	2.069	4.7	
tert-Butylbenzene	2.528	2.395	2.192	2.290	2.104	2.302	7.2	
1,2,4-Trimethylbenzene	2.002	1.897	1.795	1.808	1.765	1.853	5.2	
sec-Butylbenzene	2.759	2.613	2.457	2.461	2.386	2.535	5.9	
p-Isopropyltoluene	2.182	2.102	2.004	2.026	1.974	2.057	4.1	
1,3-Dichlorobenzene	1.661	1.546	1.505	1.531	1.471	1.543	4.6	
1,4-Dichlorobenzene	1.696	1.609	1.553	1.565	1.494	1.583	4.7	
n-Butylbenzene	2.166	2.051	2.015	2.037	1.998	2.053	3.2	
1,2-Dichlorobenzene	1.542	1.459	1.405	1.423	1.351	1.436	4.9	
1,2-Dibromo-3-Chloropropane	0.466	0.460	0.401	0.378	0.332	0.407	13.9	
1,2,4-Trichlorobenzene	1.259	1.136	1.131	1.132	1.094	1.150	5.5	
Hexachlorobutadiene	0.867	0.789	0.750	0.804	0.713	0.784	7.4	
Naphthalene	2.174	2.038	2.035	1.851	1.870	1.994	6.7	
1,2,3-Trichlorobenzene	1.184	1.086	1.006	0.963	0.993	1.046	8.5	
Acetone	0.061	0.063	0.053	0.050	0.048	0.055	12.1	
2-Butanone	0.159	0.155	0.135	0.132	0.136	0.143	8.8	
4-Methyl-2-Pentanone	0.563	0.544	0.525	0.508	0.467	0.521	7.0	
2-Hexanone	1.385	1.452	1.345	1.289	1.153	1.325	8.5	
tert-Butly Alcohol	0.032	0.031	0.028	0.025	0.026	0.028	10.7	
Methyl tert-Butly Ether	0.510	0.488	0.476	0.463	0.482	0.484	3.6	
Dibromofluoromethane	0.556	0.500	0.502	0.504	0.511	0.515	4.6	
Toluene-d8	1.021	0.942	0.935	0.917	0.943	0.952	4.2	
Bromofluorobenzene	3.142	2.798	2.913	2.794	2.948	2.919	4.9	

Min RRF for SPCC(#) = 0.1
Max %RSD for CCC (*) = 30%

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: AENI Contract: FOS60

Project No.: 9801049 Site: _____ Location: _____ Group: _____

Instrument ID: F7200 Calibration Date: 1/29/98 Time: 1625

Lab File ID: FA202.D Init. Calib. Date(s): 4/25/97 4/25/97

Heated Purge: (Y/N) N Init. Calib. Times: 1934 2200

GC Column: CAP ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF10	MIN RRF	%D	MAX %D
Chloromethane	0.128	0.121	0.100	5.5	20.0
Vinyl Chloride	0.130	0.140		-7.7	20.0
Bromomethane	0.129	0.127		1.6	20.0
Chloroethane	0.059	0.063		-6.8	20.0
Acetone	0.055	0.054		1.8	30.0
1,1-Dichloroethene	0.171	0.165		3.5	20.0
Carbon Disulfide	0.313	0.316		-1.0	20.0
Methylene Chloride	0.216	0.217		-0.5	30.0
trans-1,2-Dichloroethene	0.189	0.175		7.4	20.0
1,1-Dichloroethane	0.359	0.358	0.100	0.3	20.0
cis-1,2-Dichloroethene	0.237	0.223		5.9	20.0
Chloroform	0.521	0.516		1.0	20.0
1,1,1-Trichloroethane	0.481	0.481		0.0	20.0
2-Butanone	0.143	0.142		0.7	30.0
Carbon Tetrachloride	0.455	0.452		0.7	20.0
1,2-Dichloroethane	0.350	0.336		4.0	20.0
Benzene	0.766	0.734		4.2	20.0
Trichloroethene	0.436	0.396		9.2	20.0
1,2-Dichloropropane	0.396	0.413		-4.3	20.0
Bromodichloromethane	0.676	0.729		-7.8	20.0
trans-1,3-Dichloropropene	2.767	2.847		-2.9	20.0
Toluene	3.210	3.305		-3.0	20.0
cis-1,3-Dichloropropene	0.559	0.556		0.5	20.0
1,1,2-Trichloroethane	2.207	2.150		2.6	20.0
4-Methyl-2-pentanone	0.521	0.523		-0.4	30.0
2-Hexanone	1.325	1.385		-4.5	30.0
Tetrachloroethene	3.125	3.179		-1.7	20.0
Dibromochloromethane	4.135	3.962		4.2	20.0
Chlorobenzene	4.604	4.964	0.300	-7.8	20.0
Ethylbenzene	2.017	2.225		-10.3	20.0
m + p-Xylene	2.295	2.454		-6.9	20.0
o-Xylene	2.360	2.466		-4.5	20.0
Styrene	4.283	4.346		-1.5	20.0
Bromoform	3.794	2.537	0.250	33.1	20.0
1,1,2,2-Tetrachloroethane	3.618	3.643	0.300	-0.7	20.0

Min RRF for SPCC(#) = 0.3 (.25 for Bromoform; 0.1 for Chloromethane and 1,1-Dichloroethene)

Max %RSD for CCC (*) = 25%

7A
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: AENI　　Contract: FOS60

Project No.: 9801049　　Site: ______　　Location: ______　　Group: ______

Instrument ID: F7200　　Calibration Date: 1/29/98　　Time: 1625

Lab File ID: FA202.D　　Init. Calib. Date(s): 4/25/97　4/25/97

Heated Purge: (Y/N) N　　Init. Calib. Times: 1934　2200

GC Column: CAP　　ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF10	MIN RRF	%D	MAX %D
Dibromofluoromethane	0.515	0.520		-1.0	20.0
Toluene-d8	0.952	0.892		6.3	20.0
Bromofluorobenzene	2.919	2.925		-0.2	20.0

Min RRF for SPCC(#) = 0.3 (.25 for Bromoform; 0.1 for Chloromethane and 1,1-Dichloroethene)
Max %RSD for CCC (*) = 25%

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: AENI Contract: FOS60

Project No.: 9801049 Site: _____ Location: _____ Group: _____

Lab File ID (Standard): FA202.D Date Analyzed: 1/29/98

Instrument ID: F7200 Time Analyzed: 1625

GC Column: CAP ID: 0.53 (mm) Heated Purge: (Y/N) N

		IS1 AREA #	RT #	IS2 AREA #	RT #	IS3 AREA #	RT #
	12 HOUR STD	831446	6.52	838622	8.09	132454	13.21
	UPPER LIMIT	1662892	7.02	1677244	8.59	264908	13.71
	LOWER LIMIT	415723	6.02	419311	7.59	66227	12.71
	SAMPLE NO.						
01	VBLK01	620743	6.54	601655	8.10	93260	13.21
02	DO-0018-06-002	1142475	6.54	1179949	8.11	202843	13.21
03	DO-0018-06-005	1117140	6.54	1164507	8.11	201771	13.21
04	DO-0018-06-006	1079761	6.54	1077884	8.10	177183	13.21
05	DO-0018-06-007	304057 *	6.54	290529 *	8.11	39366 *	13.21
06	DO-0018-06-FIELD BLK	1653357	6.55	1680339 *	8.11	248814	13.21
07	DO-0018-06-002MS	1275709	6.54	1301345	8.11	201911	13.21
08	DO-0018-06-002MSD	1112173	6.55	1160373	8.11	178314	13.21
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IS1 = Pentafluorobenzene
IS2 = 1,4-Difluorobenzene
IS3 = Chlorobenzene-d5

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk
* Values outside of QC limits.

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: AENI Contract: F0S60

Project No.: 9801049 Site: _____ Location: _____ Group: _____

Lab File ID (Standard): FA202.D Date Analyzed: 1/29/98

Instrument ID: F7200 Time Analyzed: 1625

GC Column: CAP ID: 0.53 (mm) Heated Purge: (Y/N) N

		IS4 AREA #	RT #	AREA #	RT #	AREA #	RT #
	12 HOUR STD	273685	17.52				
	UPPER LIMIT	547370	18.02				
	LOWER LIMIT	136843	17.02				
	SAMPLE NO.						
01	VBLK01	204352	17.52				
02	DO-0018-06-002	514378	17.52				
03	DO-0018-06-005	502944	17.52				
04	DO-0018-06-006	443597	17.52				
05	DO-0018-06-007	92165 *	17.52				
06	DO-0018-06-FIELD BLK	588348 *	17.52				
07	DO-0018-06-002MS	488288	17.52				
08	DO-0018-06-002MSD	417853	17.52				
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IS4 = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk
* Values outside of QC limits.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.
DO-0018-06-002

Lab Name: AENI Contract: FOS60

Project No.: 9801049 Site: Location: Group:

Matrix: (soil/water) WATER Lab Sample ID: #002

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: FA204.D

Level: (low/med) Date Received: 1/19/98

% Moisture: not dec. 100 Date Analyzed: 1/29/98

GC Column: CAP ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Concentration Units: (ug/L or ug/Kg) ug/L

CAS No.	Compound		Q
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	10	U
75-15-0	Carbon Disulfide	10	U
75-09-2	Methylene Chloride	27	B
156-60-5	trans-1,2-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	10	U
78-93-3	2-Butanone	10	U
56-23-5	Carbon Tetrachloride	10	U
107-06-2	1,2-Dichloroethane	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
108-88-3	Toluene	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5.2	J
124-48-1	Dibromochloromethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
108-38-3/106-4	m + p-Xylene	10	U
95-47-6	o-Xylene	10	U
100-42-5	Styrene	10	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.
D0-0018-06-002

Lab Name: AENI Contract: FOS60

Project No.: 9801049 Site: Location: Group:

Matrix: (soil/water) WATER Lab Sample ID: #002

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: FA204.D

Level: (low/med) Date Received: 1/19/98

% Moisture: not dec. 100 Date Analyzed: 1/29/98

GC Column: CAP ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Concentration Units: (ug/L or ug/Kg) ug/L

CAS No.	Compound		Q
75-25-2	Bromoform	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U

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8260/TCL

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SAMPLE NO.

DO-0018-06-002

Lab Name: AENI Contract: FOS60

Project No.: 9801 Site: Location: Group:

Matrix: (soil/water) WATER Lab Sample ID: #002

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: FA204.D

Level: (low/med) Date Received: 1/19/98

% Moisture: not dec. 100 Date Analyzed: 1/29/98

GC Column: CAP ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Concentration Units:

Number TICs found: 2 (ug/L or ug/Kg) ug/L

CAS Number	Compound Name	RT	Est. Conc.	Q
1. 110-54-3	Hexane	4.73	6.1	J
2.	Unknown	24.07	53	J
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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

DO-0018-06-005

Lab Name: AENI Contract: FOS60

Project No.: 9801049 Site: Location: Group:

Matrix: (soil/water) WATER Lab Sample ID: #005

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: FA205.D

Level: (low/med) Date Received: 1/19/98

% Moisture: not dec. 100 Date Analyzed: 1/29/98

GC Column: CAP ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Concentration Units: (ug/L or ug/Kg) ug/L

CAS No.	Compound		Q
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	10	U
75-15-0	Carbon Disulfide	10	U
75-09-2	Methylene Chloride	29	B
156-60-5	trans-1,2-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	10	U
78-93-3	2-Butanone	10	U
56-23-5	Carbon Tetrachloride	10	U
107-06-2	1,2-Dichloroethane	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
108-88-3	Toluene	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
124-48-1	Dibromochloromethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
108-38-3/106-4	m + p-Xylene	10	U
95-47-6	o-Xylene	10	U
100-42-5	Styrene	10	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

DO-0018-06-005

Lab Name: AENI Contract: FOS60

Project No.: 9801049 Site: Location: Group:

Matrix: (soil/water) WATER Lab Sample ID: #005

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: FA205.D

Level: (low/med) Date Received: 1/19/98

% Moisture: not dec. 100 Date Analyzed: 1/29/98

GC Column: CAP ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Concentration Units: (ug/L or ug/Kg) ug/L

CAS No.	Compound		Q
75-25-2	Bromoform	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SAMPLE NO.

DO-0018-06-005

Lab Name: AENI Contract: FOS60

Project No.: 9801 Site: Location: Group:

Matrix: (soil/water) WATER Lab Sample ID: #005

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: FA205.D

Level: (low/med) Date Received: 1/19/98

% Moisture: not dec. 100 Date Analyzed: 1/29/98

GC Column: CAP ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 5 Concentration Units: (ug/L or ug/Kg) ug/L

CAS Number	Compound Name	RT	Est. Conc.	Q
1. 110-54-3	Hexane	4.75	8.3	J
2.	Unknown	21.78	13	J
3. 629-50-5	Tridecane	23.55	17	J
4.	Unknown	23.77	6	J
5.	Unknown	24.51	7.8	J
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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

DO-0018-06-006

Lab Name: AENI Contract: FOS60

Project No.: 9801049 Site: Location: Group:

Matrix: (soil/water) WATER Lab Sample ID: #006

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: FA206.D

Level: (low/med) Date Received: 1/19/98

% Moisture: not dec. 100 Date Analyzed: 1/29/98

GC Column: CAP ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Concentration Units: (ug/L or ug/Kg) ug/L

CAS No.	Compound		Q
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	10	U
75-15-0	Carbon Disulfide	10	U
75-09-2	Methylene Chloride	25	B
156-60-5	trans-1,2-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	10	U
78-93-3	2-Butanone	10	U
56-23-5	Carbon Tetrachloride	10	U
107-06-2	1,2-Dichloroethane	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
108-88-3	Toluene	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
124-48-1	Dibromochloromethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
108-38-3/106-4	m + p-Xylene	10	U
95-47-6	o-Xylene	10	U
100-42-5	Styrene	10	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

DO-0018-06-006

Lab Name: AENI Contract: FOS60

Project No.: 9801049 Site: _____ Location: _____ Group: _____

Matrix: (soil/water) WATER Lab Sample ID: #006

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: FA206.D

Level: (low/med) _____ Date Received: 1/19/98

% Moisture: not dec. 100 Date Analyzed: 1/29/98

GC Column: CAP ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Concentration Units: (ug/L or ug/Kg) ug/L

CAS No.	Compound		Q
75-25-2	Bromoform	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U

FORM I VOA

8260/TCL

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SAMPLE NO.

D0-0018-06-006

Lab Name: AENI Contract: FOS60

Project No.: 9801 Site: Location: Group:

Matrix: (soil/water) WATER Lab Sample ID: #006

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: FA206.D

Level: (low/med) Date Received: 1/19/98

% Moisture: not dec. 100 Date Analyzed: 1/29/98

GC Column: CAP ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Concentration Units:

Number TICs found: 0 (ug/L or ug/Kg) ug/L

CAS Number	Compound Name	RT	Est. Conc.	Q
1.				
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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.
DO-0018-06-007

Lab Name: AENI Contract: FOS60

Project No.: 9801049 Site: Location: Group:

Matrix: (soil/water) WATER Lab Sample ID: #007

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: FA207.D

Level: (low/med) Date Received: 1/19/98

% Moisture: not dec. 100 Date Analyzed: 1/29/98

GC Column: CAP ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/L	Q
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	10	U
75-15-0	Carbon Disulfide	10	U
75-09-2	Methylene Chloride	34	B
156-60-5	trans-1,2-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	10	U
78-93-3	2-Butanone	10	U
56-23-5	Carbon Tetrachloride	10	U
107-06-2	1,2-Dichloroethane	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
108-88-3	Toluene	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
124-48-1	Dibromochloromethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
108-38-3/106-4	m + p-Xylene	10	U
95-47-6	o-Xylene	10	U
100-42-5	Styrene	10	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.
DO-0018-06-007

Lab Name: AENI Contract: FOS60

Project No.: 9801049 Site: Location: Group:

Matrix: (soil/water) WATER Lab Sample ID: #007

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: FA207.D

Level: (low/med) Date Received: 1/19/98

% Moisture: not dec. 100 Date Analyzed: 1/29/98

GC Column: CAP ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Concentration Units: (ug/L or ug/Kg) ug/L

CAS No.	Compound		Q
75-25-2	Bromoform	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

SAMPLE NO.

D0-0018-06-007

Lab Name: AENI Contract: FOS60

Project No.: 9801 Site: Location: Group:

Matrix: (soil/water) WATER Lab Sample ID: #007

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: FA207.D

Level: (low/med) Date Received: 1/19/98

% Moisture: not dec. 100 Date Analyzed: 1/29/98

GC Column: CAP ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 0 Concentration Units: (ug/L or ug/Kg) ug/L

CAS Number	Compound Name	RT	Est. Conc.	Q
1.				
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.
DO-0018-06-FIELD BL

Lab Name: AENI Contract: FOS60

Project No.: 9801049 Site: Location: Group:

Matrix: (soil/water) WATER Lab Sample ID: #008

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: FA208.D

Level: (low/med) Date Received: 1/19/98

% Moisture: not dec. 100 Date Analyzed: 1/29/98

GC Column: CAP ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Concentration Units: (ug/L or ug/Kg) ug/L

CAS No.	Compound		Q
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	10	U
75-15-0	Carbon Disulfide	10	U
75-09-2	Methylene Chloride	20	B
156-60-5	trans-1,2-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	10	U
78-93-3	2-Butanone	10	U
56-23-5	Carbon Tetrachloride	10	U
107-06-2	1,2-Dichloroethane	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
108-88-3	Toluene	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
124-48-1	Dibromochloromethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
108-38-3/106-4	m + p-Xylene	10	U
95-47-6	o-Xylene	10	U
100-42-5	Styrene	10	U

FORM I VOA 8260/TCL

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

DO-0018-06-FIELD BL

Lab Name: AENI Contract: FOS60

Project No.: 9801049 Site: Location: Group:

Matrix: (soil/water) WATER Lab Sample ID: #008

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: FA208.D

Level: (low/med) Date Received: 1/19/98

% Moisture: not dec. 100 Date Analyzed: 1/29/98

GC Column: CAP ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Concentration Units: (ug/L or ug/Kg) ug/L

CAS No.	Compound		Q
75-25-2	Bromoform	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

SAMPLE NO.

DO-0018-06-FIELD BL

Lab Name: AENI Contract: FOS60

Project No.: 9801 Site: Location: Group:

Matrix: (soil/water) WATER Lab Sample ID: #008

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: FA208.D

Level: (low/med) Date Received: 1/19/98

% Moisture: not dec. 100 Date Analyzed: 1/29/98

GC Column: CAP ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 3 Concentration Units: (ug/L or ug/Kg) ug/L

CAS Number	Compound Name	RT	Est. Conc.	Q
1.	Unknown	23.09	5	J
2.	Unknown	23.54	12	J
3.	Unknown	24.51	6.6	J
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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.
VBLK01

Lab Name: AENI Contract: FOS60

Project No.: 9801049 Site: Location: Group:

Matrix: (soil/water) WATER Lab Sample ID: 980129FW

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: FA203.D

Level: (low/med) Date Received:

% Moisture: not dec. 100 Date Analyzed: 1/29/98

GC Column: CAP ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Concentration Units: (ug/L or ug/Kg) ug/L

CAS No.	Compound		Q
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	10	U
75-15-0	Carbon Disulfide	10	U
75-09-2	Methylene Chloride	25	
156-60-5	trans-1,2-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	10	U
78-93-3	2-Butanone	10	U
56-23-5	Carbon Tetrachloride	10	U
107-06-2	1,2-Dichloroethane	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
108-88-3	Toluene	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
124-48-1	Dibromochloromethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
108-38-3/106-4	m + p-Xylene	10	U
95-47-6	o-Xylene	10	U
100-42-5	Styrene	10	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

VBLK01

Lab Name: AENI Contract: FOS60

Project No.: 9801049 Site: Location: Group:

Matrix: (soil/water) WATER Lab Sample ID: 980129FW

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: FA203.D

Level: (low/med) Date Received:

% Moisture: not dec. 100 Date Analyzed: 1/29/98

GC Column: CAP ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Concentration Units: (ug/L or ug/Kg) ug/L

CAS No.	Compound		Q
75-25-2	Bromoform	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SAMPLE NO.

VBLK01

Lab Name: AENI Contract: FOS60

Project No.: 9801 Site: Location: Group:

Matrix: (soil/water) WATER Lab Sample ID: 980129FW

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: FA203.D

Level: (low/med) Date Received:

% Moisture: not dec. 100 Date Analyzed: 1/29/98

GC Column: CAP ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Concentration Units:

Number TICs found: 0 (ug/L or ug/Kg) ug/L

CAS Number	Compound Name	RT	Est. Conc.	Q
1.				
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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.
D0-0018-06-002MS

Lab Name: AENI Contract: FOS60

Project No.: 9801049 Site: Location: Group:

Matrix: (soil/water) WATER Lab Sample ID: #002 MS

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: FA211.D

Level: (low/med) Date Received: 1/19/98

% Moisture: not dec. 100 Date Analyzed: 1/29/98

GC Column: CAP ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Concentration Units: (ug/L or ug/Kg) ug/L

CAS No.	Compound		Q
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	47	
75-15-0	Carbon Disulfide	10	U
75-09-2	Methylene Chloride	28	B
156-60-5	trans-1,2-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	10	U
78-93-3	2-Butanone	10	U
56-23-5	Carbon Tetrachloride	10	U
107-06-2	1,2-Dichloroethane	10	U
71-43-2	Benzene	47	
79-01-6	Trichloroethene	42	
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
108-88-3	Toluene	47	
10061-01-5	cis-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5.9	J
124-48-1	Dibromochloromethane	10	U
108-90-7	Chlorobenzene	42	
100-41-4	Ethylbenzene	10	U
108-38-3/106-4	m + p-Xylene	10	U
95-47-6	o-Xylene	10	U
100-42-5	Styrene	10	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.
DO-0018-06-002MS

Lab Name: AENI Contract: FOS60

Project No.: 9801049 Site: Location: Group:

Matrix: (soil/water) WATER Lab Sample ID: #002 MS

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: FA211.D

Level: (low/med) Date Received: 1/19/98

% Moisture: not dec. 100 Date Analyzed: 1/29/98

GC Column: CAP ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Concentration Units: (ug/L or ug/Kg) ug/L

CAS No.	Compound		Q
75-25-2	Bromoform	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U

FORM I VOA

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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.
DO-0018-06-002MSD

Lab Name: AENI Contract: FOS60

Project No.: 9801049 Site: Location: Group:

Matrix: (soil/water) WATER Lab Sample ID: #002 MSD

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: FA212.D

Level: (low/med) Date Received: 1/19/98

% Moisture: not dec. 100 Date Analyzed: 1/29/98

GC Column: CAP ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Concentration Units: (ug/L or ug/Kg) ug/L

CAS No.	Compound		Q
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	46	
75-15-0	Carbon Disulfide	10	U
75-09-2	Methylene Chloride	29	B
156-60-5	trans-1,2-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	10	U
78-93-3	2-Butanone	10	U
56-23-5	Carbon Tetrachloride	10	U
107-06-2	1,2-Dichloroethane	10	U
71-43-2	Benzene	50	
79-01-6	Trichloroethene	46	
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
108-88-3	Toluene	50	
10061-01-5	cis-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5.2	J
124-48-1	Dibromochloromethane	10	U
108-90-7	Chlorobenzene	45	
100-41-4	Ethylbenzene	10	U
108-38-3/106-4	m + p-Xylene	10	U
95-47-6	o-Xylene	10	U
100-42-5	Styrene	10	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.
DO-0018-06-002MSD

Lab Name: AENI Contract: FOS60

Project No.: 9801049 Site: Location: Group:

Matrix: (soil/water) WATER Lab Sample ID: #002 MSD

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: FA212.D

Level: (low/med) Date Received: 1/19/98

% Moisture: not dec. 100 Date Analyzed: 1/29/98

GC Column: CAP ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Concentration Units: (ug/L or ug/Kg) ug/L

CAS No.	Compound		Q
75-25-2	Bromoform	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U

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AMERICAN ENVIRONMENTAL NETWORK, INC.
9151 Rumsey Road Suite 150, Columbia, MD 21045-1992
(410) 730-8525 Fax (410) 997-2586

Report Number: 9801049
Report To: Foster Wheeler Environmental Corp.
Project: NAWC Warminster
Date: February 4, 1998
Analysis: General Chemistry Parameters

Client ID	AENI ID	Date Sampled	Date Received
DO-0018-06-001	9801049-001	01/19/98	01/19/98
DO-0018-06-002	9801049-002	01/19/98	01/19/98
DO-0018-06-003	9801049-003	01/19/98	01/19/98
DO-0018-06-004	9801049-004	01/19/98	01/19/98
DO-0018-06-007	9801049-007	01/19/98	01/19/98

Five water samples were received and analyzed for General Chemistry Parameters.

All quality control data were within acceptable limits.

This report consists of tabulated sample results and a QC Summary Report.

Report Released By: _____
Christopher Baggett
Inorganic Laboratory Manager

AMERICAN ENVIRONMENTAL NETWORK, INC.
9151 Rumsey Road Suite 150, Columbia, MD 21045-1992
(410) 730-8525 Fax (410) 997-2586

Report Number: 9801049-001
Report To: Foster Wheel r Environmental Corp.
Project: NAWC Warminster
Date: February 4, 1998
Sample ID: D0-0018-06-001

Parameter	Method	Result	Date Analyzed
pH	EPA 150.1	6.9	01/20/98
Total Suspended Solids (1)	EPA 160.2	1	01/25/98

(1) Results reported as mg/L

AMERICAN ENVIRONMENTAL NETWORK, INC.
9151 Rumsey Road Suite 150, Columbia, MD 21045-1992
(410) 730-8525 Fax (410) 997-2586

Report Number: 9801049-002
R port To: Foster Wheeler Environmental Corp.
Project: NAWC Warminster
Dat : February 4, 1998
Sample ID: D0-0018-06-002

Parameter	Method	Result	Date Analyzed
Hexavalent Chromium (1)	SW846 7196	< 0.01	01/20/98
pH	EPA 150.1	7.2	01/20/98
Total Cyanide (1)	SW846 9010A	< 0.02	01/27/98
Total Suspended Solids (1)	EPA 160.2	< 1	01/25/98

(1) Results reported as mg/L

AMERICAN ENVIRONMENTAL NETWORK, INC.
9151 Rumsey Road Suite 150, Columbia, MD 21045-1992
(410) 730-8525 Fax (410) 997-2586

Report Number: 9801049-003
Report To: Fost r Wheeler Environmental Corp.
Project: NAWC Warminster
Date: February 4, 1998
Sample ID: D0-0018-06-003

Parameter	Method	Result	Date Analyzed
Total Suspended Solids	EPA 160.2	1	01/25/98

(1) Results reported as mg/L

AMERICAN ENVIRONMENTAL NETWORK, INC.
9151 Rumsey Road Suite 150, Columbia, MD 21045-1992
(410) 730-8525 Fax (410) 997-2586

Report Number: 9801049-004
Report To: Foster Wheeler Environmental Corp.
Project: NAWC Warminster
Date: February 4, 1998
Sample ID: D0-0018-06-004

Parameter	Method	Result	Dat Analyzed
Hexavalent Chromium (1)	SW846 7196	< 0.01	01/20/98
pH	EPA 150.1	7.3	01/20/98
Total Cyanide (1)	SW846 9010A	< 0.02	01/27/98
Total Suspended Solids (1)	EPA 160.2	1	01/25/98

(1) Results reported as mg/L

AMERICAN ENVIRONMENTAL NETWORK, INC.
9151 Rumsey Road Suite 150, Columbia, MD 21045-1992
(410) 730-8525 Fax (410) 997-2586

Report Number: 9801049-007
Report To: Foster Wheeler Environmental Corp.
Project: NAWC Warminster
Date: February 4, 1998
Sample ID: D0-0018-06-007

Parameter	Method	Result	Date Analyzed
Hexavalent Chromium (1)	SW846 7196	< 0.01	01/20/98
pH	EPA 150.1	7.4	01/20/98
Total Cyanide (1)	SW846 9010A	< 0.02	01/27/98
Total Suspended Solids (1)	EPA 160.2	1	01/25/98

(1) Results reported as mg/L

AMERICAN ENVIRONMENTAL NETWORK, INC.
9151 Rumsey Road Suite 150, Columbia, MD 21045-1992
(410) 730-8525 Fax (410) 997-2586

Report Number: 9801049
Report To: Foster Wheeler Environmental Corp.
Project: NAWC Warminster
Date: February 4, 1998
Analysis: General Chemistry Parameters

QC SUMMARY

Parameter	Sample ID	Result/Recovery
Hexavalent Chromium	PBLK980120	< 0.01 mg/L
	BS980120	100%
	BSD980120	99%
	9801049-007	< 0.01 mg/L
	9801049-007D	< 0.01 mg/L
	9801049-007MS	110%
	9801049-007MSD	112%
Total Suspended Solids	PBLK980125	< 1 mg/L
	BS980125	93%
	9801049-007	1 mg/L
	9801049-007D	< 1 mg/L
pH (true value = 6.00)	BS980120	5.97
	BSD980120	5.98
	9801049-007	7.4
	9801049-007D	7.4
Total Cyanide	PBLK980127	< 0.02 mg/L
	BS980127	106%
	BSD980127	104%
	9801049-002	< 0.02 mg/L
	9801049-002D	< 0.02 mg/L
	9801049-004	< 0.02 mg/L
	9801049-004MS	105%
	9801049-007	< 0.02 mg/L
	9801049-007MS	105%

AMERICAN ENVIRONMENTAL NETWORK,INC.

9151 Rumsey Road Suite 150, Columbia, MD 21045-1992
(410) 730-8525 Fax (410) 997-2586

January 30, 1998

Cli nt: Foster Wheeler Environmental Corporation

Project: NAWC Warminster

Case: 9801049

Analysis: Metals

Client ID	AENI ID	Date Sampled	Date Received	Date Analyzed
DO-0018-06-002	9801049-002	01/19/98	01/19/98	01/27,28/98
DO-0018-06-004	9801049-004	01/19/98	01/19/98	01/27,28/98
DO-0018-06-007	9801049-007	01/19/98	01/19/98	01/27,28/98

Three groundwater samples were received and analyzed for TAL metals per SW846 methodology. Results are reported in units of ug/L.

All quality control results were within normal control limits.

Report Released By

Christopher Baggett
Inorganics Manager

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

DO001806002

Lab Name: AENI Contract: 9801049

Lab Code: Case No.: FOS60 SAS No.: SDG No.: SO0018

Matrix (soil/water): WATER Lab Sample ID: 980104902

Level (low/med): LOW Date Received: 01/19/98

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	200	U		P
7440-36-0	Antimony	20.0	U		P
7440-38-2	Arsenic	8.0	U		P
7440-39-3	Barium	302			P
7440-41-7	Beryllium	2.0	U		P
7440-43-9	Cadmium	4.0	U		P
7440-70-2	Calcium	38200			P
7440-47-3	Chromium	10.0	U		P
7440-48-4	Cobalt	11.0	U		P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	217			P
7439-92-1	Lead	10.0	U		P
7439-95-4	Magnesium	12600			P
7439-96-5	Manganese	15.0	U		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	15.0	U		P
7440-09-7	Potassium	1000	U		P
7782-49-2	Selenium	5.0	U		P
7440-22-4	Silver	8.0	U		P
7440-23-5	Sodium	8450			P
7440-28-0	Thallium	10.0	U		P
7440-62-2	Vanadium	16.0	U		P
7440-66-6	Zinc	45.6			P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

CLIENT_ID: DO-0018-06-002

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

DO001806004

Lab Name: AENI Contract: 9801049

Lab Code: Case No.: FOS60 SAS No.: SDG No.: SO0018

Matrix (soil/water): WATER Lab Sample ID: 980104904

Level (low/med): LOW Date Received: 01/19/98

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	200	U		P
7440-36-0	Antimony	20.0	U		P
7440-38-2	Arsenic	8.0	U		P
7440-39-3	Barium	296			P
7440-41-7	Beryllium	2.0	U		P
7440-43-9	Cadmium	4.0	U		P
7440-70-2	Calcium	37400			P
7440-47-3	Chromium	10.0	U		P
7440-48-4	Cobalt	11.0	U		P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	278			P
7439-92-1	Lead	10.0	U		P
7439-95-4	Magnesium	12300			P
7439-96-5	Manganese	15.0	U		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	15.0	U		P
7440-09-7	Potassium	1000	U		P
7782-49-2	Selenium	5.0	U		P
7440-22-4	Silver	8.0	U		P
7440-23-5	Sodium	8210			P
7440-28-0	Thallium	10.0	U		P
7440-62-2	Vanadium	16.0	U		P
7440-66-6	Zinc	28.1			P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

CLIENT_ID: DO-0018-06-004

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1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

DO001806007

Lab Name: AENI Contract: 9801049

Lab Code: Case No.: FOS60 SAS No.: SDG No.: SO0018

Matrix (soil/water): WATER Lab Sample ID: 980104907

Level (low/med): LOW Date Received: 01/19/98

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	200	U		P
7440-36-0	Antimony	20.0	U		P
7440-38-2	Arsenic	8.0	U		P
7440-39-3	Barium	225			P
7440-41-7	Beryllium	2.0	U		P
7440-43-9	Cadmium	4.0	U		P
7440-70-2	Calcium	36900			P
7440-47-3	Chromium	10.0	U		P
7440-48-4	Cobalt	11.0	U		P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	147			P
7439-92-1	Lead	10.0	U		P
7439-95-4	Magnesium	12200			P
7439-96-5	Manganese	15.0	U		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	15.0	U		P
7440-09-7	Potassium	1000	U		P
7782-49-2	Selenium	5.0	U		P
7440-22-4	Silver	8.0	U		P
7440-23-5	Sodium	8030			P
7440-28-0	Thallium	10.0	U		P
7440-62-2	Vanadium	16.0	U		P
7440-66-6	Zinc	28.5			P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

CLIENT_ID: DO-0018-06-007

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2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: AENI Contract: 9801049

Lab Code: Case No.: FOS60 SAS No.: SDG No.: SO0018

Initial Calibration Source: INORG VENTUR

Continuing Calibration Source: INORG VENTUR

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum	9000.0	8980.45	99.8	10000.0	9852.97	98.5	9912.50	99.1	P
Antimony	450.0	447.94	99.5	500.0	503.69	100.7	508.76	101.8	P
Arsenic	45.0	44.40	98.7	500.0	499.04	99.8	496.51	99.3	P
Barium	9000.0	9124.89	101.4	10000.0	10190.61	101.9	10265.95	102.7	P
Beryllium	225.0	228.19	101.4	250.0	252.19	100.9	254.10	101.6	P
Cadmium	225.0	232.98	103.5	250.0	254.55	101.8	255.77	102.3	P
Calcium	45000.0	46265.76	102.8	50000.0	51023.38	102.0	51177.33	102.4	P
Chromium	450.0	462.76	102.8	1000.0	1008.42	100.8	1011.07	101.1	P
Cobalt	2250.0	2322.72	103.2	2500.0	2538.47	101.5	2545.05	101.8	P
Copper	1125.0	1131.41	100.6	1250.0	1240.15	99.2	1244.75	99.6	P
Iron	4500.0	4625.01	102.8	5000.0	5040.44	100.8	5042.55	100.9	P
Lead	450.0	463.27	102.9	2500.0	2538.34	101.5	2556.15	102.2	P
Magnesium	45000.0	45196.12	100.4	50000.0	49838.52	99.7	50008.70	100.0	P
Manganese	2250.0	2314.96	102.9	2500.0	2529.10	101.2	2535.28	101.4	P
Mercury	1.0	0.91	91.0	2.0	2.11	105.5	2.06	103.0	AV
Nickel	2250.0	2301.30	102.3	2500.0	2556.72	102.3	2582.89	103.3	P
Potassium	45000.0	42833.98	95.2	50000.0	47811.64	95.6	47815.12	95.6	P
Selenium	45.0	44.64	99.2	500.0	503.00	100.6	504.93	101.0	P
Silver	450.0	450.48	100.1	500.0	496.66	99.3	497.80	99.6	P
Sodium	45000.0	41438.57	92.1	50000.0	46785.96	93.6	47026.60	94.1	P
Thallium	400.0	392.30	98.1	500.0	508.48	101.7	518.17	103.6	P
Vanadium	2250.0	2289.14	101.7	2500.0	2544.84	101.8	2569.21	102.8	P
Zinc	2250.0	2315.67	102.9	2500.0	2513.36	100.5	2506.73	100.3	P
Cyanide									NR

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

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2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: AENI Contract: 9801049

Lab Code: Case No.: FOS60 SAS No.: SDG No.: SO0018

Initial Calibration Source: INORG VENTUR

Continuing Calibration Source: INORG VENTUR

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum				10000.0	9895.50	99.0			P
Antimony				500.0	511.52	102.3			P
Arsenic				500.0	495.80	99.2			P
Barium				10000.0	10323.82	103.2			P
Beryllium				250.0	255.16	102.1			P
Cadmium				250.0	257.55	103.0			P
Calcium				50000.0	51438.40	102.9			P
Chromium				1000.0	1013.01	101.3			P
Cobalt				2500.0	2550.00	102.0			P
Copper				1250.0	1246.43	99.7			P
Iron				5000.0	5060.12	101.2			P
Lead				2500.0	2566.80	102.7			P
Magnesium				50000.0	50040.69	100.1			P
Manganese				2500.0	2541.95	101.7			P
Mercury				2.0	2.12	106.0			AV
Nickel				2500.0	2596.90	103.9			P
Potassium				50000.0	47797.18	95.6			P
Selenium				500.0	505.03	101.0			P
Silver				500.0	497.94	99.6			P
Sodium				50000.0	47142.37	94.3			P
Thallium				500.0	527.15	105.4			P
Vanadium				2500.0	2581.24	103.2			P
Zinc				2500.0	2507.44	100.3			P
Cyanide									NR

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

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3
BLANKS

Lab Name: AENI Contract: 9801049

Lab Code: Case No.: FOS60 SAS No.: SDG No.: SO0018

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum	200.0	U	200.0	U	200.0	U	200.0	U	200.000	U	P
Antimony	20.0	U	20.0	U	20.0	U	20.0	U	20.000	U	P
Arsenic	8.0	U	8.0	U	8.0	U	8.0	U	8.000	U	P
Barium	100.0	U	100.0	U	100.0	U	100.0	U	100.000	U	P
Beryllium	2.0	U	2.0	U	2.0	U	2.0	U	2.000	U	P
Cadmium	4.0	U	4.0	U	4.0	U	4.0	U	4.000	U	P
Calcium	500.0	U	500.0	U	500.0	U	500.0	U	500.000	U	P
Chromium	10.0	U	10.0	U	10.0	U	10.0	U	10.000	U	P
Cobalt	11.0	U	11.0	U	11.0	U	11.0	U	11.000	U	P
Copper	25.0	U	25.0	U	25.0	U	25.0	U	25.000	U	P
Iron	100.0	U	100.0	U	100.0	U	100.0	U	100.000	U	P
Lead	10.0	U	10.0	U	10.0	U	10.0	U	10.000	U	P
Magnesium	500.0	U	500.0	U	500.0	U	500.0	U	500.000	U	P
Manganese	15.0	U	15.0	U	15.0	U	15.0	U	15.000	U	P
Mercury	0.2	U	0.2	U	0.2	U	0.2	U	0.200	U	AV
Nickel	15.0	U	15.0	U	15.0	U	15.0	U	15.000	U	P
Potassium	1000.0	U	1000.0	U	1000.0	U	1000.0	U	1000.000	U	P
Selenium	5.0	U	5.0	U	5.0	U	5.0	U	5.000	U	P
Silver	8.0	U	8.0	U	8.0	U	8.0	U	8.000	U	P
Sodium	1000.0	U	1000.0	U	1000.0	U	1000.0	U	1000.000	U	P
Thallium	10.0	U	10.0	U	10.0	U	10.0	U	10.000	U	P
Vanadium	16.0	U	16.0	U	16.0	U	16.0	U	16.000	U	P
Zinc	20.0	U	20.0	U	20.0	U	20.0	U	20.000	U	P
Cyanide											NR

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4

ICP INTERFERENCE CHECK SAMPLE

Lab Name: AENI Contract: 9801049

Lab Code: Case No.: FOS60 SAS No: SDG No.: SO0018

ICP ID Number: TJA TRACE PB ICS Source: HIGH PURITY

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	%R	Final Found Sol. A	Final Found Sol. AB	%R
Aluminum	500000	500000	512737	501633.1	100.3	514095	503370.6	100.7
Antimony	0	0	1	10.5		2	13.1	
Arsenic	0	2000	-5	2029.2	101.5	-7	2029.7	101.5
Barium	0	500	11	551.1	110.2	12	564.4	112.9
Beryllium	0	500	-1	504.7	100.9	0	515.1	103.0
Cadmium	0	1000	24	1017.5	101.7	24	1028.0	102.8
Calcium	500000	500000	489954	481474.4	96.3	489445	482861.6	96.6
Chromium	0	500	-1	497.0	99.4	-1	500.0	100.0
Cobalt	0	500	-2	492.2	98.4	-2	491.1	98.2
Copper	0	500	3	536.5	107.3	-1	542.2	108.4
Iron	200000	200000	189543	186208.1	93.1	190108	186866.2	93.4
Lead	0	1000	-6	1001.0	100.1	-6	1009.7	101.0
Magnesium	500000	500000	536513	525959.7	105.2	544651	532476.2	106.5
Manganese	0	500	8	515.4	103.1	8	519.8	104.0
Mercury								
Nickel	0	1000	1	986.4	98.6	1	1001.9	100.2
Potassium	0	0	-7	-8.3		-22	-22.4	
Selenium	0	2000	3	2015.1	100.8	2	2012.7	100.6
Silver	0	1000	0	1069.7	107.0	1	1084.6	108.5
Sodium	0	0	730	1057.6		817	1060.3	
Thallium	0	0	-13	-13.3		-12	-18.3	
Vanadium	0	500	-16	493.2	98.6	-16	502.6	100.5
Zinc	0	1000	21	1007.4	100.7	19	1003.2	100.3

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5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

980104608S

Lab Name: AENI Contract: 9801049

Lab Code: Case No.: FOS60 SAS No.: SDG No.: SO0018

Matrix (soil/water): WATER Level (low/med): LOW

% Solids for Sample: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum	80-120	1854.6100		200.0000	U	2000.00	92.7		P
Antimony	80-120	94.8940		20.0000	U	100.00	94.9		P
Arsenic	80-120	93.2760		8.0000	U	100.00	93.3		P
Barium	80-120	2015.6570		100.0000	U	2000.00	100.8		P
Beryllium	80-120	47.9170		2.0000	U	50.00	95.8		P
Cadmium	80-120	49.7450		4.0000	U	50.00	99.5		P
Calcium	80-120	11752.8100		1847.8800		10000.00	99.0		P
Chromium	80-120	195.6650		10.0000	U	200.00	97.8		P
Cobalt	80-120	495.6070		11.0000	U	500.00	99.1		P
Copper	80-120	245.9470		25.0000	U	250.00	98.4		P
Iron	80-120	2645.5100		1613.6100		1000.00	103.2		P
Lead	80-120	492.8330		10.0000	U	500.00	98.6		P
Magnesium	80-120	10303.2800		819.0700		10000.00	94.8		P
Manganese	80-120	512.4900		15.0000	U	500.00	102.5		P
Mercury									NR
Nickel	80-120	501.9380		15.0000	U	500.00	100.4		P
Potassium	80-120	8656.3700		1000.0000	U	10000.00	86.6		P
Selenium	80-120	91.6280		5.0000	U	100.00	91.6		P
Silver	80-120	93.2720		8.0000	U	100.00	93.3		P
Sodium	80-120	14029.4400		5866.1400		10000.00	81.6		P
Thallium	80-120	97.5080		10.0000	U	100.00	97.5		P
Vanadium	80-120	493.6600		16.0000	U	500.00	98.7		P
Zinc	80-120	510.5330		20.0000	U	500.00	102.1		P
Cyanide									NR

Comments:
MATRIX_SPIKE

U.S. EPA - CLP

5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

980104608M

Lab Name: AENI Contract: 9801049

Lab Code: Case No.: FOS60 SAS No.: SDG No.: SO0018

Matrix (soil/water): WATER Level (low/med): LOW

% Solids for Sample: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum	80-120	1865.1700		200.0000	U	2000.00	93.3		P
Antimony	80-120	96.4020		20.0000	U	100.00	96.4		P
Arsenic	80-120	92.5390		8.0000	U	100.00	92.5		P
Barium	80-120	2028.4720		100.0000	U	2000.00	101.4		P
Beryllium	80-120	48.2280		2.0000	U	50.00	96.5		P
Cadmium	80-120	50.2940		4.0000	U	50.00	100.6		P
Calcium	80-120	11854.3500		1847.8800		10000.00	100.1		P
Chromium	80-120	196.9950		10.0000	U	200.00	98.5		P
Cobalt	80-120	498.7980		11.0000	U	500.00	99.8		P
Copper	80-120	246.0790		25.0000	U	250.00	98.4		P
Iron	80-120	2589.7800		1613.6100		1000.00	97.6		P
Lead	80-120	495.7520		10.0000	U	500.00	99.2		P
Magnesium	80-120	10393.1400		819.0700		10000.00	95.7		P
Manganese	80-120	514.3300		15.0000	U	500.00	102.9		P
Mercury									NR
Nickel	80-120	505.4080		15.0000	U	500.00	101.1		P
Potassium	80-120	8709.7600		1000.0000	U	10000.00	87.1		P
Selenium	80-120	92.7970		5.0000	U	100.00	92.8		P
Silver	80-120	94.3350		8.0000	U	100.00	94.3		P
Sodium	80-120	14154.6700		5866.1400		10000.00	82.9		P
Thallium	80-120	102.2580		10.0000	U	100.00	102.3		P
Vanadium	80-120	497.2500		16.0000	U	500.00	99.4		P
Zinc	80-120	507.6830		20.0000	U	500.00	101.5		P
Cyanide									NR

Comments:
MATRIX_SPIKE_DUPLICATE

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5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

980104618S

Lab Name: AENI Contract: 9801049

Lab Code: Case No.: FOS60 SAS No.: SDG No.: SO0018

Matrix (soil/water): WATER Level (low/med): LOW

% Solids for Sample: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony									NR
Arsenic									NR
Barium									NR
Beryllium									NR
Cadmium									NR
Calcium									NR
Chromium									NR
Cobalt									NR
Copper									NR
Iron									NR
Lead									NR
Magnesium									NR
Manganese									NR
Mercury	80-120	2.1300		0.2000	U	2.00	106.5		AV
Nickel									NR
Potassium									NR
Selenium									NR
Silver									NR
Sodium									NR
Thallium									NR
Vanadium									NR
Zinc									NR
Cyanide									NR

Comments:
MATRIX_SPIKE

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5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

980104619M

Lab Name: AENI Contract: 9801049

Lab Code: Case No.: FOS60 SAS No.: SDG No.: SO0018

Matrix (soil/water): WATER Level (low/med): LOW

% Solids for Sample: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony									NR
Arsenic									NR
Barium									NR
Beryllium									NR
Cadmium									NR
Calcium									NR
Chromium									NR
Cobalt									NR
Copper									NR
Iron									NR
Lead									NR
Magnesium									NR
Manganese									NR
Mercury	80-120	2.0500		0.2000	U	2.00	102.5		AV
Nickel									NR
Potassium									NR
Selenium									NR
Silver									NR
Sodium									NR
Thallium									NR
Vanadium									NR
Zinc									NR
Cyanide									NR

Comments:
MATRIX_SPIKE_DUPLICATE

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6
DUPLICATES

EPA SAMPLE NO.

980104606D

Lab Name: AENI Contract: 9801049

Lab Code: Case No.: FOS60_ SAS No.: SDG No.: SO0018

Matrix (soil/water): WATER Level (low/med): _LOW__

% Solids for Sample: __0.0 % Solids for Duplicate: ___0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum								NR
Antimony								NR
Arsenic								NR
Barium								NR
Beryllium								NR
Cadmium								NR
Calcium								NR
Chromium								NR
Cobalt								NR
Copper								NR
Iron								NR
Lead								NR
Magnesium								NR
Manganese								NR
Mercury		0.2000	U	0.2000	U			AV
Nickel								NR
Potassium								NR
Selenium								NR
Silver								NR
Sodium								NR
Thallium								NR
Vanadium								NR
Zinc								NR
Cyanide								NR

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6
DUPLICATES

EPA SAMPLE NO.

980104608D

Lab Name: AENI Contract: 9801049

Lab Code: Case No.: FOS60 SAS No.: SDG No.: SO0018

Matrix (soil/water): WATER Level (low/med): LOW

% Solids for Sample: 0.0 % Solids for Duplicate: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum		200.0000	U	200.0000	U			P
Antimony		20.0000	U	20.0000	U			P
Arsenic		8.0000	U	8.0000	U			P
Barium		100.0000	U	100.0000	U			P
Beryllium		2.0000	U	2.0000	U			P
Cadmium		4.0000	U	4.0000	U			P
Calcium	500.0	1847.8800		1866.2800		1.0		P
Chromium		10.0000	U	10.0000	U			P
Cobalt		11.0000	U	11.0000	U			P
Copper		25.0000	U	25.0000	U			P
Iron		1613.6100		1597.8400		1.0		P
Lead		10.0000	U	10.0000	U			P
Magnesium	500.0	819.0700		826.4000		0.9		P
Manganese	15.0	15.0000	U	15.1700		200.0		P
Mercury								NR
Nickel		15.0000	U	15.0000	U			P
Potassium		1000.0000	U	1000.0000	U			P
Selenium		5.0000	U	5.0000	U			P
Silver		8.0000	U	8.0000	U			P
Sodium		5866.1400		5998.6000		2.2		P
Thallium		10.0000	U	10.0000	U			P
Vanadium		16.0000	U	16.0000	U			P
Zinc		20.0000	U	20.0000	U			P
Cyanide								NR

U.S. EPA - CLP

7

LABORATORY CONTROL SAMPLE

Lab Name: AENI Contract: 9801049

Lab Code: Case No.: FOS60 SAS No.: SDG No.: SO0018

Solid LCS Source:

Aqueous LCS Source: HIGH PURITY

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
Aluminum									
Antimony									
Arsenic									
Barium									
Beryllium									
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron									
Lead									
Magnesium									
Manganese									
Mercury	1.0	1.05	105.0						
Nickel									
Potassium									
Selenium									
Silver									
Sodium									
Thallium									
Vanadium									
Zinc									
Cyanide									

U.S. EPA - CLP

7

LABORATORY CONTROL SAMPLE

Lab Name: AENI Contract: 9801049

Lab Code: Case No.: FOS60 SAS No.: SDG No.: SO0018

Solid LCS Source:

Aqueous LCS Source: HIGH PURITY

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
Aluminum	2000.0	1854.80	92.7						
Antimony	100.0	94.91	94.9						
Arsenic	100.0	92.51	92.5						
Barium	2000.0	1994.97	99.7						
Beryllium	50.0	47.46	94.9						
Cadmium	50.0	49.11	98.2						
Calcium	10000.0	9876.88	98.8						
Chromium	200.0	195.43	97.7						
Cobalt	500.0	494.02	98.8						
Copper	250.0	237.61	95.0						
Iron	1000.0	1009.40	100.9						
Lead	500.0	488.07	97.6						
Magnesium	10000.0	9419.54	94.2						
Manganese	500.0	494.55	98.9						
Mercury									
Nickel	500.0	498.60	99.7						
Potassium									
Selenium	100.0	89.24	89.2						
Silver	100.0	92.66	92.7						
Sodium									
Thallium	100.0	94.12	94.1						
Vanadium	500.0	490.12	98.0						
Zinc	500.0	494.81	99.0						
Cyanide									

U.S. EPA - CLP

7
LABORATORY CONTROL SAMPLE

Lab Name: AENI_____ Contract: 9801049___

Lab Code: _____ Case No.: FOS60_ SAS No.: _____ SDG No.: SO0018

Solid LCS Source: _____

Aqueous LCS Source: HIGH PURITY_

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
Aluminum_									
Antimony_									
Arsenic__									
Barium___									
Beryllium									
Cadmium__									
Calcium__									
Chromium_									
Cobalt___									
Copper___									
Iron____									
Lead____									
Magnesium									
Manganese									
Mercury__									
Nickel___									
Potassium	40000.0	35373.21	88.4						
Selenium_									
Silver___									
Sodium___	40000.0	34723.14	86.8						
Thallium_									
Vanadium_									
Zinc____									
Cyanide__									

U.S. EPA - CLP

9

ICP SERIAL DILUTION

EPA SAMPLE NO.

980104608L

Lab Name: AENI Contract: 9801049

Lab Code: Case No.: FOS60 SAS No.: SDG No.: SO0018

Matrix (soil/water): WATER Level (low/med): LOW

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Aluminum	200.00	U	1000.00	U			P
Antimony	20.00	U	100.00	U			P
Arsenic	8.00	U	40.00	U			P
Barium	100.00	U	500.00	U			P
Beryllium	2.00	U	10.00	U			P
Cadmium	4.00	U	20.00	U			P
Calcium	1847.88		2500.00	U	100.0		P
Chromium	10.00	U	50.00	U			P
Cobalt	11.00	U	55.00	U			P
Copper	25.00	U	125.00	U			P
Iron	1613.61		1706.90		5.8		P
Lead	10.00	U	50.00	U			P
Magnesium	819.07		2500.00	U	100.0		P
Manganese	15.00	U	75.00	U			P
Mercury							NR
Nickel	15.00	U	75.00	U			P
Potassium	1000.00	U	5000.00	U			P
Selenium	5.00	U	25.00	U			P
Silver	8.00	U	40.00	U			P
Sodium	5866.14		6293.55		7.3		P
Thallium	10.00	U	50.00	U			P
Vanadium	16.00	U	80.00	U			P
Zinc	20.00	U	100.00	U			P

U.S. EPA - CLP

10
Instrument Detection Limits (Quarterly)

Lab Name: AENI Contract: 9801049

Lab Code: Case No.: FOS60 SAS No.: SDG No.: SO0018

ICP ID Number: Date: 06/30/97

Flame AA ID Number : PE_3100

Furnace AA ID Number :

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200		NR
Antimony			20		NR
Arsenic			8		NR
Barium			100		NR
Beryllium			2		NR
Cadmium			4		NR
Calcium			500		NR
Chromium			10		NR
Cobalt			11		NR
Copper			10		NR
Iron			100		NR
Lead			10		NR
Magnesium			500		NR
Manganese			15		NR
Mercury	253.05		0.2	0.2	AV
Nickel			15		NR
Potassium			1000		NR
Selenium			5		NR
Silver			8		NR
Sodium			1000		NR
Thallium			10		NR
Vanadium			16		NR
Zinc			20		NR

Comments:

U.S. EPA - CLP

10
Instrument Detection Limits (Quarterly)

Lab Name: AENI Contract: 9801049

Lab Code: Case No.: FOS60 SAS No.: SDG No.: SO0018

ICP ID Number: TJA_TRACE_PB Date: 07/21/97

Flame AA ID Number :

Furnace AA ID Number :

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum	308.21		200	200.0	P
Antimony	206.83		20	20.0	P
Arsenic	189.04		8	8.0	P
Barium	493.41		100	100.0	P
Beryllium	313.04		2	2.0	P
Cadmium	226.50		4	4.0	P
Calcium	317.93		500	500.0	P
Chromium	267.72		10	10.0	P
Cobalt	228.62		11	11.0	P
Copper	324.75		10	25.0	P
Iron	271.44		100	100.0	P
Lead	220.35		10	10.0	P
Magnesium	279.08		500	500.0	P
Manganese	257.61		15	15.0	P
Mercury			0.2		NR
Nickel	231.60		15	15.0	P
Potassium	766.49		1000	1000.0	P
Selenium	196.02		5	5.0	P
Silver	328.07		8	8.0	P
Sodium	330.20		1000	1000.0	P
Thallium	190.86		10	10.0	P
Vanadium	292.40		16	16.0	P
Zinc	206.20		20	20.0	P

Comments:

U.S. EPA - CLP

13
PREPARATION LOG

Lab Name: AENI_____ Contract: 9801049___

Lab Code: _____ Case No.:_FOS60_ SAS No.: _____ SDG No.:SO0018

Method: P_

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
0104608	01/25/98		100
104608D	01/25/98		100
104608M	01/25/98		100
104608S	01/25/98		100
LCS3419	01/25/98		100
LCS3419	01/25/98		100
PBW3419	01/25/98		100
1806002	01/25/98		100
1806004	01/25/98		100
1806007	01/25/98		100

U.S. EPA - CLP

13
PREPARATION LOG

Lab Nam : AENI_____ Contract: 9801049___

Lab Code: _____ Case No.:_FOS60_ SAS No.: _____ SDG No.:SO0018

Method: AV

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
0104606	01/25/98		100
104606D	01/25/98		100
0104617	01/25/98		100
104618S	01/25/98		100
104619M	01/25/98		100
LCS1507	01/25/98		100
PBW1507	01/25/98		100
1806002	01/25/98		100
1806004	01/25/98		100
1806007	01/25/98		100

AMERICAN ENVIRONMENTAL NETWORK, INC.

9151 Rumsey Road Suite 150, Columbia, MD 21045-1992
(410) 730-8525 Fax (410) 997-2586

Client: Foster Wheeler

Project: Warminster

Case: L9801049

Analysis: General Chemistry Parameters

Date: January 29, 1998

Client ID	AENI ID	Date Sampled	Date Received
DO-0018-06-002	9801049-002	1/19/98	1/19/98
DO-0018-06-004	9801049-004	1/19/98	1/19/98

Two samples were received and analyzed for General Chemistry Parameters. The samples were subcontracted to our Florida lab for Total Organic Carbon analyses.

The enclosed reports consist of tabulated results.

Report Released By:

John C. Ermatinger
Project Manager

American Environmental Network, Inc.
11 East Olive Road • Pensacola, FL 32514 • (850) 474-1001

SIGNATURE PAGE

Reviewed by: Linda Lofton
AEN Project Manager

Client:	AMERICAN ENVIRONMENTAL NETWORK OF MARYLAND, INC. COLUMBIA, MARYLAND
Project Name:	FOSTER WHEELER
Project Number:	9801049
Project Location:	WARMINISTER
Accession Number:	801477
Project Manager:	JOHN ERMATINGER
Sampled By:	N/S

AMERICAN ENVIRONMENTAL NETWORK 11 East Olive Road Pensacola, Florida 32514 (904) 474-1001

Analysis Report

Analysis: TOTAL ORGANIC CARBON

Accession:	801477
Client:	AMERICAN ENVIRONMENTAL NETWORK OF MARYLAND, INC.
Project Number:	9801049
Project Name:	FOSTER WHEELER
Project Location:	WARMINISTER
Department:	SEMI-VOLATILE FUELS

AMERICAN ENVIRONMENTAL NETWORK 11 East Olive Road Pensacola, Florida 32514 (904) 474-1001

"FINAL REPORT FORMAT - SINGLE"

Accession:	801477
Client:	AMERICAN ENVIRONMENTAL NETWORK OF MARYLAND, INC.
Project Number:	9801049
Project Name:	FOSTER WHEELER
Project Location:	WARMINISTER
Test:	TOTAL ORGANIC CARBON
Analysis Method:	415.1/EPA-600/4-79-202, March 1983.
Extraction Method:	N/A
Matrix:	GROUNDWATER
QC Level:	IV

Lab Id:	001	Sample Date/Time:	19-JAN-98 N/S
Client Sample Id:	DO-0018-06-002	Received Date:	21-JAN-98
Batch: TOW005		Extraction Date:	N/A
Blank: A	Dry Weight %: N/A	Analysis Date:	26-JAN-98

Parameter:	Units:	Results:	Rpt Lmts:	Q:
TOTAL ORGANIC CARBON	MG/L	ND	1	
ANALYST	INITIALS	LP		

Comments:

AMERICAN ENVIRONMENTAL NETWORK 11 East Olive Road Pensacola, Florida 32514 (904) 474-1001

"FINAL REPORT FORMAT - SINGLE"

Accession: 801477
Client: AMERICAN ENVIRONMENTAL NETWORK OF MARYLAND, INC.
Project Number: 9801049
Project Name: FOSTER WHEELER
Project Location: WARMINISTER
Test: TOTAL ORGANIC CARBON
Analysis Method: 415.1/EPA-600/4-79-202, March 1983.
Extraction Method: N/A
Matrix: GROUNDWATER
QC Level: IV

Lab Id: 002
Client Sample Id: DO-0018-06-006
Sample Date/Time: 19-JAN-98 N/S
Received Date: 21-JAN-98

Batch: TOW005
Blank: A
Dry Weight %: N/A
Extraction Date: N/A
Analysis Date: 26-JAN-98

Parameter:	Units:	Results:	Rpt Lmts:	Q:
TOTAL ORGANIC CARBON	MG/L	ND	1	
ANALYST	INITIALS	LP		

Comments:

AMERICAN ENVIRONMENTAL NETWORK 11 East Olive Road Pensacola, Florida 32514 (904) 474-1001

"FINAL REPORT FORMAT - SINGLE"

Accession:	801477
Client:	AMERICAN ENVIRONMENTAL NETWORK OF MARYLAND, INC.
Project Number:	9801049
Project Name:	FOSTER WHEELER
Project Location:	WARMINISTER
Test:	TOTAL ORGANIC CARBON
Analysis Method:	415.1/EPA-600/4-79-202, March 1983.
Extraction Method:	N/A
Matrix:	GROUNDWATER
QC Level:	IV

Lab Id:	003	Sample Date/Time:	19-JAN-98 N/S
Client Sample Id:	DO-0018-06-007	Received Date:	21-JAN-98
Batch: TOW005		Extraction Date:	N/A
Blank: A	Dry Weight %: N/A	Analysis Date:	26-JAN-98

Parameter:	Units:	Results:	Rpt Lmts:	Q:
TOTAL ORGANIC CARBON	MG/L	ND	1	
ANALYST	INITIALS	LP		

Comments:

AMERICAN ENVIRONMENTAL NETWORK 11 East Olive Rd Pensacola, FL 32514 (850) 474-1001

Data Qualifiers for Final Report

AEN-Pensacola Inorganic/Organic

@	Adjusted reporting limit due to sample matrix (dilution prior to digestion and/or analysis)
+	Elevated reporting limit due to dilution into calibration range
•	Elevated reporting limit due to matrix interference (dilution prior to digestion and/or analysis)
#	Elevated reporting limit due to insufficient sample size
D	Diluted out
J5	The reported value is quantitated as a TIC; therefore, it is estimated
ND = Not Detected	N/S = Not Submitted N/A = Not Applicable

Florida Projects Inorganic/Organic

Y1	Improper preservation, no preservative present in sample upon receipt
Y2	Improper preservation, incorrect preservative present in sample upon receipt
Y3	Improper preservation, sample temperature exceeded EPA temperature limits of 2-6°C upon receipt
Y (FL description)	The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
Q	Sample held beyond the accepted holding time
I	The reported value is < Laboratory RL and > laboratory MDL
U1	The reported value is ≤ Laboratory MDL (value for sample result is reported as the MDL)
U (FL description)	Indicates the compound was analyzed for but not detected.
T	The reported value is < Laboratory MDL (value shall not be used for statistical analysis)
V	The analyte was detected in both the sample and the associated method blank.
J1	Surrogate recovery limits have been exceeded
J2	The sample matrix interfered with the ability to make any accurate determinations
J3	The reported value failed to meet the established quality control criteria for either precision or accuracy
J (FL description)	Estimated value; not accurate.

AFCEE Projects (under QAPP) and All Other (AEN-PN) Projects/Sites for Inorganic/Organic Parameters

J4	(For positive results) Temperature limits exceeded (≤2°C or ≥ 6°C)
J (AFCEE description)	The analyte was positively identified, the quantitation is an estimation
R1	(For nondetects) Temperature limits exceeded (≤2°C or ≥ 6°C)
R2	Improper preservation, no preservative present in sample upon receipt
R3	Improper preservation, incorrect preservative present in sample upon receipt
R4	Holding time exceeded
R5	Collection requirements not met, improper container used for sample
R (AFCEE description)	The data are unusable due to deficiencies in the ability to analyze the sample and meet QC criteria
F	< RL and > laboratory MDL
F (AFCEE description)	The analyte was positively identified but the associated numerical value is below the AFCEE or lab RL
U2	≤ Laboratory MDL (value for result will be the MDL, never below the MDL)
U (AFCEE description)	The analyte was analyzed for but not detected. The associated numerical value is at or below the MDL
B (AFCEE description)	The analyte was found in the associated blank, as well as in the sample

ICR Projects Inorganic/Organic

A	Acceptable
R6	Rejected

Examples: ICR Flags

R6 = Laboratory extracted the sample but the refrigerator malfunctioned so the extract became warm and client was notified

R6 = Sample arrived in laboratory in good condition; however, the laboratory did not analyze it within EPA's established holding time limit.

CLP and CLP-like Projects

Refer to referenced CLP Statement of Work (SOW) for explanation of data qualifiers

IDL = Laboratory Instrument Detection Limit
MDL = Laboratory Method Detection Limit
RL = Reporting Limit (AFCEE RLs are listed in the AFCEE QAPP)
CLP CRDL = CLP Contract Required Detection Limit (these limits are listed in the EPA CLP Statement of Work or SOW)
CLP CRQL = CLP Contract Required Quantitation Limit (these limits are listed in the EPA CLP Statement of Work or SOW)

Any time a sample arrives at the laboratory improperly preserved (at improper pH or temperature) or after holding time has expired or prepared or analyzed after holding time, client must be notified in writing (i.e. case narrative).

AEN-Pensacola uses the most current promulgated methods contained in the reference manuals.

AMERICAN ENVIRONMENTAL NETWORK 11 East Olive Road Pensacola, Florida 32514 (904) 474-1001

Quality Control Report

Analysis: TOTAL ORGANIC CARBON

Accession:	801477
Client:	AMERICAN ENVIRONMENTAL NETWORK OF MARYLAND, INC.
Project Number:	9801049
Project Name:	FOSTER WHEELER
Project Location:	WARMINISTER
Department:	SEMI-VOLATILE FUELS

AMERICAN ENVIRONMENTAL NETWORK 11 East Olive Road Pensacola, Florida 32514 (904) 474-1001

"QC Report"

Title: Water Blank
Batch: TOW005
Analysis Method: 415.1/EPA-600/4-79-202, March 1983.
Extraction Method: N/A

Blank Id: A Date Analyzed: 26-JAN-98 Date Extracted: N/A

Parameters:	Units:	Results:	Reporting Limits:
TOTAL ORGANIC CARBON	MG/L	ND	1
ANALYST	INITIALS	LP	

Comments:

AMERICAN ENVIRONMENTAL NETWORK 11 East Olive Road Pensacola, Florida 32514 (904) 474-1001

"QC Report"

Title: Water LCS
Batch: TOW005
Analysis Method: 415.1/EPA-600/4-79-202, March 1983.
Extraction Method: N/A

RS Date Analyzed: 26-JAN-98 RS Date Extracted: N/A

Parameters:	Spike Added	Sample Conc	RS Conc	RS %Rec	Rec Lmts
TOC	6.7	<1	6.1	91	71-127

Surrogates:

Comments:

Notes:
N/S = NOT SUBMITTED N/A = NOT APPLICABLE D = DILUTED OUT
MG/L = PARTS PER MILLION. < = LESS THAN REPORTING LIMIT.
* = VALUES OUTSIDE OF QUALITY CONTROL LIMITS.
SOURCES FOR CONTROL LIMITS ARE INTERNAL LABORATORY QUALITY ASSURANCE PROGRAM AND REFERENCED METHOD.

AMERICAN ENVIRONMENTAL NETWORK 11 East Olive Road Pensacola, Florida 32514 (904) 474-1001

"QC Report"

Title: Water Matrix Spike/Matrix Spike Duplicate
Batch: TOW005
Analysis Method: 415.1/EPA-600/4-79-202, March 1983.
Extraction Method: N/A

Dry Weight %: N/A
Sample Spiked: 801477-1

MS Date Analyzed: 26-JAN-98
MSD Date Analyzed: 26-JAN-98

MS Date Extracted: N/A
MSD Date Extracted: N/A

Parameters:	Spike Added	Sample Conc	MS Conc	MS %Rec	MSD Conc	MSD %Rec	RPD	RPD Lmts	Rec Lmts
TOC	6.7	<1	6.7	100	6.8	101	1	30	51-135

Surrogates:

Comments:

Notes:
N/S = NOT SUBMITTED N/A = NOT APPLICABLE D = DILUTED OUT
MG/L = PARTS PER MILLION. < = LESS THAN REPORTING LIMIT.
* = VALUES OUTSIDE OF QUALITY CONTROL LIMITS.
SOURCES FOR CONTROL LIMITS ARE INTERNAL LABORATORY QUALITY ASSURANCE PROGRAM AND REFERENCED METHOD.

Common Notation for Organic Reporting

N/S = NOT SUBMITTED
N/A = NOT APPLICABLE
UG = MICROGRAMS
UG/L = PARTS PER BILLION
UG/KG = PARTS PER BILLION
MG/M3 = MILLIGRAM PER CUBIC METER
PPMV = PART PER MILLION BY VOLUME
MG/KG = PARTS PER MILLION
MG/L = PARTS PER MILLION
< = LESS THAN
ND = NOT DETECTED

SOURCES FOR CONTROL LIMITS ARE INTERNAL LABORATORY QUALITY ASSURANCE PROGRAM AND REFERENCED METHOD.

ORGANIC SOILS ARE REPORTED ON A DRYWEIGHT BASIS.

RPT LMTS = REPORTING LIMITS BASED ON METHOD DETECTION LIMIT STUDIES.

RPD = RELATIVE PERCENT DIFFERENCE (OR DEVIATION)

AEN/GC/FID
AEN GAS CHROMATOGRAPHIC METHOD EMPLOYING DIRECT INJECTION ON COLUMN WITH FLAME IONIZATION DETECTOR (FID).

AEN/GC/FIX
AEN GAS CHROMATOGRAPHIC METHOD FOR ANALYSIS OF FIXED GASES EMPLOYING DIRECT INJECTION ON COLUMN WITH THERMAL CONDUCTIVITY DETECTOR (TCD) AND FLAME IONIZATION DETECTOR (FID).

AEN/GC/FPD
AEN GAS CHROMATOGRAPHIC METHOD EMPLOYING DIRECT INJECTION ON COLUMN WITH FLAME PHOTOMETRIC DETECTOR (FPD) IN SULFUR-SPECIFIC MODE.

AEN/GC/PID
AEN GAS CHROMATOGRAPHIC METHOD EMPLOYING DIRECT INJECTION ON COLUMN WITH PHOTOIONIZATION DETECTOR (PID).

AEN/GC/TCD
AEN GAS CHROMATOGRAPHIC METHOD EMPLOYING DIRECT INJECTION ON COLUMN WITH THERMAL CONDUCTIVITY DETECTOR (TCD).

SW-846 METHOD 9020
PARTICULATE MATTER IS REMOVED BY ALLOWING PARTICULATES TO SETTLE IN THE SAMPLE CONTAINER AND DECANTING THE SUPERNATANT LIQUID. EXCESSIVE PARTICULATES ARE REMOVED BY FILTRATION OF THE SUPERNATANT LIQUID.

RSK 175
SAMPLE PREPARATION AND CALCULATIONS FOR DISSOLVED GAS ANALYSIS IN WATER SAMPLES USING A GC HEADSPACE EQUILIBRATION TECHNIQUE, RSK SOP-175, ROBERT S. KERR ENVIRONMENTAL RESEARCH LABORATORY, USEPA, AUGUST 11, 1994.

AEN-PN USES THE MOST CURRENT PROMULGATED METHODS CONTAINED IN THE REFERENCE MANUALS.

SW = STEVE WILHITE
RW = ROBERT WOLFE
KS = KENDALL SMITH
KL = KERRY LEMONT
JO = JENNIFER O'NEAL
LP = LEVERNE PETERSON
PLD = PAULA DOUGHTY
JL = JANET LECLEAR

AMERICAN ENVIRONMENTAL NETWORK, INC. -- PENSACOLA, FL

GC/ORGANICS RUN LOG
TOC (415.1)

#	Analyst Initials	Run Date	QC/Accession Number	Dilution	Batch Number	Standard	Comments
4	LP	1/23/98	801252-4		TOW004		
5			-6				
6			-8				
7			-10				
8			-12				
9			-14				
10			-16				
11			-18				
12			-20				
			801252-18MS				
			-18MSD				
13			801387-3				
14			-4				
15			801388-1				
16			-2				
17			801389-1				
18			2				
19			801440-1				
	LP	1/26/98	10 ppm		TOW005		
			5ppm				
			25ppm				
			50 ppm				
			BLK005W				
			LCS005W				

The analyst initials appearing on the run log, removed the sample and/or sample extract from the refrigerator and returned it to the refrigerator.

AMERICAN ENVIRONMENTAL NETWORK, INC. -- PENSACOLA, FL

GC/ORGANICS RUN LOG
TOC (415.1)

#	Analyst Initials	Run Date	QC/Accession Number	Dilution	Batch Number	Standard	Comments
	LL	1/26/98	LCSD005W		TOW005		
1			801284-1				
			1d	x3			
2			2				
			2d	x3			
3			801468-1				
4			-2				
5			801469-1				
6			801477-1				
7			2				
8			3				
			801477-1MS				
			-1MD				

The analyst initials appearing on the run log, removed the sample and/or sample extract from the refrigerator and returned it to the refrigerator.

SELFTEST
NO ERRORS

1 TOC 5.510

2 TOC 5.601

3 TOC 5.597

CAL -- 1 ML
CAL AVE 5.569
CAL ADJ 9.995

1 TOC 4.658

2 TOC 4.908

3 TOC 22.97

4 TOC 23.32

5 TOC 43.08

6 TOC 43.71

7 TOC 0.430 BLK

~~8 TOC 0.000~~ Void BROKEN LOADED W/26KB

~~9 TOC 0.769~~

~~10 TOC 4.235~~

~~11 TOC 1.683~~

12 TOC 0.358

13 TOC 5.974 LCS

14 TOC 6.272 1 6.1

15 TOC 6.592 LCSD

16 TOC 6.471 6.5

801477 1 801477-1

32 TOC 0.557

33 TOC 0.598

34 TOC 0.259 2

35 TOC 0.257

36 TOC 0.222 3

37 TOC 0.257

38 TOC 6.568 1MS

39 TOC 6.839 6.7

40 TOC 6.769 1MD

41 TOC 6.795 6.8