

23 February 2010

Mr. Jeff Dyber, P.E. - Environmental Engineer 2
New York State Department of Environmental Conservation
Division of Environmental Remediation
Bureau of Eastern Remedial Action
625 Broadway
Albany, New York 12233

RE: National Heatset Printing Site / Soil Vapor Extraction System
Operation & Maintenance Report (October – December 2009)
1 Adams Boulevard, Farmingdale, New York
New York State Department of Environmental Conservation Site 1-52-140
EA Project No. 14474.29

Dear Mr. Dyber:

This letter report provides an overview of the ongoing operation of the soil vapor extraction (SVE) system at the National Heatset Printing site in Farmingdale, New York (Figure 1). EA Engineering, P.C. and its affiliate EA Science & Technology, Inc. (EA) assumed management of the on-site SVE system under Work Assignment No. D004441-29. The activities are being conducted under the New York State Department of Environmental Conservation (NYSDEC) State Superfund Standby Contract. SVE system details are presented in an Operation & Maintenance (O&M) Manual (Shaw, 2003)¹.

In accordance with our approved Work Plan, monthly site visits were performed up to the June 2009 event. After the June 2009 visit, the frequency of the O&M visits was changed to quarterly. The decision was made in coordination with NYSDEC and was based on the reliability of system operation and the potential cost savings in system monitoring/maintenance. The quarterly O&M visit associated with this reporting period was performed on 21 December 2009 by YEC personnel on behalf of EA.

1. SYSTEM OPERATION

Based on the motor's hour meter, the system was operational for a total of 2,160 hours out of an available 2,160 hours (100 percent of the total available) during this reporting period (22 September 2009 to 21 December 2009).

Operational data for this period have been based on the measurements and effluent sample data collected on the dates listed above. The dilution valve was adjusted from the 75 percent open

¹ The Shaw Group. 2003. Soil Vapor Extraction Operation and Maintenance Manual. October.



position to 25 percent open during the reporting period by EA staff on-site for the DDC system installation. The extraction well (MW-F) valve remained at the 100 percent open position.

Operational data are summarized in Table 1 and on the site visit data collection forms provided in Attachment A. Key operating parameters for the SVE system are summarized below.

Date	Extraction Well Flow rate (cfm)	Extraction Well Vacuum (H ₂ O)	SVE Blower Flow rate (cfm)	TCE Conc. ^(a) (mg/m ³)	PCE Conc. ^(a) (mg/m ³)
12/21/09	157	70	184	0.38	4.82
(a) PCE & TCE concentration measured via laboratory analysis.					
NOTE: cfm = Cubic feet per minute. PCE = Tetrachloroethylene. TCE = Trichloroethene.					

Adjustment of the dilution valve resulted in a flow rate increase from 93 cfm to 157 cfm, and a related increase in vacuum from 31 inches H₂O to 70 inches H₂O at the extraction well. A complete set of operational data collected are presented in Tables 1 through 4.

2. MONITORING PROBES

The following vacuum data (in. of water column) were observed at the listed vapor monitoring points during the monitoring period.

Vapor Monitoring Point	12/21/09
VP-1	2.60
VP-2	0.85
VP-3	0.30
VP-7	0.25
VP-8	0.47
VP-9	0.32
VP-10	-
VP-11	0.18
VP-12	0.05
VP-13	-
VP-14	0.02
VP-15	0.01
NOTE: - = Unable to access monitoring point	

The vapor points will continue to be monitored during future site visits.



3. DEPTH-TO-WATER MEASUREMENTS

The following gauging data (ft below top-of-casing) were collected during the monitoring period.

Date	MW-C	MW-E	MW-G
12/21/09	15.76	15.76	16.12

Based on the gauging data, the water table dropped approximately 0.3 ft during the monitoring period. The wells will continue to be gauged during future site visits.

4. AIR DISCHARGE MONITORING

YEC personnel collected grab air samples from the system effluent using Tedlar bags and submitted the samples to Alpha Analytical. The samples were analyzed for volatile organic compounds using U.S. Environmental Protection Agency Method TO-14. PCE, TCE, and *cis*-1,2-dichloroethene (*cis*-1,2-DCE) were detected at the following concentrations.

Date	<i>cis</i> -1,2-DCE	TCE	PCE
12/21/09	0.09	0.38	4.82
NOTE: Units = mg/m ³			

Analytical results are summarized in Table 2 and the laboratory data report is presented in Attachment B. A summary of the field monitoring and laboratory air discharge analytical results is presented as Table 3.

Based on the effluent sampling results, a total of 39.56 lbs of PCE has been discharged during the year 2009 toward the permitted annual discharge limit of 270 lbs. A total of 1.64 lb of TCE has been discharged during the year 2009 toward the permitted annual discharge limit of 120 lbs. No *cis*-1,2-DCE was discharged during the reporting period (the annual discharge limit is 5,510 lbs).

5. CONCLUSIONS AND RECOMMENDATIONS

Based on the data collected from the SVE system during this reporting period, EA recommends continued operation of the SVE system.



Please do not hesitate to contact me at 315-431-4610 with any questions you might have regarding this report.

Sincerely,

EA SCIENCE AND
TECHNOLOGY, INC.

A handwritten signature in black ink, appearing to read 'Donald Conan', followed by a horizontal line.

Donald F. Conan, P.E.
Project Manager

DFC/drs

Enclosures

**TABLE 1
SUMMARY OF SOIL VAPOR EXTRACTION SYSTEM READINGS
NATIONAL HEATSET PRINTING
1 ADAMS BLVD., FARMINGDALE, NY**

Date	Run Time Meter Reading (hours)	Run Time Since Last Visit (hours)		Operation Time Since Last Visit (%)	Dilution Valve Position (% Open)	Extraction Well MW-F Valve Position (% Open)	Air Flow at Well (scfm)	Vacuum at Well (inches H2O)	Pre-Dilution PID (ppm)	Pre-Dilution PCE (ppm)	Influent SVE					Mid GAC				Effluent GAC			
		Available	Actual								Blower Flow (cfm)	Vacuum (inches H2O)	Temp. (°F)	PID (ppm)	PCE (ppm)	Flow (cfm)	Temp. (°F)	PID (ppm)	PCE (ppm)	Flow (cfm)	Temp. (°F)	PID (ppm)	PCE (ppm)
9/18/2002	--	--	--	SVE PILOT TEST STARTUP																			
9/30/2002	304	294	294	100%	100	50	34.5	5	2,000	500	256	25	107.2	1,015	--	317	102.3	0	--	290	89.5	0	--
10/14/2002	642	343	338	99%	100	50	38	7	1,011	400	258	27	--	75.3	50	--	--	0	--	--	--	0	--
11/19/2002	1508	882	866	98%	100	50	49	12	0	0	120	28	106	0	0	209	92	0	--	290	80.3	0	--
12/4/2002	--	368	--	--	--	--	--	--	77	200	--	--	--	14.3	10	--	--	15.5	10	--	--	0	0
12/16/2002	2153	294	645	98%	100	50	36.5	10	560	200	253	28	92	46.4	50	302	60	3.4	--	340	53.9	0	--
1/21/2003	3016	882	863	98%	100	50	--	--	--	--	70	52	98	0	0	220	--	0	--	220	--	0	--
2/10/2003	3496	490	480	98%	100	50	38	--	639	400	262	27	102	72	50	266	90	26	10	258	83	3.2	10
3/18/2003	4360	882	864	98%	100	50	92	12	125	100	266	25	123	15	10	278	124	0	0	282	117	0	0
4/29/2003	5359	1029	999	97%	75	50	75	50	152	50	132	16	118.5	48.2	25	302	96	18.6	10	287	86	0.6	0
5/13/2003	5700	343	341	99%	75	50	78	--	127	50	239	48	130	41.8	50	246	108	46	25	245	97	0.6	0
6/30/2003	6850	1176	1150	98%	50	50	115	32	82.4	50	140	66	173	36.8	50	198	157	25.1	25	240	150	29.8	100
7/10/2003	6851	245	1	0%	50	50	99.5	25	406	400	151	68	156	221	215	260	76	0	0	222	81.9	0	0
7/22/2003	7144	294	294	100	50	50	--	--	127	--	--	--	--	168	65	--	107	0	--	--	106	0	--
8/26/2003	7957	858	813	95	50	50	79	13.5	137	10	186	65	170	51.4	5	291	--	55.4	10	232	--	35.6	10
9/23/2003	8274	686	317	46	50	50	218	33	141	15	194	64	160	55	30	254	124	0	0	210	110	0	0
10/21/2003	8945	686	671	98	50	50	166	45	--	20	158	68	166	37.5	25	214	130	30.7	15	225	112	0	0
11/24/2003	9749	833	805	97	50	50	130	46	141	125	178	72	138	261	200	225	52	0	0	205	51.4	0	0
1/6/2004	9750	1054	1	0	50	50	98.5	74	118	100	164	12	140	247	250	224	48.6	0	0	200	48.4	0	0
2/9/2004	10336	833	586	70	50	50	121	44	23.1	10	172	70	155.8	29.8	25	233	137	41.4	25	235	117	0	0
3/30/2004	11289	1225	953	78	50	50	103	>50	34	<10	198	70	160	22	<10	240	128	22	<10	160	115	24	<5
4/8/2004	11441	221	152	69	50	75	127	--	23.7	<10	--	--	--	--	--	180	83	30	--	206	83	0.9	--
4/29/2004	11768	515	327	64	50	75	131	>60	2.4	0	--	76	170	2.2	0	209	128	0	0	255	116	0	0
5/24/2004	12264	613	496	81	50	75	144	75	43.8	50	172	75	178	33.1	<50	250	121	4.4	0	198	111	0	0
6/22/2004	12817	711	553	78	50	75	127	74	57	10	140	76	180	52	30	181	123	25.8	15	210	113	0	0
7/28/2004	13630	882	813	92	50	75	142	76.5	53.2	7	161	76.5	159	41.1	25	216	137	35.3	20	181	109	3.1	0
8/31/2004	13989	833	359	43	25	90	157	58	48	0	104	74	137	202	200	180	98	2.2	0	187	91	0.1	0
9/29/2004	14256	711	267	38	50	75	139	60	--	--	140	76	153	27.7	--	194	126	0	--	205	102.1	0	--
10/20/2004	14729	515	473	92	50	75	155	58	--	--	120	76	160	19.1	10	202	122	0	0	230	101	0	0
11/17/2004	15229	686	499	73	75	50	160	80	17.9	<5	148	77	160	13.5	<10	152	112	7.2	<5	173	94	0	0
12/22/2004	15565	858	337	39	75	50	143	80	15.8	<5	125	85	160	18.3	10	127	116	16	5	131	93.4	0	0
1/20/2005	15933	711	368	52	25	100	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2/23/2005	15933	833	0	0	75	50	87.5	36	174	50	188	58	110	93	50	265	56	0	0	245	38.5	0	0
3/29/2005	16217	833	284	34	75	50	87 ⁽¹⁾	40	--	--	158 ⁽¹⁾	--	121	6.4	4.5	255 ⁽¹⁾	97	3.4	3	234 ⁽¹⁾	81	0	<2
4/28/2005	--	720	720 ⁽²⁾	100	75	50	86	39	--	--	227	--	126	8.9	5	244	109	8	4	222	84.2	0	<2
5/31/2005	--	792	792 ⁽²⁾	100	50	50	98	39	7.4	9.5	208	--	124.2	10.4	10	227	118.6	17.6	10	223	112.3	0	<2
6/24/2005		576	576 ⁽²⁾	100	50	50	125	25	28.5	16	266	--	152	8.3	7	283	133	13.9	16	242	116	10.1	15
8/4/2005	17972	984	984 ⁽²⁾	100	75	65	216	26	38.1	19	353	--	153.4	8.8	12	423	135.7	10.5	12	381	120.7	7.5	12
Spent Carbon Replaced 8/10/05																							
9/13/2005	859	960	960 ⁽²⁾	100	75	50	89.5	25	59.6	14	226	--	164.5	18.3	12	265	143	0.5	0	248	124.6	0	0
10/10/2005	1502	643	643	100	75	35	86	27	59.2	19	222	--	101.3	21.7	10	225	110	15.1	0	211	99.3	0	0
11/11/2005	2271	769	769	100	50	50	79	31	--	5	209	--	110.9	12.2	9	242	99.4	2.6	2	239	83.1	0	0

Notes:

⁽¹⁾ Calculated flows based on the average of flows measured on 3-29-05 and 4-28-05

⁽²⁾ Run time meter reading not indicative of SVE system run time; actual hours run is assumed 100% of available.

PID = Total VOC concentration measured with photoionization detector

ppm = parts per million (volume/volume basis)

PCE = Tetrachloroethene (PCE) concentration measured with Drager tube of 10-500 ppm range

scfm = standard cubic feet per minute

cfm = cubic feet per minute

-- = measurement not recorded or not applicable.

Influent SVE = Readings collected between the SVE Blower and the Carbon Units

Mid GAC = Readings collected between the lead and lag carbon units

Effluent GAC = Readings collected after the lag carbon unit

GAC = granular activated carbon unit

As of 4/28/05, the calculation of "Available" run time hours is based on 24 hours, rather than 24.5 hours as previously calculated.

1 ADAMS BLVD., FARMINGDALE, NY

* Blower discharge pressure in inches H₂O

⁽¹⁾ Calculated flows based on the average of flows measured on 3-29-05 and 4-28-05

⁽²⁾ Run time meter reading not indicative of SVE system run time: actual hours run is assumed 100% of available.

RID = Total VOC concentration measured with photoionization detector

ppm = parts per million (volume/volume basis)

PCE = Tetrachloroethene (PCE) concentration measured with Dräger tube of 10-500 ppm range

scfm = standard cubic feet per minute

scfm = standard cubic feet
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-- = measurement not recorded or not applicable.

Influent SVE = Readings collected between the SVE Blower and the Carbon Units

Mid GAC = Readings collected between the lead and lag carbon units

Effluent GAC = Readings collected after the lag carbon unit

GAC = granular activated carbon unit

As of 4/28/05, the calculation of "Available" run time hours is based on 24 hours, rather than 24.5 hours as previously calculated.

TABLE 2
AIR SAMPLE ANALYTICAL RESULTS
NATIONAL HEATSET PRINTING
1 ADAMS BLVD., FARMINGDALE, NY

SVE Influent Concentration (mg/m3)			
Date	cis-1,2-Dichloroethene	Tetrachloroethene (PCE)	Trichloroethene
9/18/2002	5	600E	31
9/30/2002	ND (5)	360E	23
10/14/2002	--	--	--
11/19/2002	--	--	--

VGAC Effluent Concentration (mg/m3)			
Date	cis-1,2-Dichloroethene	Tetrachloroethene (PCE)	Trichloroethene
9/18/2002	--	--	--
9/30/2002	--	--	--
10/14/2002	--	--	--
11/19/2002	--	--	--
12/16/2002	ND (5)	ND (5)	ND (5)
1/21/2003	--	--	--
2/10/2003	ND (5)	8	6
3/18/2003	--	--	--
4/29/2003	--	--	--
5/13/2003	ND (1)	5	ND (1)
6/30/2003	--	--	--
7/22/2003	ND (1)	ND (1)	ND (1)
8/26/2003	ND (5)	29	3.6
9/23/2003	ND (5)	ND (5)	ND (5)
10/21/2003	ND (5)	ND (5)	ND (5)
11/24/2003	--	--	--
1/6/2004	--	--	--
2/9/2004	10	ND (5)	ND (5)
3/30/2004	2J	77	1J
4/29/2004	ND (5)	10	ND (5)
5/24/2004	ND (1)	ND (1)	ND (1)
6/22/2004	ND (1)	ND (1)	ND (1)
7/28/2004	ND (5)	ND (5)	ND (5)
8/12/2004	--	--	--
9/29/2004	ND (1)	ND (1)	ND (1)
10/20/2004	ND (1)	ND (1)	ND (1)
11/17/2004	ND (1)	ND (1)	ND (1)
12/22/2004	ND (1)	ND (1)	ND (1)
1/20/2005	--	--	--
3/29/2005	2	ND (1)	ND (1)
4/28/2005	1	0.5J	ND (1)
5/31/2005	1	5	2
6/24/2005	0.8J	64	2
8/4/2005	0.7J	57	1J
<i>Spent Carbon Replaced 8/10/05</i>			
9/13/2005	ND (1)	ND (1)	ND (1)
10/10/2005	ND (1)	ND (1)	ND (1)
11/11/2005	ND (1)	ND (1)	ND (1)
12/8/2005	ND (1)	ND (1)	ND (1)
1/6/2006	ND (1)	ND (1)	ND (1)
<i>Spent Carbon Replaced 1/25/06</i>			
2/6/2006	ND (1)	1	ND (1)

Notes:

Only compounds that were detected above the method reporting limit were presented above

ND (5) = Not detected above method reporting limit in parenthesis

E = Concentration exceeded calibration range

-- = sample not collected

SVE = Soil vapor extraction

J = Estimated Value

VGAC = vapor-phase granular activated carbon

mg/m3 = milligrams per cubic meter

TABLE 2
AIR SAMPLE ANALYTICAL RESULTS
NATIONAL HEATSET PRINTING
1 ADAMS BLVD., FARMINGDALE, NY

[illegible]

Notes:

Only compounds that were detected above the method reporting limit were presented above

ND (5) = Not detected above method reporting limit in parenthesis

-- = sample not collected

J = Estimated Value

J = Analyte detected below quantitation limits.

mg/m³ = milligrams per cubic meter

TABLE 3
AIR DISCHARGE MONITORING
NATIONAL HEATSET PRINTING
1 ADAMS BLVD., FARMINGDALE, NY

Date	System Effluent Flow Rate (cfm)	Field Monitoring		Elapsed Time (day)	Laboratory Results			Discharge based on Field Monitoring		Discharge based on Laboratory Results					
		PCE System Effluent Concentration (ppmv)	System Effluent VOC Concentration (ppmv)		PCE (mg/cu m.)	TCE (mg/cu m.)	cis-1,2-DCE (mg/cu m.)	PCE Discharge Since Last Visit (lb/hr)	PCE Discharge Since Last Visit (lb)	PCE Discharge Since Last Visit: lb/hr	PCE Discharge Since Last Visit (lb)	TCE Discharge Since Last Visit (lb/hr)	TCE Discharge Since Last Visit (lb)	cis-1,2-DCE Discharge Since Last Visit (lb/hr)	cis-1,2-DCE Discharge Since Last Visit (lb)
9/18/2002								SVE PILOT TEST STARTUP							
9/30/2002	290	--	0	12	--	--	--	--	--	--	--	--	--	--	--
10/14/2002	--	--	0	14	--	--	--	--	--	--	--	--	--	--	--
11/19/2002	290	--	0	36	--	--	--	--	--	--	--	--	--	--	--
12/16/2002	340	--	0	27	ND (5)	ND (5)	ND (5)	--	--	0.00	0.00	0.00	0.00	0.00	0.00
1/13/2003	45	0	--	28	--	--	--	0.0000	0.00	--	--	--	--	--	--
1/21/2003	220	--	0	8	--	--	--	--	--	--	--	--	--	--	--
2/10/2003	258	10	3.2	20	8.0	6.0	ND (5)	0.0654	31.40	0.008	3.71	0.006	2.78	0.00	0.00
3/5/2003	305	--	0	23	--	--	--	--	--	--	--	--	--	--	--
3/18/2003	282	0	0	13	--	--	--	0.0000	0.00	--	--	--	--	--	--
4/29/2003	287	0	0.6	42	--	--	--	0.0000	0.00	--	--	--	--	--	--
5/13/2003	245	0	0.6	14	5.0	ND (1)	ND (1)	0.0000	0.00	0.005	1.54	0.00	0.00	0.00	0.00
6/30/2003	240	100	29.8	48	--	--	--	0.3043	350.56	--	--	--	--	--	--
7/22/2003	222	--	0	12	ND (1)	ND (1)	ND (1)	--	--	0.00	0.00	0.00	0.00	0.00	0.00
8/26/2003	232	10	35.6	35	29.0	3.6	ND (5)	0.0588	49.42	0.025	21.17	0.003	2.63	0.00	0.00
9/23/2003	210	0	0	28	ND (5)	ND (5)	ND (5)	0.0000	0.00	0.000	0.00	0.000	0.00	0.00	0.00
10/21/2003	225	0	0	28	ND (5)	ND (5)	ND (5)	0.0000	0.00	0.000	0.00	0.000	0.00	0.00	0.00
11/24/2003	205	0	0	34	--	--	--	0.0000	0.00	--	--	--	--	--	--
2003 Totals:									431.38		26.42		5.41		0.00
1/6/2004	200	0	0	43	--	--	--	0.0000	0.00	--	--	--	--	--	--
2/9/2004	235	0	0	34	ND (5)	ND (5)	10	0.0000	0.00	0.000	0.00	0.000	0.00	0.009	7.18
3/30/2004	160	5	24	50	77	1J	2J	0.0203	24.34	0.046	55.38	0.001	0.72	0.001	1.44
4/29/2004	255	0	0	30	10	ND (5)	ND (5)	0.0000	0.00	0.010	6.88	0.001	0.69	0.002	1.38
5/24/2004	198	0	0	25	ND (1)	ND (1)	ND (1)	0.0000	0.00	0.000	0.00	0.000	0.00	0.000	0.00
6/22/2004	210	0	0	29	ND (1)	ND (1)	ND (1)	0.0000	0.00	0.000	0.00	0.000	0.00	0.000	0.00
7/28/2004	181	0	3.1	36	ND (5)	ND (5)	ND (5)	0.0000	0.00	0.000	0.00	0.000	0.00	0.000	0.00
8/12/2004	187	0	0.1	15	--	--	--	0.0000	0.00	--	--	--	--	--	--
9/29/2004	205	--	0	48	ND (1)	ND (1)	ND (1)	--	--	0.000	0.00	0.000	0.00	0.000	0.00
10/20/2004	230	0	0	21	ND (1)	ND (1)	ND (1)	0.0000	0.00	0.000	0.00	0.000	0.00	0.000	0.00
11/17/2004	173	0	0	28	ND (1)	ND (1)	ND (1)	0.0000	0.00	0.000	0.00	0.000	0.00	0.000	0.00
12/22/2004	131	0	0	35	ND (1)	ND (1)	ND (1)	0.0000	0.00	0.000	0.00	0.000	0.00	0.000	0.00
2004 Totals:									24.34		62.26		1.41		10.00

Notes: -- = Measurement not recorded

⁽¹⁾ Calculated flows based on the average of flows measured on 3-29-05 and 4-28-05

Discharge Rate (Field Mon., lb/hr) = [(flow(cfm)*influent conc.(ppmv)*MW*12.187)/(273.15+C)]*1 cu. m./35.31 cu. ft*1g/1000 mg*1 lb/453.6 g*60 min/1 hr

Discharge (Field Mon., lb) = Discharge Rate (lb/hr) * # of days*24hours/day*60 minutes/hr

Discharge Rate (Lab Res., lb/hr) = flow (cfm)*effluent conc. (mg/cu. m.)*1g/1000mg*1lb/453.6g*1cu. m./35.31cu. ft*60min/1 hr

Discharge (Lab Res., lb) = Discharge Rate (lb/hr) * # of days*24hours/day

Where: C = degrees centigrade, assumed to be 25

J = Estimated Value

hr = hours

Molecular weight (MW) of PCE=165.85; TCE=131.4; cis-1,2-DCE=96.94

cfm = cubic feet per minute

mg/cu. m = milligrams per cubic meter

ppmv = parts per million (vol./vol.)

lb = pounds

Permit Limit		
	lb/hr	lb/yr
PCE	0.031	270
TCE	0.014	120
cis-1,2-DCE	0.63	5,510

TABLE 3
AIR DISCHARGE MONITORING
NATIONAL HEATSET PRINTING
1 ADAMS BLVD., FARMINGDALE, NY

Date	System Effluent Flow Rate (cfm)	Field Monitoring		Elapsed Time (day)	Laboratory Results			Discharge based on Field Monitoring		Discharge based on Laboratory Results					
		PCE System Effluent Concentration (ppmv)	System Effluent VOC Concentration (ppmv)		PCE (mg/cu m.)	TCE (mg/cu m.)	cis-1,2-DCE (mg/cu m.)	PCE Discharge Since Last Visit (lb/hr)	PCE Discharge Since Last Visit (lb)	PCE Discharge Since Last Visit: lb/hr	PCE Discharge Since Last Visit (lb)	TCE Discharge Since Last Visit (lb/hr)	TCE Discharge Since Last Visit (lb)	cis-1,2-DCE Discharge Since Last Visit (lb/hr)	cis-1,2-DCE Discharge Since Last Visit (lb)
1/20/2005	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2/23/2005	245	0	0	34	--	--	--	0.0000	0.00	--	--	--	--	--	--
3/29/2005	234 ⁽¹⁾	0	0	34	ND (1)	ND (1)	2	0.0000	0.00	0.000	0.00	0.000	0.00	0.002	1.43
4/28/2005	222	0	0	30	0.5	ND (1)	1	0.0000	0.00	0.0004	0.30	0.000	0.00	0.001	0.60
5/31/2005	223	0	0	33	5	2	1	0.0000	0.00	0.0042	3.31	0.0017	1.32	0.001	0.66
6/24/2005	242	10.1	15	24	64	2	0.8J	0.0620	35.70	0.0580	33.42	0.0018	1.04	0.001	0.42
8/4/2005	381	12	7.5	41	57	1J	0.7J	0.1159	114.09	0.0814	80.05	0.0014	1.40	0.001	0.98
Spent Carbon Replaced 8/10/05															
9/13/2005	248	0	0	40	ND (1)	ND (1)	ND (1)	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.000	0.00
10/10/2005	211	0	0	27	ND (1)	ND (1)	ND (1)	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.000	0.00
11/11/2005	239	0	0	32	ND (1)	ND (1)	ND (1)	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.000	0.00
12/8/2005	212	0	0.1	27	ND (1)	ND (1)	ND (1)	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.000	0.00
2005 Totals:								149.79			117.08		3.77		4.09
1/6/2006	265	0	5.8	29	ND (1)	ND (1)	ND (1)	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.000	0.00
Spent Carbon Replaced 1/25/06															
2/6/2006	322	0	0	30	1	ND (1)	ND (1)	0.0000	0.00	0.0012	0.87	0.0000	0.00	0.000	0.00
3/14/2006	232	0	0	36	ND (1)	ND (1)	ND (1)	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.000	0.00
4/12/2006	271	0	0	29	0.6J	ND (1)	ND (1)	0.0000	0.00	0.0006	0.42	0.0000	0.00	0.000	0.00
5/4/2006	214	0	0	22	ND (1)	ND (1)	ND (1)	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.000	0.00
6/12/2006	253	0	0	39	ND (1)	ND (1)	ND (1)	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.000	0.00
7/12/2006	196	0	0	30	ND (1)	ND (1)	0.6 J	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.001	0.38
8/7/2006	210	0	0	26	1	ND (1)	ND (1)	0.0000	0.00	0.0008	0.49	0.0000	0.00	0.000	0.00
9/21/2006	203	0	2.1	45	2	0.8 J	0.4 J	0.0000	0.00	0.0015	1.64	0.0006	0.66	0.0003	0.33
Spent Carbon Replaced 10/11/06															
10/18/2006	236	0	0	27	--	--	--	0.0000	0.00	--	--	--	--	--	--
11/29/2006	202	0	0	42	0.9J	ND (1)	ND (1)	0.0000	0.00	0.0007	0.69	0.0000	0.00	0.0000	0.00
12/21/2006	210	0	0	22	ND (1)	ND (1)	ND (1)	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.000	0.00
2006 Totals:								0.00			4.11		0.66		0.71
1/26/2007	142	0	0	36	ND (1)	ND (1)	ND (1)	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.000	0.00
3/19/2007	172	0	0	20	ND (1)	ND (1)	ND (1)	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.000	0.00
4/27/2007	125	0	0	28	ND (1)	ND (1)	ND (1)	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.000	0.00
5/24/2007	170	0	0	27	ND (1)	ND (1)	ND (1)	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.000	0.00

Notes: -- = Measurement not recorded

⁽¹⁾ Calculated flows based on the average of flows measured on 3-29-05 and 4-28-05

Discharge Rate (Field Mon., lb/hr) = [(flow(cfm)*influent conc.(ppmv)*MW*12.187)/(273.15+C)]*1 cu. m./35.31 cu. ft*1g/1000 mg*1 lb/453.6 g*60 min/1 hr

Discharge (Field Mon., lb) = Discharge Rate (lb/hr) * # of days*24hours/day*60 minutes/hr

Discharge Rate (Lab Res., lb/hr) = flow (cfm)*effluent conc. (mg/cu. m.)*1g/1000mg*1lb/453.6g*1cu. m./35.31cu. ft*60min/1 hr

Discharge (Lab Res., lb) = Discharge Rate (lb/hr) * # of days*24hours/day

Where: C = degrees centigrade, assumed to be 25

J = Estimated Value

hr = hours

Molecular weight (MW) of PCE=165.85; TCE=131.4; cis-1,2-DCE=96.94

cfm = cubic feet per minute

mg/cu. m = milligrams per cubic meter

ppmv = parts per million (vol./vol.)

lb = pounds

Permit Limit		
	lb/hr	lb/yr
PCE	0.031	270
TCE	0.014	120
cis-1,2-DCE	0.63	5,510

TABLE 3
AIR DISCHARGE MONITORING
NATIONAL HEATSET PRINTING
1 ADAMS BLVD., FARMINGDALE, NY

Date	System Effluent Flow Rate (cfm)	Field Monitoring		Elapsed Time (day)	Laboratory Results			Discharge based on Field Monitoring		Discharge based on Laboratory Results					
		PCE System Effluent Concentration (ppmv)	System Effluent VOC Concentration (ppmv)		PCE (mg/cu m.)	TCE (mg/cu m.)	cis-1,2-DCE (mg/cu m.)	PCE Discharge Since Last Visit (lb/hr)	PCE Discharge Since Last Visit (lb)	PCE Discharge Since Last Visit: lb/hr	PCE Discharge Since Last Visit (lb)	TCE Discharge Since Last Visit (lb/hr)	TCE Discharge Since Last Visit (lb)	cis-1,2-DCE Discharge Since Last Visit (lb/hr)	cis-1,2-DCE Discharge Since Last Visit (lb)
6/21/2007	199	0	0.1	28	ND (1)	ND (1)	ND (1)	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.000	0.00
7/24/2007	194	0	0	33	0.22 J	ND (1)	ND (1)	0.0000	0.00	0.0002	0.13	0.0000	0.00	0.000	0.00
8/28/2007	129	0	0	35	0.35 J	ND (1)	0.29 J	0.0000	0.00	0.0002	0.14	0.0000	0.00	0.0001	0.12
9/18/2007	164	0	0	21	ND (1)	ND (1)	ND (1)	0.0000	0.00	0.0002	0.00	0.0000	0.00	0.000	0.00
10/31/2007	231	0	0	43	ND (1)	ND (1)	ND (1)	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.000	0.00
11/28/2007	213	0	0	28	ND (1)	ND (1)	ND (1)	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.000	0.00
1/4/2008	243	0	0	37	ND (1)	ND (1)	ND (1)	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.000	0.00
2007 Totals:									0.00		0.27		0.00		0.12
1/23/2008	192	0	0	19	ND (1)	ND (1)	ND (1)	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.000	0.00
2/28/2008	--	--	--	36	--	--	--	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.000	0.00
4/29/2008	206	0	0	61	ND (1)	ND (1)	ND (1)	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.000	0.00
5/23/2008	259	0	0	24	ND (1)	1.2	0.22 J	0.0000	0.00	0.0000	0.00	0.0012	0.67	0.000	0.00
6/26/2008	202	0	2.4	34	10	1.3	0.24 J	0.0000	0.00	0.0076	6.18	0.0010	0.80	0.000	0.00
7/28/2008	202	0	2.8	32	11	0.49 J	0.25 J	0.0000	0.00	0.0083	6.40	0.0000	0.00	0.000	0.00
8/28/2008	191	0	1.9	31	13.6	0.48	0.22	0.0000	0.00	0.0097	7.25	0.0003	0.26	0.000	0.00
9/25/2008	215	0	0	28	9.4	0.36	0.14	0.0000	0.00	0.0076	5.09	0.0003	0.19	0.000	0.00
10/31/2008	264	0	0	36	4	0.17	0.1	0.0000	0.00	0.0040	3.42	0.0002	0.15	0.000	0.00
11/24/2008	254	0	0	24	2.3	0.13	0.06	0.0000	0.00	0.0022	1.26	0.0001	0.07	0.000	0.00
12/22/2008	176	0	0.3	28	1.2	0.06	0.03	0.0000	0.00	0.0008	0.53	0.0000	0.03	0.000	0.00
2007 Totals:											30.13		2.17		0.00
1/26/2009	278	0	0.6	35	2.3	0.14	0.07	0.0000	0.00	0.0024	2.01	0.0001	0.12	0.000	0.00
2/26/2009	290	0	0	31	0.1	0.01	0.005	0.0000	0.00	0.0001	0.08	0.0000	0.01	0.000	0.00
3/26/2009	268	0	1.3	28	2.9	0.25	0.11	0.0000	0.00	0.0029	1.96	0.0003	0.17	0.000	0.00
4/28/2009	286	0	1.1	33	3.3	0.21	0.08	0.0000	0.00	0.0035	2.80	0.0002	0.18	0.000	0.00
5/18/2009	271	0	2	20	6.1	0.35	0.1	0.0000	0.00	0.0062	2.97	0.0004	0.17	0.000	0.00
6/23/2009	272	0	1.8	36	18.2	0.44	0.19	0.0000	0.00	0.0186	16.04	0.0004	0.39	0.000	0.00
9/22/2009	200	0	4	91	5.36	0.13	0.11	0.0000	0.00	0.0040	8.78	0.0001	0.21	0.000	0.00
12/21/2009	126	0	0	90	4.82	0.38	0.09	0.0000	0.00	0.0023	4.92	0.0002	0.39	0.000	0.00
2009 Totals:										39.56			1.64		0.00

Notes:

-- = Measurement not recorded

⁽¹⁾ Calculated flows based on the average of flows measured on 3-29-05 and 4-28-05

Discharge Rate (Field Mon., lb/hr) = [(flow(cfm)*influent conc.(ppmv)*MW*12.187)/(273.15+C)]*1 cu. m./35.31 cu. ft*1g/1000 mg*1 lb/453.6 g*60 min/1 hr

Discharge (Field Mon., lb) = Discharge Rate (lb/hr) * # of days*24hours/day*60 minutes/hr

Discharge Rate (Lab Res., lb/hr) = flow (cfm)*effluent conc. (mg/cu. m.)*1g/1000mg*1lb/453.6g*1cu. m./35.31cu. ft*60min/1 hr

Discharge (Lab Res., lb) = Discharge Rate (lb/hr) * # of days*24hours/day

Where: C = degrees centigrade, assumed to be 25

J = Estimated Value

hr = hours

Molecular weight (MW) of PCE=165.85; TCE=131.4; cis-1,2-DCE=96.94

cfm = cubic feet per minute

mg/cu. m = milligrams per cubic meter

ppmv = parts per million (vol./vol.)

lb = pounds

Permit Limit		
	lb/hr	lb/yr
PCE	0.031	270
TCE	0.014	120
cis-1,2-DCE	0.63	5,510

Attachment A

YEC Inspection Forms

National Heatset Printing
1 Adams Boulevard, Farmingdale, New York
EA Engineering

Personnel: Peter Lawler Time: 1145
Weather: Sunny 36F Date: 12/21/2009

System Status:

Arrival: Running
Departure: Running
Run Timer Reading: 3352772
Electric Meter Reading: 14310, 00.44, 2573, 00.67

System Data:

Extraction Well F Gate Valve: 100 % Open
Dilution Valve: 25 % Open

Pre-Bleed Air (Extraction Well):

Flow: 156.84 CFM
Vacuum: 70 "H2O
PID Reading: 6.1 PPM
Draeger Tube: - PPM
Temperature: 62.4 °F

Post-Bleed Air (SVE Influent):

Flow: 184.26 CFM
Pressure: 9 "H2O via magnehelic
PID Reading: 4.0 PPM
Draeger Tube: 0 PPM
Temperature: 149.5 °F

Carbon Monitoring:

Mid: 6.3 PPM 145.32 CFM 151.3 Temp. (°F) 0 PPM (Drager) 4 "H2O
Effluent: 0.0 PPM 126.00 CFM 122.8 Temp. (°F) 0 PPM (Drager)

Carbon effluent sample collected & shipped to lab? Yes

Knockout Tank Drained? No
Gallons: N/A
Purge water drums on-site: 0

Monitoring Well Gauging / Vapor Point Monitoring:

Well/V.P. ID:	MW-C	MW-E	MW-G	VP-1	VP-2	VP-3	VP-7	VP-8	VP-9	VP-10	VP-11	VP-12	VP-13	VP-14	VP-15
DTW (ft):	15.76	15.76	16.12	--	--	--	--	--	--	--	--	--	--	--	--
Vac. (" H2O):	--	--	--	2.6	0.85	0.3	0.25	0.47	0.32	N/A	0.18	0.05	N/A	0.02	0.01
PID (PPM):	--	--	--	0.0	0.0	0.0	0.0	0.0	0.0	N/A	0.0	0.0	N/A	0.0	0.0

Comments:

VP-10, 13 not accessible

No power onsite for Pre-bleed to have draeger analysis, n=5

wood has been added to debris pile near system, supply room was unlocked and open upon arrival, closed doors, informed Leo O.

Attachment B

Laboratory Analytical Results



ANALYTICAL REPORT

Lab Number: L0918560

Client: EA Engineering, Science and Tech
6712 Brooklawn Parkway
Suite 104
Syracuse, NY 13211

ATTN: Don Conan

Project Name: NATIONAL HEATSET

Project Number: NATIONAL HEATSET

Report Date: 12/23/09

Certifications & Approvals: MA (M-MA030), NY (11627), CT (PH-0141), NH (2206), NJ (MA015), RI (LAO00299), ME (MA0030), PA (Registration #68-02089), LA NELAC (03090), FL NELAC (E87814), US Army Corps of Engineers.

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com



Project Name: NATIONAL HEATSET
Project Number: NATIONAL HEATSET

Lab Number: L0918560
Report Date: 12/23/09

Alpha Sample ID	Client ID	Sample Location	Collection Date/Time
L0918560-01	SVE-EFFLUENT	FARMINGDALE, NY	12/21/09 13:50

Project Name: NATIONAL HEATSET
Project Number: NATIONAL HEATSET

Lab Number: L0918560
Report Date: 12/23/09

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

For additional information, please contact Client Services at 800-624-9220.

Volatile Organics in Air (Low Level)

L0918560-01 has elevated detection limits due to the dilution required by the elevated concentrations of target compounds in the sample.

The WG394419-3 LCS recoveries for Freon 114 (68%) and trans-1,3-Dichloropropene (59%) are outside the 70%-130% acceptance limit. The LCS was within overall method allowances, therefore the analysis proceeded.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:



Title: Technical Director/Representative

Date: 12/23/09

AIR

Project Name: NATIONAL HEATSET
Project Number: NATIONAL HEATSET

Lab Number: L0918560
Report Date: 12/23/09

SAMPLE RESULTS

Lab ID: L0918560-01
Client ID: SVE-EFFLUENT
Sample Location: FARMINGDALE, NY
Matrix: Soil_Vapor
Analytical Method: 48,TO-15
Analytical Date: 12/23/09 03:20
Analyst: RY

Date Collected: 12/21/09 13:50
Date Received: 12/22/09
Field Prep: Not Specified

Parameter	ppbV		ug/m3		Qualifier	Dilution Factor
	Results	RDL	Results	RDL		
Volatile Organics in Air (Low Level) - Mansfield Lab						
1,1,1-Trichloroethane	2.31	2.00	12.6	10.9		10
1,1,2,2-Tetrachloroethane	ND	2.00	ND	13.7		10
1,1,2-Trichloroethane	ND	2.00	ND	10.9		10
1,1-Dichloroethane	ND	2.00	ND	8.09		10
1,1-Dichloroethene	ND	2.00	ND	7.92		10
1,2,4-Trichlorobenzene	ND	2.00	ND	14.8		10
1,2,4-Trimethylbenzene	ND	2.00	ND	9.82		10
1,2-Dibromoethane	ND	2.00	ND	15.4		10
1,2-Dichlorobenzene	ND	2.00	ND	12.0		10
1,2-Dichloroethane	ND	2.00	ND	8.09		10
1,2-Dichloropropane	ND	2.00	ND	9.24		10
1,3,5-Trimethybenzene	ND	2.00	ND	9.82		10
1,3-Dichlorobenzene	ND	2.00	ND	12.0		10
1,4-Dichlorobenzene	ND	2.00	ND	12.0		10
Benzene	ND	2.00	ND	6.38		10
Benzyl chloride	ND	2.00	ND	10.3		10
Bromomethane	ND	2.00	ND	7.76		10
Carbon tetrachloride	ND	2.00	ND	12.6		10
Chlorobenzene	ND	2.00	ND	9.20		10
Chloroethane	ND	2.00	ND	5.27		10
Chloroform	ND	2.00	ND	9.76		10
Chloromethane	ND	2.00	ND	4.13		10
cis-1,2-Dichloroethene	22.5	2.00	89.2	7.92		10
cis-1,3-Dichloropropene	ND	2.00	ND	9.07		10
Dichlorodifluoromethane	ND	2.00	ND	9.88		10



Project Name: NATIONAL HEATSET**Lab Number:** L0918560**Project Number:** NATIONAL HEATSET**Report Date:** 12/23/09**SAMPLE RESULTS**

Lab ID: L0918560-01

Date Collected: 12/21/09 13:50

Client ID: SVE-EFFLUENT

Date Received: 12/22/09

Sample Location: FARMINGDALE, NY

Field Prep: Not Specified

Parameter	ppbV		ug/m3		Qualifier	Dilution Factor
	Results	RDL	Results	RDL		
Volatile Organics in Air (Low Level) - Mansfield Lab						
Ethylbenzene	ND	2.00	ND	8.68		10
Freon-113	ND	2.00	ND	15.3		10
Freon-114	ND	2.00	ND	14.0		10
Hexachlorobutadiene	ND	2.00	ND	21.3		10
Methylene chloride	ND	5.00	ND	17.4		10
p/m-Xylene	ND	4.00	ND	17.4		10
o-Xylene	ND	2.00	ND	8.68		10
Styrene	ND	2.00	ND	8.51		10
Tetrachloroethene	711	2.00	4820	13.6		10
Toluene	ND	2.00	ND	7.53		10
trans-1,2-Dichloroethene	ND	2.00	ND	7.92		10
trans-1,3-Dichloropropene	ND	2.00	ND	9.07		10
Trichloroethene	71.5	2.00	384	10.7		10
Trichlorofluoromethane	ND	2.00	ND	11.2		10
Vinyl chloride	ND	2.00	ND	5.11		10



Project Name: NATIONAL HEATSET

Lab Number: L0918560

Project Number: NATIONAL HEATSET

Report Date: 12/23/09

Method Blank Analysis Batch Quality Control

Analytical Method: 48,TO-15

Analytical Date: 12/22/09 17:31

Parameter	ppbV		ug/m3		Qualifier	Dilution Factor
	Results	RDL	Results	RDL		
Volatile Organics in Air (Low Level) - Mansfield Lab for sample(s): 01 Batch: WG394419-4						
1,1,1-Trichloroethane	ND	0.200	ND	1.09		1
1,1,2,2-Tetrachloroethane	ND	0.200	ND	1.37		1
1,1,2-Trichloroethane	ND	0.200	ND	1.09		1
1,1-Dichloroethane	ND	0.200	ND	0.809		1
1,1-Dichloroethene	ND	0.200	ND	0.792		1
1,2,4-Trichlorobenzene	ND	0.200	ND	1.48		1
1,2,4-Trimethylbenzene	ND	0.200	ND	0.982		1
1,2-Dibromoethane	ND	0.200	ND	1.54		1
1,2-Dichlorobenzene	ND	0.200	ND	1.20		1
1,2-Dichloroethane	ND	0.200	ND	0.809		1
1,2-Dichloropropane	ND	0.200	ND	0.924		1
1,3,5-Trimethybenzene	ND	0.200	ND	0.982		1
1,3-Dichlorobenzene	ND	0.200	ND	1.20		1
1,4-Dichlorobenzene	ND	0.200	ND	1.20		1
Benzene	ND	0.200	ND	0.638		1
Benzyl chloride	ND	0.200	ND	1.03		1
Bromomethane	ND	0.200	ND	0.776		1
Carbon tetrachloride	ND	0.200	ND	1.26		1
Chlorobenzene	ND	0.200	ND	0.920		1
Chloroethane	ND	0.200	ND	0.527		1
Chloroform	ND	0.200	ND	0.976		1
Chloromethane	ND	0.200	ND	0.413		1
cis-1,2-Dichloroethene	ND	0.200	ND	0.792		1
cis-1,3-Dichloropropene	ND	0.200	ND	0.907		1
Dichlorodifluoromethane	ND	0.200	ND	0.988		1



Project Name: NATIONAL HEATSET

Lab Number: L0918560

Project Number: NATIONAL HEATSET

Report Date: 12/23/09

Method Blank Analysis Batch Quality Control

Analytical Method: 48,TO-15

Analytical Date: 12/22/09 17:31

Parameter	ppbV		ug/m3		Qualifier	Dilution Factor
	Results	RDL	Results	RDL		
Volatile Organics in Air (Low Level) - Mansfield Lab for sample(s): 01 Batch: WG394419-4						
Ethylbenzene	ND	0.200	ND	0.868		1
Freon-113	ND	0.200	ND	1.53		1
Freon-114	ND	0.200	ND	1.40		1
Hexachlorobutadiene	ND	0.200	ND	2.13		1
Methylene chloride	ND	0.500	ND	1.74		1
p/m-Xylene	ND	0.400	ND	1.74		1
o-Xylene	ND	0.200	ND	0.868		1
Styrene	ND	0.200	ND	0.851		1
Tetrachloroethene	ND	0.200	ND	1.36		1
Toluene	ND	0.200	ND	0.753		1
trans-1,2-Dichloroethene	ND	0.200	ND	0.792		1
trans-1,3-Dichloropropene	ND	0.200	ND	0.907		1
Trichloroethene	ND	0.200	ND	1.07		1
Trichlorofluoromethane	ND	0.200	ND	1.12		1
Vinyl chloride	ND	0.200	ND	0.511		1

Lab Control Sample Analysis

Batch Quality Control

Project Name: NATIONAL HEATSET

Project Number: NATIONAL HEATSET

Lab Number: L0918560

Report Date: 12/23/09

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air (Low Level) - Mansfield Lab Associated sample(s): 01 Batch: WG394419-3								
1,1,1-Trichloroethane	88		-		70-130	-		
1,1,2,2-Tetrachloroethane	82		-		70-130	-		
1,1,2-Trichloroethane	83		-		70-130	-		
1,1-Dichloroethane	88		-		70-130	-		
1,1-Dichloroethene	96		-		70-130	-		
1,2,4-Trichlorobenzene	106		-		70-130	-		
1,2,4-Trimethylbenzene	84		-		70-130	-		
1,2-Dibromoethane	79		-		70-130	-		
1,2-Dichlorobenzene	88		-		70-130	-		
1,2-Dichloroethane	87		-		70-130	-		
1,2-Dichloropropane	81		-		70-130	-		
1,3,5-Trimethylbenzene	81		-		70-130	-		
1,3-Butadiene	96		-		70-130	-		
1,3-Dichlorobenzene	90		-		70-130	-		
1,4-Dichlorobenzene	92		-		70-130	-		
1,4-Dioxane	88		-		70-130	-		
2,2,4-Trimethylpentane	89		-		70-130	-		
2-Butanone	83		-		70-130	-		
2-Hexanone	95		-		70-130	-		
3-Chloropropene	88		-		70-130	-		
4-Ethyltoluene	88		-		70-130	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: NATIONAL HEATSET

Project Number: NATIONAL HEATSET

Lab Number: L0918560

Report Date: 12/23/09

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air (Low Level) - Mansfield Lab Associated sample(s): 01 Batch: WG394419-3								
Acetone	80		-		70-130	-		
Benzene	84		-		70-130	-		
Benzyl chloride	94		-		70-130	-		
Bromodichloromethane	92		-		70-130	-		
Bromoform	99		-		70-130	-		
Bromomethane	75		-		70-130	-		
Carbon disulfide	98		-		70-130	-		
Carbon tetrachloride	92		-		70-130	-		
Chlorobenzene	87		-		70-130	-		
Chloroethane	85		-		70-130	-		
Chloroform	92		-		70-130	-		
Chloromethane	93		-		70-130	-		
cis-1,2-Dichloroethene	91		-		70-130	-		
cis-1,3-Dichloropropene	75		-		70-130	-		
Cyclohexane	92		-		70-130	-		
Dibromochloromethane	94		-		70-130	-		
Dichlorodifluoromethane	92		-		70-130	-		
Ethyl Alcohol	85		-		70-130	-		
Ethyl Acetate	93		-		70-130	-		
Ethylbenzene	84		-		70-130	-		
1,1,2-Trichloro-1,2,2-Trifluoroethane	95		-		70-130	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: NATIONAL HEATSET

Project Number: NATIONAL HEATSET

Lab Number: L0918560

Report Date: 12/23/09

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air (Low Level) - Mansfield Lab Associated sample(s): 01 Batch: WG394419-3								
1,2-Dichloro-1,1,2,2-tetrafluoroethane	68	Q	-		70-130	-		
Hexachlorobutadiene	92		-		70-130	-		
iso-Propyl Alcohol	102		-		70-130	-		
Methylene chloride	84		-		70-130	-		
4-Methyl-2-pentanone	86		-		70-130	-		
Methyl tert butyl ether	88		-		70-130	-		
p/m-Xylene	82		-		70-130	-		
o-Xylene	84		-		70-130	-		
Heptane	90		-		70-130	-		
n-Hexane	93		-		70-130	-		
Propylene	88		-		70-130	-		
Styrene	85		-		70-130	-		
Tetrachloroethene	93		-		70-130	-		
Tetrahydrofuran	78		-		70-130	-		
Toluene	85		-		70-130	-		
trans-1,2-Dichloroethene	93		-		70-130	-		
trans-1,3-Dichloropropene	59	Q	-		70-130	-		
Trichloroethene	92		-		70-130	-		
Trichlorofluoromethane	95		-		70-130	-		
Vinyl acetate	87		-		70-130	-		
Vinyl bromide	99		-		70-130	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: NATIONAL HEATSET

Project Number: NATIONAL HEATSET

Lab Number: L0918560

Report Date: 12/23/09

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air (Low Level) - Mansfield Lab Associated sample(s): 01 Batch: WG394419-3								
Vinyl chloride	92		-		70-130	-		
Naphthalene	104		-		70-130	-		
Propane	77		-		70-130	-		
Acrylonitrile	82		-		70-130	-		
Acrolein	82		-		70-130	-		
1,1,1,2-Tetrachloroethane	83		-		70-130	-		
Isopropylbenzene	82		-		70-130	-		
1,2,3-Trichloropropane	76		-		70-130	-		
Acetonitrile	82		-		70-130	-		
Bromobenzene	82		-		70-130	-		
Chlorodifluoromethane	85		-		70-130	-		
Dichlorofluoromethane	84		-		70-130	-		
Dibromomethane	83		-		70-130	-		
Pentane	94		-		70-130	-		
Octane	80		-		70-130	-		
Tertiary-Amyl Methyl Ether	79		-		70-130	-		
o-Chlorotoluene	88		-		70-130	-		
p-Chlorotoluene	85		-		70-130	-		
2,2-Dichloropropane	85		-		70-130	-		
1,1-Dichloropropene	89		-		70-130	-		
Isopropyl Ether	86		-		70-130	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: NATIONAL HEATSET

Project Number: NATIONAL HEATSET

Lab Number: L0918560

Report Date: 12/23/09

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air (Low Level) - Mansfield Lab Associated sample(s): 01 Batch: WG394419-3								
Ethyl-Tert-Butyl-Ether	77		-		70-130	-		
1,2,3-Trichlorobenzene	108		-		70-130	-		
Ethyl ether	81		-		70-130	-		
n-Butylbenzene	87		-		70-130	-		
sec-Butylbenzene	80		-		70-130	-		
tert-Butylbenzene	80		-		70-130	-		
1,2-Dibromo-3-chloropropane	87		-		70-130	-		
p-Isopropyltoluene	82		-		70-130	-		
n-Propylbenzene	87		-		70-130	-		
1,3-Dichloropropane	76		-		70-130	-		
Methanol	66	Q	-		70-130	-		
Butane	85		-		70-130	-		
Nonane (C9)	80		-		70-130	-		
Decane (C10)	76		-		70-130	-		
Undecane	93		-		70-130	-		
Dodecane (C12)	129		-		70-130	-		
Butyl Acetate	92		-		70-130	-		
tert-Butyl Alcohol	102		-		70-130	-		

Lab Duplicate Analysis Batch Quality Control

Project Name: NATIONAL HEATSET

Project Number: NATIONAL HEATSE

Lab Number: L0918560

Report Date: 12/23/09

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics in Air (Low Level) - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG394419-5 QC Sample: L0918547-02 Client ID: DUP Sample						
1,1,1-Trichloroethane	ND	ND	ppbV	NC		25
1,1,2,2-Tetrachloroethane	ND	ND	ppbV	NC		25
1,1,2-Trichloroethane	ND	ND	ppbV	NC		25
1,1-Dichloroethane	ND	ND	ppbV	NC		25
1,1-Dichloroethene	ND	ND	ppbV	NC		25
1,2-Dichlorobenzene	ND	ND	ppbV	NC		25
1,2-Dichloroethane	ND	ND	ppbV	NC		25
1,2-Dichloropropane	ND	ND	ppbV	NC		25
1,3-Dichlorobenzene	ND	ND	ppbV	NC		25
1,4-Dichlorobenzene	ND	ND	ppbV	NC		25
Benzyl chloride	ND	ND	ppbV	NC		25
Bromomethane	ND	ND	ppbV	NC		25
Carbon tetrachloride	ND	ND	ppbV	NC		25
Chlorobenzene	ND	ND	ppbV	NC		25
Chloroethane	ND	ND	ppbV	NC		25
Chloroform	ND	ND	ppbV	NC		25
Chloromethane	0.536	0.560	ppbV	4		25
cis-1,2-Dichloroethene	ND	ND	ppbV	NC		25
cis-1,3-Dichloropropene	ND	ND	ppbV	NC		25

Lab Duplicate Analysis

Batch Quality Control

Project Name: NATIONAL HEATSET

Project Number: NATIONAL HEATSE

Lab Number: L0918560

Report Date: 12/23/09

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
Volatile Organics in Air (Low Level) - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG394419-5 QC Sample: L0918547-02 Client ID: DUP Sample					
Dichlorodifluoromethane	0.474	0.469	ppbV	1	25
Methylene chloride	ND	ND	ppbV	NC	25
Tetrachloroethene	0.283	0.288	ppbV	2	25
trans-1,2-Dichloroethene	ND	ND	ppbV	NC	25
trans-1,3-Dichloropropene	ND	ND	ppbV	NC	25
Trichloroethene	0.422	0.457	ppbV	8	25
Trichlorofluoromethane	ND	ND	ppbV	NC	25
Vinyl chloride	ND	ND	ppbV	NC	25

Project Name: NATIONAL HEATSET**Lab Number:** L0918560**Project Number:** NATIONAL HEATSET**Report Date:** 12/23/09**Sample Receipt and Container Information**

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis
L0918560-01A	Tedlar Bag 5 liter-Polypropylene	N/A	N/A		NA	Absent	TO15-LL(30)

*Hold days indicated by values in parentheses

Project Name: NATIONAL HEATSET
Project Number: NATIONAL HEATSET

Lab Number: L0918560
Report Date: 12/23/09

GLOSSARY

Acronyms

EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
ND	- Not detected at the reported detection limit for the sample.
NI	- Not Ignitable.
RDL	- Reported Detection Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Data Qualifiers

A	- Spectra identified as "Aldol Condensation Product".
B	- The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than five times (5x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank.
D	- Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
E	- Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
H	- The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
P	- The RPD between the results for the two columns exceeds the method-specified criteria.
Q	- The quality control sample exceeds the associated acceptance criteria. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RDL. (Metals only.)
R	- Analytical results are from sample re-analysis.
RE	- Analytical results are from sample re-extraction.
J	- Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

Report Format: Data Usability Report



Project Name: NATIONAL HEATSET
Project Number: NATIONAL HEATSET

Lab Number: L0918560
Report Date: 12/23/09

REFERENCES

- 48 Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air. Second Edition. EPA/625/R-96/010b, January 1999.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Woods Hole Labs shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Woods Hole Labs.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



Certificate/Approval Program Summary

Last revised December 15, 2009 – Mansfield Facility

The following list includes only those analytes/methods for which certification/approval is currently held. For a complete listing of analytes for the referenced methods, please contact your Alpha Customer Service Representative.

Connecticut Department of Public Health Certificate/Lab ID: PH-0141.

Wastewater/Non-Potable Water (Inorganic Parameters: pH, Turbidity, Conductivity, Alkalinity, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Vanadium, Zinc, Total Residue (Solids), Total Suspended Solids (non-filterable), Total Cyanide. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Acid Extractables, Benzidines, Phthalate Esters, Nitrosamines, Nitroaromatics & Isophorone, PAHs, Haloethers, Chlorinated Hydrocarbons, Volatile Organics.)

Solid Waste/Soil (Inorganic Parameters: pH, Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, Zinc, Total Organic Carbon, Total Cyanide, Corrosivity, TCLP 1311. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Volatile Organics, Acid Extractables, Benzidines, Phthalates, Nitrosamines, Nitroaromatics & Cyclic Ketones, PAHs, Haloethers, Chlorinated Hydrocarbons.)

Florida Department of Health Certificate/Lab ID: E87814. *NELAP Accredited.*

Non-Potable Water (Inorganic Parameters: SM2320B, EPA 120.1, SM2510B, EPA 245.1, EPA 150.1, EPA 160.2, SM2540D, EPA 335.2, SM2540G, EPA 180.1. Organic Parameters: EPA 625, 608.)

Solid & Chemical Materials (Inorganic Parameters: 6020, 7470, 7471, 9045, 9014. Organic Parameters: EPA 8260, 8270, 8082, 8081.)

Air & Emissions (EPA TO-15.)

Louisiana Department of Environmental Quality Certificate/Lab ID: 03090. *NELAP Accredited.*

Non-Potable Water (Inorganic Parameters: EPA 120.1, 150.1, 160.2, 180.1, 200.8, 245.1, 310.1, 335.2, 608, 625, 1631, 3010, 3015, 3020, 6020, 9010, 9014, 9040, SM2320B, 2510B, 2540D, 2540G, 4500CN-E, 4500H-B, Organic Parameters: EPA 3510, 3580, 3630, 3640, 3660, 3665, 5030, 8015 (mod), 3570, 8081, 8082, 8260, 8270,)

Solid & Chemical Materials (Inorganic Parameters: 6020, 7196, 7470, 7471, 7474, 9010, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015 (mod), EPA 3570, 1311, 3050, 3051, 3060, 3580, 3630, 3640, 3660, 3665, 5035, 8081, 8082, 8260, 8270.)

Biological Tissue (Inorganic Parameters: EPA 6020. Organic Parameters: EPA 3570, 3510, 3610, 3630, 3640, 8270.)

Maine Department of Human Services Certificate/Lab ID: MA0030.

Wastewater (Inorganic Parameters: EPA 120.1, 300.0, SM 2320, 2510B, 2540C, 2540D, EPA 245.1. Organic Parameters: 608, 624.)

Massachusetts Department of Environmental Protection Certificate/Lab ID: M-MA030.

Non-Potable Water (Inorganic Parameters: SM4500H+B. Organic Parameters: EPA 624.)

New Hampshire Department of Environmental Services Certificate/Lab ID: 2206. *NELAP Accredited.*

Non-Potable Water (Inorganic Parameters: EPA 200.8, 245.1, 1631E, 120.1, 150.1, 180.1, 310.1, 335.2, 160.2, SM2540D, 2540G, 4500CN-E, 4500H+B, 2320B, 2510B. Organic Parameters: EPA 625, 608.)

New Jersey Department of Environmental Protection Certificate/Lab ID: MA015. NELAP Accredited.

Non-Potable Water (Inorganic Parameters: SW-846 1312, 3010, 3020A, 3015, 6020, SM2320B, EPA 200.8, SM2540C, 2540D, 2540G, EPA 120.1, SM2510B, EPA 180.1, 245.1, 1631E, SW-846 9040B, 6020, 9010B, 9014 Organic Parameters: EPA 608, 625, SW-846 3510C, 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082 8260B, 8270C)

Solid & Chemical Materials (Inorganic Parameters: SW-846 6020, 9010B, 9014, 1311, 1312, 3050B, 3051, 3060A, 7196A, 7470A, 7471A, 9045C, 9060. Organic Parameters: SW-846 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082, 8260B, 8270C, 3570, 8015B.)

Atmospheric Organic Parameters (EPA TO-15)

Biological Tissue (Inorganic Parameters: SW-846 6020 Organic Parameters: SW-846 8270C, 3510C, 3570, 3610B, 3630C, 3640A)

New York Department of Health Certificate/Lab ID: 11627. NELAP Accredited.

Non-Potable Water (Inorganic Parameters: EPA 310.1, SM2320B, EPA 365.2, 160.1, EPA 160.2, SM2540D, EPA 200.8, 6020, 1631E, 245.1, 335.2, 9014, 150.1, 9040B, 120.1, SM2510B, EPA 376.2, 180.1, 9010B. Organic Parameters: EPA 624, 8260B, 8270C, 608, 8081A, 625, 8082, 3510C, 3511, 5030B.)

Solid & Hazardous Waste (Inorganic Parameters: EPA 9040B, 9045C, SW-846 Ch7 Sec 7.3, EPA 6020, 7196A, 7471A, 7474, 9014, 9040B, 9045C, 9010B. Organic Parameters: EPA 8260B, 8270C, 8081A, DRO 8015B, 8082, 1311, 3050B, 3580, 3050B, 3035, 3570, 3051, 5035, 5030B.)

Air & Emissions (EPA TO-15.)

Pennsylvania Department of Environmental Protection Certificate/Lab ID: 68-02089. NELAP Accredited.

Non-Potable Water (Organic Parameters: EPA 5030B, EPA 8260)

Rhode Island Department of Health Certificate/Lab ID: LAO00299. NELAP Accredited via LA-DEQ.

Refer to MA-DEP Certificate for Non-Potable Water.

Refer to LA-DEQ Certificate for Non-Potable Water.

Texas Commission of Environmental Quality Certificate/Lab ID: T104704419-08-TX. NELAP Accredited.

Solid & Chemical Materials (Inorganic Parameters: EPA 6020, 7470, 7471, 1311, 7196, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015, 8270, 8260, 8081, 8082.)

U.S. Army Corps of Engineers

Department of Defense Certificate/Lab ID: L2217.01.

Non-Potable Water (Inorganic Parameters: EPA 3005A, 3020, 6020, 245.1, 245.7, 1631E, 7470A, 7474, 9014, 120.1, 9050A, 180.1, SM4500H-B, 2320B, 2510B, 2540D, 9040. Organic Parameters: EPA 3510C, 5030B, 9010B, 624, 8260B, 8270C, 8270 Alk-PAH, 8082, 8081A, 8015 (SHC), 8015 (DRO).)

Solid & Hazardous Waste (Inorganic Parameters: EPA 1311, 1312, 3051, 6020, 747A, 7474, 9045C, 9060, SM 2540G, ASTM D422-63. Organic Parameters: EPA 3580, 3570, 3540C, 5035, 8260B, 8270C, 8270 Alk-PAH, 8082, 8081A, 8015 (SHC), 8015 (DRO).)

Air & Emissions (EPA TO-15.)

Analytes Not Accredited by NELAP

Certification is not available by NELAP for the following analytes: **8270C**: Biphenyl.

Billing Information

[illegible]

8

[illegible]

Regulatory Requirements/Report Limits

[illegible]

ANALYSIS

1

Sample Comments (i.e. PID)

○ ○ ○ ○

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