



Linda Hanefeld
Remediation and Redevelopment Team Supervisor
Wisconsin Department of Natural Resources
South Central Region
3911 Fish Hatchery Rd
Fitchburg WI 53711

Subject:

Bi-Monthly Progress Report, Madison-Kipp Corporation (MKC) Site, 201 Waubesa Street, Madison, Wisconsin.

Dear Ms. Hanefeld:

On behalf of Madison-Kipp Corporation, this Bi-Monthly Progress Report provides a summary of the activities completed from June 16 through June 29, 2012 at the MKC site located at 201 Waubesa Street in Madison, Wisconsin (site).

Tasks Completed – June 16 through June 29, 2012

The following tasks were completed during the period of June 16 through June 29, 2012 and are presented in chronological order.

- Investigation activities related to the *Work Plan for Polychlorinated Biphenyl Investigation*, the *Bedrock Characterization Work Plan*, and the approved groundwater sampling portion of the *Site Investigation Work Plan* are ongoing.
- Submitted *Results of Air Testing* letters dated June 21, 2012 to the residents at 201 and 210 South Marquette Street and 253 Waubesa Street documenting the indoor air and sub-slab vapor split-sampling results. Copies of the *Results of Air Testing* letters were also provided to WDNR and the Wisconsin Department of Health Services (WDHS).

ARCADIS U.S., Inc.
126 North Jefferson Street
Suite 400
Milwaukee
Wisconsin 53202
Tel 414 276 7742
Fax 414 276 7603
www.arcadis-us.com

ENVIRONMENT

Date:

June 29, 2012

Contact:

Jennine Trask

Phone:

414.277.6203

Email:

Jennine.Trask@arcadis-us.com

Our ref:

WI001283.0006

Imagine the result

- Performed operation, maintenance and monitoring (OM&M) activities for the soil vapor extraction (SVE) system on June 22, 2012. Weekly Phase I SVE system monitoring and blower maintenance was performed by MKC personnel on June 18 and 25, 2012. Data collected during the weekly and monthly OM&M activities through June 18, 2012 is provided as Attachment A.
- The WDNR issued the *Conditional Approval: May 2012 Site Investigation Work Plan* letter dated June 25, 2012.
- Submitted *Results of Air Testing* letter dated June 27, 2012 to the resident at 249 Waubesa Street documenting the indoor air and sub-slab vapor split-sampling results. Copies of the *Results of Air Testing* letters were also provided to WDNR and the WDHS.
- Submitted *Results of Air Testing* letter dated June 28, 2012 to the resident at 266 Waubesa Street documenting the indoor air and sub-slab vapor split-sampling results. Copies of the *Results of Air Testing* letters were also provided to WDNR and the WDHS.

Tasks In-Progress

The following tasks are scheduled to be completed between June 30 and July 15, 2012.

- Ongoing investigation activities related to the *Work Plan for Polychlorinated Biphenyl Investigation, Bedrock Characterization Work Plan* and *Site Investigation Work Plan* with WDNR approval.
- Perform weekly and monthly Phase I SVE system OM&M activities.
- Complete split sampling of the WDNR indoor and sub-slab vapor sampling, depending on schedule.
- Participate in bi-weekly conference calls with the WDNR.

If you have any questions or require any additional information, please contact us at 414.276.7742.

Sincerely,

ARCADIS U.S., Inc.



Christopher D. Kubacki, PE
Project Engineer



Jennine L. Trask, PE
Project Manager

Attachments:

A SVE System Data Tables

Copies:

David Crass – Michael Best
Mark Meunier – Madison Kipp
Steve Tinker – Wisconsin Department of Justice (electronic)
Mike Schmoller – WDNR (electronic)
Bradley Grams & Peter Ramanauskas, EPA Region V (electronic)

Attachment A

SVE System Data Tables

Table 1. Phase I SVE System Analytical Data, Madison-Kipp Corporation, Madison, Wisconsin.

Well/Boring Sample Date	Effluent			Influent	Effluent	Influent	Effluent
	3/9/2012	3/10/2012	3/11/2012	3/16/2012	3/16/2012	3/23/2012	3/23/2012
1,1-Dichloroethene	<0.15	<0.3	<0.3	<2.1	<0.03	<1.5	<0.045
1,2,4-Trimethylbenzene	<0.26	<0.52	<0.52	<3.6	0.17 J	<2.6	0.079 J
1,3,5-Trimethylbenzene	<0.26	<0.51	<0.51	<3.6	0.069 J	<2.6	<0.077
1,4-Dichlorobenzene	<0.22	<0.44	<0.44	<3.1	0.049 J	<2.2	<0.066
Benzene	<0.09	<0.18	<0.18	<1.3	0.71	<0.9	0.69
Chloroethane	<0.08	<0.16	<0.16	<1.1	<0.016	<0.8	<0.024
Chloroform	<0.16	<0.31	<0.31	<2.2	<0.031	<1.6	<0.047
Chloromethane	5.2	0.86 J	<0.13	<0.91	0.30 J	<0.65	0.65 J
cis-1,2-Dichloroethene	<0.07	<0.14	<0.14	78	0.5	190	14
Dichlorodifluoromethane	<0.19	0.94 J	0.56 J	<2.6	0.55	<1.9	0.44 J
Ethylbenzene	<0.11	<0.22	<0.22	<1.5	0.084 J	<1.1	<0.033
Methylene Chloride	<0.065	<0.13	<0.13	<0.91	0.26 J B	<0.65	0.50 J
Tetrachloroethene	<0.055	<0.11	<0.11	1,500	14	1,900	38
Toluene	0.23 J	0.32 J	0.22 J	<1.3	0.33	1.0 J	0.14 J
Trichloroethene	<0.15	<0.3	<0.3	76	0.2	130	1.2
Trichlorofluoromethane	<0.17	<0.34	<0.34	<2.4	0.21	<1.7	0.18 J
Vinyl chloride	<0.15	10	13	16	18	37	33
Xylene (total)	<0.11	<0.22	<0.22	<1.5	0.53	<1.1	0.17 J
Xylene, o-	<0.11	<0.22	<0.22	<1.5	0.17 J	<1.1	0.052 J

Only detected constituents are noted. Constituent concentrations are reported as ppbv.

The system operates with the dilution air valve 50 percent open to maintain system operation within maximum range of blower vacuum.

Influent sampling began on 3/16/12 to evaluate the effectiveness of carbon treatment.

System sampling occurred daily for the first three days of startup, weekly for the next three weeks, and monthly thereafter.

< Constituent not detected above noted laboratory detection limit.

-- Not monitored or sampled.

B Compound was found in the blank and sample.

Bold Constituent detected above laboratory detection limit.

J Constituent concentration is an approximate value.

ppbv Parts per billion by volume.

Table 1. Phase I SVE System Analytical Data, Madison-Kipp Corporation, Madison, Wisconsin.

Well/Boring Sample Date	Influent	Effluent	Influent	Effluent	Influent	Effluent	Influent	Effluent
	3/30/2012	3/30/2012	4/11/2012	4/11/2012	5/9/2012	5/9/2012	6/14/2012	6/12/2012
1,1-Dichloroethene	<1.5	<0.12	<4	0.16 J	<4	<1.2	<5	<1.4
1,2,4-Trimethylbenzene	5.7 J	2.4	<0.98	<0.021	<4	<1.2	<5	<1.4
1,3,5-Trimethylbenzene	<2.6	0.69 J	<0.89	<0.019	<4	<1.2	<5	<1.4
1,4-Dichlorobenzene	<2.2	<0.18	<0.84	<0.018	<4	<1.2	<5	<1.4
Benzene	<0.9	0.57 J	11	0.15 J	<4	<1.2	<5	<1.4
Chloroethane	<0.8	0.56 J	<1.5	<0.033	<10	<3	<13	<3.5
Chloroform	<1.6	<0.12	<1.1	0.037 J	<4	<1.2	<5	<1.4
Chloromethane	<0.65	0.87 J	<1.6	0.6	<10	<3	<13	<3.5
cis-1,2-Dichloroethene	150	17	240	19	170	230	150	180
Dichlorodifluoromethane	<1.9	0.73 J	<0.94	0.47 J	<10	<3	<13	<3.5
Ethylbenzene	2.2 J	0.66 J	<0.7	<0.015	<4	<1.2	<5	<1.4
Methylene Chloride	<0.65	0.62 J	2.5 J B	0.16 J B	<10	<3	<13	<3.5
Tetrachloroethene	890	98	700	0.16 J	440	36	580	<1.4
Toluene	6.1 J	2.7	1.2 J	<0.014	<4	2	<5	2.2
Trichloroethene	100	4.4	110	0.061 J	80	3	71	8.7
Trichlorofluoromethane	<1.7	<0.14	<0.98	0.12 J	<4	<1.2	<5	<1.4
Vinyl chloride	34	31	8.7 J	7.6	<4	3	<5	<1.4
Xylene (total)	10	3.5	<0.75	<0.016	<4	<1.2	<5	1.4
Xylene, o-	3.1 J	1.1	<0.75	<0.016	<4	<1.2	<5	<1.4

Only detected constituents are noted. Constituent concentrations are reported as ppbv.

The system operates with the dilution air valve 50 percent open to maintain system operation within maximum range of blower vacuum.

Influent sampling began on 3/16/12 to evaluate the effectiveness of carbon treatment.

System sampling occurred daily for the first three days of startup, weekly for the next three weeks, and monthly thereafter.

< Constituent not detected above noted laboratory detection limit.

-- Not monitored or sampled.

B Compound was found in the blank and sample.

Bold Constituent detected above laboratory detection limit.

J Constituent concentration is an approximate value.

ppbv Parts per billion by volume.

Table 2. Extraction Well Manifold Monitoring Data, Phase I SVE System, Madison-Kipp Corporation, Madison, Wisconsin.

Well ID	Date	System Manifold			
		Vacuum (in Hg)	Vacuum (in H ₂ O)	Flow Rate (cfm)	VOCs (ppm)
SVE-1	3/9/12	-6.5	-88.4	20	109.7 ¹
SVE-1	3/9/12	-5.5	-74.8	30	47.4 ²
SVE-1	3/10/12	-6	-81.6	30	27.3
SVE-1	3/11/12	-6	-81.6	30	25.1
SVE-1	3/16/12	-5.5	-74.8	20	15.9
SVE-1	3/23/12	-6	-81.6	25	--
SVE-1	3/23/12	-6	-81.6	25	13.5
SVE-1	3/29/12 ³	-3	-40.8	20	--
SVE-1	3/29/12 ⁴	-4	-54.4	30	--
SVE-1	3/30/12	-5	-68.0	25	14.8
SVE-1	4/11/12	-5	-68.0	25	14.1
SVE-1	4/16/12	-5	-68.0	25	--
SVE-1	4/23/12	-5	-68.0	100	--
SVE-1	4/30/12	-5	-68.0	30	--
SVE-1	5/7/12	-5	-68.0	10	--
SVE-1	5/9/12	-5	-68.0	30	4.3
SVE-1	5/14/12	-5	-68.0	30	--
SVE-1	5/21/12	-5	-68.0	10	--
SVE-1	5/30/12	-4	-54.4	20	--
SVE-1	6/4/12	-5	-68.0	30	--
SVE-1	6/11/12	-5	-68.0	30	--
SVE-1	6/12/12	-4.5	-61.2	28	6
SVE-1	6/14/12	-3.5	-47.6	22	--
SVE-1	6/18/12	-2	-27.2	20	--
SVE-2	3/9/12	-3	-40.8	40	105.8 ¹
SVE-2	3/9/12	-4	-54.4	60	11.5 ²
SVE-2	3/10/12	-3.5	-47.6	55	10.3
SVE-2	3/11/12	-3.5	-47.6	50	8.2
SVE-2	3/16/12	-3.5	-47.6	50	5.3
SVE-2	3/23/12	-3.25	-44.2	40	--
SVE-2	3/23/12	-3.25	-44.2	40	6.1
SVE-2	3/29/12 ³	-1.5	-20.4	25	--
SVE-2	3/29/12 ⁴	-2.5	-34.0	37	--
SVE-2	3/30/12	-3	-40.8	40	6.9
SVE-2	4/11/12	-2.5	-34.0	35	6.3
SVE-2	4/16/12	-2.5	-34.0	40	--
SVE-2	4/23/12	-2.5	-34.0	120	--
SVE-2	4/30/12	-3	-40.8	40	--
SVE-2	5/7/12	-2.5	-34.0	30	--
SVE-2	5/9/12	-3	-40.8	35	2.6
SVE-2	5/14/12	-3	-40.8	50	--
SVE-2	5/21/12	-2.5	-34.0	45	--
SVE-2	5/30/12	-2.5	-34.0	40	--
SVE-2	6/4/12	-3	-40.8	45	--
SVE-2	6/11/12	-2.5	-34.0	45	--
SVE-2	6/12/12	-2.5	-34.0	40	6.6
SVE-2	6/14/12	-3.5	-47.6	25	--
SVE-2	6/18/12	-1	-13.6	20	--

Footnotes on Page 5.

Table 2. Extraction Well Manifold Monitoring Data, Phase I SVE System, Madison-Kipp Corporation, Madison, Wisconsin.

Well ID	Date	System Manifold			
		Vacuum (in Hg)	Vacuum (in H ₂ O)	Flow Rate (cfm)	VOCs (ppm)
SVE-3	3/9/12	-2.25	-30.6	60	85.3 ¹
SVE-3	3/9/12	-3	-40.8	85	5.92 ²
SVE-3	3/10/12	-2.5	-34.0	80	6.1
SVE-3	3/11/12	-2.5	-34.0	75	4.5
SVE-3	3/16/12	-2.5	-34.0	60	1.6
SVE-3	3/23/12	-3	-40.8	60	--
SVE-3	3/23/12	-3	-40.8	60	4.4
SVE-3	3/29/12 ³	-2	-27.2	30	--
SVE-3	3/29/12 ⁴	-2.5	-34.0	50	--
SVE-3	3/30/12	-4	-54.4	50	6.1
SVE-3	4/11/12	-3	-40.8	50	4.9
SVE-3	4/16/12	-2.5	-34.0	50	--
SVE-3	4/23/12	-2.5	-34.0	140	--
SVE-3	4/30/12	-2.6	-35.3	50	--
SVE-3	5/7/12	-3	-40.8	50	--
SVE-3	5/9/12	-3	-40.8	40	5.9
SVE-3	5/14/12	-3	-40.8	50	--
SVE-3	5/21/12	-3	-40.8	50	--
SVE-3	5/30/12	-3.5	-47.6	50	--
SVE-3	6/4/12	-3	-40.8	50	--
SVE-3	6/11/12	-2.5	-34.0	50	--
SVE-3	6/12/12	-2.25	-30.6	50	9.3
SVE-3	6/14/12	-2	-27.2	40	--
SVE-3	6/18/12	-1	-13.6	20	--
SVE-4	3/9/12	-6.5	-88.4	32.5	105.1 ¹
SVE-4	3/9/12	-6.5	-88.4	32	5.1 ²
SVE-4	3/10/12	-6.5	-88.4	30	2.1
SVE-4	3/11/12	-6.5	-88.4	28	5.2
SVE-4	3/16/12	-7	-95.2	28	3.1
SVE-4	3/23/12	-8	-108.8	27	--
SVE-4	3/23/12	-7	-95.2	27	9.7
SVE-4	3/29/12 ³	-3.5	-47.6	25	--
SVE-4	3/29/12 ⁴	-4.5	-61.2	30	--
SVE-4	3/30/12	-7	-95.2	25	10.3
SVE-4	4/11/12	-4	-54.4	20	10
SVE-4	4/16/12	-7.5	-102.0	17	--
SVE-4	4/23/12	-7.5	-102.0	20	--
SVE-4	4/30/12	-7.6	-103.3	27	--
SVE-4	5/7/12	-7	-95.2	18	--
SVE-4	5/9/12	-7	-95.2	18	9.4
SVE-4	5/14/12	-7	-95.2	20	--
SVE-4	5/21/12	-7	-95.2	30	--
SVE-4	5/30/12	-7	-95.2	33	--
SVE-4	6/4/12	-7	-95.2	30	--
SVE-4	6/11/12	-7	-95.2	30	--
SVE-4	6/12/12	-7	-95.2	23	8.3

Footnotes on Page 5.

Table 2. Extraction Well Manifold Monitoring Data, Phase I SVE System, Madison-Kipp Corporation, Madison, Wisconsin.

Well ID	Date	System Manifold			
		Vacuum (in Hg)	Vacuum (in H ₂ O)	Flow Rate (cfm)	VOCs (ppm)
SVE-4	6/14/12	-5.75	-78.2	23	--
SVE-4	6/18/12	-4	-54.4	17	--
SVE-5	3/9/12	-6.5	-88.4	35	47.2 ¹
SVE-5	3/9/12	-6.5	-88.4	34	15.0 ²
SVE-5	3/10/12	-6.5	-88.4	33	10.8
SVE-5	3/11/12	-6.5	-88.4	32	3.6
SVE-5	3/16/12	-6	-81.6	34	2.9
SVE-5	3/23/12	-7	-95.2	32	--
SVE-5	3/23/12	-6	-81.6	32	3
SVE-5	3/29/12 ³	-4.5	-61.2	30	--
SVE-5	3/29/12 ⁴	-5.5	-74.8	37	--
SVE-5	3/30/12	-7	-95.2	35	2.8
SVE-5	4/11/12	-6	-81.6	27	3.3
SVE-5	4/16/12	-6	-81.6	27	--
SVE-5	4/23/12	-6	-81.6	25	--
SVE-5	4/30/12	-7	-95.2	38	--
SVE-5	5/7/12	-6	-81.6	26	--
SVE-5	5/9/12	-6	-81.6	27	1
SVE-5	5/14/12	-6	-81.6	27	--
SVE-5	5/21/12	-6	-81.6	28	--
SVE-5	5/30/12	-6	-81.6	38	--
SVE-5	6/4/12	-6	-81.6	35	--
SVE-5	6/11/12	-6	-81.6	35	--
SVE-5	6/12/12	-5.25	-71.4	30	3.6
SVE-5	6/14/12	-5	-68.0	29	--
SVE-5	6/18/12	-4	-54.4	22	--
SVE-6	3/9/12	-8.5	-115.6	19	37.5 ¹
SVE-6	3/9/12	-8	-108.8	19	3.7 ²
SVE-6	3/10/12	-8	-108.8	20	1.3
SVE-6	3/11/12	-8	-108.8	20	2.8
SVE-6	3/16/12	-7.5	-102.0	16	1.9
SVE-6	3/23/12	-9	-122.4	--	--
SVE-6	3/23/12	-9	-122.4	17	2.2
SVE-6	3/29/12 ³	-6	-81.6	23	--
SVE-6	3/29/12 ⁴	-7	-95.2	24	--
SVE-6	3/30/12	-9	-122.4	17	2
SVE-6	4/11/12	-7	-95.2	17	2.3
SVE-6	4/16/12	-8	-108.8	5	--
SVE-6	4/23/12	-7.5	-102.0	19	--
SVE-6	4/30/12	-9	-122.4	25	--
SVE-6	5/7/12	-6	-81.6	18	--
SVE-6	5/9/12	-6	-81.6	13	0.5
SVE-6	5/14/12	-7	-95.2	15	--
SVE-6	5/21/12	-7	-95.2	25	--
SVE-6	5/30/12	-7	-95.2	24	--
SVE-6	6/4/12	-7	-95.2	20	--
SVE-6	6/11/12	-7	-95.2	20	--

Footnotes on Page 5.

Table 2. Extraction Well Manifold Monitoring Data, Phase I SVE System, Madison-Kipp Corporation, Madison, Wisconsin.

Well ID	Date	System Manifold			
		Vacuum (in Hg)	Vacuum (in H ₂ O)	Flow Rate (cfm)	VOCs (ppm)
SVE-6	6/12/12	-6.75	-91.8	16	3.1
SVE-6	6/14/12	-6	-81.6	19	--
SVE-6	6/18/12	-5	-68.0	15	--
SVE-7	3/9/12	-6	-81.6	40	96.2 ¹
SVE-7	3/9/12	-5.5	-74.8	30	11.8 ²
SVE-7	3/10/12	-5.5	-74.8	30	10.5
SVE-7	3/11/12	-5.25	-71.4	30	7.3
SVE-7	3/16/12	-5.5	-74.8	30	3.6
SVE-7	3/23/12	-6	-81.6	35	--
SVE-7	3/23/12	-6	-81.6	35	3.4
SVE-7	3/29/12 ³	-3.5	-47.6	20	--
SVE-7	3/29/12 ⁴	-4	-54.4	30	--
SVE-7	3/30/12	-5	-68.0	30	3
SVE-7	4/11/12	-4	-54.4	25	7
SVE-7	4/16/12	-5	-68.0	25	--
SVE-7	4/23/12	-5	-68.0	120	--
SVE-7	4/30/12	-5	-68.0	30	--
SVE-7	5/7/12	-5	-68.0	25	--
SVE-7	5/9/12	-5	-68.0	30	0.6
SVE-7	5/14/12	-5	-68.0	30	--
SVE-7	5/21/12	-5	-68.0	40	--
SVE-7	5/30/12	-4	-54.4	30	--
SVE-7	6/4/12	-5	-68.0	40	--
SVE-7	6/11/12	-4	-54.4	40	--
SVE-7	6/12/12	-4.5	-61.2	35	4
SVE-7	6/14/12	-3.5	-47.6	25	--
SVE-7	6/18/12	-2.5	-34.0	20	--
SVE-8	3/9/12	-7	-95.2	30	34.2 ¹
SVE-8	3/9/12	-7	-95.2	30	7.2 ²
SVE-8	3/10/12	-7	-95.2	31	4.3
SVE-8	3/11/12	-6.5	-88.4	33	6.7
SVE-8	3/16/12	-6.5	-88.4	32	2.4
SVE-8	3/23/12	-7	-95.2	35	--
SVE-8	3/23/12	-7	-95.2	35	2.5
SVE-8	3/29/12 ³	-5	-68.0	29	--
SVE-8	3/29/12 ⁴	-5.5	-74.8	35	--
SVE-8	3/30/12	-6	-81.6	37	2.9
SVE-8	4/11/12	-6	-81.6	27	2
SVE-8	4/16/12	-6	-81.6	25	--
SVE-8	4/23/12	-6	-81.6	25	--
SVE-8	4/30/12	-6	-81.6	40	--
SVE-8	5/7/12	-6	-81.6	25	--
SVE-8	5/9/12	-6	-81.6	27	0.5
SVE-8	5/14/12	-6	-81.6	27	--
SVE-8	5/21/12	-6	-81.6	38	--
SVE-8	5/30/12	-6	-81.6	38	--
SVE-8	6/4/12	-7	-95.2	35	--

Footnotes on Page 5.

Table 2. Extraction Well Manifold Monitoring Data, Phase I SVE System, Madison-Kipp Corporation, Madison, Wisconsin.

Well ID	Date	System Manifold			
		Vacuum (in Hg)	Vacuum (in H ₂ O)	Flow Rate (cfm)	VOCs (ppm)
SVE-8	6/11/12	-6	-81.6	35	--
SVE-8	6/12/12	-5.5	-74.8	28	3.4
SVE-8	6/14/12	-5	-68.0	27	--
SVE-8	6/18/12	-3	-40.8	18	--
SVE-9	3/9/12	-9.5	-129.2	13	196.1 ¹
SVE-9	3/9/12	-9	-122.4	15	172.1 ²
SVE-9	3/10/12	-9	-122.4	15	144.5
SVE-9	3/11/12	-9	-122.4	15	131.2
SVE-9	3/16/12	-9	-122.4	15	26.3
SVE-9	3/23/12	-9.5	-129.2	17	--
SVE-9	3/23/12	-10	-136.0	17	29.7
SVE-9	3/29/12 ³	-7	-95.2	13	--
SVE-9	3/29/12 ⁴	-8.5	-115.6	17	--
SVE-9	3/30/12	-9	-122.4	17	30.6
SVE-9	4/11/12	-8.5	-115.6	13	5
SVE-9	4/16/12	-9	-122.4	7	--
SVE-9	4/23/12	-9	-122.4	4	--
SVE-9	4/30/12	-9	-122.4	22	--
SVE-9	5/7/12	-9	-122.4	8	--
SVE-9	5/9/12	-8	-108.8	13	4.3
SVE-9	5/14/12	-8	-108.8	10	--
SVE-9	5/21/12	-8	-108.8	25	--
SVE-9	5/30/12	-8	-108.8	25	--
SVE-9	6/4/12	-8	-108.8	22	--
SVE-9	6/11/12	-8	-108.8	22	--
SVE-9	6/12/12	-8	-108.8	18	6.9
SVE-9	6/14/12	-7.25	-98.6	17	--
SVE-9	6/18/12	-6	-81.6	12	--

Start system at 1:15 pm on March 9, 2012.

Vacuum measured with inline vacuum gauge in units of in Hg. Vacuum converted to in H₂O for comparison.

Extraction well flow rate measured with inline air flow meter.

VOCs measured with a PID (calibrated to 100 ppm isobutylene).

- 1 Vacuum measured at well head at 12:55 pm.
- 2 Vacuum measured at well head at 5:30 pm.
- 3 System restarted with make-up air valve open 100 percent to reduce backpressure on blower.
- 4 Make-up air valve closed to 50 percent open to continue operation of system consistent with previous settings.
- Not monitored.
- cfm Cubic feet per minute.
- in Hg Inches of mercury.
- in H₂O Inches of water column.
- PID Photoionization detector.
- ppm Parts per million.
- VOCs Volatile organic compounds reported as isobutylene.