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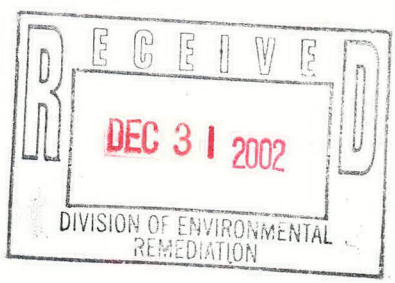
Bioremediation Field Pilot Study
Status Report
Volume II



Universal Instruments Corporation

Kirkwood, Broome County, New York

December 2002

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REPORT

Bioremediation Field Pilot Study Status Report Volume II

Universal Instruments Corporation

Kirkwood, Broome County, New York

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APPENDIX B

MONITORING WELL GROUND-WATER SAMPLING FIELD DATA
Universal Instruments Facility
Kirkwood, New York
September 2001

Well Number:	MW-2	**Well Depth (ft TIC):**	16.38	**PID (ppm):**	-
Sample Date:	9/21/2001	**Screen Length (ft):**		**Initial Water Level (ft TIC):**	11.97
Sampling Device:	Bladder	**Pump Intake Depth (ft TIC):**	14.38	**Pre-Pumping Water Level (ft TIC):**	11.72
Sampling Personnel:	JL/MMY	**Well Diameter (in):**	1.5	**Tubing Type:**	Teflon-lined polyethylene

Time	pH	Temp. (degrees C)	Specific Cond. (uS/cm)	Dissolved Oxygen (ppm)	Turbidity (NTU)	Redox (mV)	Depth to Water (feet)	Purge Rate (mL/min)	Comments
1110	5.91	17.2	0.589	4.12	-10.0	153	Probe can't fit	200	started purging
1115	5.85	16.7	0.593	3.30	-10.0	148	into well	200	Turbidity not working properly
1120	5.83	16.20	0.608	2.45	-10.0	142		200	
1125	5.79	15.90	0.622	1.67	-10.0	148		150	
1130	5.72	16.10	0.641	1.64	-10.0	159		150	
1135	5.70	16.00	0.644	1.32	-10.0	163		150	
1140	5.67	16.5	0.645	1.01	-10.0	167		150	
1145	5.65	16.9	0.646	0.97	-10.0	170		150	
1150	5.66	16.6	0.643	1.08	-10.0	172		150	
1155	5.65	16.6	0.648	0.98	-10.0	171		150	
1200	5.66	16.6	0.651	0.00	-10.0	171		150	
1205	5.67	16.7	0.652	0.00	-10.0	170		150	

Sample collected using a bladder pump for VOC's, Redox parameters, methane, ethane, ethene and metabolic acids.
Total Volume Purged: 2.5 gallons
Notes: Sample time 1210

MONITORING WELL GROUND-WATER SAMPLING FIELD DATA
Universal Instruments Facility
Kirkwood, New York
September 2001

Well Number:	MW-3			**Well Depth (ft TIC):**		14.21	**PID (ppm):**	-	
Sample Date:	9/20/2001			**Screen Length (ft):**			**Initial Water Level (ft TIC):**		8.38
Sampling Device:	Bladder			**Pump Intake Depth (ft TIC):**		12	**Pre-Pumping Water Level (ft TIC):**		8.10
Sampling Personnel:	JL/MMY			**Well Diameter (in):**		2.0	**Tubing Type:**	Teflon-lined polyethylene	

Time	pH	Temp. (degrees C)	Specific Cond. (uS/cm)	Dissolved Oxygen (ppm)	Turbidity (NTU)	Redox (mV)	Depth to Water (feet)	Purge Rate (mL/min)	Comments
1315	6.27	17.72	0.459	15.92	2.1	230		200	started purging
1320	6.72	18.04	0.474	2.36	19.3	180	8.88	200	
1325	6.81	18.06	0.474	1.42	10.3	166		200	
1330	6.83	17.99	0.484	0.81	5.0	158	8.98	200	
1335	6.85	17.83	0.496	0.37	2.5	147		200	
1340	6.86	17.79	0.497	0.35	2.7	146	9.00	200	
1345	6.84	17.8	0.500	0.11	1.2	135	9.00	200	
1350	6.84	17.8	0.502	0.04	1.6	132		200	
1355	6.87	17.8	0.506	0.01	0.0	126	8.80	200	
1400	6.87	18.0	0.506	0.04	0.0	125	8.63	200	

*TIC - top of inner casing

Sample collected using a bladder pump for VOC's, Redox parameters, methane, ethane, ethene and metabolic acids.

Total Volume Purged:

Notes: Sampled time 1410

MONITORING WELL GROUND-WATER SAMPLING FIELD DATA
Universal Instruments Facility
Kirkwood, New York
September 2001

Well Number:	MW-5	**Well Depth (ft TIC):**	21.70	**PID (ppm):**	-
Sample Date:	9/21/2001	**Screen Length (ft):**		**Initial Water Level (ft TIC):**	12.05
Sampling Device:	Bladder	**Pump Intake Depth (ft TIC):**	19	**Pre-Pumping Water Level (ft TIC):**	11.72
Sampling Personnel:	JL/MMY	**Well Diameter (in):**	2.0	**Tubing Type:**	Teflon-lined polyethylene

Time	pH	Temp. (degrees C)	Specific Cond. (uS/cm)	Dissolved Oxygen (ppm)	Turbidity (NTU)	Redox (mV)	Depth to Water (feet)	Purge Rate (mL/min)	Comments
1155									started purging
1158	5.77	13.71	2520	0.00	258.0	175	12.46		
1203	5.54	13.69	2490	0.00	103.0	156	12.39	150	
1208	5.54	14.59	2460	0.00	70.5	154	12.15		
1213	5.53	14.82	2500	0.00	60.5	152	12.15	200	adjusted flow
1218	5.53	14.71	2500	0.00	41.2	150	12.15		
1223	5.53	14.50	2510	0.00	34.3	150	12.16	200	
1228	5.53	14.52	2500	0.00	24.1	150	12.15		
1233	5.53	14.73	2500	0.00	23.7	149	12.15	200	
1238	5.53	14.32	2530	0.00	22.4	149	12.15		

*TIC - top of inner casing

Sample collected using a bladder pump for VOC's, Redox parameters, methane, ethane, ethene

Total Volume Purged: 3 gallons

Notes: Sample time 1240

MONITORING WELL GROUND-WATER SAMPLING FIELD DATA
Universal Instruments Facility
Kirkwood, New York
September 2001

Well Number:	MW-6	**Well Depth (ft TIC):**	34.61	**PID (ppm):**	-
Sample Date:	9/21/2001	**Screen Length (ft):**		**Initial Water Level (ft TIC):**	3.28
Sampling Device:	Bladder	**Pump Intake Depth (ft TIC):**	32.61	**Pre-Pumping Water Level (ft TIC):**	2.68
Sampling Personnel:	JL	**Well Diameter (in):**	2.0	**Tubing Type:**	Teflon-lined polyethylene

Time	pH	Temp. (degrees C)	Specific Cond. (uS/cm)	Dissolved Oxygen (ppm)	Turbidity (NTU)	Redox (mV)	Depth to Water (feet)	Purge Rate (mL/min)	Comments
852	6.97	15.8	0.381	2.72	-10.0	119	3.32	200	started purging
855	6.88	15.9	0.376	0.26	-1.6	93	3.69	150	
900	6.86	15.90	0.376	0.00	6.0	30	4.26	150	
905	6.86	16.00	0.376	0.00	14.9	7	4.71	150	
910	6.86	16.40	0.374	0.00	43.0	-1	5.12	150	
915	6.87	16.80	0.376	0.00	32.8	1	5.57	150	
920	6.88	16.9	0.377	0.00	57.9	6	5.86	150	
925	6.88	17.4	0.375	0.00	64.7	14	6.11	150	
930	6.90	17.2	0.376	0.00	65.0	21	6.34	150	
935	6.91	17.6	0.375	0.00	47.8	28	6.59	150	
940	6.90	17.7	0.376	0.00	54.0	34	6.75	150	
945	6.91	17.6	0.375	0.00	53.5	38	6.99	150	
950	6.91	18.0	0.374	0.00	41.7	44	7.07	150	
955	6.91	18.2	0.374	0.00	41.9	47	7.21	150	
1000	6.90	18.4	0.375	0.00	42.4	49	7.41	150	

*TIC - top of inner casing

Sample collected using a bladder pump for VOC's, Redox parameters, methane, ethane, ethene .

Total Volume Purged: 1.5 gallons

Notes: Sample time 1010

MONITORING WELL GROUND-WATER SAMPLING FIELD DATA
Universal Instruments Facility
Kirkwood, New York
September 2001

Well Number:	MW-7A			**Well Depth (ft TIC):**		16.20	**PID (ppm):**	-	
Sample Date:	9/20/2001			**Screen Length (ft):**			**Initial Water Level (ft TIC):**		7.26
Sampling Device:	Bladder			**Pump Intake Depth (ft TIC):**		14	**Pre-Pumping Water Level (ft TIC):**		6.91
Sampling Personnel:	DBG/MRA			**Well Diameter (in):**		2.0	**Tubing Type:**	Teflon-lined polyethylene	
Time	**pH**	**Temp.** (degrees C)	**Specific Cond.** (uS/cm)	**Dissolved Oxygen** (ppm)	**Turbidity** (NTU)	**Redox** (mV)	**Depth to Water** (feet)	**Purge Rate** (mL/min)	**Comments**
930	5.84	16.82	1.26	4.01	26.0	204	7.45	120	started purging
935	5.83	16.89	1.28	3.27	21.6	195	7.65	120	
940	5.83	16.95	1.29	3.59	23.6	189	7.88	120	
945	5.85	17.04	1.29	4.39	18.8	184	8.18	120	
950	5.87	17.21	1.29	4.84	16.4	181	8.21	120	
955	5.88	17.45	1.30	5.22	14.7	178	8.36	120	
1000	5.89	17.50	1.30	5.40	14.3	176	8.51	120	
1005	5.89	17.57	1.30	5.49	13.6	175	8.57	120	
1010	5.89	17.51	1.31	5.55	9.0	174	8.68	120	
1015	5.89	17.45	1.31	5.58	8.1	171	8.80	120	
1020	5.89	17.60	1.31	5.62	7.6	170	8.92	120	

*TIC - top of inner casing

Sample collected using a bladder pump for VOC's, Redox parameters, methane, ethane, ethene and metabolic acids.

Total Volume Purged: 1.5 gallons

Notes: Sample time 1030

MONITORING WELL GROUND-WATER SAMPLING FIELD DATA
Universal Instruments Facility
Kirkwood, New York
September 2001

Well Number:	MW-8	**Well Depth (ft TIC):**	59.11	**PID (ppm):**	-
Sample Date:	9/21/2001	**Screen Length (ft):**		**Initial Water Level (ft TIC):**	29.27
Sampling Device:	Bladder	**Pump Intake Depth (ft TIC):**	57	**Pre-Pumping Water Level (ft TIC):**	
Sampling Personnel:	DBG/MRA	**Well Diameter (in):**	2.0	**Tubing Type:**	Teflon-lined polyethylene

Time	pH	Temp. (degrees C)	Specific Cond. (uS/cm)	Dissolved Oxygen (ppm)	Turbidity (NTU)	Redox (mV)	Depth to Water (feet)	Purge Rate (mL/min)	Comments
910	6.82	14.83	0.472	13.43	900	201	29.49	200	started purging
915	6.83	14.91	0.478	11.16	800	190			
920	6.91	14.80	0.470	8.79	750	181	29.46	200	
925	6.93	14.62	0.468	7.13	560	179			
930	6.96	14.60	0.460	6.09	320	166	29.40	200	
935	7.00	14.57	0.460	6.11	420	168			
940	7.09	14.50	0.462	5.89	560	168	29.41		
945	7.09	14.79	0.460	6.70	580	132			
950	7.09	14.82	0.461	7.14	591	117			
955	7.09	14.91	0.460	6.78	380	115	24.43	200	
1000	7.09	14.88	0.462	5.98	320	99			
1005	7.09	14.89	0.466	6.35	320	101			

*TIC - top of inner casing

Sample collected using a bladder pump for VOC's, Redox parameters, methane, ethane, ethene and metabolic acids.

Total Volume Purged:

Notes: Due to high turbidity - will shut off pump at 1010 and allow an hour to settle prior to sampling
Sample time 1115

MONITORING WELL GROUND-WATER SAMPLING FIELD DATA
Universal Instruments Facility
Kirkwood, New York
September 2001

Well Number:	MW-9	**Well Depth (ft TIC):**	59.73	**PID (ppm):**	-
Sample Date:	9/19/2001	**Screen Length (ft):**		**Initial Water Level (ft TIC):**	47.95
Sampling Device:	Bladder	**Pump Intake Depth (ft TIC):**	57.93	**Pre-Pumping Water Level (ft TIC):**	47.31
Sampling Personnel:	MRA/JL/MY	**Well Diameter (in):**	2.0	**Tubing Type:**	Teflon-lined polyethylene

Time	pH	Temp. (degrees C)	Specific Cond. (uS/cm)	Dissolved Oxygen (ppm)	Turbidity (NTU)	Redox (mV)	Depth to Water (feet)	Purge Rate (mL/min)	Comments
1005	6.22	13.95	0.397	4.88	21.7	46	49.80	150	started purging
1010	6.27	13.53	0.386	3.38	23.1	56	50.52	250	
1015	6.35	13.16	0.382	2.23	32.2	62	51.95	175	
1020	6.41	13.15	0.391	1.88	65.4	69	52.76	200	
1025	6.43	13.80	0.400	1.64	77.3	74	52.80	100	
1030	6.43	14.14	0.416	1.55	82.2	82	52.55	150	
1035	6.43	14.11	0.434	1.49	87.0	89	52.45	150	
1040	6.43	14.11	0.452	1.39	117.0	96	52.40	150	
1045	6.41	14.23	0.476	1.38	149.0	102	52.25	150	
1050	6.37	14.35	0.524	1.44	144.0	111	52.11	150	
1055	6.35	14.30	0.589	1.48	141.0	118	52.02	150	
1100	6.32	14.11	0.640	1.45	125.0	123	52.03	150	
1105	6.28	14.25	0.962	1.41	112.0	129	51.95	150	
1110	6.26	14.40	0.732	1.42	91.1	133	51.89	150	
1115	6.24	14.30	0.788	1.45	82.8	136	51.90	150	
1120	6.21	14.45	0.834	1.46	66.4	138	51.82	150	
1125	6.20	14.48	0.862	1.46	50.4	140	51.76	150	
1130	6.18	14.60	0.881	1.44	46.0	140	51.78	150	

*TIC - top of inner casing

Sample collected using a bladder pump for VOC's, Redox parameters, methane, ethane, ethene .

Total Volume Purged: 3.0 gallons

Notes: Sample time 1430
Stopped pumping at 1130 bottle sets needed aren't here yet

MONITORING WELL GROUND-WATER SAMPLING FIELD DATA
Universal Instruments Facility
Kirkwood, New York
September 2001

Well Number:	MW-11			**Well Depth (ft TIC):**		61.45	**PID (ppm):**	-	
Sample Date:	9/19/2001			**Screen Length (ft):**			**Initial Water Level (ft TIC):**		41.98
Sampling Device:	Bladder			**Pump Intake Depth (ft TIC):**		59.45	**Pre-Pumping Water Level (ft TIC):**		40.87
Sampling Personnel:	JL/DG			**Well Diameter (in):**		2.0	**Tubing Type:**	Teflon-lined polyethylene	
Time	**pH**	**Temp.** (degrees C)	**Specific Cond.** (uS/cm)	**Dissolved Oxygen** (ppm)	**Turbidity** (NTU)	**Redox** (mV)	**Depth to Water** (feet)	**Purge Rate** (mL/min)	**Comments**
1600	8.05	17.22	0.550	17.25	-7.1	151	42.74	200	started purging
1605	7.00	16.08	0.543	5.63	653.0	161	44.01	150	
1610	7.01	15.81	0.541	3.47	178.0	157	45.10	150	
1615	7.13	15.93	0.537	2.54	50.3	149	46.10	150	
1620	7.49	16.14	0.530	2.42	14.6	136	47.05	150	
1625	7.70	16.02	0.527	2.38	10.9	129	47.81	150	
1630	7.72	15.97	0.525	2.18	10.0	128	48.57	150	
1635	7.72	16.04	0.526	2.07	9.6	127	49.31	150	
1640	7.72	16.13	0.525	1.99	8.7	126	49.97	150	
1645	7.73	16.06	0.526	1.82	11.2	123	50.54	150	
1650	7.75	15.99	0.528	1.72	7.5	120	51.23	150	
1655	7.76	16.10	0.530	1.68	5.6	117	51.89	150	

*TIC - top of inner casing

Sample collected using a bladder pump for VOC's, Redox parameters, methane, ethane, ethene and metabolic acids.

Total Volume Purged: 2.75 gallons

Notes: Sample time 1715

MONITORING WELL GROUND-WATER SAMPLING FIELD DATA
Universal Instruments Facility
Kirkwood, New York
September 2001

Well Number:	MW-12	**Well Depth (ft TIC):**	72.29	**PID (ppm):**	-
Sample Date:	9/19/2001	**Screen Length (ft):**		**Initial Water Level (ft TIC):**	40.38
Sampling Device:	Bladder	**Pump Intake Depth (ft TIC):**	70	**Pre-Pumping Water Level (ft TIC):**	6.91
Sampling Personnel:	DBG/MRA/MMY	**Well Diameter (in):**	2.0	**Tubing Type:**	Teflon-lined polyethylene

Time	pH	Temp. (degrees C)	Specific Cond. (uS/cm)	Dissolved Oxygen (ppm)	Turbidity (NTU)	Redox (mV)	Depth to Water (feet)	Purge Rate (mL/min)	Comments
1805									started purging
1812	9.46	16.48	0.417	5.96	24.3	73	42.79	100	
1817	7.26	16.28	0.646	0.00	12.7	126	41.70	100	
1824	7.49	16.58	0.654	0.00	19.8	113		200	adjusted rate
1829	7.38	16.40	0.652	0.00	30.7	114		200	
1834	6.90	16.14	0.681	0.00	46.0	124	41.55	200	
1839	6.70	16.22	0.722	0.00	77.3	114		200	
1844	6.64	16.10	0.739	0.00	82.8	104	41.60	200	
1849	6.62	16.08	0.740	0.00	74.5	97		200	
1854	6.62	15.98	0.739	0.00	73.5	92	41.55	200	
1859	6.62	15.93	0.733	0.00	74.5	89		200	
1903	6.61	16.03	0.722	0.00	79.7	89	41.33	200	

*TIC - top of inner casing

Sample collected using a bladder pump for VOC's, Redox parameters, methane, ethane, ethene .

Total Volume Purged:

Notes: 1903 shut off pump to allow turbidity to decrease.
Sample time 2000

MONITORING WELL GROUND-WATER SAMPLING FIELD DATA
Universal Instruments Facility
Kirkwood, New York
September 2001

Well Number:	MW-13			**Well Depth (ft TIC):**		48.28	**PID (ppm):**	-	
Sample Date:	9/20/2001			**Screen Length (ft):**			**Initial Water Level (ft TIC):**		33.20
Sampling Device:	Bladder			**Pump Intake Depth (ft TIC):**		46	**Pre-Pumping Water Level (ft TIC):**		32.26
Sampling Personnel:	MMY			**Well Diameter (in):**		2.0	**Tubing Type:**	Teflon-lined polyethylene	
Time	**pH**	**Temp.** (degrees C)	**Specific Cond.** (uS/cm)	**Dissolved Oxygen** (ppm)	**Turbidity** (NTU)	**Redox** (mV)	**Depth to Water** (feet)	**Purge Rate** (mL/min)	**Comments**
900									started purging
905	6.49	15.90	0.280	10.35	-10.0	244	34.46	250	
910	6.60	15.51	0.281	5.60	-7.7	207		250	
915	6.71	15.36	0.281	3.64	-4.9	182	37.80	200	
920	6.78	15.53	0.280	2.80	-5.6	170	39.00		
925	6.84	15.97	0.280	2.14	-5.6	161	39.40		
930	6.87	15.88	0.280	1.39	-6.1	147	39.60	180	
935	6.87	16.07	0.280	1.12	-6.2	137	39.95		
940	6.85	16.45	0.281	0.95	-5.4	132	40.20		
945	6.90	16.21	0.280	0.77	-5.2	125	40.55	180	
950	6.90	16.05	0.278	0.57	-3.9	81	40.90	150	
955	6.94	16.07	0.276	0.17	-3.7	61	41.20	150	
1000	6.94	16.14	0.278	0.00	-2.9	58			

*TIC - top of inner casing

Sample collected using a bladder pump for VOC's, Redox parameters, methane, ethane, ethene and metabolic acids.

Total Volume Purged:

Notes: Sample time 1005

MONITORING WELL GROUND-WATER SAMPLING FIELD DATA
Universal Instruments Facility
Kirkwood, New York
September 2001

Well Number:	MW-14	**Well Depth (ft TIC):**	72.08	**PID (ppm):**	-
Sample Date:	9/19/2001	**Screen Length (ft):**	70	**Initial Water Level (ft TIC):**	41.43
Sampling Device:	Bladder	**Pump Intake Depth (ft TIC):**	14	**Pre-Pumping Water Level (ft TIC):**	
Sampling Personnel:	MRA/JL/MMY	**Well Diameter (in):**	2.0	**Tubing Type:**	Teflon-lined polyethylene

Time	pH	Temp. (degrees C)	Specific Cond. (uS/cm)	Dissolved Oxygen (ppm)	Turbidity (NTU)	Redox (mV)	Depth to Water (feet)	Purge Rate (mL/min)	Comments
1120	5.99	15.58	2.47	0.00	216.0	113		250	started purging
1125	5.99	15.53	2.47	0.00	203.1	112		250	
1130	5.98	15.48	2.47	0.00	198.0	112	41.56	250	
1135	5.93	15.50	2.53	0.00	125.0	113		250	
1140	5.91	15.47	2.56	0.00	91.3	112		250	
1145	5.89	15.35	2.59	0.00	85.0	112		250	
1150	5.87	15.37	2.61	0.00	81.9	112	41.57	250	
155	5.86	15.45	2.62	0.00	77.0	112	41.57	250	
1200	5.85	15.37	2.62	0.00	708.0	112		250	
1205	5.84	15.39	2.61	0.00	70.0	112		250	
1210	5.83	15.35	2.61	0.00	70.9	111	41.57	250	
1215	5.83	15.38	2.60	0.00	76.8	111		250	

*TIC - top of inner casing

Sample collected using a bladder pump for VOC's, Redox parameters, methane, ethane, ethene and metabolic acids.

Total Volume Purged:

Notes: Sample time 1445

MONITORING WELL GROUND-WATER SAMPLING FIELD DATA
Universal Instruments Facility
Kirkwood, New York
September 2001

Well Number:	MW-15	**Well Depth (ft TIC):**	45.76	**PID (ppm):**	-
Sample Date:	9/26/2001	**Screen Length (ft):**		**Initial Water Level (ft TIC):**	31.57
Sampling Device:	Bladder	**Pump Intake Depth (ft TIC):**	43.76	**Pre-Pumping Water Level (ft TIC):**	31.02
Sampling Personnel:	jl/DBG	**Well Diameter (in):**	2.0	**Tubing Type:**	Teflon-lined polyethylene

Time	pH	Temp. (degrees C)	Specific Cond. (uS/cm)	Dissolved Oxygen (ppm)	Turbidity (NTU)	Redox (mV)	Depth to Water (feet)	Purge Rate (mL/min)	Comments
1512	8.40	13.30	0.420	5.65	11.6	21	32.71	350	started purging
1515	7.36	12.80	0.407	0.66	31.5	44	32.91	200	
1520	7.13	13.00	0.406	0.00	42.9	45	32.80	150	
1525	7.03	13.20	0.406	0.00	46.1	44	32.60	150	
1530	7.00	13.30	0.405	0.00	46.5	46	32.52	150	
1535	6.98	13.10	0.406	0.00	44.5	46	32.51	150	
1540	6.99	13.10	0.407	0.00	42.0	46	32.45	150	
1545	7.01	13.20	0.407	0.00	47.8	46	32.43	150	
1550	7.10	13.10	0.410	0.00	34.3	43	32.43	150	
1555	7.23	13.10	0.416	0.00	40.6	40	32.47	150	
1600	7.31	13.10	0.417	0.18	35.5	41	32.41	150	

*TIC - top of inner casing

Sample collected using a bladder pump for VOC's, Redox parameters, methane, ethane, ethene and metabolic acids.

Total Volume Purged: 2.0 gallons

Notes: Sample time 1610

MONITORING WELL GROUND-WATER SAMPLING FIELD DATA
Universal Instruments Facility
Kirkwood, New York
September 2001

Well Number:	MW-16			**Well Depth (ft TIC):**	30.60		**PID (ppm):**	-	
Sample Date:	9/20/2001			**Screen Length (ft):**			**Initial Water Level (ft TIC):**	22.41	
Sampling Device:	Bladder			**Pump Intake Depth (ft TIC):**	28		**Pre-Pumping Water Level (ft TIC):**	22.41	
Sampling Personnel:	DBG			**Well Diameter (in):**	2.0		**Tubing Type:**	Teflon-lined polyethylene	
Time	**pH**	**Temp.** (degrees C)	**Specific Cond.** (uS/cm)	**Dissolved Oxygen** (ppm)	**Turbidity** (NTU)	**Redox** (mV)	**Depth to Water** (feet)	**Purge Rate** (mL/min)	**Comments**
750	6.71	12.89	0.247	0.00	65.3	202	22.41	120	started purging
755	6.72	12.94	0.245	0.00	86.2	201	22.41	120	
800	6.73	13.01	0.243	0.00	108.0	198	22.41	120	
805	6.73	12.94	0.242	0.00	116.0	196	22.41	120	
810	6.73	12.96	0.242	0.00	111.0	195	22.41	120	
815	6.73	12.94	0.241	0.00	111.0	195	22.41	120	
820	6.73	12.95	0.240	0.00	106.0	194	22.41	120	
825	6.72	12.86	0.239	0.00	96.1	194	22.41	120	
830	6.72	12.84	0.239	0.00	80.6	194	22.41	120	
835	6.72	12.90	0.237	0.00	81.1	194	22.41	120	
840	6.72	12.92	0.237	0.00	76.3	194	22.41	120	
845	6.72	12.89	0.237	0.00	79.5	194	22.41	120	
855	6.72	12.90	0.237	0.00	81.4	194	22.41	120	

*TIC - top of inner casing

Sample collected using a bladder pump for VOC's, Redox parameters, methane, ethane, ethene and metabolic acids.

Total Volume Purged: 1.5 gallons

Notes: Sample time 1045
At 855 shut off pump to let turbidity sit for an hour

MONITORING WELL GROUND-WATER SAMPLING FIELD DATA
Universal Instruments Facility
Kirkwood, New York
September 2001

Well Number:	MW-17			**Well Depth (ft TIC):**		20.00	**PID (ppm):**	-	
Sample Date:	9/25/2001			**Screen Length (ft):**			**Initial Water Level (ft TIC):**		15.31
Sampling Device:	Bladder			**Pump Intake Depth (ft TIC):**		18	**Pre-Pumping Water Level (ft TIC):**		15.22
Sampling Personnel:	JL			**Well Diameter (in):**		2.0	**Tubing Type:**	Teflon-lined polyethylene	
Time	**pH**	**Temp.** (degrees C)	**Specific Cond.** (uS/cm)	**Dissolved Oxygen** (ppm)	**Turbidity** (NTU)	**Redox** (mV)	**Depth to Water** (feet)	**Purge Rate** (mL/min)	**Comments**
915	6.30	12.99	1.71	0.00	79.6	106	15.65	150	started purging
920	6.11	13.00	1.71	0.00	283.0	110	15.62	150	
925	6.07	12.91	1.74	0.00	326.0	112	15.63	150	
930	6.06	12.78	1.79	0.00	280.0	111	15.63	150	
935	6.06	12.78	1.81	0.00	194.0	111	15.62	150	
940	6.07	12.74	1.83	0.00	136.0	109	15.62	150	
945	6.07	12.78	1.83	0.00	104.0	109	15.61	150	
950	6.07	12.58	1.84	0.00	78.0	107	15.62	150	
955	6.07	12.83	1.85	0.00	50.0	107	15.61	150	
1000	6.06	13.10	1.84	0.00	43.0	106	15.62	150	
1005	6.06	13.37	1.85	0.00	47.0	105	15.62	150	

*TIC - top of inner casing

Sample collected using a bladder pump for VOC's, Redox parameters, methane, ethane, ethene .

Total Volume Purged: 2.0 gallons

Notes: Sample time 1015

MONITORING WELL GROUND-WATER SAMPLING FIELD DATA
Universal Instruments Facility
Kirkwood, New York
September 2001

Well Number:	MW-18			**Well Depth (ft TIC):**		16.49	**PID (ppm):**	-	
Sample Date:	9/28/2001			**Screen Length (ft):**			**Initial Water Level (ft TIC):**		14.51
Sampling Device:	Bladder			**Pump Intake Depth (ft TIC):**		14	**Pre-Pumping Water Level (ft TIC):**		
Sampling Personnel:	DBG/MRA			**Well Diameter (in):**		2.0	**Tubing Type:**	Teflon-lined polyethylene	
Time	**pH**	**Temp.** (degrees C)	**Specific Cond.** (uS/cm)	**Dissolved Oxygen** (ppm)	**Turbidity** (NTU)	**Redox** (mV)	**Depth to Water** (feet)	**Purge Rate** (mL/min)	**Comments**
									started purging
DNS									

*TIC - top of inner casing

Sample collected using a bladder pump for VOC's, Redox parameters, methane, ethane, ethene and metabolic acids.

Total Volume Purged:

Notes: Did not sample insufficient amount of water

MONITORING WELL GROUND-WATER SAMPLING FIELD DATA
Universal Instruments Facility
Kirkwood, New York
September 2001

Well Number:	MW-19			**Well Depth (ft TIC):**		18.94	**PID (ppm):**	-	
Sample Date:	9/24/2001			**Screen Length (ft):**			**Initial Water Level (ft TIC):**		15.59
Sampling Device:	Bladder			**Pump Intake Depth (ft TIC):**		16.94	**Pre-Pumping Water Level (ft TIC):**		15.02
Sampling Personnel:	JL			**Well Diameter (in):**		2.0	**Tubing Type:**	Teflon-lined polyethylene	
Time	**pH**	**Temp.** (degrees C)	**Specific Cond.** (uS/cm)	**Dissolved Oxygen** (ppm)	**Turbidity** (NTU)	**Redox** (mV)	**Depth to Water** (feet)	**Purge Rate** (mL/min)	**Comments**
1140	5.79	15.34	1.82	0.00	774	130	Below level of pump	200	started purging
1145	5.79	16.57	1.80	0.00	768	122	"	150	
1150	5.79	17.01	1.80	0.00	828	115	"	125	
1155	5.80	17.08	1.79	0.00	746	103	"	125	
1200	5.80	17.55	1.77	0.00	584	97	"	125	
1205	5.80	18.23	1.78	0.00	433	96	"	125	
1210	5.80	17.90	1.79	0.00	477	95	"	125	
1215	5.80	18.13	1.80	0.00	317	94	"	125	
1220	5.81	18.30	1.81	0.00	164	93	"	125	
1225	5.80	18.14	1.82	0.00	158	91	"	125	
1230	5.80	17.81	1.82	0.00	156	89	"	125	
1235	5.80	17.42	1.81	0.00	123	88	"	125	

*TIC - top of inner casing

Sample collected using a bladder pump for VOC's, Redox parameters, methane, ethane, ethene and metabolic acids.

Total Volume Purged: 1.5 gallons

Notes: Sample time 1330
Let sit for an hour , then sampled due to turbidity.

MONITORING WELL GROUND-WATER SAMPLING FIELD DATA
Universal Instruments Facility
Kirkwood, New York
September 2001

Well Number:	MW-20	**Well Depth (ft TIC):**	23.45	**PID (ppm):**	-
Sample Date:	9/26/2001	**Screen Length (ft):**		**Initial Water Level (ft TIC):**	11.28
Sampling Device:	Bladder	**Pump Intake Depth (ft TIC):**	21	**Pre-Pumping Water Level (ft TIC):**	6.91
Sampling Personnel:	DBG/MRA	**Well Diameter (in):**	2.0	**Tubing Type:**	Teflon-lined polyethylene

Time	pH	Temp. (degrees C)	Specific Cond. (uS/cm)	Dissolved Oxygen (ppm)	Turbidity (NTU)	Redox (mV)	Depth to Water (feet)	Purge Rate (mL/min)	Comments
1130	6.68	15.51	1.20	4.49	147.0	64		200	started purging
1135	6.68	16.11	1.20	3.21	132.2	69	11.90	200	
1140	6.68	16.22	1.20	2.34	99.8	74		200	
1145	6.71	16.15	1.20	2.69	85.3	80		200	
1150	6.72	16.08	1.20	2.88	76.7	84	11.92	200	
1155	6.74	16.10	1.20	3.00	60.2	88		200	
1200	6.76	16.08	1.20	3.01	44.9	91		200	
1205	6.76	16.07	1.20	3.05	44.6	94	11.92	200	
1210	6.77	16.05	1.20	3.04	33.3	98		200	
1215	6.78	16.05	1.21	3.03	31.2	101		200	
1220	6.79	16.06	1.21	3.01	25.7	105	11.91	200	
1225	6.78	16.05	1.21	3.00	21.9	107		200	

*TIC - top of inner casing

Sample collected using a bladder pump for VOC's, Redox parameters, methane, ethane, ethene and metabolic acids.

Total Volume Purged: 2.5 gallons

Notes: Sample time 1230

MONITORING WELL GROUND-WATER SAMPLING FIELD DATA
Universal Instruments Facility
Kirkwood, New York
September 2001

Well Number:	MW-21	**Well Depth (ft TIC):**	40.39	**PID (ppm):**	-
Sample Date:	9/26/2001	**Screen Length (ft):**		**Initial Water Level (ft TIC):**	26.33
Sampling Device:	Bladder	**Pump Intake Depth (ft TIC):**	38	**Pre-Pumping Water Level (ft TIC):**	26.38
Sampling Personnel:	ADR	**Well Diameter (in):**	2.0	**Tubing Type:**	Teflon-lined polyethylene

Time	pH	Temp. (degrees C)	Specific Cond. (uS/cm)	Dissolved Oxygen (ppm)	Turbidity (NTU)	Redox (mV)	Depth to Water (feet)	Purge Rate (mL/min)	Comments
1500	6.54	15.11	0.171	3.21	999.0	68	26.44	200	started purging
1505	6.48	14.99	0.235	2.23	498.0	52	26.38	200	
1510	6.54	14.79	0.266	0.91	409.0	27	36.40	200	
1515	6.59	14.76	0.302	0.58	251.0	30	26.39	200	
1520	6.60	14.74	0.330	0.61	158.0	36	26.39	200	
1525	6.63	14.68	0.346	0.64	147.0	41	26.39	200	
1530	6.62	14.62	0.372	0.70	123.0	49	26.37	200	
1535	6.64	14.63	0.387	0.77	84.6	54	26.36	200	
1540	6.64	14.59	0.395	0.81	84.7	55	26.36	200	
1545	6.64	14.52	0.403	0.83	69.2	57	26.39	200	
1550	6.65	14.54	0.414	0.89	66.4	60	26.38	200	
1555	6.78	14.37	0.413	5.01	34.2	81	26.40	200	
1600	6.65	14.07	0.436	1.41	36.1	76	26.44	200	
1605	6.64	12.98	0.441	0.32	61.2	69	26.44	200	
1610	6.63	12.78	0.441	0.32	42.8	66	26.44	200	

*TIC - top of inner casing

Sample collected using a bladder pump for VOC's, Redox parameters, methane, ethane, ethene and metabolic acids.

Total Volume Purged: 3 gallons

Notes: Sample time 1630

MONITORING WELL GROUND-WATER SAMPLING FIELD DATA
Universal Instruments Facility
Kirkwood, New York
September 2001

Well Number:	MW-22	**Well Depth (ft TIC):**	21.33	**PID (ppm):**	-
Sample Date:	9/20/2001	**Screen Length (ft):**		**Initial Water Level (ft TIC):**	6.70
Sampling Device:	Bladder	**Pump Intake Depth (ft TIC):**	19.33	**Pre-Pumping Water Level (ft TIC):**	5.56
Sampling Personnel:	JL	**Well Diameter (in):**	2.0	**Tubing Type:**	Teflon-lined polyethylene

Time	pH	Temp. (degrees C)	Specific Cond. (uS/cm)	Dissolved Oxygen (ppm)	Turbidity (NTU)	Redox (mV)	Depth to Water (feet)	Purge Rate (mL/min)	Comments
1312	6.85	15.90	0.339	6.53	68.4	133	7.90	400	started purging
1317	6.88	15.50	0.325	0.00	95.4	38	9.46	150	
1320	6.89	16.00	0.324	0.00	85.4	27	9.69	150	
1325	6.89	16.50	0.324	0.00	79.7	27	9.96	150	
1330	6.88	17.20	0.324	0.00	77.8	32	10.27	150	
1335	6.89	17.50	0.326	0.00	74.7	40	10.55	150	
1340	6.89	17.70	0.327	0.00	83.3	47	10.82	150	
1345	6.89	17.80	0.327	0.00	76.8	52	11.08	150	
1350	6.89	17.80	0.327	0.00	73.5	56	11.25	150	
1355	6.90	15.60	0.333	0.00	83.6	53	12.45	150	
1400	6.90	16.40	0.326	0.00	45.9	47	12.50	150	
1405	6.89	16.60	0.326	0.00	47.5	42	12.52	150	
1410	6.89	17.30	0.326	0.00	48.9	41	12.99	150	

*TIC - top of inner casing

Sample collected using a bladder pump for VOC's, Redox parameters, methane, ethane, ethene and metabolic acids.

Total Volume Purged: 2.0 gallons

Notes: Sample time 1425

MONITORING WELL GROUND-WATER SAMPLING FIELD DATA
Universal Instruments Facility
Kirkwood, New York
September 2001

Well Number:	MW-23			**Well Depth (ft TIC):**		49.72	**PID (ppm):**	-		
Sample Date:	9/19/2001			**Screen Length (ft):**			**Initial Water Level (ft TIC):**		40.73	
Sampling Device:	Bladder			**Pump Intake Depth (ft TIC):**		47	**Pre-Pumping Water Level (ft TIC):**			
Sampling Personnel:	MRA/JL/MY			**Well Diameter (in):**		2.0	**Tubing Type:**	Teflon-lined polyethylene		
Time	**pH**	**Temp.** (degrees C)	**Specific Cond.** (uS/cm)	**Dissolved Oxygen** (ppm)	**Turbidity** (NTU)	**Redox** (mV)	**Depth to Water** (feet)	**Purge Rate** (mL/min)	**Comments**	
1020									started purging	
1023	6.65	14.60	0.432	0.30	-10.0	-147		350		
1028	6.57	14.80	0.428	0.00	-10.0	-123	45.80	350	adjusted pump rate	
1033	6.46	14.90	0.427	0.00	-10.0	-110	46.85	250		
1038	6.41	15.40	0.427	0.00	-10.0	-116	47.35	250		
1043	6.41	15.60	0.426	0.00	-10.0	-116	below 47.6	250	water level below top of pump	
1048	6.44	15.90	0.425	0.00	-10.0	-119		250	turned off pump	

*TIC - top of inner casing

Sample collected using a bladder pump for VOC's, Redox parameters, methane, ethane, ethene

Total Volume Purged:

Notes: Turbidity flashing -10.0 NTU on hand unit. Checked readings with another r unit -same reading.
1205 water level 47.13 checked water again at 1435 45.73 ft.
Collect Sample for VOC's and redox parameters only. During sampling water level went dry. Sample time 1435

MONITORING WELL GROUND-WATER SAMPLING FIELD DATA
Universal Instruments Facility
Kirkwood, New York
September 2001

Well Number:	MW-24	**Well Depth (ft TIC):**	44.65	**PID (ppm):**	-
Sample Date:	9/20/2001	**Screen Length (ft):**		**Initial Water Level (ft TIC):**	36.46
Sampling Device:	Bladder	**Pump Intake Depth (ft TIC):**	42.65	**Pre-Pumping Water Level (ft TIC):**	36.51
Sampling Personnel:	JL	**Well Diameter (in):**	2.0	**Tubing Type:**	Teflon-lined polyethylene

Time	pH	Temp. (degrees C)	Specific Cond. (uS/cm)	Dissolved Oxygen (ppm)	Turbidity (NTU)	Redox (mV)	Depth to Water (feet)	Purge Rate (mL/min)	Comments
905	5.85	12.10	0.620	2.75	>999	170	37.03	350	started purging
910	5.67	13.20	0.614	0.63	>999	179	37.11	200	
915	5.63	13.00	0.609	0.58	>999	185	37.31	200	
920	5.59	13.10	0.602	1.05	799	192	37.41	200	
925	5.57	13.40	0.601	1.82	503	197	37.61	200	
930	5.60	13.20	0.603	2.39	461	197	37.68	200	
935	5.64	13.30	0.604	2.75	360	196	37.73	200	
940	5.69	13.60	0.606	2.97	298	195	37.76	200	
945	5.74	13.90	0.607	3.05	255	192	37.81	200	
950	5.79	14.20	0.607	3.18	178	190	37.72	200	
955	5.81	14.30	0.607	3.07	157	190	37.72	200	
1000	5.81	14.60	0.608	2.84	120	191	37.75	200	
1005	5.80	13.80	0.610	2.57	209	191	37.81	200	

*TIC - top of inner casing

Sample collected using a bladder pump for VOC's, Redox parameters, methane, ethane, ethene and metabolic acids.

Total Volume Purged: 2.0 gallons

Notes: Stop purging at 1005 let well sit for an hour
Sample time 1100

MONITORING WELL GROUND-WATER SAMPLING FIELD DATA
Universal Instruments Facility
Kirkwood, New York
September 2001

Well Number:	MW-25	**Well Depth (ft TIC):**	39.81	**PID (ppm):**	-
Sample Date:	9/25/2001	**Screen Length (ft):**		**Initial Water Level (ft TIC):**	14.37
Sampling Device:	Bladder	**Pump Intake Depth (ft TIC):**	37.5	**Pre-Pumping Water Level (ft TIC):**	14.36
Sampling Personnel:	MRA/DBG	**Well Diameter (in):**	2.0	**Tubing Type:**	Teflon-lined polyethylene

Time	pH	Temp. (degrees C)	Specific Cond. (uS/cm)	Dissolved Oxygen (ppm)	Turbidity (NTU)	Redox (mV)	Depth to Water (feet)	Purge Rate (mL/min)	Comments
1025	6.33	15.15	1.38	9.43	469	221		200	started purging
1030	6.08	14.30	1.46	3.56	948	216	15.11	200	
1035	6.01	14.09	1.59	2.79	999	217		200	
1040	5.91	13.85	1.55	1.21	999	220		200	
1045	5.90	13.91	1.56	1.11	999	221	15.20	200	
1050	5.87	13.90	1.58	0.75	887	223	15.20	200	
1055	5.86	13.90	1.58	0.50	647	227		200	
1100	5.86	13.90	1.58	0.43	521	230		200	
1105	5.86	14.00	1.58	0.36	404	231	15.19	200	
1110	5.86	14.00	1.58	0.31	356	215		200	
1115	5.86	14.00	1.58	0.30	197	211		200	
1120	5.86	14.00	1.58	0.28	102	208		200	

*TIC - top of inner casing

Sample collected using a bladder pump for VOC's, Redox parameters, methane, ethane, ethene and metabolic acids.

Total Volume Purged: 2 gallons

Notes: Sample time 1230

MONITORING WELL GROUND-WATER SAMPLING FIELD DATA
Universal Instruments Facility
Kirkwood, New York
September 2001

Well Number:	MW-26	**Well Depth (ft TIC):**	28.03	**PID (ppm):**	-
Sample Date:	9/24/2001	**Screen Length (ft):**		**Initial Water Level (ft TIC):**	15.63
Sampling Device:	Bladder	**Pump Intake Depth (ft TIC):**	26	**Pre-Pumping Water Level (ft TIC):**	
Sampling Personnel:	MRA/JL	**Well Diameter (in):**	2.0	**Tubing Type:**	Teflon-lined polyethylene

Time	pH	Temp. (degrees C)	Specific Cond. (uS/cm)	Dissolved Oxygen (ppm)	Turbidity (NTU)	Redox (mV)	Depth to Water (feet)	Purge Rate (mL/min)	Comments
1125	9.23	16.49	0.459	6.11	61.2	51	15.83	200	started purging
1130	9.11	16.51	0.457	5.51	40.9	60		200	
1135	9.00	16.60	0.440	4.65	38.7	66		200	
1145	8.71	17.21	0.379	3.21	39.2	81	16.10	200	
1150	8.46	17.53	0.314	2.83	47.2	90		200	
1155	8.23	17.21	0.315	2.50	55.6	100		200	
1200	7.93	17.00	0.340	2.40	51.0	105	16.11	200	
1205	7.81	17.51	0.345	1.95	62.5	121		200	
1210	6.61	17.42	0.750	1.37	33.3	167		200	
1215	6.59	17.50	0.757	1.41	29.1	169	16.14	200	
1220	6.61	17.45	0.761	1.21	28.9	173		200	
1225	6.67	17.47	0.769	1.10	31.2	175		200	

*TIC - top of inner casing

Sample collected using a bladder pump for VOC's, Redox parameters, methane, ethane, ethene and metabolic acids.

Total Volume Purged: 2 gallons

Notes: Sample time 1235

MONITORING WELL GROUND-WATER SAMPLING FIELD DATA
Universal Instruments Facility
Kirkwood, New York
September 2001

Well Number:	MW-27	**Well Depth (ft TIC):**	26.67	**PID (ppm):**	-
Sample Date:	9/29/2001	**Screen Length (ft):**		**Initial Water Level (ft TIC):**	14.68
Sampling Device:	Bladder	**Pump Intake Depth (ft TIC):**	24.5	**Pre-Pumping Water Level (ft TIC):**	
Sampling Personnel:	MRA	**Well Diameter (in):**	2.0	**Tubing Type:**	Teflon-lined polyethylene

Time	pH	Temp. (degrees C)	Specific Cond. (uS/cm)	Dissolved Oxygen (ppm)	Turbidity (NTU)	Redox (mV)	Depth to Water (feet)	Purge Rate (mL/min)	Comments
800	7.32	13.95	1.12	12.95	999.0	-86	15.11	150	started purging
805	6.98	14.00	1.19	8.32	375.0	-90		150	
810	6.23	13.74	1.21	3.35	172.0	-91		150	
815	5.87	12.93	1.26	1.86	218.0	-94	15.23	150	
820	5.86	13.36	1.26	1.31	180.0	-108		150	
825	5.89	13.21	1.26	1.25	179.0	-119		150	
830	5.90	13.15	1.26	1.05	171.0	-120		150	
835	5.90	13.38	1.26	0.94	167.0	-137	15.00	150	
840	5.91	13.56	1.00	0.92	151.0	-142		150	
845	5.90	13.69	1.26	0.87	121.0	-147		150	
850	5.93	13.70	1.27	0.83	116.0	-148	15.09	150	
855	5.94	13.73	1.27	0.83	96.4	-152	14.80	150	

*TIC - top of inner casing

Sample collected using a bladder pump for VOC's, Redox parameters, methane, ethane, ethene and metabolic acids.

Total Volume Purged: 2 gallons

Notes: Let sit for I hour prior to sampling .
Sample time 1000

MONITORING WELL GROUND-WATER SAMPLING FIELD DATA
Universal Instruments Facility
Kirkwood, New York
September 2001

Well Number:	MW-28	**Well Depth (ft TIC):**	25.84	**PID (ppm):**	-
Sample Date:	9/25/2001	**Screen Length (ft):**		**Initial Water Level (ft TIC):**	14.29
Sampling Device:	Bladder	**Pump Intake Depth (ft TIC):**	23.5	**Pre-Pumping Water Level (ft TIC):**	14.26
Sampling Personnel:	MRA/DBG	**Well Diameter (in):**	2.0	**Tubing Type:**	Teflon-lined polyethylene

Time	pH	Temp. (degrees C)	Specific Cond. (uS/cm)	Dissolved Oxygen (ppm)	Turbidity (NTU)	Redox (mV)	Depth to Water (feet)	Purge Rate (mL/min)	Comments
1025	5.46	16.4	0.715	3.02	18.2	118		200	started purging
1030	5.44	16.3	0.708	0.56	78.0	112		200	
1035	5.44	16.4	0.705	0.21	71.3	117		200	
1040	5.45	16.8	0.709	0.18	68.8	120		200	
1045	5.44	16.8	0.705	0.22	65.1	127		200	
1050	5.44	16.7	0.705	0.21	52.7	128	14.40	200	
1055	5.44	16.8	0.705	0.24	33.8	130		200	
1100	5.44	16.9	0.705	0.29	36.9	131		200	
1105	5.44	16.8	0.704	0.34	41.9	135		200	
1110	5.44	17.0	0.705	0.41	45.2	138	14.37	200	
1115	5.44	17.0	0.705	0.49	43.1	140		200	
1120	5.44	17.1	0.706	0.67	45.4	144	14.33	200	

*TIC - top of inner casing

Sample collected using a bladder pump for VOC's, Redox parameters, methane, ethane, ethene and metabolic acids.

Total Volume Purged: 2 gallons

Notes: Sample time 1135

MONITORING WELL GROUND-WATER SAMPLING FIELD DATA
Universal Instruments Facility
Kirkwood, New York
September 2001

Well Number:	MW-29	**Well Depth (ft TIC):** 49.00	**PID (ppm):** -
Sample Date:	9/19/2001	**Screen Length (ft):**	**Initial Water Level (ft TIC):** 43.49
Sampling Device:	Bladder	**Pump Intake Depth (ft TIC):** 47	**Pre-Pumping Water Level (ft TIC):**
Sampling Personnel:	DBG/MMY	**Well Diameter (in):** 2.0	**Tubing Type:** Teflon-lined polyethylene

Time	pH	Temp. (degrees C)	Specific Cond. (uS/cm)	Dissolved Oxygen (ppm)	Turbidity (NTU)	Redox (mV)	Depth to Water (feet)	Purge Rate (mL/min)	Comments
1615									started purging
1618	6.46	16.6	0.405	5.47	-10.0	-134	43.66	200	
1623	6.67	17.5	0.382	0.88	-10.0	-142	43.78	200	
1628	6.63	17.7	0.373	0.34	-10.0	-131	43.88	200	
1633	6.50	17.0	0.373	0.51	-10.0	-116	44.00	200	
1638	6.45	16.3	0.375	0.62	-10.0	-111	44.00	200	
1643	6.39	16.0	0.369	0.78	-10.0	-103		200	
1655	6.39	16.4	0.370	1.23	-10.0	-99	44.45	200	
1700	6.43	14.0	0.357	2.56	-10.0	-90		200	
1705	6.44	13.6	0.348	3.38	-10.0	-89		200	
1710	6.46	13.6	0.345	3.48	-10.0	-93		200	
1715	6.48	13.4	0.343	3.36	-10.0	-95		200	

*TIC - top of inner casing

Sample collected using a bladder pump for VOC's, Redox parameters, methane, ethane, ethene and metabolic acids.

Total Volume Purged: 2.5 gallons

Notes: Sample time 1730

MONITORING WELL GROUND-WATER SAMPLING FIELD DATA
Universal Instruments Facility
Kirkwood, New York
September 2001

Well Number:	MW-30			**Well Depth (ft TIC):**		21.05	**PID (ppm):**	-	
Sample Date:	9/29/2001			**Screen Length (ft):**			**Initial Water Level (ft TIC):**		14.90
Sampling Device:	Bladder			**Pump Intake Depth (ft TIC):**		19	**Pre-Pumping Water Level (ft TIC):**		15.29
Sampling Personnel:	ADR			**Well Diameter (in):**		2.0	**Tubing Type:**	Teflon-lined polyethylene	
Time	**pH**	**Temp.** (degrees C)	**Specific Cond.** (uS/cm)	**Dissolved Oxygen** (ppm)	**Turbidity** (NTU)	**Redox** (mV)	**Depth to Water** (feet)	**Purge Rate** (mL/min)	**Comments**
1135	5.88	15.49	1.78	0.00	19.7	-133	15.29		started purging
1140	5.88	15.24	1.85	0.00	28.8	-137	17.45		
1140	5.87	15.35	1.80	0.31	156.0	-135			water level is below pump intake
									pump turned off
1210									water has recharged above pump
									(~ 2 ft)
1230									
									well sampled

*TIC - top of inner casing

Sample collected using a bladder pump for VOC's, Redox parameters, methane, ethane, ethene and metabolic acids.

Total Volume Purged: 1.0 gallon

Notes: Sample time 1230

MONITORING WELL GROUND-WATER SAMPLING FIELD DATA
Universal Instruments Facility
Kirkwood, New York
September 2001

Well Number:	MW-31	**Well Depth (ft TIC):**	24.10	**PID (ppm):**	-
Sample Date:	9/29/2001	**Screen Length (ft):**		**Initial Water Level (ft TIC):**	14.58
Sampling Device:	Bladder	**Pump Intake Depth (ft TIC):**	22	**Pre-Pumping Water Level (ft TIC):**	
Sampling Personnel:	ADR	**Well Diameter (in):**	2.0	**Tubing Type:**	Teflon-lined polyethylene

Time	pH	Temp. (degrees C)	Specific Cond. (uS/cm)	Dissolved Oxygen (ppm)	Turbidity (NTU)	Redox (mV)	Depth to Water (feet)	Purge Rate (mL/min)	Comments
925	5.79	18.19	2.35	4.61	72.8	99	13.56		started purging
930	5.67	17.02	2.36	0.00	55.7	98	13.61		
935	5.67	16.70	2.34	0.00	41.2	96	13.62		
940	5.66	16.44	2.33	0.00	12.8	93	13.65		
945	5.66	16.38	2.33	0.00	9.4	90	13.67		
950	5.66	16.30	2.33	0.00	6.6	85	13.65		
955	5.66	16.26	2.33	0.00	5.7	83	13.64		
1000	5.66	16.25	2.33	0.00	4.7	81	13.64		
1005	5.65	16.22	2.33	0.00	3.1	79	13.65		
1010	5.66	16.21	2.32	0.00	2.1	76	13.65		
1015	5.66	16.21	2.32	0.00	2.1	76	13.65		

*TIC - top of inner casing

Sample collected using a bladder pump for VOC's, Redox parameters, methane, ethane, ethene and metabolic acids.

Total Volume Purged: 5 gallons

Notes: Sample time 1015

MONITORING WELL GROUND-WATER SAMPLING FIELD DATA
Universal Instruments Facility
Kirkwood, New York
September 2001

Well Number:	MW-32			**Well Depth (ft TIC):**		23.30	**PID (ppm):**	-		
Sample Date:	9/25/2001			**Screen Length (ft):**			**Initial Water Level (ft TIC):**		13.90	
Sampling Device:	Bladder			**Pump Intake Depth (ft TIC):**		21	**Pre-Pumping Water Level (ft TIC):**			
Sampling Personnel:	MRA/JL/DBG			**Well Diameter (in):**		2.0	**Tubing Type:**	Teflon-lined polyethylene		
Time	**pH**	**Temp.** (degrees C)	**Specific Cond.** (uS/cm)	**Dissolved Oxygen** (ppm)	**Turbidity** (NTU)	**Redox** (mV)	**Depth to Water** (feet)	**Purge Rate** (mL/min)	**Comments**	
1520	6.06	17.7	1.250	12.25	854.0	12		200	started purging	
1525	6.05	17.10	1.270	9.35	999.0	11	16.12	200		
1530	6.00	16.53	1.310	5.21	532.2	-9		200		
1535	5.91	16.51	1.490	0.50	368.0	-26		200		
1540	5.91	16.06	1.500	0.00	210.0	-26	16.14	200		
1545	5.91	16.05	1.500	0.00	236.0	-26		200		
1550	5.91	15.97	1.500	0.00	172.0	-27	16.19	200		
1555	5.93	15.58	1.520	0.00	139.0	-30		200		
1600	5.91	15.64	1.510	0.00	124.0	-32		200		

*TIC - top of inner casing

Sample collected using a bladder pump for VOC's, Redox parameters, methane, ethane, ethene and metabolic acids.

Total Volume Purged: 2 gallons

Notes: Allow to sit one hour prior to sampling
Sample time 1720

MONITORING WELL GROUND-WATER SAMPLING FIELD DATA
Universal Instruments Facility
Kirkwood, New York
September 2001

Well Number:	MW-33	**Well Depth (ft TIC):**	22.47	**PID (ppm):**	-
Sample Date:	9/26/2001	**Screen Length (ft):**		**Initial Water Level (ft TIC):**	14.82
Sampling Device:	Bladder	**Pump Intake Depth (ft TIC):**	20.47	**Pre-Pumping Water Level (ft TIC):**	14.68
Sampling Personnel:	JL	**Well Diameter (in):**	2.0	**Tubing Type:**	Teflon-lined polyethylene

Time	pH	Temp. (degrees C)	Specific Cond. (uS/cm)	Dissolved Oxygen (ppm)	Turbidity (NTU)	Redox (mV)	Depth to Water (feet)	Purge Rate (mL/min)	Comments
837	6.08	10.60	1.62	1.25	-10.0	200	15.28	350	started purging
840	6.01	10.70	1.63	0.35	-10.0	188	15.39	350	
845	6.00	11.00	1.61	0.00	-10.0	165	15.61	350	
850	5.99	10.70	1.62	0.00	-10.0	149	15.48	200	
855	5.98	10.50	1.63	0.00	-10.0	143	15.41	200	
900	5.98	11.00	1.65	0.00	-10.0	139	15.33	200	
905	5.98	10.80	1.67	0.00	-10.0	137	15.31	200	
910	5.98	10.30	1.69	0.00	-10.0	136	15.21	200	
915	5.98	9.90	1.71	0.00	-10.0	132	15.16	200	
920	5.98	9.80	1.73	0.00	-10.0	127	15.11	200	

*TIC - top of inner casing

Sample collected using a bladder pump for VOC's, Redox parameters, methane, ethane, ethene

Total Volume Purged: 1.5 gallons

Notes: Sample time 930

MONITORING WELL GROUND-WATER SAMPLING FIELD DATA
Universal Instruments Facility
Kirkwood, New York
September 2001

Well Number:	MW-34	**Well Depth (ft TIC):**	58.62	**PID (ppm):**	-
Sample Date:	9/25/2001	**Screen Length (ft):**		**Initial Water Level (ft TIC):**	9.56
Sampling Device:	Bladder	**Pump Intake Depth (ft TIC):**	56.62	**Pre-Pumping Water Level (ft TIC):**	9.08
Sampling Personnel:	MRA/JL/DBG	**Well Diameter (in):**	2.0	**Tubing Type:**	Teflon-lined polyethylene

Time	pH	Temp. (degrees C)	Specific Cond. (uS/cm)	Dissolved Oxygen (ppm)	Turbidity (NTU)	Redox (mV)	Depth to Water (feet)	Purge Rate (mL/min)	Comments
1120	6.89	15.39	0.395	0.03	34.2	-41	11.04	250	started purging
1125	6.88	15.13	0.393	0.00	45.3	-67	11.35	250	
1130	6.87	14.95	0.389	0.00	64.8	-83	11.49	200	
1135	6.88	15.54	0.387	0.00	64.3	-83	11.31	200	
1140	6.88	15.70	0.387	0.00	76.0	-70	11.33	200	
1145	6.88	15.91	0.387	0.00	73.8	-51	11.25	200	
1150	6.87	15.97	0.386	0.00	65.2	-48	11.15	200	
1155	6.88	15.65	0.386	0.00	49.5	-18	11.35	200	
1200	6.88	15.57	0.385	0.00	50.5	-23	11.40	200	
1205	6.88	15.53	0.384	0.00	37.4	-25	11.40	200	
1210	6.88	15.51	0.384	0.00	48.7	-22	11.38	200	

*TIC - top of inner casing

Sample collected using a bladder pump for VOC's, Redox parameters, methane, ethane, ethene and metabolic acids.

Total Volume Purged: 2 gallons

Notes: Sample time 1220

MONITORING WELL GROUND-WATER SAMPLING FIELD DATA
Universal Instruments Facility
Kirkwood, New York
September 2001

Well Number:	MW-35	**Well Depth (ft TIC):**	36.98	**PID (ppm):**	-
Sample Date:	9/25/2001	**Screen Length (ft):**		**Initial Water Level (ft TIC):**	14.26
Sampling Device:	Bladder	**Pump Intake Depth (ft TIC):**	34.98	**Pre-Pumping Water Level (ft TIC):**	14.28
Sampling Personnel:	MRA/JL/DBG	**Well Diameter (in):**	2.0	**Tubing Type:**	Teflon-lined polyethylene

Time	pH	Temp. (degrees C)	Specific Cond. (uS/cm)	Dissolved Oxygen (ppm)	Turbidity (NTU)	Redox (mV)	Depth to Water (feet)	Purge Rate (mL/min)	Comments
1520	5.98	16.10	1.50	4.72	-10.0	180	14.28	200	started purging
1525	5.77	15.60	1.47	0.63	-10.0	177	14.23	150	
1530	5.74	16.10	1.47	0.52	-10.0	176	14.25	150	
1535	5.71	16.60	1.47	0.40	-10.0	177	14.28	150	
1540	5.70	16.70	1.47	0.35	-10.0	177	14.28	150	
1545	5.68	16.90	1.47	0.33	-10.0	177	14.30	150	
1550	5.67	17.00	1.47	0.32	-10.0	177	14.28	150	
1555	5.68	17.10	1.47	0.25	-10.0	176	14.26	150	
1600	5.69	17.10	1.47	0.26	-10.0	174	14.26	150	
1605	5.71	17.20	1.47	0.20	-10.0	172	14.26	150	

*TIC - top of inner casing

Sample collected using a bladder pump for VOC's, Redox parameters, methane, ethane, ethene

Total Volume Purged: 2.0 gallons

Notes: Sample time 1620

MONITORING WELL GROUND-WATER SAMPLING FIELD DATA
Universal Instruments Facility
Kirkwood, New York
September 2001

Well Number:	MW-36	**Well Depth (ft TIC):**	22.13	**PID (ppm):**	-
Sample Date:	9/26/2001	**Screen Length (ft):**		**Initial Water Level (ft TIC):**	13.96
Sampling Device:	Bladder	**Pump Intake Depth (ft TIC):**	20.13	**Pre-Pumping Water Level (ft TIC):**	13.89
Sampling Personnel:	JL/DBG	**Well Diameter (in):**	2.0	**Tubing Type:**	Teflon-lined polyethy.

Time	pH	Temp. (degrees C)	Specific Cond. (uS/cm)	Dissolved Oxygen (ppm)	Turbidity (NTU)	Redox (mV)	Depth to Water (feet)	Purge Rate (mL/min)	Comments
1105	5.69	14	1.69	4.12	27.7	-49	14.45	250	started purging
1110	5.74	13.9	1.74	0.00	21.8	-68	14.11	150	
1115	5.76	14.1	1.73	0.00	17.9	-73	14.11	150	
1120	5.77	14.0	1.70	0.00	11.2	-73	14.11	150	
1125	5.76	14.0	1.65	0.00	6.7	-71	14.11	150	
1130	5.76	14.0	1.66	0.00	4.4	-70	14.06	150	
1135	5.76	14.0	1.62	0.00	5.8	-68	14.07	150	
1140	5.76	14.2	1.59	0.00	6.6	-67	14.06	150	
1145	5.75	14.2	1.57	0.00	6.2	-65	14.06	150	
1150	5.75	14.3	1.55	0.00	6.5	-64	14.07	150	

*TIC - top of inner casing

Sample collected using a bladder pump for VOC's, Redox parameters, methane, ethane, ethene

Total Volume Purged: 2 gallons

Notes: Sulfur odor from well.. Well was under water full of diesel and oil in pilot parking lot.
Sample time 1200

MONITORING WELL GROUND-WATER SAMPLING FIELD DATA
Universal Instruments Facility
Kirkwood, New York
September 2001

Well Number:	MW-37	**Well Depth (ft TIC):**	36.52	**PID (ppm):**	-
Sample Date:	9/28/2001	**Screen Length (ft):**	5	**Initial Water Level (ft TIC):**	15.32
Sampling Device:	Bladder	**Pump Intake Depth (ft TIC):**	34.5	**Pre-Pumping Water Level (ft TIC):**	
Sampling Personnel:	MRA//DBG	**Well Diameter (in):**	2.0	**Tubing Type:**	Teflon-lined polyethylene

Time	pH	Temp. (degrees C)	Specific Cond. (uS/cm)	Dissolved Oxygen (ppm)	Turbidity (NTU)	Redox (mV)	Depth to Water (feet)	Purge Rate (mL/min)	Comments
805	6.70	13.4	0.501	10.67	499.0	164		400	started purging
810	6.76	12.50	0.759	5.04	999.0	99	16.00	400	
815	6.79	13.20	0.783	0.07	-10.0	22	15.94	400	
820	6.56	13.00	0.731	1.96	-10.0	24		400	
825	6.51	12.80	0.777	2.23	-10.0	12		400	
830	6.36	13.00	0.873	2.29	-10.0	22		400	
835	6.34	13.00	0.894	2.00	-10.0	17	15.85	400	
840	6.33	13.00	0.927	1.82	-10.0	14	15.75	400	
845	6.31	12.90	0.924	1.72	-10.0	14	15.73	400	
850	6.30	13.00	0.960	1.56	-10.0	12	15.72	400	
855	6.26	13.00	1.160	1.40	-10.0	12	15.71	400	
900	6.24	13.00	1.170	1.31	-10.0	12	15.65	400	

*TIC - top of inner casing

Sample collected using a bladder pump for VOC's, Redox parameters, methane, ethane, ethene and metabolic acids.

Total Volume Purged: 4 gallons

Notes: Sample time 1000

MONITORING WELL GROUND-WATER SAMPLING FIELD DATA
Universal Instruments Facility
Kirkwood, New York
September 2001

Well Number:	MW-38	**Well Depth (ft TIC):**	25.27	**PID (ppm):**	-
Sample Date:	9/28/2001	**Screen Length (ft):**		**Initial Water Level (ft TIC):**	9.12
Sampling Device:	Bladder	**Pump Intake Depth (ft TIC):**	23.25	**Pre-Pumping Water Level (ft TIC):**	
Sampling Personnel:	ADR/MRA	**Well Diameter (in):**	2.0	**Tubing Type:**	Teflon-lined polyethylene

Time	pH	Temp. (degrees C)	Specific Cond. (uS/cm)	Dissolved Oxygen (ppm)	Turbidity (NTU)	Redox (mV)	Depth to Water (feet)	Purge Rate (mL/min)	Comments
745	7.03	12.85	0.326	7.13	114.0	137	9.60		started purging
750	5.73	12.74	0.432	6.71	999.0	185	9.60		
755	5.45	12.66	0.769	6.32	999.0	183	9.60		
800	5.43	12.60	0.933	5.85	999.0	178	9.90		Drain flow through
805	5.46	12.62	0.904	7.48	999.0	177	9.97		
810	5.45	12.42	0.969	6.05	999.0	175	10.05		
815	5.45	12.36	0.974	5.81	999.0	174	10.07		
820	5.46	12.31	0.985	5.65	999.0	173	10.10		
825	5.46	12.28	0.993	5.46	999.0	172	10.10		
830	5.46	12.27	1.160	4.75	999.0	173	10.10		Drain flow through
835	5.48	12.34	1.180	5.35	999.0	173	10.10		
840	5.49	12.28	1.180	5.05	999.0	173			
845	5.49	12.34	1.180	4.88	999.0	175			
850	5.49	12.33	1.190	4.73	999.0	180			
855	5.49	12.33	1.190	4.70	999.0	180			

*TIC - top of inner casing

Sample collected using a bladder pump for VOC's, Redox parameters, methane, ethane, ethene and metabolic acids.

Total Volume Purged: 2 gallons

Notes: Sample time 945

MONITORING WELL GROUND-WATER SAMPLING FIELD DATA
Universal Instruments Facility
Kirkwood, New York
September 2001

Well Number:	MP-1			**Well Depth (ft TIC):**		41.48	**PID (ppm):**	-	
Sample Date:	9/27/2001			**Screen Length (ft):**			**Initial Water Level (ft TIC):**	39.78	
Sampling Device:	Bladder			**Pump Intake Depth (ft TIC):**			**Pre-Pumping Water Level (ft TIC):**		
Sampling Personnel:	MRA/JL/DBG			**Well Diameter (in):**		1.0	**Tubing Type:**	Teflon-lined polyethylene	
Time	**pH**	**Temp.** (degrees C)	**Specific Cond.** (uS/cm)	**Dissolved Oxygen** (ppm)	**Turbidity** (NTU)	**Redox** (mV)	**Depth to Water** (feet)	**Purge Rate** (mL/min)	**Comments**
NS									started purging

*TIC - top of inner casing

Sample collected using a bladder pump for VOC's, Redox parameters, methane, ethane, ethene and metabolic acids.

Total Volume Purged:

Notes: Well had a soft bottom after Parrat Wolf developed. Insufficient amount of water to sample.

MONITORING WELL GROUND-WATER SAMPLING FIELD DATA
Universal Instruments Facility
Kirkwood, New York
September 2001

Well Number:	MP-2			**Well Depth (ft TIC):**		44.83	**PID (ppm):**	-	
Sample Date:	9/27/2001			**Screen Length (ft):**			**Initial Water Level (ft TIC):**		43.21
Sampling Device:	Bladder			**Pump Intake Depth (ft TIC):**			**Pre-Pumping Water Level (ft TIC):**		
Sampling Personnel:	MRA/ADR			**Well Diameter (in):**		1.0	**Tubing Type:**	Teflon-lined polyethylene	
Time	**pH**	**Temp.** (degrees C)	**Specific Cond.** (uS/cm)	**Dissolved Oxygen** (ppm)	**Turbidity** (NTU)	**Redox** (mV)	**Depth to Water** (feet)	**Purge Rate** (mL/min)	**Comments**
NS									started purging

*TIC - top of inner casing

Sample collected using a bladder pump for VOC's, Redox parameters, methane, ethane, ethene and metabolic acids.

Total Volume Purged:

Notes: Well had a soft bottom after Parrat Wolf developed. Insufficient amount of water to sample.

MONITORING WELL GROUND-WATER SAMPLING FIELD DATA
Universal Instruments Facility
Kirkwood, New York
September 2001

Well Number:	MP-3D	**Well Depth (ft TIC):**	56.74	**PID (ppm):**	-
Sample Date:	9/28/2001	**Screen Length (ft):**		**Initial Water Level (ft TIC):**	39.32
Sampling Device:	Bladder	**Pump Intake Depth (ft TIC):**	54	**Pre-Pumping Water Level (ft TIC):**	
Sampling Personnel:	MRA/ADR?DBG	**Well Diameter (in):**	1.0	**Tubing Type:**	Teflon-lined polyethylene

Time	pH	Temp. (degrees C)	Specific Cond. (uS/cm)	Dissolved Oxygen (ppm)	Turbidity (NTU)	Redox (mV)	Depth to Water (feet)	Purge Rate (mL/min)	Comments
1015	8.39	12.98	0.395	13.65	999.0	153		200	started purging
1020	8.41	13.25	0.393	11.21	325.7	141		200	
1025	8.43	13.31	0.394	9.32	210.2	133		200	
1030	8.43	13.08	0.393	8.70	182.0	123		200	
1035	8.51	13.49	0.395	8.69	207.0	118		200	
1040	8.56	13.58	0.396	8.79	172.0	118		200	
1045	8.41	13.60	0.398	9.00	129.0	120		200	
1050	8.40	13.35	0.399	8.77	117.0	121		200	
1055	8.39	13.34	0.398	8.93	76.9	123		200	
1100	8.40	13.35	0.399	8.95	51.2	127		200	
1105	8.41	13.36	0.399	8.99	49.3	123		200	
1110	8.40	13.37	0.398	8.94	41.2	126		200	
1115	8.41	13.36	0.399	8.95	46.7	129		200	

*TIC - top of inner casing

Sample collected using a bladder pump for VOC's, Redox parameters, methane, ethane, ethene and metabolic acids.

Total Volume Purged:

Notes: Sample time 1125
Unable to take water level readings due to diameter of well.

MONITORING WELL GROUND-WATER SAMPLING FIELD DATA
Universal Instruments Facility
Kirkwood, New York
September 2001

Well Number:	MP-3S			**Well Depth (ft TIC):**			**PID (ppm):**	-	
Sample Date:	NS			**Screen Length (ft):**			**Initial Water Level (ft TIC):**		
Sampling Device:	Bladder			**Pump Intake Depth (ft TIC):**			**Pre-Pumping Water Level (ft TIC):**		
Sampling Personnel:				**Well Diameter (in):**		1.0	**Tubing Type:**	Teflon-lined polyethylene	
Time	**pH**	**Temp.** (degrees C)	**Specific Cond.** (uS/cm)	**Dissolved Oxygen** (ppm)	**Turbidity** (NTU)	**Redox** (mV)	**Depth to Water** (feet)	**Purge Rate** (mL/min)	**Comments**
NS									started purging

*TIC - top of inner casing

Sample collected using a bladder pump for VOC's, Redox parameters, methane, ethane, ethene and metabolic acids.

Total Volume Purged:

Notes:

MONITORING WELL GROUND-WATER SAMPLING FIELD DATA
Universal Instruments Facility
Kirkwood, New York
September 2001

Well Number:	MP-4			**Well Depth (ft TIC):**		27.85	**PID (ppm):**	-		
Sample Date:	9/27/2001			**Screen Length (ft):**			**Initial Water Level (ft TIC):**	10.10		
Sampling Device:	Bladder			**Pump Intake Depth (ft TIC):**		25.5	**Pre-Pumping Water Level (ft TIC):**			
Sampling Personnel:	JL			**Well Diameter (in):**		1.0	**Tubing Type:**	Teflon-lined polyethylene		
Time	**pH**	**Temp.** (degrees C)	**Specific Cond.** (uS/cm)	**Dissolved Oxygen** (ppm)	**Turbidity** (NTU)	**Redox** (mV)	**Depth to Water** (feet)	**Purge Rate** (mL/min)	**Comments**	
830	6.43	14.1	1.180	4.62	-10.0	-61	NA	100	started purging	
835	6.43	14.00	1.130	0.08	>999	-110		150		
840	6.42	13.90	1.110	0.33	>999	-130		150		
845	6.37	13.90	1.100	0.62	>999	-130		150		
850	6.34	13.90	1.080	1.15	>999	-113		150		
855	6.41	14.00	0.895	1.20	>999	-95		150		
900	6.32	13.80	0.899	1.50	>999	-96		150		
905	6.29	13.80	0.905	1.10	>999	-88		150		
910	6.27	13.80	0.910	0.97	>999	-82		150		
915	6.26	13.80	0.923	0.79	816.0	-79		150		
920	6.22	13.80	0.951	0.78	575.0	-63		150		
925	6.22	13.80	0.952	0.88	468.0	-65		150		

*TIC - top of inner casing

Sample collected using a bladder pump for VOC's, Redox parameters, methane, ethane, ethene and metabolic acids.

Total Volume Purged: 1.5 gallons

Notes: Sample time 1030
Unable to take water level readings due to diameter of well.
Due to high turbidity will let MP-4 sit one hour prior to sampling

MONITORING WELL GROUND-WATER SAMPLING FIELD DATA
Universal Instruments Facility
Kirkwood, New York
September 2001

Well Number:	MP-5	**Well Depth (ft TIC):**	24.74	**PID (ppm):**	-
Sample Date:	9/27/2001	**Screen Length (ft):**		**Initial Water Level (ft TIC):**	12.89
Sampling Device:	Bladder	**Pump Intake Depth (ft TIC):**	22.5	**Pre-Pumping Water Level (ft TIC):**	
Sampling Personnel:	MRA/ADR	**Well Diameter (in):**	1.0	**Tubing Type:**	Teflon-lined polyethylene

Time	pH	Temp. (degrees C)	Specific Cond. (uS/cm)	Dissolved Oxygen (ppm)	Turbidity (NTU)	Redox (mV)	Depth to Water (feet)	Purge Rate (mL/min)	Comments
825	5.91	15.89	2.24	5.50	685.0	134	NA	100	started purging
830	5.88	15.84	2.35	2.41	350.0	106		100	
835	5.87	15.86	2.44	2.60	215.0	104		100	
840	5.86	15.97	2.49	2.66	154.0	104		100	
845	5.84	15.97	2.55	2.81	138.0	106		100	Flow through cell drained
850	5.82	16.11	2.56	2.96	41.6	116		100	
855	5.80	16.04	2.67	2.73	29.8	113		100	
900	5.80	16.09	2.68	2.90	30.0	113		100	
905	5.80	16.12	2.69	3.05	25.3	113		100	
910	5.79	16.17	2.70	3.09	23.5	113		100	
915	5.79	16.31	2.73	3.15	27.1	113		100	
920	5.78	16.27	2.74	3.20	19.8	116		100	
925	5.77	16.28	2.76	3.25	16.2	121		100	
930	5.77	16.40	2.78	3.44	12.9	127		100	

*TIC - top of inner casing

Sample collected using a bladder pump for VOC's, Redox parameters, methane, ethane, ethene and metabolic acids.

Total Volume Purged: 1.5 gallons

Notes: Sample time 930
Unable to take water level readings due to diameter of well.

MONITORING WELL GROUND-WATER SAMPLING FIELD DATA
Universal Instruments Facility
Kirkwood, New York
September 2001

Well Number:	MP-6S	**Well Depth (ft TIC):**	24.78	**PID (ppm):**	-
Sample Date:	9/24/2001	**Screen Length (ft):**		**Initial Water Level (ft TIC):**	13.44
Sampling Device:	Bladder	**Pump Intake Depth (ft TIC):**	22.5	**Pre-Pumping Water Level (ft TIC):**	
Sampling Personnel:	MRA/JL/DBG	**Well Diameter (in):**	1.0	**Tubing Type:**	Teflon-lined polyethylene

Time	pH	Temp. (degrees C)	Specific Cond. (uS/cm)	Dissolved Oxygen (ppm)	Turbidity (NTU)	Redox (mV)	Depth to Water (feet)	Purge Rate (mL/min)	Comments
1340	6.97	16.52	0.739	13.65	999.0	135		150	started purging
1345	6.89	16.36	0.722	7.74	999.0	122		150	
1350	6.88	16.33	0.732	3.33	999.0	107		150	
1355	6.81	16.31	0.759	2.79	999.0	100		150	
1400	6.79	16.29	0.871	1.61	890.0	102		150	
1405	6.73	16.24	0.894	1.28	751.0	97		150	
1410	6.75	16.29	0.844	1.14	999.0	86		150	
1415	6.79	16.29	0.807	1.00	999.0	86		150	
1420	6.81	16.15	0.771	0.97	999.0	85		150	
1425	6.82	16.15	0.751	0.81	999.0	84		150	
1430	6.90	16.10	0.701	0.75	999.0	82		150	

*TIC - top of inner casing

Sample collected using a bladder pump for VOC's, Redox parameters, methane, ethane, ethene and metabolic acids.

Total Volume Purged: 2.5 gallons

Notes: Sample time 1540
Unable to take water level readings due to diameter of well.
Due to high turbidity will let MP-6S sit one hour prior to sampling

MONITORING WELL GROUND-WATER SAMPLING FIELD DATA
Universal Instruments Facility
Kirkwood, New York
September 2001

Well Number:	MP-6D	**Well Depth (ft TIC):**	49.61	**PID (ppm):**	-
Sample Date:	9/24/2001	**Screen Length (ft):**		**Initial Water Level (ft TIC):**	9.33
Sampling Device:	Bladder	**Pump Intake Depth (ft TIC):**	47.61	**Pre-Pumping Water Level (ft TIC):**	
Sampling Personnel:	JL	**Well Diameter (in):**	1.0	**Tubing Type:**	Teflon-lined polyethylene

Time	pH	Temp. (degrees C)	Specific Cond. (uS/cm)	Dissolved Oxygen (ppm)	Turbidity (NTU)	Redox (mV)	Depth to Water (feet)	Purge Rate (mL/min)	Comments
1430	8.61	17.85	0.251	3.52	348.0	-73	NA	150	started purging
1435	8.51	16.47	0.252	1.22	>999	-101		150	
1440	7.42	15.82	0.270	0.78	>999	-90		150	
1445	6.95	15.79	0.278	0.62	>999	-121		150	
1450	9.76	15.29	0.287	0.17	>999	-165		150	
1455	6.70	15.35	0.291	0.00	>999	-196		150	
1500	6.63	15.25	0.301	0.00	>999	-211		150	
1505	6.59	15.24	0.307	0.08	>999	-221		150	
1510	6.54	15.31	0.307	0.00	>999	-227		150	
1515	6.55	15.47	0.309	0.00	>999	-228		150	
1520	6.53	15.68	0.305	0.00	>999	-231		150	
1525	6.53	15.80	0.304	0.00	>999	-231		150	

*TIC - top of inner casing

Sample collected using a bladder pump for VOC's, Redox parameters, methane, ethane, ethene and metabolic acids.

Total Volume Purged: 2.5 gallons

Notes: Sample time 1630
Unable to take water level readings due to diameter of well.
Due to high turbidity will let MP-6S sit one hour prior to sampling

MONITORING WELL GROUND-WATER SAMPLING FIELD DATA
Universal Instruments Facility
Kirkwood, New York
September 2001

Well Number:	MP-7	**Well Depth (ft TIC):**	20.34	**PID (ppm):**	-
Sample Date:	9/27/2001	**Screen Length (ft):**		**Initial Water Level (ft TIC):**	13.83
Sampling Device:	Bladder	**Pump Intake Depth (ft TIC):**	18.34	**Pre-Pumping Water Level (ft TIC):**	
Sampling Personnel:	JL	**Well Diameter (in):**	1.0	**Tubing Type:**	Teflon-lined polyethylene

Time	pH	Temp. (degrees C)	Specific Cond. (uS/cm)	Dissolved Oxygen (ppm)	Turbidity (NTU)	Redox (mV)	Depth to Water (feet)	Purge Rate (mL/min)	Comments
1443	5.76	16.9	0.395	9.59	>999	189	NA	150	started purging
1445	5.75	16.60	0.399	9.53	>999	189		150	
1450	5.75	16.70	0.399	9.18	>999	189		150	
1455	5.75	16.90	0.398	9.08	>999	187		150	
1500	5.82	16.60	0.396	9.94	>999	187		150	
1505	5.83	16.80	0.401	9.16	>999	187		150	
1510	5.83	17.20	0.398	8.53	>999	186		150	
1515	5.83	17.10	0.398	8.47	>999	185		150	
1520	5.84	16.10	0.396	9.83	>999	185		150	
1525	5.83	16.30	0.416	9.18	>999	186		150	
1530	5.81	15.70	0.424	9.15	620.0	186		150	
1535	5.82	15.30	0.428	8.96	607.0	187		150	

*TIC - top of inner casing

Sample collected using a bladder pump for VOC's, Redox parameters, methane, ethane, ethene and metabolic acids.

Total Volume Purged: 1.5 gallons

Notes: Purged well, however no sample taken
Unable to take water level readings due to diameter of well.

MONITORING WELL GROUND-WATER SAMPLING FIELD DATA
Universal Instruments Facility
Kirkwood, New York
September 2001

Well Number:	MP-8S	**Well Depth (ft TIC):**	23.61	**PID (ppm):**	-
Sample Date:	9/27/2001	**Screen Length (ft):**		**Initial Water Level (ft TIC):**	14.50
Sampling Device:	Bladder	**Pump Intake Depth (ft TIC):**	21.5	**Pre-Pumping Water Level (ft TIC):**	
Sampling Personnel:	JL	**Well Diameter (in):**	1.0	**Tubing Type:**	Teflon-lined polyethylene

Time	pH	Temp. (degrees C)	Specific Cond. (uS/cm)	Dissolved Oxygen (ppm)	Turbidity (NTU)	Redox (mV)	Depth to Water (feet)	Purge Rate (mL/min)	Comments
1125	5.81	15.5	0.709	10.65	>999	152	NA	150	started purging
1130	5.74	15.00	0.696	10.58	>999	161		150	
1135	5.74	15.00	0.700	10.06	>999	166		150	
1140	5.74	15.10	0.699	9.81	329.0	169		150	
1145	5.70	15.40	0.683	10.65	>999	176		150	
1150	5.68	14.80	0.702	10.78	>999	181		150	Drained flow through cell
1155	5.68	14.50	0.624	10.58	589.0	181		150	
1200	5.62	14.30	0.750	11.23	387.0	187		150	
1205	5.61	14.40	0.762	11.02	229.0	190		150	
1210	5.59	14.30	0.782	10.78	156.0	193		150	
1215	5.59	14.30	0.798	10.53	102.0	195		150	
1220	5.58	14.30	0.801	10.42	91.0	197		150	

*TIC - top of inner casing

Sample collected using a bladder pump for VOC's, Redox parameters, methane, ethane, ethene and metabolic acids.

Total Volume Purged: 1.5 gallons

Notes: Sample time 1330
Unable to take water level readings due to diameter of well.
Due to high turbidity will let MP-8S sit one hour prior to sampling

MONITORING WELL GROUND-WATER SAMPLING FIELD DATA
Universal Instruments Facility
Kirkwood, New York
September 2001

Well Number:	MP-8D			**Well Depth (ft TIC):**	54.75		**PID (ppm):**	-	
Sample Date:	9/27/2001			**Screen Length (ft):**			**Initial Water Level (ft TIC):**	12.84	
Sampling Device:	Bladder			**Pump Intake Depth (ft TIC):**	52.75		**Pre-Pumping Water Level (ft TIC):**		
Sampling Personnel:	MRA/ADR			**Well Diameter (in):**	1.0		**Tubing Type:**	Teflon-lined polyethylene	
Time	**pH**	**Temp.** (degrees C)	**Specific Cond.** (uS/cm)	**Dissolved Oxygen** (ppm)	**Turbidity** (NTU)	**Redox** (mV)	**Depth to Water** (feet)	**Purge Rate** (mL/min)	**Comments**
1010	7.16	17.47	0.337	5.85	80.4	153	NA	150	started purging
1015	7.39	17.36	0.400	3.60	999.0	73		150	
1020	7.54	17.00	0.390	4.04	999.0	44		150	
1025	7.64	16.56	0.404	2.95	999.0	41		150	
1030	7.38	16.26	0.000	3.96	12.1	84		150	
1035								150	
1040	7.73	15.97	0.414	2.47	999.0	45		150	
1045	7.62	15.86	0.453	2.23	999.0	44		150	
1050	7.58	15.75	0.487	2.02	999.0	41		150	
1055	7.51	15.53	0.566	1.42	999.0	41		150	
1100	7.50	15.54	0.570	1.40	999.0	41		150	
1105	7.50	15.52	0.593	1.41	999.0	42		150	

*TIC - top of inner casing

Sample collected using a bladder pump for VOC's, Redox parameters, methane, ethane, ethene and metabolic acids.

Total Volume Purged: 1.0 gallons

Notes: Sample time 1215
Unable to take water level readings due to diameter of well.
Due to high turbidity will let MP-8D sit one hour prior to sampling

MONITORING WELL GROUND-WATER SAMPLING FIELD DATA
Universal Instruments Facility
Kirkwood, New York
September 2001

Well Number:	MP-9			**Well Depth (ft TIC):**		25.00	**PID (ppm):**	-	
Sample Date:	9/27/2001			**Screen Length (ft):**			**Initial Water Level (ft TIC):**		13.88
Sampling Device:	Bladder			**Pump Intake Depth (ft TIC):**			**Pre-Pumping Water Level (ft TIC):**		
Sampling Personnel:	ADR/MRA			**Well Diameter (in):**		1.0	**Tubing Type:**	Teflon-lined polyethylene	
Time	**pH**	**Temp.** (degrees C)	**Specific Cond.** (uS/cm)	**Dissolved Oxygen** (ppm)	**Turbidity** (NTU)	**Redox** (mV)	**Depth to Water** (feet)	**Purge Rate** (mL/min)	**Comments**
NS									

*TIC - top of inner casing

Sample collected using a bladder pump for VOC's, Redox parameters, methane, ethane, ethene and metabolic acids.

Total Volume Purged:

Notes: Parratt Wolf developed well to 25 ft, silt at 16.37 BGS
Bladder pump will not extend deeper than 13.5 --Possibility riser bent.

MONITORING WELL GROUND-WATER SAMPLING FIELD DATA
Universal Instruments Facility
Kirkwood, New York
September 2001

Well Number:	MP-10S			**Well Depth (ft TIC):**		20.58	**PID (ppm):**	-		
Sample Date:	9/27/2001			**Screen Length (ft):**			**Initial Water Level (ft TIC):**			
Sampling Device:	Bladder			**Pump Intake Depth (ft TIC):**			**Pre-Pumping Water Level (ft TIC):**			
Sampling Personnel:	MRA/JL/DBG			**Well Diameter (in):**		1.0	**Tubing Type:**	Teflon-lined polyethylene		
Time	**pH**	**Temp.** (degrees C)	**Specific Cond.** (uS/cm)	**Dissolved Oxygen** (ppm)	**Turbidity** (NTU)	**Redox** (mV)	**Depth to Water** (feet)	**Purge Rate** (mL/min)	**Comments**	
NS										

*TIC - top of inner casing

Sample collected using a bladder pump for VOC's, Redox parameters, methane, ethane, ethene and metabolic acids.

Total Volume Purged:

Notes: Not sampled silt in well

MONITORING WELL GROUND-WATER SAMPLING FIELD DATA
Universal Instruments Facility
Kirkwood, New York
September 2001

Well Number:	MP-10D			**Well Depth (ft TIC):**	56.21		**PID (ppm):**	-	
Sample Date:	9/27/2001			**Screen Length (ft):**			**Initial Water Level (ft TIC):**	14.30	
Sampling Device:	Bladder			**Pump Intake Depth (ft TIC):**	54.21		**Pre-Pumping Water Level (ft TIC):**		
Sampling Personnel:	MRA/ADR			**Well Diameter (in):**	1.0		**Tubing Type:**	Teflon-lined polyethylene	
Time	**pH**	**Temp.** (degrees C)	**Specific Cond.** (uS/cm)	**Dissolved Oxygen** (ppm)	**Turbidity** (NTU)	**Redox** (mV)	**Depth to Water** (feet)	**Purge Rate** (mL/min)	**Comments**
1500	6.91	17.64	0.365	8.23	224.0	177	NA	200	started purging
1505	6.94	16.66	0.485	5.16	999.0	129			
1510	7.16	15.77	0.779	2.62	999.0	54			
1515	7.25	15.37	0.678	2.37	999.0	62			
1520	7.27	14.84	0.716	3.51	999.0	58			
1525	7.24	14.45	0.729	1.50	999.0	46			
1530	7.18	13.92	0.752	0.77	999.0	52			
1535	7.18	13.82	0.685	0.67	999.0	53			
1540	7.16	13.47	0.593	0.35	999.0	58			
1545	7.14	13.51	0.557	0.30	999.0	64			
1550	7.15	13.60	0.531	0.38	999.0	72			
1555	7.15	13.80	0.517	0.61	999.0	84			

*TIC - top of inner casing

Sample collected using a bladder pump for VOC's, Redox parameters, methane, ethane, ethene and metabolic acids.

Total Volume Purged: 2.5 gallons

Notes: Sample time 1700
Unable to take water level readings due to diameter of well.
Due to high turbidity will let MP-10D sit one hour prior to sampling

Project: Kirkwood Bioremediation Status Report
Laboratory: Compuchem, Cary, North Carolina
Sample Delivery Group: A2291
Fraction: Organic
Matrix: Groundwater
Report Date: 12/11/2002

This data usability summary report is based upon a review of analytical data generated for groundwater samples. The sample locations, laboratory identification numbers, sample collection dates, sample matrix, and analyses performed are presented in Table 1.

The sample analyses were performed in accordance with the procedures outlined in method 8260B, "Test Methods for Evaluating Solid Waste", Physical/Chemical Methods (SW-846), Third Edition, Final (Promulgated) Updates II, IIA, and III June 1997. The data deliverables provided by the laboratory were New York State Department of Environmental Conservation Analytical Services Protocol (NYSDEC ASP) Category B format.

All sample analyses have undergone an analytical quality assurance review to ensure adherence to the required protocols. Results have been validated or qualified according to general guidance provided in the Region II modifications to "Laboratory Data Validation Functional Guidelines for Validating Organic Analyses", USEPA 9/94. This document specifies procedures for validating data generated for CLP analyses. Therefore, the quality control requirements specified in the methods and associated acceptance criteria were also used to evaluate the non-CLP data. The parameters presented on the following page were evaluated.

X	•	Data Completeness
X	•	Chain of Custody Documentation
X	•	Holding Times
X	•	Instrument Performance
X	•	Initial and Continuing Calibrations
X	•	Laboratory and Field Blank Analysis Results
X	•	Surrogate Compound Recoveries
X	•	Matrix Spike/Matrix Spike Duplicate Recoveries and Reproducibility
	•	Field Duplicate Analysis Results
X	•	Laboratory Control Sample/Blank Spike Results
X	•	Internal Standard Performance
X	•	Qualitative Identification
X	•	Quantitation Limits

X - Denotes parameter evaluated.

It is recommended that the data only be used according to the qualifiers presented, and discussed in this report. All other data should be considered qualitatively and quantitatively valid as reported by the laboratory, based on the items evaluated. Analysis result forms presenting the validated and qualified results for the samples receiving the data validation are attached. Documentation of the reasons for data qualification is also attached.

Report Approved By:

Shawne M. Rodgers
President

12/10/2008

Date

1.0 *DATA COMPLETENESS*

The data deliverables were complete.

2.0 *CHAIN OF CUSTODY DOCUMENTATION*

The chain of custody records were complete.

3.0 *HOLDING TIMES*

Holding times were met for all analyses.

4.0 *INSTRUMENT PERFORMANCE*

All criteria were met. No qualifiers were applied.

5.0 *INITIAL AND CONTINUING CALIBRATIONS*

The continuing calibration precision criterion was exceeded for trichloroethene for both of the standards analyzed on 9/29/2001 (the percent difference for this compound for the standard was -26.2). The results for trichloroethene for samples NP-6D, MP-6S, and MW-26 should be considered quantitative estimates. Positive results for this compound have been marked with "J" qualifiers to indicate that they are quantitative estimates. Nondetected results have been marked "UJ".

6.0 *LABORATORY AND FIELD BLANK ANALYSIS RESULTS*

All criteria were met. No qualifiers were applied.

7.0 *SURROGATE COMPOUNDS*

All criteria were met. No qualifiers were applied.

8.0 *MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERIES AND REPRODUCIBILITY*

All criteria were met. No qualifiers were applied.

9.0 *FIELD DUPLICATE RESULTS*

There were no field duplicate samples submitted with this SDG.

10.0 *LABORATORY CONTROL SAMPLE/ BLANK SPIKE RESULTS*

All criteria were met. No qualifiers were applied.

11.0 *INTERNAL STANDARD PERFORMANCE*

All criteria were met. No qualifiers were applied.

12.0 *QUALITATIVE IDENTIFICATION*

Requirements for qualitative identification were met for all samples.

13.0 *QUANTITATION LIMITS*

The samples presented below were re-analyzed at dilutions for volatile organic compounds. The reanalyses were performed because the responses for volatile compounds exceeded the linear range of the GC/MS instrument for the initial undiluted analyses. The affected results were reported from the dilution analyses. All other results have been reported from the initial analyses.

Sample	Dilution Factor	Result Reported From a Dilution
MP-6S	10.0	Tetrachloroethene
MW-19	8.3	Trichloroethene, Tetrachloroethene
MW-26	10.0	Tetrachloroethene

As required by USEPA protocol, all compounds, which were qualitatively identified at concentrations below their respective Quantitation Limits (QLs), have been marked with "J" qualifiers to indicate that they are quantitative estimates.

Table 1 Samples For Data Validation Review
Kirkwood Bioremediation Status Report
Compuchem Sample Delivery Group A2291

Sample ID	LAB ID		DATE	MATRIX
MP-6D	A2291	1	9/24/2001	Groundwater
MW-19	A2291	2	9/24/2001	Groundwater
MW-19	A2291	3	9/24/2001	Groundwater
MW-26	A2291	3	9/24/2001	Groundwater
MP-6S	A2291	4	9/24/2001	Groundwater

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VOLATILE ORGANICS ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.

MP-6D

Lab Name: COMPUCHEM Contract: 6/2000 ASP

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: A2291

Matrix: (soil/water) WATER Lab Sample ID: A2291-1

Sample wt/vol: 25 (g/mL) ML Lab File ID: A2291-1B71

Level: (low/med) LOW Date Received: 09/25/01

% Moisture: not dec. _____ Date Analyzed: 09/30/01

GC Column: SPB-624 ID: 0.32 (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
75-01-4	Vinyl Chloride	0.5	U
75-35-4	1,1-Dichloroethene	0.5	U
156-60-5	trans-1,2-Dichloroethene	0.5	U
75-34-3	1,1-Dichloroethane	0.5	U
156-59-2	cis-1,2-Dichloroethene	0.5	U
71-55-6	1,1,1-Trichloroethane	0.5	U
79-01-6	Trichloroethene	0.5	UJ
127-18-4	Tetrachloroethene	2	

11/26/2001

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VOLATILE ORGANICS ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.

MP-6S

Lab Name: COMPUCHEM Contract: 6/2000 ASP

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: A2291

Matrix: (soil/water) WATER Lab Sample ID: A2291-4

Sample wt/vol: 25 (g/mL) ML Lab File ID: A2291-4B71

Level: (low/med) LCW Date Received: 09/25/01

% Moisture: not dec. _____ Date Analyzed: 09/30/01

GC Column: SPB-624 ID: 0.32 (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
75-01-4	Vinyl Chloride	0.5	U
75-35-4	1,1-Dichloroethene	0.5	U
156-60-5	trans-1,2-Dichloroethene	0.5	U
75-34-3	1,1-Dichloroethane	0.5	U
156-59-2	cis-1,2-Dichloroethene	0.5	U
71-55-6	1,1,1-Trichloroethane	0.5	U
79-01-6	Trichloroethene	0.5	UJ
127-18-4	Tetrachloroethene	~~160~~	~~E~~ ◊

◊ Report from dilution

FORM I CLP-VOA-1 6/2000

SMM 11/26/2001

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VOLATILE ORGANICS ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.

MP-6SDL

Lab Name: COMPUCHEM Contract: 6/2000 ASP

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: A2291

Matrix: (soil/water) WATER Lab Sample ID: A2291-4

Sample wt/vol: 25 (g/mL) ML Lab File ID: A2291-4DA71

Level: (low/med) LOW Date Received: 09/25/01

% Moisture: not dec. _____ Date Analyzed: 10/03/01

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 10.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-01-4	Vinyl Chloride	5	U
75-35-4	1,1-Dichloroethene	5	U
156-60-5	trans-1,2-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
156-59-2	cis-1,2-Dichloroethene	5	U
71-55-6	1,1,1-Trichloroethane	5	U
79-01-6	Trichloroethene	5	U
127-18-4	Tetrachloroethene	120	D *

* Report

SML 11/26/2002

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VOLATILE ORGANICS ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.

MW-19

Lab Name: COMPUCHEM Contract: 6/2000 ASP

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: A2291

Matrix: (soil/water) WATER Lab Sample ID: A2291-2

Sample wt/vol: 25 (g/mL) ML Lab File ID: A2291-2B71

Level: (low/med) LOW Date Received: 09/25/01

% Moisture: not dec. _____ Date Analyzed: 09/30/01

GC Column: SPB-624 ID: 0.32 (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
75-01-4	Vinyl Chloride	0.5	J
75-35-4	1,1-Dichloroethene	0.3	J
156-60-5	trans-1,2-Dichloroethene	1	
75-34-3	1,1-Dichloroethane	0.5	U
156-59-2	cis-1,2-Dichloroethene	24	
71-55-6	1,1,1-Trichloroethane	0.5	U
79-01-6	Trichloroethene	~~29~~	~~E~~ *
127-18-4	Tetrachloroethene	~~130~~	~~E~~ *

*Report from dilution.

SMW 11/26/2001

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VOLATILE ORGANICS ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.

MW-19DL

Lab Name: COMPUCHEM Contract: 6/2000 ASP

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: A2291

Matrix: (soil/water) WATER Lab Sample ID: A2291-2

Sample wt/vol: 25 (g/mL) ML Lab File ID: A2291-2DA71

Level: (low/med) LOW Date Received: 09/25/01

% Moisture: not dec. _____ Date Analyzed: 10/03/01

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 8.3

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-01-4	Vinyl Chloride	4	U
75-35-4	1,1-Dichloroethene	4	U
156-60-5	trans-1,2-Dichloroethene	4	U
75-34-3	1,1-Dichloroethane	4	U
156-59-2	cis-1,2-Dichloroethene	20	D
71-55-6	1,1,1-Trichloroethane	4	U
79-01-6	Trichloroethene	20	~~D~~ ☆
127-18-4	Tetrachloroethene	88	~~D~~ ☆

☆ Report

FORM I CLP-VOA-1 6/2000

11/20/2001

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VOLATILE ORGANICS ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.

MW-26

Lab Name: COMPUCHEM Contract: 6/2000 ASP

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: A2291

Matrix: (soil/water) WATER Lab Sample ID: A2291-3

Sample wt/vol: 25 (g/mL) ML Lab File ID: A2291-3B71

Level: (low/med) LOW Date Received: 09/25/01

% Moisture: not dec. _____ Date Analyzed: 09/30/01

GC Column: SPB-624 ID: 0.32 (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
75-01-4	Vinyl Chloride	0.5	U
75-35-4	1,1-Dichloroethene	0.5	U
156-60-5	trans-1,2-Dichloroethene	0.2	J
75-34-3	1,1-Dichloroethane	0.5	U
156-59-2	cis-1,2-Dichloroethene	6	
71-55-6	1,1,1-Trichloroethane	0.5	U
79-01-6	Trichlorcethene	7	J
127-18-4	Tetrachlcroethene	~~140~~	~~E~~ ⊠

⊠ Report from dilution

FORM I CLP-VOA-1 6/2000

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VOLATILE ORGANICS ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.

MW-26DL

Lab Name: COMPUCHEM Contract: 6/2000 ASP

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: A2291

Matrix: (soil/water) WATER Lab Sample ID: A2291-3

Sample wt/vol: 25 (g/mL) ML Lab File ID: A2291-3DA71

Level: (low/med) LOW Date Received: 09/25/01

% Moisture: not dec. _____ Date Analyzed: 10/03/01

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 10.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-01-4	Vinyl Chloride	5	U
75-35-4	1,1-Dichloroethene	5	U
156-60-5	trans-1,2-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
156-59-2	cis-1,2-Dichloroethene	5	D
71-55-6	1,1,1-Trichloroethane	5	U
79-01-6	Trichlorcethene	5	D
127-18-4	Tetrachloroethene	94	D ✱

✱ Report

FORM I CLP-VOA-1 6/2000

SMF 11/26/2001

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: COMPUCHEM Contract: 6/2000 ASP

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: A2291

Instrument ID: 5972HP71 Calibration Date: 09/29/01 Time: 1945

Lab File ID: CU010929B71 Init. Calib. Date(s): 09/26/01 09/27/01

EPA Sample No.(VSTD050##): VSTD005LQ Init. Calib. Times: 2036 0048

Heated Purge: (Y/N) N

GC Column: SPB-624 ID: 0.32 (mm)

COMPOUND	$\overline{RRF}$	RRF5	MIN RRF	%D	MAX %D
Vinyl Chloride	1.447	1.528	0.100	5.6	25.0
1,1-Dichloroethene	2.365	2.269	0.100	-4.1	25.0
trans-1,2-Dichloroethene	2.727	2.714		-0.5	
1,1-Dichloroethane	4.324	5.226	0.200	20.9	25.0
cis-1,2-Dichloroethene	2.468	2.502		1.4	
1,1,1-Trichloroethane	0.690	0.768	0.100	11.3	25.0
Trichloroethene	0.455	0.336	0.300	-26.2	25.0
Tetrachloroethene	0.394	0.338	0.100	-14.2	25.0
Toluene-d8	1.384	1.447		4.6	
Bromofluorobenzene	0.525	0.608	0.200	15.8	25.0
1,2-Dichloroethane-d4	2.186	2.807		28.4	

All other compounds must meet a minimum RRF of 0.010.

Results all estimated. (all samples)

Data Validation Qualifier Code Glossary

J - The positive result reported for this analyte is a quantitative estimate.

U - This analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit.

UJ - This analyte was not detected in the sample. The actual quantitation/detection limit may be higher than reported.

N - This analyte has been "tentatively" identified. The numeric value represents its approximate concentration.

Y - This analyte coelutes with another target compound on the two chromatographic columns used for analysis.

R - The result for this analyte is unreliable. Additional data is needed to confirm or disprove the presence of this compound/analyte in the sample.

Other Codes:

ND - There were no positive results for this analytical fraction.

NA - This parameter is not applicable to this sample.

NR - This analysis parameter was not required for this sample.

Project: Kirkwood Bioremediation Status Report
Laboratory: Compuchem, Cary, North Carolina
Sample Delivery Group: B2291
Fraction: Organic
Matrix: Groundwater
Report Date: 12/13/2002

This data usability summary report is based upon a review of analytical data generated for groundwater samples. The sample locations, laboratory identification numbers, sample collection dates, sample matrix, and analyses performed are presented in Table 1.

The sample analyses were performed in accordance with the procedures outlined in method 8260B, "Test Methods for Evaluating Solid Waste", Physical/Chemical Methods (SW-846), Third Edition, Final (Promulgated) Updates II, IIA, and III June 1997. The data deliverables provided by the laboratory were New York State Department of Environmental Conservation Analytical Services Protocol (NYSDEC ASP) Category B format.

All sample analyses have undergone an analytical quality assurance review to ensure adherence to the required protocols. Results have been validated or qualified according to general guidance provided in the Region II modifications to "Laboratory Data Validation Functional Guidelines for Validating Organic Analyses", USEPA 9/94. This document specifies procedures for validating data generated for CLP analyses. Therefore, the quality control requirements specified in the methods and associated acceptance criteria were also used to evaluate the non-CLP data. The parameters presented on the following page were evaluated.

X	•	Data Completeness
X	•	Chain of Custody Documentation
X	•	Holding Times
X	•	Instrument Performance
X	•	Initial and Continuing Calibrations
X	•	Laboratory and Field Blank Analysis Results
X	•	Surrogate Compound Recoveries
X	•	Matrix Spike/Matrix Spike Duplicate Recoveries and Reproducibility
	•	Field Duplicate Analysis Results
X	•	Laboratory Control Sample/Blank Spike Results
X	•	Internal Standard Performance
X	•	Qualitative Identification
X	•	Quantitation Limits

X - Denotes parameter evaluated.

It is recommended that the data only be used according to the qualifiers presented, and discussed in this report. All other data should be considered qualitatively and quantitatively valid as reported by the laboratory, based on the items evaluated. Analysis result forms presenting the validated and qualified results for the samples receiving the data validation are attached. Documentation of the reasons for data qualification is also attached.

Report Approved By:

Shawne M. Rodgers
President

12/13/2000

Date

1.0 *DATA COMPLETENESS*

The data deliverables were complete.

2.0 *CHAIN OF CUSTODY DOCUMENTATION*

The chain of custody records were complete.

3.0 *HOLDING TIMES*

Holding times were met for all analyses.

4.0 *INSTRUMENT PERFORMANCE*

All criteria were met. No qualifiers were applied.

5.0 *INITIAL AND CONTINUING CALIBRATIONS*

The following volatile organic compounds results should be considered quantitative estimates. The continuing calibration precision criterion was exceeded for these compounds. The lack of precision indicates instrument instability for these compounds. Positive results have been marked with "J" qualifiers to indicate that they are estimates. Quantitation limits are marked "UJ".

Compound	Qualified Results
1,1-Dichloroethene	MW-17, MW35
trans-1, 2-Dichloroethene	MW-17, MW-35
Trichloroethene	MW-25, MW-28, MW-32, MW-34
Vinyl Chloride	MW-17, MW-35

6.0 *LABORATORY AND FIELD BLANK ANALYSIS RESULTS*

All criteria were met. No qualifiers were applied.

7.0 *SURROGATE COMPOUNDS*

All criteria were met. No qualifiers were applied.

8.0 *MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERIES AND REPRODUCIBILITY*

All criteria were met. No qualifiers were applied.

9.0 *FIELD DUPLICATE RESULTS*

There were no field duplicate samples submitted with this SDG.

10.0 *LABORATORY CONTROL SAMPLE/ BLANK SPIKE RESULTS*

All criteria were met. No qualifiers were applied.

11.0 *INTERNAL STANDARD PERFORMANCE*

All criteria were met. No qualifiers were applied.

12.0 *QUALITATIVE IDENTIFICATION*

Requirements for qualitative identification were met for all samples.

13.0 *QUANTITATION LIMITS*

The samples presented below were re-analyzed at dilutions for volatile organic compounds. The reanalyses were performed because the responses for volatile compounds exceeded the linear range of the GC/MS instrument for the initial undiluted analyses. The affected results were reported from the dilution analyses. All other results have been reported from the initial analyses.

Sample	Dilution Factor	Result Reported From a Dilution
MW-25	50.0	Tetrachloroethene
MW-28	7.1	Tetrachloroethene

As required by USEPA protocol, all compounds, which were qualitatively identified at concentrations below their respective Quantitation Limits (QLs), have been marked with "J" qualifiers to indicate that they are quantitative estimates.

Table 1 Samples For Data Validation Review
Kirkwood Bioremediation Status Report
Compuchem Sample Delivery Group B2291

Sample ID	LAB ID		DATE	MATRIX
MW-17	B2291	1	9/25/2001	Groundwater
MW-28	B2291	2	9/25/2001	Groundwater
MW-34	B2291	3	9/25/2001	Groundwater
MW-25	B2291	4	9/25/2001	Groundwater
MW-35	B2291	5	9/25/2001	Groundwater
MW-32	B2291	6	9/25/2001	Groundwater
TB-1	B2291	7	9/25/2001	Trip Blank

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VOLATILE ORGANICS ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.

MW-17

Lab Name: COMPUCHEM Contract: 6/2000 ASP

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: B2291

Matrix: (soil/water) WATER Lab Sample ID: B2291-1

Sample wt/vol: 25 (g/mL) ML Lab File ID: B2291-1RA71

Level: (low/med) LOW Date Received: 09/26/01

% Moisture: not dec. _____ Date Analyzed: 10/03/01

GC Column: SPB-624 ID: 0.32 (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
75-01-4	Vinyl Chloride	0.5	UJ
75-35-4	1,1-Dichloroethene	0.5	UJ
156-60-5	trans-1,2-Dichloroethene	0.5	UJ
75-34-3	1,1-Dichloroethane	0.5	U
156-59-2	cis-1,2-Dichloroethene	0.5	U
71-55-6	1,1,1-Trichloroethane	0.5	U
79-01-6	Trichloroethene	0.5	U
127-18-4	Tetrachloroethene	3	

SMK 11/26/2001

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VOLATILE ORGANICS ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.

MW-25

Lab Name: COMPUCHEM Contract: 6/2000 ASP

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: B2291

Matrix: (soil/water) WATER Lab Sample ID: B2291-4

Sample wt/vol: 25 (g/mL) ML Lab File ID: B2291-4B71

Level: (low/med) LOW Date Received: 09/26/01

% Moisture: not dec. _____ Date Analyzed: 09/30/01

GC Column: SPB-624 ID: 0.32 (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
75-01-4	Vinyl Chloride	0.5	U
75-35-4	1,1-Dichloroethene	0.5	U
156-60-5	trans-1,2-Dichloroethene	0.3	J
75-34-3	1,1-Dichloroethane	0.5	U
156-59-2	cis-1,2-Dichloroethene	2	
71-55-6	1,1,1-Trichloroethane	0.2	J
79-01-6	Trichloroethene	7	J
127-18-4	Tetrachloroethene	~~410~~	~~E~~ ✡

✡ Report from dilution

FORM I CLP-VOA-1 6/2000

SMK 11/26/2001

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VOLATILE ORGANICS ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.

MW-25DL

Lab Name: COMPUCHEM Contract: 6/2000 ASP

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: B2291

Matrix: (soil/water) WATER Lab Sample ID: B2291-4

Sample wt/vol: 25 (g/mL) ML Lab File ID: B2291-4D2A71

Level: (low/med) LOW Date Received: 09/26/01

% Moisture: not dec. _____ Date Analyzed: 10/04/01

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 50.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-01-4	Vinyl Chloride	25	U
75-35-4	1,1-Dichloroethene	25	U
156-60-5	trans-1,2-Dichloroethene	25	U
75-34-3	1,1-Dichloroethane	25	U
156-59-2	cis-1,2-Dichloroethene	25	U
71-55-6	1,1,1-Trichloroethane	25	U
79-01-6	Trichloroethene	25	U
127-18-4	Tetrachloroethene	630	~~DB~~ ✱

✱ Report

smk 11/26/2001

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VOLATILE ORGANICS ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.

MW-28

Lab Name: COMPUCHEM Contract: 6/2000 ASP

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: B2291

Matrix: (soil/water) WATER Lab Sample ID: B2291-2

Sample wt/vol: 25 (g/mL) ML Lab File ID: B2291-2B71

Level: (low/med) LOW Date Received: 09/26/01

% Moisture: not dec. _____ Date Analyzed: 09/30/01

GC Column: SPB-624 ID: 0.32 (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
75-01-4	Vinyl Chloride	0.5	U
75-35-4	1,1-Dichloroethene	0.5	U
156-60-5	trans-1,2-Dichloroethene	0.5	U
75-34-3	1,1-Dichloroethane	0.5	U
156-59-2	cis-1,2-Dichloroethene	3	
71-55-6	1,1,1-Trichloroethane	0.5	U
79-01-6	Trichloroethene	2	J
127-18-4	Tetrachloroethene	~~110~~	~~E~~ *

* Report from dilution

FORM I CLP-VOA-1 6/2000

SM 11/26/2001

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VOLATILE ORGANICS ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.

MW-28DL

Lab Name: COMPUCHEM Contract: 6/2000 ASP

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: B2291

Matrix: (soil/water) WATER Lab Sample ID: B2291-2

Sample wt/vol: 25 (g/mL) ML Lab File ID: B2291-2DA71

Level: (low/med) LOW Date Received: 09/26/01

% Moisture: not dec. _____ Date Analyzed: 10/03/01

GC Column: SPB-624 ~~ID~~: 0.32 (mm) Dilution Factor: 7.1

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-01-4	Vinyl Chloride	4	U
75-35-4	1,1-Dichloroethene	4	U
156-60-5	trans-1,2-Dichloroethene	4	U
75-34-3	1,1-Dichloroethane	4	U
156-59-2	cis-1,2-Dichloroethene	3	DJ
71-55-6	1,1,1-Trichloroethane	4	U
79-01-6	Trichloroethene	1	DJ
127-18-4	Tetrachloroethene	70	~~D~~ A

A Report

FORM I CLP-VOA-1 6/2000

SMK 11/26/01

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VOLATILE ORGANICS ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.

MW-32

Lab Name: COMPUCHEM Contract: 6/2000 ASP

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: B2291

Matrix: (soil/water) WATER Lab Sample ID: B2291-6

Sample wt/vol: 25 (g/mL) ML Lab File ID: B2291-6B71

Level: (low/med) LOW Date Received: 09/26/01

% Moisture: not dec. _____ Date Analyzed: 09/30/01

GC Column: SPB-624 ID: 0.32 (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
75-01-4	Vinyl Chloride	0.5	U
75-35-4	1,1-Dichloroethene	0.5	U
156-60-5	trans-1,2-Dichloroethene	0.5	U
75-34-3	1,1-Dichloroethane	0.5	U
156-59-2	cis-1,2-Dichloroethene	0.5	U
71-55-6	1,1,1-Trichloroethane	0.5	U
79-01-6	Trichloroethene	0.5	U J
127-18-4	Tetrachloroethene	0.5	U

SMT 11/26/01

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VOLATILE ORGANICS ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.

MW-34

Lab Name: COMPUCHEM Contract: 6/2000 ASP

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: B2291

Matrix: (soil/water) WATER Lab Sample ID: B2291-3

Sample wt/vol: 25 (g/mL) ML Lab File ID: B2291-3B71

Level: (low/med) LOW Date Received: 09/26/01

% Moisture: not dec. _____ Date Analyzed: 09/30/01

GC Column: SPB-624 ID: 0.32 (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
75-01-4	Vinyl Chloride	0.5	U
75-35-4	1,1-Dichloroethene	0.5	U
156-60-5	trans-1,2-Dichloroethene	0.5	U
75-34-3	1,1-Dichloroethane	0.5	U
156-59-2	cis-1,2-Dichloroethene	0.5	U
71-55-6	1,1,1-Trichloroethane	0.5	U
79-01-6	Trichloroethene	0.5	UJ
127-18-4	Tetrachloroethene	0.5	U

SMT 11/26/2001

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VOLATILE ORGANICS ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.

MW-35

Lab Name: COMPUCHEM Contract: 6/2000 ASP

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: B2291

Matrix: (soil/water) WATER Lab Sample ID: B2291-5

Sample wt/vol: 25 (g/mL) ML Lab File ID: B2291-5RA71

Level: (low/med) LOW Date Received: 09/26/01

% Moisture: not dec. _____ Date Analyzed: 10/03/01

GC Column: SPB-624 ID: 0.32 (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
75-01-4	Vinyl Chloride	0.5	UJ
75-35-4	1,1-Dichloroethene	0.5	UJ
156-60-5	trans-1,2-Dichloroethene	0.5	UJ
75-34-3	1,1-Dichloroethane	0.5	U
156-59-2	cis-1,2-Dichloroethene	0.5	U
71-55-6	1,1,1-Trichloroethane	0.7	
79-01-6	Trichloroethene	0.5	U
127-18-4	Tetrachloroethene	0.5	U

SMM 11/26/2001

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VOLATILE ORGANICS ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.

TB-1

Lab Name: COMPUCHEM Contract: 6/2000 ASP

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: B2291

Matrix: (soil/water) WATER Lab Sample ID: B2291-7

Sample wt/vol: 25 (g/mL) ML Lab File ID: B2291-7A71

Level: (low/med) LOW Date Received: 09/26/01

% Moisture: not dec. _____ Date Analyzed: 10/03/01

GC Column: SPB-624 ID: 0.32 (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
75-01-4	Vinyl Chloride	0.5	U
75-35-4	1,1-Dichloroethene	0.5	U
156-60-5	trans-1,2-Dichloroethene	0.5	U
75-34-3	1,1-Dichloroethane	0.5	U
156-59-2	cis-1,2-Dichloroethene	0.5	U
71-55-6	1,1,1-Trichloroethane	0.5	U
79-01-6	Trichloroethene	0.5	U
127-18-4	Tetrachloroethene	0.5	U

SMK 11/29/2001

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: COMPUCHEM Contract: 6/2000 ASP

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: B2291

Instrument ID: 5972HP71 Calibration Date: 09/29/01 Time: 1945

Lab File ID: CU010929B71 Init. Calib. Date(s): 09/26/01 09/27/01

EPA Sample No.(VSTD050##): VSTD005LQ Init. Calib. Times: 2036 0048

Heated Purge: (Y/N) N

GC Column: SPB-624 ID: 0.32 (mm)

COMPOUND	$\overline{RRF}$	RRF5	MIN RRF	%D	MAX %D
Vinyl Chloride	1.447	1.528	0.100	5.6	25.0
1,1-Dichloroethene	2.365	2.269	0.100	-4.1	25.0
trans-1,2-Dichloroethene	2.727	2.714		-0.5	
1,1-Dichloroethane	4.324	5.226	0.200	20.9	25.0
cis-1,2-Dichloroethene	2.468	2.502		1.4	
1,1,1-Trichloroethane	0.690	0.768	0.100	11.3	25.0
Trichloroethene	0.455	0.336	0.300	-26.2	25.0
Tetrachloroethene	0.394	0.338	0.100	-14.2	25.0
Toluene-d8	1.384	1.447		4.6	
Bromofluorobenzene	0.525	0.608	0.200	15.8	25.0
1,2-Dichloroethane-d4	2.186	2.807		28.4	

All other compounds must meet a minimum RRF of 0.010.

Results also estimated
MW-3
MW-28
MW-34
MW-32

SMK 11/26/2002

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: COMPUCHEM Contract: 6/2000 ASP

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: B2291

Instrument ID: 5972HP71 Calibration Date: 10/03/01 Time: 1025

Lab File ID: CT011003A71 Init. Calib. Date(s): 10/02/01 10/02/01

EPA Sample No.(VSTD050##): VSTD005MF Init. Calib. Times: 1328 1720

Heated Purge: (Y/N) N

GC Column: SPB-624 ID: 0.32 (mm)

COMPOUND	$\overline{RRF}$	RRF5	MIN RRF	%D	MAX %D
Vinyl Chloride	2.177	1.669	0.100	-23.3	25.0
1,1-Dichloroethene	2.833	2.168	0.100	-23.5	25.0
trans-1,2-Dichloroethene	3.490	2.730		-21.8	
1,1-Dichloroethane	6.235	4.993	0.200	-19.9	25.0
cis-1,2-Dichloroethene	3.451	2.775		-19.6	
1,1,1-Trichloroethane	0.532	0.562	0.100	5.6	25.0
Trichloroethene	0.418	0.374	0.300	-10.5	25.0
Tetrachloroethene	0.320	0.338	0.100	5.6	25.0
Toluene-d8	1.277	1.329		4.1	
Bromofluorobenzene	0.484	0.491	0.200	1.4	25.0
1,2-Dichloroethane-d4	2.523	2.169		-14.0	

All other compounds must meet a minimum RRF of 0.010.

Results are estimated. MW17, MW35 ~~MW-28D~~

SMK 11/26/2001

Data Validation Qualifier Code Glossary

J - The positive result reported for this analyte is a quantitative estimate.

U - This analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit.

UJ - This analyte was not detected in the sample. The actual quantitation/detection limit may be higher than reported.

N - This analyte has been "tentatively" identified. The numeric value represents its approximate concentration.

Y - This analyte coelutes with another target compound on the two chromatographic columns used for analysis.

R - The result for this analyte is unreliable. Additional data is needed to confirm or disprove the presence of this compound/analyte in the sample.

Other Codes:

ND - There were no positive results for this analytical fraction.

NA - This parameter is not applicable to this sample.

NR - This analysis parameter was not required for this sample.

Project: Kirkwood Bioremediation Status Report
Laboratory: Compuchem, Cary, North Carolina
Sample Delivery Group: C2291
Fraction: Organic
Matrix: Groundwater
Report Date: 12/13/2002

This data usability summary report is based upon a review of analytical data generated for groundwater samples. The sample locations, laboratory identification numbers, sample collection dates, sample matrix, and analyses performed are presented in Table 1.

The sample analyses were performed in accordance with the procedures outlined in method 8260B, "Test Methods for Evaluating Solid Waste", Physical/Chemical Methods (SW-846), Third Edition, Final (Promulgated) Updates II, IIA, and III June 1997. The data deliverables provided by the laboratory were New York State Department of Environmental Conservation Analytical Services Protocol (NYSDEC ASP) Category B format.

All sample analyses have undergone an analytical quality assurance review to ensure adherence to the required protocols. Results have been validated or qualified according to general guidance provided in the Region II modifications to "Laboratory Data Validation Functional Guidelines for Validating Organic Analyses", USEPA 9/94. This document specifies procedures for validating data generated for CLP analyses. Therefore, the quality control requirements specified in the methods and associated acceptance criteria were also used to evaluate the non-CLP data. The parameters presented on the following page were evaluated.

X	•	Data Completeness
X	•	Chain of Custody Documentation
X	•	Holding Times
X	•	Instrument Performance
X	•	Initial and Continuing Calibrations
X	•	Laboratory and Field Blank Analysis Results
X	•	Surrogate Compound Recoveries
X	•	Matrix Spike/Matrix Spike Duplicate Recoveries and Reproducibility
	•	Field Duplicate Analysis Results
X	•	Laboratory Control Sample/Blank Spike Results
X	•	Internal Standard Performance
X	•	Qualitative Identification
X	•	Quantitation Limits

X - Denotes parameter evaluated.

It is recommended that the data only be used according to the qualifiers presented, and discussed in this report. All other data should be considered qualitatively and quantitatively valid as reported by the laboratory, based on the items evaluated. Analysis result forms presenting the validated and qualified results for the samples receiving the data validation are attached. Documentation of the reasons for data qualification is also attached.

Report Approved By:

Shawne M. Rodgers
President

12/13/00
Date

1.0 *DATA COMPLETENESS*

The mass spectrum for tetrachloroethene for sample MP-8D was missing from the data package. The laboratory was contacted and provided the missing data.

2.0 *CHAIN OF CUSTODY DOCUMENTATION*

The chain of custody records were complete.

3.0 *HOLDING TIMES*

Holding times were met for all analyses.

4.0 *INSTRUMENT PERFORMANCE*

All criteria were met. No qualifiers were applied.

5.0 *INITIAL AND CONTINUING CALIBRATIONS*

All criteria were met. No qualifiers were applied.

6.0 *LABORATORY AND FIELD BLANK ANALYSIS RESULTS*

Positive results reported for tetrachloroethene for samples MP-8D and MP-10D are qualitatively invalid due to the presence of this compound in associated laboratory method and/or field blanks. USEPA protocol requires positive results for uncommon contaminants, such as tetrachlorcethene, that are less than or equal to five times the associated blank contamination level, to be considered qualitatively invalid. Replacing results that are less than the quantitation limit with the quantitation limit has indicated this. Results that are greater than the quantitation limits are marked "U".

7.0 *SURROGATE COMPOUNDS*

All criteria were met. No qualifiers were applied.

8.0 *MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERIES AND REPRODUCIBILITY*

All criteria were met. No qualifiers were applied.

9.0 *FIELD DUPLICATE RESULTS*

There were no field duplicate samples submitted with this SDG.

10.0 *LABORATORY CONTROL SAMPLE/ BLANK SPIKE RESULTS*

All criteria were met. No qualifiers were applied.

11.0 *INTERNAL STANDARD PERFORMANCE*

All criteria were met. No qualifiers were applied.

12.0 *QUALITATIVE IDENTIFICATION*

A positive result of 0.2 µg/L was reported for vinyl chloride for sample MP-8S. The mass spectrum for this compound did not match the reference spectrum included in the data package. Additionally, the method detection limit on the summary included in the data package shows a method detection limit of 0.248 µg/L for this compound. It does not appear that a positive result should have been reported for vinyl chloride for this sample. This positive results has been replaced by the sample quantitation limit for vinyl chloride.

13.0 *QUANTITATION LIMITS*

The samples presented below were re-analyzed at dilutions for volatile organic compounds. The reanalysis was performed because the responses for volatile compounds exceeded the linear range of the GC/MS instrument for the initial undiluted analyses. The affected results were reported from the dilution analyses. All other results have been reported from the initial analyses.

Sample	Dilution Factor	Result Reported From a Dilution
MP-4	500	Tetrachloroethene
MP-5	100	Tetrachloroethene
MP-8S	12.5	Tetrachloroethene
MW-27	5.0	Tetrachloroethene

The positive result for trichloroethene for sample MP-4 should be considered a quantitative estimate. The response for this compound exceeded the linear range of the GC/MS instrument. A dilution analysis of this sample resulted in a response for the compound below detectable levels. The result has been reported from the initial analysis and is marked with a "J" qualifier to indicate that it is a quantitative estimate.

As required by USEPA protocol, all compounds, which were qualitatively identified at concentrations below their respective Quantitation Limits (QLs), have been marked with "J" qualifiers to indicate that they are quantitative estimates.

Table 1 Samples For Data Validation Review
Kirkwood Bioremediation Status Report
Compuchem Sample Delivery Group C2291

Sample ID	LAB ID		DATE	MATRIX
MW-27	C2291	1	9/26/2001	Groundwater
MW-31	C2291	2	9/26/2001	Groundwater
MW-33	C2291	3	9/26/2001	Groundwater
MW-36	C2291	4	9/26/2001	Groundwater
MW-30	C2291	5	9/26/2001	Groundwater
MW-20	C2291	6	9/26/2001	Groundwater
MW-15	C2291	7	9/26/2001	Groundwater
MW-21	C2291	8	9/26/2001	Groundwater
TB-2	C2291	9	9/26/2001	Trip Blank
MP-5	C2291	10	9/27/2001	Groundwater
MP-4	C2291	11	9/27/2001	Groundwater
MP-8S	C2291	12	9/27/2001	Groundwater
MP-8D	C2291	13	9/27/2001	Groundwater
MP-10D	C2291	14	9/27/2001	Groundwater
TB-3	C2291	15	9/27/2001	Trip Blank

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VOLATILE ORGANICS ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.

MP-10D

Lab Name: COMPUCHEM Contract: 6/2000 ASP

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: C2291

Matrix: (soil/water) WATER Lab Sample ID: C2291-14

Sample wt/vol: 25 (g/mL) ML Lab File ID: C2291-14RA71

Level: (low/med) LOW Date Received: 09/28/01

% Moisture: not dec. ________ Date Analyzed: 10/04/01

GC Column: SPB-624 ID: 0.32 (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
75-01-4	Vinyl Chloride	0.5	U
75-35-4	1,1-Dichloroethene	0.5	U
156-60-5	trans-1,2-Dichloroethene	0.5	U
75-34-3	1,1-Dichloroethane	0.5	U
156-59-2	cis-1,2-Dichloroethene	0.5	U
71-55-6	1,1,1-Trichloroethane	0.5	U
79-01-6	Trichloroethene	0.5	U
127-18-4	Tetrachloroethene	0.5	~~B~~ U

FORM I CLP-VOA-1 6/2000

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VOLATILE ORGANICS ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.

MP-4

Lab Name: COMPUCHEM   Contract: 6/2000 ASP

Lab Code: LIBRTY   Case No.:   SAS No.:   SDG No.: C2291

Matrix: (soil/water) WATER   Lab Sample ID: C2291-11

Sample wt/vol: 25 (g/mL) ML   Lab File ID: C2291-11B71

Level: (low/med) LOW   Date Received: 09/28/01

% Moisture: not dec. ________   Date Analyzed: 10/04/01

GC Column: SPB-624 ID: 0.32 (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
75-01-4	Vinyl Chloride	0.5	U
75-35-4	1,1-Dichloroethene	0.4	J
156-60-5	trans-1,2-Dichloroethene	0.5	U
75-34-3	1,1-Dichloroethane	0.5	U
156-59-2	cis-1,2-Dichloroethene	12	
71-55-6	1,1,1-Trichloroethane	2	
79-01-6	Trichloroethene	30 smk J ~~30~~	~~E~~ *
127-18-4	Tetrachloroethene	~~620~~	~~E~~ *

* Report from dilution

FORM I CLP-VOA-1   6/2000

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VOLATILE ORGANICS ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.

MP-4DL

Lab Name: COMPUCHEM Contract: 6/2000 ASP

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: C2291

Matrix: (soil/water) WATER Lab Sample ID: C2291-11

Sample wt/vol: 25 (g/mL) ML Lab File ID: C2291-11D2A71

Level: (low/med) LOW Date Received: 09/28/01

% Moisture: not dec. _____ Date Analyzed: 10/04/01

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 500.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-01-4	Vinyl Chloride	250	U
75-35-4	1,1-Dichloroethene	250	U
156-60-5	trans-1,2-Dichloroethene	250	U
75-34-3	1,1-Dichloroethane	250	U
156-59-2	cis-1,2-Dichloroethene	250	U
71-55-6	1,1,1-Trichloroethane	250	U
79-01-6	Trichloroethene	250	U
127-18-4	Tetrachloroethene	7700	~~DB~~ ✱

✱ Report

SMK 11/26/2001

FORM I CLP-VOA-1 6/2000

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VOLATILE ORGANICS ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.

MP-5

Lab Name: COMPUCHEM Contract: 6/2000 ASP

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: C2291

Matrix: (soil/water) WATER Lab Sample ID: C2291-10

Sample wt/vol: 25 (g/mL) ML Lab File ID: C2291-10B71

Level: (low/med) LOW Date Received: 09/28/01

% Moisture: not dec. _____ Date Analyzed: 10/04/01

GC Column: SPB-624 ID: 0.32 (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
75-01-4	Vinyl Chlcride	0.5	U
75-35-4	1,1-Dichlcroethene	0.5	U
156-60-5	trans-1,2-Dichloroethene	0.5	U
75-34-3	1,1-Dichloroethane	0.5	U
156-59-2	cis-1,2-Dichloroethene	0.5	U
71-55-6	1,1,1-Trichloroethane	0.3	J
79-01-6	Trichloroethene	0.6	
127-18-4	Tetrachlorcethene	~~360~~	~~E~~ *

* Repat from dilution

SMK 11/26/2001

FORM I CLP-VOA-1 6/2000

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VOLATILE ORGANICS ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.

MP-5DL

Lab Name: COMPUCHEM Contract: 6/2000 ASP

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: C2291

Matrix: (soil/water) WATER Lab Sample ID: C2291-10

Sample wt/vol: 25 (g/mL) ML Lab File ID: C2291-10R3A71

Level: (low/med) LOW Date Received: 09/28/01

% Moisture: not dec. _____ Date Analyzed: 10/08/01

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 100.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-01-4	Vinyl Chloride	50	U
75-35-4	1,1-Dichloroethene	50	U
156-60-5	trans-1,2-Dichloroethene	50	U
75-34-3	1,1-Dichloroethane	50	U
156-59-2	cis-1,2-Dichloroethene	50	U
71-55-6	1,1,1-Trichloroethane	50	U
79-01-6	Trichloroethene	50	U
127-18-4	Tetrachloroethene	1500	~~D~~ *

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SMK 11/26/2001

FORM I CLP-VOA-1 6/2000

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VOLATILE ORGANICS ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.

MP-8D

Lab Name: COMPUCHEM Contract: 6/2000 ASP

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: C2291

Matrix: (soil/water) WATER Lab Sample ID: C2291-13

Sample wt/vol: 25 (g/mL) ML Lab File ID: C2291-13RA71

Level: (low/med) LOW Date Received: 09/28/01

% Moisture: not dec. _____ Date Analyzed: 10/04/01

GC Column: SPB-624 ID: 0.32 (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
75-01-4	Vinyl Chloride	0.5	U
75-35-4	1,1-Dichloroethene	0.5	U
156-60-5	trans-1,2-Dichloroethene	0.5	U
75-34-3	1,1-Dichloroethane	0.5	U
156-59-2	cis-1,2-Dichloroethene	0.5	U
71-55-6	1,1,1-Trichloroethane	0.5	U
79-01-6	Trichloroethene	0.5	U
127-18-4	Tetrachloroethene	2	~~B~~ U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.

MP-8S

Lab Name: COMPUCHEM Contract: 6/2000 ASP

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: C2291

Matrix: (soil/water) WATER Lab Sample ID: C2291-12

Sample wt/vol: 25 (g/mL) ML Lab File ID: C2291-12B71

Level: (low/med) LOW Date Received: 09/28/01

% Moisture: not dec. _____ Date Analyzed: 10/04/01

GC Column: SPB-624 ID: 0.32 (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
75-01-4	Vinyl Chloride	0.5	U
75-35-4	1,1-Dichloroethene	0.5	U
156-60-5	trans-1,2-Dichloroethene	0.2	J
75-34-3	1,1-Dichloroethane	0.5	U
156-59-2	cis-1,2-Dichloroethene	7	
71-55-6	1,1,1-Trichloroethane	0.5	U
79-01-6	Trichloroethene	3	
127-18-4	Tetrachloroethene	180	E ★

★ Report from dilution

Smt 11/29/2001

Data File: /chem/5972hp71.i/DG011003B71.b/C2291-12B71.d

Date : 04-OCT-2001 06:54

Client ID: MP-8S

Instrument: 5972hp71.i

Sample Info:

Purge Volume: 25.0

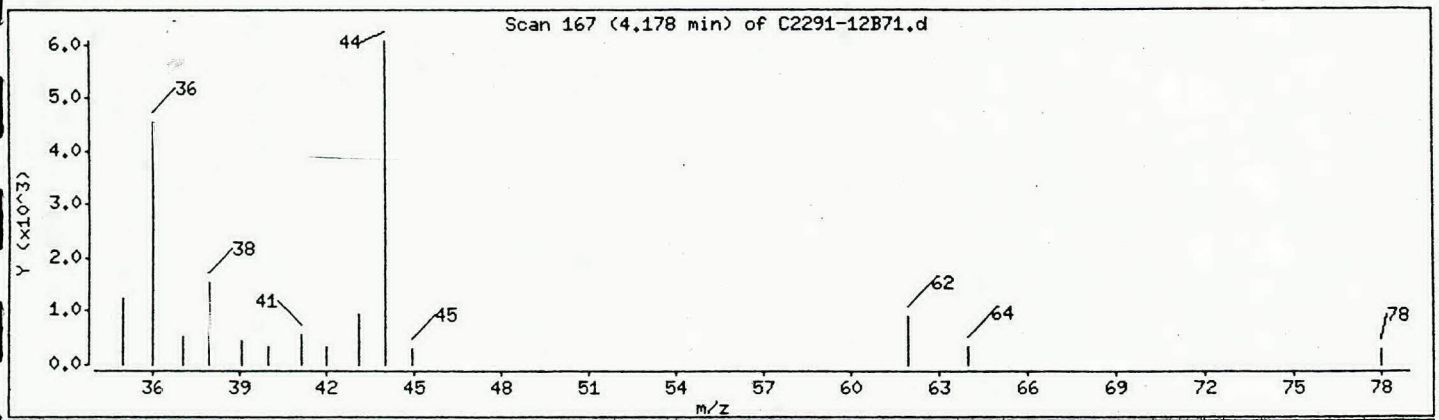
Operator: 2323

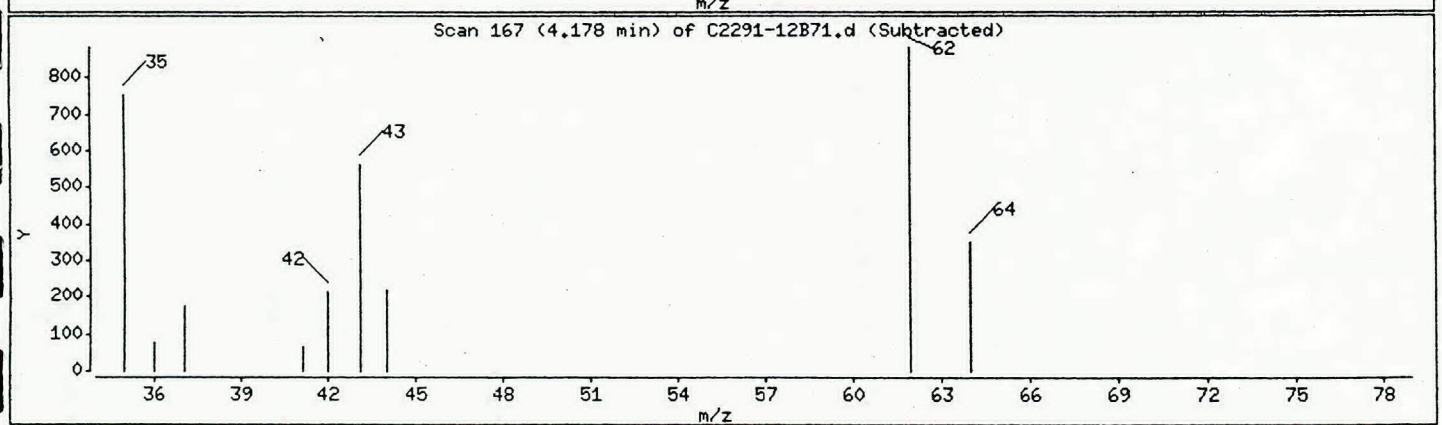
Column phase: SPB-624

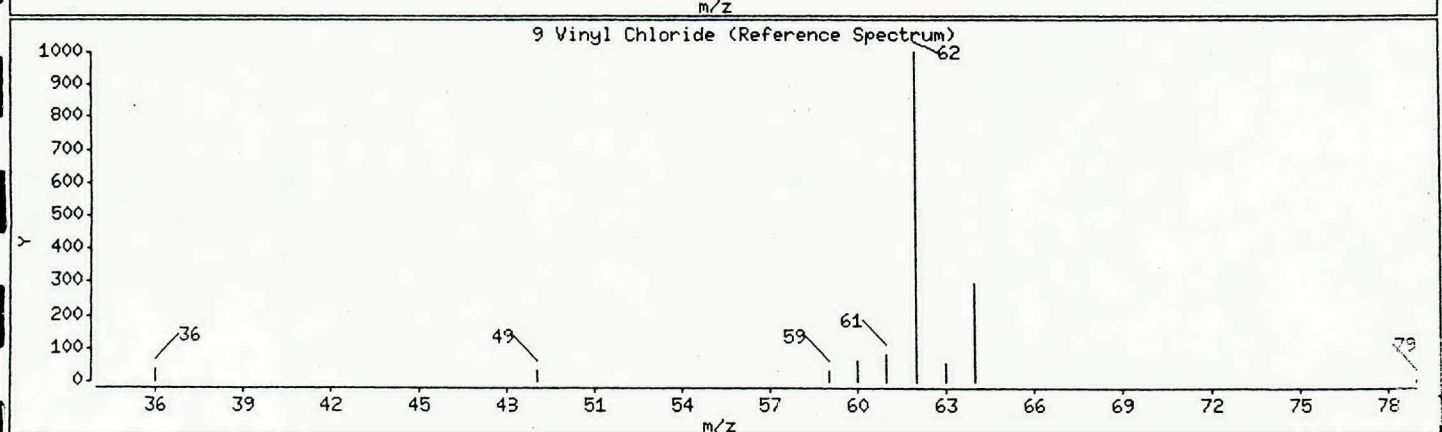
Column diameter: 0.32

9 Vinyl Chloride

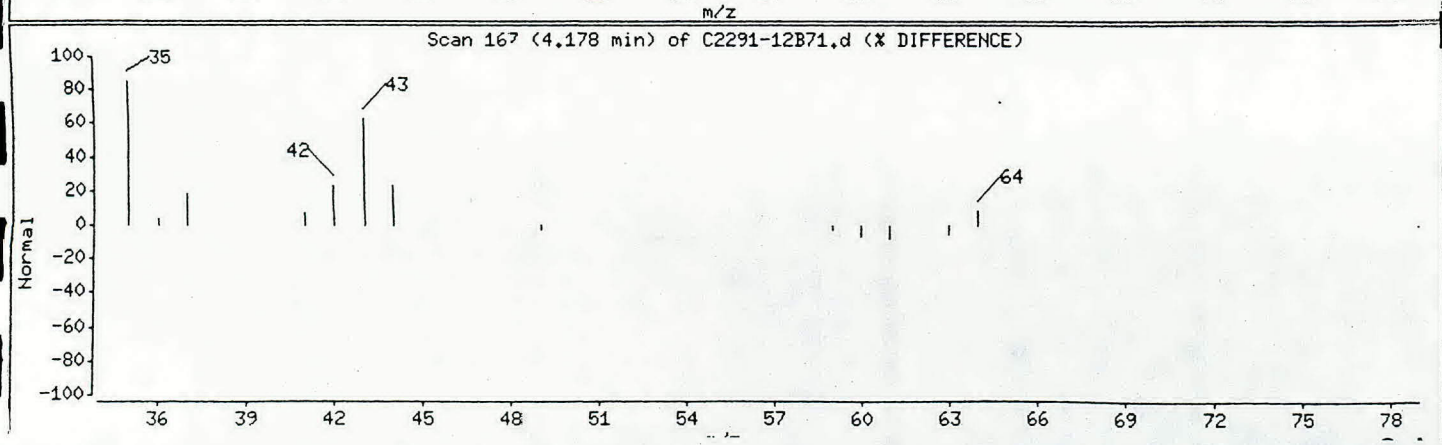
Concentration: 0.248 ug/L







poor match



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VOLATILE ORGANICS ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.

MP-8SDL

Lab Name: COMPUCHEM Contract: 6/2000 ASP

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: C2291

Matrix: (soil/water) WATER Lab Sample ID: C2291-12

Sample wt/vol: 25 (g/mL) ML Lab File ID: C2291-12D2A71

Level: (low/med) LOW Date Received: 09/28/01

% Moisture: not dec. _____ Date Analyzed: 10/08/01

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 12.5

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-01-4	Vinyl Chloride	6	U
75-35-4	1,1-Dichloroethene	6	U
156-60-5	trans-1,2-Dichloroethene	6	U
75-34-3	1,1-Dichloroethane	6	U
156-59-2	cis-1,2-Dichloroethene	6	DJ
71-55-6	1,1,1-Trichloroethane	6	U
79-01-6	Trichloroethene	2	DJ
127-18-4	Tetrachloroethene	150	D ✱

✱ Repeat

SMA 11/26/01

FORM I CLP-VOA-1 6/2000

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VOLATILE ORGANICS ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.

MW-15

Lab Name: COMPUCHEM Contract: 6/2000 ASP

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: C2291

Matrix: (soil/water) WATER Lab Sample ID: C2291-7

Sample wt/vol: 25 (g/mL) ML Lab File ID: C2291-7B71

Level: (low/med) LOW Date Received: 09/28/01

% Moisture: not dec. _____ Date Analyzed: 10/04/01

GC Column: SPB-624 ID: 0.32 (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
75-01-4	Vinyl Chloride	0.5	U
75-35-4	1,1-Dichloroethene	0.5	U
156-60-5	trans-1,2-Dichloroethene	0.5	U
75-34-3	1,1-Dichloroethane	0.5	U
156-59-2	cis-1,2-Dichloroethene	0.5	U
71-55-6	1,1,1-Trichloroethane	0.5	U
79-01-6	Trichloroethene	0.5	U
127-18-4	Tetrachloroethene	0.5	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.

MW-20

Lab Name: COMPUCHEM Contract: 6/2000 ASP

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: C2291

Matrix: (soil/water) WATER Lab Sample ID: C2291-6

Sample wt/vol: 25 (g/mL) ML Lab File ID: C2291-6B71

Level: (low/med) LOW Date Received: 09/28/01

% Moisture: not dec. _____ Date Analyzed: 10/04/01

GC Column: SPB-624 ID: 0.32 (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
75-01-4	Vinyl Chloride	0.5	U
75-35-4	1,1-Dichloroethene	0.5	U
156-60-5	trans-1,2-Dichloroethene	0.5	U
75-34-3	1,1-Dichloroethane	0.5	U
156-59-2	cis-1,2-Dichloroethene	0.5	U
71-55-6	1,1,1-Trichloroethane	0.5	U
79-01-6	Trichloroethene	0.5	U
127-18-4	Tetrachloroethene	8	

FORM I CLP-VOA-1

SMC 6/2000
11/26/2001

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VOLATILE ORGANICS ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.

MW-21

Lab Name: COMPUCHEM Contract: 6/2000 ASP

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: C2291

Matrix: (soil/water) WATER Lab Sample ID: C2291-8

Sample wt/vol: 25 (g/mL) ML Lab File ID: C2291-8B71

Level: (low/med) LOW Date Received: 09/28/01

% Moisture: not dec. _____ Date Analyzed: 10/04/01

GC Column: SPB-624 ID: 0.32 (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
75-01-4	Vinyl Chloride	0.5	U
75-35-4	1,1-Dichloroethene	0.5	U
156-60-5	trans-1,2-Dichloroethene	0.5	U
75-34-3	1,1-Dichloroethane	0.5	U
156-59-2	cis-1,2-Dichloroethene	0.5	U
71-55-6	1,1,1-Trichloroethane	0.5	U
79-01-6	Trichloroethene	0.5	U
127-18-4	Tetrachloroethene	0.5	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.

MW-27

Lab Name: COMPUCHEM Contract: 6/2000 ASP

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: C2291

Matrix: (soil/water) WATER Lab Sample ID: C2291-1

Sample wt/vol: 25 (g/mL) ML Lab File ID: C2291-1A71

Level: (low/med) LOW Date Received: 09/28/01

% Moisture: not dec. _____ Date Analyzed: 10/03/01

GC Column: SPB-624 ID: 0.32 (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
75-01-4	Vinyl Chloride	0.5	U
75-35-4	1,1-Dichloroethene	0.5	U
156-60-5	trans-1,2-Dichloroethene	0.5	U
75-34-3	1,1-Dichloroethane	0.5	U
156-59-2	cis-1,2-Dichloroethene	7	
71-55-6	1,1,1-Trichloroethane	0.5	U
79-01-6	Trichloroethene	6	
127-18-4	Tetrachloroethene	56	E ☆

☆ Repeat from dilution

FORM I CLP-VOA-1 6/2000

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VOLATILE ORGANICS ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.

MW-27DL

Lab Name: COMPUCHEM Contract: 6/2000 ASP

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: C2291

Matrix: (soil/water) WATER Lab Sample ID: C2291-1

Sample wt/vol: 25 (g/mL) ML Lab File ID: C2291-1DB71

Level: (low/med) LOW Date Received: 09/28/01

% Moisture: not dec. _____ Date Analyzed: 10/04/01

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 5.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-01-4	Vinyl Chloride	3	U
75-35-4	1,1-Dichloroethene	3	U
156-60-5	trans-1,2-Dichloroethene	3	U
75-34-3	1,1-Dichloroethane	3	U
156-59-2	cis-1,2-Dichloroethene	6	D
71-55-6	1,1,1-Trichloroethane	3	U
79-01-6	Trichloroethene	5	D
127-18-4	Tetrachloroethene	56	D ~~D~~

~~D~~ Repeat

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VOLATILE ORGANICS ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.

MW-30

Lab Name: COMPUCHEM Contract: 6/2000 ASP

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: C2291

Matrix: (soil/water) WATER Lab Sample ID: C2291-5

Sample wt/vol: 25 (g/mL) ML Lab File ID: C2291-5B71

Level: (low/med) LOW Date Received: 09/28/01

% Moisture: not dec. _____ Date Analyzed: 10/04/01

GC Column: SPB-624 ID: 0.32 (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
75-01-4	Vinyl Chloride	0.5	U
75-35-4	1,1-Dichloroethene	0.5	U
156-60-5	trans-1,2-Dichloroethene	0.5	U
75-34-3	1,1-Dichloroethane	0.5	U
156-59-2	cis-1,2-Dichloroethene	0.6	
71-55-6	1,1,1-Trichloroethane	0.5	U
79-01-6	Trichloroethene	1	
127-18-4	Tetrachloroethene	0.5	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.

MW-31

Lab Name: COMPUCHEM Contract: 6/2000 ASP

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: C2291

Matrix: (soil/water) WATER Lab Sample ID: C2291-2

Sample wt/vol: 25 (g/mL) ML Lab File ID: C2291-2RB71

Level: (low/med) LOW Date Received: 09/28/01

% Moisture: not dec. _____ Date Analyzed: 10/04/01

GC Column: SPB-624 ID: 0.32 (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
75-01-4	Vinyl Chloride	0.5	U
75-35-4	1,1-Dichloroethene	0.5	U
156-60-5	trans-1,2-Dichloroethene	0.5	U
75-34-3	1,1-Dichloroethane	0.5	U
156-59-2	cis-1,2-Dichloroethene	1	
71-55-6	1,1,1-Trichloroethane	0.5	U
79-01-6	Trichloroethene	3	
127-18-4	Tetrachloroethene	1	

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VOLATILE ORGANICS ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.

MW-33

Lab Name: COMPUCHEM Contract: 6/2000 ASP

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: C2291

Matrix: (soil/water) WATER Lab Sample ID: C2291-3

Sample wt/vol: 25 (g/mL) ML Lab File ID: C2291-3B71

Level: (low/med) LOW Date Received: 09/28/01

% Moisture: not dec. _____ Date Analyzed: 10/04/01

GC Column: SPB-624 ID: 0.32 (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
75-01-4	Vinyl Chloride	0.5	U
75-35-4	1,1-Dichloroethene	0.5	U
156-60-5	trans-1,2-Dichloroethene	0.5	U
75-34-3	1,1-Dichloroethane	0.5	U
156-59-2	cis-1,2-Dichloroethene	0.8	
71-55-6	1,1,1-Trichloroethane	0.5	U
79-01-6	Trichlorcethene	0.6	
127-18-4	Tetrachlcroethene	13	

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VOLATILE ORGANICS ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.

MW-36

Lab Name: COMPUCHEM Contract: 6/2000 ASP

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: C2291

Matrix: (soil/water) WATER Lab Sample ID: C2291-4

Sample wt/vol: 25 (g/mL) ML Lab File ID: C2291-4B71

Level: (low/med) LOW Date Received: 09/28/01

% Moisture: not dec. _____ Date Analyzed: 10/04/01

GC Column: SPB-624 ID: 0.32 (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
75-01-4	Vinyl Chloride	0.5	U
75-35-4	1,1-Dichloroethene	0.5	U
156-60-5	trans-1,2-Dichloroethene	0.5	U
75-34-3	1,1-Dichloroethane	0.5	U
156-59-2	cis-1,2-Dichloroethene	0.5	
71-55-6	1,1,1-Trichloroethane	0.5	U
79-01-6	Trichloroethene	0.5	U
127-18-4	Tetrachloroethene	0.5	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.

TB-2

Lab Name: COMPUCHEM Contract: 6/2000 ASP

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: C2291

Matrix: (soil/water) WATER Lab Sample ID: C2291-9

Sample wt/vol: 25 (g/mL) ML Lab File ID: C2291-9A71

Level: (low/med) LOW Date Received: 09/28/01

% Moisture: not dec. _____ Date Analyzed: 10/03/01

GC Column: SPB-624 ID: 0.32 (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
75-01-4	Vinyl Chloride	0.5	U
75-35-4	1,1-Dichloroethene	0.5	U
156-60-5	trans-1,2-Dichloroethene	0.5	U
75-34-3	1,1-Dichloroethane	0.5	U
156-59-2	cis-1,2-Dichloroethene	0.5	U
71-55-6	1,1,1-Trichloroethane	0.5	U
79-01-6	Trichloroethene	0.5	U
127-18-4	Tetrachloroethene	0.5	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.

TB-3

Lab Name: COMPUCHEM Contract: 6/2000 ASP

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: C2291

Matrix: (soil/water) WATER Lab Sample ID: C2291-15

Sample wt/vol: 25 (g/mL) ML Lab File ID: C2291-15A71

Level: (low/med) LOW Date Received: 09/28/01

% Moisture: not dec. _____ Date Analyzed: 10/03/01

GC Column: SPB-624 ID: 0.32 (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
75-01-4	Vinyl Chloride	0.5	U
75-35-4	1,1-Dichloroethene	0.5	U
156-60-5	trans-1,2-Dichloroethene	0.5	U
75-34-3	1,1-Dichloroethane	0.5	U
156-59-2	cis-1,2-Dichloroethene	0.5	U
71-55-6	1,1,1-Trichloroethane	0.5	U
79-01-6	Trichloroethene	0.5	U
127-18-4	Tetrachloroethene	0.5	U

SMK 11/26/2001

Environmental Data Quality, Inc.

BLANK ANALYSIS RESULTS FOR TARGET ORGANIC COMPOUNDS

Date / Time	Fraction V	Fraction SV	Fraction P	MATRIX Aqu.	MATRIX Solid	BLANK TYPE TB	BLANK TYPE MB	BLANK TYPE EB	BLANK TYPE FB	Sample I.D. Number	Assoc. Samples	Contaminant	Conc. µg/L	Conc. µg/Kg	Qualification Limit 5X	Qualification Limit 10X
10/3/2001	X			X			X			VBLKQX	(1)	None				
10/4/2001	X			X			X			VBLKRD	↓	None				
10/4/2001	X			X			X			VBLKRE	↓	Tetrachloroethene	0.4		2.0	—
10/6/2001	X			X			X			VBLKUG	↓	None				
10/3/2001	X			X		X				TB-2	(2)					
10/3/2001	X			X		X				TB-3	(3)					

Notes: (1) See summary
(2) Samples collected on 9/26/2001
(3) Samples collected on 9/27/2001

Shawne M. Rodgers

From: Shawne M. Rodgers [edqi@voicenet.com]
Sent: Wednesday, November 27, 2002 3:49 AM
To: csmith@compuchemlabs.com
Cc: Greg Albright
Subject: Inquiry - Dover Kirkwood Bioremediation Status Report Compuchem Sample Delivery C2291

Importance: High

Chuck,

We are currently completing a validation review of data generated for the above referenced project. The following questions have arisen as a result of this review:

- The mass spectrum for tetrachloroethene for sample MP-8D (laboratory ID C2291-13) is missing from the data package.
- A positive result of 0.2 ug/L was reported for vinyl chloride for sample MP-8S (C2291-12). The mass spectrum for this compound did not match the reference spectrum included in the data package. Additionally, the method detection limit on the summary included in the data package shows an MDL of 0.248 ug/L for this compound. It does not appear that a positive result should have been reported for vinyl chloride for this sample.

Thanks,

Shawne

Environmental Data Quality, Inc.,
967 East Swedesford Road
Suite 404
Exton, PA 19341
Phone: (610) 725-1770
Fax: (610) 725-1781
email: edqi@voicenet.com

Tracking:

Recipient	Read
csmith@compuchemlabs.com	Read: 11/27/02 8:02 AM
Greg Albright	

Project: Kirkwood Bioremediation Status Report
Laboratory: Compuchem, Cary, North Carolina
Sample Delivery Group: G2291
Fraction: Organic
Matrix: Groundwater
Report Date: 12/13/2002

This data usability summary report is based upon a review of analytical data generated for groundwater samples. The sample locations, laboratory identification numbers, sample collection dates, sample matrix, and analyses performed are presented in Table 1.

The sample analyses were performed in accordance with the procedures outlined in method 8260B, "Test Methods for Evaluating Solid Waste", Physical/Chemical Methods (SW-846), Third Edition, Final (Promulgated) Updates II, IIA, and III June 1997. The data deliverables provided by the laboratory were New York State Department of Environmental Conservation Analytical Services Protocol (NYSDEC ASP) Category B format.

All sample analyses have undergone an analytical quality assurance review to ensure adherence to the required protocols. Results have been validated or qualified according to general guidance provided in the Region II modifications to "Laboratory Data Validation Functional Guidelines for Validating Organic Analyses", USEPA 9/94. This document specifies procedures for validating data generated for CLP analyses. Therefore, the quality control requirements specified in the methods and associated acceptance criteria were also used to evaluate the non-CLP data. The parameters presented on the following page were evaluated.

X	•	Data Completeness
X	•	Chain of Custody Documentation
X	•	Holding Times
X	•	Instrument Performance
X	•	Initial and Continuing Calibrations
X	•	Laboratory and Field Blank Analysis Results
X	•	Surrogate Compound Recoveries
X	•	Matrix Spike/Matrix Spike Duplicate Recoveries and Reproducibility
	•	Field Duplicate Analysis Results
X	•	Laboratory Control Sample/Blank Spike Results
X	•	Internal Standard Performance
X	•	Qualitative Identification
X	•	Quantitation Limits

X - Denotes parameter evaluated.

It is recommended that the data only be used according to the qualifiers presented, and discussed in this report. All other data should be considered qualitatively and quantitatively valid as reported by the laboratory, based on the items evaluated. Analysis result forms presenting the validated and qualified results for the samples receiving the data validation are attached. Documentation of the reasons for data qualification is also attached.

Report Approved By:

Shawnie M. Rodgers

Shawnie M. Rodgers
President

12/13/2002

Date

1.0 *DATA COMPLETENESS*

The chain of custody records were missing from the data package. The laboratory was contacted and provided the missing information.

2.0 *CHAIN OF CUSTODY DOCUMENTATION*

The chain of custody records were complete.

3.0 *HOLDING TIMES*

Holding times were met for all analyses.

4.0 *INSTRUMENT PERFORMANCE*

All criteria were met. No qualifiers were applied.

5.0 *INITIAL AND CONTINUING CALIBRATIONS*

All criteria were met. No qualifiers were applied.

6.0 *LABORATORY AND FIELD BLANK ANALYSIS RESULTS*

All criteria were met. No qualifiers were applied.

7.0 *SURROGATE COMPOUNDS*

All criteria were met. No qualifiers were applied.

8.0 *MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERIES AND REPRODUCIBILITY*

The matrix spike/matrix spike duplicate analyses were performed for sample MW-38DL. The MS/MSD recoveries for tetrachloroethene were above the acceptance limits (429% and 400%, respectively). The positive result for this compound for the original sample should be considered a biased high quantitative estimate. The result has been marked with a "J" qualifier to indicate that it is a biased high quantitative estimate.

9.0 FIELD DUPLICATE RESULTS

There were no field duplicate samples submitted with this SDG.

10.0 LABORATORY CONTROL SAMPLE/ BLANK SPIKE RESULTS

All criteria were met. No qualifiers were applied.

11.0 INTERNAL STANDARD PERFORMANCE

All criteria were met. No qualifiers were applied.

12.0 QUALITATIVE IDENTIFICATION

Requirements for qualitative identification were met for all samples.

13.0 QUANTITATION LIMITS

The following samples below were re-analyzed at dilutions for volatile organic compounds. The reanalyses were performed because the responses for volatile compounds exceeded the linear range of the GC/MS instrument for the initial undiluted analyses. The affected results were reported from the dilution analyses. All other results have been reported from the initial analyses.

Sample	Dilution Factor	Result Reported From a Dilution
FD092801	12.5	Tetrachloroethene
MW-38	12.5	Tetrachloroethene

As required by USEPA protocol, all compounds, which were qualitatively identified at concentrations below their respective Quantitation Limits (QLs), have been marked with "J" qualifiers to indicate that they are quantitative estimates.

Table 1 Samples For Data Validation Review
Kirkwood Bioremediation Status Report
Compuchem Sample Delivery Group G2291

Sample ID	LAB ID		DATE	MATRIX
MW-38	G2291	1	9/28/01	Groundwater
MW-37	G2291	2	9/28/01	Groundwater
MW-3D	G2291	3	9/28/01	Groundwater
FD092801	G2291	4	9/28/01	Groundwater
EB092801	G2291	5	9/28/01	Groundwater
TB-4	G2291	6	9/28/01	Trip Blank

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VOLATILE ORGANICS ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.

EB092801

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: G2291

Matrix: (soil/water) WATER Lab Sample ID: G2291-5

Sample wt/vol: 25 (g/mL) ML Lab File ID: G2291-5A71

Level: (low/med) LOW Date Received: 09/29/01

% Moisture: not dec. _____ Date Analyzed: 10/08/01

GC Column: SPB-624 ID: 0.32 (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
75-01-4	Vinyl Chloride	0.5	U
75-35-4	1,1-Dichloroethene	0.5	U
156-60-5	trans-1,2-Dichloroethene	0.5	U
75-34-3	1,1-Dichloroethane	0.5	U
156-59-2	cis-1,2-Dichloroethene	0.5	U
71-55-6	1,1,1-Trichloroethane	0.5	U
79-01-6	Trichloroethene	0.5	U
127-18-4	Tetrachloroethene	0.5	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.

FD092801

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: G2291

Matrix: (soil/water) WATER Lab Sample ID: G2291-4

Sample wt/vol: 25 (g/mL) ML Lab File ID: G2291-4A71

Level: (low/med) LOW Date Received: 09/29/01

% Moisture: not dec. _____ Date Analyzed: 10/08/01

GC Column: SPB-624 ID: 0.32 (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
75-01-4	Vinyl Chloride	0.5	U
75-35-4	1,1-Dichloroethene	0.5	U
156-60-5	trans-1,2-Dichloroethene	0.3	J
75-34-3	1,1-Dichloroethane	0.5	U
156-59-2	cis-1,2-Dichloroethene	17	
71-55-6	1,1,1-Trichloroethane	0.5	U
79-01-6	Trichloroethene	20	
127-18-4	Tetrachloroethene	~~210~~	~~E~~ ✗

✗ Report from dilution

SMK 11/26/2001

FORM I CLP-VOA-1 6/2000

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.

FD092801DL

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: G2291

Matrix: (soil/water) WATER Lab Sample ID: G2291-4

Sample wt/vol: 25 (g/mL) ML Lab File ID: G2291-4DB71

Level: (low/med) LOW Date Received: 09/29/01

% Moisture: not dec. _____ Date Analyzed: 10/08/01

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 12.5

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-01-4	Vinyl Chloride	6	U
75-35-4	1,1-Dichloroethene	6	U
156-60-5	trans-1,2-Dichloroethene	6	U
75-34-3	1,1-Dichloroethane	6	U
156-59-2	cis-1,2-Dichloroethene	9	D
71-55-6	1,1,1-Trichloroethane	6	U
79-01-6	Trichloroethene	9	D
127-18-4	Tetrachloroethene	140	~~D~~ A

* Report

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.

MW-37

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: G2291

Matrix: (soil/water) WATER Lab Sample ID: G2291-2

Sample wt/vol: 25 (g/mL) ML Lab File ID: G2291-2A71

Level: (low/med) LOW Date Received: 09/29/01

% Moisture: not dec. _____ Date Analyzed: 10/08/01

GC Column: SPB-624 ID: 0.32 (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
75-01-4	Vinyl Chloride	0.5	U
75-35-4	1,1-Dichloroethene	0.5	U
156-60-5	trans-1,2-Dichloroethene	0.5	U
75-34-3	1,1-Dichloroethane	0.5	U
156-59-2	cis-1,2-Dichloroethene	0.5	U
71-55-6	1,1,1-Trichloroethane	0.5	U
79-01-6	Trichloroethene	0.7	
127-18-4	Tetrachloroethene	24	

1 Report

FORM I CLP-VOA-1

SMM 11/26/2001

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.

MW-37RE

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: G2291

Matrix: (soil/water) WATER Lab Sample ID: G2291-2

Sample wt/vol: 25 (g/mL) ML Lab File ID: G2291-2R3A71

Level: (low/med) LOW Date Received: 09/29/01

% Moisture: not dec. _____ Date Analyzed: 10/09/01

GC Column: SPB-624 ID: 0.32 (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
75-01-4	Vinyl Chloride	0.5	U
75-35-4	1,1-Dichloroethene	0.5	U
156-60-5	trans-1,2-Dichloroethene	0.5	U
75-34-3	1,1-Dichloroethane	0.5	U
156-59-2	cis-1,2-Dichloroethene	0.5	U
71-55-6	1,1,1-Trichloroethane	0.5	U
79-01-6	Trichloroethene	0.8	
127-18-4	Tetrachloroethene	31	E

Report from initial analysis

SMK. 01

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VOLATILE ORGANICS ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.

MW-38

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: G2291

Matrix: (soil/water) WATER Lab Sample ID: G2291-1

Sample wt/vol: 25 (g/mL) ML Lab File ID: G2291-1A71

Level: (low/med) LOW Date Received: 09/29/01

% Moisture: not dec. _____ Date Analyzed: 10/08/01

GC Column: SPB-624 ID: 0.32 (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
75-01-4	Vinyl Chloride	0.5	U
75-35-4	1,1-Dichloroethene	0.5	U
156-60-5	trans-1,2-Dichloroethene	0.3	J
75-34-3	1,1-Dichloroethane	0.5	U
156-59-2	cis-1,2-Dichloroethene	18	
71-55-6	1,1,1-Trichloroethane	0.5	U
79-01-6	Trichloroethene	20	
127-18-4	Tetrachloroethene	~~210~~	~~E~~

* Report from dilution

FORM I CLP-VOA-1 6/2000

SMK 11/26/2002

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.

MW-38DL

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: G2291

Matrix: (soil/water) WATER Lab Sample ID: G2291-1

Sample wt/vol: 25 (g/mL) ML Lab File ID: G2291-1DB71

Level: (low/med) LOW Date Received: 09/29/01

% Moisture: not dec. _____ Date Analyzed: 10/08/01

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 12.5

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-01-4	Vinyl Chloride	6	U
75-35-4	1,1-Dichloroethene	6	U
156-60-5	trans-1,2-Dichloroethene	6	U
75-34-3	1,1-Dichloroethane	6	U
156-59-2	cis-1,2-Dichloroethene	10	D
71-55-6	1,1,1-Trichloroethane	6	U
79-01-6	Trichloroethene	10	D
127-18-4	Tetrachloroethene	140	~~D~~ J *

* Report

FORM I CLP-VOA-1 6/2000

SMM 11/26/01

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.

MW-3D

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: G2291

Matrix: (soil/water) WATER Lab Sample ID: G2291-3

Sample wt/vol: 25 (g/mL) ML Lab File ID: G2291-3R2B71

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 10/09/01

GC Column: SPB-624 ID: 0.32 (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
75-01-4	Vinyl Chloride	0.5	U
75-35-4	1,1-Dichloroethene	0.5	U
156-60-5	trans-1,2-Dichloroethene	0.5	U
75-34-3	1,1-Dichloroethane	0.5	U
156-59-2	cis-1,2-Dichloroethene	0.5	U
71-55-6	1,1,1-Trichloroethane	0.5	U
79-01-6	Trichloroethene	0.5	U
127-18-4	Tetrachloroethene	1	

SMK 11/26/01

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.

TB-4

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: G2291

Matrix: (soil/water) WATER Lab Sample ID: G2291-6

Sample wt/vol: 25 (g/mL) ML Lab File ID: G2291-6A71

Level: (low/med) LOW Date Received: 09/29/01

% Moisture: not dec. _____ Date Analyzed: 10/08/01

GC Column: SPB-624 ID: 0.32 (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
75-01-4	Vinyl Chloride	0.5	U
75-35-4	1,1-Dichloroethene	0.5	U
156-60-5	trans-1,2-Dichloroethene	0.5	U
75-34-3	1,1-Dichloroethane	0.5	U
156-59-2	cis-1,2-Dichloroethene	0.5	U
71-55-6	1,1,1-Trichloroethane	0.5	U
79-01-6	Trichloroethene	0.5	U
127-18-4	Tetrachloroethene	0.5	U

3A

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: G2291

Matrix Spike - NYSDEC Sample No.: MW-38DL

COMPCUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
Vinyl Chloride	62.50	0.00	53.55	86	50-150
1,1-Dichloroethene	62.50	0.00	57.60	92	61-145
trans-1,2-Dichloroethen	62.50	0.00	60.01	96	50-150
1,1-Dichloroethane	62.50	0.00	62.54	100	50-150
cis-1,2-Dichloroethene	62.50	9.77	76.24	106	50-150
1,1,1-Trichloroethane	62.50	0.00	60.96	98	50-150
Trichloroethene	62.50	9.63	80.85	114	71-120
Tetrachloroethene	62.50	144.2	412.3	429*	50-150

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Vinyl Chloride	62.50	55.57	89	3	40	50-150
1,1-Dichloroethene	62.50	57.43	92	0	14	61-145
trans-1,2-Dichloroethen	62.50	60.28	96	0	40	50-150
1,1-Dichloroethane	62.50	61.60	99	1	40	50-150
cis-1,2-Dichloroethene	62.50	77.27	108	2	40	50-150
1,1,1-Trichloroethane	62.50	62.40	100	2	40	50-150
Trichloroethene	62.50	80.64	114	0	40	71-120
Tetrachloroethene	62.50	394.4	400*	7	40	50-150

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

* Values outside of QC limits

RPD: 0 out of 8 outside limits
Spike Recovery: 2 out of 16 outside limits

COMMENTS: _____

FORM III CLP VOA-1

COMPUCHEM
a division of Liberty Analytical Corp.
501 Madison Avenue
Cary, NC 27513
1-800-833-5097

CHAIN-OF-CUSTODY RECORD

No. 058091

Project Name: DOVER / UNIVERSAL	Client Address: BURLAND, BOWER & LEE INC	Point-of-Contact: GREG ALBRIGHT (BBL)
Carrier: FED-EX	8 SOUTH RIVER ROAD	Telephone No.: (609) 860-0590
Airbill No.: 829336539379	CRANBURY, NEW JERSEY 08512	Sampling complete? Y or (N) (see Note 1)
Sampler Name: MICHAEL R ALBRIGHT	Sampler Signature: Michael R Albright	Project-specific (PS) or Batch (B) QC? ____

BOX #1
1. Surface Water
2. Ground Water
3. Leachate
4. Rinsate
5. Soil / Sediment / Sludge
6. Trip Blank
7. Oil
8. Waste
9. Other____

BOX #2
A. HCl + Ice
B. HNO3 + Ice
C. NaOH + Ice
D. H2SO4 + Ice
E. Unpreserved
F. Ice Only
G. Other____
H. NaHSO4 + Ice
I. ZnAc+NaOH + Ice

BOX #3
F. Filtered
U. Unfiltered

Box #4
H. High
M. Medium
L. Low

Box #5
C. CLP 3/90
S. SW-846
W. CWA 600-series
O. Other____
T. TCLP

Sample ID (9 characters maximum)	Date: Year: 2001	Time	Box #1 Matrix	Box #2 Preservative	Box #3 Filtered / Unfiltered	Box #4 Expected Conc.	Box #5 Method	No. of Bottles	Use for Lab QC (MS or DUP)	VOA 624/8260	SVOC	Pesticide	PCB	Herbicide	Metals / Mercury	Cyanide	TOC / TOX	O&G / TPH					Remarks / Comments (see Notes 2 & 3)
MW-36	9/28	09:45	2	A	U			3		X													* SITE SPECIFIC
MW-37	9/28	10:00	2	A	U			3		X													PARAMETERS LIST
MP-3D	9/28	11:25	2	A	U			3		X													(SSPL) - VOCs
FD092801	9/28	:	2	A	U			3		X													BY EPA METHOD
EB092801	9/28	08:30	2	A	U			3		X													8260B
TB-4	9/28	:	2	A	U			3		X													
	/	:																					
	/	:																					
	/	:																					
	/	:																					

Clients Special Instructions:

Temperature ____ °C

Lab: Received in Good Condition? Y or N **Describe Problems, if any:**

#1 Relinquished By: (Sig) Michael R Albright Date: 9/28/01	#2 Relinquished By: (Sig) Date:	#3 Relinquished By: (Sig) Date:
Company Name: BURLAND, BOWER & LEE INC Time: 1200	Company Name: Time:	Company Name: Time:
#1 Received By: (Sig) Date: 9-29-01	#2 Received By: (Sig) Date:	#3 Received By: (Sig) Date:
Company Name: CompuChem Time: 1030	Company Name: Time:	Company Name: Time:

Note (1): If "N" lab will hold samples to await remainder of project-maximizing batch size and minimizing QC ratio; if "Y" lab will begin processing batches now.
Note (2): Samples stored 60 days after date report mailed at no extra charge. Note (3): All lab copies of data destroyed after three years.

COMPUCHEM

Login Chain of Custody Report (ln01)

Oct. 02, 2001 *05:27 PM*

Login Number: G2291

Account: BB&L Blasland, Bouck & Lee, Inc.

Project: DOVER/UNIVERSAL

Case: Q2291

Laboratory Sample Number	Client Sample Number	Collect Date	Receive Date	PR	Due Date	Comments
G2291-1	MW-38	28-SEP-01	29-SEP-01	9	12-OCT-01	PPS1016/8260B VOAs-25ML/PPS1016.sub/NYSDEC ASP CAT. B DELIVERABLES
Water	S VOA-8260B-25ML	Hold: 12-OCT-01	40ml vial	3	Bottles	
G2291-2	MW-37	28-SEP-01	29-SEP-01	9	12-OCT-01	PPS1016/8260B VOAs-25ML/PPS1016.sub/NYSDEC ASP CAT. B DELIVERABLES
Water	S VOA-8260B-25ML	Hold: 12-OCT-01	40ml vial	3	Bottles	
G2291-3	MW-3D	28-SEP-01	29-SEP-01	9	12-OCT-01	PPS1016/8260B VOAs-25ML/PPS1016.sub/NYSDEC ASP CAT. B DELIVERABLES
Water	S VOA-8260B-25ML	Hold: 12-OCT-01	40ml vial	3	Bottles	
G2291-4	FD092801	28-SEP-01	29-SEP-01	9	12-OCT-01	PPS1016/8260B VOAs-25ML/PPS1016.sub/NYSDEC ASP CAT. B DELIVERABLES
Water	S VOA-8260B-25ML	Hold: 12-OCT-01	40ml vial	3	Bottles	
G2291-5	EB092801	28-SEP-01	29-SEP-01	9	12-OCT-01	PPS1016/8260B VOAs-25ML/PPS1016.sub/NYSDEC ASP CAT. B DELIVERABLES
Water	S VOA-8260B-25ML	Hold: 12-OCT-01	40ml vial	3	Bottles	
G2291-6	TB-4	28-SEP-01	29-SEP-01	9	12-OCT-01	PPS1016/8260B VOAs-25ML/PPS1016.sub/NYSDEC ASP CAT. B DELIVERABLES
Water	S VOA-8260B-25ML	Hold: 12-OCT-01	40ml vial	3	Bottles	

Signature : _____

Date : 10/2/1

COMPUCHEM a Divison of Liberty Analytical
COMMERCIAL RECEIVING LOG

Client:	B, B, & L, Inc.	Rec'd Date:	9-29-01
Project:	Dover	Courier:	Fed Ex
Quote:	Q2291	Airbill No.	8193365394379
Login No.	G2291		
Subcontract?	Y / (N)		
TAT Verbal	Report 13		

PPS/RFA 1016

Lab Instructions
8260B VOAs/Report PPS1016.sub/25 ml purge
NJDEP Cat B deliverables

Cooler Rec'd By:	
Sample Login By:	
Temperature:	1.0 °C
Cyanide Samples checked for sulfide & chlorine?	Y / (NA)
Phenol Samples checked for chlorine?	Y / (NA)
Received in Good Condition?	(Y) / N
If no, explain:	

CompuChem ID	Client ID	QC	Matrix	Date 2001	Military Time	Parameters: 8260B VOA No. & Type	pH	No. & Type	pH	No. & Type	pH	No. & Type	pH	No. & Type	pH	No. & Type	pH	No. & Type	pH	No. & Type	pH
G2291-1	MW-38		WA	09/28	09:45	3-40ml															
-2	MW-37				10:00																
-3	MP-3D				11:25																
-4	FD092801				—																
-5	EB092801				08:30																
-6	TB-4				—																
				/	:																
				/	:																
				/	:																
				/	:			10/1/1													
				/	:	QS															
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				/	:																

Container Type Abbreviations: 40mL(40mL vial) AL(Amber Liter) PL(Plastic Liter) 500P(500mL Plastic) 250P(250mL Plastic) OTHER_____

Roy Sutton
Case Reviewer
October 05, 2001

csmith

From: Shawne M. Rodgers [edqi@voicenet.com]
Sent: Wednesday, November 27, 2002 3:49 AM
To: csmith@compuchemlabs.com
Cc: Greg Albright
Subject: Inquiry - Dover Kirkwood Bioremediation Status Report Compuchem Sample Delivery G2291

Importance: High

Chuck,

We are currently completing a validation review of data generated for the above referenced project. The following questions have arisen as a result of this review:

- The chain of custody record pertaining to the samples is missing from the data package.

Thanks,

Shawne

Environmental Data Quality, Inc.,
967 East Swedesford Road
Suite 4C4
Exton, PA 19341
Phone: (610) 725-1770
Fax: (610) 725-1781
email: edqi@voicenet.com

Project: Kirkwood Bioremediation Status Report
Laboratory: Compuchem, Cary, North Carolina
Sample Delivery Group: T2291
Fraction: Organic
Matrix: Groundwater
Report Date: 12/13/2002

This data usability summary report is based upon a review of analytical data generated for groundwater samples. The sample locations, laboratory identification numbers, sample collection dates, sample matrix, and analyses performed are presented in Table 1.

The sample analyses were performed in accordance with the procedures outlined in method 8260B, "Test Methods for Evaluating Solid Waste", Physical/Chemical Methods (SW-846), Third Edition, Final (Promulgated) Updates II, IIA, and III June 1997. The data deliverables provided by the laboratory were New York State Department of Environmental Conservation Analytical Services Protocol (NYSDEC ASP) Category B format.

All sample analyses have undergone an analytical quality assurance review to ensure adherence to the required protocols. Results have been validated or qualified according to general guidance provided in the Region II modifications to "Laboratory Data Validation Functional Guidelines for Validating Organic Analyses", USEPA 9/94. This document specifies procedures for validating data generated for CLP analyses. Therefore, the quality control requirements specified in the methods and associated acceptance criteria were also used to evaluate the non-CLP data. The parameters presented on the following page were evaluated.

X	•	Data Completeness
X	•	Chain of Custody Documentation
X	•	Holding Times
X	•	Instrument Performance
X	•	Initial and Continuing Calibrations
X	•	Laboratory and Field Blank Analysis Results
X	•	Surrogate Compound Recoveries
X	•	Matrix Spike/Matrix Spike Duplicate Recoveries and Reproducibility
	•	Field Duplicate Analysis Results
X	•	Laboratory Control Sample/Blank Spike Results
X	•	Internal Standard Performance
X	•	Qualitative Identification
X	•	Quantitation Limits

X - Denotes parameter evaluated.

It is recommended that the data only be used according to the qualifiers presented, and discussed in this report. All other data should be considered qualitatively and quantitatively valid as reported by the laboratory, based on the items evaluated. Analysis result forms presenting the validated and qualified results for the samples receiving the data validation are attached. Documentation of the reasons for data qualification is also attached.

Report Approved By:

Shawne M. Rodgers
President

12/13/00
Date

1.0 *DATA COMPLETENESS*

The data deliverables were complete.

2.0 *CHAIN OF CUSTODY DOCUMENTATION*

The chain of custody records were complete.

3.0 *HOLDING TIMES*

Holding times were met for all analyses.

4.0 *INSTRUMENT PERFORMANCE*

All criteria were met. No qualifiers were applied.

5.0 *INITIAL AND CONTINUING CALIBRATIONS*

The continuing calibration precision criterion was exceeded for trichlorcethene for both of the standards analyzed on 9/27/2001 (the percent difference for this compound for the standards was -28.81 and -21.3, respectively). The results for trichloroethene for all samples should be considered quantitative estimates (J, UJ). Positive results for this compound have been marked with "J" qualifiers to indicate that they are quantitative estimates. Nondetected results have been marked "UJ".

6.0 *LABORATORY AND FIELD BLANK ANALYSIS RESULTS*

All criteria were met. No qualifiers were applied.

7.0 *SURROGATE COMPOUNDS*

All criteria were met. No qualifiers were applied.

8.0 *MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERIES AND REPRODUCIBILITY*

All criteria were met. No qualifiers were applied.

9.0 *FIELD DUPLICATE RESULTS*

There were no field duplicate samples submitted with this SDG.

10.0 *LABORATORY CONTROL SAMPLE/ BLANK SPIKE RESULTS*

All criteria were met. No qualifiers were applied.

11.0 *INTERNAL STANDARD PERFORMANCE*

All criteria were met. No qualifiers were applied.

12.0 *QUALITATIVE IDENTIFICATION*

Requirements for qualitative identification were met for all samples.

13.0 *QUANTITATION LIMITS*

Sample MW-24 was analyzed at a 100-fold dilution. The dilution analysis was performed because of the suspected presence of high levels of target compounds and/or interferences. Quantitation limits are elevated by the dilution factor for this sample for target compounds that were not detected. The elevated quantitation limits should be noted when assessing the data for this sample.

Sample MW-24 was re-analyzed at a 167-fold dilution. The dilution reanalysis was performed the tetrachloroethene response exceeded the linear range of the GC/MS instrument. Results for this compound have been reported from the dilution analysis. All other results are reported from the initial analysis.

As required by USEPA protocol, all compounds, which were qualitatively identified at concentrations below their respective Quantitation Limits (QLs), have been marked with "J" qualifiers to indicate that they are quantitative estimates.

Table 1 Samples For Data Validation Review
Kirkwood Bioremediation Status Report
Compuchem Sample Delivery Group T2291

Sample ID	LAB ID		DATE	MATRIX
MW-9	T2291	1	9/19/2001	Groundwater
MW-14	T2291	2	9/19/2001	Groundwater
MW-23	T2291	3	9/19/2001	Groundwater
MW-11	T2291	4	9/19/2001	Groundwater
MW-29	T2291	5	9/19/2001	Groundwater
MW-12	T2291	6	9/19/2001	Groundwater
MW-16	T2291	7	9/20/2001	Groundwater
MW-24	T2291	8	9/20/2001	Groundwater
MW-13	T2291	9	9/20/2001	Groundwater
MW-3	T2291	10	9/20/2001	Groundwater
MW-22	T2291	11	9/20/2001	Groundwater
MW-7A	T2291	12	9/20/2001	Groundwater

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.

MW-11

Lab Name: COMPUCHEM Contract: 6/2000 ASP

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: T2291

Matrix: (soil/water) WATER Lab Sample ID: T2291-4

Sample wt/vol: 25 (g/mL) ML Lab File ID: T2291-4A71

Level: (low/med) LOW Date Received: 09/21/01

% Moisture: not dec. _____ Date Analyzed: 09/27/01

GC Column: SPB-624 ID: 0.32 (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
75-01-4	Vinyl Chloride	0.5	U
75-35-4	1,1-Dichloroethene	0.5	U
156-60-5	trans-1,2-Dichloroethene	0.5	U
75-34-3	1,1-Dichloroethane	0.5	U
156-59-2	cis-1,2-Dichloroethene	0.5	U
71-55-6	1,1,1-Trichloroethane	0.2	J
79-01-6	Trichloroethene	0.5	UJ
127-18-4	Tetrachloroethene	0.5	U

SML 11/26/2001

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VOLATILE ORGANICS ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.

MW-12

Lab Name: COMPUCHEM Contract: 6/2000 ASP

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: T2291

Matrix: (soil/water) WATER Lab Sample ID: T2291-6

Sample wt/vol: 25 (g/mL) ML Lab File ID: T2291-6A71

Level: (low/med) LOW Date Received: 09/21/01

% Moisture: not dec. _____ Date Analyzed: 09/27/01

GC Column: SPB-624 ID: 0.32 (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
75-01-4	Vinyl Chloride	0.5	U
75-35-4	1,1-Dichloroethene	0.5	U
156-60-5	trans-1,2-Dichloroethene	0.5	U
75-34-3	1,1-Dichloroethane	0.5	U
156-59-2	cis-1,2-Dichloroethene	0.5	U
71-55-6	1,1,1-Trichloroethane	0.5	U
79-01-6	Trichloroethene	0.5	UJ
127-18-4	Tetrachloroethene	0.5	U

SMK 11/26/2001

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VOLATILE ORGANICS ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.

MW-13

Lab Name: COMPUCHEM Contract: 6/2000 ASP

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: T2291

Matrix: (soil/water) WATER Lab Sample ID: T2291-9

Sample wt/vol: 25 (g/mL) ML Lab File ID: T2291-9A71

Level: (low/med) LOW Date Received: 09/21/01

% Moisture: not dec. _____ Date Analyzed: 09/27/01

GC Column: SPB-624 ID: 0.32 (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
75-01-4	Vinyl Chloride	0.5	U
75-35-4	1,1-Dichloroethene	0.5	U
156-60-5	trans-1,2-Dichloroethene	0.5	U
75-34-3	1,1-Dichloroethane	0.5	U
156-59-2	cis-1,2-Dichloroethene	0.5	U
71-55-6	1,1,1-Trichloroethane	0.5	U
79-01-6	Trichloroethene	0.3	J
127-18-4	Tetrachloroethene	13	

SMM 11/26/2001

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VOLATILE ORGANICS ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.

MW-14

Lab Name: COMPUCHEM Contract: 6/2000 ASP

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: T2291

Matrix: (soil/water) WATER Lab Sample ID: T2291-2

Sample wt/vol: 25 (g/mL) ML Lab File ID: T2291-2RB71

Level: (low/med) LOW Date Received: 09/21/01

% Moisture: not dec. _____ Date Analyzed: 09/27/01

GC Column: SPB-624 ID: 0.32 (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
75-01-4	Vinyl Chloride	0.5	U
75-35-4	1,1-Dichloroethene	0.5	U
156-60-5	trans-1,2-Dichloroethene	0.5	U
75-34-3	1,1-Dichloroethane	0.5	U
156-59-2	cis-1,2-Dichloroethene	0.5	U
71-55-6	1,1,1-Trichloroethane	0.5	U
79-01-6	Trichloroethene	0.5	UJ
127-18-4	Tetrachloroethene	0.3	J

SMH 11/26/2001

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.

MW-16

Lab Name: COMPUCHEM Contract: 6/2000 ASP

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: T2291

Matrix: (soil/water) WATER Lab Sample ID: T2291-7

Sample wt/vol: 25 (g/mL) ML Lab File ID: T2291-7A71

Level: (low/med) LOW Date Received: 09/21/01

% Moisture: not dec. _____ Date Analyzed: 09/27/01

GC Column: SPB-624 ID: 0.32 (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
75-01-4	Vinyl Chloride	0.5	U
75-35-4	1,1-Dichloroethene	0.5	U
156-60-5	trans-1,2-Dichloroethene	0.5	U
75-34-3	1,1-Dichloroethane	0.5	U
156-59-2	cis-1,2-Dichloroethene	0.5	U
71-55-6	1,1,1-Trichloroethane	0.5	U
79-01-6	Trichloroethene	0.5	UJ
127-18-4	Tetrachloroethene	2	

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VOLATILE ORGANICS ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.

MW-22

Lab Name: COMPUCHEM Contract: 6/2000 ASP

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: T2291

Matrix: (soil/water) WATER Lab Sample ID: T2291-11

Sample wt/vol: 25 (g/mL) ML Lab File ID: T2291-11A71

Level: (low/med) LOW Date Received: 09/21/01

% Moisture: not dec. _____ Date Analyzed: 09/27/01

GC Column: SPB-624 ID: 0.32 (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
75-01-4	Vinyl Chloride	0.5	U
75-35-4	1,1-Dichloroethene	0.5	U
156-60-5	trans-1,2-Dichloroethene	0.5	U
75-34-3	1,1-Dichloroethane	0.5	U
156-59-2	cis-1,2-Dichloroethene	0.5	U
71-55-6	1,1,1-Trichloroethane	0.5	U
79-01-6	Trichloroethene	0.5	UJ
127-18-4	Tetrachloroethene	0.5	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.

MW-23

Lab Name: COMPUCHEM Contract: 6/2000 ASP

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: T2291

Matrix: (soil/water) WATER Lab Sample ID: T2291-3

Sample wt/vol: 25 (g/mL) ML Lab File ID: T2291-3A71

Level: (low/med) LOW Date Received: 09/21/01

% Moisture: not dec. _____ Date Analyzed: 09/27/01

GC Column: SPB-624 ID: 0.32 (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
75-01-4	Vinyl Chloride	0.5	U
75-35-4	1,1-Dichloroethene	0.5	U
156-60-5	trans-1,2-Dichloroethene	0.5	U
75-34-3	1,1-Dichloroethane	0.5	U
156-59-2	cis-1,2-Dichloroethene	5	
71-55-6	1,1,1-Trichloroethane	0.5	U
79-01-6	Trichloroethene	2	J
127-18-4	Tetrachloroethene	0.3	J

SMH 11/26/01

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VOLATILE ORGANICS ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.

MW-24

Lab Name: COMPUCHEM Contract: 6/2000 ASP

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: T2291

Matrix: (soil/water) WATER Lab Sample ID: T2291-8

Sample wt/vol: 25 (g/mL) ML Lab File ID: T2291-8DA71

Level: (low/med) LOW Date Received: 09/21/01

% Moisture: not dec. _____ Date Analyzed: 09/27/01

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 100.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-01-4	Vinyl Chloride	50	U
75-35-4	1,1-Dichloroethene	50	U
156-60-5	trans-1,2-Dichloroethene	50	U
75-34-3	1,1-Dichloroethane	50	U
156-59-2	cis-1,2-Dichloroethene	46	J
71-55-6	1,1,1-Trichloroethane	50	U
79-01-6	Trichloroethene	26	J
127-18-4	Tetrachloroethene	~~2500~~	~~E~~ ✱

✱ Report from dilution.

SMH 11/26/2001

FORM I CLP-VOA-1 6/2000

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VOLATILE ORGANICS ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.

MW-24DL

Lab Name: COMPUCHEM Contract: 6/2000 ASP

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: T2291

Matrix: (soil/water) WATER Lab Sample ID: T2291-8

Sample wt/vol: 25 (g/mL) ML Lab File ID: T2291-8D2B71

Level: (low/med) LOW Date Received: 09/21/01

% Moisture: not dec. _____ Date Analyzed: 09/27/01

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 167.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-01-4	Vinyl Chloride	84	U
75-35-4	1,1-Dichloroethene	84	U
156-60-5	trans-1,2-Dichloroethene	84	U
75-34-3	1,1-Dichloroethane	84	U
156-59-2	cis-1,2-Dichloroethene	46	DJ
71-55-6	1,1,1-Trichloroethane	84	U
79-01-6	Trichloroethene	84	U
127-18-4	Tetrachloroethene	2500	D ✡

✡ Report

FORM I CLP-VOA-1 6/2000

SMC 11/26/2001

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VOLATILE ORGANICS ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.

MW-29

Lab Name: COMPUCHEM Contract: 6/2000 ASP

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: T2291

Matrix: (soil/water) WATER Lab Sample ID: T2291-5

Sample wt/vol: 25 (g/mL) ML Lab File ID: T2291-5A71

Level: (low/med) LOW Date Received: 09/21/01

% Moisture: not dec. _____ Date Analyzed: 09/27/01

GC Column: SPB-624 ID: 0.32 (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
75-01-4	Vinyl Chloride	0.5	U
75-35-4	1,1-Dichloroethene	0.5	U
156-60-5	trans-1,2-Dichloroethene	0.5	U
75-34-3	1,1-Dichloroethane	0.5	U
156-59-2	cis-1,2-Dichloroethene	0.5	U
71-55-6	1,1,1-Trichloroethane	0.5	U
79-01-6	Trichloroethene	0.5	UJ
127-18-4	Tetrachloroethene	0.5	U

SML 11/26/2001

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VOLATILE ORGANICS ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.

MW-3

Lab Name: COMPUCHEM Contract: 6/2000 ASP

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: T2291

Matrix: (soil/water) WATER Lab Sample ID: T2291-10

Sample wt/vol: 25 (g/mL) ML Lab File ID: T2291-10R2B71

Level: (low/med) LOW Date Received: 09/21/01

% Moisture: not dec. _____ Date Analyzed: 09/27/01

GC Column: SPB-624 ID: 0.32 (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
75-01-4	Vinyl Chloride	0.5	U
75-35-4	1,1-Dichloroethene	0.5	U
156-60-5	trans-1,2-Dichloroethene	0.5	U
75-34-3	1,1-Dichloroethane	0.5	U
156-59-2	cis-1,2-Dichloroethene	0.5	U
71-55-6	1,1,1-Trichloroethane	0.5	U
79-01-6	Trichloroethene	0.5	UJ
127-18-4	Tetrachloroethene	11	

SMT 11/26/2001

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VOLATILE ORGANICS ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.

MW-7A

Lab Name: COMPUCHEM Contract: 6/2000 ASP

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: T2291

Matrix: (soil/water) WATER Lab Sample ID: T2291-12

Sample wt/vol: 25 (g/mL) ML Lab File ID: T2291-12D2B71

Level: (low/med) LOW Date Received: 09/21/01

% Moisture: not dec. _____ Date Analyzed: 09/27/01

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 250.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-01-4	Vinyl Chloride	130	U
75-35-4	1,1-Dichloroethene	130	U
156-60-5	trans-1,2-Dichloroethene	130	U
75-34-3	1,1-Dichloroethane	130	U
156-59-2	cis-1,2-Dichloroethene	130	U
71-55-6	1,1,1-Trichloroethane	130	U
79-01-6	Trichloroethene	130	UJ
127-18-4	Tetrachloroethene	3600	

SMM 11/26/2002

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VCLATILE ORGANICS ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.

MW-9

Lab Name: COMPUCHEM Contract: 6/2000 ASP

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: T2291

Matrix: (soil/water) WATER Lab Sample ID: T2291-1

Sample wt/vol: 25 (g/mL) ML Lab File ID: T2291-1A71

Level: (low/med) LCW Date Received: 09/21/01

% Moisture: not dec. _____ Date Analyzed: 09/27/01

GC Column: SPB-624 ID: 0.32 (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
75-01-4	Vinyl Chloride	0.5	U
75-35-4	1,1-Dichloroethene	0.5	U
156-60-5	trans-1,2-Dichloroethene	0.5	U
75-34-3	1,1-Dichloroethane	0.5	U
156-59-2	cis-1,2-Dichloroethene	0.5	U
71-55-6	1,1,1-Trichloroethane	0.5	U
79-01-6	Trichloroethene	0.5	UJ
127-18-4	Tetrachloroethene	0.5	U

11/26/2001

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: COMPUCHEM Contract: 6/2000 ASP

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: T2291

Instrument ID: 5972HP71 Calibration Date: 09/27/01 Time: 1326

Lab File ID: CS010927B71 Init. Calib. Date(s): 09/26/01 09/27/01

EPA Sample No.(VSTD050##): VSTD005LL Init. Calib. Times: 2036 0048

Heated Purge: (Y/N) N

GC Column: SPB-624 ID: 0.32 (mm)

COMPOUND	$\overline{RRF}$	RRF5	MIN RRF	%D	MAX %D
Vinyl Chloride	1.447	1.250	0.100	-13.6	25.0
1,1-Dichloroethene	2.365	2.139	0.100	-9.6	25.0
trans-1,2-Dichloroethene	2.727	2.429		-10.9	
1,1-Dichloroethane	4.324	4.013	0.200	-7.2	25.0
cis-1,2-Dichloroethene	2.468	2.321		-6.0	
1,1,1-Trichloroethane	0.690	0.637	0.100	-7.7	25.0
Trichlcroethene	0.455	0.358	0.300	-21.3	25.0
Tetrachloroethene	0.394	0.412	0.100	4.6	25.0
Toluene-d8	1.384	1.360		-1.7	
Bromofluorobenzene	0.525	0.496	0.200	-5.5	25.0
1,2-Dichloroethane-d4	2.186	1.942		-11.2	

All other compounds must meet a minimum RRF of 0.010.

Results are estimated

SMK 12/2/2002

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: COMPUCHEM Contract: 6/2000 ASP

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: T2291

Instrument ID: 5972HP71 Calibration Date: 09/27/01 Time: 0134

Lab File ID: CS010927A71 Init. Calib. Date(s): 09/26/01 09/27/01

EPA Sample No.(VSTD050##): VSTD005LJ Init. Calib. Times: 2036 0048

Heated Purge: (Y/N) N

GC Column: SPB-624 ID: 0.32 (mm)

COMPOUND	$\overline{RRF}$	RRF5	MIN RRF	%D	MAX %D
Vinyl Chloride	1.447	1.317	0.100	-9.0	25.0
1,1-Dichloroethene	2.365	2.062	0.100	-12.8	25.0
trans-1,2-Dichloroethene	2.727	2.411		-11.6	
1,1-Dichloroethane	4.324	3.873	0.200	-10.4	25.0
cis-1,2-Dichloroethene	2.468	2.110		-14.5	
1,1,1-Trichloroethane	0.690	0.580	0.100	-15.9	25.0
Trichloroethene	0.455	0.324	0.300	-28.8	25.0
Tetrachloroethene	0.394	0.363	0.100	-7.9	25.0
Toluene-d8	1.384	1.381		-0.2	
Bromofluorobenzene	0.525	0.509	0.200	-3.0	25.0
1,2-Dichloroethane-d4	2.186	1.925		-11.9	

All other compounds must meet a minimum RRF of 0.010.

Results are estimated

Data Validation Qualifier Code Glossary

J - The positive result reported for this analyte is a quantitative estimate.

U - This analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit.

UJ - This analyte was not detected in the sample. The actual quantitation/detection limit may be higher than reported.

N - This analyte has been "tentatively" identified. The numeric value represents its approximate concentration.

Y - This analyte coelutes with another target compound on the two chromatographic columns used for analysis.

R - The result for this analyte is unreliable. Additional data is needed to confirm or disprove the presence of this compound/analyte in the sample.

Other Codes:

ND - There were no positive results for this analytical fraction.

NA - This parameter is not applicable to this sample.

NR - This analysis parameter was not required for this sample.

Project: Kirkwood Bioremediation Status Report
Laboratory: Compuchem, Cary, North Carolina
Sample Delivery Group: Y2291
Fraction: Organic
Matrix: Groundwater
Report Date: 12/11/2002

This data usability summary report is based upon a review of analytical data generated for groundwater samples. The sample locations, laboratory identification numbers, sample collection dates, sample matrix, and analyses performed are presented in Table 1.

The sample analyses were performed in accordance with the procedures outlined in method 8260B, "Test Methods for Evaluating Solid Waste", Physical/Chemical Methods (SW-846), Third Edition, Final (Promulgated) Updates II, IIA, and III June 1997. The data deliverables provided by the laboratory were New York State Department of Environmental Conservation Analytical Services Protocol (NYSDEC ASP) Category B format.

All sample analyses have undergone an analytical quality assurance review to ensure adherence to the required protocols. Results have been validated or qualified according to general guidance provided in the Region II modifications to "Laboratory Data Validation Functional Guidelines for Validating Organic Analyses", USEPA 9/94. This document specifies procedures for validating data generated for CLP analyses. Therefore, the quality control requirements specified in the methods and associated acceptance criteria were also used to evaluate the non-CLP data. The parameters presented on the following page were evaluated.

X	•	Data Completeness
X	•	Chain of Custody Documentation
X	•	Holding Times
X	•	Instrument Performance
X	•	Initial and Continuing Calibrations
X	•	Laboratory and Field Blank Analysis Results
X	•	Surrogate Compound Recoveries
X	•	Matrix Spike/Matrix Spike Duplicate Recoveries and Reproducibility
	•	Field Duplicate Analysis Results
X	•	Laboratory Control Sample/Blank Spike Results
X	•	Internal Standard Performance
X	•	Qualitative Identification
X	•	Quantitation Limits

X - Denotes parameter evaluated.

It is recommended that the data only be used according to the qualifiers presented, and discussed in this report. All other data should be considered qualitatively and quantitatively valid as reported by the laboratory, based on the items evaluated. Analysis result forms presenting the validated and qualified results for the samples receiving the data validation are attached. Documentation of the reasons for data qualification is also attached.

Report Approved By:

Shawne M. Rodgers
President

12/13/2002

Date

1.0 *DATA COMPLETENESS*

The data deliverables were complete.

2.0 *CHAIN OF CUSTODY DOCUMENTATION*

The chain of custody records were complete.

3.0 *HOLDING TIMES*

Holding times were met for all analyses.

4.0 *INSTRUMENT PERFORMANCE*

All criteria were met. No qualifiers were applied.

5.0 *INITIAL AND CONTINUING CALIBRATIONS*

The continuing calibration precision criterion was exceeded for trichloroethene for both of the standards analyzed on 9/29/2001 (the percent difference for this compound for the standards was -23.1 and -26.2, respectively). The results for trichloroethene for all samples should be considered quantitative estimates. Positive results have been marked with "J" qualifiers to indicate that they are estimates. Quantitation limits are marked "UJ".

The continuing calibration precision criterion was exceeded for tetrachloroethene for the standards analyzed on 9/29/2001 at 0001 (the percent difference for this compound for the standard was -20.1). The results for tetrachloroethene for the associated samples (MW-5, MW-6, MW-8) should be considered quantitative estimates. Positive results have been marked with "J" qualifiers to indicate that they are estimates. Quantitation limits are marked "UJ".

The continuing calibration precision criterion was exceeded for 1,1-dichloroethanefor the standards analyzed on 9/29/2001 at 0001 (the percent difference for this compound for the standard was -20.1). The results for 1,1-dichloroethanefor the associated sample, MW-2, should be considered a quantitative estimate. Placing a "J" qualifier next to the quantitative result has indicated this.

6.0 *LABORATORY AND FIELD BLANK ANALYSIS RESULTS*

All criteria were met. No qualifiers were applied.

7.0 *SURROGATE COMPOUNDS*

All criteria were met. No qualifiers were applied.

8.0 *MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERIES AND REPRODUCIBILITY*

The matrix spike/matrix spike duplicate analyses were performed for sample MW-2DL. The MS/MSD recoveries for tetrachloroethene were below the acceptance limits (-25 and -37%, respectively). The trichloroethene matrix spike duplicate recovery was 70%. The result for trichloroethene was reported from the undiluted analysis; and was qualified due to its continuing calibration. The positive result for tetrachloroethene for the original sample should be considered a biased low quantitative estimate. The result has been marked with a "J" qualifier to indicate that it is a biased low quantitative estimate.

9.0 *FIELD DUPLICATE RESULTS*

There were no field duplicate samples submitted with this SDG.

10.0 *LABORATORY CONTROL SAMPLE/ BLANK SPIKE RESULTS*

All criteria were met. No qualifiers were applied.

11.0 *INTERNAL STANDARD PERFORMANCE*

All criteria were met. No qualifiers were applied.

12.0 *QUALITATIVE IDENTIFICATION*

Requirements for qualitative identification were met for all samples.

13.0 *QUANTITATION LIMITS*

The following samples were re-analyzed at dilutions for volatile organic compounds. The reanalyses were performed because the responses for volatile compounds exceeded the linear range of the GC/MS instrument for the initial analyses. The affected results were reported from the dilution analyses. All other results have been reported from the initial analyses.

Sample	Dilution Factor	Result Reported From a Dilution
MW-2	3.6	Tetrachloroethene
MW-5	25.0	Tetrachloroethene

The trichloroethene result for sample MW-5 should be considered a quantitative estimate. The response for this compound exceeded the linear range of the GC/MS instrument. The dilution analysis of this sample resulted in a response for this compound that was below detectable levels. The result has been marked with a "J" qualifier to indicate that it is a quantitative estimate.

The tetrachloroethene result for sample MW-8 should be considered a quantitative estimate. The response for this compound exceeded the linear range of the GC/MS instrument. The laboratory did not re-analyze the sample at a dilution. The result has been marked with a "J" qualifier to indicate that it is a quantitative estimate.

As required by USEPA protocol, all compounds, which were qualitatively identified at concentrations below their respective Quantitation Limits (QLs), have been marked with "J" qualifiers to indicate that they are quantitative estimates.

Table 1 Samples For Data Validation Review
Kirkwood Bioremediation Status Report
Compuchem Sample Delivery Group Y2291

Sample ID	LAB ID		DATE	MATRIX
MW-6	Y2291	1	9/21/2001	Groundwater
MW-8	Y2291	2	9/21/2001	Groundwater
MW-2	Y2291	3	9/21/2001	Groundwater
MW-5	Y2291	4	9/21/2001	Groundwater

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.

MW-2

Lab Name: COMPUCHEM Contract: 6/2000 ASP

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: Y2291

Matrix: (soil/water) WATER Lab Sample ID: Y2291-3

Sample wt/vol: 25 (g/mL) ML Lab File ID: Y2291-3RB71

Level: (low/med) LOW Date Received: 09/24/01

% Moisture: not dec. _____ Date Analyzed: 09/29/01

GC Column: SPB-624 ID: 0.32 (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
75-01-4	Vinyl Chloride	0.5	U
75-35-4	1,1-Dichloroethene	0.5	U
156-60-5	trans-1,2-Dichloroethene	0.5	U
75-34-3	1,1-Dichloroethane	0.5	UJ
156-59-2	cis-1,2-Dichloroethene	1	
71-55-6	1,1,1-Trichloroethane	0.5	U
79-01-6	Trichloroethene	2	J
127-18-4	Tetrachloroethene	63	E *

* Report from dilution

SMM 11/26/01

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.

MW-2DL

Lab Name: COMPUCHEM Contract: 6/2000 ASP

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: Y2291

Matrix: (soil/water) WATER Lab Sample ID: Y2291-3

Sample wt/vol: 25 (g/mL) ML Lab File ID: Y2291-3RD2A71

Level: (low/med) LOW Date Received: 09/24/01

% Moisture: not dec. _____ Date Analyzed: 10/02/01

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 3.6

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-01-4	Vinyl Chloride	2	U
75-35-4	1,1-Dichloroethene	2	U
156-60-5	trans-1,2-Dichloroethene	2	U
75-34-3	1,1-Dichloroethane	2	U
156-59-2	cis-1,2-Dichloroethene	1	DJ
71-55-6	1,1,1-Trichloroethane	2	U
79-01-6	Trichloroethene	1	DJ
127-18-4	Tetrachloroethene	22	~~DJ~~ *

* Report

SMC 11/26/2001

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.

MW-5

Lab Name: COMPUCHEM Contract: 6/2000 ASP

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: Y2291

Matrix: (soil/water) WATER Lab Sample ID: Y2291-4

Sample wt/vol: 25 (g/mL) ML Lab File ID: Y2291-4B71

Level: (low/med) LOW Date Received: 09/24/01

% Moisture: not dec. _____ Date Analyzed: 09/29/01

GC Column: SPB-624 ID: 0.32 (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
75-01-4	Vinyl Chloride		0.5	
75-35-4	1,1-Dichloroethene		0.3	J
156-60-5	trans-1,2-Dichloroethene		1	
75-34-3	1,1-Dichloroethane		0.5	U
156-59-2	cis-1,2-Dichloroethene		25	
71-55-6	1,1,1-Trichloroethane		0.5	U
79-01-6	Trichloroethene	29J	~~29~~	~~E~~ *
127-18-4	Tetrachloroethene		~~150~~	~~E~~ *

* Report from dilution

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.

MW-5RE

Lab Name: COMPUCHEM Contract: 6/2000 ASP

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: Y2291

Matrix: (soil/water) WATER Lab Sample ID: Y2291-4

Sample wt/vol: 25 (g/mL) ML Lab File ID: Y2291-4R2A71

Level: (low/med) LOW Date Received: 09/24/01

% Moisture: not dec. _____ Date Analyzed: 10/02/01

GC Column: SPB-624 ID: 0.32 (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
75-01-4	Vinyl Chloride	0.5	U
75-35-4	1,1-Dichloroethene	0.5	U
156-60-5	trans-1,2-Dichloroethene	0.5	U
75-34-3	1,1-Dichloroethane	0.5	U
156-59-2	cis-1,2-Dichloroethene	0.5	U
71-55-6	1,1,1-Trichloroethane	0.5	U
79-01-6	Trichloroethene	0.5	U
127-18-4	Tetrachloroethene	12	

D

D Repeat

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.

MW-6

Lab Name: COMPUCHEM Contract: 6/2000 ASP

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: Y2291

Matrix: (soil/water) WATER Lab Sample ID: Y2291-1

Sample wt/vol: 25 (g/mL) ML Lab File ID: Y2291-1B71

Level: (low/med) LOW Date Received: 09/24/01

% Moisture: not dec. _____ Date Analyzed: 09/29/01

GC Column: SPB-624 ID: 0.32 (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
75-01-4	Vinyl Chloride	0.5	U
75-35-4	1,1-Dichloroethene	0.5	U
156-60-5	trans-1,2-Dichloroethene	0.5	U
75-34-3	1,1-Dichloroethane	0.5	U
156-59-2	cis-1,2-Dichloroethene	0.5	U
71-55-6	1,1,1-Trichloroethane	0.5	U
79-01-6	Trichloroethene	0.5	UJ
127-18-4	Tetrachloroethene	0.5	UJ

SMM 11/26/01

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VOLATILE ORGANICS ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.

MW-8

Lab Name: COMPUCHEM Contract: 6/2000 ASP

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: Y2291

Matrix: (soil/water) WATER Lab Sample ID: Y2291-2

Sample wt/vol: 25 (g/mL) ML Lab File ID: Y2291-2B71

Level: (low/med) LOW Date Received: 09/24/01

% Moisture: not dec. _____ Date Analyzed: 09/29/01

GC Column: SPB-624 ID: 0.32 (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
75-01-4	Vinyl Chloride	0.5	U
75-35-4	1,1-Dichloroethene	0.5	U
156-60-5	trans-1,2-Dichloroethene	0.5	U
75-34-3	1,1-Dichloroethane	0.5	U
156-59-2	cis-1,2-Dichloroethene	2	
71-55-6	1,1,1-Trichloroethane	0.5	U
79-01-6	Trichloroethene	2	J
127-18-4	Tetrachloroethene	~~67~~ 67	~~E~~ J

SMK 11/26/2001

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VOLATILE ORGANICS ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.

MW-8RE

Lab Name: COMPUCHEM Contract: 6/2000 ASP

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: Y2291

Matrix: (soil/water) WATER Lab Sample ID: Y2291-2

Sample wt/vol: 25 (g/mL) ML Lab File ID: Y2291-2R2A71

Level: (low/med) LOW Date Received: 09/24/01

% Moisture: not dec. _____ Date Analyzed: 10/02/01

GC Column: SPB-624 ID: 0.32 (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
75-01-4	Vinyl Chloride	0.5	U
75-35-4	1,1-Dichloroethene	0.5	U
156-60-5	trans-1,2-Dichloroethene	0.5	U
75-34-3	1,1-Dichloroethane	0.5	U
156-59-2	cis-1,2-Dichloroethene	0.5	U
71-55-6	1,1,1-Trichloroethane	0.5	U
79-01-6	Trichlorcethene	0.5	U
127-18-4	Tetrachlcroethene	0.5	U

3A

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: COMPUCHEM Contract: 6/2000 ASP

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: Y2291

Matrix Spike - NYSDEC Sample No.: MW-2DL

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
Vinyl Chloride	17.85	0.00	19.27	108	50-150
1,1-Dichloroethene	17.85	0.00	19.19	108	61-145
trans-1,2-Dichloroethen	17.85	0.00	19.57	110	50-150
1,1-Dichloroethane	17.85	0.00	18.75	105	50-150
cis-1,2-Dichloroethene	17.85	1.01	19.90	106	50-150
1,1,1-Trichloroethane	17.85	0.00	19.15	107	50-150
Trichloroethene	17.85	0.963	13.93	73	71-120
Tetrachloroethene	17.85	22.44	17.94	-25*	50-150

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Vinyl Chloride	17.85	17.99	101	7	40	50-150
1,1-Dichloroethene	17.85	17.79	100	8	14	61-145
trans-1,2-Dichloroethen	17.85	17.81	100	10	40	50-150
1,1-Dichloroethane	17.85	18.87	106	1	40	50-150
cis-1,2-Dichloroethene	17.85	18.71	99	7	40	50-150
1,1,1-Trichloroethane	17.85	18.56	104	3	40	50-150
Trichloroethene	17.85	13.50	76	4	40	71-120
Tetrachloroethene	17.85	15.83	-37*	-39	40	50-150

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

* Values outside of QC limits

RPD: 0 out of 8 outside limits
Spike Recovery: 3 out of 16 outside limits

COMMENTS: _____

Results for background sample used

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: COMPUCHEM Contract: 6/2000 ASP

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: Y2291

Instrument ID: 5972HP71 Calibration Date: 09/29/01 Time: 0001

Lab File ID: CT010928B71 Init. Calib. Date(s): 09/26/01 09/27/01

EPA Sample No.(VSTD050##): VSTD005LP Init. Calib. Times: 2036 0048

Heated Purge: (Y/N) N

GC Column: SPB-624 ID: 0.32 (mm)

COMPOUND	$\overline{RRF}$	RRF5	MIN RRF	%D	MAX %D
Vinyl Chloride	1.447	1.528	0.100	5.6	25.0
1,1-Dichloroethene	2.365	2.113	0.100	-10.7	25.0
trans-1,2-Dichloroethene	2.727	2.508		-8.0	
1,1-Dichloroethane	4.324	4.882	0.200	12.9	25.0
cis-1,2-Dichloroethene	2.468	2.333		-5.5	
1,1,1-Trichloroethane	0.690	0.734	0.100	6.4	25.0
Trichlorcethene	0.455	0.350	0.300	-23.1	25.0
Tetrachlcroethene	0.394	0.315	0.100	-20.1	25.0
Toluene-d8	1.384	1.463		5.7	
Bromoflucrobenzene	0.525	0.595	0.200	13.3	25.0
1,2-Dichloroethane-d4	2.186	2.841		30.0	

All other compounds must meet a minimum RRF of 0.010.

results all estimated MW5, MW-6, MW-8

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: COMPUCHEM Contract: 6/2000 ASP

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: Y2291

Instrument ID: 5972HP71 Calibration Date: 09/29/01 Time: 1945

Lab File ID: CU010929B71 Init. Calib. Date(s): 09/26/01 09/27/01

EPA Sample No.(VSTD050##): VSTD005LQ Init. Calib. Times: 2036 0048

Heated Purge: (Y/N) N

GC Column: SPB-624 ID: 0.32 (mm)

COMPOUND	$\overline{RRF}$	RRF5	MIN RRF	%D	MAX %D
Vinyl Chloride	1.447	1.528	0.100	5.6	25.0
1,1-Dichloroethene	2.365	2.269	0.100	-4.1	25.0
trans-1,2-Dichloroethene	2.727	2.714		-0.5	
1,1-Dichloroethane	4.324	5.226	0.200	20.9	25.0
cis-1,2-Dichloroethene	2.468	2.502		1.4	
1,1,1-Trichloroethane	0.690	0.768	0.100	11.3	25.0
Trichloroethene	0.455	0.336	0.300	-26.2	25.0
Tetrachloroethene	0.394	0.338	0.100	-14.2	25.0
Toluene-d8	1.384	1.447		4.6	
Bromofluorobenzene	0.525	0.608	0.200	15.8	25.0
1,2-Dichloroethane-d4	2.186	2.807		28.4	

All other compounds must meet a minimum RRF of 0.010.

Results are estimated for MW-2

Data Validation Qualifier Code Glossary

J - The positive result reported for this analyte is a quantitative estimate.

U - This analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit.

UJ - This analyte was not detected in the sample. The actual quantitation/detection limit may be higher than reported.

N - This analyte has been "tentatively" identified. The numeric value represents its approximate concentration.

Y - This analyte coelutes with another target compound on the two chromatographic columns used for analysis.

R - The result for this analyte is unreliable. Additional data is needed to confirm or disprove the presence of this compound/analyte in the sample.

Other Codes:

ND - There were no positive results for this analytical fraction.

NA - This parameter is not applicable to this sample.

NR - This analysis parameter was not required for this sample.