

2010 ANNUAL REPORT – FINAL REPORT

**Post-Closure Groundwater Monitoring  
Coldwater Road Landfill  
Flint, Michigan  
MID 005 356 860**

Motors Liquidation Company  
Birmingham, Michigan

February 2011



**Post-Closure Groundwater Monitoring  
Coldwater Road Landfill  
Flint, Michigan  
MID 005 356 860**

Prepared for:

Motors Liquidation Company  
Birmingham, Michigan



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SCOTT L. CORMIER, P.E.  
VICE PRESIDENT  
O'BRIEN & GERE



February 16, 2011

**Mr. Richard Conforti, P.E.**

Environmental Engineer  
Michigan Department of Environmental Quality  
Waste and Hazardous Material Division  
P.O. Box 30241  
Lansing, Michigan 48909-7741

RE: Post-Closure Groundwater Monitoring 2010 Annual Report  
Coldwater Road Landfill, Flint, Michigan  
MID 005 356 860  
FILE: 14774 / 46317 #5

Dear Mr. Conforti:

On behalf of Motors Liquidation Company, O'Brien & Gere is pleased to present the results of the annual groundwater sampling event conducted in November 2010 for the Coldwater Road Landfill site (Figure 1). The groundwater samples were analyzed for total organic carbon (TOC, Method 415.1), total organic halogen (TOX, Method 9020A), specific conductivity (Method 120.1), and dissolved metals (chromium (Cr), copper (Cu), nickel (Ni), and zinc (Zn) Method 200.8). The event also included field measurements for pH, specific conductivity, dissolved oxygen, oxidation reduction potential, temperature, and turbidity. Groundwater samples were collected using a bladder or peristaltic pump, and low-flow sampling techniques in accordance with O'Brien & Gere procedures and the site-specific Field Method Guide (Appendix A). Samples to be analyzed for dissolved metals were field filtered. Groundwater sampling logs are included as (Appendix B).

Gauging and sampling were conducted on November 8, 2010 through November 11, 2010. The results are presented in two separate tables: Table 1 - Depth to Groundwater Levels in Monitoring Wells; and Table 2 - Post-Closure Monitoring - Historical Analytical Results (Physical Parameters, TOC, TOX, and Metals). Laboratory analytical reports are included in (Appendix C).

A site location map (Figure 1) and monitoring well location map (Figure 2) are also included. A groundwater elevation map was completed for the shallow wells (Figure 3) and a groundwater potentiometric surface map was completed for the deeper drift aquifer (Figure 4).

Contours were not plotted for groundwater in the shallow wells because the wells monitor discontinuous perched zones; therefore, the water level elevations exhibited no pattern.

The drift aquifer static water elevations, which were calculated from depth to water measurements collected on November 9, 2010, were consistent with historical data. Groundwater in the drift aquifer flows in a southerly direction as shown on Figure 4.

Groundwater samples were collected from six monitoring wells screened in perched zones and six monitoring wells screened in the drift aquifer during this sampling event.

A review of the analytical data presented in the attached tables indicates analytical results similar to previous sampling events with the following exceptions:

- Chromium concentrations increased
- Copper concentrations were not detected, except in B-9 where copper slightly increased in concentration

- Nickel concentrations were not detected, except in B-9 where nickel stayed similar to the previous sampling result in June 2010
- Zinc concentrations were not detected, except in B-9 where zinc increased in concentration, but was similar to historical results
- TOC concentrations stayed similar or increased; expect in B-2D and B-21D where TOC decreased
- TOX concentrations were not detected, except in B-7, B-9, B-18A, B-23DR (but was non-detect in the duplicate sample) and B-24R where TOX increased
- pH concentrations stayed similar or decreased slightly
- Specific conductivity stayed similar or decreased slightly; except in B-19AR and B-21D where specific conductivity increased

The duplicate sample results collected from monitoring well B-23DR were comparable to the original sample.

During this sampling event there was a spike of chromium in the monitoring wells. There were no other spikes or trends for the additional constituents (copper, nickel, and zinc) monitored in the wells; therefore, the chromium spikes were not confirmed spikes and do not suggest there was a release from the landfill. There was one exceedance of the Shewart control limits during this sampling event in monitoring well B-28 for chromium (Appendix D). Monitoring well B-28 was resampled for chromium on December 7, 2010, which resulted in a non-detectable chromium concentration (<0.005 mg/L). Because chromium was not detected during the resample of B-28, and chromium was the only constituent that spiked during this sampling event, it suggests there was not a release from the landfill. The spikes in chromium concentrations will continue to be reviewed during future sampling events. No other trends or spikes were observed during this monitoring event.

The next sampling event is currently scheduled for June 2011. If you have any questions, please feel free to contact either of us at (248) 477-5701.

Very truly yours,

**O'BRIEN & GERE ENGINEERS, INC.**

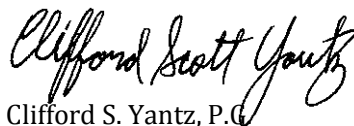


Scott L. Cormier, P.E.

Vice President

Very truly yours,

**O'BRIEN & GERE ENGINEERS, INC.**



Clifford S. Yantz, P.E.

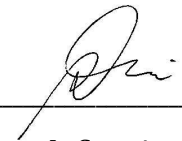
Technical Associate

Enclosure

cc: David Favero – Motors Liquidation Company  
Kevin Schneider – O'Brien & Gere

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

On Behalf of Motors Liquidation Company

  
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Scott L. Cormier, P.E.  
Agent for Motors Liquidation Company

Vice President - O'Brien & Gere Engineers, Inc.

Title

February 16, 2011

Date

cc: file

*TABLES*

**Table 1**  
**Coldwater Road Landfill Facility**  
**Depth to Ground Water Levels in Monitoring Wells**  
**November 9, 2010**

Well	Top Of Casing Elev. (ft) *	Depth To Water (ft)	Static Water Elev. (ft)
B-2D	805.18	56.73	748.45
B-7	815.20	26.98	788.22
B-9	809.16	14.19	794.97
B-18A	812.25	26.05	786.20
B-19A	813.89	13.95	799.94
B-19AR	813.15	41.45	771.70
B-20D	816.61	72.59	744.02
B-21D	822.60	83.08	739.52
B-22D	823.73	87.33	736.40
B-23DR	813.72	84.12	729.60
B-24R	817.37	17.82	799.55
B-27D**	814.36	78.79	735.57
B-28	818.07	9.46	808.61

**Notes**

Casing elevations were provided by Bartow & King Engineers and are in feet relative to National Geodetic Vertical Datum

\* - Top of casing elevations were resurveyed in May 2005 after the installation of the replacement wells.

R - Indicates a replacement well location.

\*\* - Top of casing elevation was surveyed in December 2005 after the installation of the new well.

**Table 2**  
**Coldwater Road Landfill Facility**  
**Post-Closure Monitoring - Historical Analytical Results**  
**Physical Parameters, TOC, TOX, Metals, Chloride, Cyanide, Phenols, and Sulfate**

Well ID	Sample Date	Indicator Parameters					Dissolved Metals (ug/L)							Inorganics (mg/L)			
		TOC (mg/L)	TOX (ug/L)	pH	SpC	T	Cr	Cu	Ni	Zn	Fe	Mn	Na	Chloride	Cyanide	Phenols	Sulfate
<b>B-2D</b>	6/21/1995	5.3	<10	9.0	434	15.0	<20	<20	<30	<20	--	--	--	--	--	--	--
	8/31/1995	6.3	130	8.3	479	14.4	<20	<20	<40	<20	--	--	--	--	--	--	--
	2/9/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	6/19/1996	5.2	<100	7.5	580	12.4	<20	<20	<20	<20	--	--	--	--	--	--	--
	8/21/1996	7.4	<5	7.7	641	13.9	<20	<20	<20	50	--	--	--	--	--	--	--
	11/13/1996	11.0	<5	7.3	769	7.6	<20	<20	<20	30	--	--	--	--	--	--	--
	5/6/1997	26.0	<100	6.3	1500	7.0	10	<10	28	30	--	--	--	--	--	--	--
	11/6/1997	15.0	<100	6.9	660	9.0	<10	<10	39	<10	280	577	--	12	<0.005	<0.020	79
	5/4/1998	29.0	12	6.7	549	12.4	<10	<10	<5	<10	--	--	--	--	--	--	--
	11/5/1998	52.0	18	4.7	498	8.6	<10	<10	<5	10	<10	17	33,600	--	--	--	--
	12/23/1998	--	--	--	--	--	--	--	--	--	--	--	--	13	<0.005	<0.020	40
	4/26/1999	52.0	<100	8.5	523	14.5	<10	<10	<5	<10	--	--	--	--	--	--	--
	11/5/1999	6.4	<100	7.4	405	12.8	<10	<10	<5	40	70	21	35,100	4	<0.005	<0.020	42
	4/26/2000	5.4	<100	8.0	770	17.4	<10	<10	<5	<10	--	--	--	--	--	--	--
	12/8/2000	5.5	<10	6.7	610	9.7	<10	<10	9	<10	40	--	22,900	7	<0.005	<0.020	81
	5/15/2001	5.5	<100	7.8	890	13.2	<10	<10	<5	<10	--	--	--	--	--	--	--
	10/18/2001	4.1	<100	7.4	1830	9.4	<10	<10	<5	<10	230	--	12,900	2	<0.005	<0.020	32
Dup. 10/18/2001	3.6	<100	7.4	1780	7.8	<10	<10	<5	<10	210	--	12,700	1	<0.005	<0.020	32	
5/16/2002	4.0	<100	7.2	1000	11.6	<10	<10	<5	<10	--	--	--	--	--	--	--	
Dup. 11/7/2002	2.6	<30	7.4	490	9.5	<5	<5	<5	<5	140	8	11,900	2	<0.005	<0.020	32	
11/7/2002	2.7	<30	--	--	--	<5	<5	<5	<5	140	6	11,200	2	<0.005	<0.020	30	
6/3/2003	4.4	<30	6.9	530	12.9	<5	<5	<5	<5	--	--	--	--	--	--	--	
11/13/2003	2.8	<30	8.0	630	7.7	<5	<5	<5	<5	110	7	--	2	<0.005	<0.010	31	
6/30/2004	4.2	<30	6.3	570	15.8	<5	<5	<5	7	--	--	--	--	--	--	--	
12/10/2004	2.0	<30	6.8	550	10.2	<5	<5	<5	10	760	145	10,700	2	<0.005	<0.010	35	
6/8/2005	2.0	<30	8.0	620	11.5	<5	<5	<5	<5	660	199	10,900	<5	<0.005	<0.010	34	
12/8/2005	3.0	<30	6.9	642	10.2	9	<4	<5	<10	140	120	13,300	--	--	--	--	
6/28/2006	6.3	<30	7.4	671	12.2	<5	<4	<5	8	110	70	15,000	2	<0.005	<0.010	50	
Dup. 6/28/2006	5.1	<30	7.4	682	12.2	<5	<4	<5	8	120	70	15,200	3	<0.005	<0.010	50	
11/30/2006	5.1	43.3	7.2	677	8.4	<5	<4	<5	18	--	--	--	--	--	--	--	
6/8/2007	2.4	69.1	6.8	644	14.1	8	2	1	6	110	104	14,800	4	<0.005	<0.010	44	
11/14/2007	5.2	<30	7.1	783	14.9	1	1	4	9	--	--	--	--	--	--	--	
6/25/2008	5.7	<60	6.9	920	18.4	<5	1	5	7	350	32	26,100	10	<0.005	<0.010	98	
11/20/2008	4.5	<30	6.8	806	9.1	<5	<1	<5	<5	--	--	--	--	--	--	--	
6/25/2009	5.6	<30	7.0	924	23.7	<5	203	<5	113	22	77	29,700	10	<0.005	<0.010	104	
11/16/2009	4	<30	7.2	835	10.2	<5	<4	<5	6	--	--	--	--	--	--	--	
6/16/2010	5	<30	7.1	841	13.9	<5	<4	<5	<5	40	83	19,000	7	<0.005	<0.020	75	
11/10/2010	4	<30	7.2	779	11.3	11	<4	<5	<5	--	--	--	--	--	--	--	

See notes on page 16.

**Table 2**  
**Coldwater Road Landfill Facility**  
**Post-Closure Monitoring - Historical Analytical Results**  
**Physical Parameters, TOC, TOX, Metals, Chloride, Cyanide, Phenols, and Sulfate**

Well ID	Sample Date	Indicator Parameters					Dissolved Metals (ug/L)							Inorganics (mg/L)			
		TOC (mg/L)	TOX (ug/L)	pH	SpC	T	Cr	Cu	Ni	Zn	Fe	Mn	Na	Chloride	Cyanide	Phenols	Sulfate
B-7	6/21/1995	8.7	23	7.5	1509	13.8	<20	<20	<30	<20	--	--	--	--	--	--	--
	8/31/1995	--	--	--	--	--	<20	<20	<40	<20	--	--	--	--	--	--	--
	2/9/1996	14.0	120	--	--	--	<20	<20	<40	22	--	--	--	--	--	--	--
	6/19/1996	20.0	<100	6.9	1,508	13.2	<20	<20	<20	20	--	--	--	--	--	--	--
	8/21/1996	55.0	26	7.6	1,567	17.1	<20	<20	<20	60	--	--	--	--	--	--	--
	11/13/1996	27.0	<5	8.0	1,960	7.2	<20	<20	<20	50	--	--	--	--	--	--	--
	5/6/1997	16.0	<100	7.2	780	11.0	<10	10	14	10	--	--	--	--	--	--	--
	11/6/1997	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/4/1998	6.0	<5	6.6	1,270	10.7	<10	<10	<5	20	--	--	--	--	--	--	--
	11/5/1998	4.0	<10	4.6	1,240	11.2	<10	<10	8	30	10	424	31,000	--	--	--	--
	12/23/1998	--	--	--	--	--	--	--	--	--	--	--	--	58	<0.005	<0.020	161
	4/26/1999	3.9	<100	7.5	1,413	14.2	<10	<10	10	<10	--	--	--	--	--	--	--
	11/5/1999	5.1	<100	6.5	1,230	14.2	<10	<10	8	30	260	313	41,800	64	<0.005	<0.020	301
	4/26/2000	4.8	<100	7.6	1,450	10.2	<10	<10	<5	<10	--	--	--	--	--	--	--
	Dup.	4/26/2000	5.9	<100	NS	NS	NS	<10	<10	6	10	--	--	--	--	--	--
12/8/2000		4.2	<10	7.1	1,180	9.5	<10	<10	20	10	50	--	58,900	79	<0.005	<0.020	227
5/16/2001		5.0	<100	7.3	1,330	13.0	<10	<10	7	<10	--	--	--	--	--	--	--
10/18/2001		5.3	<100	7.2	1,210	12.5	<10	<10	5	<10	330	--	60,800	81	<0.005	NA	205
5/16/2002		3.9	<100	7.2	1,850	11.9	<10	<10	<5	10	--	--	--	--	--	--	--
11/7/2002		NR	NR	7.4	1,120	10.3	<5	<5	5	5	250	<5	65,500	NA	NA	NA	NA
6/4/2003		3.3	<30	6.9	1,460	12.6	<5	<5	<5	<5	--	--	--	--	--	--	--
11/13/2003		3.9	<30	6.9	1,590	9.6	<5	<5	<5	5	190	<5	--	85	<0.005	<0.010	279
6/30/2004		4.3	43	7.1	1,353	16.0	<5	<5	9	7	--	--	--	--	--	--	--
12/9/2004		4.0	<30	5.3	1,290	10.8	<5	<5	7	14	180	74	71,200	78	<0.005	<0.010	251
6/8/2005		7.0	86	7.4	1,121	10.9	5	<5	9	13	170	31	81,900	80	<0.005	<0.010	254
12/7/2005		7.5	<30	8.7	1,430	12.2	10	<4	6	20	150	50	85,300	--	--	--	--
6/29/2006		4.3	<30	7.2	1,470	11.7	5	<4	9	18	190	150	76,900	73	<0.005	<0.010	270
11/29/2006		4.4	<30	6.9	1,380	15.3	<5	<4	9	11	--	--	--	--	--	--	--
6/7/2007		3.9	23.7	6.9	1,400	13.4	11	27	5	14	130	42	87,300	72	<0.005	<0.010	208
11/14/2007	3.5	<30	6.9	1,350	13.4	14	6	16	20	--	--	--	--	--	--	--	
6/25/2008	3.8	72.9	6.9	1,410	20.7	<5	3	6	<5	350	10	94,800	68	<0.005	<0.010	222	
11/17/2008	4.6	20.5	6.8	1,258	5.5	<5	3	5	17	--	--	--	--	--	--	--	
6/24/2009	4.5	<30	6.9	1,184	20.0	<5	3	<5	14	67	36	84,500	40	<0.005	<0.010	154	
11/17/2009	8	25.3	7.3	1,090	10.3	<5	<4	<5	<5	--	--	--	--	--	--	--	
6/17/2010	5	<30	7.0	1,290	16.3	<5	<4	<5	<5	<20	47	86,000	61	<0.005	<0.020	160	
11/8/2010	8	103	7.2	997	13.9	17	<4	<5	<5	--	--	--	--	--	--	--	

See notes on page 16.

**Table 2**  
**Coldwater Road Landfill Facility**  
**Post-Closure Monitoring - Historical Analytical Results**  
**Physical Parameters, TOC, TOX, Metals, Chloride, Cyanide, Phenols, and Sulfate**

Well ID	Sample Date	Indicator Parameters					Dissolved Metals (ug/L)							Inorganics (mg/L)			
		TOC (mg/L)	TOX (ug/L)	pH	SpC	T	Cr	Cu	Ni	Zn	Fe	Mn	Na	Chloride	Cyanide	Phenols	Sulfate
B-9	6/21/1995	3.5	34	7.7	2,400	14.6	<20	<20	<30	<20	--	--	--	--	--	--	--
	8/31/1995	3.9	<10	7.7	1,829	14.8	37	43	<40	<20	--	--	--	--	--	--	--
	2/9/1996	3.1	<10	7.3	2,860	8.0	<20	<20	<40	<20	--	--	--	--	--	--	--
	6/19/1996	2.1	<100	6.8	2,550	11.5	<20	<20	<20	<20	--	--	--	--	--	--	--
	8/21/1996	2.3	<5	8.0	2,310	16.4	<20	<20	<20	70	--	--	--	--	--	--	--
	11/13/1996	71.0	<5	6.8	3,280	9.2	<20	<20	<20	40	--	--	--	--	--	--	--
	5/6/1997	3.0	<100	6.8	2,600	10.0	<10	<10	51	20	--	--	--	--	--	--	--
	11/6/1997	2.0	<100	6.5	2,800	11.0	<10	<10	183	40	650	741	--	141	<0.005	<0.020	1,178
	5/4/1998	3.0	<5	6.6	2,400	14.5	10	10	18	40	--	--	--	--	--	--	--
	11/5/1998	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	--	--	--	--
	12/23/1998	--	--	--	--	--	--	--	--	--	--	--	--	NS	NS	NS	NS
	4/26/1999	4.0	<100	7.7	1,860	12.2	<10	<10	19	20	--	--	--	--	--	--	--
	11/5/1999	2.5	<100	6.8	2,340	15.4	<10	<10	20	30	610	1280	47,100	128	<0.005	<0.020	1,222
	4/26/2000	5.5	<100	7.6	2,780	9.5	<10	<10	12	30	--	--	--	--	--	--	--
	12/8/2000	5.0	<10	7.6	2,400	7.8	<10	<10	46	<10	50	--	69,500	142	<0.005	<0.020	1,246
	5/16/2001	4.8	<100	7.4	1,070	12.6	<10	<10	7	10	--	--	--	--	--	--	--
	10/17/2001	4.0	<100	7.5	2,130	10.8	<10	<10	8	20	940	--	66,000	122	<0.005	NA	1,150
	5/16/2002	1.9	<100	7.2	2,470	11.6	<10	<10	7	10	--	--	--	--	--	--	--
	11/7/2002	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	6/4/2003	2.2	57	6.8	2,690	10.7	<5	<5	15	13	--	--	--	--	--	--	--
	11/13/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	6/30/2004	3.8	NS	6.9	2,379	12.7	<5	8	19	28	--	--	--	--	--	--	--
	12/9/2004	3.0	<30	5.9	2,480	11.4	<5	<5	11	19	570	248	55,900	149	<0.005	<0.010	1,350
6/8/2005	4.0	<30	7.1	2,116	10.3	6	6	12	17	480	701	58,300	128	<0.005	<0.010	1,160	
12/7/2005	5.0	<30	8.6	2,830	11.9	11	5	12	40	320	410	58,500	--	--	--	--	
6/29/2006	1.9	<30	6.8	2,820	12.4	6	6	13	19	390	330	63,600	125	<0.005	<0.010	1,150	
11/30/2006	2.7	36.7	7.2	2,830	12.5	<5	6	<5	14	--	--	--	--	--	--	--	
6/5/2007	2.1	<30	6.7	2,770	11.0	12	6	24	21	320	1,900	67,300	112	<0.005	<0.010	1,120	
11/16/2007	2.0	27.4	6.7	3,000	9.4	2	6	24	18	--	--	--	--	--	--	--	
7/2/2008	1.8	36.4	6.4	3,060	19.7	<5	4	13	19	780	812	64,200	133	<0.005	<0.010	1,280	
11/20/2008	2.2	15.9	6.4	3,290	8.1	<5	<1	13	<5	--	--	--	--	--	--	--	
Dup. 11/20/2008	2.0	127	6.4	3,280	8.1	<5	<1	13	<5	--	--	--	--	--	--	--	
6/25/2009	1.6	<30	6.7	2,700	19.8	<5	<1	<5	<5	59	173	65,300	107	<0.005	<0.010	1,120	
11/16/2009	3	84.1	6.7	3,030	12.7	<5	<4	16	8	--	--	--	--	--	--	--	
6/15/2010	3	27.5	6.7	3,030	13.0	<5	<4	7	6	460	475	70,700	117	<0.005	<0.020	1,230	
11/11/2010	3	37.5	6.4	2,910	12.9	19	4	7	15	--	--	--	--	--	--	--	

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**Table 2**  
**Coldwater Road Landfill Facility**  
**Post-Closure Monitoring - Historical Analytical Results**  
**Physical Parameters, TOC, TOX, Metals, Chloride, Cyanide, Phenols, and Sulfate**

Well ID	Sample Date	Indicator Parameters					Dissolved Metals (ug/L)							Inorganics (mg/L)			
		TOC (mg/L)	TOX (ug/L)	pH	SpC	T	Cr	Cu	Ni	Zn	Fe	Mn	Na	Chloride	Cyanide	Phenols	Sulfate
<b>B-14</b>	6/21/1995	4.0	<10	--	--	--	<20	<20	<30	<20	--	--	--	--	--	--	--
	8/31/1995	--	25	--	--	--	<20	<20	<40	<20	--	--	--	--	--	--	--
	2/9/1996	3.0	<10	7.6	776	8.9	<20	<20	<40	<20	--	--	--	--	--	--	--
	6/19/1996	1.7	<100	7.3	704	13.6	<20	<20	<20	<20	--	--	--	--	--	--	--
	8/21/1996	2.6	<5	8.9	748	13.1	<20	<20	<20	60	--	--	--	--	--	--	--
	11/13/1996	76.0	<5	7.8	980	7.2	<20	<20	<20	40	--	--	--	--	--	--	--
	5/6/1997	3.0	<100	7.0	670	10.0	<10	<10	11	<10	--	--	--	--	--	--	--
	11/6/1997	2.0	<100	6.8	670	10.0	<10	<10	43	10	550	67	--	12	<0.005	<0.020	61
	5/4/1998	6.0	<5	6.7	558	13.3	<10	<10	<5	<10	--	--	--	--	--	--	--
	11/5/1998	2.0	<10	6.4	642	9.9	<10	<10	<5	10	<10	<5	13,900	--	--	--	--
	12/23/1998	--	--	--	--	--	--	--	--	--	--	--	--	8	<0.005	<0.020	47
	4/26/1999	4.5	<100	8.0	488	13.3	<10	<10	<5	30	--	--	--	--	--	--	--
	11/5/1999	NS	NS	7.3	609	14.2	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/26/2000	7.1	<100	7.4	510	14.7	<10	<10	<5	960	--	--	--	--	--	--	--
	12/8/2000	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/15/2001	5.0	--	7.8	510	13.2	<10	<10	6	380	--	--	--	--	--	--	--
	10/18/2001	2.1	<100	7.3	750	10.7	<10	<10	8	90	260	--	21,500	6	<0.005	NA	72
	5/16/2002	2.3	NR	7.1	1,790	12.1	<10	<10	<5	60	--	--	--	--	--	--	--
	11/7/2002	NR	NR	7.5	540	9.9	<5	<5	<5	31	170	15	14,400	NA	NA	NA	NA
	6/3/2003	2.4	<30	6.9	710	12.4	<5	<5	<5	54	--	--	--	--	--	--	--
11/13/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
6/29/2004	2.8	<30	7.3	693	14.9	<5	<5	<5	26	--	--	--	--	--	--	--	
12/9/2004	5.0	<30	6.6	560	10.5	<5	<5	<5	1,260	160	62	4,390	5	<0.005	<0.010	84	
Re-sample	2/10/2005	--	--	--	--	--	--	--	160	--	--	--	--	--	--	--	
	6/8/2005	4.0	<30	7.6	647	11.4	<5	<5	12	40	110	56	18,500	8	<0.005	<0.010	79
	12/8/2005	4.6	<30	6.1	818	1.6	8	<4	<5	30	210	40	16,000	--	--	--	--
Re-sample	2/14/2006	--	--	8.1	603	9.5	--	--	--	100	--	--	--	--	--	--	--
	6/27/2006	3.5	<30	7.1	767	13.2	<5	<4	<5	1,090	160	90	14,600	6	<0.005	<0.010	93
Re-sample	8/3/2006	--	--	7.5	840	12.4	--	--	--	203	--	--	--	--	--	--	--
	12/1/2006	3.2	<30	7.4	873	12.3	<5	<5	<5	1,440	--	--	--	--	--	--	--
Re-sample	1/30/2007	--	--	8	607	10.1	--	--	--	1,850	--	--	--	--	--	--	--
	6/5/2007	1.6	26.1	7.0	849	11.0	9	3	1	355	520	245	15,200	10	<0.005	<0.010	82
	11/15/2007	1.2	16.1	7.1	803	7.8	2	1	4	134	--	--	--	--	--	--	--

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**Table 2**  
**Coldwater Road Landfill Facility**  
**Post-Closure Monitoring - Historical Analytical Results**  
**Physical Parameters, TOC, TOX, Metals, Chloride, Cyanide, Phenols, and Sulfate**

Well ID	Sample Date	Indicator Parameters					Dissolved Metals (ug/L)							Inorganics (mg/L)			
		TOC (mg/L)	TOX (ug/L)	pH	SpC	T	Cr	Cu	Ni	Zn	Fe	Mn	Na	Chloride	Cyanide	Phenols	Sulfate
B-18A	6/21/1995	2.7	<10	7.5	1,048	13.3	<20	<20	<30	150	--	--	--	--	--	--	--
	8/31/1995	3.0	<10	7.9	989	13.2	<20	<20	<40	<20	--	--	--	--	--	--	--
	2/9/1996	2.3	<10	7.4	1,021	9.3	<20	<20	<40	<20	--	--	--	--	--	--	--
	6/19/1996	1.4	<100	7.0	944	13.2	<20	<20	<20	<20	--	--	--	--	--	--	--
	8/21/1996	2.4	<5	7.5	1,041	12.8	<20	<20	<20	60	--	--	--	--	--	--	--
	11/13/1996	19.0	<5	7.2	1,331	6.4	<20	<20	<20	70	--	--	--	--	--	--	--
	5/6/1997	2.0	<100	6.5	900	10.0	<10	<10	13	10	--	--	--	--	--	--	--
	11/6/1997	4.0	<100	6.4	1,100	10.0	<10	<10	62	10	380	62	--	12	<0.005	<0.020	130
	5/4/1998	2.0	<5	6.7	862	11.8	<10	<10	<5	20	--	--	--	--	--	--	--
	11/5/1998	1.0	<10	6.0	1,090	11.8	<10	<10	<5	10	240	128	46,000	--	--	--	--
	12/23/1998	--	--	--	--	--	--	--	--	--	--	--	--	10	<0.005	<0.020	133
	4/26/1999	2.1	<100	8.1	921	14.0	<10	<10	<5	20	--	--	--	--	--	--	--
	11/5/1999	4.3	<100	7.1	832	14.0	<10	<10	<5	60	180	155	39,200	8	<0.005	<0.020	130
	4/26/2000	2.4	<100	7.5	980	10.4	<10	<10	<5	30	--	--	--	--	--	--	--
12/8/2000	2.6	<10	7.0	990	9.9	<10	<10	15	<10	<10	--	34,500	7	<0.005	<0.020	126	
Dup. 12/8/2000	2.6	<10	--	--	--	<10	<10	13	<10	40	--	35,100	7	<0.005	<0.020	112	
5/16/2001	2.4	<100	7.9	1,160	12.9	<10	<10	<5	10	--	--	--	--	--	--	--	
10/17/2001	2.2	<100	7.1	1,020	12.2	<10	<10	<5	<10	350	--	35,400	7	<0.005	<0.020	132	
5/16/2002	1.5	<100	7.2	2,080	12.2	<10	<10	<5	10	--	--	--	--	--	--	--	
11/7/2002	1.9	<30	7.2	820	10.1	<5	<5	<5	<5	190	26	40,800	10	<0.005	<0.020	134	
6/4/2003	1.6	<30	6.9	790	13.1	<5	<5	<5	5	--	--	--	--	--	--	--	
Dup. 11/13/2003	1	<30	7.7	1,180	7.1	<5	<5	<5	<5	160	<5	--	10	<0.005	<0.010	129	
11/13/2003	--	--	--	--	--	--	--	--	--	--	--	--	11	<0.005	<0.010	130	
6/29/2004	1.2	<30	7.2	863	12.0	<5	<5	7	10	--	--	--	--	--	--	--	
12/9/2004	3	<30	6.2	960	10.5	<5	<5	9	12	900	363	37,900	14	<0.005	<0.010	127	
6/8/2005	2	<30	7.4	819	10.9	<5	<5	6	16	170	80	40,000	11	<0.005	<0.010	120	
12/8/2005	2.6	<30	9.7	1,120	10.1	11	<4	<5	10	390	170	47,000	--	--	--	--	
6/27/2006	1.2	<30	7.1	1,110	13.2	5	4	<5	46	170	50	48,200	13	<0.005	<0.010	125	
11/30/2006	1.4	119	7.2	1,100	11.5	5	<4	<5	9	--	--	--	--	--	--	--	
6/4/2007	1	19.9	7.0	1,070	13.2	9	3	3	14	110	22	51,800	15	<0.005	<0.010	114	
11/14/2007	<1	19	6.9	1,090	13.7	1	2	6	11	--	--	--	--	--	--	--	
6/25/2008	12	34.1	7.1	1,060	20.4	<5	2	<5	11	310	<5	54,800	15	<0.005	<0.010	110	
11/18/2008	<1	<30	6.6	1,088	2.9	<5	<1	<5	<5	--	--	--	--	--	--	--	
6/24/2009	<1	<30	7.3	1,060	26.2	<5	1	<5	15	<20	<5	53,100	16	<0.005	<0.010	111	
11/18/2009	2	<30	6.9	1,070	11.7	<5	<4	<5	45	--	--	--	--	--	--	--	
6/17/2010	1	<30	7.2	1,080	17.5	<5	<4	<5	8	<20	<5	45,500	15	<0.005	<0.020	109	
11/10/2010	2	28	6.9	1,065	9.5	12	<4	<5	<5	--	--	--	--	--	--	--	

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**Physical Parameters, TOC, TOX, Metals, Chloride, Cyanide, Phenols, and Sulfate**

Well ID	Sample Date	Indicator Parameters					Dissolved Metals (ug/L)							Inorganics (mg/L)			
		TOC (mg/L)	TOX (ug/L)	pH	SpC	T	Cr	Cu	Ni	Zn	Fe	Mn	Na	Chloride	Cyanide	Phenols	Sulfate
<b>B-19A</b>	6/21/1995	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	--	--	--	--
	8/31/1995	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	--	--	--	--
	2/9/1996	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	--	--	--	--
	6/19/1996	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	--	--	--	--
	8/21/1996	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	--	--	--	--
	11/13/1996	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	--	--	--	--
	5/6/1997	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	--	--	--	--
	11/6/1997	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	WD	WD	WD	WD
	5/4/1998	3.0	<5	6.8	1,480	10.1	<10	<10	<5	30	--	--	--	--	--	--	--
	11/5/1998	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	--	--	--	--
	12/23/1998	--	--	--	--	--	--	--	--	--	--	--	--	NS	NS	NS	NS
	4/26/1999	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	--	--	--	--
	11/5/1999	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/26/2000	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	--	--	--	--
	12/8/2000	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/16/2001	4.0	<100	7.1	1,050	11.8	<10	<10	<5	<10	--	--	--	--	--	--	--
	10/17/2001	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
5/16/2002	6.0	<100	7.2	1,740	10.6	<10	<10	<5	10	--	--	--	--	--	--	--	
11/7/2002	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
6/4/2003	5.8	<30	6.9	1,350	12.9	<5	<5	<5	<5	--	--	--	--	--	--	--	
11/13/2003	3.4	<30	7.6	1,620	10.2	<5	<5	<5	<5	20	<5	--	148	<0.005	<0.010	229	
6/29/2004	3.9	<30	7.2	1,316	14.7	<5	<5	<5	8	--	--	--	--	--	--	--	
12/9/2004	5.0	33	6.2	1,340	9.9	<5	<5	<5	9	240	11	111,000	116	<0.005	<0.010	233	
Dup. 12/9/2004	5.0	<30	--	--	--	<5	<5	<5	7	170	<5	114,000	116	<0.005	<0.010	233	
<b>B-19AR</b>	6/7/2005	3.0	<30	7.1	829	12.2	<5	<5	7	<5	1,320	228	15,700	52	<0.005	<0.010	130
Dup. 12/8/2005	5.5	<30	--	1,390	--	10	<4	<5	20	160	<20	81,400	--	--	--	--	
12/8/2005	5.3	<30	7.1	1,390	12.3	10	<4	<5	<10	150	<20	74,800	--	--	--	--	
Re-sample 2/14/2006	--	--	8.0	840	5.9	<5	--	--	--	--	--	--	--	--	--	--	
6/29/2006	2.7	<30	7.6	860	12.0	<5	<4	12	21	240	210	22,400	51	<0.005	<0.010	153	
11/30/2006	6.2	33.7	7.2	1,300	11.4	5	<4	<5	<5	--	--	--	--	--	--	--	
6/7/2007	2	<30	7.0	899	11.4	6	4	4	9	70	21	19,700	58	<0.005	<0.010	136	
11/13/2007	1.5	<30	7.3	1,070	12.1	3	7	26	11	--	--	--	--	--	--	--	
6/25/2008	2.4	38.8	7.1	1,060	17.4	<5	3	<5	16	380	9	18,500	58	<0.005	<0.010	148	
11/18/2008	1.3	<30	7.0	1,052	8.0	<5	1	<5	14	--	--	--	--	--	--	--	
6/24/2009	1.0	<30	7.7	911	17.3	<5	2	<5	<5	36	<5	21,200	60	<0.005	<0.010	147	
11/19/2009	2	<30	7.4	994	10.4	<5	<4	<5	7	--	--	--	--	--	--	--	
6/15/2010	2	<30	7.6	992	16.1	<5	<4	<5	<5	<20	<5	19,800	59	<0.005	<0.020	154	
<b>11/10/2010</b>	<b>2</b>	<b>&lt;30</b>	<b>6.9</b>	<b>1,128</b>	<b>8.7</b>	<b>12</b>	<b>&lt;4</b>	<b>&lt;5</b>	<b>&lt;5</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	

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**Coldwater Road Landfill Facility**  
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**Physical Parameters, TOC, TOX, Metals, Chloride, Cyanide, Phenols, and Sulfate**

Well ID	Sample Date	Indicator Parameters					Dissolved Metals (ug/L)							Inorganics (mg/L)			
		TOC (mg/L)	TOX (ug/L)	pH	SpC	T	Cr	Cu	Ni	Zn	Fe	Mn	Na	Chloride	Cyanide	Phenols	Sulfate
B-20D	6/21/1995	2.8	<10	8.3	771	15.1	<20	<20	<30	<20	--	--	--	--	--	--	--
	8/31/1995	4.7	47	8.1	1,204	14.6	<20	20	<40	<20	--	--	--	--	--	--	--
	2/9/1996	21.0	38	7.1	801	9.1	32	28	54	120	--	--	--	--	--	--	--
	6/19/1996	2.4	<100	7.9	745	11.9	<20	<20	<20	<20	--	--	--	--	--	--	--
	8/21/1996	3.0	<5	8.0	750	13.1	<20	<20	<20	40	--	--	--	--	--	--	--
	11/13/1996	16.0	<5	7.7	1,075	6.7	<20	<20	<20	40	--	--	--	--	--	--	--
	5/6/1997	3.0	<100	6.8	640	10.0	<10	<10	15	10	--	--	--	--	--	--	--
	11/6/1997	5.0	<100	6.7	700	10.0	<10	20	41	<10	260	35	--	5	<0.005	<0.020	101
	5/4/1998	4.0	<5	6.8	579	12.2	<10	<10	<5	<10	--	--	--	--	--	--	--
	11/5/1998	3.0	11	6.5	667	13.5	<10	<10	<5	10	<10	18	31,000	--	--	--	--
	Dup. 11/5/1998	5.0	16	6.5	677	13.6	<10	<10	<5	10	170	8	30,300	--	--	--	--
	12/23/1998	--	--	--	--	--	--	--	--	--	--	--	--	3	<0.005	<0.020	92
	Dup. 12/23/1998	--	--	--	--	--	--	--	--	--	--	--	--	3	<0.005	<0.020	89
	4/26/1999	3.2	<100	8.4	506	13.0	<10	<10	<5	10	--	--	--	--	--	--	--
11/5/1999	5.3	<100	7.5	677	12.5	<10	<10	<5	60	130	60	31,400	33	<0.005	<0.020	105	
4/26/2000	3.2	<100	7.4	760	14.9	<10	<10	<5	<10	--	--	--	--	--	--	--	
12/8/2000	3.2	<10	7.5	780	4.7	<10	<10	15	<10	20	--	19,700	2	<0.005	<0.020	113	
5/15/2001	2.7	<100	7.0	590	13.0	<10	<10	<5	<10	--	--	--	--	--	--	--	
10/18/2001	2.5	<100	7.9	930	10.4	<10	<10	<5	<10	300	--	20,600	2	<0.005	<0.020	105	
5/16/2002	3.2	<100	7.2	780	11.9	<10	<10	<5	10	--	--	--	--	--	--	--	
11/7/2002	1.8	<30	7.6	610	8.7	<5	<5	<5	<5	250	74	20,900	3	<0.005	<0.020	115	
6/3/2003	2.5	<30	7.4	620	12.8	<5	<5	<5	<5	--	--	--	--	--	--	--	
11/13/2003	1.3	<30	8.0	630	7.7	<5	<5	5	<5	200	15	--	5	<0.005	<0.010	127	
6/29/2004	9.4	<30	7.5	666	13.1	<5	<5	11	<5	--	--	--	--	--	--	--	
12/10/2004	2.0	<30	6.6	830	10.8	<5	<5	11	10	2,110	92	16,800	3	<0.005	<0.010	148	
6/7/2005	4.0	<30	7.3	707	11.9	7	<5	5	<5	2,140	66	16,500	<5	<0.005	<0.010	155	
12/8/2005	4.1	<30	4.8	957	11.1	11	<4	26	<10	120	120	20,600	--	--	--	--	
6/28/2006	1.7	<30	7.4	979	12.5	7	<4	<5	5	2,120	60	17,600	2	<0.005	<0.010	169	
11/30/2006	3.4	<30	7.5	980	12.5	6	<4	6	<5	--	--	--	--	--	--	--	
6/8/2007	3.4	30.9	6.7	929	13.4	10	22	19	124	610	160	25,500	4	<0.005	0.074	144	
11/13/2007	2.1	<30	7.2	932	13.5	3	1	13	9	--	--	--	--	--	--	--	
6/25/2008	<1	<60	7.0	946	15.5	<5	2	<5	7	2,400	55	19,500	4	<0.005	<0.010	164	
11/18/2008	1	36.1	6.9	1,006	12.6	<5	4	6	22	--	--	--	--	--	--	--	
6/24/2009	1.1	<30	7.2	1,000	19.4	<5	<1	<5	<5	1,720	56	21,000	3	<0.005	<0.010	180	
Dup. 6/24/2009	<1	<30	7.2	1,010	19.4	<5	<1	<5	<5	1,640	56	20,800	3	<0.005	<0.010	183	
11/18/2009	2	<30	7.0	1,030	12.1	<5	<4	<5	5	--	--	--	--	--	--	--	
6/16/2010	2	<30	7.3	1,020	15.1	<5	<4	<5	<5	1,930	49	19,000	2	<0.005	<0.020	177	
11/9/2010	3	<30	7.0	998	11.7	11	<4	<5	<5	--	--	--	--	--	--	--	

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**Table 2**  
**Coldwater Road Landfill Facility**  
**Post-Closure Monitoring - Historical Analytical Results**  
**Physical Parameters, TOC, TOX, Metals, Chloride, Cyanide, Phenols, and Sulfate**

Well ID	Sample Date	Indicator Parameters					Dissolved Metals (ug/L)							Inorganics (mg/L)			
		TOC (mg/L)	TOX (ug/L)	pH	SpC	T	Cr	Cu	Ni	Zn	Fe	Mn	Na	Chloride	Cyanide	Phenols	Sulfate
B-21D	6/21/1995	4.2	<10	8.3	870	14.5	<20	<20	<30	61	--	--	--	--	--	--	--
	8/31/1995	3.3	19	8.1	684	14.2	<20	21	<40	<20	--	--	--	--	--	--	--
	2/9/1996	4.1	<10	7.7	646	8.6	<20	<20	<40	<20	--	--	--	--	--	--	--
	6/19/1996	5.3	<100	7.6	577	14.1	<20	<20	<20	<20	--	--	--	--	--	--	--
	8/21/1996	2.5	<5	7.9	576	13.8	<20	<20	<20	50	--	--	--	--	--	--	--
	11/13/1996	17.0	<5	7.3	810	8.8	<20	<20	<20	40	--	--	--	--	--	--	--
	5/6/1997	2.0	<100	6.8	530	10.2	<10	<10	8	<10	--	--	--	--	--	--	--
	11/6/1997	3.0	<100	6.7	540	10.0	<10	<10	30	<10	240	27	--	2	<0.005	<0.020	33
	5/4/1998	16.0	<5	6.9	480	11.5	<10	<10	<5	20	--	--	--	--	--	--	--
	11/5/1998	5.0	<10	7.2	565	7.8	<10	<10	<5	10	240	43	26,700	--	--	--	--
	12/23/1998	--	--	--	--	--	--	--	--	--	--	--	--	2	<0.005	<0.020	15
	4/26/1999	11.0	<100	8.2	506	13.0	<10	<10	<5	10	--	--	--	--	--	--	--
	11/5/1999	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/26/2000	2.5	<100	8.2	660	14.1	<10	<10	<5	<10	--	--	--	--	--	--	--
12/8/2000	4.2	<10	8.4	680	7.1	<10	<10	11	<10	<10	--	29,600	2	<0.005	<0.020	36	
5/15/2001	1.9	<100	7.9	570	13.0	<10	<10	<5	10	--	--	--	--	--	--	--	
5/15/2001	1.9	<100	8.3	560	13.0	<10	<10	<5	10	--	--	--	--	--	--	--	
10/18/2001	3.4	<100	7.6	570	13.7	<10	<10	<5	<10	200	--	22,200	1	<0.005	<0.020	41	
5/16/2002	6.1	<100	7.2	630	11.7	<10	<10	<5	<10	--	--	--	--	--	--	--	
11/7/2002	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
6/3/2003	5.8	<30	7.3	510	13.0	<5	<5	<5	6	--	--	--	--	--	--	--	
11/13/2003	1.0	<30	7.8	710	8.7	<5	<5	<5	9	100	<5	--	4	<0.005	<0.010	48	
6/30/2004	4.0	<30	6.8	570	14.8	<5	<5	<5	7	--	--	--	--	--	--	--	
12/10/2004	2.0	<30	6.4	600	9.9	<5	<5	<5	7	1,330	44	20,100	2	<0.005	<0.010	50	
6/8/2005	3.0	<30	7.7	560	14.2	<5	<5	12	6	1,350	72	21,000	<5	<0.005	<0.010	44	
12/8/2005	4.4	<30	5.5	741	11.4	8	<4	8	<10	1,070	60	21,500	--	--	--	--	
6/28/2006	1.5	<30	7.4	718	12.8	<5	6	5	13	430	60	23,500	2	<0.005	<0.010	53	
11/30/2006	1.8	49.1	7.6	693	11.5	<5	<4	<5	<5	--	--	--	--	--	--	--	
6/8/2007	1.2	<30	6.3	709	13.2	10	2	5	7	1,200	49	21,500	4	<0.005	<0.010	60	
11/14/2007	<1	<30	7.3	738	14.5	2	1	5	8	--	--	--	--	--	--	--	
6/26/2008	1.8	16.8	7.1	738	16.9	<5	1	<5	<5	1,390	40	22,700	3	<0.005	<0.010	60	
11/19/2008	1.1	<30	6.9	739	11.0	<5	<1	5	<5	--	--	--	--	--	--	--	
6/25/2009	<1	<30	6.7	743	16.1	<5	<1	<5	<5	1,210	34	25,100	3	<0.005	<0.010	64	
11/19/2009	2	41.2	7.2	745	10.2	<5	<4	<5	6	--	--	--	--	--	--	--	
11/19/2009	2	<30	7.2	739	10.2	<5	<4	<5	<5	--	--	--	--	--	--	--	
6/17/2010	2	<30	7.4	736	13.2	<5	<4	<5	<5	980	34	23,700	3	<0.005	<0.020	58	
11/10/2010	1	<30	7.3	739	11.0	11	<4	<5	<5	--	--	--	--	--	--	--	

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**Table 2**  
**Coldwater Road Landfill Facility**  
**Post-Closure Monitoring - Historical Analytical Results**  
**Physical Parameters, TOC, TOX, Metals, Chloride, Cyanide, Phenols, and Sulfate**

Well ID	Sample Date	Indicator Parameters					Dissolved Metals (ug/L)							Inorganics (mg/L)			
		TOC (mg/L)	TOX (ug/L)	pH	SpC	T	Cr	Cu	Ni	Zn	Fe	Mn	Na	Chloride	Cyanide	Phenols	Sulfate
B-22D	6/21/1995	2.6	<10	7.7	573	15.5	<20	<20	370	<20	--	--	--	--	--	--	--
	8/31/1995	4.5	47	8.3	739	14.3	<20	<20	<40	47	--	--	--	--	--	--	--
	2/9/1996	6.9	<10	NS	NS	NS	<20	<20	<40	80	--	--	--	--	--	--	--
	6/19/1996	1.8	<100	7.5	600	13.4	<20	<20	<20	20	--	--	--	--	--	--	--
	8/21/1996	1.7	<5	8.1	608	14.2	<20	<20	<20	50	--	--	--	--	--	--	--
	11/13/1996	10.0	<5	7.2	817	7.7	<20	<20	<20	50	--	--	--	--	--	--	--
	5/6/1997	2.0	<100	6.7	550	10.1	<10	<10	<5	<10	--	--	--	--	--	--	--
	11/6/1997	7.0	<100	6.9	550	10.0	<10	<10	29	10	1,360	55	--	2	<0.005	<0.020	32
	5/4/1998	5.0	<5	7.1	501	11.7	<10	<10	<5	<10	--	--	--	--	--	--	--
	11/5/1998	6.0	<10	6.6	559	9.8	<10	<10	<5	10	1,180	47	23,800	--	--	--	--
	12/23/1998	--	--	--	--	--	--	--	--	--	--	--	--	2	<0.005	<0.020	28
	4/26/1999	18.0	<100	8.2	485	13.2	<10	<10	<5	10	--	--	--	--	--	--	--
	11/5/1999	2.6	<100	7.3	474	13.6	<10	<10	<5	20	90	31	27,900	2	<0.005	<0.020	29
	4/26/2000	2.5	<100	8.2	670	14.2	<10	<10	<5	<10	--	--	--	--	--	--	--
	12/8/2000	2.5	<10	7.5	510	5.4	<10	<10	8	<10	<10	--	26,500	2	<0.005	<0.020	31
	5/15/2001	6.7	<100	8.0	690	13.7	<10	<10	6	30	--	--	--	--	--	--	--
	10/18/2001	1.7	<100	7.6	2,610	10.2	<10	<10	<5	<10	200	--	27,800	1	<0.005	<0.020	33
	5/16/2002	3.2	<100	7.1	630	12.1	<10	<10	<5	<10	--	--	--	--	--	--	--
	11/7/2002	1.5	<30	7.4	480	8.8	<5	<5	<5	<5	120	11	25,200	2	<0.005	<0.020	35
	6/3/2003	2.3	<30	6.8	570	13.1	<5	<5	<5	<5	--	--	--	--	--	--	--
	11/14/2003	1.6	<30	8.1	660	9.8	<5	<5	<5	9	6	<5	--	3	<0.005	<0.010	37
	6/30/2004	1.7	<30	6.3	610	15.5	<5	<5	<5	6	--	--	--	--	--	--	--
	12/10/2004	2.0	<30	7.0	600	10.3	<5	<5	<5	6	1,280	37	25,100	2	<0.005	<0.010	42
6/8/2005	2.0	<30	7.7	531	13.2	6	<5	<5	<5	1,370	38	23,700	<5	<0.005	<0.010	40	
12/8/2005	2.7	<30	5.8	702	11.7	10	<4	46	<10	2,200	250	25,400	--	--	--	--	
6/28/2006	<1	<30	7.5	682	13.0	<5	<4	<5	<5	1,290	30	25,800	2	<0.005	<0.010	42	
11/30/2006	2.2	<30	7.5	684	13.3	<5	<4	<5	7	--	--	--	--	--	--	--	
Dup. 11/30/2006	5.3	<30	7.5	676	13.3	<5	<4	<5	<5	--	--	--	--	--	--	--	
6/8/2007	3.8	<30	6.6	680	14.3	7	2	1	5	1,180	32	28,100	3	<0.005	<0.010	46	
Dup. 6/8/2007	3.1	21.1	6.6	669	14.3	9	2	1	4	1,210	31	28,400	4	<0.005	<0.010	47	
11/14/2007	1.1	<30	7.3	710	14.2	2	2	3	6	--	--	--	--	--	--	--	
6/26/2008	1.7	22.6	7.1	694	19.3	<5	<1	<5	5	1,100	33	25,900	3	<0.005	<0.010	46	
Dup. 6/26/2008	2.6	<30	7.1	710	19.3	<5	<1	<5	7	1,150	34	26,400	3	<0.005	<0.010	46	
11/19/2008	8.9	<30	6.9	699	8.2	<5	<1	8	8	--	--	--	--	--	--	--	
6/25/2009	1.1	<30	6.7	705	16.6	<5	<1	<5	<5	1,340	30	28,500	2	<0.005	<0.010	54	
11/18/2009	2	<30	7.2	710	11.4	<5	<4	<5	<5	--	--	--	--	--	--	--	
6/16/2010	2	<30	7.4	715	15.7	<5	<4	<5	<5	1,100	28	26,000	2	<0.005	<0.020	51	
11/11/2010	2	<30	7.3	704	10.3	11	<4	<5	<5	--	--	--	--	--	--	--	

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**Table 2**  
**Coldwater Road Landfill Facility**  
**Post-Closure Monitoring - Historical Analytical Results**  
**Physical Parameters, TOC, TOX, Metals, Chloride, Cyanide, Phenols, and Sulfate**

Well ID	Sample Date	Indicator Parameters					Dissolved Metals (ug/L)							Inorganics (mg/L)			
		TOC (mg/L)	TOX (ug/L)	pH	SpC	T	Cr	Cu	Ni	Zn	Fe	Mn	Na	Chloride	Cyanide	Phenols	Sulfate
B-23D	6/21/1995	3.4	<10	7.3	680	15.1	<20	<20	<30	<20	--	--	--	--	--	--	--
	8/31/1995	3.9	96	8.2	845	15.4	<20	<20	<40	<20	--	--	--	--	--	--	--
	2/9/1996	3.8	34	7.5	751	11.3	<20	<20	<40	<20	--	--	--	--	--	--	--
	6/19/1996	2.2	<100	8.3	632	14.2	<20	<20	<20	<20	--	--	--	--	--	--	--
	8/21/1996	1.7	<5	8.9	691	14.6	<20	<20	<20	50	--	--	--	--	--	--	--
	11/13/1996	40.0	<5	7.7	977	7.6	<20	<20	<20	40	--	--	--	--	--	--	--
	5/6/1997	2.0	<100	6.8	610	11.0	<10	<10	9	<10	--	--	--	--	--	--	--
	11/6/1997	3.0	<100	6.0	620	10.0	<10	<10	31	<10	160	15	--	2	<0.005	<0.020	25
	5/4/1998	2.0	<5	6.4	558	12.2	<10	<10	<5	<10	--	--	--	--	--	--	--
	11/5/1998	5.0	<10	6.5	639	9.8	<10	<10	<5	70	<10	<5	29,700	--	--	--	--
	12/23/1998	--	--	--	--	--	--	--	--	--	--	--	--	2	<0.005	<0.020	21
	4/26/1999	3.6	<100	8.1	552	13.3	<10	<10	<5	<10	--	--	--	--	--	--	--
	Dup 4/26/1999	3.0	<100	NS	NS	NS	<10	<10	<5	<10	--	--	--	--	--	--	--
	11/5/1999	3.4	<100	7.4	546	13.3	<10	<10	<5	<10	80	14	34,700	3	<0.005	<0.020	26
	Dup 11/5/1999	3.1	<100	NS	NS	NS	<10	<10	<5	<10	90	15	33,300	3	<0.005	<0.020	25
4/26/2000	3.2	<100	7.9	800	13.7	<10	<10	<5	<10	--	--	--	--	--	--	--	
12/8/2000	2.0	<10	7.0	570	7.0	<10	<10	7	<10	60	--	35,400	2	<0.005	<0.020	22	
5/15/2001	3.2	<100	7.9	790	13.1	<10	<10	<5	10	--	--	--	--	--	--	--	
10/17/2001	1.8	<100	7.5	600	11.3	<10	<10	<5	<10	170	--	32,800	2	<0.005	<0.020	23	
5/16/2002	5.4	<100	7.2	1200	11.2	<10	<10	<5	10	--	--	--	--	--	--	--	
11/7/2002	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
6/3/2003	3.9	<30	6.9	640	12.9	<5	<5	<5	<5	--	--	--	--	--	--	--	
Dup 6/3/2003	3.7	<30	--	--	--	<5	<5	<5	<5	--	--	--	--	--	--	--	
11/13/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
6/30/2004	NS	NS	NS	NS	NS	NS	NS	NS	NS	--	--	--	--	--	--	--	
12/10/2004	2.0	<30	6.7	640.0	11.3	<5	<5	11	10	500	65	30,500	2	<0.005	<0.010	25	
B-23DR 6/7/2005	2.0	<30	7.3	594.0	12.2	<5	<5	<5	<5	2,520	49	20,600	25	<0.005	<0.010	60	
Dup 6/7/2005	2.0	<30	--	--	--	<5	<5	<5	<5	2,580	48	20,600	25	<0.005	<0.010	59	
B-23DR 12/8/2005	3.8	<30	6.2	700.0	6.1	7	<4	<5	<10	370	60	39,200	--	--	--	--	
6/27/2006	1.2	<30	7.1	760.0	13.4	5	<4	<5	5	2,280	50	20,500	26	<0.005	0.010	67	
11/30/2006	2.2	<30	7.6	568.0	11.8	<5	<4	<5	6	--	--	--	--	--	--	--	
6/8/2007	1.1	33.7	6.5	736	13.1	7	1	1	5	1,100	43	23,800	28	<0.005	<0.010	62	
11/16/2007	<1	<30	7.3	780	21.4	2	1	3	8	--	--	--	--	--	--	--	
6/26/2008	2.0	27.2	7.0	753	18.2	<5	1	<5	<5	1,850	44	23,700	22	<0.005	<0.010	54	
11/21/2008	<1	<30	6.7	763	6.0	<5	<1	<5	19	--	--	--	--	--	--	--	
6/25/2009	<1	<30	6.7	776	18.9	<5	<1	<5	<5	1,500	43	23,900	29	<0.005	<0.010	63	
11/18/2009	2	<30	7.2	756	11.9	<5	<4	<5	10	--	--	--	--	--	--	--	
B-23DR 6/16/2010	2	<30	7.4	747	18.2	<5	<4	<5	<5	950	35	23,200	20	<0.005	<0.020	45	
11/11/2010	2	21.5	7.3	743	12.8	11	<4	<5	<5	--	--	--	--	--	--	--	
Dup 11/11/2010	2	<30	7.3	742	12.8	11	<4	<5	<5	--	--	--	--	--	--	--	

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**Table 2**  
**Coldwater Road Landfill Facility**  
**Post-Closure Monitoring - Historical Analytical Results**  
**Physical Parameters, TOC, TOX, Metals, Chloride, Cyanide, Phenols, and Sulfate**

Well ID	Sample Date	Indicator Parameters					Dissolved Metals (ug/L)							Inorganics (mg/L)			
		TOC (mg/L)	TOX (ug/L)	pH	SpC	T	Cr	Cu	Ni	Zn	Fe	Mn	Na	Chloride	Cyanide	Phenols	Sulfate
<b>B-24</b>	6/21/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	8/31/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2/9/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	6/19/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	8/21/1996	5.6	<5	7.8	1,502	12.7	<20	<20	<20	90	--	--	--	--	--	--	--
	11/13/1996	20.0	<5	7.1	2,030	7.8	<20	<20	<20	50	--	--	--	--	--	--	--
	5/6/1997	5.0	<100	6.4	1,700	10.0	<10	<10	31	10	--	--	--	--	--	--	--
	11/6/1997	--	--	--	--	--	--	--	--	--	--	--	--	NS	NS	NS	NS
	5/4/1998	4.0	<5	6.5	1,410	11.6	<10	<10	8	20	--	--	--	--	--	--	--
	11/5/1998	4.0	23	5.5	1,595	10.4	<10	<10	9	20	60	120	27,700	--	--	--	--
	12/23/1998	--	--	--	--	--	--	--	--	--	--	--	--	163	<0.005	<0.020	205
	4/26/1999	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	--	--	--	--
	11/5/1999	NS	NS	7.2	1,152	13.8	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/26/2000	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	--	--	--	--
	12/8/2000	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/15/2001	NS	NS	6.4	1,450	12.9	NS	NS	NS	NS	NS	NS	NS	--	--	--	--
	10/17/2001	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/16/2002	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	--	--	--	--
	11/7/2002	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	6/3/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	--	--	--	--
11/13/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
6/30/2004	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	--	--	--	--	
12/9/2004	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
B-24R	6/7/2005	8.0	<30	7.3	857	10.6	8	<5	<5	<5	10,600	448	27,100	49	<0.005	<0.010	206
B-24R	12/8/2005	6.6	<30	5.2	1,120	11.9	11	<4	<5	10	3,180	210	28,700	--	--	--	--
	6/28/2006	4.7	<30	7.3	1,080	11.9	6	<4	<5	<5	3,760	210	27,700	48	<0.005	<0.010	182
	11/30/2006	4.8	30	7.3	1,100	11.7	6	<4	<5	<5	--	--	--	--	--	--	--
	6/4/2007	4.5	110	7.2	1,080	11.0	9	2	2	19	2,400	194	27,900	47	<0.005	<0.010	184
	11/13/2007	4.1	30.1	7.1	1,130	14.0	3	1	5	7	--	--	--	--	--	--	--
	6/26/2008	4.3	<30	7.0	1,130	19.0	<5	1	<5	8	3,490	175	39,600	46	<0.005	<0.010	189
	11/18/2008	3.8	<30	6.8	1,125	5.3	<5	<1	<5	<5	--	--	--	--	--	--	--
	6/24/2009	5.2	<30	6.6	1,120	17.4	<5	<1	<5	<5	4,000	155	38,400	48	<0.005	<0.010	201
	11/18/2009	5	86.4	7.1	1,140	12.9	<5	<4	<5	<5	--	--	--	--	--	--	--
	6/16/2010	4	22.7	7.0	1,150	16.3	<5	<4	<5	<5	1,880	222	39,500	46	<0.005	<0.020	196
	<b>11/9/2010</b>	<b>5</b>	<b>26.8</b>	<b>6.9</b>	<b>1,136</b>	<b>13.5</b>	<b>11</b>	<b>&lt;4</b>	<b>&lt;5</b>	<b>&lt;5</b>	--	--	--	--	--	--	--

See notes on page 16.

**Table 2**  
**Coldwater Road Landfill Facility**  
**Post-Closure Monitoring - Historical Analytical Results**  
**Physical Parameters, TOC, TOX, Metals, Chloride, Cyanide, Phenols, and Sulfate**

Well ID	Sample Date	Indicator Parameters					Dissolved Metals (ug/L)							Inorganics (mg/L)			
		TOC (mg/L)	TOX (ug/L)	pH	SpC	T	Cr	Cu	Ni	Zn	Fe	Mn	Na	Chloride	Cyanide	Phenols	Sulfate
<b>B-27D</b>	12/8/2005	3.7	<30	5	714	4.8	9	<4	6	<10	240	140	34,200	--	--	--	--
	6/27/2006	1.3	<30	7.1	644	13.5	6	<4	7	6	1,050	110	32,300	--	--	--	--
	11/30/2006	<1	<30	7.5	540	11.7	<5	<4	<5	6	--	--	--	--	--	--	--
	6/8/2007	4	25.7	6.6	628	14.6	9	2	3	36	1,520	58	36,300	4	<0.005	<0.010	23
	11/15/2007	1.9	<30	7.3	649	11.6	2	1	5	32	--	--	--	--	--	--	--
	6/26/2008	1.7	<30	7.1	659	16.3	<5	<1	<5	<5	300	59	33,900	2	<0.005	<0.010	23
	11/21/2008	1.3	<30	6.8	667	6.6	<5	<1	<5	<5	--	--	--	--	--	--	--
	6/25/2009	<1	<30	6.8	651	16.5	<5	1	<5	<5	2,030	52	37,200	2	<0.005	<0.010	20
	11/18/2009	2	<30	7.3	653	11.2	<5	<4	<5	<5	--	--	--	--	--	--	--
	6/15/2010	2	<30	7.4	646	15.7	<5	<4	<5	<5	1,250	36	32,200	2	<0.005	<0.020	19
Dup.	6/15/2010	2	31.2	7.4	652	15.7	<5	<4	<5	1,220	35	31,700	2	<0.005	<0.020	20	
	<b>11/9/2010</b>	<b>2</b>	<b>&lt;30</b>	<b>7.2</b>	<b>651</b>	<b>13.3</b>	<b>10</b>	<b>&lt;4</b>	<b>&lt;5</b>	<b>&lt;5</b>	--	--	--	--	--	--	--

See notes on page 16.

**Table 2**  
**Coldwater Road Landfill Facility**  
**Post-Closure Monitoring - Historical Analytical Results**  
**Physical Parameters, TOC, TOX, Metals, Chloride, Cyanide, Phenols, and Sulfate**

Well ID	Sample Date	Indicator Parameters					Dissolved Metals (ug/L)							Inorganics (mg/L)			
		TOC (mg/L)	TOX (ug/L)	pH	SpC	T	Cr	Cu	Ni	Zn	Fe	Mn	Na	Chloride	Cyanide	Phenols	Sulfate
<b>B-28</b>	11/21/2005	--	--	6.2	994	12.3	--	--	--	<5	--	--	--	--	--	--	--
Dup.	11/21/2005	--	--	6.2	--	12.3	--	--	--	7	--	--	--	--	--	--	--
	6/27/2006	3	<30	7.1	828	13.2	5	<4	<5	18	2,380	210	17,000	--	--	--	--
	12/1/2006	2.4	<30	7.5	812	12.3	<5	<4	<5	5	--	--	--	--	--	--	--
Dup.	12/1/2006	3.3	<30	7.5	810	12.3	<5	<4	<5	<5	--	--	--	--	--	--	--
	6/5/2007	2.1	<30	6.8	845	10.6	9	2	3	6	1,690	160	25,100	12	<0.005	<0.010	87
	11/15/2007	2.5	15	6.8	816	9.1	3	2	5	11	--	--	--	--	--	--	--
	6/27/2008	1.8	<30	6.9	840	17.6	<5	1	<5	5	370	84	16,300	10	<0.005	<0.010	88
	11/19/2008	1.1	<30	6.8	804	7.0	<5	<1	<5	<5	--	--	--	--	--	--	--
	6/24/2009	1.1	<30	7.0	822	19.5	<5	<1	<5	<5	204	132	14,600	10	<0.005	<0.010	84
	11/18/2009	2	<30	6.9	814	11.6	<5	<4	<5	20	--	--	--	--	--	--	--
	6/16/2010	2	<30	7.0	841	17.6	<5	<4	<5	<5	790	173	19,100	12	<0.005	<0.020	78
	<b>11/10/2010</b>	<b>3</b>	<b>&lt;30</b>	<b>7.1</b>	<b>813</b>	<b>13.3</b>	<b>18</b>	<b>&lt;4</b>	<b>&lt;5</b>	<b>&lt;5</b>	--	--	--	--	--	--	--

See notes on page 16.

**Table 2**  
**Coldwater Road Landfill Facility**  
**Post-Closure Monitoring - Historical Analytical Results**  
**Physical Parameters, TOC, TOX, Metals, Chloride, Cyanide, Phenols, and Sulfate**

Well ID	Sample Date	Indicator Parameters					Dissolved Metals (ug/L)							Inorganics (mg/L)			
		TOC (mg/L)	TOX (ug/L)	pH	SpC	T	Cr	Cu	Ni	Zn	Fe	Mn	Na	Chloride	Cyanide	Phenols	Sulfate
<b>B-29</b>	11/21/2005	--	--	6.8	1,870	11.7	--	--	--	11	--	--	--	--	--	--	--
	6/27/2006	--	--	7.1	1,480	12.3	6	<4	<5	28	1,480	140	47,300	--	--	--	--
	12/1/2006	--	--	7.3	--	11.4	8	<4	5	9	--	--	--	--	--	--	--
	6/5/2007	2.4	31.1	6.9	1,402	10.3	11	3	3	8	800	118	46,300	70	<0.005	<0.010	218
	11/15/2007	3.2	17.3	6.9	1,370	12.2	4	2	7	14	--	--	--	--	--	--	--
Dup.	11/15/2007	2.7	16.5	6.9	1,380	12.2	3	2	7	10	--	--	--	--	--	--	--

See notes on page 16.

**Table 2**  
**Coldwater Road Landfill Facility**  
**Post-Closure Monitoring - Historical Analytical Results**  
**Physical Parameters, TOC, TOX, Metals, Chloride, Cyanide, Phenols, and Sulfate**

Well ID	Sample Date	Indicator Parameters					Dissolved Metals (ug/L)							Inorganics (mg/L)			
		TOC (mg/L)	TOX (ug/L)	pH	SpC	T	Cr	Cu	Ni	Zn	Fe	Mn	Na	Chloride	Cyanide	Phenols	Sulfate
<b>B-30</b>	11/21/2005	--	--	6.8	1,450	12.1	--	--	--	212	--	--	--	--	--	--	--
	6/27/2006	--	--	7.1	1,330	12.3	6	<4	<5	16	2,690	100	21,300	--	--	--	--
	12/1/2006	--	--	7.3	--	10.6	6	<4	<5	8	--	--	--	--	--	--	--
	6/5/2007	2.7	<30	7.0	1,542	10.9	11	4	4	17	1,260	171	25,000	35	<0.005	<0.010	452
	11/15/2007	2.4	17.4	7.0	1,510	9.3	4	3	7	14	--	--	--	--	--	--	--

See notes on page 16.

**Table 2**  
**Coldwater Road Landfill Facility**  
**Post-Closure Monitoring - Historical Analytical Results**  
**Physical Parameters, TOC, TOX, Metals, Chloride, Cyanide, Phenols, and Sulfate**

Well ID	Sample Date	Indicator Parameters					Dissolved Metals (ug/L)							Inorganics (mg/L)			
		TOC (mg/L)	TOX (ug/L)	pH	SpC	T	Cr	Cu	Ni	Zn	Fe	Mn	Na	Chloride	Cyanide	Phenols	Sulfate
Equipment Blank	12/10/2004	<1	<30	--	--	--	<5	<5	<5	11	<20	13	810	<2	<0.005	<0.010	<2
	6/8/2005	<1	<30	--	--	--	<5	<5	<5	<5	<20	<5	120	<5	<0.005	<0.010	<5
	12/8/2005	<1	<30	--	5	--	<5	<4	<5	<10	<100	<20	<1000	--	--	--	--
	6/28/2006	<1	<30	--	12	--	<5	<4	<5	<5	<100	<20	<1000	<1	<0.005	<0.010	<1
	12/1/2006	<1	<30	--	26	--	<5	<4	<5	<5	--	--	--	--	--	--	--
	6/8/2007	<1	26	--	13	--	<5	1	1	13	<20	11	340	<2	<0.005	<0.010	<2
	11/15/2007	<1	<30	--	4	--	<5	1	1	9	--	--	--	--	--	--	--
	6/26/2008	<1	<30	--	3	--	<5	1	<5	<5	100	7	420	<2	<0.005	<0.010	<2
	11/19/2008	<1	<30	--	6	--	<5	1	<5	<5	--	--	--	--	--	--	--
	6/25/2009	<1	<30	--	24	--	<5	<1	<5	<5	110	<5	200	<2	<0.005	<0.010	<2
	11/19/2009	0.7	<30	--	5	--	<5	<4	<5	<5	--	--	--	--	--	--	--
	6/17/2010	0.4	<30	--	4	--	<5	<4	<5	<5	<20	<5	<200	<2	<0.005	<0.020	<2
	11/11/2010	1	<30	--	1.2	--	<5	<4	<5	<5	--	--	--	--	--	--	--

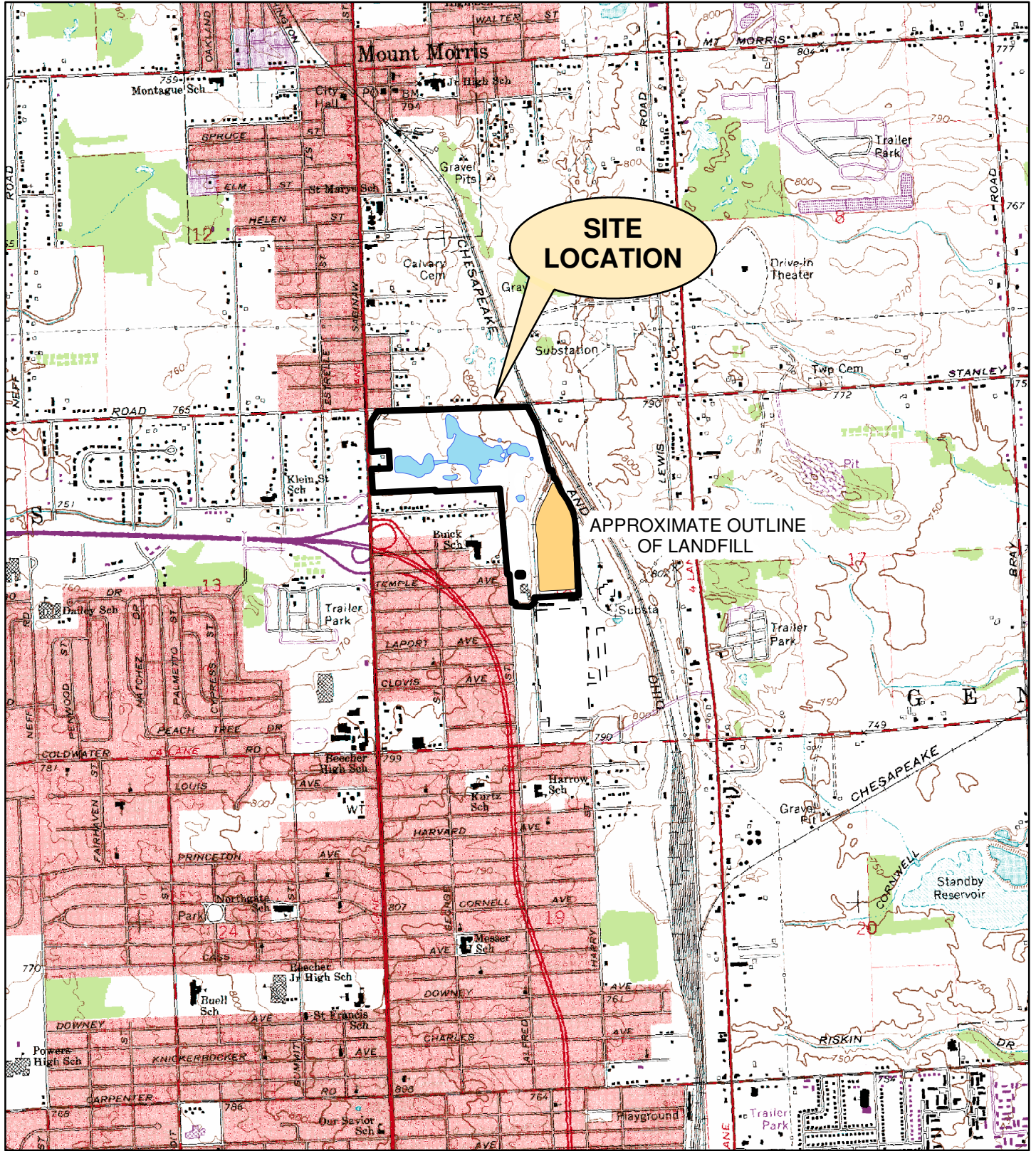
Notes

- 1) < = Not detected.
- 2) NS = Not sampled, insufficient liquid encountered.
- 3) NR = No Result, insufficient sample volume.
- 4) T = Temperature in degrees Celsius.
- 5) -- = Not analyzed.
- 6) Dup = Duplicate sample.

*FIGURES*

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PLOT DATE: 1/14/2011 jmo



**MOTORS LIQUIDATION COMPANY  
COLDWATER ROAD LANDFILL FACILITY  
FLINT, MICHIGAN**

**SITE LOCATION MAP**



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PLOT DATE: 1/14/2011 jmo

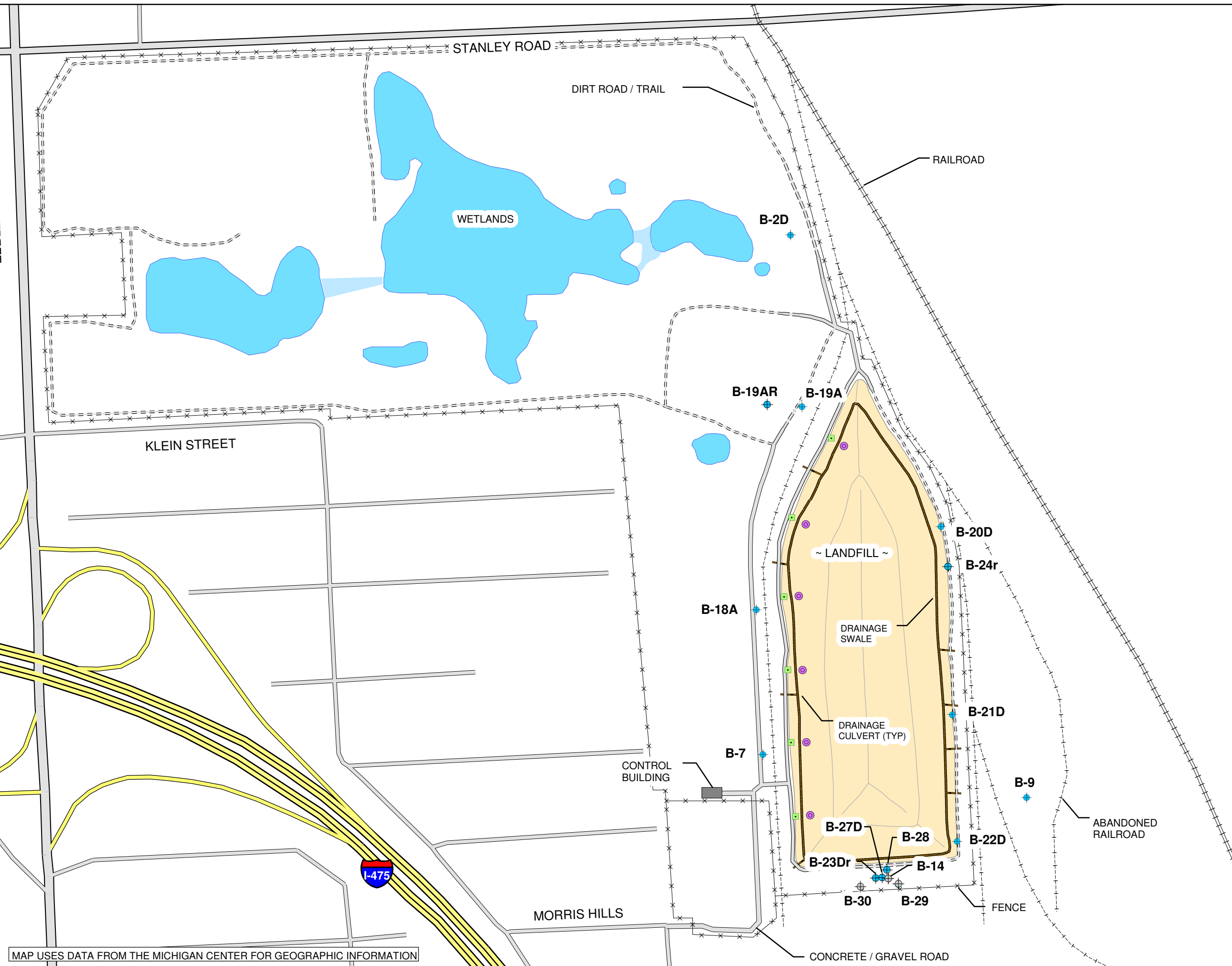






FIGURE 2

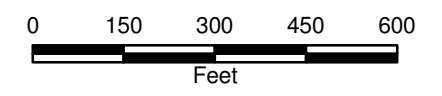


**LEGEND**

-  LEACHATE COLLECTION SUMP
-  ACCESS PORT FOR LEAK DETECTION VAULT
-  MONITORING WELL
-  ABANDONED WELL

MOTORS LIQUIDATION COMPANY  
 COLDWATER ROAD  
 LANDFILL FACILITY  
 FLINT, MICHIGAN

**SITE LAYOUT**



JANUARY 2011  
 14774/46317-004

MAP USES DATA FROM THE MICHIGAN CENTER FOR GEOGRAPHIC INFORMATION

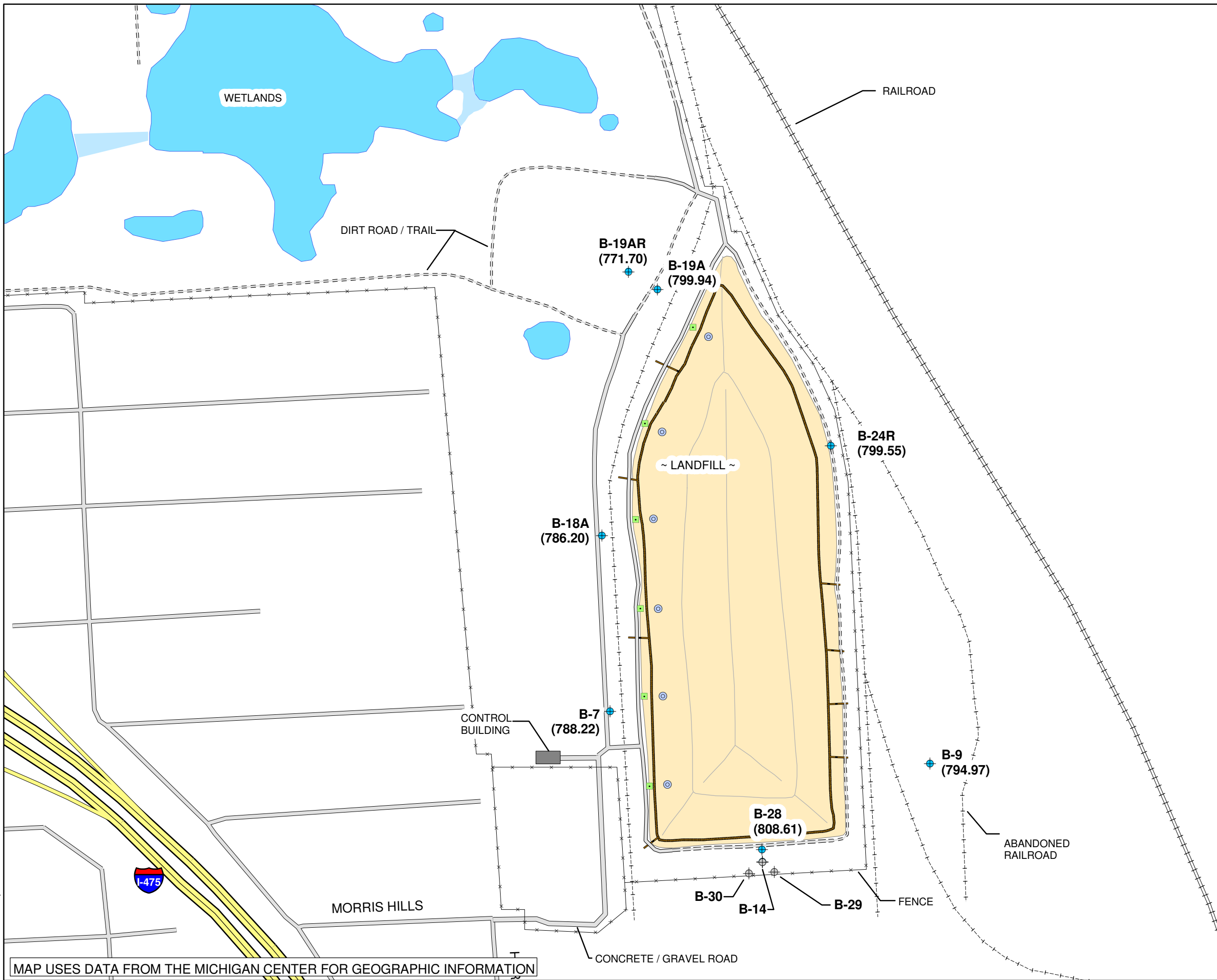





FIGURE 3

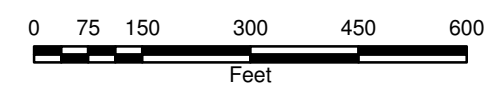


**LEGEND**

-  MONITORING WELL
-  (794.97) GROUNDWATER ELEVATION
-  ABANDONED WELL

MOTORS LIQUIDATION COMPANY  
 COLDWATER ROAD  
 LANDFILL FACILITY  
 FLINT, MICHIGAN

**SHALLOW  
 GROUNDWATER  
 ELEVATION MAP  
 NOVEMBER 9, 2010**



JANUARY 2011  
 14774/46317-011



MAP USES DATA FROM THE MICHIGAN CENTER FOR GEOGRAPHIC INFORMATION

1078\PROJECTS\MLC\_14774\46317\DOCS\REPORTS\ANNUAL FIGURES\012.MXD

PLOT DATE: 1/14/2011 jmo

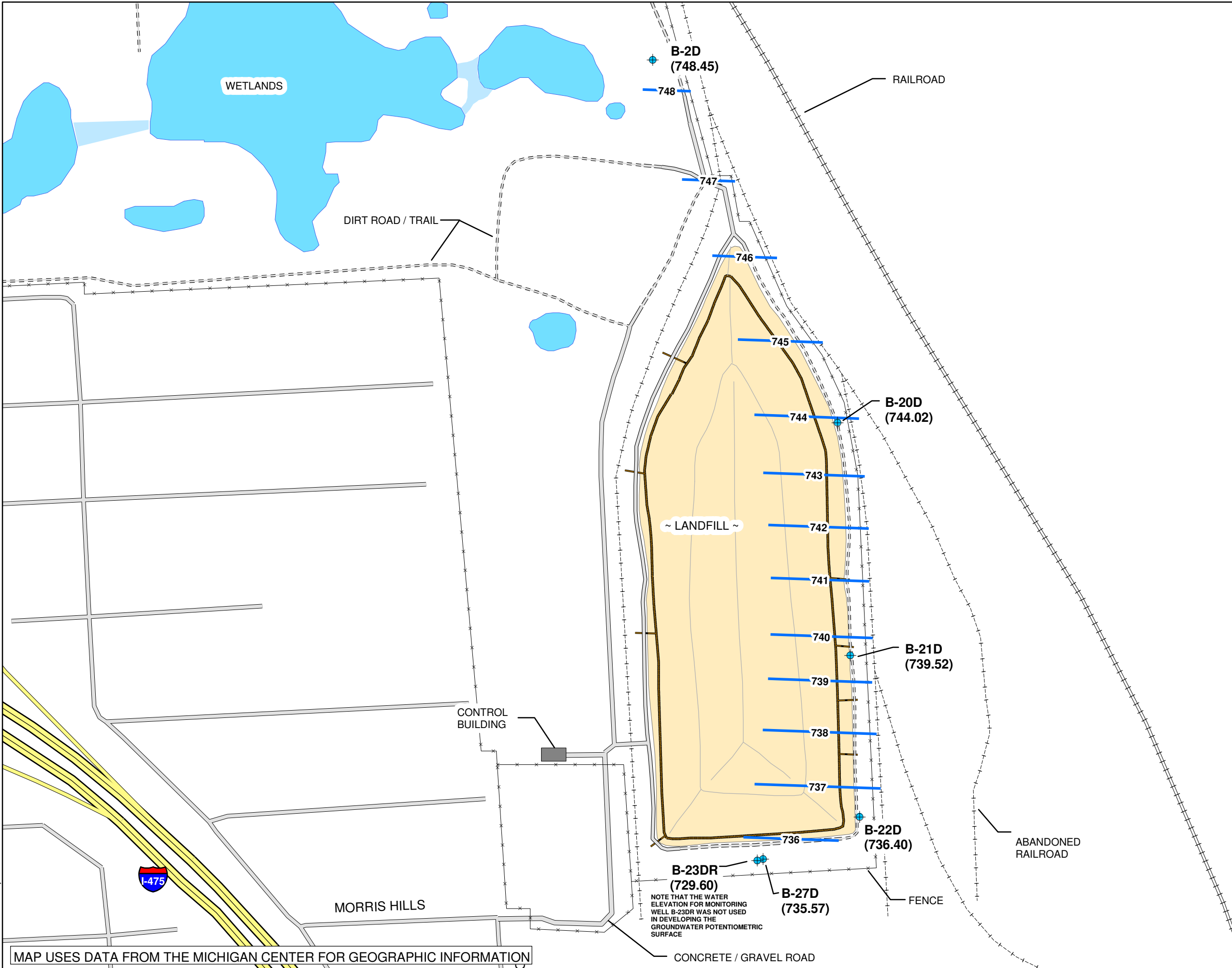


FIGURE 4

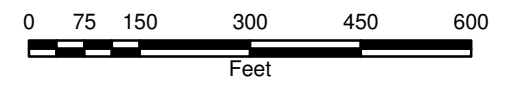


**LEGEND**

- MONITORING WELL
- GROUNDWATER ELEVATION
- GROUNDWATER POTENTIOMETRIC SURFACE ELEVATION

REALM  
 COLDWATER ROAD  
 LANDFILL FACILITY  
 FLINT, MICHIGAN

**DRIFT AQUIFER  
 GROUNDWATER  
 POTENTIOMETRIC  
 SURFACE MAP  
 NOVEMBER 9, 2010**



JANUARY 2011  
 14774/46317-012



MAP USES DATA FROM THE MICHIGAN CENTER FOR GEOGRAPHIC INFORMATION

NOTE THAT THE WATER ELEVATION FOR MONITORING WELL B-23DR WAS NOT USED IN DEVELOPING THE GROUNDWATER POTENTIOMETRIC SURFACE

***APPENDIX A***  
***Sampling Procedures***

**GROUND WATER SAMPLING STANDARD OPERATING PROCEDURE  
COLDWATER ROAD LANDFILL  
FLINT, MICHIGAN**

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**References ..... 7**

**List of Forms** (*Following Text*)

Ground Water Sampling Log

## Introduction

This procedure is for the collection of ground water samples for laboratory analysis.

The objective of most ground water quality monitoring programs is to obtain samples that are representative of existing ground water conditions, or samples that retain the physical and chemical properties of the ground water within an aquifer.

One of the most important aspects of ground water sampling is acquiring samples that are free of suspended silt, sediment, or other fine grained particulates. Fine grain materials may often have a variety of chemical components sorbed to the particle or have the ability to sorb chemicals from the aqueous phase to the particle, which will bias the subsequent analytical results.

Constituents known to have an affinity for fine-grained particulates are: polychlorinated biphenyls (PCBs), semi-volatile organic compounds (SVOCs), and inorganics. Monitoring programs where these constituents are suspected or known to be prevalent must employ sampling methods that minimize particulate presence.

The sampling method of "preference" for sites where particulate sorption is an issue is the "low stress/low flow" technique described herein. Experience has shown that the "low stress/low flow" technique typically achieves representative ground water samples with minimal particulate interference.

Lastly, in "extreme" cases "ultra-low flow" techniques have been employed at select sites where "low stress/low flow" methods were used, yet particulate-sensitive constituents continue to bias the analytical results. Ultra-low flow techniques are conducted at purging rates below 100 mL per minute, and should only be utilized after careful review and a procedural variance has been approved.

## GM Procedures Referenced

- FMG 1.4 - Data Recording - Field Books/Digital Recording.
- FMG 5.1 - Water Level Measurements.
- FMG 8.0 - Field Instruments - Use/Calibration
- FMG 9.0 - Equipment Decontamination.

## Procedural Guidelines

The following describes the "Low Stress/Low Flow Methods" technique for ground water sampling.

"Low Stress/Low Flow Methods" will be employed at the Coldwater Road Landfill site to collect ground water samples truly representative of the ground water present, and to minimize the impact of sediment/ colloid presence. Analyses typically sensitive to turbidity/sediment issues are PCBs, SVOCs, and inorganic constituents.

### Preparatory Requirements

1. Verify well identification and location using borehole log details and location layout figures. Note the condition of the well and inform the Project Manager of any required repair work.
2. For new wells, prior to opening the well cap, measure the breathing space above the well casing with a PID to establish baseline levels. Repeat this measurement once the well cap is opened. If either of these measurements exceeds the air quality criteria in the Health and Safety Plan, field personnel should adjust their PPE accordingly.
3. Prior to commencing the ground water purging/sampling tasks, water level and total well depth measurements must be obtained to determine the volume of water in the well. Refer to FMG 5.1 - Water Level Measurements for details, as necessary. In some settings it may be necessary to allow time for the water level to equilibrate. This condition exists if a watertight seal exists at the well cap and the water level has fluctuated above the top of screen, creating a vacuum or pressurized area within the well casing. Three water level checks will verify static water level conditions or changing conditions.
4. Calculate the water volume in the well. Typically overburden well volumes consider only the quantity of water standing in the well screen and riser; bedrock well volumes are calculated on the quantity of water within the open core hole and within the overburden casing.
5. Estimate the natural ground water flow rate into well to determine the approximate pumping rate for purging/sampling activities.

### Well Purging and Stabilization Monitoring (Low Stress/Low Flow Method)

1. The GM method of preference for ground water sampling will be the low stress/low flow method described below.
2. Bladder pumps/submersible variable rate pumps (i.e., Grundfos™ Rediflo or equivalent) or peristaltic pumps are typically employed.
3. Slowly lower the pump, safety cable, tubing and electrical lines into the well to the depth specified by the project requirements. The pump or tubing should be placed in the well as early as possible before sampling is initiated (this is to minimize well disturbance). Peristaltic tubing placement should include a tubing "clamp" at the well head, to minimize vibration transfer into

the water column. The pump or tubing intake must be at the mid-point of the well screen to prevent disturbance and re-suspension of any sediment in the screen base. Bedrock well sampling may require pump/tubing placement in specific fracture zone areas or other areas, which will be identified within the project Work Plan.

4. Before starting the pump, measure the water level again with the pump in the well leaving the water level measuring device in the well when completed.
5. Purge the well at 100 to a maximum of 500 milliliters per minute (mL/min). During purging, the water level should be monitored approximately every 5 minutes, or as appropriate. A steady flow rate should be maintained which results in drawdown of 0.3 ft or less. The rate of pumping should not exceed the natural flow rate conditions of the well being sampled. Care should be taken to maintain pump suction and to avoid entrainment of air in the tubing. Record adjustments made to the pumping rates and water levels immediately after each adjustment.

If drawdowns of 0.3 feet or less can not be maintained because of the permeability of the formation at a particular well location, “ultra-low flow” purge techniques will be employed. Ultra-low flow purge rates are rates below 100 mL/min. However, if ultra-low flow purging still results in the well purging “dry,” the well will be allowed to recharge for the balance of the day. As a sufficient volume of water enters the well, field parameter measurements will be collected and purging will continue up to a maximum of 24 hours from the beginning of purging, at which time the ground water sample from the well will be collected.

6. Calibrate field instrument and document calibration activity. Calibration shall be performed in accordance with manufacturer's recommendations and FMG 8.0 - Field Instruments - Use/Calibration.
7. During the purging of the well, monitor and record the field indicator parameters (pH, temperature, conductivity, oxidation-reduction (redox) reaction potential (ORP), dissolved oxygen (DO), and turbidity) approximately every 5 minutes. Stabilization is considered achieved when the final ground water flow rate is achieved, and three consecutive readings for each parameter are within the following limits:

- pH                     $\pm 0.1$  pH units of the average value of the three readings;
- temperature        $\pm 3$  percent of the average value of the three readings;
- conductivity        $\pm 0.005$  milliSiemen per centimeter (mS/cm) of the average value of the three readings for conductivity  $< 1$  mS/cm and  $\pm 0.01$  mS/cm of the average value of the three readings for conductivity  $> 1$  MS/cm;
- ORP                  $\pm 10$  millivolts (mV) of the average value of the three readings;
- DO                     $\pm 10$  percent of the average value of the three readings; and
- turbidity             $\pm 10$  percent of the average value of the three readings, or a final value of less than 5 nephelometric turbidity units (NTU).

8. Should stabilization not be achieved for all field parameters, purging is continued until a maximum of 3 well volumes have been purged from the well. After purging 3 well volumes, purging is continued if the purge water remains visually turbid and appears to be clearing, or if stabilization parameters are varying slightly outside of the stabilization criteria listed above and appear to be approaching stabilization.
9. The pump must not be removed from the well between purging and sampling.

### Sampling Techniques

1. Samples are typically collected directly from the pump with the ground water being discharged directly into the appropriate sample container. Avoid handling the interior of the bottle or bottle cap and don new gloves for each well sampled to avoid contamination of the sample.
2. Order of sample collection:
  - VOCs;
  - SVOCs and PCBs;
  - Total organic carbon (TOC);
  - Total organic halogens (TOX);
  - Extractable organics;
  - Total metals;
  - Dissolved metals;
  - Phenols;
  - Cyanide;
  - Sulfate and chloride; and
  - Nitrate and ammonia.
3. For low stress/low flow sampling, samples should be collected at a flow rate between 100 and 250 mL/min and such that drawdown of the water level within the well does not exceed the maximum allowable drawdown of 0.3 ft, except as noted in item 5. under well purging and stabilization monitoring.
4. The pumping rate used to collect a sample for VOCs should not exceed 100 mL/min. Samples should be transferred directly to the final container 40 mL glass vials completely full and topped with a teflon cap. Once capped the vial must be inverted and tapped to check for headspace/air presence (bubbles). If air is present the sample vial will be discarded, and re-collected until free of air.
5. Field filtration will be performed as indicated in the Post-Closure Care Plan. Sediment presence can interfere or bias sample results; false positive findings have been observed when turbid samples for inorganic (and other analytes) are analyzed. Field filtration can eliminate this concern; generally applicable to only inorganic/PCB analysis. In-line disposable filter cartridges are generally the easiest and quickest method for field filtration.

6. Sample labels/sample identification. All samples must be labeled with:
  - A unique sample number;
  - Date and time;
  - Parameters to be analyzed;
  - Project Reference ID; and
  - Sampler's initials.
7. Labels should be secured to the bottle(s) and should be written in indelible inks.

## Equipment/Materials

1. pH, conductivity, nephelometric (i.e., turbidity), ORP, DO, and temperature multimeter. A separate turbidity meter may be utilized if necessary.
2. Flow-through cell for multimeter.
3. Field filtration units (if required).
4. Purging/sampling equipment:
  - Peristaltic pump (not suitable for VOCs<sup>1</sup>/SVOCs, or drawing water from depths greater than 25 ft<sup>2</sup>);
  - Suction pumps (not suitable for VOCs/SVOCs, or depths greater than 25 ft);
  - Submersible pumps (suitable for VOCs/SVOCs only at low flow rates); and
  - Bladder pumps (suitable for VOCs/SVOCs).
5. Water level probe.
6. Sampling materials (containers, log book/forms, coolers, chain-of-custody).
7. Post-Closure Care Plan.
8. Health and Safety Plan.

*Note<sup>1</sup>: Peristaltic pump use for VOC collection is acceptable on select EPA/RCRA and MDEQ sites; this technique has gained acceptance in select areas (MDEQ allows VOC sampling with the peristaltic pump).*

*Note<sup>2</sup>: Exception is noted in locations that the suction line can be placed at the desired sample depth (i.e., 100 ft), and the natural recharge maintains a water level within 25 feet of the ground surface.*

### Field Notes

Field notes must document field activities and measurements collected during the sampling activities. FMG 1.4 - Data Recording - Field Books/Digital Recording describes the data/recording procedure for field activities. The log book/field file should document the following for each well sampled:

- Identification of well.
- PID readings before and after well opening (if required).
- Well depth.
- Static water level depth and measurement technique.
- Sounded well depth.
- Presence of immiscible layers and detection/collection method.
- Well yield – high or low.
- Purge volume, pumping rate, and final disposition.
- Time well purged.
- Measured field parameters and meter calibration records.
- Purge/sampling device used.
- Well sampling sequence.
- Sample appearance.
- Sample odors.
- Sample volume.
- Types of sample containers and sample identification.
- Preservative(s) used.
- Parameters requested for analysis.
- Field analysis data and method(s).
- Sample distribution and transporter.
- Analytical laboratory.
- Chain-of-custody number for shipment to laboratory.
- Field observations on sampling event.
- Name(s) of sampling personnel.
- Climatic conditions including air temperature.
- Problems encountered and any deviations made from the established sampling protocol.

A standard ground water sampling log form for documentation and reporting ground water purging and sampling events will be utilized.

### Ground water/Decontamination Fluid Disposal

The Post-Closure Care Plan will identify the required disposal procedures for ground water and decontamination fluids. Ground water disposal methods will vary on a case-by-case basis but may range from:

1. Off-site treatment at private treatment/disposal facilities or public owned treatment facilities.
2. On-site treatment at Facility-operated facilities.

3. Direct discharge to the surrounding ground surface, allowing ground water infiltration to the underlying subsurface regime.

Decontamination fluids should be segregated and collected separately from wash waters/ground water containers.

## References

*ASTM D5474 - Guide for Selection of Data Elements for Ground water Investigations.*

*ASTM D4696 - Guide for Pore-Liquid Sampling from the Vadose Zone.*

*ASTM D5979 - Guide for Conceptualization and Characterization of Ground water Systems.*

*ASTM D5903 - Guide for Planning and Preparing for a Ground water Sampling Event.*

*ASTM D4448 - Standard Guide for Sampling Ground water Wells.*

*ASTM D6001 - Standard Guide for Direct Push Water Sampling for Geo-Environmental Investigations.*

*USEPA Low-Flow (Minimal Drawdown) Ground-Water Sampling Procedures (EPA/540/S -95/504).*

*USEPA RCRA Ground water Monitoring: Draft Technical Guidance (EPA/530-R-93-001).*

*MDEQ RRD Operational Memorandum No. 2: Sampling and Analysis.*

***APPENDIX B***  
***Groundwater Sampling Logs***

Date: 11/10/10  
 Site Name: Coldwater Road Landfill Weather: cloudy 40s  
 Location: Flint, MI Well #: B-2D  
 Project No.: 46317 Evacuation Method: bladder pump  
 Personnel: KBS Sampling Method: Low-flow

Well Information:

Depth of Well \* 72.97 ft. Water Volume /ft. for:  
 Depth to Water \* 56.91 ft. X 2" Diameter Well = 0.163 X LWC  
 Length of Water Column \_\_\_\_\_ ft. 4" Diameter Well = 0.653 X LWC  
 Volume of Water in Well \_\_\_\_\_ gal.(s) 6" Diameter Well = 1.469 X LWC

Volume removed before sampling 2 gal.(s)  
 Did well go dry? No

(Other, Specify) \_\_\_\_\_

\* Measurements taken from  Well Casing  Protective Casing  \_\_\_\_\_

Instrument Calibration:

Calibrated within Range

pH Yes  
 ORP Yes  
 Conductivity Yes  
 DO Yes

Water parameters:

Time	Pumping Rate (ml/min.)	Drawdown (ft) 0.3 feet or less	Temperature (Celsius) ±3 percent	Conductivity (mS/cm) ±0.005 (mS/cm)	Dissolved Oxygen (mg/L) ±10 percent	pH ±0.1 pH units	ORP (mV) ±10 millivolts	Turbidity (NTUs) ±10 percent
<u>1120</u>	initial <u>100</u>	initial <u>56.96</u>	initial <u>10.13</u>	initial <u>0.258</u>	initial <u>12.76</u>	initial <u>7.40</u>	initial <u>17.1</u>	initial _____
<u>1125</u>			<u>10.48</u>	<u>0.526</u>	<u>8.90</u>	<u>7.13</u>	<u>17.13</u>	<u>165</u>
<u>1130</u>			<u>10.59</u>	<u>0.573</u>	<u>7.71</u>	<u>7.10</u>	<u>26.9</u>	<u>602</u>
<u>1135</u>			<u>10.60</u>	<u>0.573</u>	<u>6.94</u>	<u>7.08</u>	<u>25.0</u>	<u>518</u>
<u>1140</u>			<u>10.68</u>	<u>0.559</u>	<u>6.01</u>	<u>7.07</u>	<u>20.7</u>	<u>471</u>
<u>1145</u>			<u>10.69</u>	<u>0.554</u>	<u>5.10</u>	<u>7.09</u>	<u>18.9</u>	<u>269</u>
<u>1150</u>			<u>10.78</u>	<u>0.536</u>	<u>4.54</u>	<u>7.10</u>	<u>17.0</u>	<u>199</u>
<u>1155</u>			<u>10.74</u>	<u>0.526</u>	<u>3.88</u>	<u>7.11</u>	<u>19.0</u>	<u>143</u>
<u>1200</u>			<u>10.89</u>	<u>0.519</u>	<u>3.50</u>	<u>7.11</u>	<u>18.7</u>	<u>110</u>
<u>1205</u>			<u>10.97</u>	<u>0.512</u>	<u>3.19</u>	<u>7.13</u>	<u>17.6</u>	<u>75</u>
<u>1210</u>			<u>11.05</u>	<u>0.507</u>	<u>3.02</u>	<u>7.15</u>	<u>15.9</u>	<u>66</u>

Water Sample:

Time Collected 1230

over →

Physical Appearance at Start

Physical Appearance at Sampling

Color: Rust color  
 Odor: \_\_\_\_\_  
 Turbidity (> 100 NTU): High  
 Sheen/Free Product: \_\_\_\_\_

Color: clear  
 Odor: \_\_\_\_\_  
 Turbidity (> 100 NTU): med  
 Sheen/Free Product: \_\_\_\_\_

Samples collected:

Analyses	# Bottles	Bottle Size/Type	Preservative	Field Filtered
Dissolved Metals - Cu, Cr, Ni, Zn	1	125 ml Plastic	HNO <sub>3</sub>	yes
TOC	2	40 ml VOAs	H <sub>2</sub> SO <sub>4</sub>	
TOX	2	40 ml VOAs	H <sub>2</sub> SO <sub>4</sub>	
SpC	1	250 ml Plastic	None	

Notes:

B-2D

Time	PUMP	DD	TEMP	Con	DO	pH	ORP	Turb
1220	100	56.96	11.09	0.500	2.87	7.15	15.4	55
1225	↓	↓	11.24	0.498	2.76	7.16	14.4	54
1230	↓	↓	11.31	0.496	2.71	7.17	12.0	52

Date 11/8/10  
 Site Name Coldwater Road Landfill  
 Location Flint, MI  
 Project No. 48317  
 Personnel KBS

Weather SUNNY 60°  
 Well # B-7  
 Evacuation Method peristaltic pump  
 Sampling Method Low-flow

Well Information:

Depth of Well \* 31.59 ft.  
 Depth to Water \* 24.14 ft.  
 Length of Water Column \_\_\_\_\_ ft.  
 Volume of Water in Well \_\_\_\_\_ gal.(s)

Water Volume /ft. for:
X 2" Diameter Well = 0.163 X LWC
4" Diameter Well = 0.653 X LWC
6" Diameter Well = 1.469 X LWC

Volume removed before sampling 3/4 gal.(s)  
 Did well go dry? \_\_\_\_\_

\* Measurements taken from  Well Casing  Protective Casing  (Other, Specify) \_\_\_\_\_

Instrument Calibration:

Calibrated within Range  
 pH Yes  
 ORP Yes  
 Conductivity Yes  
 DO Yes

Water parameters:

Time	Pumping Rate (ml/min.)	Drawdown (ft) 0.3 feet or less	Temperature (Celsius) ±3 percent	Conductivity (mS/cm) ±0.005 (mS/cm)	Dissolved Oxygen (mg/L) ±10 percent	pH ±0.1 pH units	ORP (mV) ±10 millivolts	Turbidity (NTUs) ±10 percent
1520	initial 106	initial	initial 13.72	initial 0.991	initial 7.61	initial 7.18	initial 101.2	initial 19
1525		25.52	13.62	0.995	6.59 6.28	7.17	98.5	12
1530		26.10	13.73	1.001	5.61	7.09	93.9	4
1535		26.53	13.77	1.005	5.16	7.14	93.0	6
1540		26.96	13.82	1.005	5.05	7.14	90.1	6
1545		27.45	13.75	1.001	5.29	7.17	91.4	6
1550		28.16	13.80	1.000	5.30	7.16	90.2	5

Water Sample:

Time Collected 1550

Physical Appearance at Start

Color clear  
 Odor \_\_\_\_\_  
 Turbidity (> 100 NTU) Low  
 Sheen/Free Product \_\_\_\_\_

Physical Appearance at Sampling

Color clear  
 Odor \_\_\_\_\_  
 Turbidity (> 100 NTU) Low  
 Sheen/Free Product \_\_\_\_\_

Samples collected:

Analyses	# Bottles	Bottle Size/Type	Preservative	Field Filtered
Dissolved Metals - Cu, Cr, Ni, Zn	1	125 ml Plastic	HNO <sub>3</sub>	yes
TOC	2	40 ml VOAs	H <sub>2</sub> SO <sub>4</sub>	
TOX	2	40 ml VOAs	H <sub>2</sub> SO <sub>4</sub>	
SpC	1	250 ml Plastic	None	

Notes:

Date 11/1/10  
 Site Name Coldwater Road Landfill  
 Location Flint, MI  
 Project No. 46317  
 Personnel KBS

Weather cloudy 40s  
 Well # B-9  
 Evacuation Method peristaltic pump  
 Sampling Method Low-flow

**Well Information:**

Depth of Well \* 25.35 ft.  
 Depth to Water \* 13.94 ft.  
 Length of Water Column \_\_\_\_\_ ft.  
 Volume of Water in Well \_\_\_\_\_ gal.(s)

Water Volume /ft. for:	
<input checked="" type="checkbox"/>	2" Diameter Well = 0.163 X LWC
<input type="checkbox"/>	4" Diameter Well = 0.653 X LWC
<input type="checkbox"/>	6" Diameter Well = 1.469 X LWC

Volume removed before sampling \_\_\_\_\_ gal.(s)  
 Did well go dry? NO

\* Measurements taken from  Well Casing  Protective Casing  (Other, Specify)

**Instrument Calibration:**

Calibrated within Range

pH Yes  
 ORP Yes  
 Conductivity Yes  
 DO Yes

**Water parameters:**

Time	Pumping Rate (ml/min.)	Drawdown (ft) 0.3 feet or less	Temperature (Celsius) ±3 percent	Conductivity (mS/cm) ±0.005 (mS/cm)	Dissolved Oxygen (mg/L) ±10 percent	pH ±0.1 pH units	ORP (mV) ±10 millivolts	Turbidity (NTUs) ±10 percent
920	initial 100	initial 15.02	initial 12.05	initial 1.915	initial 10.23	initial 5.93	initial 183.0	initial 17.6
925		15.94	12.39	1.909	1.49	6.19	118.3	15.8
930		16.46	12.29	1.905	1.11	6.24	105.0	14.4
935		16.92	12.52	1.905	0.79	6.30	96.5	13.3
940		17.33	12.61	1.905	0.67	6.32	81.7	15.7
945		17.95	12.63	1.906	0.60	6.34	71.4	14.3
950		18.76	12.79	1.908	0.53	6.35	65.7	12.8
955		19.41	12.92	1.907	0.57	6.37	65.0	10.3
1000		19.79	12.90	1.904	0.58	6.37	63.9	11.5

Water Sample: 1000  
 Time Collected

Physical Appearance at Start

Physical Appearance at Sampling

Color clear  
 Odor \_\_\_\_\_  
 Turbidity (> 100 NTU) Low  
 Sheen/Free Product \_\_\_\_\_

Color clear  
 Odor \_\_\_\_\_  
 Turbidity (> 100 NTU) Low  
 Sheen/Free Product \_\_\_\_\_

**Samples collected:**

Analyses	# Bottles	Bottle Size/Type	Preservative	Field Filtered
Dissolved Metals - Cu, Cr, Ni, Zn	1	125 ml Plastic	HNO <sub>3</sub>	yes
TOC	2	40 ml VOAs	H <sub>2</sub> SO <sub>4</sub>	
TOX	2	40 ml VOAs	H <sub>2</sub> SO <sub>4</sub>	
SpC	1	250 ml Plastic	None	

Notes: put new cap and lock on well

Date 11/10/10  
 Site Name Coldwater Road Landfill  
 Location Flint, MI  
 Project No. 46317  
 Personnel KBS

Weather F00 40s  
 Well # B-18A  
 Evacuation Method peristaltic pump  
 Sampling Method Low-flow

Well Information:

Depth of Well \* 43.4 ft.  
 Depth to Water \* 26.14 ft.  
 Length of Water Column \_\_\_\_\_ ft.  
 Volume of Water in Well \_\_\_\_\_ gal.(s)

Water Volume /ft. for:	
X	2" Diameter Well = 0.163 X LWC
	4" Diameter Well = 0.653 X LWC
	6" Diameter Well = 1.469 X LWC

Volume removed before sampling \_\_\_\_\_ gal.(s)  
 Did well go dry? \_\_\_\_\_

\* Measurements taken from  Well Casing  Protective Casing  (Other, Specify) \_\_\_\_\_

Instrument Calibration:

Calibrated within Range

pH xs  
 ORP xs  
 Conductivity xs  
 DO xs

Water parameters:

Time	Pumping Rate (ml/min.)	Drawdown (ft) 0.3 feet or less	Temperature (Celsius) ±3 percent	Conductivity (mS/cm) ±0.005 (mS/cm)	Dissolved Oxygen (mg/L) ±10 percent	pH ±0.1 pH units	ORP (mV) ±10 millivolts	Turbidity (NTUs) ±10 percent
950	initial 100	initial 26.85	initial 9.54	initial 0.694	initial 3.26	initial 6.30	initial 163.9	initial 8.73
955	↓	27.35	9.75	0.650	2.50	6.60	9.0	4.19
1000	↓	27.69	9.88	0.652	1.77	6.72	-14.3	3.73
1005	↓	28.21	10.00	0.650	1.31	6.80	-22.2	2.97
1010	↓	28.89	9.91	0.646	1.06	6.87	-18.8	2.69
1015	↓	29.01	9.70	0.644	0.96	6.90	-18.5	2.30
1020	↓	29.18	9.53	0.642	0.90	6.91	-18.2	2.19
1025	↓	29.29	9.51	0.639	0.88	6.91	-17.4	2.45

Water Sample: 1025  
 Time Collected

Physical Appearance at Start

Physical Appearance at Sampling

Color clear  
 Odor \_\_\_\_\_  
 Turbidity (> 100 NTU) Low  
 Sheen/Free Product \_\_\_\_\_

Color clear  
 Odor \_\_\_\_\_  
 Turbidity (> 100 NTU) Low  
 Sheen/Free Product \_\_\_\_\_

Samples collected:

Analyses	# Bottles	Bottle Size/Type	Preservative	Field Filtered
Dissolved Metals - Cu, Cr, Ni, Zn	1	125 ml Plastic	HNO <sub>3</sub>	yes
TOC	2	40 ml VOAs	H <sub>2</sub> SO <sub>4</sub>	
TOX	2	40 ml VOAs	H <sub>2</sub> SO <sub>4</sub>	
SpC	1	250 ml Plastic	None	

Notes:

O'Brien & Gere Engineers, Inc.

Ground Water Sampling Log

Date 11/10/10  
 Site Name Coldwater Road Landfill  
 Location Flint, MI  
 Project No. 46317  
 Personnel KBS  
 Weather Fog 90°  
 Well # B-19Ar  
 Evacuation Method bladder pump  
 Sampling Method Low-flow

Well Information:

Depth of Well \* 46.5 ft.  
 Depth to Water \* 47.30 ft.  
 Length of Water Column \_\_\_\_\_ ft.  
 Volume of Water in Well \_\_\_\_\_ gal.(s)

Water Volume /ft. for:  
 X 2" Diameter Well = 0.163 X LWC  
 \_\_\_\_\_ 4" Diameter Well = 0.653 X LWC  
 \_\_\_\_\_ 6" Diameter Well = 1.469 X LWC

Volume removed before sampling 1.25 gal.(s)  
 Did well go dry? \_\_\_\_\_

\* Measurements taken from  Well Casing  Protective Casing  (Other, Specify) \_\_\_\_\_

Instrument Calibration:

Calibrated within Range  
 pH Yes  
 ORP Yes  
 Conductivity Yes  
 DO Yes

Water parameters:

Time	Pumping Rate (ml/min.)	Drawdown (ft) 0.3 feet or less	Temperature (Celsius) ±3 percent	Conductivity (mS/cm) ±0.005 (mS/cm)	Dissolved Oxygen (mg/L) ±10 percent	pH ±0.1 pH units	ORP (mV) ±10 millivolts	Turbidity (NTUs) ±10 percent
9:05	initial 100	initial 41.95	initial 10.15	initial 0.945	initial 1.08	initial 6.83	initial 235.5	initial
9:10	< 100	42.35	10.20	.94	.77	6.86	225.5	87
9:15		42.44	9.99	.94	.69	6.90	214.7	83
9:20		42.50	9.76	.94	.80	6.91	207.0	89
9:25		42.63	9.79	.937	.89	6.90	201.9	86
9:30		42.76	9.54	.938	.62	6.91	194.9	85
9:35		42.94	9.27	.935	.58	6.91	190.8	85
9:40		43.08	8.85	.936	.58	6.91	187.2	<del>87</del> 87
9:45		43.13	8.75	.933	.59	6.91	184.7	87
9:50		43.16	8.69	.934	.60	6.91	183.8	85

Water Sample:

Time Collected 10:00A

Physical Appearance at Start

Color cloudy  
 Odor \_\_\_\_\_  
 Turbidity (> 100 NTU) 85  
 Sheen/Free Product \_\_\_\_\_

Physical Appearance at Sampling

Color cloudy  
 Odor \_\_\_\_\_  
 Turbidity (> 100 NTU) 85  
 Sheen/Free Product \_\_\_\_\_

Samples collected:

Analyses	# Bottles	Bottle Size/Type	Preservative	Field Filtered
Dissolved Metals - Cu, Cr, Ni, Zn	1	125 ml Plastic	HNO <sub>3</sub>	yes
TOC	2	40 ml VOAs	H <sub>2</sub> SO <sub>4</sub>	
TOX	2	40 ml VOAs	H <sub>2</sub> SO <sub>4</sub>	
SpC	1	250 ml Plastic	None	

Notes:

**O'Brien & Gere Engineers, Inc.**

**Ground Water Sampling Log**

Date 11/9/10  
 Site Name Coldwater Road Landfill  
 Location Flint, MI  
 Project No. 46317  
 Personnel KBS

Weather Sunny 60s  
 Well # B-20D  
 Evacuation Method bladder pump  
 Sampling Method Low-flow

**Well Information:**

Depth of Well \* 84.97 ft.  
 Depth to Water \* 72.59 ft.  
 Length of Water Column \_\_\_\_\_ ft.  
 Volume of Water in Well \_\_\_\_\_ gal.(s)

Water Volume /ft. for:	
<input checked="" type="checkbox"/>	2" Diameter Well = 0.163 X LWC
<input type="checkbox"/>	4" Diameter Well = 0.653 X LWC
<input type="checkbox"/>	6" Diameter Well = 1.469 X LWC

Volume removed before sampling 3 3/4 gal.(s)  
 Did well go dry? NO

\* Measurements taken from  Well Casing  Protective Casing  (Other, Specify) \_\_\_\_\_

**Instrument Calibration:**

Calibrated within Range

pH Yes  
 ORP Yes  
 Conductivity Yes  
 DO Yes

**Water parameters:**

Time	Pumping Rate (ml/min.)	Drawdown (ft) 0.3 feet or less	Temperature (Celsius) ±3 percent	Conductivity (mS/cm) ±0.005 (mS/cm)	Dissolved Oxygen (mg/L) ±10 percent	pH ±0.1 pH units	ORP (mV) ±10 millivolts	Turbidity (NTUs) ±10 percent
1500	initial 100	initial 72.80	initial 12.88	initial 0.655	initial 9.29	initial 7.53	initial -46.1	initial 193
1505		72.87	12.45	0.648	8.11	7.37	-51.3	161
1510		72.90	12.71	0.652	4.35	7.03	-55.8	181
1515		72.90	12.78	0.653	3.33	6.99	-68.7	254
1520		72.90	12.82	0.653	1.97	6.98	-80.3	341
1525		72.90	13.05	0.658	1.24	7.00	-88.7	417
1530		72.90	13.07	0.660	0.99	7.02	-92.3	444
1535		72.91	13.08	0.663	0.80	7.03	-96.1	440
1540		72.92	12.27	0.652	0.70	7.03	-99.0	378
1545		72.92	12.46	0.652	0.54	6.98	-97.2	307
1550	↓	72.92	12.60	0.654	0.59	7.01	-99.7	288

Water Sample: 1650  
 Time Collected

Physical Appearance at Start

Physical Appearance at Sampling

Color cloudy  
 Odor \_\_\_\_\_  
 Turbidity (> 100 NTU) High  
 Sheen/Free Product \_\_\_\_\_

Color slightly cloudy  
 Odor \_\_\_\_\_  
 Turbidity (> 100 NTU) Med  
 Sheen/Free Product \_\_\_\_\_

**Samples collected:**

Analyses	# Bottles	Bottle Size/Type	Preservative	Field Filtered
Dissolved Metals - Cu, Cr, Ni, Zn	1	125 ml Plastic	HNO <sub>3</sub>	yes
TOC	2	40 ml VOAs	H <sub>2</sub> SO <sub>4</sub>	
TOX	2	40 ml VOAs	H <sub>2</sub> SO <sub>4</sub>	
SpC	1	250 ml Plastic	None	

Notes:

B-200

Time	DD	Temp	cond	DO	pH	ORP	Turb
1555	72.92	12.55	0.655	0.59	7.04	-101.5	204
1600	72.94	12.49	0.655	0.56	7.05	-102.8	221
1605	72.94	12.34	0.651	0.57	7.05	-103.2	187
1610	72.95	12.18	0.648	0.58	7.04	-103.4	168
1615	72.96	12.07	0.645	0.46	7.03	-103.4	138
1620	72.96	12.05	0.645	0.48	7.03	-103.5	127
1630	72.97	11.99	0.644	0.46	7.04	-104.2	112
1635	73.01	11.73	0.640	0.49	7.04	-104.9	109
1640	73.10	11.58	0.634	0.44	7.02	-103.8	99.2
1645	73.10	11.67	0.634	0.44	7.02	-103.7	98
1650	73.11	11.67	0.635	0.45	7.04	-104.1	98.5
1655	73.14	11.68	0.635	0.44	7.02	-104.2	97.9

Sample collected 1650

Date 11/10/10  
 Site Name Coldwater Road Landfill  
 Location Flint, MI  
 Project No. 46317  
 Personnel KBS

Weather cloudy 50°  
 Well # B-21D  
 Evacuation Method bladder pump  
 Sampling Method Low-flow

Well Information:

Depth of Well \* 97.44 ft.  
 Depth to Water \* 82.64 ft.  
 Length of Water Column \_\_\_\_\_ ft.  
 Volume of Water in Well \_\_\_\_\_ gal.(s)

Water Volume /ft. for:  
 2" Diameter Well = 0.163 X LWC  
 4" Diameter Well = 0.653 X LWC  
 6" Diameter Well = 1.469 X LWC

Volume removed before sampling \_\_\_\_\_ gal.(s)  
 Did well go dry? No

\* Measurements taken from  Well Casing  Protective Casing  (Other, Specify) \_\_\_\_\_

Instrument Calibration:

Calibrated within Range  
 pH Yes  
 ORP Yes  
 Conductivity Yes  
 DO Yes

Water parameters:

Time	Pumping Rate (mL/min.)	Drawdown (ft) 0.3 feet or less	Temperature (Celsius) ±3 percent	Conductivity (mS/cm) ±0.005 (mS/cm)	Dissolved Oxygen (mg/L) ±10 percent	pH ±0.1 pH units	ORP (mV) ±10 millivolts	Turbidity (NTUs) ±10 percent
1430	initial 100	initial 83.75	initial 12.30	initial 0.660	initial 10.16	initial 7.67	initial 219.1	initial 237
1435		83.90	11.67	0.542	3.04	7.32	126.1	232
1440		83.90	11.54	0.540	2.07	7.30	44.0	213
1445		83.96	11.49	0.541	1.93	7.30	18.1	249
1450		83.90	11.41	0.541	1.73	7.30	3.1	245
1455		83.98	11.39	0.544	1.56	7.30	-16.5	261
1500		83.90	11.35	0.546	1.28	7.29	-25.8	298
1505		83.96	11.28	0.552	1.01	7.28	-36.6	285
1510		83.90	11.21	0.558	0.94	7.28	-44.4	269
1515		83.90	11.20	0.566	0.86	7.28	-49.3	278
1520			11.12	0.576	0.80	7.27	-50.0	

Water Sample: 1615  
 Time Collected

Physical Appearance at Start

Color cloudy  
 Odor \_\_\_\_\_  
 Turbidity (> 100 NTU) High  
 Sheen/Free Product \_\_\_\_\_

Physical Appearance at Sampling

Color Slightly cloudy  
 Odor \_\_\_\_\_  
 Turbidity (> 100 NTU) med to High  
 Sheen/Free Product \_\_\_\_\_

Samples collected:

Analyses	# Bottles	Bottle Size/Type	Preservative	Field Filtered
Dissolved Metals - Cu, Cr, Ni, Zn	1	125 ml Plastic	HNO <sub>3</sub>	yes
TOC	2	40 ml VOAs	H <sub>2</sub> SO <sub>4</sub>	
TOX	2	40 ml VOAs	H <sub>2</sub> SO <sub>4</sub>	
SpC	1	250 ml Plastic	None	

Notes:

# B-210

	pump	DO	temp	con	DO	pH	ORP	Turb
1525	↓	83.90	11.09	0.583	0.72	7.28	-63.6	262
1530			11.05	0.585	0.69	7.28	-65.5	247
1535			11.05	0.587	0.71	7.28	-66.8	228
1540			11.00	0.591	0.74	7.28	-68.3	219
1545			10.94	0.595	0.70	7.28	-69.8	200
1550			10.91	0.599	0.63	7.28	-71.7	207
1555			10.92	0.602	0.60	7.28	-74.5	156
1600			10.88	0.604	0.56	7.28	-76.6	140
1605			10.77	0.606	0.53	7.27	-74.8	118
1610			10.95	0.607	0.55	7.28	-76.8	111
1615			10.98	0.610	0.52	7.28	-79.0	106

O'Brien & Gere Engineers, Inc.

Ground Water Sampling Log

Date 11/11/10  
 Site Name Coldwater Road Landfill  
 Location Flint, MI  
 Project No. 46317  
 Personnel KBS

Weather cloudy 40s  
 Well # B-22D  
 Evacuation Method bladder pump  
 Sampling Method Low-flow

Well Information:

Depth of Well \* 97.24 ft.  
 Depth to Water \* 87.55 ft.  
 Length of Water Column \_\_\_\_\_ ft.  
 Volume of Water in Well \_\_\_\_\_ gal.(s)

Water Volume /ft. for:	
X	2" Diameter Well = 0.163 X LWC
	4" Diameter Well = 0.653 X LWC
	6" Diameter Well = 1.469 X LWC

Volume removed before sampling 1 gal.(s)  
 Did well go dry? \_\_\_\_\_

\* Measurements taken from  Well Casing  Protective Casing  (Other, Specify) \_\_\_\_\_

Instrument Calibration:

Calibrated within Range

pH Yes  
 ORP Yes  
 Conductivity Yes  
 DO Yes

Water parameters:

Time	Pumping Rate (ml/min.)	Drawdown (ft) 0.3 feet or less	Temperature (Celsius) ±3 percent	Conductivity (mS/cm) ±0.005 (mS/cm)	Dissolved Oxygen (mg/L) ±10 percent	pH ±0.1 pH units	ORP (mV) ±10 millivolts	Turbidity (NTUs) ±10 percent
<u>855</u>	initial <u>100</u>	initial <u>87.74</u>	initial <u>10.13</u>	initial <u>0.650</u>	initial <u>5.80</u>	initial <u>7.12</u>	initial <u>-40.5</u>	initial <u>325</u>
<u>900</u>		<u>87.78</u>	<u>10.22</u>	<u>0.620</u>	<u>1.66</u>	<u>7.21</u>	<u>-83.5</u>	<u>250</u>
<u>905</u>		<u>87.78</u>	<u>10.10</u>	<u>0.615</u>	<u>1.27</u>	<u>7.25</u>	<u>-86.7</u>	<u>209</u>
<u>910</u>		<u>87.78</u>	<u>10.02</u>	<u>0.613</u>	<u>1.13</u>	<u>7.28</u>	<u>-88.0</u>	<u>185</u>
<u>915</u>		<u>87.78</u>	<u>9.99</u>	<u>0.611</u>	<u>1.00</u>	<u>7.28</u>	<u>-88.8</u>	<u>140</u>
<u>920</u>		<u>87.78</u>	<u>9.94</u>	<u>0.611</u>	<u>0.91</u>	<u>7.28</u>	<u>-88.8</u>	<u>120</u>
<u>925</u>		<u>87.78</u>	<u>9.96</u>	<u>0.610</u>	<u>0.93</u>	<u>7.29</u>	<u>-88.7</u>	<u>101</u>
<u>930</u>		<u>87.78</u>	<u>10.17</u>	<u>0.609</u>	<u>0.97</u>	<u>7.30</u>	<u>-88.5</u>	<u>87</u>
<u>935</u>		<u>87.78</u>	<u>10.34</u>	<u>0.609</u>	<u>1.02</u>	<u>7.30</u>	<u>-87.5</u>	<u>78</u>
<u>940</u>		<u>87.78</u>	<u>10.37</u>	<u>0.609</u>	<u>1.13</u>	<u>7.30</u>	<u>-85.3</u>	<u>61</u>
<u>945</u>		<u>87.78</u>	<u>10.33</u>	<u>0.609</u>	<u>1.23</u>	<u>7.31</u>	<u>-82.8</u>	<u>51</u>

Water Sample:

Time Collected 1015

over →

Physical Appearance at Start

Color clear  
 Odor -  
 Turbidity (> 100 NTU) 325  
 Sheen/Free Product -

Physical Appearance at Sampling

Color clear  
 Odor -  
 Turbidity (> 100 NTU) 37  
 Sheen/Free Product -

Samples collected:

Analyses	# Bottles	Bottle Size/Type	Preservative	Field Filtered
Dissolved Metals - Cu, Cr, Ni, Zn	1	125 ml Plastic	HNO <sub>3</sub>	yes
TOC	2	40 ml VOAs	H <sub>2</sub> SO <sub>4</sub>	
TOX	2	40 ml VOAs	H <sub>2</sub> SO <sub>4</sub>	
SpC	1	250 ml Plastic	None	

Notes:

B-22D

Time	PUMP	DD	TEMP	Con	DO	pH	ORP	Turb
9:50	100	87.28	10.33	0.609	1.33	7.30	-80.5	47
9:55			10.28	0.610	1.33	7.29	-79.8	42
10:00			10.29	0.609	1.44	7.30	-77.0	42
10:05			10.21	0.608	1.46	7.30	-77.2	39
10:10			10.33	0.608	1.45	7.31	-77.4	36

O'Brien & Gere Engineers, Inc.

Ground Water Sampling Log

Date 11/11/10  
 Site Name Coldwater Road Landfill  
 Location Flint, MI  
 Project No. 46317  
 Personnel KBS

Weather Cloudy 40s  
 Well # B-23Dr  
 Evacuation Method bladder pump  
 Sampling Method Low-flow

Well Information:

Depth of Well \* 107 ft.  
 Depth to Water \* 84.41 ft.  
 Length of Water Column \_\_\_\_\_ ft.  
 Volume of Water in Well \_\_\_\_\_ gal.(s)

Water Volume /ft. for:	
X	2" Diameter Well = 0.163 X LWC
	4" Diameter Well = 0.653 X LWC
	6" Diameter Well = 1.469 X LWC

Volume removed before sampling \_\_\_\_\_ gal.(s)  
 Did well go dry? NO

\* Measurements taken from  Well Casing  Protective Casing  (Other, Specify) \_\_\_\_\_

Instrument Calibration:

Calibrated within Range

pH Yes  
 ORP Yes  
 Conductivity Yes  
 DO Yes

Water parameters:

Time	Pumping Rate (ml/min.)	Drawdown (ft) 0.3 feet or less	Temperature (Celsius) ±3 percent	Conductivity (mS/cm) ±0.005 (mS/cm)	Dissolved Oxygen (mg/L) ±10 percent	pH ±0.1 pH units	ORP (mV) ±10 millivolts	Turbidity (NTUs) ±10 percent
1105	initial 120	initial 84.41	initial 13.17	initial 0.612	initial 8.49	initial 7.39	initial -61.9	initial 184
1110		84.41	13.12	0.643	3.87	7.30	-78.8	240
1115		84.41	12.71	0.659	1.68	7.29	-87.1	189
1120		84.41	12.58	0.660	1.01	7.27	-96.7	129
1125		84.41	12.72	0.659	0.86	7.28	-99.3	100
1130		84.41	12.69	0.656	0.82	7.28	-101.1	77
1135		84.41	12.70	0.651	0.85	7.29	-99.8	62
1140		84.41	12.74	0.645	0.90	7.29	-97.8	50
1145		84.41	12.71	0.640	0.95	7.29	-96.2	42
1150		84.41	12.65	0.638	0.98	7.28	-93.4	34
1155		84.41	12.70	0.635	1.00	7.29	-93.1	26

Water Sample: Time Collected 1205

over →

Physical Appearance at Start

Physical Appearance at Sampling

Color cloudy  
 Odor \_\_\_\_\_  
 Turbidity (> 100 NTU) High  
 Sheen/Free Product \_\_\_\_\_

Color clear  
 Odor \_\_\_\_\_  
 Turbidity (> 100 NTU) Low  
 Sheen/Free Product \_\_\_\_\_

Samples collected:

Analyses	# Bottles	Bottle Size/Type	Preservative	Field Filtered
Dissolved Metals - Cu, Cr, Ni, Zn	1	125 ml Plastic	HNO <sub>3</sub>	yes
TOC	2	40 ml VOAs	H <sub>2</sub> SO <sub>4</sub>	
TOX	2	40 ml VOAs	H <sub>2</sub> SO <sub>4</sub>	
SpC	1	250 ml Plastic	None	

Notes: DUP-03 collected

B-230r

Time	pump	DP	Temp	Con	Do	pH	ORP	Turb
1200	120	84.41	12.76	0.637	0.94	7.29	-93.4	21
1205	120	84.41	12.84	0.639	0.9	7.28	-94.1	19

O'Brien & Gere Engineers, Inc.

Ground Water Sampling Log

Date 11/9/10  
 Site Name Coldwater Road Landfill  
 Location Flint, MI  
 Project No. 46317  
 Personnel KBS

Weather Clear 60°F  
 Well # B-24r  
 Evacuation Method peristaltic pump  
 Sampling Method Low-flow

Well Information:

Depth of Well \* 29.5 ft.  
 Depth to Water \* 17.82 ft.  
 Length of Water Column \_\_\_\_\_ ft.  
 Volume of Water in Well \_\_\_\_\_ gal.(s)

Water Volume /ft. for:	
X	2" Diameter Well = 0.163 X LWC
	4" Diameter Well = 0.653 X LWC
	6" Diameter Well = 1.469 X LWC

Volume removed before sampling 1.75 gal.(s)  
 Did well go dry? No

\* Measurements taken from  Well Casing  Protective Casing  (Other, Specify) \_\_\_\_\_

Instrument Calibration:

Calibrated within Range

pH ✓  
 ORP ✓  
 Conductivity ✓  
 DO ✓

Water parameters:

Time	Pumping Rate (ml/min.)	Drawdown (ft) 0.3 feet or less	Temperature (Celsius) ±3 percent	Conductivity (mS/cm) ±0.005 (mS/cm)	Dissolved Oxygen (mg/L) ±10 percent	pH ±0.1 pH units	ORP (mV) ±10 millivolts	Turbidity (NTUs) ±10 percent
1:25p	initial 200ml/min	initial 19.03	initial 13.25	initial .764	initial 6.60	initial 6.87	initial -101.7	initial 10
1:30		19.39	13.47	.770	6.39	6.59	-92.0	6
1:35		19.76	13.44	.769	.92	6.59	-94.5	4
1:40		19.98	13.44	.769	.80	6.62	-96.6	5
1:45		20.26	13.65	.771	.70	6.66	-100.0	7
1:50		20.44	13.60	.770	.64	6.72	-103.2	4
1:55		20.61	13.69	.770	.57	6.78	-105.0	5
2:00		20.69	13.68	.770	.53	6.81	-106.7	3
2:05		20.94	13.57	.767	.54	6.85	-107.9	2
2:10		21.18	13.51	.764	.54	6.88	-107.1	3
2:15		21.40	13.46	.764	.58	6.90	-106.7	2

Water Sample: Time Collected 2:30

Physical Appearance at Start

Color clear  
 Odor -  
 Turbidity (> 100 NTU) 2  
 Sheen/Free Product -

Physical Appearance at Sampling

Color clear  
 Odor -  
 Turbidity (> 100 NTU) 2  
 Sheen/Free Product -

Samples collected:

Analyses	# Bottles	Bottle Size/Type	Preservative	Field Filtered
Dissolved Metals - Cu, Cr, Ni, Zn	1	125 ml Plastic	HNO <sub>3</sub>	yes
TOC	2	40 ml VOAs	H <sub>2</sub> SO <sub>4</sub>	
TOX	2	40 ml VOAs	H <sub>2</sub> SO <sub>4</sub>	
SpC	1	250 ml Plastic	None	

Notes:

O'Brien & Gere Engineers, Inc.

Ground Water Sampling Log

Date 11/9/10  
 Site Name Coldwater Road Landfill  
 Location Flint, MI  
 Project No. 46317  
 Personnel KBS / TJR

Weather Sunny 40s  
 Well # B-27D  
 Evacuation Method bladder pump  
 Sampling Method Low-flow

Well Information:

Depth of Well \* 89 ft.  
 Depth to Water \* 78.79 ft.  
 Length of Water Column \_\_\_\_\_ ft.  
 Volume of Water in Well \_\_\_\_\_ gal.(s)

Water Volume /ft. for:	
X	2" Diameter Well = 0.163 X LWC
	4" Diameter Well = 0.653 X LWC
	6" Diameter Well = 1.469 X LWC

Volume removed before sampling 2 3/4 gal.(s)  
 Did well go dry? No

\* Measurements taken from  Well Casing  Protective Casing  (Other, Specify) \_\_\_\_\_

Instrument Calibration:

Calibrated within Range  
 pH Yes  
 ORP Yes  
 Conductivity Yes  
 DO Yes

Water parameters:

Time	Pumping Rate (ml/min.)	Drawdown (ft) 0.3 feet or less	Temperature (Celsius) ±3 percent	Conductivity (mS/cm) ±0.005 (mS/cm)	Dissolved Oxygen (mg/L) ±10 percent	pH ±0.1 pH units	ORP (mV) ±10 millivolts	Turbidity (NTUs) ±10 percent
<u>9:25</u> initial	<u>100</u>	initial <u>79.10</u>	initial <u>10.84</u>	initial <u>0.410</u>	initial <u>7.05</u>	initial <u>6.19</u>	initial <u>-17.7</u>	initial <u>749</u>
<u>9:30</u>			<u>10.72</u>	<u>0.399</u>	<u>0.87</u>	<u>6.48</u>	<u>-98.3</u>	<u>1000</u>
<u>9:35</u>			<u>10.70</u>	<u>0.393</u>	<u>1.56</u>	<u>6.57</u>	<u>-113.3</u>	<u>1000</u>
<u>9:40</u>			<u>11.10</u>	<u>0.397</u>	<u>1.31</u>	<u>6.60</u>	<u>-118.0</u>	<u>1000</u>
<u>9:45</u>			<u>11.17</u>	<u>0.398</u>	<u>1.02</u>	<u>6.72</u>	<u>-126.8</u>	<u>1000</u>
<u>9:50</u>			<u>11.20</u>	<u>0.398</u>	<u>0.93</u>	<u>6.74</u>	<u>-129.8</u>	<u>908</u>
<u>9:55</u>			<u>11.30</u>	<u>0.399</u>	<u>0.88</u>	<u>6.84</u>	<u>-132.6</u>	<u>779</u>
<u>10:00</u>			<u>11.42</u>	<u>0.401</u>	<u>0.75</u>	<u>6.87</u>	<u>-134.3</u>	<u>681</u>
<u>10:05</u>			<u>11.52</u>	<u>0.402</u>	<u>0.65</u>	<u>6.92</u>	<u>-137.4</u>	<u>524</u>
<u>10:10</u>			<u>11.68</u>	<u>0.404</u>	<u>0.59</u>	<u>6.97</u>	<u>-139.3</u>	<u>414</u>
<u>10:15</u>			<u>11.71</u>	<u>0.405</u>	<u>0.56</u>	<u>7.00</u>	<u>-140.0</u>	<u>398</u>

Water Sample: Time Collected 1130

Physical Appearance at Start  
 Color cloudy  
 Odor \_\_\_\_\_  
 Turbidity (> 100 NTU) High  
 Sheen/Free Product \_\_\_\_\_

Physical Appearance at Sampling  
 Color clear  
 Odor \_\_\_\_\_  
 Turbidity (> 100 NTU) Low  
 Sheen/Free Product \_\_\_\_\_

Samples collected:

Analyses	# Bottles	Bottle Size/Type	Preservative	Field Filtered
Dissolved Metals - Cu, Cr, Ni, Zn	1	125 ml Plastic	HNO <sub>3</sub>	yes
TOC	2	40 ml VOAs	H <sub>2</sub> SO <sub>4</sub>	
TOX	2	40 ml VOAs	H <sub>2</sub> SO <sub>4</sub>	
SpC	1	250 ml Plastic	None	

Notes:

# B-27D

Time	PUMP	DD	TEMP	CON	DO	pH	ORP	Turb
1020	100	79.10	11.79	0.406	0.56	7.03	-140.0	323
1025	100	79.10	11.89	0.407	0.53	7.04	-140.3	215
1030			12.01	0.408	0.49	7.07	-139.8	194
1035			12.16	0.410	0.49	7.09	-139.3	186
1040			12.16	0.411	0.50	7.11	-137.7	144
1045			12.15	0.411	0.52	7.11	-137.1	148
1050			12.27	0.412	0.49	7.12	-135.6	116
1055			12.40	0.414	0.52	7.13	-134.6	103
1100			12.52	0.415	0.56	7.14	-133.8	102
1105			12.64	0.418	0.52	7.15	-133.3	74.3
1110			12.86	0.420	0.50	7.17	-132.8	78.8
1115			12.90	0.421	0.50	7.17	-132.7	45.0
1120			12.58	0.419	0.53	7.17	-133.7	48.7
1125			13.03	0.423	0.49	7.16	-127.7	54.9
1130			13.33	0.426	0.51	7.18	-126.2	44.9

O'Brien & Gere Engineers, Inc.

Ground Water Sampling Log

Date: 11/9/10  
 Site Name: Coldwater Road Landfill  
 Location: Flint, MI  
 Project No.: 46317  
 Personnel: KBS

Weather: Sunny 50°  
 Well #: B-28  
 Evacuation Method: peristaltic pump  
 Sampling Method: Low-flow

Well Information:

Depth of Well \* 31.5 ft.  
 Depth to Water \* 9.46 ft.  
 Length of Water Column \_\_\_\_\_ ft.  
 Volume of Water in Well \_\_\_\_\_ gal.(s)

Water Volume /ft. for:
X 2" Diameter Well = 0.163 X LWC
4" Diameter Well = 0.653 X LWC
6" Diameter Well = 1.469 X LWC

Volume removed before sampling \_\_\_\_\_ gal.(s)  
 Did well go dry? NO

\* Measurements taken from  Well Casing  Protective Casing  (Other, Specify) \_\_\_\_\_

Instrument Calibration:

Calibrated within Range

pH Y  
 ORP Y  
 Conductivity Y  
 DO Y

Water parameters:

Time	Pumping Rate (ml/min.)	Drawdown (ft) 0.3 feet or less	Temperature (Celsius) ±3 percent	Conductivity (mS/cm) ±0.005 (mS/cm)	Dissolved Oxygen (mg/L) ±10 percent	pH ±0.1 pH units	ORP (mV) ±10 millivolts	Turbidity (NTUs) ±10 percent
9:28	initial <u>200 ml/min</u>	initial <u>9.36</u>	initial <u>12.71</u>	initial <u>.860</u>	initial <u>1.46</u>	initial <u>6.95</u>	initial <u>-5.2</u>	initial <u>3</u>
9:33		<u>11.11</u>	<u>12.83</u>	<u>.766</u>	<u>1.08</u>	<u>7.00</u>	<u>-39.9</u>	<u>2</u>
9:38		<u>11.74</u>	<u>12.91</u>	<u>.732</u>	<u>1.03</u>	<u>7.02</u>	<u>-68.9</u>	<u>2</u>
9:43		<u>12.25</u>	<u>12.90</u>	<u>.726</u>	<u>.78</u>	<u>7.03</u>	<u>-72.2</u>	<u>2</u>
9:48		<u>12.75</u>	<u>13.00</u>	<u>.723</u>	<u>.69</u>	<u>7.05</u>	<u>-78.6</u>	<u>2</u>
9:53		<u>13.20</u>	<u>13.14</u>	<u>.723</u>	<u>.62</u>	<u>7.06</u>	<u>-81.0</u>	<u>1</u>
9:58		<u>13.54</u>	<u>13.13</u>	<u>.723</u>	<u>.55</u>	<u>7.06</u>	<u>-81.5</u>	<u>0</u>
10:03		<u>13.83</u>	<u>13.24</u>	<u>.723</u>	<u>.48</u>	<u>7.06</u>	<u>-78.6</u>	<u>0</u>
10:08		<u>14.13</u>	<u>13.29</u>	<u>.723</u>	<u>.50</u>	<u>7.05</u>	<u>-83.2</u>	<u>0</u>

Water Sample:

Time Collected 9:30

Physical Appearance at Start

Color: clear  
 Odor: -  
 Turbidity (> 100 NTU): 2  
 Sheen/Free Product: -

Physical Appearance at Sampling

Color: clear  
 Odor: -  
 Turbidity (> 100 NTU): 0  
 Sheen/Free Product: -

Samples collected:

Analyses	# Bottles	Bottle Size/Type	Preservative	Field Filtered
Dissolved Metals - Cu, Cr, Ni, Zn	1	125 ml Plastic	HNO <sub>3</sub>	yes
TOC	2	40 ml VOAs	H <sub>2</sub> SO <sub>4</sub>	
TOX	2	40 ml VOAs	H <sub>2</sub> SO <sub>4</sub>	
SpC	1	250 ml Plastic	None	

Notes:

*APPENDIX C*  
*Analytical Results*



# Analytical Laboratory Report

Report ID: S46639.01(01)  
Generated on 11/23/2010

Report to

Attention: Clifford Yantz  
O'Brien & Gere Engineers, Inc.  
37000 Grand River Ave.  
Suite 260  
Farmington, MI 48335

Phone: 248-477-5701 FAX:  
Email: YantzCS@obg.com/SecresME@obg.com

Report produced by

Merit Laboratories  
2680 East Lansing Drive  
East Lansing, MI 48823

Phone: (517) 332-0167 FAX: (517) 332-6333

Report Summary

Lab Sample ID(s): S46639.01-S46639.06  
Project: Coldwater Road Landfill Annual Sampling  
Collected Date: 11/09/2010 - 11/10/2010  
Submitted Date/Time: 11/10/2010 15:30  
Sampled by: Kevin S./Todd K.  
P.O. #: 11018537

Report Notes

Results relate only to items tested as received by the laboratory.  
Methods may be modified for improved performance.  
Results reported on a dry weight basis where applicable.  
"Not detected" indicates that parameter was not found at a level equal to or greater than the RL.  
Report shall not be reproduced except in full, without the written approval of Merit Laboratories.

Laboratory Certifications:

Michigan DNRE (#9956), Ohio EPA (#CL0002), NELAC NY (#11814), NELAC FL (#E871045), WBENC (#2005110032)  
Some analytes reported may not be certified. Full certification lists are available upon request.

Violetta F. Murshak  
Laboratory Director



# Analytical Laboratory Report

## Sample Summary (6 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S46639.01	B-28	Groundwater	11/09/2010 09:30
S46639.02	B-27D	Groundwater	11/09/2010 11:30
S46639.03	B-24r	Groundwater	11/09/2010 14:30
S46639.04	B-20D	Groundwater	11/09/2010 16:50
S46639.05	B-19Ar	Groundwater	11/10/2010 10:00
S46639.06	B-18A	Groundwater	11/10/2010 10:25



# Analytical Laboratory Report

Lab Sample ID: S46639.01  
 Sample Tag: B-28  
 Collected Date/Time: 11/09/2010 09:30  
 Matrix: Groundwater  
 COC Reference: 54856

## Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	125ml Plastic	HNO3	Yes	4.5	IR
1	500ml Plastic	None	Yes	4.5	IR
2	40ml Glass	H2SO4	Yes	4.5	IR
1	125ml Amber	H2SO4	Yes	4.5	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
<b>Extraction / Prep.</b>								
Metal Digestion	Completed			3015A	11/18/10 09:00	JRT		
<b>Inorganics</b>								
Conductivity	813	umhos/cm		120.1	11/16/10 16:38	JKB		
TOC	3	mg/L	1	EPA 415	11/15/10 12:00	TestA		O1
<b>Metals</b>								
Chromium, Dissolved	0.018	mg/L	0.005	200.8	11/18/10 14:06	SLS	7440-47-3	
Copper, Dissolved	Not detected	mg/L	0.004	200.8	11/18/10 14:06	SLS	7440-50-8	
Nickel, Dissolved	Not detected	mg/L	0.005	200.8	11/18/10 14:06	SLS	7440-02-0	
Zinc, Dissolved	Not detected	mg/L	0.005	200.8	11/18/10 14:06	SLS	7440-66-6	
<b>Organics</b>								
TOX	Not detected	ug/L	30.0	9020A	11/17/10 12:00	TestA		O

O-Analysis performed by outside laboratory. See attached report. 1-Method blank contamination. The associated method blank contains the target analyte at a reportable level.



# Analytical Laboratory Report

Lab Sample ID: S46639.02  
 Sample Tag: B-27D  
 Collected Date/Time: 11/09/2010 11:30  
 Matrix: Groundwater  
 COC Reference: 54856

## Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	125ml Plastic	HNO3	Yes	4.5	IR
1	500ml Plastic	None	Yes	4.5	IR
2	40ml Glass	H2SO4	Yes	4.5	IR
1	125ml Amber	H2SO4	Yes	4.5	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
<b>Extraction / Prep.</b>								
Metal Digestion	Completed			3015A	11/18/10 09:00	JRT		
<b>Inorganics</b>								
Conductivity	651	umhos/cm		120.1	11/16/10 16:40	JKB		
TOC	2	mg/L	1	EPA 415	11/15/10 12:00	TestA		O1
<b>Metals</b>								
Chromium, Dissolved	0.010	mg/L	0.005	200.8	11/18/10 14:08	SLS	7440-47-3	
Copper, Dissolved	Not detected	mg/L	0.004	200.8	11/18/10 14:08	SLS	7440-50-8	
Nickel, Dissolved	Not detected	mg/L	0.005	200.8	11/18/10 14:08	SLS	7440-02-0	
Zinc, Dissolved	Not detected	mg/L	0.005	200.8	11/18/10 14:08	SLS	7440-66-6	
<b>Organics</b>								
TOX	Not detected	ug/L	30.0	9020A	11/17/10 12:00	TestA		O

O-Analysis performed by outside laboratory. See attached report. 1-Method blank contamination. The associated method blank contains the target analyte at a reportable level.



# Analytical Laboratory Report

Lab Sample ID: S46639.03  
 Sample Tag: B-24r  
 Collected Date/Time: 11/09/2010 14:30  
 Matrix: Groundwater  
 COC Reference: 54856

## Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	125ml Plastic	HNO3	Yes	4.5	IR
1	500ml Plastic	None	Yes	4.5	IR
2	40ml Glass	H2SO4	Yes	4.5	IR
1	125ml Amber	H2SO4	Yes	4.5	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
<b>Extraction / Prep.</b>								
Metal Digestion	Completed			3015A	11/18/10 09:00	JRT		
<b>Inorganics</b>								
Conductivity	1,136	umhos/cm		120.1	11/16/10 16:42	JKB		
TOC	5	mg/L	1	EPA 415	11/15/10 12:00	TestA		O1
<b>Metals</b>								
Chromium, Dissolved	0.011	mg/L	0.005	200.8	11/18/10 14:10	SLS	7440-47-3	
Copper, Dissolved	Not detected	mg/L	0.004	200.8	11/18/10 14:10	SLS	7440-50-8	
Nickel, Dissolved	Not detected	mg/L	0.005	200.8	11/18/10 14:10	SLS	7440-02-0	
Zinc, Dissolved	Not detected	mg/L	0.005	200.8	11/18/10 14:10	SLS	7440-66-6	
<b>Organics</b>								
TOX	26.8	ug/L	30.0	9020A	11/17/10 12:00	TestA		O2

O-Analysis performed by outside laboratory. See attached report. 1-Method blank contamination. The associated method blank contains the target analyte at a reportable level.

2-Estimated result. Result is less than RL.



# Analytical Laboratory Report

Lab Sample ID: S46639.04  
 Sample Tag: B-20D  
 Collected Date/Time: 11/09/2010 16:50  
 Matrix: Groundwater  
 COC Reference: 54856

## Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	125ml Plastic	HNO3	Yes	4.5	IR
1	500ml Plastic	None	Yes	4.5	IR
2	40ml Glass	H2SO4	Yes	4.5	IR
1	125ml Amber	H2SO4	Yes	4.5	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
<b>Extraction / Prep.</b>								
Metal Digestion	Completed			3015A	11/18/10 09:00	JRT		
<b>Inorganics</b>								
Conductivity	998	umhos/cm		120.1	11/16/10 16:44	JKB		
TOC	3	mg/L	1	EPA 415	11/15/10 12:00	TestA		O1
<b>Metals</b>								
Chromium, Dissolved	0.011	mg/L	0.005	200.8	11/18/10 14:13	SLS	7440-47-3	
Copper, Dissolved	Not detected	mg/L	0.004	200.8	11/18/10 14:13	SLS	7440-50-8	
Nickel, Dissolved	Not detected	mg/L	0.005	200.8	11/18/10 14:13	SLS	7440-02-0	
Zinc, Dissolved	Not detected	mg/L	0.005	200.8	11/18/10 14:13	SLS	7440-66-6	
<b>Organics</b>								
TOX	Not detected	ug/L	30.0	9020A	11/17/10 12:00	TestA		O

O-Analysis performed by outside laboratory. See attached report. 1-Method blank contamination. The associated method blank contains the target analyte at a reportable level.



# Analytical Laboratory Report

Lab Sample ID: S46639.05  
 Sample Tag: B-19Ar  
 Collected Date/Time: 11/10/2010 10:00  
 Matrix: Groundwater  
 COC Reference: 54856

## Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	125ml Plastic	HNO3	Yes	4.5	IR
1	500ml Plastic	None	Yes	4.5	IR
2	40ml Glass	H2SO4	Yes	4.5	IR
1	125ml Amber	H2SO4	Yes	4.5	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
<b>Extraction / Prep.</b>								
Metal Digestion	Completed			3015A	11/18/10 09:00	JRT		
<b>Inorganics</b>								
Conductivity	1,128	umhos/cm		120.1	11/16/10 16:46	JKB		
TOC	2	mg/L	1	EPA 415	11/15/10 12:00	TestA		O1
<b>Metals</b>								
Chromium, Dissolved	0.012	mg/L	0.005	200.8	11/18/10 14:15	SLS	7440-47-3	
Copper, Dissolved	Not detected	mg/L	0.004	200.8	11/18/10 14:15	SLS	7440-50-8	
Nickel, Dissolved	Not detected	mg/L	0.005	200.8	11/18/10 14:15	SLS	7440-02-0	
Zinc, Dissolved	Not detected	mg/L	0.005	200.8	11/18/10 14:15	SLS	7440-66-6	
<b>Organics</b>								
TOX	Not detected	ug/L	30.0	9020A	11/17/10 12:00	TestA		O

O-Analysis performed by outside laboratory. See attached report. 1-Method blank contamination. The associated method blank contains the target analyte at a reportable level.



# Analytical Laboratory Report

Lab Sample ID: S46639.06  
 Sample Tag: B-18A  
 Collected Date/Time: 11/10/2010 10:25  
 Matrix: Groundwater  
 COC Reference: 54856

## Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	125ml Plastic	HNO3	Yes	4.5	IR
1	500ml Plastic	None	Yes	4.5	IR
2	40ml Glass	H2SO4	Yes	4.5	IR
1	125ml Amber	H2SO4	Yes	4.5	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
<b>Extraction / Prep.</b>								
Metal Digestion	Completed			3015A	11/18/10 09:00	JRT		
<b>Inorganics</b>								
Conductivity	1,065	umhos/cm		120.1	11/16/10 16:48	JKB		
TOC	2	mg/L	1	EPA 415	11/15/10 12:00	TestA		O1
<b>Metals</b>								
Chromium, Dissolved	0.012	mg/L	0.005	200.8	11/18/10 14:17	SLS	7440-47-3	
Copper, Dissolved	Not detected	mg/L	0.004	200.8	11/18/10 14:17	SLS	7440-50-8	
Nickel, Dissolved	Not detected	mg/L	0.005	200.8	11/18/10 14:17	SLS	7440-02-0	
Zinc, Dissolved	Not detected	mg/L	0.005	200.8	11/18/10 14:17	SLS	7440-66-6	
<b>Organics</b>								
TOX	28.0	ug/L	30.0	9020A	11/17/10 12:00	TestA		O2

O-Analysis performed by outside laboratory. See attached report. 1-Method blank contamination. The associated method blank contains the target analyte at a reportable level.

2-Estimated result. Result is less than RL.

## ANALYTICAL REPORT

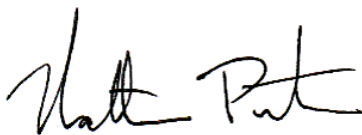
PROJECT NO. 46639

Lot #: A0K120427

Paula Shaw

Merit Laboratories  
2680 E Lansing Drive  
Lansing, MI 48823

TESTAMERICA LABORATORIES, INC.



Designee for

**Denise D. Heckler**

Project Manager

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Approved for release.  
Nathan Pietras  
Project Manager  
11/23/2010 8:59 AM

November 23, 2010

**TestAmerica Laboratories, Inc.**

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## CASE NARRATIVE

A0K120427

The following report contains the analytical results for six water samples submitted to TestAmerica North Canton by Merit Laboratories, project number 46639. The samples were received November 12, 2010, according to documented sample acceptance procedures.

TestAmerica utilizes USEPA approved methods in all analytical work. The samples presented in this report were analyzed for the parameter(s) listed on the analytical methods summary page in accordance with the method(s) indicated. A summary of QC data for these analyses is included at the back of the report.

TestAmerica North Canton attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the applicable methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This laboratory report is confidential and is intended for the sole use of TestAmerica and its client.

All parameters were evaluated to the method detection limit and include qualified results where applicable.

Please refer to the Quality Control Elements Narrative following this case narrative for additional quality control information.

If you have any questions, please call the Project Manager, Denise D. Heckler, at 330-497-9396.

This report is sequentially paginated. The final page of the report is labeled as "END OF REPORT."

## **CASE NARRATIVE (continued)**

### **SUPPLEMENTAL QC INFORMATION**

#### **SAMPLE RECEIVING**

The temperature of the cooler upon sample receipt was 0.0°C.

#### **GENERAL CHEMISTRY**

The sample(s) that contain results between the MDL and the RL were flagged with "B". There is the possibility of false positive or mis-identification at these quantitation levels. The acceptance criteria for the ICB, CCB, and Method Blank are +/- the standard reporting limit (SRL).

The sample(s) that contained concentrations of target analyte(s) at a reportable level in the associated Method Blank(s) were flagged with "J". Refer to the sample report pages for the affected analytes(s).

## QUALITY CONTROL ELEMENTS NARRATIVE

TestAmerica conducts a quality assurance/quality control (QA/QC) program designed to provide scientifically valid and legally defensible data. Toward this end, several types of quality control indicators are incorporated into the QA/QC program, which is described in detail in QA Policy, QA-003. These indicators are introduced into the sample testing process to provide a mechanism for the assessment of the analytical data. Program or agency specific requirements take precedence over the requirements listed in this narrative.

### **QC BATCH**

Environmental samples are taken through the testing process in groups called QUALITY CONTROL BATCHES (QC batches). A QC batch contains up to twenty environmental samples of a similar matrix (water, soil) that are processed using the same reagents and standards. TestAmerica North Canton requires that each environmental sample be associated with a QC batch.

Several quality control samples are included in each QC batch and are processed identically to the twenty environmental samples.

For SW846/RCRA methods, QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) pair or a MATRIX SPIKE/SAMPLE DUPLICATE (MS/DU) pair. If there is insufficient sample to perform an MS/MSD or an MS/DU, then a LABORATORY CONTROL SAMPLE DUPLICATE (LCSD) is included in the QC batch.

For 600 series/CWA methods, QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE (MS). An MS is prepared and analyzed at a 10% frequency for GC Methods and at a 5% frequency for GC/MS methods.

### **LABORATORY CONTROL SAMPLE**

The Laboratory Control Sample is a QC sample that is created by adding known concentrations of a full or partial set of target analytes to a matrix similar to that of the environmental samples in the QC batch. Multi peak responders may not be included in the target spike list due to co-elution. The LCS analyte recovery results are used to monitor the analytical process and provide evidence that the laboratory is performing the method within acceptable guidelines. All control analytes indicated by a bold type in the LCS must meet acceptance criteria. Failure to meet the established recovery guidelines requires the reparation and reanalysis of all samples in the QC batch. Comparison of only the failed parameters from the first batch are evaluated. The only exception to the rework requirement is that if the LCS recoveries are biased high and the associated sample is ND (non-detected) for the parameter(s) of interest, the batch is acceptable.

At times, a Laboratory Control Sample Duplicate (LCSD) is also included in the QC batch. An LCSD is a QC sample that is created and handled identically to the LCS. Analyte recovery data from the LCSD is assessed in the same way as that of the LCS. The LCSD recoveries, together with the LCS recoveries, are used to determine the reproducibility (precision) of the analytical system. Precision data are expressed as relative percent differences (RPDs). If the RPD fails for an LCS/LCSD and yet the recoveries are within acceptance criteria, the batch is still acceptable.

### **METHOD BLANK**

The Method Blank is a QC sample consisting of all the reagents used in analyzing the environmental samples contained in the QC batch. Method Blank results are used to determine if interference or contamination in the analytical system could lead to the reporting of false positive data or elevated analyte concentrations. All target analytes must be below the reporting limits (RL) or the associated sample(s) must be ND except under the following circumstances:

- Common organic contaminants may be present at concentrations up to 5 times the reporting limits. Common metals contaminants may be present at concentrations up to 2 times the reporting limit, or the reported blank concentration must be twenty fold less than the concentration reported in the associated environmental samples. (See common laboratory contaminants listed in the table.)

<b><u>Volatile (GC or GC/MS)</u></b>	<b><u>Semivolatile (GC/MS)</u></b>	<b><u>Metals ICP-MS</u></b>	<b><u>Metals ICP Trace</u></b>
Methylene Chloride, Acetone, 2-Butanone	Phthalate Esters	Copper, Iron, Zinc, Lead, Calcium, Magnesium, Potassium, Sodium, Barium, Chromium, Manganese	Copper, Iron, Zinc, Lead

## QUALITY CONTROL ELEMENTS NARRATIVE (continued)

- Organic blanks will be accepted if compounds detected in the blank are present in the associated samples at levels 10 times the blank level. Inorganic blanks will be accepted if elements detected in the blank are present in the associated samples at 20 times the blank level.
- Blanks will be accepted if the compounds/elements detected are not present in any of the associated environmental samples.

Failure to meet these Method Blank criteria requires the reparation and reanalysis of all samples in the QC batch.

### **MATRIX SPIKE/MATRIX SPIKE DUPLICATE**

A Matrix Spike and a Matrix Spike Duplicate are a pair of environmental samples to which known concentrations of a full or partial set of target analytes are added. The MS/MSD results are determined in the same manner as the results of the environmental sample used to prepare the MS/MSD. The analyte recoveries and the relative percent differences (RPDs) of the recoveries are calculated and used to evaluate the effect of the sample matrix on the analytical results. Due to the potential variability of the matrix of each sample, the MS/MSD results may not have an immediate bearing on any samples except the one spiked; therefore, the associated batch MS/MSD may not reflect the same compounds as the samples contained in the analytical report. When these MS/MSD results fail to meet acceptance criteria, the data is evaluated. If the LCS is within acceptance criteria, the batch is considered acceptable.

For certain methods, a Matrix Spike/Sample Duplicate (MS/DU) may be included in the QC batch in place of the MS/MSD. For the parameters (i.e. pH, ignitability) where it is not possible to prepare a spiked sample, a Sample Duplicate may be included in the QC batch. However, a Sample Duplicate is less likely to provide usable precision statistics depending on the likelihood of finding concentrations below the standard reporting limit. When the Sample Duplicate result fails to meet acceptance criteria, the data is evaluated.

For certain methods (600 series methods/CWA), a Matrix Spike is required in place of a Matrix Spike/Matrix Spike Duplicate (MS/MSD) or Matrix Spike/Sample Duplicate (MS/DU).

The acceptance criteria do not apply to samples that are diluted.

### **SURROGATE COMPOUNDS**

In addition to these batch-related QC indicators, each organic environmental and QC sample is spiked with surrogate compounds. Surrogates are organic chemicals that behave similarly to the analytes of interest and that are rarely present in the environment. Surrogate recoveries are used to monitor the individual performance of a sample in the analytical system.

If surrogate recoveries are biased high in the LCS, LCSD, or the Method Blank, and the associated sample(s) are ND, the batch is acceptable. Otherwise, if the LCS, LCSD, or Method Blank surrogate(s) fail to meet recovery criteria, the entire sample batch is reprepared and reanalyzed. If the surrogate recoveries are outside criteria for environmental samples, the samples will be reprepared and reanalyzed unless there is objective evidence of matrix interference or if the sample dilution is greater than the threshold outlined in the associated method SOP.

The acceptance criteria do not apply to samples that are diluted. All other surrogate recoveries will be reported.

For the GC/MS BNA methods, the surrogate criterion is that two of the three surrogates for each fraction must meet acceptance criteria. The third surrogate must have a recovery of ten percent or greater.

For the Pesticide and PCB methods, the surrogate criterion is that one of two surrogate compounds must meet acceptance criteria. The second surrogate must have a recovery of 10% or greater.



### **TestAmerica Certifications and Approvals:**

*The laboratory is certified for the analytes listed on the documents below. These are available upon request.*  
California (#01144CA), Connecticut (#PH-0590), Florida (#E87225),  
Illinois (#200004), Kansas (#E10336), Minnesota (#39-999-348), New Jersey (#OH001), New York (#10975), Nevada  
(#OH-000482008A), OhioVAP (#CL0024), Pennsylvania (#008), West Virginia (#210), Wisconsin (#999518190), NAVY,  
ARMY, USDA Soil Permit

N:\QAQC\Customer Service\Narrative - Combined RCRA\_CWA 032609.doc

## EXECUTIVE SUMMARY - Detection Highlights

A0K120427

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>ANALYTICAL METHOD</u>
<b>46639.01 11/09/10 09:30 001</b>				
Total Organic Carbon	3 J	1	mg/L	MCAWW 415.1
<b>46639.02 11/09/10 11:30 002</b>				
Total Organic Carbon	2 J	1	mg/L	MCAWW 415.1
<b>46639.03 11/09/10 14:30 003</b>				
Total Organic Carbon	5 J	1	mg/L	MCAWW 415.1
Total Organic Halogens	26.8 B	30.0	ug/L	SW846 9020B
<b>46639.04 11/09/10 16:50 004</b>				
Total Organic Carbon	3 J	1	mg/L	MCAWW 415.1
<b>46639.05 11/10/10 10:00 005</b>				
Total Organic Carbon	2 J	1	mg/L	MCAWW 415.1
<b>46639.06 11/10/10 10:25 006</b>				
Total Organic Carbon	2 J	1	mg/L	MCAWW 415.1
Total Organic Halogens	28.0 B	30.0	ug/L	SW846 9020B

# ANALYTICAL METHODS SUMMARY

A0K120427

<u>PARAMETER</u>	<u>ANALYTICAL METHOD</u>
Total Organic Carbon	MCAWW 415.1
Total Organic Halogens	SW846 9020B

## References:

- MCAWW "Methods for Chemical Analysis of Water and Wastes",  
EPA-600/4-79-020, March 1983 and subsequent revisions.
- SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical  
Methods", Third Edition, November 1986 and its updates.

# SAMPLE SUMMARY

A0K120427

<u>WO #</u>	<u>SAMPLE#</u>	<u>CLIENT SAMPLE ID</u>	<u>SAMPLED DATE</u>	<u>SAMP TIME</u>
L9X4L	001	46639.01	11/09/10	09:30
L9X4M	002	46639.02	11/09/10	11:30
L9X4P	003	46639.03	11/09/10	14:30
L9X4R	004	46639.04	11/09/10	16:50
L9X4T	005	46639.05	11/10/10	10:00
L9X4V	006	46639.06	11/10/10	10:25

## **NOTE(S) :**

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Merit Laboratories

Client Sample ID: 46639.01

General Chemistry

Lot-Sample #...: A0K120427-001    Work Order #...: L9X4L    Matrix.....: WG  
Date Sampled...: 11/09/10 09:30    Date Received..: 11/12/10

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Total Organic Carbon	3 J	1	mg/L	MCAWW 415.1	11/15/10	0319343
			Dilution Factor: 1	MDL.....: 0.2		
Total Organic Halogens	ND	30.0	ug/L	SW846 9020B	11/17/10	0321244
			Dilution Factor: 1	MDL.....: 17.0		

**NOTE(S):**

RL Reporting Limit

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Merit Laboratories

Client Sample ID: 46639.02

General Chemistry

Lot-Sample #...: A0K120427-002    Work Order #...: L9X4M    Matrix.....: WG  
Date Sampled...: 11/09/10 11:30    Date Received..: 11/12/10

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Total Organic Carbon	2 J	1	mg/L	MCAWW 415.1	11/15/10	0319343
			Dilution Factor: 1	MDL.....: 0.2		
Total Organic Halogens	ND	30.0	ug/L	SW846 9020B	11/17/10	0321244
			Dilution Factor: 1	MDL.....: 17.0		

**NOTE(S):**

RL Reporting Limit

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Merit Laboratories

Client Sample ID: 46639.03

General Chemistry

Lot-Sample #...: A0K120427-003    Work Order #...: L9X4P    Matrix.....: WG  
Date Sampled...: 11/09/10 14:30    Date Received..: 11/12/10

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Total Organic Carbon	5 J	1	mg/L	MCAWW 415.1	11/15/10	0319343
			Dilution Factor: 1	MDL.....: 0.2		
Total Organic Halogens	26.8 B	30.0	ug/L	SW846 9020B	11/17/10	0321244
			Dilution Factor: 1	MDL.....: 17.0		

**NOTE(S):**

- 
- RL Reporting Limit
  - J Method blank contamination. The associated method blank contains the target analyte at a reportable level.
  - B Estimated result. Result is less than RL.

Merit Laboratories

Client Sample ID: 46639.04

General Chemistry

Lot-Sample #...: A0K120427-004    Work Order #...: L9X4R    Matrix.....: WG  
Date Sampled...: 11/09/10 16:50    Date Received..: 11/12/10

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Total Organic Carbon	3 J	1	mg/L	MCAWW 415.1	11/15/10	0319343
			Dilution Factor: 1	MDL.....: 0.2		
Total Organic Halogens	ND	30.0	ug/L	SW846 9020B	11/17/10	0321244
			Dilution Factor: 1	MDL.....: 17.0		

**NOTE(S):**

RL Reporting Limit

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Merit Laboratories

Client Sample ID: 46639.05

General Chemistry

Lot-Sample #...: A0K120427-005    Work Order #...: L9X4T    Matrix.....: WG  
Date Sampled...: 11/10/10 10:00    Date Received..: 11/12/10

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Total Organic Carbon	2 J	1	mg/L	MCAWW 415.1	11/15/10	0319343
			Dilution Factor: 1	MDL.....: 0.2		
Total Organic Halogens	ND	30.0	ug/L	SW846 9020B	11/17/10	0321244
			Dilution Factor: 1	MDL.....: 17.0		

**NOTE(S):**

RL Reporting Limit

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Merit Laboratories

Client Sample ID: 46639.06

General Chemistry

Lot-Sample #...: A0K120427-006    Work Order #...: L9X4V    Matrix.....: WG  
Date Sampled...: 11/10/10 10:25    Date Received..: 11/12/10

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Total Organic Carbon	2 J	1	mg/L	MCAWW 415.1	11/15/10	0319343
			Dilution Factor: 1	MDL.....: 0.2		
Total Organic Halogens	28.0 B	30.0	ug/L	SW846 9020B	11/17/10	0321244
			Dilution Factor: 1	MDL.....: 17.0		

**NOTE(S):**

- 
- RL Reporting Limit
  - J Method blank contamination. The associated method blank contains the target analyte at a reportable level.
  - B Estimated result. Result is less than RL.

# ***QUALITY CONTROL SECTION***

METHOD BLANK REPORT

General Chemistry

Client Lot #...: A0K120427

Matrix.....: WATER

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION-</u> <u>ANALYSIS DATE</u>	<u>PREP</u> <u>BATCH #</u>
Total Organic Carbon	0.3 B	1	mg/L	MCAWW 415.1	11/15/10	0319343
		Work Order #: L93531AA MB Lot-Sample #: A0K150000-343				
		Dilution Factor: 1				
Total Organic Halogens	ND	30.0	ug/L	SW846 9020B	11/17/10	0321244
		Work Order #: L96241AA MB Lot-Sample #: A0K170000-244				
		Dilution Factor: 1				

**NOTE(S):**

Calculations are performed before rounding to avoid round-off errors in calculated results.

B Estimated result. Result is less than RL.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: A0K120427

Matrix.....: WATER

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Total Organic Carbon	101	(88 - 115)	MCAWW 415.1 Dilution Factor: 1	11/15/10	0319343
Total Organic Halogens	106	(67 - 115)	SW846 9020B Dilution Factor: 1	11/17/10	0321244

**NOTE(S):**

---

Calculations are performed before rounding to avoid round-off errors in calculated results.

**MATRIX SPIKE SAMPLE EVALUATION REPORT**

**General Chemistry**

Client Lot #...: A0K120427

Matrix.....: WATER

Date Sampled...: 11/01/10 13:45 Date Received...: 11/03/10

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>RPD</u>	<u>RPD LIMITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Total Organic Halogens			WO#: L9HQQ1C6-MS/L9HQQ1C7-MSD			MS Lot-Sample #: C0K030593-001	
	93	(59 - 126)			SW846 9020B	11/17/10	0321244
	106	(59 - 126)	13	(0-99)	SW846 9020B	11/17/10	0321244
			Dilution Factor: 1				
Total Organic Carbon			WO#: L9X331AD-MS/L9X331AE-MSD			MS Lot-Sample #: A0K120423-001	
	99	(72 - 136)			MCAWW 415.1	11/15/10	0319343
	97	(72 - 136)	1.5	(0-20)	MCAWW 415.1	11/15/10	0319343
			Dilution Factor: 1				

**NOTE(S):**

---

Calculations are performed before rounding to avoid round-off errors in calculated results.

# Chain of Custody Record

TestAmerica Laboratory location:  DW  NPDES  RCRA  Other

TestAmerica  
THE LEADER IN ENVIRONMENTAL TESTING

Company Name: **Merit Labs** Client Project Manager: **Paula Shaw** Site Contact: \_\_\_\_\_ Lab Contact: \_\_\_\_\_  
 Address: **2680 East Lansing Dr.** Telephone: \_\_\_\_\_ Telephone: \_\_\_\_\_  
 City/State/Zip: **East Lansing, MI 48823** Email: **paula.shaw@meritlabs.com** Telephone: \_\_\_\_\_  
 Phone: **517-332-0167**

Project Name: **46639** Method of Shipment/Carrier: **UPS** TAT if different from below:  3 weeks  2 weeks  1 week  2 days  1 day  
 Project Number: **46639** Shipping/Tracking No: \_\_\_\_\_

PO# **46639**

Sample Identification	Sample Date	Sample Time	Matrix					Contaminants/Parameters						Sample Specific Notes / Special Instructions
			Air	Aqueous	Sediment	Solid	Other:	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Unpres	

Sample Identification	Sample Date	Sample Time	Matrix					Contaminants/Parameters						Sample Specific Notes / Special Instructions					
			Air	Aqueous	Sediment	Solid	Other:	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Unpres		Other:				
46639.01	11-9-10	0730	X																
.02		1130	X																
.03		1430	X																
.04		1650	X																
.05	11-10-10	1000	X																
.06		1025	X																

Possible Hazard Identification:  Non-Hazard  Flammable  Skin Irritant  Poison B  Unknown

Special Instructions/QC Requirements & Comments: \_\_\_\_\_

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month):  Return to Client  Disposal By Lab  Archive For \_\_\_\_\_ Months

Relinquished by: **Paula Shaw** Company: **Merit** Date/Time: **11-11-10/1600** Received by: **UPS** Company: **Merit** Date/Time: \_\_\_\_\_  
 Relinquished by: \_\_\_\_\_ Company: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Received by: **Maureen Adelstein** Company: **MARCO** Date/Time: **11/21/10 950**

**TestAmerica Cooler Receipt Form/Narrative**  
**North Canton Facility**

Lot Number: 10K120427

Client Merit Project \_\_\_\_\_  
 Cooler Received on 11/12/10 Opened on 11/12/10 By: Deanna DeWick  
 FedEx  UPS  DHL  FAS  Stetson  Client Drop Off  TestAmerica Courier  Other \_\_\_\_\_  
 (Signature)

TestAmerica Cooler # \_\_\_\_\_ Multiple Coolers  Foam Box  Client Cooler  Other \_\_\_\_\_  
 1. Were custody seals on the outside of the cooler(s)? Yes  No  Intact? Yes  No  NA

If YES, Quantity \_\_\_\_\_ Quantity Unsalvageable \_\_\_\_\_  
 Were custody seals on the outside of cooler(s) signed and dated? Yes  No  NA   
 Were custody seals on the bottle(s)? Yes  No   
 If YES, are there any exceptions? \_\_\_\_\_

2. Shippers' packing slip attached to the cooler(s)? Yes  No   
 3. Did custody papers accompany the sample(s)? Yes  No   
 4. Were the custody papers signed in the appropriate place? Yes  No   
 5. Packing material used: Bubble Wrap  Foam  None  Other \_\_\_\_\_  
 6. Cooler temperature upon receipt 0.0 °C See back of form for multiple coolers/temps

METHOD: IR  Other   
 COOLANT: Wet Ice  Blue Ice  Dry Ice  Water  None   
 7. Did all bottles arrive in good condition (Unbroken)? Yes  No   
 8. Could all bottle labels be reconciled with the COC? Yes  No   
 9. Were sample(s) at the correct pH upon receipt? Yes  No  NA   
 10. Were correct bottle(s) used for the test(s) indicated? Yes  No  NA   
 11. Were air bubbles >6 mm in any VOA vials? Yes  No  NA   
 12. Sufficient quantity received to perform indicated analyses? Yes  No

13. Was a trip blank present in the cooler(s)? Yes  No  Were VOAs on the COC? Yes  No   
 Contacted PM \_\_\_\_\_ Date \_\_\_\_\_ by \_\_\_\_\_ via Verbal  Voice Mail  Other   
 Concerning \_\_\_\_\_

**14. CHAIN OF CUSTODY**

The following discrepancies occurred:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**15. SAMPLE CONDITION**

Sample(s) \_\_\_\_\_ were received after the recommended holding time had expired.  
 Sample(s) \_\_\_\_\_ were received in a broken container.  
 Sample(s) \_\_\_\_\_ were received with bubble >6 mm in diameter. (Notify PM)

**16. SAMPLE PRESERVATION**

Sample(s) \_\_\_\_\_ were further preserved in Sample Receiving to meet recommended pH level(s). Nitric Acid Lot# 051010-HNO<sub>3</sub>; Sulfuric Acid Lot# 051010-H<sub>2</sub>SO<sub>4</sub>; Sodium Hydroxide Lot# 100108 -NaOH; Hydrochloric Acid Lot# 092006-HCl; Sodium Hydroxide and Zinc Acetate Lot# 100108-(CH<sub>3</sub>COO)<sub>2</sub>ZN/NaOH. What time was preservative added to sample(s)? \_\_\_\_\_

Client ID	pH	Date	Initials
1	~2	11/12/10	AD
2	~2		
3	~2		
4	~2		
5	~2		
6	~2		



***END OF REPORT***



2680 East Lansing Dr., East Lansing, MI 48823  
 Phone (517) 332-0167 Fax (517) 332-6333  
 www.meritlabs.com

C.O.C. PAGE # 1 OF 1

54856

**REPORT TO**

**CHAIN OF CUSTODY RECORD**

**INVOICE TO**

CONTACT NAME Cliff Yantz  
 COMPANY O'Brien & Gere  
 ADDRESS 37000 Grand River  
 CITY Farmington Hills STATE MI ZIP CODE 48335  
 PHONE NO. 248-477-5701 FAX NO. \_\_\_\_\_ P.O. NO. \_\_\_\_\_  
 E-MAIL ADDRESS \_\_\_\_\_ QUOTE NO. \_\_\_\_\_

CONTACT NAME \_\_\_\_\_  SAME  
 COMPANY \_\_\_\_\_  
 ADDRESS \_\_\_\_\_  
 CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP CODE \_\_\_\_\_  
 PHONE NO. \_\_\_\_\_ FAX NO. \_\_\_\_\_ P.O. NO. \_\_\_\_\_

**ANALYSIS (ATTACH LIST IF MORE SPACE REQUIRED)**

PROJECT NO./NAME Edgewater Rd landfill Annual Sampling SAMPLER(S) - PLEASE PRINT/SIGN NAME Todd Kane  
Kevin Schneider  
 TURNAROUND TIME REQUIRED  24 HR  48 HR  72 HR  STANDARD  OTHER  
 DELIVERABLES REQUIRED  STANDARD  LEVEL II  LEVEL III  OTHER

**SPECIAL INSTRUCTIONS/NOTES**

Metals Are:  
 Cu, Cr, Ni, Zn

MATRIX CODE: GW=GROUNDWATER WW=WASTEWATER S=SOIL L=LIQUID SD=SOLID  
 SL=SLUDGE O=OIL A=AIR W=WASTE M=MISC

**# Containers & Preservatives**

MERIT LAB NO.	YEAR		SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	NONE	HCL	HNO <sub>3</sub>	H <sub>2</sub> SO <sub>4</sub>	NaOH	MeOH	OTHER
	DATE	TIME										
46639.01	11/9/10	930	B-28	GW	5	1		1	3			
.02	↓	1130	B-27D	GW	5	1		1	3			
.03	↓	1430	B-24c	GW	5	1		1	3			
.04	↓	1650	B-20D	GW	5	1		1	3			
.05	11/10/10	1000	B-19Ar	GW	5	1		1	3			
.06	11/10/10	1025	B-18A	GW	5	1		1	3			

TOC	Specific Conductivity	Dissolved Metals	TOX
X	X	X	X
X	X	X	X
X	X	X	X
X	X	X	X
X	X	X	X
X	X	X	X

RELINQUISHED BY: [Signature] O'Brien & Gere DATE 11/10/10 TIME 1:35  
 RECEIVED BY: [Signature] DATE 11-10-10 TIME 1:30  
 RELINQUISHED BY: \_\_\_\_\_ DATE \_\_\_\_\_ TIME \_\_\_\_\_  
 RECEIVED BY: \_\_\_\_\_ DATE \_\_\_\_\_ TIME \_\_\_\_\_

RELINQUISHED BY: [Signature] DATE 11-10-10 TIME 15:30  
 RECEIVED BY: [Signature] DATE 11/10/10 TIME 15:30  
 SEAL NO. \_\_\_\_\_ SEAL INTACT YES  NO  INITIALS \_\_\_\_\_ NOTES: TEMP. ON ARRIVAL 4.5  
 SEAL NO. \_\_\_\_\_ SEAL INTACT YES  NO  INITIALS \_\_\_\_\_



# Analytical Laboratory Report

Report ID: S46657.01(01)  
Generated on 11/23/2010

Report to

Attention: Clifford Yantz  
O'Brien & Gere Engineers, Inc.  
37000 Grand River Ave.  
Suite 260  
Farmington, MI 48335

Phone: 248-477-5701 FAX:  
Email: YantzCS@obg.com/SecresME@obg.com

Report produced by

Merit Laboratories  
2680 East Lansing Drive  
East Lansing, MI 48823

Phone: (517) 332-0167 FAX: (517) 332-6333

Report Summary

Lab Sample ID(s): S46657.01-S46657.07  
Project: Coldwater Road Landfill Annual Sampling  
Collected Date: 11/10/2010 - 11/11/2010  
Submitted Date/Time: 11/11/2010 15:20  
Sampled by: Kevin Schneider  
P.O. #: 11018537

Report Notes

Results relate only to items tested as received by the laboratory.  
Methods may be modified for improved performance.  
Results reported on a dry weight basis where applicable.  
"Not detected" indicates that parameter was not found at a level equal to or greater than the RL.  
Report shall not be reproduced except in full, without the written approval of Merit Laboratories.

Laboratory Certifications:

Michigan DNRE (#9956), Ohio EPA (#CL0002), NELAC NY (#11814), NELAC FL (#E871045), WBENC (#2005110032)  
Some analytes reported may not be certified. Full certification lists are available upon request.

Violetta F. Murshak  
Laboratory Director



# Analytical Laboratory Report

## Sample Summary (7 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S46657.01	B-2D	Groundwater	11/10/2010 12:30
S46657.02	B-21D	Groundwater	11/10/2010 16:15
S46657.03	B-9	Groundwater	11/11/2010 10:00
S46657.04	B-22D	Groundwater	11/11/2010 10:15
S46657.05	B-23Dr	Groundwater	11/11/2010 12:05
S46657.06	DUP-03	Groundwater	11/11/2010
S46657.07	EB-01	Groundwater	11/11/2010 12:45



# Analytical Laboratory Report

Lab Sample ID: S46657.01  
 Sample Tag: B-2D  
 Collected Date/Time: 11/10/2010 12:30  
 Matrix: Groundwater  
 COC Reference: 54857

## Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	125ml Plastic	HNO3	Yes	4.4	IR
1	500ml Plastic	None	Yes	4.4	IR
2	40ml Glass	H2SO4	Yes	4.4	IR
1	125ml Amber	H2SO4	Yes	4.4	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
<b>Extraction / Prep.</b>								
Metal Digestion	Completed			3015A	11/18/10 09:00	JRT		
<b>Inorganics</b>								
Conductivity	779	umhos/cm		120.1	11/15/10 14:28	JKB		
TOC	4	mg/L	1	EPA 415	11/15/10 12:00	TestA		O1
<b>Metals</b>								
Chromium, Dissolved	0.011	mg/L	0.005	200.8	11/18/10 14:36	SLS	7440-47-3	
Copper, Dissolved	Not detected	mg/L	0.004	200.8	11/18/10 14:36	SLS	7440-50-8	
Nickel, Dissolved	Not detected	mg/L	0.005	200.8	11/18/10 14:36	SLS	7440-02-0	
Zinc, Dissolved	Not detected	mg/L	0.005	200.8	11/18/10 14:36	SLS	7440-66-6	
<b>Organics</b>								
TOX	Not detected	ug/L	30.0	9020A	11/15/10 12:00	TestA		O

O-Analysis performed by outside laboratory. See attached report. 1-Method blank contamination. The associated method blank contains the target analyte at a reportable level.



# Analytical Laboratory Report

Lab Sample ID: S46657.02  
 Sample Tag: B-21D  
 Collected Date/Time: 11/10/2010 16:15  
 Matrix: Groundwater  
 COC Reference: 54857

## Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	125ml Plastic	HNO3	Yes	4.4	IR
1	500ml Plastic	None	Yes	4.4	IR
2	40ml Glass	H2SO4	Yes	4.4	IR
1	125ml Amber	H2SO4	Yes	4.4	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
<b>Extraction / Prep.</b>								
Metal Digestion	Completed			3015A	11/18/10 09:00	JRT		
<b>Inorganics</b>								
Conductivity	739	umhos/cm		120.1	11/15/10 14:30	JKB		
TOC	1	mg/L	1	EPA 415	11/15/10 12:00	TestA		O1
<b>Metals</b>								
Chromium, Dissolved	0.011	mg/L	0.005	200.8	11/18/10 14:39	SLS	7440-47-3	
Copper, Dissolved	Not detected	mg/L	0.004	200.8	11/18/10 14:39	SLS	7440-50-8	
Nickel, Dissolved	Not detected	mg/L	0.005	200.8	11/18/10 14:39	SLS	7440-02-0	
Zinc, Dissolved	Not detected	mg/L	0.005	200.8	11/18/10 14:39	SLS	7440-66-6	
<b>Organics</b>								
TOX	Not detected	ug/L	30.0	9020A	11/15/10 12:00	TestA		O

O-Analysis performed by outside laboratory. See attached report. 1-Method blank contamination. The associated method blank contains the target analyte at a reportable level.



# Analytical Laboratory Report

Lab Sample ID: S46657.03  
 Sample Tag: B-9  
 Collected Date/Time: 11/11/2010 10:00  
 Matrix: Groundwater  
 COC Reference: 54857

## Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	125ml Plastic	HNO3	Yes	4.4	IR
1	500ml Plastic	None	Yes	4.4	IR
2	40ml Glass	H2SO4	Yes	4.4	IR
1	125ml Amber	H2SO4	Yes	4.4	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
<b>Extraction / Prep.</b>								
Metal Digestion	Completed			3015A	11/18/10 09:00	JRT		
<b>Inorganics</b>								
Conductivity	2,910	umhos/cm		120.1	11/15/10 14:32	JKB		
TOC	3	mg/L	1	EPA 415	11/15/10 12:00	TestA		O1
<b>Metals</b>								
Chromium, Dissolved	0.019	mg/L	0.005	200.8	11/18/10 14:41	SLS	7440-47-3	
Copper, Dissolved	0.004	mg/L	0.004	200.8	11/18/10 14:41	SLS	7440-50-8	
Nickel, Dissolved	0.007	mg/L	0.005	200.8	11/18/10 14:41	SLS	7440-02-0	
Zinc, Dissolved	0.015	mg/L	0.005	200.8	11/18/10 14:41	SLS	7440-66-6	
<b>Organics</b>								
TOX	37.5	ug/L	30.0	9020A	11/15/10 12:00	TestA		O

O-Analysis performed by outside laboratory. See attached report. 1-Method blank contamination. The associated method blank contains the target analyte at a reportable level.



# Analytical Laboratory Report

Lab Sample ID: S46657.04  
 Sample Tag: B-22D  
 Collected Date/Time: 11/11/2010 10:15  
 Matrix: Groundwater  
 COC Reference: 54857

## Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	125ml Plastic	HNO3	Yes	4.4	IR
1	500ml Plastic	None	Yes	4.4	IR
2	40ml Glass	H2SO4	Yes	4.4	IR
1	125ml Amber	H2SO4	Yes	4.4	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
<b>Extraction / Prep.</b>								
Metal Digestion	Completed			3015A	11/18/10 09:00	JRT		
<b>Inorganics</b>								
Conductivity	704	umhos/cm		120.1	11/15/10 14:34	JKB		
TOC	2	mg/L	1	EPA 415	11/15/10 12:00	TestA		O1
<b>Metals</b>								
Chromium, Dissolved	0.011	mg/L	0.005	200.8	11/18/10 14:43	SLS	7440-47-3	
Copper, Dissolved	Not detected	mg/L	0.004	200.8	11/18/10 14:43	SLS	7440-50-8	
Nickel, Dissolved	Not detected	mg/L	0.005	200.8	11/18/10 14:43	SLS	7440-02-0	
Zinc, Dissolved	Not detected	mg/L	0.005	200.8	11/18/10 14:43	SLS	7440-66-6	
<b>Organics</b>								
TOX	Not detected	ug/L	30.0	9020A	11/15/10 12:00	TestA		O

O-Analysis performed by outside laboratory. See attached report. 1-Method blank contamination. The associated method blank contains the target analyte at a reportable level.



# Analytical Laboratory Report

Lab Sample ID: S46657.05  
 Sample Tag: B-23Dr  
 Collected Date/Time: 11/11/2010 12:05  
 Matrix: Groundwater  
 COC Reference: 54857

## Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	125ml Plastic	HNO3	Yes	4.4	IR
1	500ml Plastic	None	Yes	4.4	IR
2	40ml Glass	H2SO4	Yes	4.4	IR
1	125ml Amber	H2SO4	Yes	4.4	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
<b>Extraction / Prep.</b>								
Metal Digestion	Completed			3015A	11/18/10 09:00	JRT		
<b>Inorganics</b>								
Conductivity	743	umhos/cm		120.1	11/15/10 14:36	JKB		
TOC	2	mg/L	1	EPA 415	11/15/10 12:00	TestA		O1
<b>Metals</b>								
Chromium, Dissolved	0.011	mg/L	0.005	200.8	11/18/10 14:46	SLS	7440-47-3	
Copper, Dissolved	Not detected	mg/L	0.004	200.8	11/18/10 14:46	SLS	7440-50-8	
Nickel, Dissolved	Not detected	mg/L	0.005	200.8	11/18/10 14:46	SLS	7440-02-0	
Zinc, Dissolved	Not detected	mg/L	0.005	200.8	11/18/10 14:46	SLS	7440-66-6	
<b>Organics</b>								
TOX	21.5	ug/L	30.0	9020A	11/16/10 12:00	TestA		O2

O-Analysis performed by outside laboratory. See attached report. 1-Method blank contamination. The associated method blank contains the target analyte at a reportable level.

2-Estimated result. Result is less than RL.



# Analytical Laboratory Report

Lab Sample ID: S46657.06  
 Sample Tag: DUP-03  
 Collected Date/Time: 11/11/2010 :  
 Matrix: Groundwater  
 COC Reference: 54857

## Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	125ml Plastic	HNO3	Yes	4.4	IR
1	500ml Plastic	None	Yes	4.4	IR
2	40ml Glass	H2SO4	Yes	4.4	IR
1	125ml Amber	H2SO4	Yes	4.4	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
<b>Extraction / Prep.</b>								
Metal Digestion	Completed			3015A	11/18/10 09:00	JRT		
<b>Inorganics</b>								
Conductivity	742	umhos/cm		120.1	11/15/10 14:38	JKB		
TOC	2	mg/L	1	EPA 415	11/15/10 12:00	TestA		O1
<b>Metals</b>								
Chromium, Dissolved	0.011	mg/L	0.005	200.8	11/18/10 14:48	SLS	7440-47-3	
Copper, Dissolved	Not detected	mg/L	0.004	200.8	11/18/10 14:48	SLS	7440-50-8	
Nickel, Dissolved	Not detected	mg/L	0.005	200.8	11/18/10 14:48	SLS	7440-02-0	
Zinc, Dissolved	Not detected	mg/L	0.005	200.8	11/18/10 14:48	SLS	7440-66-6	
<b>Organics</b>								
TOX	Not detected	ug/L	30.0	9020A	11/17/10 12:00	TestA		O

O-Analysis performed by outside laboratory. See attached report. 1-Method blank contamination. The associated method blank contains the target analyte at a reportable level.



# Analytical Laboratory Report

Lab Sample ID: S46657.07  
 Sample Tag: EB-01  
 Collected Date/Time: 11/11/2010 12:45  
 Matrix: Groundwater  
 COC Reference: 54857

## Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	125ml Plastic	HNO3	Yes	4.4	IR
1	500ml Plastic	None	Yes	4.4	IR
2	40ml Glass	H2SO4	Yes	4.4	IR
1	125ml Amber	H2SO4	Yes	4.4	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
<b>Extraction / Prep.</b>								
Metal Digestion	Completed			3015A	11/18/10 09:00	JRT		
<b>Inorganics</b>								
Conductivity	1.2	umhos/cm		120.1	11/15/10 14:40	JKB		
TOC	1	mg/L	1	EPA 415	11/15/10 12:00	TestA		O1
<b>Metals</b>								
Chromium, Dissolved	Not detected	mg/L	0.005	200.8	11/18/10 14:50	SLS	7440-47-3	
Copper, Dissolved	Not detected	mg/L	0.004	200.8	11/18/10 14:50	SLS	7440-50-8	
Nickel, Dissolved	Not detected	mg/L	0.005	200.8	11/18/10 14:50	SLS	7440-02-0	
Zinc, Dissolved	Not detected	mg/L	0.005	200.8	11/18/10 14:50	SLS	7440-66-6	
<b>Organics</b>								
TOX	Not detected	ug/L	30.0	9020A	11/17/10 12:00	TestA		O

O-Analysis performed by outside laboratory. See attached report. 1-Method blank contamination. The associated method blank contains the target analyte at a reportable level.

## ANALYTICAL REPORT

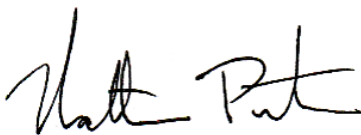
PROJECT NO. 46657

Lot #: A0K120423

Paula Shaw

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Project Manager  
11/23/2010 9:01 AM

November 23, 2010

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## CASE NARRATIVE

A0K120423

The following report contains the analytical results for seven water samples submitted to TestAmerica North Canton by Merit Laboratories, project number 46657. The samples were received November 12, 2010, according to documented sample acceptance procedures.

TestAmerica utilizes USEPA approved methods in all analytical work. The samples presented in this report were analyzed for the parameter(s) listed on the analytical methods summary page in accordance with the method(s) indicated. A summary of QC data for these analyses is included at the back of the report.

TestAmerica North Canton attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the applicable methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This laboratory report is confidential and is intended for the sole use of TestAmerica and its client.

All parameters were evaluated to the method detection limit and include qualified results where applicable.

Please refer to the Quality Control Elements Narrative following this case narrative for additional quality control information.

If you have any questions, please call the Project Manager, Denise D. Heckler, at 330-497-9396.

This report is sequentially paginated. The final page of the report is labeled as "END OF REPORT."

## **CASE NARRATIVE (continued)**

### **SUPPLEMENTAL QC INFORMATION**

#### **SAMPLE RECEIVING**

The temperature of the cooler upon sample receipt was 0.0°C.

#### **GENERAL CHEMISTRY**

The sample(s) that contain results between the MDL and the RL were flagged with "B". There is the possibility of false positive or mis-identification at these quantitation levels. The acceptance criteria for the ICB, CCB, and Method Blank are +/- the standard reporting limit (SRL).

The sample(s) that contained concentrations of target analyte(s) at a reportable level in the associated Method Blank(s) were flagged with "J". Refer to the sample report pages for the affected analytes(s).

## QUALITY CONTROL ELEMENTS NARRATIVE

TestAmerica conducts a quality assurance/quality control (QA/QC) program designed to provide scientifically valid and legally defensible data. Toward this end, several types of quality control indicators are incorporated into the QA/QC program, which is described in detail in QA Policy, QA-003. These indicators are introduced into the sample testing process to provide a mechanism for the assessment of the analytical data. Program or agency specific requirements take precedence over the requirements listed in this narrative.

### **QC BATCH**

Environmental samples are taken through the testing process in groups called QUALITY CONTROL BATCHES (QC batches). A QC batch contains up to twenty environmental samples of a similar matrix (water, soil) that are processed using the same reagents and standards. TestAmerica North Canton requires that each environmental sample be associated with a QC batch.

Several quality control samples are included in each QC batch and are processed identically to the twenty environmental samples.

For SW846/RCRA methods, QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) pair or a MATRIX SPIKE/SAMPLE DUPLICATE (MS/DU) pair. If there is insufficient sample to perform an MS/MSD or an MS/DU, then a LABORATORY CONTROL SAMPLE DUPLICATE (LCSD) is included in the QC batch.

For 600 series/CWA methods, QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE (MS). An MS is prepared and analyzed at a 10% frequency for GC Methods and at a 5% frequency for GC/MS methods.

### **LABORATORY CONTROL SAMPLE**

The Laboratory Control Sample is a QC sample that is created by adding known concentrations of a full or partial set of target analytes to a matrix similar to that of the environmental samples in the QC batch. Multi peak responders may not be included in the target spike list due to co-elution. The LCS analyte recovery results are used to monitor the analytical process and provide evidence that the laboratory is performing the method within acceptable guidelines. All control analytes indicated by a bold type in the LCS must meet acceptance criteria. Failure to meet the established recovery guidelines requires the reparation and reanalysis of all samples in the QC batch. Comparison of only the failed parameters from the first batch are evaluated. The only exception to the rework requirement is that if the LCS recoveries are biased high and the associated sample is ND (non-detected) for the parameter(s) of interest, the batch is acceptable.

At times, a Laboratory Control Sample Duplicate (LCSD) is also included in the QC batch. An LCSD is a QC sample that is created and handled identically to the LCS. Analyte recovery data from the LCSD is assessed in the same way as that of the LCS. The LCSD recoveries, together with the LCS recoveries, are used to determine the reproducibility (precision) of the analytical system. Precision data are expressed as relative percent differences (RPDs). If the RPD fails for an LCS/LCSD and yet the recoveries are within acceptance criteria, the batch is still acceptable.

### **METHOD BLANK**

The Method Blank is a QC sample consisting of all the reagents used in analyzing the environmental samples contained in the QC batch. Method Blank results are used to determine if interference or contamination in the analytical system could lead to the reporting of false positive data or elevated analyte concentrations. All target analytes must be below the reporting limits (RL) or the associated sample(s) must be ND except under the following circumstances:

- Common organic contaminants may be present at concentrations up to 5 times the reporting limits. Common metals contaminants may be present at concentrations up to 2 times the reporting limit, or the reported blank concentration must be twenty fold less than the concentration reported in the associated environmental samples. (See common laboratory contaminants listed in the table.)

<b><u>Volatile (GC or GC/MS)</u></b>	<b><u>Semivolatile (GC/MS)</u></b>	<b><u>Metals ICP-MS</u></b>	<b><u>Metals ICP Trace</u></b>
Methylene Chloride, Acetone, 2-Butanone	Phthalate Esters	Copper, Iron, Zinc, Lead, Calcium, Magnesium, Potassium, Sodium, Barium, Chromium, Manganese	Copper, Iron, Zinc, Lead

## QUALITY CONTROL ELEMENTS NARRATIVE (continued)

- Organic blanks will be accepted if compounds detected in the blank are present in the associated samples at levels 10 times the blank level. Inorganic blanks will be accepted if elements detected in the blank are present in the associated samples at 20 times the blank level.
- Blanks will be accepted if the compounds/elements detected are not present in any of the associated environmental samples.

Failure to meet these Method Blank criteria requires the reparation and reanalysis of all samples in the QC batch.

### **MATRIX SPIKE/MATRIX SPIKE DUPLICATE**

A Matrix Spike and a Matrix Spike Duplicate are a pair of environmental samples to which known concentrations of a full or partial set of target analytes are added. The MS/MSD results are determined in the same manner as the results of the environmental sample used to prepare the MS/MSD. The analyte recoveries and the relative percent differences (RPDs) of the recoveries are calculated and used to evaluate the effect of the sample matrix on the analytical results. Due to the potential variability of the matrix of each sample, the MS/MSD results may not have an immediate bearing on any samples except the one spiked; therefore, the associated batch MS/MSD may not reflect the same compounds as the samples contained in the analytical report. When these MS/MSD results fail to meet acceptance criteria, the data is evaluated. If the LCS is within acceptance criteria, the batch is considered acceptable.

For certain methods, a Matrix Spike/Sample Duplicate (MS/DU) may be included in the QC batch in place of the MS/MSD. For the parameters (i.e. pH, ignitability) where it is not possible to prepare a spiked sample, a Sample Duplicate may be included in the QC batch. However, a Sample Duplicate is less likely to provide usable precision statistics depending on the likelihood of finding concentrations below the standard reporting limit. When the Sample Duplicate result fails to meet acceptance criteria, the data is evaluated.

For certain methods (600 series methods/CWA), a Matrix Spike is required in place of a Matrix Spike/Matrix Spike Duplicate (MS/MSD) or Matrix Spike/Sample Duplicate (MS/DU).

The acceptance criteria do not apply to samples that are diluted.

### **SURROGATE COMPOUNDS**

In addition to these batch-related QC indicators, each organic environmental and QC sample is spiked with surrogate compounds. Surrogates are organic chemicals that behave similarly to the analytes of interest and that are rarely present in the environment. Surrogate recoveries are used to monitor the individual performance of a sample in the analytical system.

If surrogate recoveries are biased high in the LCS, LCSD, or the Method Blank, and the associated sample(s) are ND, the batch is acceptable. Otherwise, if the LCS, LCSD, or Method Blank surrogate(s) fail to meet recovery criteria, the entire sample batch is reprepared and reanalyzed. If the surrogate recoveries are outside criteria for environmental samples, the samples will be reprepared and reanalyzed unless there is objective evidence of matrix interference or if the sample dilution is greater than the threshold outlined in the associated method SOP.

The acceptance criteria do not apply to samples that are diluted. All other surrogate recoveries will be reported.

For the GC/MS BNA methods, the surrogate criterion is that two of the three surrogates for each fraction must meet acceptance criteria. The third surrogate must have a recovery of ten percent or greater.

For the Pesticide and PCB methods, the surrogate criterion is that one of two surrogate compounds must meet acceptance criteria. The second surrogate must have a recovery of 10% or greater.



### **TestAmerica Certifications and Approvals:**

*The laboratory is certified for the analytes listed on the documents below. These are available upon request.*  
California (#01144CA), Connecticut (#PH-0590), Florida (#E87225),  
Illinois (#200004), Kansas (#E10336), Minnesota (#39-999-348), New Jersey (#OH001), New York (#10975), Nevada  
(#OH-000482008A), OhioVAP (#CL0024), Pennsylvania (#008), West Virginia (#210), Wisconsin (#999518190), NAVY,  
ARMY, USDA Soil Permit

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## EXECUTIVE SUMMARY - Detection Highlights

A0K120423

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>ANALYTICAL METHOD</u>
<b>46657.01 11/10/10 12:30 001</b>				
Total Organic Carbon	4 J	1	mg/L	MCAWW 415.1
<b>46657.02 11/10/10 16:15 002</b>				
Total Organic Carbon	1 J	1	mg/L	MCAWW 415.1
<b>46657.03 11/11/10 10:00 003</b>				
Total Organic Carbon	3 J	1	mg/L	MCAWW 415.1
Total Organic Halogens	37.5	30.0	ug/L	SW846 9020B
<b>46657.04 11/11/10 10:15 004</b>				
Total Organic Carbon	2 J	1	mg/L	MCAWW 415.1
<b>46657.05 11/11/10 12:05 005</b>				
Total Organic Carbon	2 J	1	mg/L	MCAWW 415.1
Total Organic Halogens	21.5 B	30.0	ug/L	SW846 9020B
<b>46657.06 11/11/10 006</b>				
Total Organic Carbon	2 J	1	mg/L	MCAWW 415.1
<b>46657.07 11/11/10 12:45 007</b>				
Total Organic Carbon	1 J	1	mg/L	MCAWW 415.1

# ANALYTICAL METHODS SUMMARY

A0K120423

<u>PARAMETER</u>	<u>ANALYTICAL METHOD</u>
Total Organic Carbon	MCAWW 415.1
Total Organic Halogens	SW846 9020B

## References:

- MCAWW "Methods for Chemical Analysis of Water and Wastes",  
EPA-600/4-79-020, March 1983 and subsequent revisions.
- SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical  
Methods", Third Edition, November 1986 and its updates.

# SAMPLE SUMMARY

A0K120423

<u>WO #</u>	<u>SAMPLE#</u>	<u>CLIENT SAMPLE ID</u>	<u>SAMPLED DATE</u>	<u>SAMP TIME</u>
L9X33	001	46657.01	11/10/10	12:30
L9X36	002	46657.02	11/10/10	16:15
L9X37	003	46657.03	11/11/10	10:00
L9X38	004	46657.04	11/11/10	10:15
L9X4C	005	46657.05	11/11/10	12:05
L9X4D	006	46657.06	11/11/10	
L9X4E	007	46657.07	11/11/10	12:45

## NOTE(S) :

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Merit Laboratories

Client Sample ID: 46657.01

General Chemistry

Lot-Sample #...: A0K120423-001    Work Order #...: L9X33    Matrix.....: WG  
Date Sampled...: 11/10/10 12:30    Date Received...: 11/12/10

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Total Organic Carbon	4 J	1	mg/L	MCAWW 415.1	11/15/10	0319343
			Dilution Factor: 1	MDL.....: 0.2		
Total Organic Halogens	ND	30.0	ug/L	SW846 9020B	11/15/10	0320354
			Dilution Factor: 1	MDL.....: 17.0		

**NOTE(S):**

RL Reporting Limit

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Merit Laboratories

Client Sample ID: 46657.02

General Chemistry

Lot-Sample #...: A0K120423-002    Work Order #...: L9X36    Matrix.....: WG  
Date Sampled...: 11/10/10 16:15    Date Received...: 11/12/10

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Total Organic Carbon	1 J	1	mg/L	MCAWW 415.1	11/15/10	0319343
			Dilution Factor: 1	MDL.....: 0.2		
Total Organic Halogens	ND	30.0	ug/L	SW846 9020B	11/15/10	0320354
			Dilution Factor: 1	MDL.....: 17.0		

**NOTE(S):**

RL Reporting Limit

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Merit Laboratories

Client Sample ID: 46657.03

General Chemistry

Lot-Sample #...: A0K120423-003    Work Order #...: L9X37    Matrix.....: WG  
Date Sampled...: 11/11/10 10:00    Date Received..: 11/12/10

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Total Organic Carbon	3 J	1	mg/L	MCAWW 415.1	11/15/10	0319343
			Dilution Factor: 1	MDL.....: 0.2		
Total Organic Halogens	37.5	30.0	ug/L	SW846 9020B	11/15/10	0320354
			Dilution Factor: 1	MDL.....: 17.0		

**NOTE(S):**

RL Reporting Limit

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Merit Laboratories

Client Sample ID: 46657.04

General Chemistry

Lot-Sample #...: A0K120423-004    Work Order #...: L9X38    Matrix.....: WG  
Date Sampled...: 11/11/10 10:15    Date Received...: 11/12/10

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Total Organic Carbon	2 J	1	mg/L	MCAWW 415.1	11/15/10	0319343
			Dilution Factor: 1	MDL.....: 0.2		
Total Organic Halogens	ND	30.0	ug/L	SW846 9020B	11/15/10	0320354
			Dilution Factor: 1	MDL.....: 17.0		

**NOTE(S):**

RL Reporting Limit

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Merit Laboratories

Client Sample ID: 46657.05

General Chemistry

Lot-Sample #...: A0K120423-005    Work Order #...: L9X4C    Matrix.....: WG  
Date Sampled...: 11/11/10 12:05    Date Received..: 11/12/10

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Total Organic Carbon	2 J	1	mg/L	MCAWW 415.1	11/15/10	0319343
			Dilution Factor: 1	MDL.....: 0.2		
Total Organic Halogens	21.5 B	30.0	ug/L	SW846 9020B	11/16/10	0320354
			Dilution Factor: 1	MDL.....: 17.0		

**NOTE(S):**

- 
- RL Reporting Limit
  - J Method blank contamination. The associated method blank contains the target analyte at a reportable level.
  - B Estimated result. Result is less than RL.

Merit Laboratories

Client Sample ID: 46657.06

General Chemistry

Lot-Sample #...: A0K120423-006

Work Order #...: L9X4D

Matrix.....: WG

Date Sampled...: 11/11/10

Date Received...: 11/12/10

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Total Organic Carbon	2 J	1	mg/L	MCAWW 415.1	11/15/10	0319343
			Dilution Factor: 1	MDL.....: 0.2		
Total Organic Halogens	ND	30.0	ug/L	SW846 9020B	11/17/10	0321244
			Dilution Factor: 1	MDL.....: 17.0		

**NOTE(S):**

RL Reporting Limit

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Merit Laboratories

Client Sample ID: 46657.07

General Chemistry

Lot-Sample #...: A0K120423-007    Work Order #...: L9X4E    Matrix.....: WG  
Date Sampled...: 11/11/10 12:45    Date Received...: 11/12/10

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Total Organic Carbon	1 J	1	mg/L	MCAWW 415.1	11/15/10	0319343
			Dilution Factor: 1	MDL.....: 0.2		
Total Organic Halogens	ND	30.0	ug/L	SW846 9020B	11/17/10	0321244
			Dilution Factor: 1	MDL.....: 17.0		

**NOTE(S):**

RL Reporting Limit

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

# ***QUALITY CONTROL SECTION***

METHOD BLANK REPORT

General Chemistry

Client Lot #...: A0K120423

Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Total Organic Carbon	0.3 B	1	mg/L	MCAWW 415.1	11/15/10	0319343
		Work Order #: L93531AA MB Lot-Sample #: A0K150000-343				
		Dilution Factor: 1				
Total Organic Halogens	ND	30.0	ug/L	SW846 9020B	11/15/10	0320354
		Work Order #: L95JA1AA MB Lot-Sample #: A0K160000-354				
		Dilution Factor: 1				
Total Organic Halogens	ND	30.0	ug/L	SW846 9020B	11/17/10	0321244
		Work Order #: L96241AA MB Lot-Sample #: A0K170000-244				
		Dilution Factor: 1				

**NOTE(S):**

Calculations are performed before rounding to avoid round-off errors in calculated results.

B Estimated result. Result is less than RL.

**LABORATORY CONTROL SAMPLE EVALUATION REPORT**

**General Chemistry**

**Client Lot #...:** A0K120423

**Matrix.....:** WATER

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Total Organic Carbon	101	(88 - 115)	MCAWW 415.1 Dilution Factor: 1	11/15/10	0319343
			Work Order #: L93531AC	LCS Lot-Sample#: A0K150000-343	
Total Organic Halogens	103	(67 - 115)	SW846 9020B Dilution Factor: 1	11/15/10	0320354
			Work Order #: L95JA1AC	LCS Lot-Sample#: A0K160000-354	
Total Organic Halogens	106	(67 - 115)	SW846 9020B Dilution Factor: 1	11/17/10	0321244
			Work Order #: L96241AC	LCS Lot-Sample#: A0K170000-244	

**NOTE(S):**

---

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: A0K120423

Matrix.....: WG

Date Sampled...: 11/10/10 12:30 Date Received...: 11/12/10

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>RPD</u>	<u>RPD LIMITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Total Organic Carbon			WO#: L9X331AD-MS/L9X331AE-MSD			MS Lot-Sample #: A0K120423-001	
	99	(72 - 136)			MCAWW 415.1	11/15/10	0319343
	97	(72 - 136)	1.5	(0-20)	MCAWW 415.1	11/15/10	0319343
			Dilution Factor: 1				

**NOTE(S):**

Calculations are performed before rounding to avoid round-off errors in calculated results.

**MATRIX SPIKE SAMPLE EVALUATION REPORT**

**General Chemistry**

Client Lot #...: A0K120423

Matrix.....: WATER

Date Sampled...: 11/01/10 13:45 Date Received...: 11/03/10

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>RPD</u>	<u>RPD LIMITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Total Organic Halogens			WO#: L9HQQ1C6-MS/L9HQQ1C7-MSD			MS Lot-Sample #: C0K030593-001	
	93	(59 - 126)			SW846 9020B	11/17/10	0321244
	106	(59 - 126)	13	(0-99)	SW846 9020B	11/17/10	0321244
			Dilution Factor: 1				
Total Organic Halogens			WO#: L9MW71CK-MS/L9MW71CL-MSD			MS Lot-Sample #: C0K060410-001	
	99	(59 - 126)			SW846 9020B	11/15/10	0320354
	83	(59 - 126)	16	(0-99)	SW846 9020B	11/15/10	0320354
			Dilution Factor: 1				

**NOTE(S):**

---

Calculations are performed before rounding to avoid round-off errors in calculated results.

# Chain of Custody Record

TestAmerica Laboratory location:  DW  NPDES  RCRA  Other

TestAmerica Laboratories, Inc. COC No: \_\_\_\_\_ of \_\_\_\_\_ COCs

<b>Client Contact</b> Company Name: <u>Merit Labs</u> Address: <u>2680 East Lansing Dr.</u> City/State/Zip: <u>East Lansing, MI 48823</u> Phone: <u>517-332-0167</u>		<b>Client Project Manager:</b> Name: <u>Paola Shaw</u> Email: <u>pauleshaw@merit-labs.com</u> Telephone: _____		<b>Site Contact:</b> Name: _____ Telephone: _____		<b>Lab Contact:</b> Name: _____ Telephone: _____	
Project Name: <u>46657</u>		Method of Shipment/Carrier: <u>VPS</u>		Shipping/Tracking No: _____		TAT if different from below: _____ <input type="checkbox"/> 3 weeks <input type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day	
PO # <u>46657</u>		Sample Identification		Sample Date		Sample Time	
						Air <input type="checkbox"/> Aqueous <input type="checkbox"/> Sediment <input type="checkbox"/> Solid <input type="checkbox"/> Other: _____	
						H2SO4 <input type="checkbox"/> HNO3 <input type="checkbox"/> HCl <input type="checkbox"/> NaOH <input type="checkbox"/> ZnAc/NaOH <input type="checkbox"/> Unpres <input type="checkbox"/> Other: _____	
						TOC <input type="checkbox"/> TOX <input type="checkbox"/>	
						Analyzes	
						Sample Specific Notes / Special Instructions: _____	
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown		Special Instructions/QC Requirements & Comments: _____					
Relinquished by: <u>Paola Shaw</u>		Company: <u>Merit</u>		Date/Time: <u>11-11-10/1600</u>		Received by: <u>VPS</u>	
Relinquished by: _____		Company: _____		Date/Time: _____		Received in Laboratory by: <u>Paola Schott</u>	
Relinquished by: _____		Company: _____		Date/Time: _____		Company: <u>TRC</u>	
						Date/Time: <u>11/12/10 950</u>	

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**TestAmerica Cooler Receipt Form/Narrative**  
**North Canton Facility**

Lot Number: AOK120423

Client Merit Project \_\_\_\_\_ By: Dennis Achard  
 Cooler Received on 11/12/10 Opened on 11/12/10 (Signature)  
 FedEx  UPS  DHL  FAS  Stetson  Client Drop Off  TestAmerica Courier  Other \_\_\_\_\_  
 TestAmerica Cooler # \_\_\_\_\_ Multiple Coolers  Foam Box  Client Cooler  Other \_\_\_\_\_  
 1. Were custody seals on the outside of the cooler(s)? Yes  No  Intact? Yes  No  NA   
 If YES, Quantity \_\_\_\_\_ Quantity Unsalvageable \_\_\_\_\_  
 Were custody seals on the outside of cooler(s) signed and dated? Yes  No  NA   
 Were custody seals on the bottle(s)? Yes  No   
 If YES, are there any exceptions? \_\_\_\_\_ Yes  No   
 2. Shippers' packing slip attached to the cooler(s)? Yes  No  Relinquished by client? Yes  No   
 3. Did custody papers accompany the sample(s)? Yes  No  Yes  No   
 4. Were the custody papers signed in the appropriate place? Yes  No   
 5. Packing material used: Bubble Wrap  Foam  None  Other \_\_\_\_\_  
 6. Cooler temperature upon receipt 0.0 °C See back of form for multiple coolers/temps   
 METHOD: IR  Other   
 COOLANT: Wet Ice  Blue Ice  Dry Ice  Water  None   
 7. Did all bottles arrive in good condition (Unbroken)? Yes  No   
 8. Could all bottle labels be reconciled with the COC? Yes  No   
 9. Were sample(s) at the correct pH upon receipt? Yes  No  NA   
 10. Were correct bottle(s) used for the test(s) indicated? Yes  No   
 11. Were air bubbles >6 mm in any VOA vials? Yes  No  NA   
 12. Sufficient quantity received to perform indicated analyses? Yes  No   
 13. Was a trip blank present in the cooler(s)? Yes  No  Were VOAs on the COC? Yes  No   
 Contacted PM \_\_\_\_\_ Date \_\_\_\_\_ by \_\_\_\_\_ via Verbal  Voice Mail  Other   
 Concerning \_\_\_\_\_

**14. CHAIN OF CUSTODY**

The following discrepancies occurred:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**15. SAMPLE CONDITION**

Sample(s) \_\_\_\_\_ were received after the recommended holding time had expired.  
 Sample(s) \_\_\_\_\_ were received in a broken container.  
 Sample(s) \_\_\_\_\_ were received with bubble >6 mm in diameter. (Notify PM)

**16. SAMPLE PRESERVATION**

Sample(s) \_\_\_\_\_ were further preserved in Sample Receiving to meet recommended pH level(s). Nitric Acid Lot# 051010-HNO<sub>3</sub>; Sulfuric Acid Lot# 051010-H<sub>2</sub>SO<sub>4</sub>; Sodium Hydroxide Lot# 100108 -NaOH; Hydrochloric Acid Lot# 092006-HCl; Sodium Hydroxide and Zinc Acetate Lot# 100108-(CH<sub>3</sub>COO)<sub>2</sub>ZN/NaOH. What time was preservative added to sample(s)? \_\_\_\_\_

Client ID	pH	Date	Initials
1	4.2	11/12/10	ac
2	4.2		
3	4.2		
4	4.2		
5	4.2		
6	4.2		
7	4.2		



***END OF REPORT***



2680 East Lansing Dr., East Lansing, MI 48823  
 Phone (517) 332-0167 Fax (517) 332-6333  
 www.meritlabs.com

C.O.C. PAGE # 1 OF 1

54857

**REPORT TO**

**CHAIN OF CUSTODY RECORD**

**INVOICE TO**

CONTACT NAME: Cliff Kantz  
 COMPANY: O'Brien & Gere  
 ADDRESS: 37000 Grand River  
 CITY: Farmington Hills STATE: MI ZIP CODE: 48335  
 PHONE NO.: 248-477-5701 FAX NO.: \_\_\_\_\_ P.O. NO.: \_\_\_\_\_  
 E-MAIL ADDRESS: \_\_\_\_\_ QUOTE NO.: \_\_\_\_\_

CONTACT NAME: \_\_\_\_\_  SAME  
 COMPANY: \_\_\_\_\_  
 ADDRESS: \_\_\_\_\_  
 CITY: \_\_\_\_\_ STATE: \_\_\_\_\_ ZIP CODE: \_\_\_\_\_  
 PHONE NO.: \_\_\_\_\_ FAX NO.: \_\_\_\_\_ P.O. NO.: \_\_\_\_\_

**ANALYSIS (ATTACH LIST IF MORE SPACE REQUIRED)**

PROJECT NO./NAME: Coldwater Rd landfill Annual sampling SAMPLER(S) - PLEASE PRINT/SIGN NAME: Kevin Schneider  
 TURNAROUND TIME REQUIRED:  24 HR  48 HR  72 HR  STANDARD  OTHER  
 DELIVERABLES REQUIRED:  STANDARD  LEVEL II  LEVEL III  OTHER

TOL Specific Conductivity Dissolved Metals	TDX	SPECIAL INSTRUCTIONS/NOTES	
		<u>Metals Anal: Cu, Cr, Ni, Zn</u>	

MATRIX CODE: GW-GROUNDWATER SL-SLUDGE WW-WASTEWATER O-OIL S-SOIL A-AIR L-LIQUID W-WASTE SD-SOLID M-MISC

# Containers & Preservatives

MERIT LAB NO.	YEAR		SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	NONE	HCL	HNO3	K2SO4	NaOH	MeOH	OTHER	TOL	TDX		
	DATE	TIME														
46657.01	11/10/10	1230	B-2D	GW	5	1	1	3					X	X	X	X
.02	11/10/10	1615	B-21D	GW	5	1	1	3					X	X	X	X
.03	11/11/10	1000	B-9	GW	5	1	1	3					X	X	X	X
.04	11/11/10	1015	B-22D	GW	5	1	1	3					X	X	X	X
.05	11/11/10	1005	B-23Dc	GW	5	1	1	3					X	X	X	X
.06	11/11/10	—	DUP-03	GW	5	1	1	3					X	X	X	X
.07	11/11/10	1245	EB-01	QC	5	1	1	3					X	X	X	X

Equipment Blank

RELINQUISHED BY: [Signature] OBCO DATE: 11/11/10 TIME: 1345  
 RECEIVED BY: [Signature] DATE: 11/11/10 TIME: 1400

RELINQUISHED BY: [Signature] DATE: 11/11/10 TIME: 1520  
 RECEIVED BY: [Signature] DATE: 11/11/10 TIME: 1520  
 SEAL NO. SEAL INTACT YES  NO  INITIALS: \_\_\_\_\_ NOTES: \_\_\_\_\_ TEMP. ON ARRIVAL: 4.4



# Analytical Laboratory Report

Report ID: S47048.01(01)  
Generated on 12/09/2010

Report to

Attention: Mr. Clifford Yantz  
O'Brien & Gere Engineers  
37000 Grand River Ave.  
Suite 260  
Farmington, MI 48335

Phone: 248-477-5701 FAX: 248-477-5962  
Email: YantzCS@obg.com

Report produced by

Merit Laboratories  
2680 East Lansing Drive  
East Lansing, MI 48823

Phone: (517) 332-0167 FAX: (517) 332-6333

Report Summary

Lab Sample ID(s): S47048.01  
Project: Well 28 Chromium Sample  
Collected Date: 12/07/2010  
Submitted Date/Time: 12/08/2010 14:00  
Sampled by: Todd Krane  
P.O. #:

Report Notes

Results relate only to items tested as received by the laboratory.  
Methods may be modified for improved performance.  
Results reported on a dry weight basis where applicable.  
"Not detected" indicates that parameter was not found at a level equal to or greater than the RL.  
Report shall not be reproduced except in full, without the written approval of Merit Laboratories.

Laboratory Certifications:

Michigan DNRE (#9956), Ohio EPA (#CL0002), NELAC NY (#11814), NELAC FL (#E871045), WBENC (#2005110032)  
Some analytes reported may not be certified. Full certification lists are available upon request.

Violetta F. Murshak  
Laboratory Director



# Analytical Laboratory Report

Sample Summary (1 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S47048.01	W28-001	Water	12/07/2010 11:00



# Analytical Laboratory Report

Lab Sample ID: S47048.01  
Sample Tag: W28-001  
Collected Date/Time: 12/07/2010 11:00  
Matrix: Water  
COC Reference: 52125

## Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	125ml Plastic	HNO3	Yes	4.3	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
<b>Extraction / Prep.</b>								
Metal Digestion	Completed			3015A	12/08/10 15:30	PER		
<b>Metals</b>								
Chromium	Not detected	mg/L	0.005	200.8	12/08/10 16:14	PER	7440-47-3	

**REPORT TO****CHAIN OF CUSTODY RECORD****INVOICE TO**

CONTACT NAME <i>Cliff Yantz</i>		CONTACT NAME <i>Cliff Yantz</i>	
COMPANY <i>O'Brien &amp; Gere</i>		COMPANY <i>OBG</i>	
ADDRESS <i>37000 Grandview Ave, Ste 260</i>		ADDRESS	
CITY <i>Farmington Hills</i>	STATE	CITY	STATE
PHONE NO. <i>248-477-5701</i>	FAX NO.	PHONE NO.	FAX NO.
E-MAIL ADDRESS <i>Cliff.Yantz@obg.com</i>	QUOTE NO.	P.O. NO.	

**ANALYSIS (ATTACH LIST IF MORE SPACE REQUIRED)**

PROJECT NO./NAME <i>Well 28 Chromium Sample</i>		SAMPLER(S) - PLEASE PRINT/SIGN NAME <i>Todd Brown / Todd Brown</i>		SPECIAL INSTRUCTIONS/NOTES											
TURNAROUND TIME REQUIRED <input checked="" type="checkbox"/> 24 HR <input type="checkbox"/> 48 HR <input type="checkbox"/> 72 HR <input type="checkbox"/> STANDARD <input type="checkbox"/> OTHER															
DELIVERABLES REQUIRED <input checked="" type="checkbox"/> STANDARD <input type="checkbox"/> LEVEL II <input type="checkbox"/> LEVEL III <input type="checkbox"/> OTHER															
MATRIX CODE:	GW=GROUNDWATER SL=SLUDGE	WW=WASTEWATER O=OIL	S=SOIL A=AIR	L=LIQUID W=WASTE	SD=SOLID M=MISC	# Containers & Preservatives					Chromium				
MATRIX CODE:						NONE	HCL	HNO3	H2SO4	NaOH					
MERIT LAB NO.	YEAR		SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	# Containers & Preservatives									
	DATE	TIME				NONE	HCL	HNO3	H2SO4	NaOH	NaOCl	OTHER			
<i>47048.01</i>	<i>12/7/10</i>	<i>11:00</i>	<i>W28-001</i>		<i>1</i>			<i>X</i>						<i>X</i>	

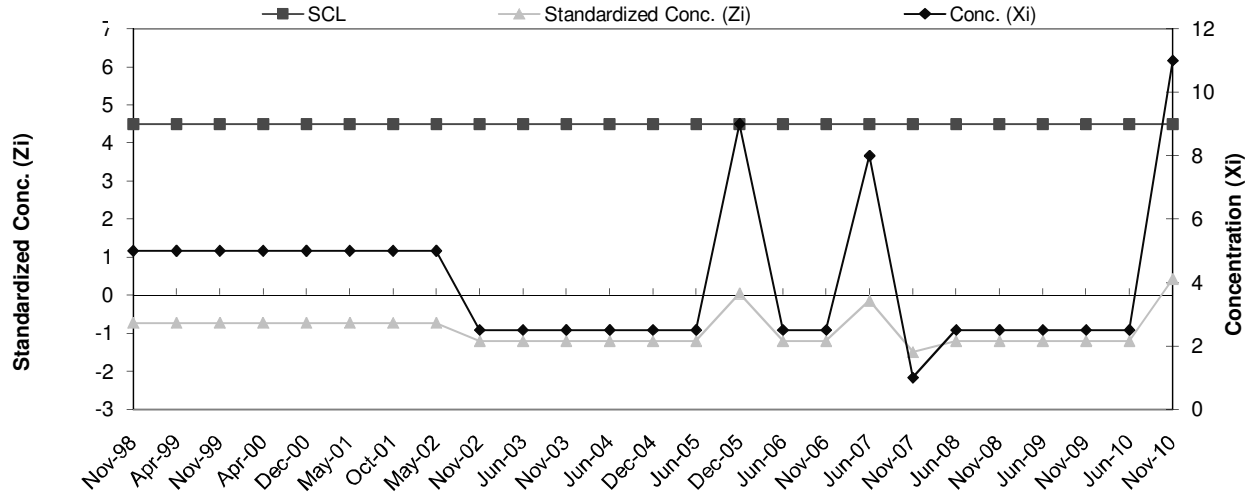
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RECEIVED BY: SIGNATURE/ORGANIZATION <i>Cliff Yantz</i>	DATE <i>12-8-10</i>	TIME <i>11:00</i>	RECEIVED BY: SIGNATURE/ORGANIZATION <i>Cliff Yantz</i>	DATE <i>12-8-10</i>	TIME <i>11:00</i>	RECEIVED BY: SIGNATURE/ORGANIZATION <i>Cliff Yantz</i>	DATE <i>12-8-10</i>	TIME <i>14:00</i>	RECEIVED BY: SIGNATURE/ORGANIZATION <i>Cliff Yantz</i>	DATE <i>12-8-10</i>	TIME <i>14:00</i>
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SEAL NO.			SEAL INTACT YES <input type="checkbox"/> NO <input type="checkbox"/>		INITIALS		NOTES: TEMP. ON ARRIVAL <i>43</i>				
SEAL NO.			SEAL INTACT YES <input type="checkbox"/> NO <input type="checkbox"/>		INITIALS						

*APPENDIX D*  
*Shewart - Charts*

**COLDWATER ROAD LANDFILL FACILITY  
RCRA GROUND WATER DETECTION MONITORING SYSTEM  
SHEWART CONTROL CHART  
B-2d Cr**

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	10	8.78	5.19
2	Aug-95	10		
3	Jun-96	10		
4	Aug-96	10		
5	Nov-96	10		
6	May-97	10		
7	Nov-97	5		
8	May-98	5		

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	Nov-98	4.5	5	-0.73
10	Apr-99	4.5	5	-0.73
11	Nov-99	4.5	5	-0.73
12	Apr-00	4.5	5	-0.73
13	Dec-00	4.5	5	-0.73
14	May-01	4.5	5	-0.73
15	Oct-01	4.5	5	-0.73
16	May-02	4.5	5	-0.73
17	Nov-02	4.5	2.5	-1.21
18	Jun-03	4.5	2.5	-1.21
19	Nov-03	4.5	2.5	-1.21
20	Jun-04	4.5	2.5	-1.21
21	Dec-04	4.5	2.5	-1.21
22	Jun-05	4.5	2.5	-1.21
23	Dec-05	4.5	9	0.04
24	Jun-06	4.5	2.5	-1.21
25	Nov-06	4.5	2.5	-1.21
26	Jun-07	4.5	8	-0.15
27	Nov-07	4.5	1	-1.50
28	Jun-08	4.5	2.5	-1.21
29	Nov-08	4.5	2.5	-1.21
30	Jun-09	4.5	2.5	-1.21
31	Nov-09	4.5	2.5	-1.21
32	Jun-10	4.5	2.5	-1.21
33	Nov-10	4.5	11	0.43

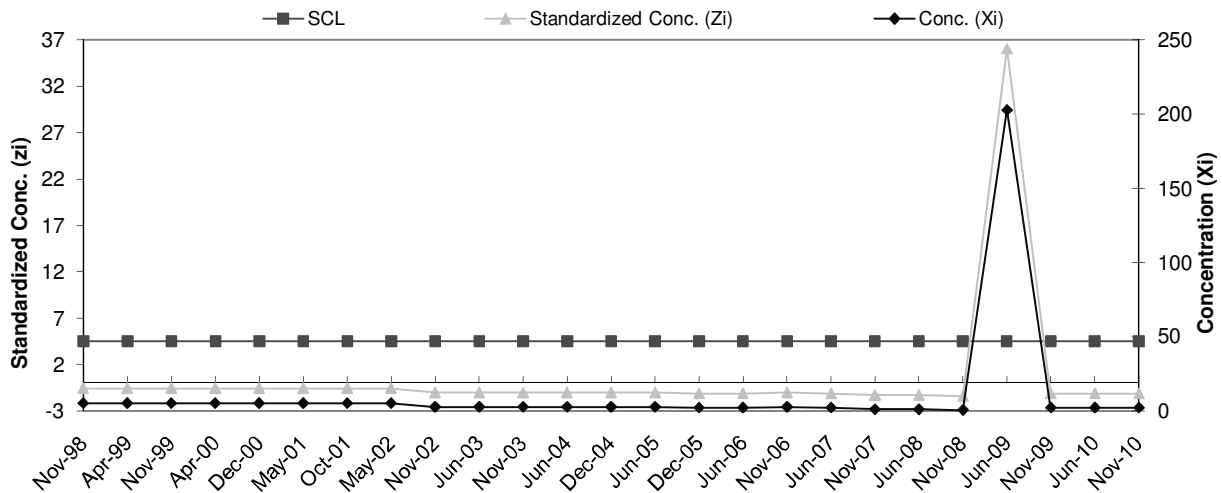


**COLDWATER ROAD LANDFILL FACILITY  
RCRA GROUND WATER DETECTION MONITORING SYSTEM  
SHEWART CONTROL CHART**

B-2d Cu

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	10	<b>8.13</b>	<b>5.40</b>
2	Aug-95	10		
3	Jun-96	10		
4	Aug-96	10		
5	Nov-96	10		
6	May-97	5		
7	Nov-97	5		
8	May-98	5		

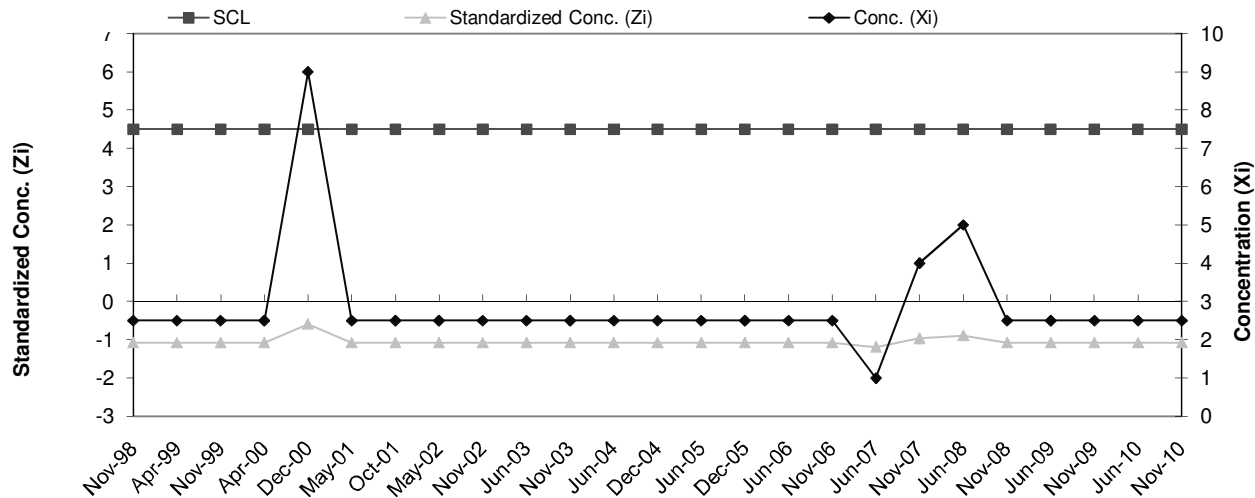
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	Nov-98	4.5	5	-0.58
10	Apr-99	4.5	5	-0.58
11	Nov-99	4.5	5	-0.58
12	Apr-00	4.5	5	-0.58
13	Dec-00	4.5	5	-0.58
14	May-01	4.5	5	-0.58
15	Oct-01	4.5	5	-0.58
16	May-02	4.5	5	-0.58
17	Nov-02	4.5	2.5	-1.04
18	Jun-03	4.5	2.5	-1.04
19	Nov-03	4.5	2.5	-1.04
20	Jun-04	4.5	2.5	-1.04
21	Dec-04	4.5	2.5	-1.04
22	Jun-05	4.5	2.5	-1.04
23	Dec-05	4.5	2	-1.14
24	Jun-06	4.5	2	-1.14
25	Nov-06	4.5	2.5	-1.04
26	Jun-07	4.5	2	-1.14
27	Nov-07	4.5	1	-1.32
28	Jun-08	4.5	1	-1.32
29	Nov-08	4.5	0.5	-1.41
30	Jun-09	4.5	203	36.09
31	Nov-09	4.5	2	-1.14
32	Jun-10	4.5	2	-1.14
33	Nov-10	4.5	2	-1.14



**COLDWATER ROAD LANDFILL FACILITY  
RCRA GROUND WATER DETECTION MONITORING SYSTEM  
SHEWART CONTROL CHART  
B-2d Ni**

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	15	<b>16.83</b>	<b>13.28</b>
2	Aug-95	20		
3	Jun-96	10		
4	Aug-96	10		
5	Nov-96	10		
6	May-97	28		
7	Nov-97	39		
8	May-98	2.5		

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	Nov-98	4.5	2.5	-1.08
10	Apr-99	4.5	2.5	-1.08
11	Nov-99	4.5	2.5	-1.08
12	Apr-00	4.5	2.5	-1.08
13	Dec-00	4.5	9	-0.59
14	May-01	4.5	2.5	-1.08
15	Oct-01	4.5	2.5	-1.08
16	May-02	4.5	2.5	-1.08
17	Nov-02	4.5	2.5	-1.08
18	Jun-03	4.5	2.5	-1.08
19	Nov-03	4.5	2.5	-1.08
20	Jun-04	4.5	2.5	-1.08
21	Dec-04	4.5	2.5	-1.08
22	Jun-05	4.5	2.5	-1.08
23	Dec-05	4.5	2.5	-1.08
24	Jun-06	4.5	2.5	-1.08
25	Nov-06	4.5	2.5	-1.08
26	Jun-07	4.5	1	-1.19
27	Nov-07	4.5	4	-0.97
28	Jun-08	4.5	5	-0.89
29	Nov-08	4.5	2.5	-1.08
30	Jun-09	4.5	2.5	-1.08
31	Nov-09	4.5	2.5	-1.08
32	Jun-10	4.5	2.5	-1.08
33	Nov-10	4.5	2.5	-1.08

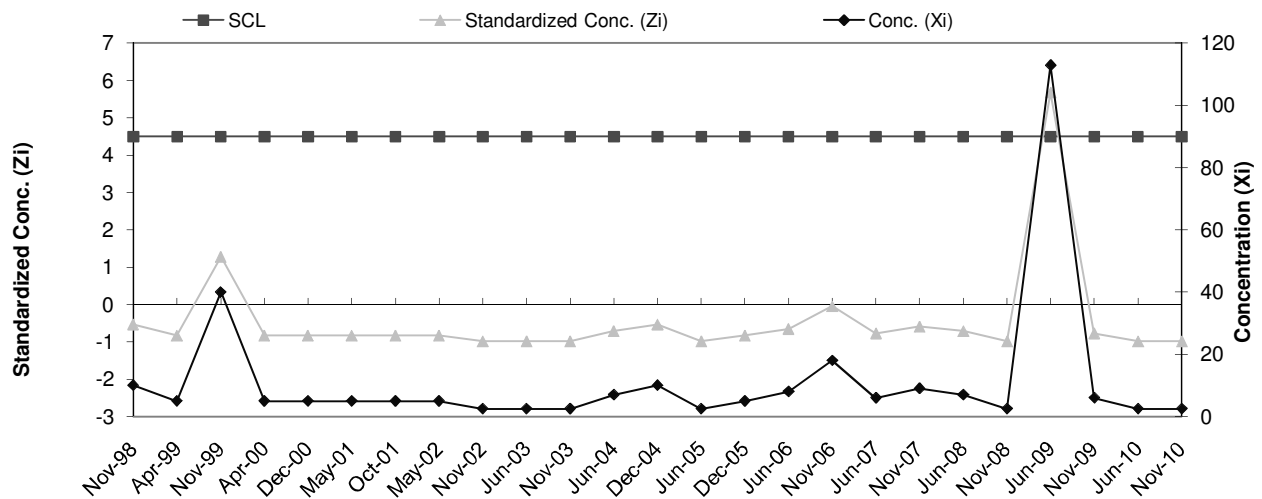


**COLDWATER ROAD LANDFILL FACILITY  
RCRA GROUND WATER DETECTION MONITORING SYSTEM  
SHEWART CONTROL CHART**

B-2d Zn

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	10	<b>18.75</b>	<b>16.62</b>
2	Aug-95	10		
3	Jun-96	10		
4	Aug-96	50		
5	Nov-96	30		
6	May-97	30		
7	Nov-97	5		
8	May-98	5		

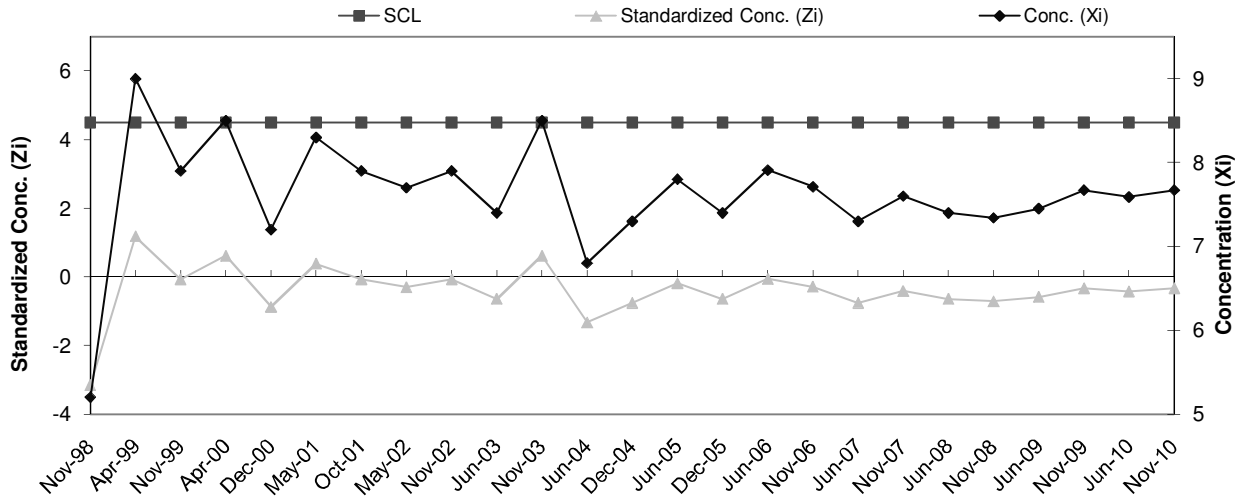
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	Nov-98	4.5	10	-0.53
10	Apr-99	4.5	5	-0.83
11	Nov-99	4.5	40	1.28
12	Apr-00	4.5	5	-0.83
13	Dec-00	4.5	5	-0.83
14	May-01	4.5	5	-0.83
15	Oct-01	4.5	5	-0.83
16	May-02	4.5	5	-0.83
17	Nov-02	4.5	2.5	-0.98
18	Jun-03	4.5	2.5	-0.98
19	Nov-03	4.5	2.5	-0.98
20	Jun-04	4.5	7	-0.71
21	Dec-04	4.5	10	-0.53
22	Jun-05	4.5	2.5	-0.98
23	Dec-05	4.5	5	-0.83
24	Jun-06	4.5	8	-0.65
25	Nov-06	4.5	18	-0.05
26	Jun-07	4.5	6	-0.77
27	Nov-07	4.5	9	-0.59
28	Jun-08	4.5	7	-0.71
29	Nov-08	4.5	2.5	-0.98
30	Jun-09	4.5	113	5.67
31	Nov-09	4.5	6	-0.77
32	Jun-10	4.5	2.5	-0.98
33	Nov-10	4.5	2.5	-0.98



**COLDWATER ROAD LANDFILL FACILITY  
RCRA GROUND WATER DETECTION MONITORING SYSTEM  
SHEWART CONTROL CHART  
B-2d pH**

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	9.0	<b>7.46</b>	<b>0.88</b>
2	Aug-95	8.3		
3	Jun-96	7.5		
4	Aug-96	7.7		
5	Nov-96	7.3		
6	May-97	6.3		
7	Nov-97	6.9		
8	May-98	6.7		

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	Nov-98	4.5	4.7	-3.15
10	Apr-99	4.5	8.5	1.18
11	Nov-99	4.5	7.4	-0.07
12	Apr-00	4.5	8.0	0.61
13	Dec-00	4.5	6.7	-0.87
14	May-01	4.5	7.8	0.38
15	Oct-01	4.5	7.4	-0.07
16	May-02	4.5	7.2	-0.30
17	Nov-02	4.5	7.4	-0.07
18	Jun-03	4.5	6.9	-0.64
19	Nov-03	4.5	8.0	0.61
20	Jun-04	4.5	6.3	-1.32
21	Dec-04	4.5	6.8	-0.75
22	Jun-05	4.5	7.3	-0.19
23	Dec-05	4.5	6.9	-0.64
24	Jun-06	4.5	7.4	-0.06
25	Nov-06	4.5	7.2	-0.29
26	Jun-07	4.5	6.8	-0.75
27	Nov-07	4.5	7.1	-0.41
28	Jun-08	4.5	6.9	-0.64
29	Nov-08	4.5	6.8	-0.71
30	Jun-09	4.5	7.0	-0.58
31	Nov-09	4.5	7.2	-0.33
32	Jun-10	4.5	7.1	-0.42
33	Nov-10	4.5	7.2	-0.33

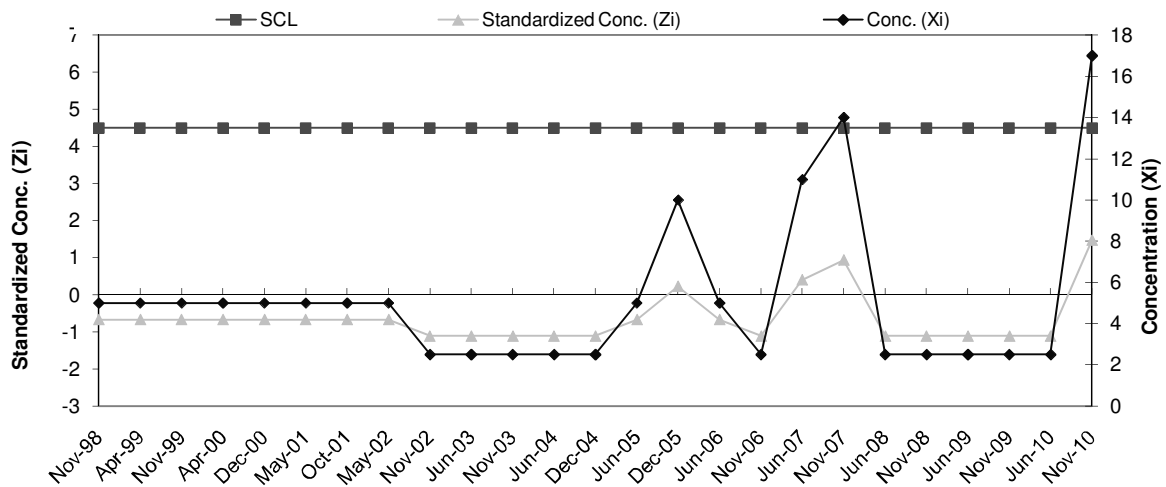




**COLDWATER ROAD LANDFILL FACILITY  
RCRA GROUND WATER DETECTION MONITORING SYSTEM  
SHEWART CONTROL CHART  
B-7 Cr**

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	10	<b>8.75</b>	<b>5.60</b>
2	Aug-95	10		
3	Feb-96	10		
4	Jun-96	10		
5	Aug-96	10		
6	Nov-96	10		
7	May-97	5		
8	May-98	5		

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	Nov-98	4.5	5	-0.67
10	Apr-99	4.5	5	-0.67
11	Nov-99	4.5	5	-0.67
12	Apr-00	4.5	5	-0.67
13	Dec-00	4.5	5	-0.67
14	May-01	4.5	5	-0.67
15	Oct-01	4.5	5	-0.67
16	May-02	4.5	5	-0.67
17	Nov-02	4.5	2.5	-1.12
18	Jun-03	4.5	2.5	-1.12
19	Nov-03	4.5	2.5	-1.12
20	Jun-04	4.5	2.5	-1.12
21	Dec-04	4.5	2.5	-1.12
22	Jun-05	4.5	5	-0.67
23	Dec-05	4.5	10	0.22
24	Jun-06	4.5	5	-0.67
25	Nov-06	4.5	2.5	-1.12
26	Jun-07	4.5	11	0.40
27	Nov-07	4.5	14	0.94
28	Jun-08	4.5	2.5	-1.12
29	Nov-08	4.5	2.5	-1.12
30	Jun-09	4.5	2.5	-1.12
31	Nov-09	4.5	2.5	-1.12
32	Jun-10	4.5	2.5	-1.12
33	Nov-10	4.5	17	1.47

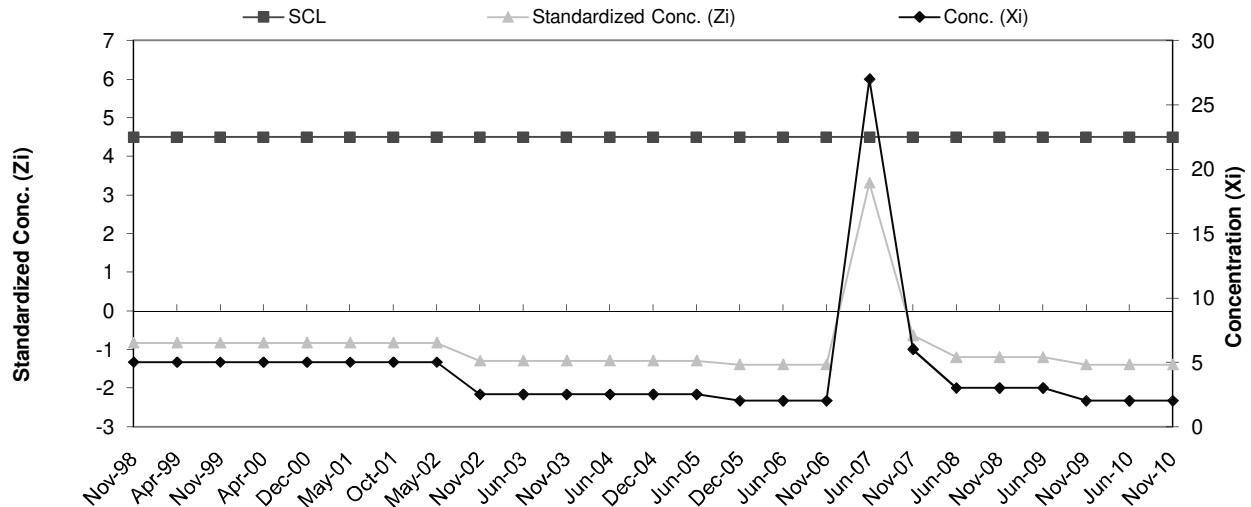


**COLDWATER ROAD LANDFILL FACILITY  
RCRA GROUND WATER DETECTION MONITORING SYSTEM  
SHEWART CONTROL CHART**

B-7 Cu

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	10	<b>9.40</b>	<b>5.32</b>
2	Aug-95	10		
3	Feb-96	10		
4	Jun-96	10		
5	Aug-96	10		
6	Nov-96	10		
7	May-97	10		
8	May-98	5		

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	Nov-98	4.5	5	-0.83
10	Apr-99	4.5	5	-0.83
11	Nov-99	4.5	5	-0.83
12	Apr-00	4.5	5	-0.83
13	Dec-00	4.5	5	-0.83
14	May-01	4.5	5	-0.83
15	Oct-01	4.5	5	-0.83
16	May-02	4.5	5	-0.83
17	Nov-02	4.5	2.5	-1.30
18	Jun-03	4.5	2.5	-1.30
19	Nov-03	4.5	2.5	-1.30
20	Jun-04	4.5	2.5	-1.30
21	Dec-04	4.5	2.5	-1.30
22	Jun-05	4.5	2.5	-1.30
23	Dec-05	4.5	2	-1.39
24	Jun-06	4.5	2	-1.39
25	Nov-06	4.5	2	-1.39
26	Jun-07	4.5	27	3.31
27	Nov-07	4.5	6	-0.64
28	Jun-08	4.5	3	-1.20
29	Nov-08	4.5	3	-1.20
30	Jun-09	4.5	3	-1.20
31	Nov-09	4.5	2	-1.39
32	Jun-10	4.5	2	-1.39
33	Nov-10	4.5	2	-1.39

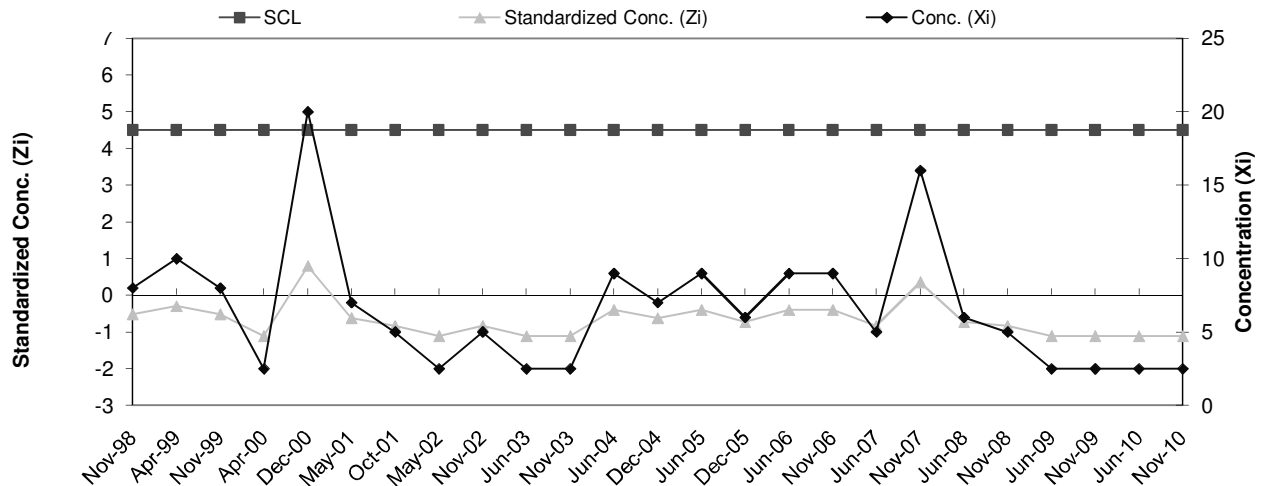


**COLDWATER ROAD LANDFILL FACILITY  
RCRA GROUND WATER DETECTION MONITORING SYSTEM  
SHEWART CONTROL CHART**

B-7 Ni

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	15	12.70	9.19
2	Aug-95	20		
3	Feb-96	20		
4	Jun-96	10		
5	Aug-96	10		
6	Nov-96	20		
7	May-97	14		
8	May-98	2.5		

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	Nov-98	4.5	8	-0.51
10	Apr-99	4.5	10	-0.29
11	Nov-99	4.5	8	-0.51
12	Apr-00	4.5	2.5	-1.11
13	Dec-00	4.5	20	0.79
14	May-01	4.5	7	-0.62
15	Oct-01	4.5	5	-0.84
16	May-02	4.5	2.5	-1.11
17	Nov-02	4.5	5	-0.84
18	Jun-03	4.5	2.5	-1.11
19	Nov-03	4.5	2.5	-1.11
20	Jun-04	4.5	9	-0.40
21	Dec-04	4.5	7	-0.62
22	Jun-05	4.5	9	-0.40
23	Dec-05	4.5	6	-0.73
24	Jun-06	4.5	9	-0.40
25	Nov-06	4.5	9	-0.40
26	Jun-07	4.5	5	-0.84
27	Nov-07	4.5	16	0.36
28	Jun-08	4.5	6	-0.73
29	Nov-08	4.5	5	-0.84
30	Jun-09	4.5	2.5	-1.11
31	Nov-09	4.5	2.5	-1.11
32	Jun-10	4.5	2.5	-1.11
33	Nov-10	4.5	2.5	-1.11







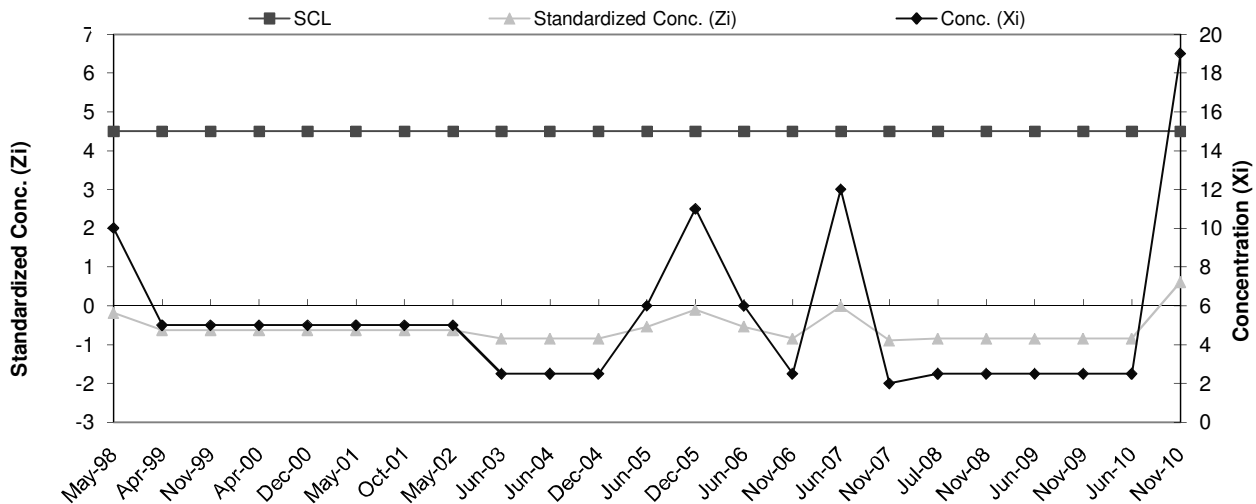


**COLDWATER ROAD LANDFILL FACILITY  
RCRA GROUND WATER DETECTION MONITORING SYSTEM  
SHEWART CONTROL CHART**

B-9 Cr

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	10	12.12	11.34
2	Aug-95	37		
3	Feb-96	10		
4	Jun-96	10		
5	Aug-96	10		
6	Nov-96	10		
7	May-97	5		
8	Nov-97	5		

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	10	-0.19
10	Apr-99	4.5	5	-0.63
11	Nov-99	4.5	5	-0.63
12	Apr-00	4.5	5	-0.63
13	Dec-00	4.5	5	-0.63
14	May-01	4.5	5	-0.63
15	Oct-01	4.5	5	-0.63
16	May-02	4.5	5	-0.63
17	Jun-03	4.5	2.5	-0.85
18	Jun-04	4.5	2.5	-0.85
19	Dec-04	4.5	2.5	-0.85
20	Jun-05	4.5	6	-0.54
21	Dec-05	4.5	11	-0.10
22	Jun-06	4.5	6	-0.54
23	Nov-06	4.5	2.5	-0.85
24	Jun-07	4.5	12	-0.01
25	Nov-07	4.5	2	-0.89
26	Jul-08	4.5	2.5	-0.85
27	Nov-08	4.5	2.5	-0.85
28	Jun-09	4.5	2.5	-0.85
29	Nov-09	4.5	2.5	-0.85
30	Jun-10	4.5	2.5	-0.85
31	Nov-10	4.5	19	0.61

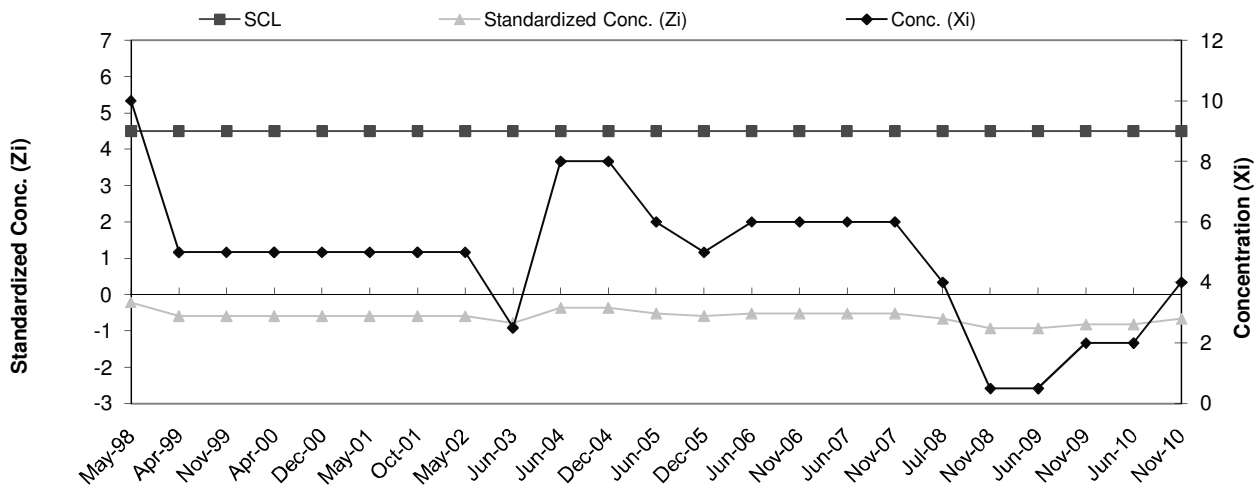


**COLDWATER ROAD LANDFILL FACILITY  
RCRA GROUND WATER DETECTION MONITORING SYSTEM  
SHEWART CONTROL CHART**

B-9 Cu

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	10	12.87	13.26
2	Aug-95	43		
3	Feb-96	10		
4	Jun-96	10		
5	Aug-96	10		
6	Nov-96	10		
7	May-97	5		
8	Nov-97	5		

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	10	-0.22
10	Apr-99	4.5	5	-0.59
11	Nov-99	4.5	5	-0.59
12	Apr-00	4.5	5	-0.59
13	Dec-00	4.5	5	-0.59
14	May-01	4.5	5	-0.59
15	Oct-01	4.5	5	-0.59
16	May-02	4.5	5	-0.59
17	Jun-03	4.5	2.5	-0.78
18	Jun-04	4.5	8	-0.37
19	Dec-04	4.5	8	-0.37
20	Jun-05	4.5	6	-0.52
21	Dec-05	4.5	5	-0.59
22	Jun-06	4.5	6	-0.52
23	Nov-06	4.5	6	-0.52
24	Jun-07	4.5	6	-0.52
25	Nov-07	4.5	6	-0.52
26	Jul-08	4.5	4	-0.67
27	Nov-08	4.5	0.5	-0.93
28	Jun-09	4.5	0.5	-0.93
29	Nov-09	4.5	2	-0.82
30	Jun-10	4.5	2	-0.82
31	Nov-10	4.5	4	-0.67

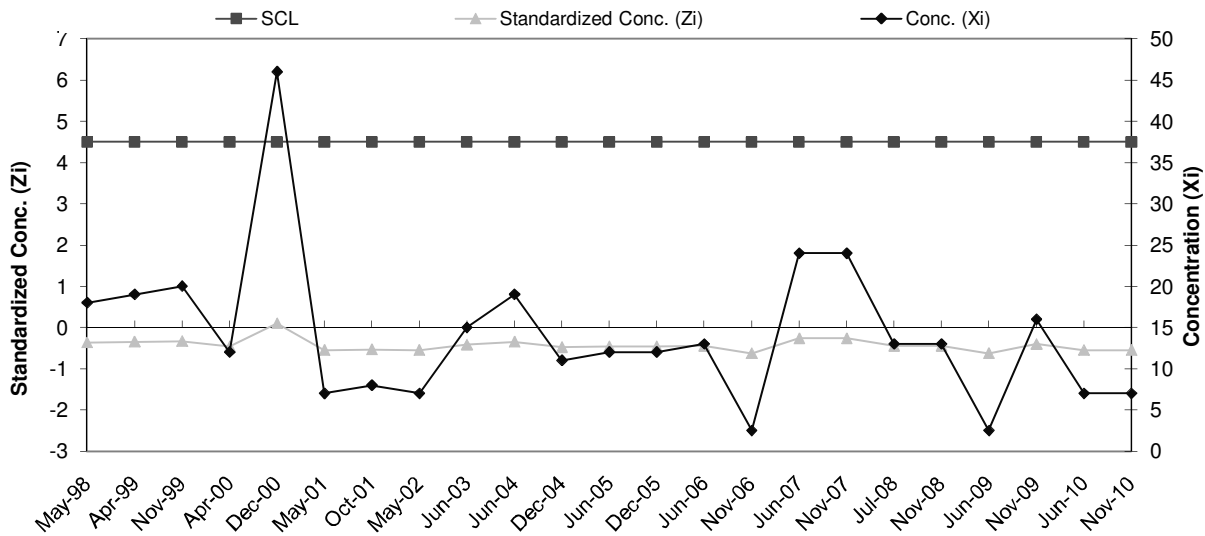


**COLDWATER ROAD LANDFILL FACILITY  
RCRA GROUND WATER DETECTION MONITORING SYSTEM  
SHEWART CONTROL CHART**

B-9 Ni

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	15	<b>39.83</b>	<b>59.86</b>
2	Aug-95	20		
3	Feb-96	20		
4	Jun-96	10		
5	Aug-96	10		
6	Nov-96	10		
7	May-97	51		
8	Nov-97	183		

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	18	-0.36
10	Apr-99	4.5	19	-0.35
11	Nov-99	4.5	20	-0.33
12	Apr-00	4.5	12	-0.46
13	Dec-00	4.5	46	0.10
14	May-01	4.5	7	-0.55
15	Oct-01	4.5	8	-0.53
16	May-02	4.5	7	-0.55
17	Jun-03	4.5	15	-0.41
18	Jun-04	4.5	19	-0.35
19	Dec-04	4.5	11	-0.48
20	Jun-05	4.5	12	-0.46
21	Dec-05	4.5	12	-0.46
22	Jun-06	4.5	13	-0.45
23	Nov-06	4.5	2.5	-0.62
24	Jun-07	4.5	24	-0.26
25	Nov-07	4.5	24	-0.26
26	Jul-08	4.5	13	-0.45
27	Nov-08	4.5	13	-0.45
28	Jun-09	4.5	2.5	-0.62
29	Nov-09	4.5	16	-0.40
30	Jun-10	4.5	7	-0.55
31	Nov-10	4.5	7	-0.55

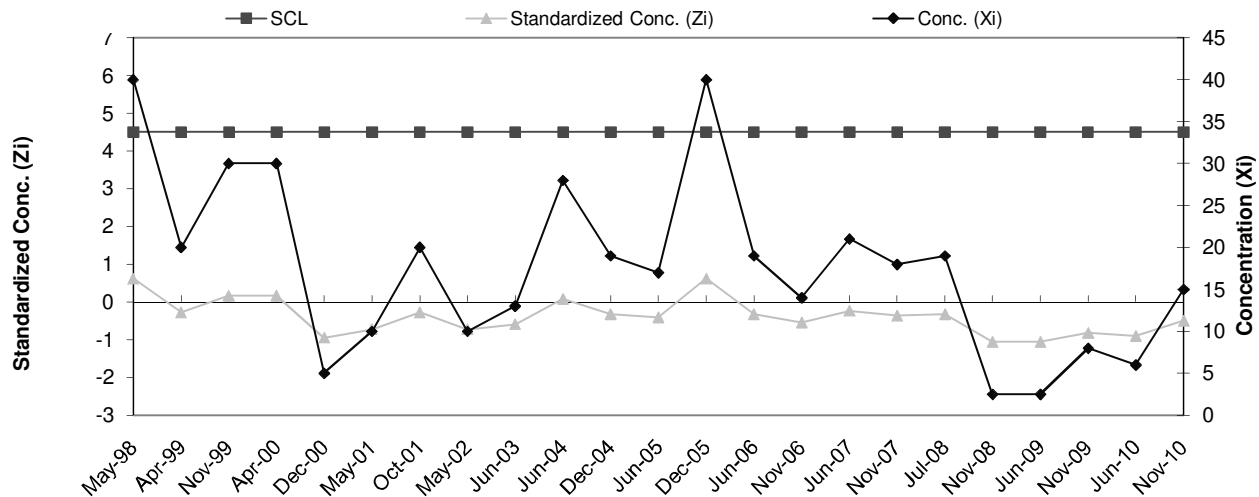


**COLDWATER ROAD LANDFILL FACILITY  
RCRA GROUND WATER DETECTION MONITORING SYSTEM  
SHEWART CONTROL CHART**

**B-9 Zn**

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	10	26.23	22.36
2	Aug-95	10		
3	Feb-96	10		
4	Jun-96	10		
5	Aug-96	70		
6	Nov-96	40		
7	May-97	20		
8	Nov-97	40		

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	40	0.62
10	Apr-99	4.5	20	-0.28
11	Nov-99	4.5	30	0.17
12	Apr-00	4.5	30	0.17
13	Dec-00	4.5	5	-0.95
14	May-01	4.5	10	-0.73
15	Oct-01	4.5	20	-0.28
16	May-02	4.5	10	-0.73
17	Jun-03	4.5	13	-0.59
18	Jun-04	4.5	28	0.08
19	Dec-04	4.5	19	-0.32
20	Jun-05	4.5	17	-0.41
21	Dec-05	4.5	40	0.62
22	Jun-06	4.5	19	-0.32
23	Nov-06	4.5	14	-0.55
24	Jun-07	4.5	21	-0.23
25	Nov-07	4.5	18	-0.37
26	Jul-08	4.5	19	-0.32
27	Nov-08	4.5	2.5	-1.06
28	Jun-09	4.5	2.5	-1.06
29	Nov-09	4.5	8	-0.82
30	Jun-10	4.5	6	-0.90
31	Nov-10	4.5	15	-0.50





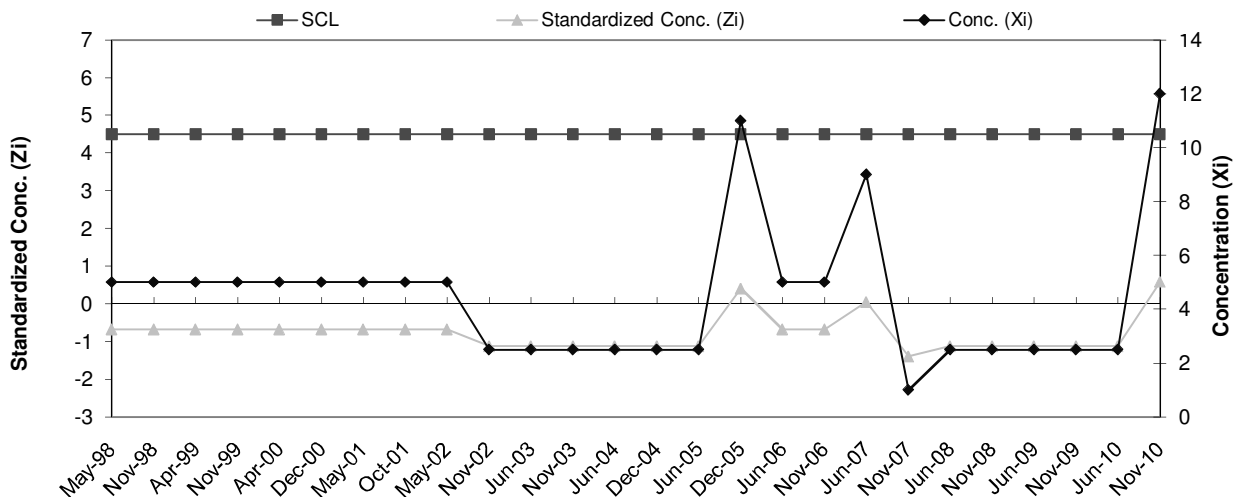


**COLDWATER ROAD LANDFILL FACILITY  
RCRA GROUND WATER DETECTION MONITORING SYSTEM  
SHEWART CONTROL CHART**

B-18a Cr

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	10	8.74	5.57
2	Aug-95	10		
3	Feb-96	10		
4	Jun-96	10		
5	Aug-96	10		
6	Nov-96	10		
7	May-97	5		
8	Nov-97	5		

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	5	-0.67
10	Nov-98	4.5	5	-0.67
11	Apr-99	4.5	5	-0.67
12	Nov-99	4.5	5	-0.67
13	Apr-00	4.5	5	-0.67
14	Dec-00	4.5	5	-0.67
15	May-01	4.5	5	-0.67
16	Oct-01	4.5	5	-0.67
17	May-02	4.5	5	-0.67
18	Nov-02	4.5	2.5	-1.12
19	Jun-03	4.5	2.5	-1.12
20	Nov-03	4.5	2.5	-1.12
21	Jun-04	4.5	2.5	-1.12
22	Dec-04	4.5	2.5	-1.12
23	Jun-05	4.5	2.5	-1.12
24	Dec-05	4.5	11	0.41
25	Jun-06	4.5	5	-0.67
26	Nov-06	4.5	5	-0.67
27	Jun-07	4.5	9	0.05
28	Nov-07	4.5	1	-1.39
29	Jun-08	4.5	2.5	-1.12
30	Nov-08	4.5	2.5	-1.12
31	Jun-09	4.5	2.5	-1.12
32	Nov-09	4.5	2.5	-1.12
33	Jun-10	4.5	2.5	-1.12
34	Nov-10	4.5	12	0.59

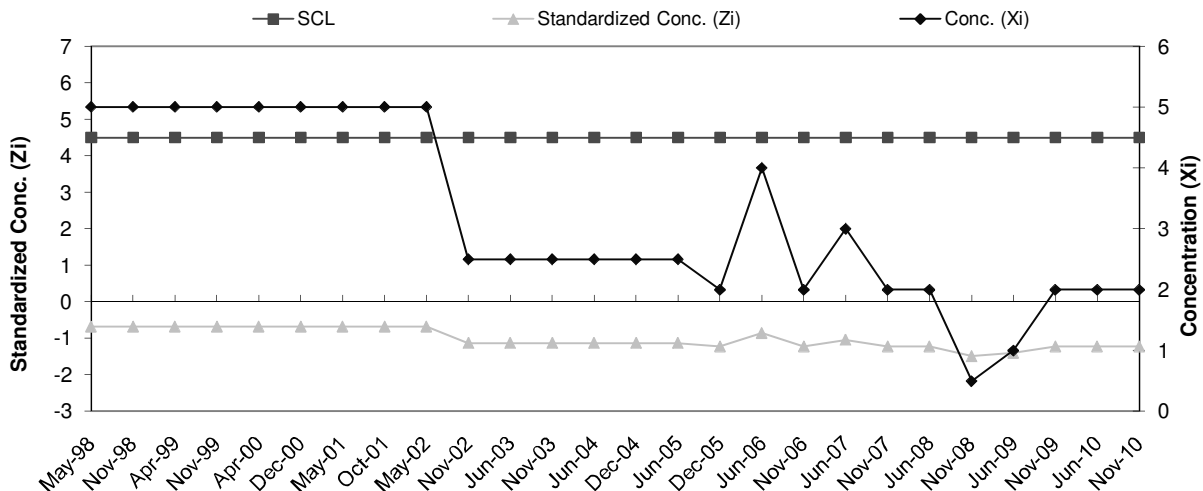


**COLDWATER ROAD LANDFILL FACILITY  
RCRA GROUND WATER DETECTION MONITORING SYSTEM  
SHEWART CONTROL CHART**

B-18a Cu

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	10	<b>8.78</b>	<b>5.56</b>
2	Aug-95	10		
3	Feb-96	10		
4	Jun-96	10		
5	Aug-96	10		
6	Nov-96	10		
7	May-97	5		
8	Nov-97	5		

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	5	-0.68
10	Nov-98	4.5	5	-0.68
11	Apr-99	4.5	5	-0.68
12	Nov-99	4.5	5	-0.68
13	Apr-00	4.5	5	-0.68
14	Dec-00	4.5	5	-0.68
15	May-01	4.5	5	-0.68
16	Oct-01	4.5	5	-0.68
17	May-02	4.5	5	-0.68
18	Nov-02	4.5	2.5	-1.13
19	Jun-03	4.5	2.5	-1.13
20	Nov-03	4.5	2.5	-1.13
21	Jun-04	4.5	2.5	-1.13
22	Dec-04	4.5	2.5	-1.13
23	Jun-05	4.5	2.5	-1.13
24	Dec-05	4.5	2	-1.22
25	Jun-06	4.5	4	-0.86
26	Nov-06	4.5	2	-1.22
27	Jun-07	4.5	3	-1.04
28	Nov-07	4.5	2	-1.22
29	Jun-08	4.5	2	-1.22
30	Nov-08	4.5	0.5	-1.49
31	Jun-09	4.5	1	-1.40
32	Nov-09	4.5	2	-1.22
33	Jun-10	4.5	2	-1.22
34	Nov-10	4.5	2	-1.22

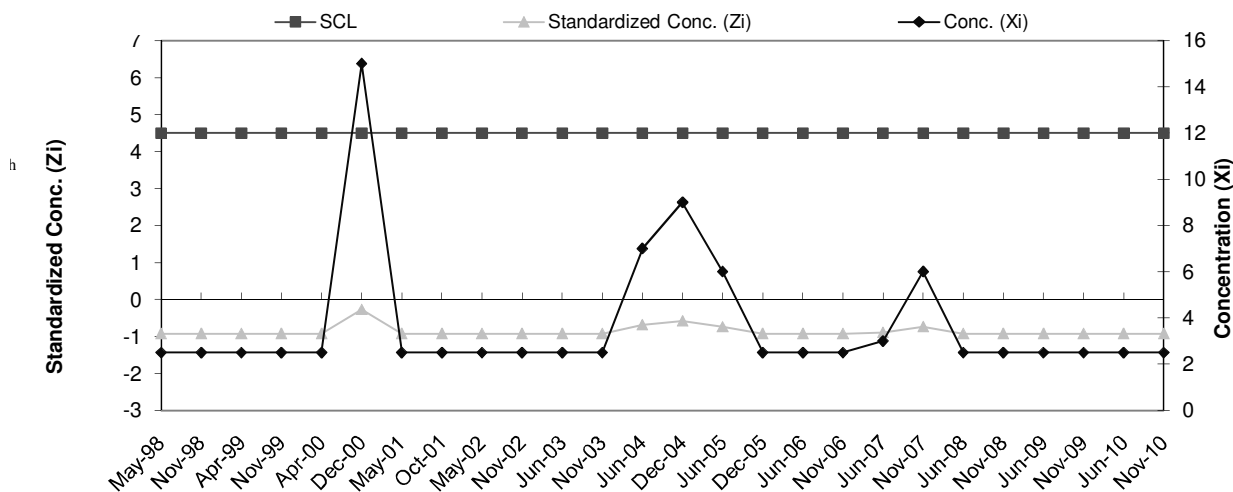


**COLDWATER ROAD LANDFILL FACILITY  
RCRA GROUND WATER DETECTION MONITORING SYSTEM  
SHEWART CONTROL CHART**

B-18a Ni

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	15	20.01	18.96
2	Aug-95	20		
3	Feb-96	20		
4	Jun-96	10		
5	Aug-96	10		
6	Nov-96	10		
7	May-97	13		
8	Nov-97	62		

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	2.5	-0.92
10	Nov-98	4.5	2.5	-0.92
11	Apr-99	4.5	2.5	-0.92
12	Nov-99	4.5	2.5	-0.92
13	Apr-00	4.5	2.5	-0.92
14	Dec-00	4.5	15	-0.26
15	May-01	4.5	2.5	-0.92
16	Oct-01	4.5	2.5	-0.92
17	May-02	4.5	2.5	-0.92
18	Nov-02	4.5	2.5	-0.92
19	Jun-03	4.5	2.5	-0.92
20	Nov-03	4.5	2.5	-0.92
21	Jun-04	4.5	7	-0.69
22	Dec-04	4.5	9	-0.58
23	Jun-05	4.5	6	-0.74
24	Dec-05	4.5	2.5	-0.92
25	Jun-06	4.5	2.5	-0.92
26	Nov-06	4.5	2.5	-0.92
27	Jun-07	4.5	3	-0.90
28	Nov-07	4.5	6	-0.74
29	Jun-08	4.5	2.5	-0.92
30	Nov-08	4.5	2.5	-0.92
31	Jun-09	4.5	2.5	-0.92
32	Nov-09	4.5	2.5	-0.92
33	Jun-10	4.5	2.5	-0.92
34	Nov-10	4.5	2.5	-0.92

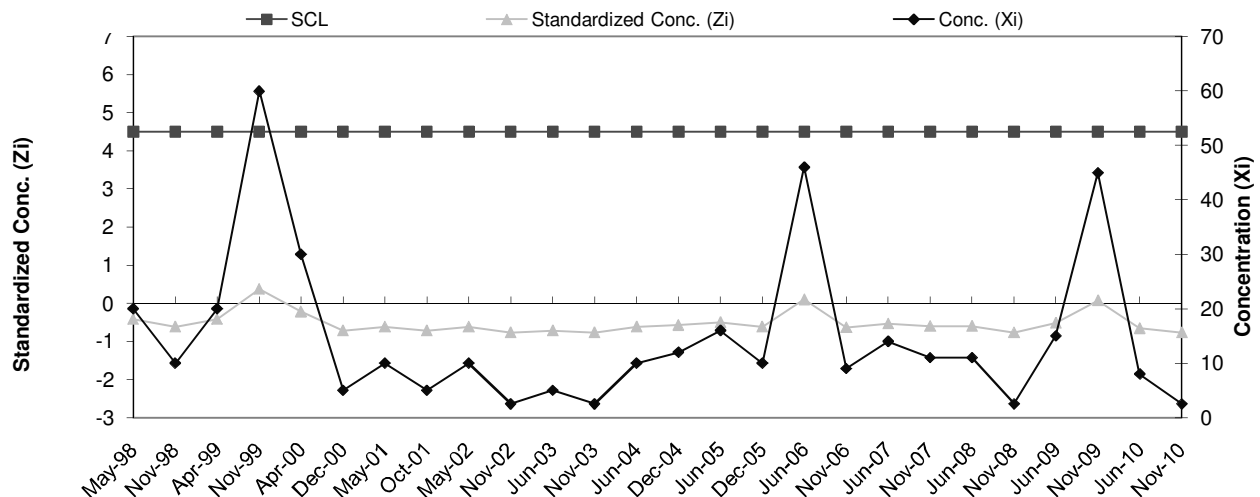


**COLDWATER ROAD LANDFILL FACILITY  
RCRA GROUND WATER DETECTION MONITORING SYSTEM  
SHEWART CONTROL CHART**

B-18a Zn

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	150	41.25	50.67
2	Aug-95	10		
3	Feb-96	10		
4	Jun-96	10		
5	Aug-96	60		
6	Nov-96	70		
7	May-97	10		
8	Nov-97	10		

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	20	-0.42
10	Nov-98	4.5	10	-0.62
11	Apr-99	4.5	20	-0.42
12	Nov-99	4.5	60	0.37
13	Apr-00	4.5	30	-0.22
14	Dec-00	4.5	5	-0.72
15	May-01	4.5	10	-0.62
16	Oct-01	4.5	5	-0.72
17	May-02	4.5	10	-0.62
18	Nov-02	4.5	2.5	-0.76
19	Jun-03	4.5	5	-0.72
20	Nov-03	4.5	2.5	-0.76
21	Jun-04	4.5	10	-0.62
22	Dec-04	4.5	12	-0.58
23	Jun-05	4.5	16	-0.50
24	Dec-05	4.5	10	-0.62
25	Jun-06	4.5	46	0.09
26	Nov-06	4.5	9	-0.64
27	Jun-07	4.5	14	-0.54
28	Nov-07	4.5	11	-0.60
29	Jun-08	4.5	11	-0.60
30	Nov-08	4.5	2.5	-0.76
31	Jun-09	4.5	15	-0.52
32	Nov-09	4.5	45	0.07
33	Jun-10	4.5	8	-0.66
34	Nov-10	4.5	2.5	-0.76

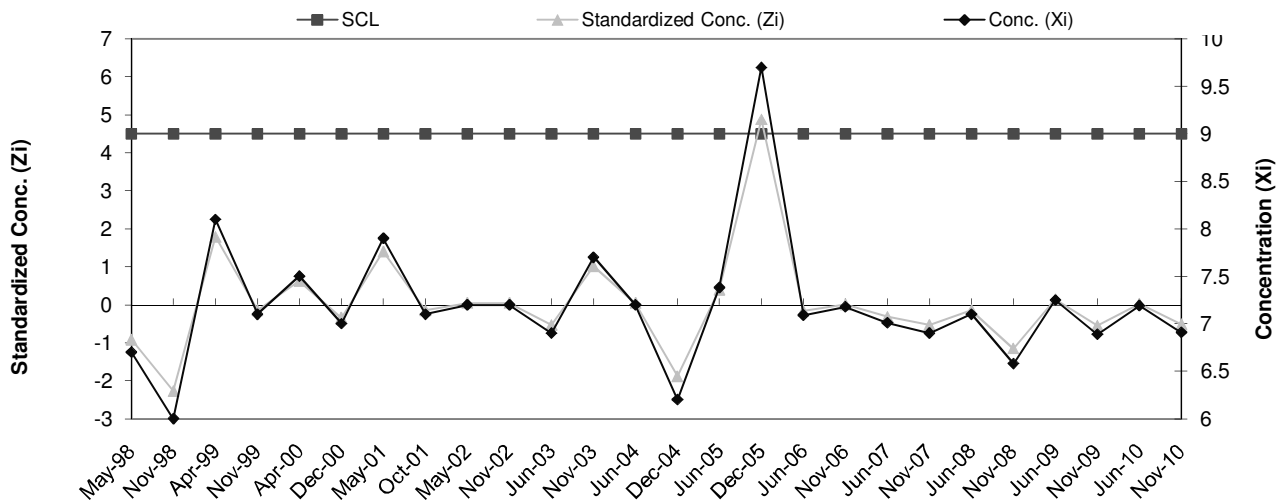


**COLDWATER ROAD LANDFILL FACILITY  
RCRA GROUND WATER DETECTION MONITORING SYSTEM  
SHEWART CONTROL CHART**

**B-18a pH**

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	7.5	7.18	0.52
2	Aug-95	7.9		
3	Feb-96	7.4		
4	Jun-96	7.0		
5	Aug-96	7.5		
6	Nov-96	7.2		
7	May-97	6.5		
8	Nov-97	6.4		

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	6.7	-0.92
10	Nov-98	4.5	6.0	-2.27
11	Apr-99	4.5	8.1	1.79
12	Nov-99	4.5	7.1	-0.14
13	Apr-00	4.5	7.5	0.63
14	Dec-00	4.5	7.0	-0.34
15	May-01	4.5	7.9	1.40
16	Oct-01	4.5	7.1	-0.14
17	May-02	4.5	7.2	0.05
18	Nov-02	4.5	7.2	0.05
19	Jun-03	4.5	6.9	-0.53
20	Nov-03	4.5	7.7	1.01
21	Jun-04	4.5	7.2	0.05
22	Dec-04	4.5	6.2	-1.88
23	Jun-05	4.5	7.4	0.40
24	Dec-05	4.5	9.7	4.88
25	Jun-06	4.5	7.1	-0.16
26	Nov-06	4.5	7.2	0.01
27	Jun-07	4.5	7.0	-0.32
28	Nov-07	4.5	6.9	-0.53
29	Jun-08	4.5	7.1	-0.14
30	Nov-08	4.5	6.6	-1.15
31	Jun-09	4.5	7.3	0.14
32	Nov-09	4.5	6.9	-0.55
33	Jun-10	4.5	7.2	0.03
34	Nov-10	4.5	6.9	-0.51

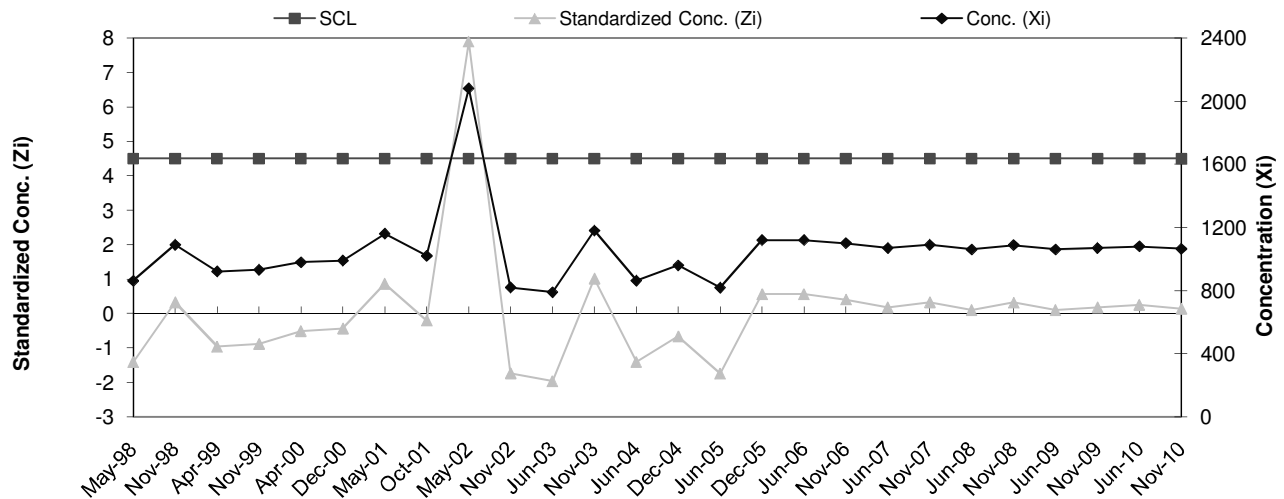


**COLDWATER ROAD LANDFILL FACILITY  
RCRA GROUND WATER DETECTION MONITORING SYSTEM  
SHEWART CONTROL CHART**

B-18a SpC

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	1048	1,046.75	130.80
2	Aug-95	989		
3	Feb-96	1021		
4	Jun-96	944.0		
5	Aug-96	1041		
6	Nov-96	1331		
7	May-97	900		
8	Nov-97	1100		

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	862	-1.41
10	Nov-98	4.5	1090.0	0.33
11	Apr-99	4.5	921	-0.96
12	Nov-99	4.5	932	-0.88
13	Apr-00	4.5	980	-0.51
14	Dec-00	4.5	990.0	-0.43
15	May-01	4.5	1160	0.87
16	Oct-01	4.5	1020	-0.20
17	May-02	4.5	2080	7.90
18	Nov-02	4.5	820	-1.73
19	Jun-03	4.5	790	-1.96
20	Nov-03	4.5	1180	1.02
21	Jun-04	4.5	863	-1.40
22	Dec-04	4.5	960	-0.66
23	Jun-05	4.5	819	-1.74
24	Dec-05	4.5	1120	0.56
25	Jun-06	4.5	1120	0.56
26	Nov-06	4.5	1100	0.41
27	Jun-07	4.5	1070	0.18
28	Nov-07	4.5	1090	0.33
29	Jun-08	4.5	1060	0.10
30	Nov-08	4.5	1088	0.32
31	Jun-09	4.5	1060	0.10
32	Nov-09	4.5	1070	0.18
33	Jun-10	4.5	1080	0.25
34	Nov-10	4.5	1065	0.14











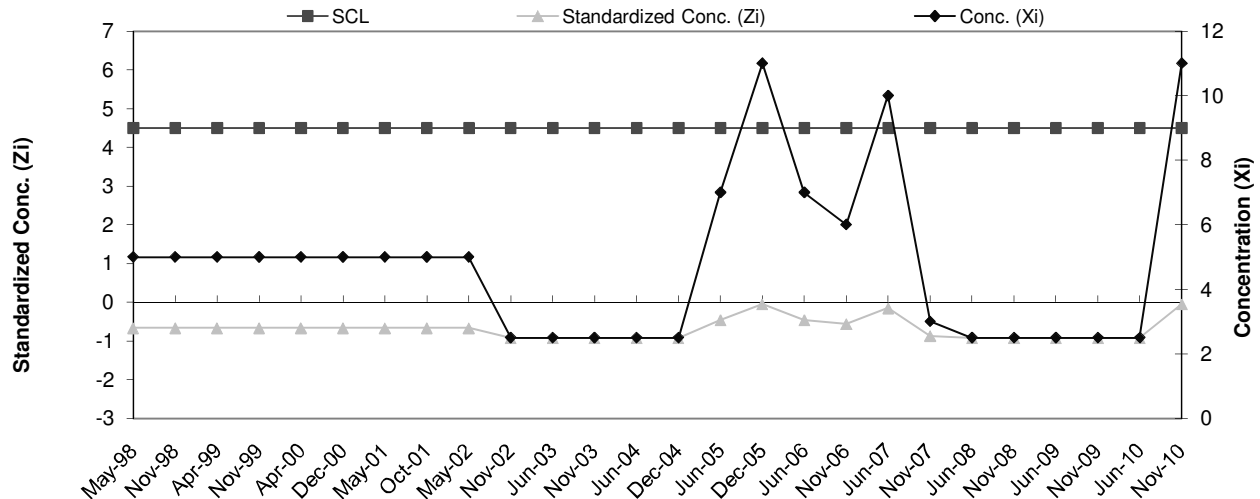




**COLDWATER ROAD LANDFILL FACILITY  
RCRA GROUND WATER DETECTION MONITORING SYSTEM  
SHEWART CONTROL CHART  
B-20d Cr**

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	10	<b>11.51</b>	<b>9.80</b>
2	Aug-95	10		
3	Feb-96	32		
4	Jun-96	10		
5	Aug-96	10		
6	Nov-96	10		
7	May-97	5		
8	Nov-97	5		

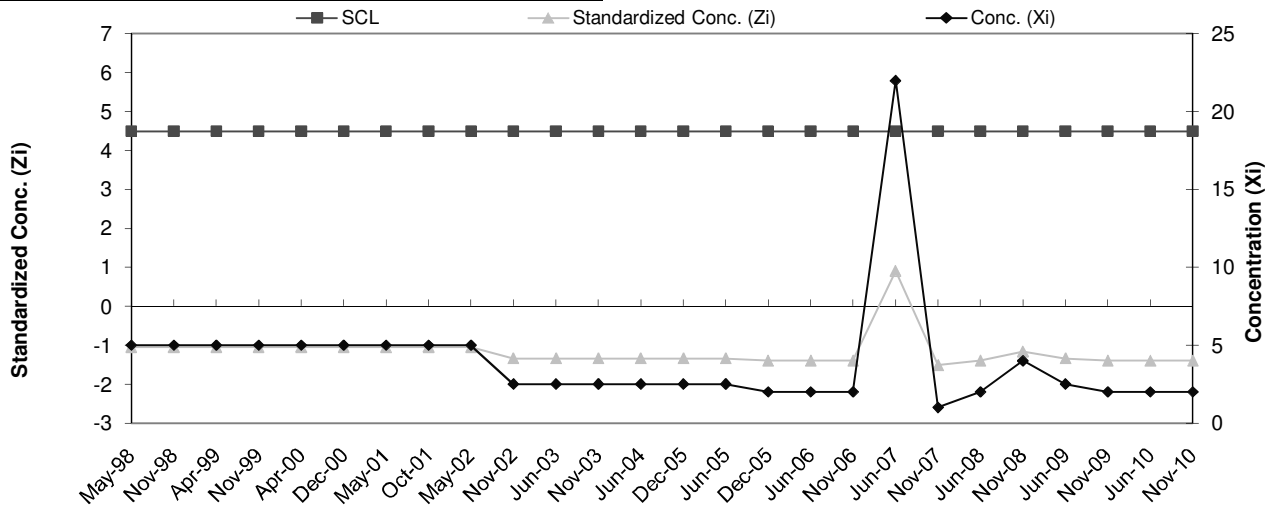
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	5	-0.66
10	Nov-98	4.5	5	-0.66
11	Apr-99	4.5	5	-0.66
12	Nov-99	4.5	5	-0.66
13	Apr-00	4.5	5	-0.66
14	Dec-00	4.5	5	-0.66
15	May-01	4.5	5	-0.66
16	Oct-01	4.5	5	-0.66
17	May-02	4.5	5	-0.66
18	Nov-02	4.5	2.5	-0.92
19	Jun-03	4.5	2.5	-0.92
20	Nov-03	4.5	2.5	-0.92
21	Jun-04	4.5	2.5	-0.92
22	Dec-04	4.5	2.5	-0.92
23	Jun-05	4.5	7	-0.46
24	Dec-05	4.5	11	-0.05
25	Jun-06	4.5	7	-0.46
26	Nov-06	4.5	6	-0.56
27	Jun-07	4.5	10	-0.15
28	Nov-07	4.5	3	-0.87
29	Jun-08	4.5	2.5	-0.92
30	Nov-08	4.5	2.5	-0.92
31	Jun-09	4.5	2.5	-0.92
32	Nov-09	4.5	2.5	-0.92
33	Jun-10	4.5	2.5	-0.92
34	Nov-10	4.5	11	-0.05



**COLDWATER ROAD LANDFILL FACILITY  
RCRA GROUND WATER DETECTION MONITORING SYSTEM  
SHEWART CONTROL CHART  
B-20d Cu**

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	10	<b>14.13</b>	<b>8.70</b>
2	Aug-95	20		
3	Feb-96	28		
4	Jun-96	10		
5	Aug-96	10		
6	Nov-96	10		
7	May-97	5		
8	Nov-97	20		

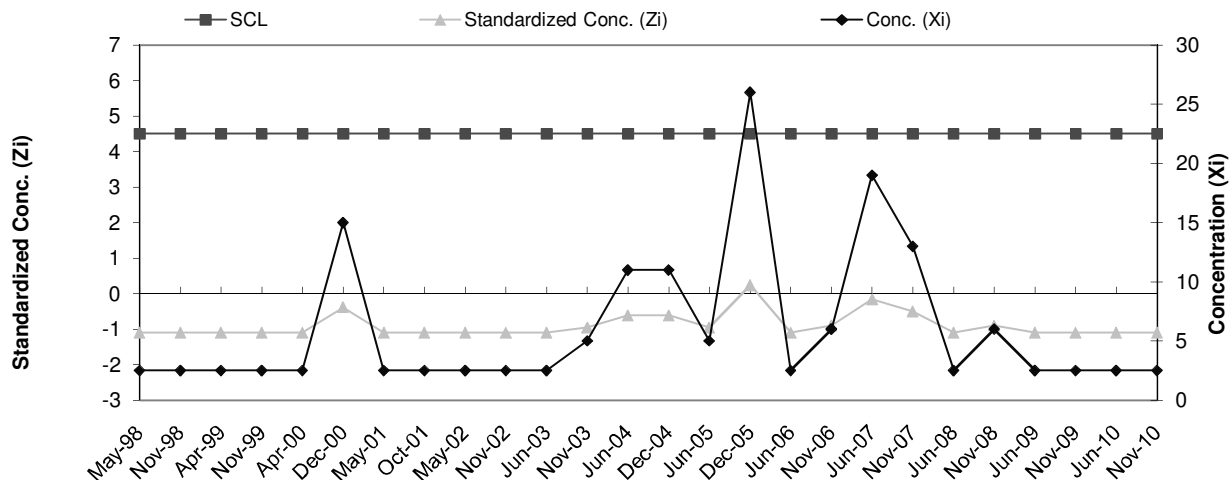
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	5	-1.05
10	Nov-98	4.5	5	-1.05
11	Apr-99	4.5	5	-1.05
12	Nov-99	4.5	5	-1.05
13	Apr-00	4.5	5	-1.05
14	Dec-00	4.5	5	-1.05
15	May-01	4.5	5	-1.05
16	Oct-01	4.5	5	-1.05
17	May-02	4.5	5	-1.05
18	Nov-02	4.5	2.5	-1.34
19	Jun-03	4.5	2.5	-1.34
20	Nov-03	4.5	2.5	-1.34
21	Jun-04	4.5	2.5	-1.34
22	Dec-05	4.5	2.5	-1.34
23	Jun-05	4.5	2.5	-1.34
24	Dec-05	4.5	2	-1.39
25	Jun-06	4.5	2	-1.39
26	Nov-06	4.5	2	-1.39
27	Jun-07	4.5	22	0.90
28	Nov-07	4.5	1	-1.51
29	Jun-08	4.5	2	-1.39
30	Nov-08	4.5	4	-1.16
31	Jun-09	4.5	2.5	-1.34
32	Nov-09	4.5	2	-1.39
33	Jun-10	4.5	2	-1.39
34	Nov-10	4.5	2	-1.39



**COLDWATER ROAD LANDFILL FACILITY  
RCRA GROUND WATER DETECTION MONITORING SYSTEM  
SHEWART CONTROL CHART  
B-20d Ni**

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	15	<b>21.88</b>	<b>17.64</b>
2	Aug-95	20		
3	Feb-96	54		
4	Jun-96	10		
5	Aug-96	10		
6	Nov-96	10		
7	May-97	15		
8	Nov-97	41		

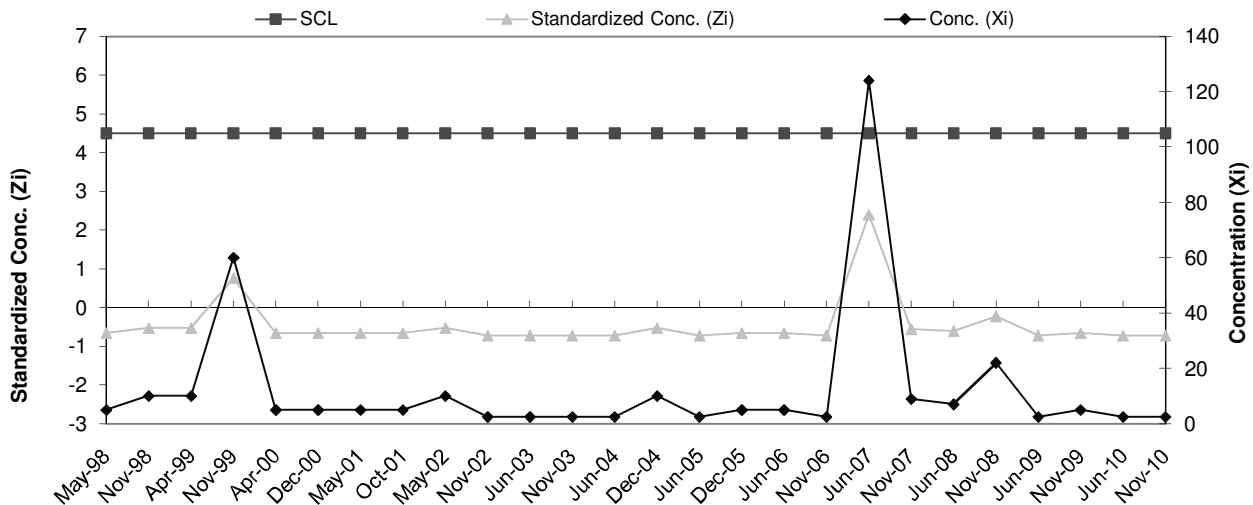
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	2.5	-1.10
10	Nov-98	4.5	2.5	-1.10
11	Apr-99	4.5	2.5	-1.10
12	Nov-99	4.5	2.5	-1.10
13	Apr-00	4.5	2.5	-1.10
14	Dec-00	4.5	15	-0.39
15	May-01	4.5	2.5	-1.10
16	Oct-01	4.5	2.5	-1.10
17	May-02	4.5	2.5	-1.10
18	Nov-02	4.5	2.5	-1.10
19	Jun-03	4.5	2.5	-1.10
20	Nov-03	4.5	5	-0.96
21	Jun-04	4.5	11	-0.62
22	Dec-04	4.5	11	-0.62
23	Jun-05	4.5	5	-0.96
24	Dec-05	4.5	26	0.23
25	Jun-06	4.5	2.5	-1.10
26	Nov-06	4.5	6	-0.90
27	Jun-07	4.5	19	-0.16
28	Nov-07	4.5	13	-0.50
29	Jun-08	4.5	2.5	-1.10
30	Nov-08	4.5	6	-0.90
31	Jun-09	4.5	2.5	-1.10
32	Nov-09	4.5	2.5	-1.10
33	Jun-10	4.5	2.5	-1.10
34	Nov-10	4.5	2.5	-1.10



**COLDWATER ROAD LANDFILL FACILITY  
RCRA GROUND WATER DETECTION MONITORING SYSTEM  
SHEWART CONTROL CHART  
B-20d Zn**

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	10	<b>30.66</b>	<b>38.93</b>
2	Aug-95	10		
3	Feb-96	120		
4	Jun-96	10		
5	Aug-96	40		
6	Nov-96	40		
7	May-97	10		
8	Nov-97	5		

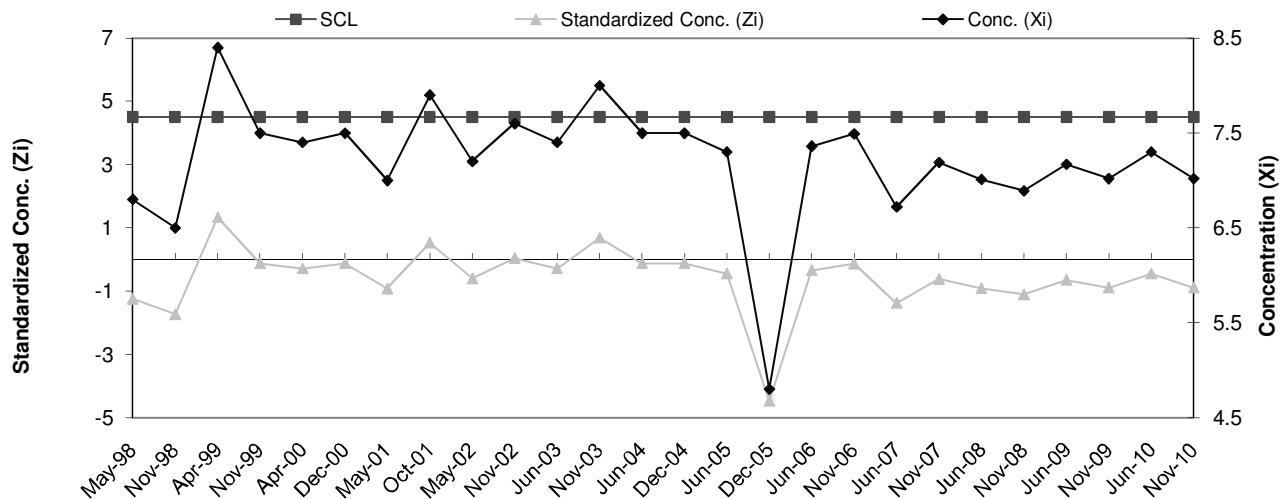
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	5	-0.66
10	Nov-98	4.5	10	-0.53
11	Apr-99	4.5	10	-0.53
12	Nov-99	4.5	60	0.75
13	Apr-00	4.5	5	-0.66
14	Dec-00	4.5	5	-0.66
15	May-01	4.5	5	-0.66
16	Oct-01	4.5	5	-0.66
17	May-02	4.5	10	-0.53
18	Nov-02	4.5	2.5	-0.72
19	Jun-03	4.5	2.5	-0.72
20	Nov-03	4.5	2.5	-0.72
21	Jun-04	4.5	2.5	-0.72
22	Dec-04	4.5	10	-0.53
23	Jun-05	4.5	2.5	-0.72
24	Dec-05	4.5	5	-0.66
25	Jun-06	4.5	5	-0.66
26	Nov-06	4.5	2.5	-0.72
27	Jun-07	4.5	124	2.40
28	Nov-07	4.5	9	-0.56
29	Jun-08	4.5	7	-0.61
30	Nov-08	4.5	22	-0.22
31	Jun-09	4.5	2.5	-0.72
32	Nov-09	4.5	5	-0.66
33	Jun-10	4.5	2.5	-0.72
34	Nov-10	4.5	2.5	-0.72



**COLDWATER ROAD LANDFILL FACILITY  
RCRA GROUND WATER DETECTION MONITORING SYSTEM  
SHEWART CONTROL CHART  
B-20d pH**

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	8.3	<b>7.58</b>	<b>0.62</b>
2	Aug-95	8.1		
3	Feb-96	7.1		
4	Jun-96	7.9		
5	Aug-96	8.0		
6	Nov-96	7.7		
7	May-97	6.8		
8	Nov-97	6.7		

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	6.8	-1.25
10	Nov-98	4.5	6.5	-1.73
11	Apr-99	4.5	8.4	1.33
12	Nov-99	4.5	7.5	-0.12
13	Apr-00	4.5	7.4	-0.28
14	Dec-00	4.5	7.5	-0.12
15	May-01	4.5	7.0	-0.93
16	Oct-01	4.5	7.9	0.52
17	May-02	4.5	7.2	-0.60
18	Nov-02	4.5	7.6	0.04
19	Jun-03	4.5	7.4	-0.28
20	Nov-03	4.5	8.0	0.68
21	Jun-04	4.5	7.5	-0.12
22	Dec-04	4.5	7.5	-0.12
23	Jun-05	4.5	7.3	-0.44
24	Dec-05	4.5	4.8	-4.47
25	Jun-06	4.5	7.4	-0.35
26	Nov-06	4.5	7.5	-0.14
27	Jun-07	4.5	6.7	-1.38
28	Nov-07	4.5	7.2	-0.62
29	Jun-08	4.5	7.0	-0.91
30	Nov-08	4.5	6.9	-1.10
31	Jun-09	4.5	7.2	-0.65
32	Nov-09	4.5	7.0	-0.89
33	Jun-10	4.5	7.3	-0.44
34	Nov-10	4.5	7.0	-0.89

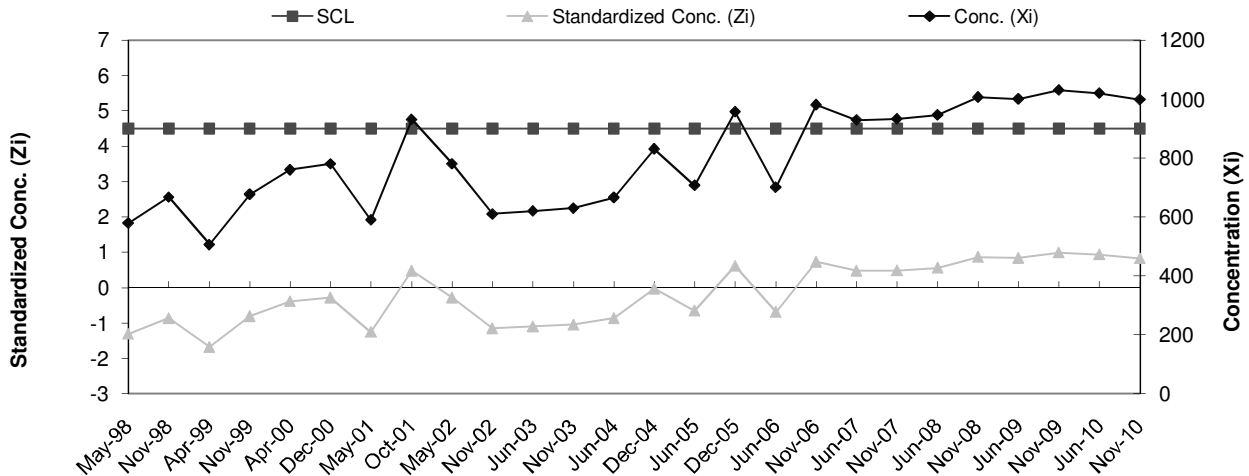


**COLDWATER ROAD LANDFILL FACILITY  
RCRA GROUND WATER DETECTION MONITORING SYSTEM  
SHEWART CONTROL CHART**

B-20d SpC

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	771	835.75	196.61
2	Aug-95	1204		
3	Feb-96	801		
4	Jun-96	745		
5	Aug-96	750		
6	Nov-96	1075		
7	May-97	640		
8	Nov-97	700		

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	579	-1.31
10	Nov-98	4.5	667	-0.86
11	Apr-99	4.5	506	-1.68
12	Nov-99	4.5	677	-0.81
13	Apr-00	4.5	760	-0.39
14	Dec-00	4.5	780	-0.28
15	May-01	4.5	590	-1.25
16	Oct-01	4.5	930	0.48
17	May-02	4.5	780	-0.28
18	Nov-02	4.5	610	-1.15
19	Jun-03	4.5	620	-1.10
20	Nov-03	4.5	630	-1.05
21	Jun-04	4.5	666	-0.86
22	Dec-04	4.5	830	-0.03
23	Jun-05	4.5	707	-0.65
24	Dec-05	4.5	957	0.62
25	Jun-06	4.5	701	-0.69
26	Nov-06	4.5	980	0.73
27	Jun-07	4.5	929	0.47
28	Nov-07	4.5	932	0.49
29	Jun-08	4.5	946	0.56
30	Nov-08	4.5	1006	0.87
31	Jun-09	4.5	1000	0.84
32	Nov-09	4.5	1030	0.99
33	Jun-10	4.5	1020	0.94
34	Nov-10	4.5	998	0.83

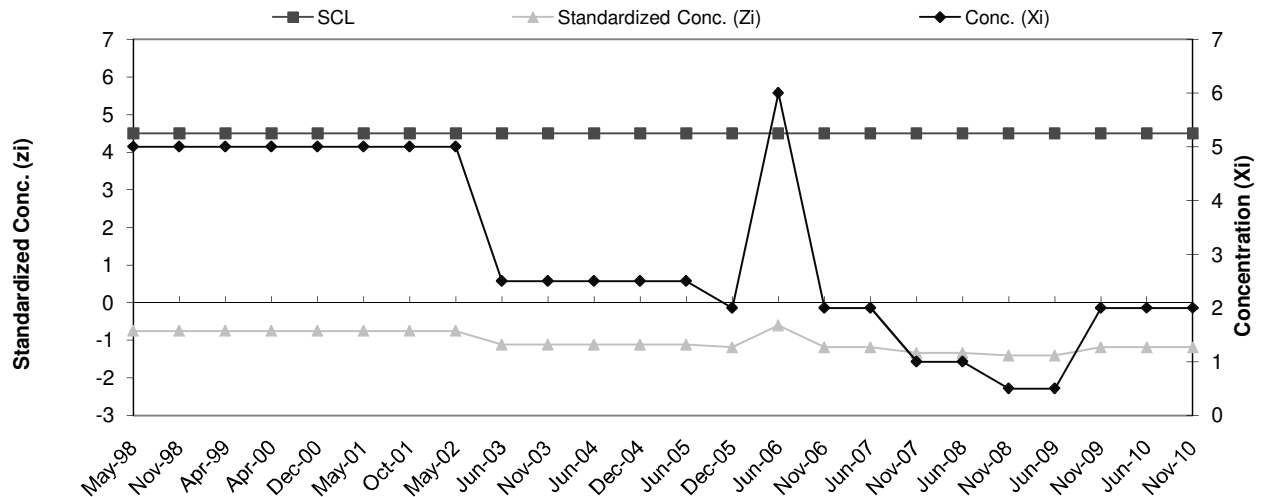




**COLDWATER ROAD LANDFILL FACILITY  
RCRA GROUND WATER DETECTION MONITORING SYSTEM  
SHEWART CONTROL CHART  
B-21d Cu**

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	10	<b>10.13</b>	<b>6.83</b>
2	Aug-95	21		
3	Feb-96	10		
4	Jun-96	10		
5	Aug-96	10		
6	Nov-96	10		
7	May-97	5		
8	Nov-97	5		

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	5	-0.75
10	Nov-98	4.5	5	-0.75
11	Apr-99	4.5	5	-0.75
12	Apr-00	4.5	5	-0.75
13	Dec-00	4.5	5	-0.75
14	May-01	4.5	5	-0.75
15	Oct-01	4.5	5	-0.75
16	May-02	4.5	5	-0.75
18	Jun-03	4.5	2.5	-1.12
19	Nov-03	4.5	2.5	-1.12
20	Jun-04	4.5	2.5	-1.12
21	Dec-04	4.5	2.5	-1.12
22	Jun-05	4.5	2.5	-1.12
23	Dec-05	4.5	2	-1.19
24	Jun-06	4.5	6	-0.60
25	Nov-06	4.5	2	-1.19
26	Jun-07	4.5	2	-1.19
27	Nov-07	4.5	1	-1.34
28	Jun-08	4.5	1	-1.34
29	Nov-08	4.5	0.5	-1.41
30	Jun-09	4.5	0.5	-1.41
31	Nov-09	4.5	2	-1.19
32	Jun-10	4.5	2	-1.19
33	Nov-10	4.5	2	-1.19

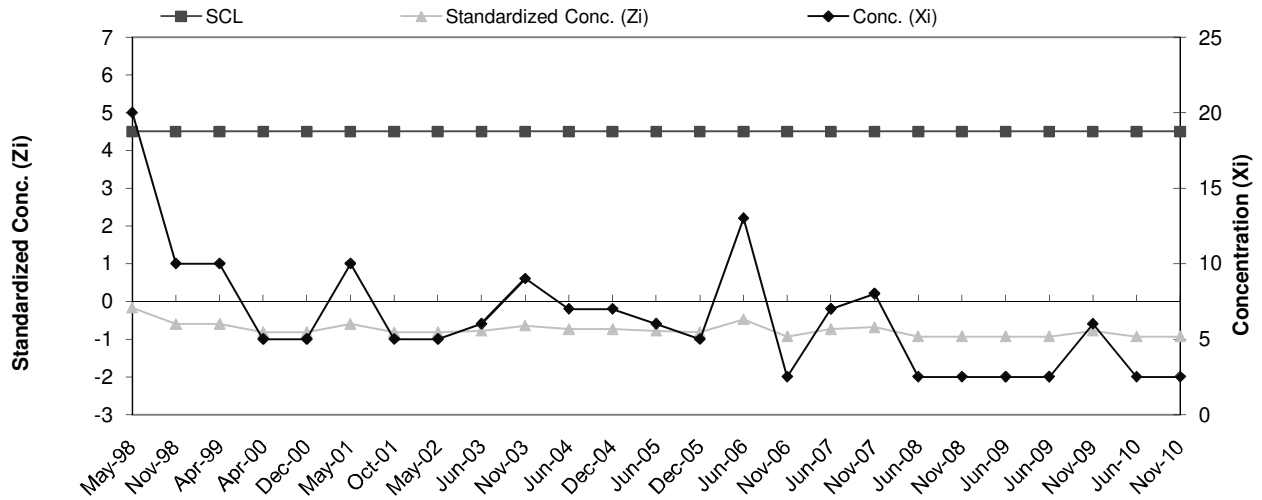




**COLDWATER ROAD LANDFILL FACILITY  
RCRA GROUND WATER DETECTION MONITORING SYSTEM  
SHEWART CONTROL CHART  
B-21d Zn**

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	61	<b>23.89</b>	<b>23.00</b>
2	Aug-95	10		
3	Feb-96	10		
4	Jun-96	10		
5	Aug-96	50		
6	Nov-96	40		
7	May-97	5		
8	Nov-97	5		

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	20	-0.17
10	Nov-98	4.5	10	-0.60
11	Apr-99	4.5	10	-0.60
12	Apr-00	4.5	5	-0.82
13	Dec-00	4.5	5	-0.82
14	May-01	4.5	10	-0.60
15	Oct-01	4.5	5	-0.82
16	May-02	4.5	5	-0.82
18	Jun-03	4.5	6	-0.78
19	Nov-03	4.5	9	-0.65
20	Jun-04	4.5	7	-0.73
21	Dec-04	4.5	7	-0.73
22	Jun-05	4.5	6	-0.78
23	Dec-05	4.5	5	-0.82
24	Jun-06	4.5	13	-0.47
25	Nov-06	4.5	2.5	-0.93
26	Jun-07	4.5	7	-0.73
27	Nov-07	4.5	8	-0.69
28	Jun-08	4.5	2.5	-0.93
29	Nov-08	4.5	2.5	-0.93
30	Jun-09	4.5	2.5	-0.93
31	Jun-09	4.5	2.5	-0.93
32	Nov-09	4.5	6	-0.78
33	Jun-10	4.5	2.5	-0.93
34	Nov-10	4.5	2.5	-0.93



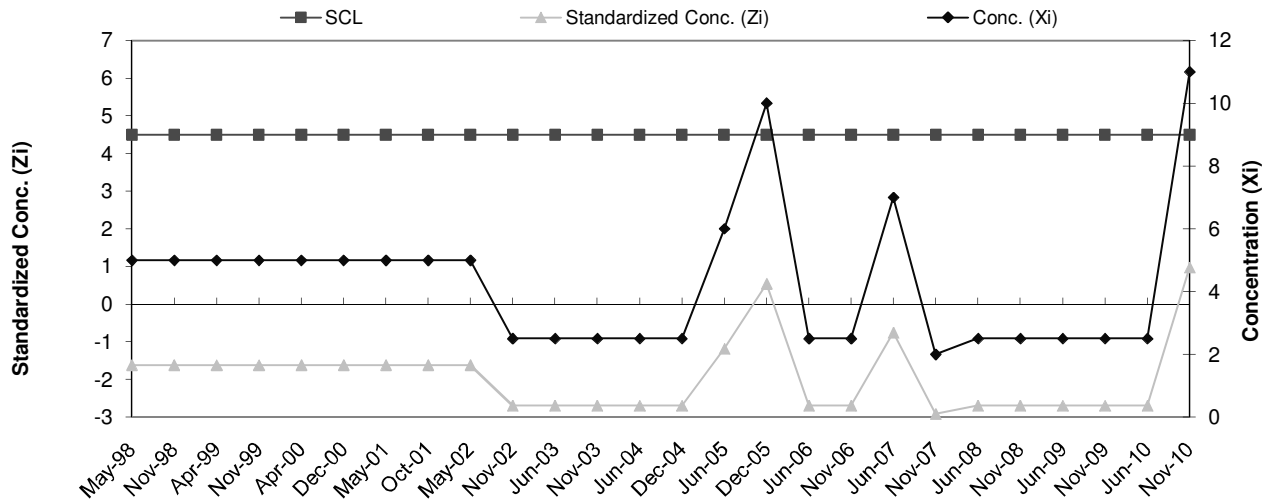




**COLDWATER ROAD LANDFILL FACILITY  
RCRA GROUND WATER DETECTION MONITORING SYSTEM  
SHEWART CONTROL CHART  
B-22D Cr**

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	10	<b>8.75</b>	<b>2.31</b>
2	Aug-95	10		
3	Feb-96	10		
4	Jun-96	10		
5	Aug-96	10		
6	Nov-96	10		
7	May-97	5		
8	Nov-97	5		

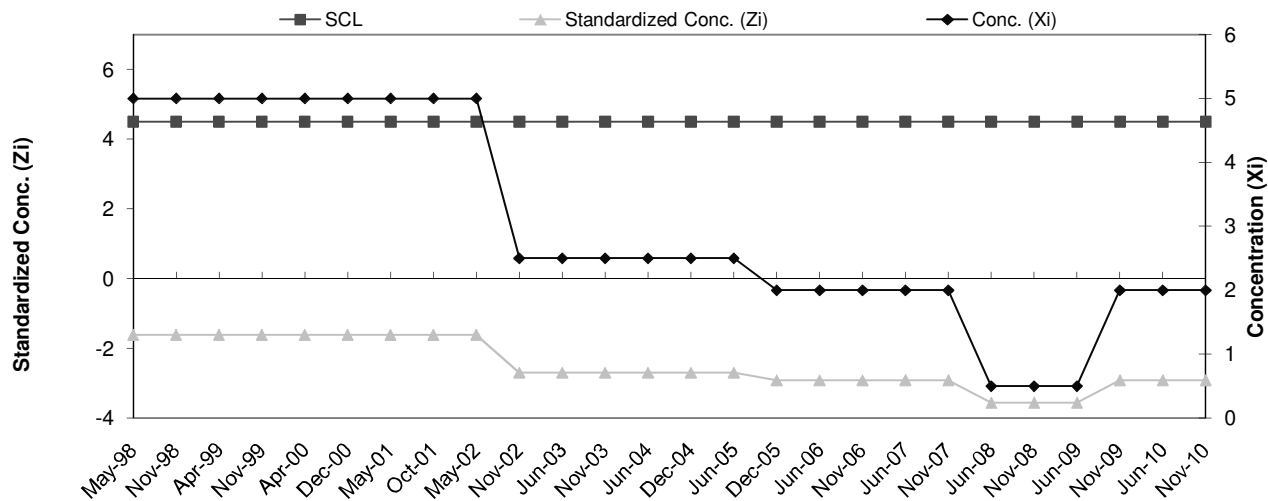
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	5	-1.62
10	Nov-98	4.5	5	-1.62
11	Apr-99	4.5	5	-1.62
12	Nov-99	4.5	5	-1.62
13	Apr-00	4.5	5	-1.62
14	Dec-00	4.5	5	-1.62
15	May-01	4.5	5	-1.62
16	Oct-01	4.5	5	-1.62
17	May-02	4.5	5	-1.62
18	Nov-02	4.5	2.5	-2.70
19	Jun-03	4.5	2.5	-2.70
20	Nov-03	4.5	2.5	-2.70
21	Jun-04	4.5	2.5	-2.70
22	Dec-04	4.5	2.5	-2.70
23	Jun-05	4.5	6	-1.19
24	Dec-05	4.5	10	0.54
25	Jun-06	4.5	2.5	-2.70
26	Nov-06	4.5	2.5	-2.70
27	Jun-07	4.5	7	-0.76
28	Nov-07	4.5	2	-2.92
29	Jun-08	4.5	2.5	-2.70
30	Nov-08	4.5	2.5	-2.70
31	Jun-09	4.5	2.5	-2.70
32	Nov-09	4.5	2.5	-2.70
33	Jun-10	4.5	2.5	-2.70
34	Nov-10	4.5	11	0.97



**COLDWATER ROAD LANDFILL FACILITY  
RCRA GROUND WATER DETECTION MONITORING SYSTEM  
SHEWART CONTROL CHART  
B-22D Cu**

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	10	<b>8.75</b>	<b>2.31</b>
2	Aug-95	10		
3	Feb-96	10		
4	Jun-96	10		
5	Aug-96	10		
6	Nov-96	10		
7	May-97	5		
8	Nov-97	5		

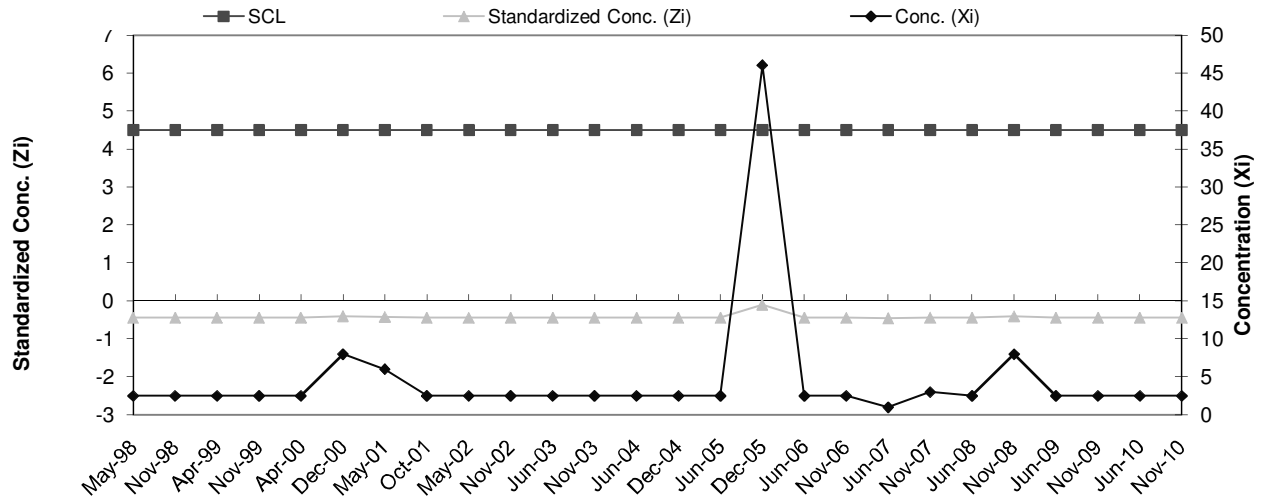
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	5	-1.62
10	Nov-98	4.5	5	-1.62
11	Apr-99	4.5	5	-1.62
12	Nov-99	4.5	5	-1.62
13	Apr-00	4.5	5	-1.62
14	Dec-00	4.5	5	-1.62
15	May-01	4.5	5	-1.62
16	Oct-01	4.5	5	-1.62
17	May-02	4.5	5	-1.62
18	Nov-02	4.5	2.5	-2.70
19	Jun-03	4.5	2.5	-2.70
20	Nov-03	4.5	2.5	-2.70
21	Jun-04	4.5	2.5	-2.70
22	Dec-04	4.5	2.5	-2.70
23	Jun-05	4.5	2.5	-2.70
24	Dec-05	4.5	2	-2.92
25	Jun-06	4.5	2	-2.92
26	Nov-06	4.5	2	-2.92
27	Jun-07	4.5	2	-2.92
28	Nov-07	4.5	2	-2.92
29	Jun-08	4.5	0.5	-3.56
30	Nov-08	4.5	0.5	-3.56
31	Jun-09	4.5	0.5	-3.56
32	Nov-09	4.5	2	-2.92
33	Jun-10	4.5	2	-2.92
34	Nov-10	4.5	2	-2.92



**COLDWATER ROAD LANDFILL FACILITY  
RCRA GROUND WATER DETECTION MONITORING SYSTEM  
SHEWART CONTROL CHART  
B-22D Ni**

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	370	<b>58.94</b>	<b>125.96</b>
2	Aug-95	20		
3	Feb-96	20		
4	Jun-96	10		
5	Aug-96	10		
6	Nov-96	10		
7	May-97	2.5		
8	Nov-97	29		

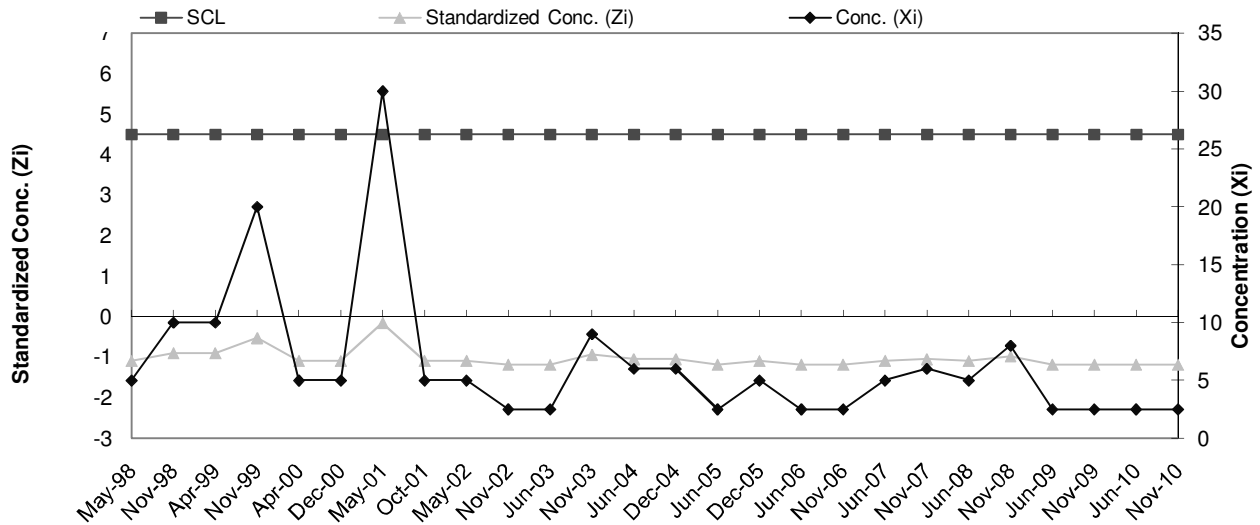
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	2.5	-0.45
10	Nov-98	4.5	2.5	-0.45
11	Apr-99	4.5	2.5	-0.45
12	Nov-99	4.5	2.5	-0.45
13	Apr-00	4.5	2.5	-0.45
14	Dec-00	4.5	8	-0.40
15	May-01	4.5	6	-0.42
16	Oct-01	4.5	2.5	-0.45
17	May-02	4.5	2.5	-0.45
18	Nov-02	4.5	2.5	-0.45
19	Jun-03	4.5	2.5	-0.45
20	Nov-03	4.5	2.5	-0.45
21	Jun-04	4.5	2.5	-0.45
22	Dec-04	4.5	2.5	-0.45
23	Jun-05	4.5	2.5	-0.45
24	Dec-05	4.5	46	-0.10
25	Jun-06	4.5	2.5	-0.45
26	Nov-06	4.5	2.5	-0.45
27	Jun-07	4.5	1	-0.46
28	Nov-07	4.5	3	-0.44
29	Jun-08	4.5	2.5	-0.45
30	Nov-08	4.5	8	-0.40
31	Jun-09	4.5	2.5	-0.45
32	Nov-09	4.5	2.5	-0.45
33	Jun-10	4.5	2.5	-0.45
34	Nov-10	4.5	2.5	-0.45



**COLDWATER ROAD LANDFILL FACILITY  
RCRA GROUND WATER DETECTION MONITORING SYSTEM  
SHEWART CONTROL CHART  
B-22D Zn**

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	10	<b>34.00</b>	<b>26.69</b>
2	Aug-95	47		
3	Feb-96	80		
4	Jun-96	20		
5	Aug-96	50		
6	Nov-96	50		
7	May-97	5		
8	Nov-97	10		

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	5	-1.09
10	Nov-98	4.5	10	-0.90
11	Apr-99	4.5	10	-0.90
12	Nov-99	4.5	20	-0.52
13	Apr-00	4.5	5	-1.09
14	Dec-00	4.5	5	-1.09
15	May-01	4.5	30	-0.15
16	Oct-01	4.5	5	-1.09
17	May-02	4.5	5	-1.09
18	Nov-02	4.5	2.5	-1.18
19	Jun-03	4.5	2.5	-1.18
20	Nov-03	4.5	9	-0.94
21	Jun-04	4.5	6	-1.05
22	Dec-04	4.5	6	-1.05
23	Jun-05	4.5	2.5	-1.18
24	Dec-05	4.5	5	-1.09
25	Jun-06	4.5	2.5	-1.18
26	Nov-06	4.5	2.5	-1.18
27	Jun-07	4.5	5	-1.09
28	Nov-07	4.5	6	-1.05
29	Jun-08	4.5	5	-1.09
30	Nov-08	4.5	8	-0.97
31	Jun-09	4.5	2.5	-1.18
32	Nov-09	4.5	2.5	-1.18
33	Jun-10	4.5	2.5	-1.18
34	Nov-10	4.5	2.5	-1.18













































COLDWATER ROAD LANDFILL FACILITY  
 RCRA GROUND WATER DETECTION MONITORING SYSTEM  
 SHEWART CONTROL CHART  
 B-28 Cu

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-06	2	1.50	0.71
2	Dec-06	2		
3	Jun-07	2		
4	Nov-07	2		
5	Jun-08	1		
6	Nov-08	0.5		
7	Jun-09	0.5		
8	Nov-09	2		

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	Jun-10	4.5	2	0.71
10	Nov-10	4.5	2	0.71

