

Tables

Table 1
Soil Boring Summary
Adams County Landfill Vertical Expansion
Alternative Geotechnical Investigation Program
(Results From 2017 Feasibility Report)



Boring Location	Ground Surface Elevation (ft. m.s.l.)	Boring Depth (ft. b.g.s.)	Boring Terminus Elevation (ft. m.s.l.)	Boring Terminus Formation	Required Elevation (25' below subbase) (ft. m.s.l.)	Estimated Sub Base Grade at Closet Point (ft. m.s.l.)	Required Separation Footages (ft)
B-5	967.46	51.5	915.96	Lacustrine	938	963	47.04
B-10	959.36	41.5	917.86	Lacustrine	943	968	50.14
B-13	973.12	45	928.12	Lacustrine	941	966	37.88
B-15	976.65	46.5	930.15	Lacustrine	939	964	33.85
B-100	958.29	27	931.29	Lacustrine	932	957	25.71
B-101	960.28	19	941.28	Lacustrine	938	963	21.72
B-102	960.84	29	931.84	Lacustrine	932	957	25.16
B-103	959.52	22	937.52	Lacustrine	938	963	25.48
B-104	967.04	22	945.04	Lacustrine	941	966	20.96
B-105	970.92	37	933.92	Lacustrine	935	960	26.08
B-106	962.82	22	940.82	Lacustrine	941	966	25.18
MW-2	963.24	36.5	926.74	Lacustrine	928	953	26.26
MW-2P	963.03	66.5	896.53	Lacustrine	928	953	56.47
MW-3	962.22	41.5	920.72	Lacustrine	943	968	47.28
MW-3P	962.07	70.8	891.27	Lacustrine	943	968	76.73
MW-16	961.63	31.5	930.13	Lacustrine	943	968	37.87
MW-17	981.35	51.1	930.25	Lacustrine	939	964	33.75
MW-17P	981.64	81	900.64	Lacustrine	939	964	63.36
MW-19	965.13	35	930.13	Lacustrine	928	953	22.87
MW-19P	964.72	61.5	903.22	Lacustrine	928	953	49.78
MW-29	961.73	37	924.73	Lacustrine	928	953	28.27
MW-30	977.84	47	930.84	Lacustrine	939	964	33.16
MW-30P	977.94	75	902.94	Lacustrine	939	964	61.06
MW-31	967.90	42	925.90	Lacustrine	943	968	42.1

Table 2
Existing Geotechnical Program Monitoring Well Information
Adams County Landfill Vertical Expansion
Alternative Geotechnical Investigation Program
(Results From 2017 Feasibility Report)

Well ID	Current Status	Ground Surface Elevation (ft. m.s.l.)	Top of Casing Elevation (ft. m.s.l.)	Top of Screen Elevation (ft. m.s.l.)	Bottom of Screen Elevation (ft. m.s.l.)	Depth of Well Bottom (ft.)	Screen Length (ft.)	Distance from Waste Limits (ft.)
MW-2	Active	963.24	964.96	942.24	927.24	36	15	<150
MW-2P	Active	963.03	964.62	903.03	898.03	65	5	<150
MW-3	Active	962.22	964.88	936.22	921.22	41	15	In future waste area
MW-3P	Active	962.07	964.04	897.07	892.07	70	5	In future waste area
MW-16	Active	961.63	963.42	943.33	933.33	28.3	10	>150, <300
MW-17	Active	981.35	982.64	942.35	932.35	49	10	In future waste area
MW-17P	Active	981.64	982.99	906.14	901.14	80.5	5	In future waste area
MW-19	Active	965.13	966.09	945.13	935.13	30	10	<150
MW-19P	Active	964.72	966.06	909.52	904.52	60.2	5	<150
MW-29	Active	961.73	963.47	943.73	928.73	33	15	>150, <300
MW-30	Active	977.84	979.49	947.84	932.84	45	15	<150
MW-30P	Active	977.94	979.69	907.94	902.94	75	5	<150
MW-31	Active	967.90	969.70	942.90	927.90	40	15	>150, <300

Table 3
Physical Soils Testing Laboratory Results--All Soil Types
Adams County Landfill Vertical Expansion
Alternative Geotechnical Investigation Program
(Results from 2017 Feasibility Report)

Boring or Well Number	Sample ID	Sample Depth (ft. b.g.s.)	Grain Size					Atterberg Limits			USCS Classification	Laboratory Permeability ASTM D5084 (cm/s)	Dry Density (lbs./ft ³)	Moisture Content (%)	Geologic Origin			
			% Gravel (>4.75mm)	% Sand (4.75mm-0.075mm)	% Silt (0.075mm-0.005mm)	% Clay (< 0.005mm)	% P200 Content	Plastic Limit (%)	Liquid Limit (%)	Plasticity Index (%)								
B-102	B-102	27'-29'	NT												2.20E-06	95.4	29.4	Lacustrine
B-105	B-105	25'-37'	NT												2.20E-06	95.0	30.7	
MW-29, 30, 31; B-100, 102, 105	CL-1	Composite	0.0	10.3	45.4	44.3	89.7	17.0	34.0	CL								
	CL-2	Composite sampling of	0.0	9.1	49.8	41.1	90.9	17.0	31.0	CL								
	CL-3	major soil unit	0.0	7.6	51.3	41.1	92.4	20.0	31.0	CL								
	CL-4	from 22'-47'	0.0	9.0	39.5	51.5	91.0	19.0	39.0	CL								
	CL-5		0.0	9.2	50.9	39.9	90.8	17.0	31.0	CL								
MW-29, 31; B- 102, 103	ML-1	Composite	0.0	21.2	54.1	24.7	78.8	NP			ML							
	ML-2	sampling of	0.0	27.3	61.8	10.8	72.6	NP			ML							
	ML-3	major soil unit	0.0	26.2	52.9	20.9	73.8	NP			ML							
	ML-4	from 15'-20'	0.0	45.0	35.4	19.6	55.0	16.0	21.0	CL-ML								
	ML-5	and 25'-30'	0.0	21.9	54.2	23.8	78.0	NP			CL-ML							
MW-29, 30, 30P, 31; B- 100, 101, 102, 103, 104, 105,	SM-1	Composite	0.0	80.0		20	20	NP			SM							
	SM-2	sampling of	0.0	81.8		18.2	18.2	NP			SM							
	SM-3	major soil unit	0.0	82.5		17.5	17.5	NP			SM							
	SM-4	from 0.5'-75'	0.0	77.2		22.8	22.8	NP			SM							
	SM-5		0.0	84.4		15.6	15.6	NP			SM							
MW-29	Well Screen	22'-37'	0.0	14.0	39.9	46.1	86.0	17.0	30.0	CL								
MW-30		32'-47'	0.0	37.6	48.7	13.7	62.4	NP		ML								
MW-30P		70'-75'	0.0	55.4	29.3	15.3	44.6	13.0	16.0	SM								
MW-31		27'-42'	0.0	50.4	28.5	21.1	49.6	NP		SM								
N=			21.0	21.0	21.0	21.0	21.0	8.0	8.0		2	2	2					
Min.			0.0	7.6	15.6	10.8		13.0	16.0		2.20E-06	95.0	29.4					
Max.			0.0	84.4	61.8	51.5		20.0	39.0		2.20E-06	95.4	30.7					
Mean.			0.0	39.5	38.7	29.6		17.0	29.1		2.20E-06	95.2	30.05					
Std. Deviation			0.0	29.2	14.9	13.7		2.1	7.3		0.0	0.283	0.919					

N = Number of Samples

NT = Not Tested

NP = Non-Plastic

Table 4
Slug Test Parameters and Field Hydraulic Conductivity Values Summary
Adams County Vertical Expansion
Alternative Geotechnical Investigation Program
(Results From 2017 Feasibility Report)

Well ID	Date of Test	Test No. ¹	Depth of Well (ft.)	Depth to Water (ft.)	Initial Drawdown Elevation (t ₀) (ft.)	Initial Well Radius (r) (ft.)	Effective Well Radius (R) (ft.)	Sat. Aquifer Thickness (ft.)	Screen Length (L) (ft.)	Height of Water Column (b) (ft.)	Soil Type Surrounding Screen	K (ft/sec) ²	K (cm/sec) ³						
MW-1	1986	Slug In	41.41	29.46			0.292	11.95	12	11.95	SP;CL	2.26E-03	6.90E-02						
MW-2			37.72	25.16			0.292	12.56	13	12.56	SP;CL	3.61E-05	1.10E-03						
MW-3			43.66	30.34			0.292	13.32	14	13.32	SP;CL	2.53E-04	7.70E-03						
MW-3P			71.97	--	--	--	--	--	--	--	SP	7.87E-06	2.40E-04						
MW-6			43.44	31.84			0.333	11.6	11.6	12	11.6	SP;CL,ML	1.54E-04	4.70E-03					
MW-6P			74.06	--	--	--	--	--	--	--	SP	1.48E-05	4.50E-04						
MW-7			35.45	29.83			0.333	5.62	5.62	6	5.62	SM	1.35E-02	4.10E-01					
MW-7P			64.63	--	--	--	--	--	--	--	SP	7.22E-05	2.20E-03						
MW-8			50.04	42.83			0.333	7.21	7.21	8	7.21	SM; SP;CL	2.85E-04	8.70E-03					
MW-9			30.71	27.18			0.333	3.53	3.53	4	3.53	SM;SP	4.27E-04	1.30E-02					
MW-16			30.09	23.39			0.333	6.7	6.7	7	6.7	ML,CL,SM	5.25E-04	1.60E-02					
MW-17			50.29	39.71			0.333	10.58	10.58	10	10.58	ML,CL,SM	1.77E-04	5.40E-03					
MW-18			32.86	26.46			0.333	6.4	6.4	7	6.4	SP;ML,CL,SM	5.25E-04	1.60E-02					
MW-18P			63.48	--	--	--	--	--	--	--	--	SP	1.51E-05	4.60E-04					
MW-29	--	Slug In	34.1	24.76	24.95	0.083	0.33	9.34	10	9.34	SM, ML, CL	--	--						
		22.76			3.80E-04							1.10E-02							
		39.03			8.70E-06							2.60E-04							
MW-30	1/28/2016	Slug In	46.9	38.48	37.77	0.083	0.33	8.42	9	8.42	SM, CL	2.00E-04	6.10E-03						
		37.77			6.63E-04							1.90E-02							
Slug Out		44.22			46.40							0.083	0.33	32.0	5	31.58	SM	6.80E-04	2.10E-02
42.36					7.10E-06														
MW-30P		Slug In	75.8																
MW-31		Slug Out	41.4	32.7	33.15	0.083	0.33	8.70	9	8.70	SM, CL	4.60E-05	1.40E-03						
		30.59			4.60E-05							1.40E-03							

¹Slug in test = falling head test, Slug out test = rising head test

²ft/sec = hydraulic conductivity in units of feet per second

³cm/sec = hydraulic conductivity in units of centimeter per second

Table 5
Groundwater Elevations Summary
Adams County Landfill Vertical Expansion
(Results From 2017 Feasibility Report)



Well Id.	Ground Surface (ft. m.s.l.)	Reference Elevation (ft. m.s.l.)	Top of Screen (ft. m.s.l.)	Bottom of Screen (ft. m.s.l.)	GROUNDWATER ELEVATION (ft. m.s.l.)						
					12/17/2015	1/21/2016	2/25/2016	3/29/2016	5/26/2016	6/27/2016	8/1/2016
MW-1	959.12	960.53	934.12	919.12	<u>930.79</u>	931.62	931.77	934.06	934.23	933.91	934.01
MW-1P	959.70	960.64	894.70	889.70	<u>930.94</u>	931.77	931.79	932.75	934.21	933.78	933.90
MW-2	963.24	964.96	942.24	927.24	<u>933.87</u>	936.56	936.38	935.27	940.45	940.09	939.86
MW-2P	963.03	964.62	903.03	898.03	<u>934.19</u>	935.09	935.15	936.14	937.76	937.37	936.62
MW-3	962.22	964.88	936.22	921.22	<u>933.81</u>	934.69	934.71	936.50	937.49	937.02	936.23
MW-3P	962.07	964.04	897.07	892.07	<u>932.49</u>	933.43	934.68	935.94	937.44	936.96	936.18
MW-6	973.83	975.27	946.83	931.83	<u>934.22</u>	937.83	938.10	936.70	940.99	940.79	940.37
MW-6P	974.22	976.08	907.02	902.02	<u>929.49</u>	931.11	931.11	931.41	933.68	933.18	932.36
MW-7	966.44	968.09	942.64	932.64	<u>935.45</u>	936.84	936.95	937.44	939.50	939.79	939.59
MW-7P	966.65	968.58	908.95	903.95	<u>930.18</u>	931.09	931.14	932.24	933.60	933.11	932.32
MW-9	963.03	965.54	944.83	934.83	<u>934.77</u>	935.37	935.68	936.76	939.99	940.23	938.94
MW-16	961.63	963.42	943.33	933.33	<u>937.20</u>	938.66	938.79	938.40	941.39	941.40	940.98
MW-17	981.35	982.64	942.35	932.35	<u>940.83</u>	NM	942.34	941.44	944.27	944.34	944.49
MW-17P	981.64	982.99	906.14	901.14	<u>933.61</u>	934.56	934.65	935.76	937.34	936.90	936.13
MW-18	963.98	965.34	942.48	932.48	<u>935.62</u>	938.98	938.68	939.54	940.39	941.18	941.16
MW-18P	964.21	965.69	907.21	902.21	<u>931.63</u>	932.93	932.98	933.99	935.47	935.04	934.29
MW-19	965.13	966.09	945.13	935.13	<u>937.19</u>	939.62	939.02	940.78	941.70	941.65	941.46
MW-19P	964.72	966.06	909.52	904.52	<u>932.96</u>	933.89	933.93	934.96	936.48	936.07	935.36
MW-20	969.57	971.36	940.27	930.27	<u>935.73</u>	936.98	937.23	936.95	939.80	939.97	939.70
MW-21	964.97	967.16	941.47	931.47	<u>935.33</u>	936.42	936.60	936.66	939.47	939.54	939.21
MW-22	964.50	966.06	938.00	928.00	<u>935.41</u>	936.26	936.44	936.82	939.30	939.41	939.07
MW-25	961.99	965.14	937.49	927.49	<u>936.91</u>	938.70	938.75	939.57	941.85	941.72	941.30
MW-26	959.97	962.87	936.47	926.47	<u>936.60</u>	938.29	938.23	939.45	942.27	941.62	940.87
MW-27	977.42	980.64	937.42	927.42	<u>938.48</u>	940.17	940.23	941.10	944.20	944.04	946.86
MW-28	971.48	974.04	939.48	924.48	<u>937.63</u>	939.56	939.54	940.96	943.50	942.98	942.41
MW-29	961.73	963.47	943.73	928.73	<u>938.24</u>	938.62	938.64	939.21	942.24	941.48	942.07
MW-30	977.84	979.49	947.84	932.84	<u>940.62</u>	940.84	940.92	941.10	943.30	943.75	943.65
MW-30P	977.94	979.69	907.94	902.94	<u>934.27</u>	935.18	935.31	936.41	938.07	937.66	936.89
MW-31	967.90	969.70	942.90	927.90	<u>936.63</u>	937.00	936.94	937.85	939.76	940.60	940.56

NM- Not Measured

Note: Overall groundwater elevation high and low is based off of monitoring wells only.

930.79 - Indicates lowest water level

934.23 - Indicates highest water level

Table 6
Groundwater Baseline Sampling Summary
Adams County Landfill Vertical Expansion
Alternative Geotechnical Investigation Program

2016 Feasibility Sampling																
ES/PAL		MW-31														
Public Health Parameters		12/17/15	01/01/16	02/01/16	03/31/16	05/26/16	06/27/16	08/01/16	09/01/16	09/07/18	03/06/19	09/05/19	03/05/20	09/03/20	03/03/21	09/07/21
Arsenic, diss., µg/L		<0.50	<0.50	<0.50	<0.50	--	--	--	--	--	--	--	--	--	--	--
Barium, diss., mg/L*		0.0395	0.0179	0.0197	0.0179	--	--	--	--	--	--	--	--	--	--	--
Chromium, diss., µg/L		4.1	2.3	2.6	2.1	--	--	--	--	--	--	--	--	--	--	--
Fluoride, diss., mg/L		0.17	0.16	0.17	0.12	--	--	--	--	--	--	--	--	--	--	--
Mercury, diss., µg/L		0.06	0.067	<0.020	<0.020	--	--	--	--	--	--	--	--	--	--	--
Silver, diss,µg/L		<2.0	<2.0	<2.0	<2.0	--	--	--	--	--	--	--	--	--	--	--
Public Welfare Parameters																
Copper, diss., µg/L		12.1	2.8	<1.6	<1.6	--	--	--	--	--	--	--	--	--	--	--
Manganese, diss., mg/L		0.008	0.0049	0.0045	0.0046	--	--	--	--	--	--	--	--	--	--	--
Zinc, diss., mg/L		0.0489	<0.0019	0.0019	<0.0019	--	--	--	--	--	--	--	--	--	--	--
Detection Parameters																
Alkalinity, sol., mg/L		NS/390	280	280	280	280	280	280	290	290	240	260	240	230	210	210
Boron, diss., µg/L		1000/200	11.2	9.6	7.4	10.5	--	--	--	--	--	--	--	--	--	--
Cadmium, diss., µg/L		5/0.5	0.4	<0.26	<0.26	<0.26	--	--	--	--	--	--	--	--	--	--
Chloride, diss., mg/L		250/125 mg/L	1.6	2.6	1.9	1.7	2.2	2.5	2.2	1.5	1.6	1.7	1.4	1.2	2.5	<1.0
COD, sol., mg/L		NS	<15	15	<15	<14	--	--	--	--	--	--	--	--	--	--
Conductivity, field at 25°C		NS/570	326	314	317	373	396	408	417	405	467	457	431	431	387	390
Cyanide, diss., µg/L		200/40 µg/L	--	--	--	<6.0	<6.0	<6.0	<6.0	--	--	--	--	--	--	--
pH, field, S.U.		NS	6.92	7.01	7.03	7.32	7.03	8.28	7.34	7.83	6.72	7.23	7.61	6.61	7.19	6.62
temp., field degrees C		NS	9.6	7.2	9.5	9.2	9.8	8.3	9.5	8.4	10.12	9.77	10.08	9.54	10.26	10.29
Ground water elevation		NS	936.63	937.00	936.94	937.85	939.76	940.60	940.56	940.32	944.62	946.33	950.58	949.52	948.98	947.99
Hardness mg/L		NS/360	242	227	245	254	273	249	248	289	241	249	226	222	225	201
Lead, diss., µg/L		15/1.5	97.9	<1.5	<1.5	<1.5	<1.5	<1.5	<1.3	<1.3	--	--	--	--	--	--
NO3+NO2 as N, mg/L		10/2 mg/L	<0.070	0.093	<0.070	<0.045	--	--	--	--	--	--	--	--	--	--
Selenium, diss., µg/L		50/10	<12	<1.2	<1.2	--	--	--	--	--	--	--	--	--	--	--
Sulfate, diss., mg/L		250/125 mg/L	15	15	15	15	--	--	--	--	--	--	--	--	--	--
VOCs	Varies	ND	ND	--	--	--	--	--	--	--	ND	--	ND	--	Chloromethane 0.65	--

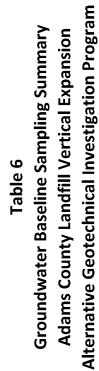
NS- No Standard

ND- No Detect

-- Not Sampled

10 Indicates an ES Exceedance

0.026 Indicates a PAL Exceedance



Groundwater Baseline Sampling Summary
Adams County Landfill Vertical Expansion
Alternative Geotechnical Investigation Program

NS- No Standard
ND- No Detect
-- Not Sampled
10 Indicates an ES Exceedance
0.026 Indicates a PAL Exceedance

Table 6
Groundwater Baseline Sampling Summary
Adams County Landfill Vertical Expansion
Alternative Geotechnical Investigation Program

Public Health Parameters	ES/PAL µg/L	Historic Sampling										MW-1P										Semiannual Sampling									
		9/14/87	12/17/87	3/2/88	6/8/88	3/11/13	9/17/13	3/19/14	9/23/14	3/17/15	9/9/15	3/16/16	9/19/16	3/9/17	9/6/17	3/7/18	9/6/18	3/5/19	9/4/19	3/4/20	9/2/20	3/2/21	9/7/2021								
Arsenic, diss., µg/L	10/1	<5.0	BDL	BDL	BDL	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--								
Barium, diss. mg/L	2/0.4 mg/L	<1.0	BDL	BDL	BDL	--	--	--	--	<1.0	--	--	--	--	--	--	--	--	--	--	--	--	--								
Chromium, diss., µg/L	100/10	<5.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--								
Fluoride, diss., mg/L	4/0.8 mg/L	0.1	0.4	0.4	BDL	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--								
Mercury, diss., µg/L	2/0.2	<0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--								
Silver, diss.µg/L	50/10	<5.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--								
Public Welfare Parameters																															
Copper, diss., µg/L	1300/130	<80	--	BDL	BDL	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--								
Manganese, diss., mg/L	0.05/0.025 mg/L	<0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--								
Zinc, diss., mg/L	5/2.5 mg/L	<0.05	BDL	0.015	BDL	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--								
Detection Parameters																															
Alkalinity, sol., mg/L	NS/220	100	120	110	120	120	120	110	100	110	110	110	110	110	130	130	130	120	140	140	130	140	130								
Cadmium, diss. µg/L	5/0.5	3.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--								
Chloride, diss. µg/L	250/125 mg/L	1	BDL	BDL	BDL	2.6	2.7	2.1	3	3.4	2.8	1.9	2.5	1.7	3.6	2.6	1.8	2.3	2	1.7	1.4	1.7	1.5								
COD, sol., mg/L	NS/30	15	25	BDL	BDL	<13	<13	<12	23	<15	<15	<14	<14	--	--	--	--	--	--	--	--	--	--								
Conductivity, field at 25°C	NS/610	233	224	236	228	489	284	324	244	310	229	216	221	209	248	241	239	273	265	274	680	275	284								
Cyanide, diss., µg/L	200/40 µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--								
pH, field, S.U.	NS	7.08	7.38	7.27	7.10	6.51	6.87	7.14	7.69	7.34	8.09	8.21	8.54	8.38	8.32	7.3	6.38	6.96	7.74	6.78	7.21	7.17	7.14								
temp., field degrees C	NS	--	--	--	--	8.3	10.2	9.6	10.4	9.4	10.8	9.11	10.13	8.85	10.32	9.21	10.25	9.86	10.25	9.36	10.29	9.08	10.12								
Ground water elevation	NS	931.77	930.60	930.46	931.07	930.01	931.41	930.36	932.92	931.75	931.08	932.21	933.89	935.79	935.53	933.07	934.83	935.77	937.96	936.74	936.36	935.83	936.42								
Hardness mg/L	NS/300	130	140	NR	130	122	113	106	111	129	115	99.1	111	88.4	120	121	111	137	130	140	143	142	142								
Lead, diss., µg/L	15/1.5	<5.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--								
NO3+NO2 as N, mg/L	10/2 mg/L	0.45	1.0	0.88	0.56	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--								
Selenium, diss., µg/L	50/10	<5.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--								
Sulfate, diss., mg/L	250/125 mg/L	17	14	11	9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--								
VOCs	Varies	ND	--	--	--	ND	--	ND	--	ND	--	ND	--	ND	--	--	ND	--	ND	--	PCE - 1.9 µg/L	--	--								
																					Toluene 0.46 µg/L	--	--								

NS- No Standard

ND- No Detect

NR- Not Reported in GEMS

-- Not Sampled

10 Indicates an ES Exceedance

0.026 Indicates a PAL Exceedance

NS- No Standard
ND- No Detect
-- Not Sampled
10 Indicates an ES Exceedance
0.026 Indicates a PAL Exceedance

Table 6
Groundwater Baseline Sampling Summary
Adams County Landfill Vertical Expansion
Alternative Geotechnical Investigation Program

ES/PAL µg/L		MW-2P																											
Public Health Parameters		Historic Sampling								2016 Feasibility Sampling								Semiannual Sampling											
		9/14/87	12/17/87	3/2/88	6/8/88	3/12/13	9/18/13	3/20/14	9/24/14	3/18/15	9/10/15	3/17/16	9/20/16	6/27/16	8/1/16	9/1/16	10/11/16	3/9/17	9/6/17	3/8/18	9/6/18	3/16/19	9/5/19	3/5/20	9/3/20	3/3/21	9/7/21		
Arsenic, diss., µg/L	10/1	<5.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL		
Barium, diss., mg/L	2/0.4 mg/L	<1.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL		
Chromium, diss., µg/L	100/10	<5.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL		
Fluoride, diss., mg/L	4/0.8 mg/L	<0.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL		
Mercury, diss., µg/L	2/0.2	<0.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL		
Silver, diss.,µg/L	50/10	<5.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL		
Public Welfare Parameters																													
Copper, diss., µg/L	1300/130	<80.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL		
Manganese, diss., mg/L	0.05/0.025 mg/L	<0.05	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL		
Zinc, diss., mg/L	5/2.5 mg/L	<0.05	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL		
Detection Parameters																													
Alkalinity, sol., mg/L	NS/220	100	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL		
Cadmium, diss., µg/L	5/0.5	1.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL		
Chloride, diss., mg/L	250/125 mg/L	1	BDL	BDL	BDL	2.8	2	1.4	2.3	2	2.2	1.7	BDL	<0.26	<0.40	<0.40	<0.40	1.6	1.9	1.7	1.6	1.6	1.8	1.7	1.5	1.3	1.1		
COD, sol. mg/L	NS/31	10	15	BDL	BDL	<13	<13	<12	<15	47	130	24	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL		
Conductivity, field at 25°C	NS/440	217	225	234	222	278	276	406	296	318	256	270	277	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL		
Cyanide, diss., µg/L	200/40 µg/L	NS	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	<6.0	<6.0	<6.0	<6.0	8.38	8.15	7.26	6.36	7.25	7.72	6.64	7.28	7.37	7.03		
pH, field, S.U.	NS	7.14	7.04	7.11	7.01	6.83	6.81	6.93	7.82	6.7	7.9	8.08	8.48	BDL	BDL	BDL	BDL	9.09	10.43	9.27	10.05	9.66	10.39	9.69	10.26	9.52	10.25		
temp., field degrees C	NS	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	9.09	10.43	9.27	10.05	9.66	10.39	9.69	10.26	9.52	10.25		
Ground water elevation	NS	935.36	934.13	933.86	934.62	932.95	935.15	933.47	936.55	935.54	934.66	935.30	937.40	937.37	936.62	936.64	939.87	939.62	939.51	936.87	938.65	939.67	942.46	941.23	939.95	940.28			
Hardness mg/L	NS/310	120	140	NR	130	128	130	119	128	151	129	119	143	BDL	BDL	BDL	BDL	128	155	148	133	142	138	149	137	148	149		
Lead, diss., µg/L	15/1.5	<5.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	<1.5	<1.3	<1.3	<1.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL		
NO3+NO2 as N, mg/L	10/2 mg/L	<0.05	0.22	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL		
Selenium, diss., µg/L	50/10	<5.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	<1.2	<1.0	<1.0	<1.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL		
Sulfate, diss., mg/L	250/125 mg/L	11	14	12	11	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL		
VOCs	Varies	ND	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL		

NS- No Standard

ND- No Detect

BDL- Below an unknown detection limit

-- Not Sampled

10 Indicates an ES Exceedance

0.026 Indicates a PAL Exceedance

Table 6
Groundwater Baseline Sampling Summary
Adams County Landfill Vertical Expansion
Alternative Geotechnical Investigation Program

Public Health Parameters	ES/PAL µg/L	MW-3																	
		Historic Sampling									2016 Feasibility Sampling								
		7/1/86	10/1/86	12/30/86	3/17/87	6/24/87	9/14/87	3/12/13	9/18/13	3/20/14	9/24/14	3/18/15	9/10/15	3/17/16	9/20/16	6/27/16	8/1/16	9/1/16	10/11/16
Arsenic, diss., µg/L	10/1	<5.0	<5.0	<5.0	<5.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium, diss., mg/L	2/0.4 mg/L	<0.50	<1.0	<1.0	<1.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium, diss., µg/L	100/10	<5.0	<5.0	<5.0	<5.0	--	--	--	--	--	--	--	--	--	--	<1.0	<2.0	<2.0	<2.0
Fluoride, diss., mg/L	4/0.8 mg/L	<0.1	<0.1	0.19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury, diss., µg/L	2/0.2	<1.0	<1.0	<0.5	<0.5	--	--	--	--	--	--	--	--	--	--	0.090	0.043	0.096	<0.020
Silver, diss., µg/L	50/10	<5.0	<5.0	<5.0	<5.0	--	--	--	--	--	--	--	--	--	--	<2.0	<2.5	<2.5	<2.5
Public Welfare Parameters																			
Copper, diss., µg/L	1300/130	<80	<80	<100	<80	--	--	--	--	--	--	--	--	--	--	<1.6	<3.9	<3.9	<3.9
Manganese, diss., mg/L	0.05/0.025 mg/L	<0.05	--	--	--	--	<0.05	--	--	--	--	--	--	--	--	0.0018	<0.0022	0.0029	<0.0022
Zinc, diss., mg/L	5/2.5 mg/L	<0.05	<0.05	<0.05	<0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Detection Parameters																			
Alkalinity, sol., mg/L	NS/290	159	180	170	160	180	160	240	240	230	230	240	250	260	280	--	--	--	--
Cadmium, diss., µg/L	5/0.5	<1.0	<1.0	<1.0	<1.0	--	--	--	--	--	--	--	--	--	--	<0.26	<0.40	<0.40	<0.40
Chloride, diss., mg/L	250/125 mg/L	1	54	<5.0	<1.0	<1.0	2.4	2.2	2.2	1.4	2.2	1.8	1.5	2	1.7	--	--	--	--
COD, sol., mg/L	NS/32	59	<5.0	10	<5.0	<5.0	<5.0	27	<13	95	17	<15	<15	110	35	--	--	--	--
Conductivity, field at 25°C	NS/590	--	--	--	--	319	295	430	428	588	478	502	454	471	487	--	--	--	--
Cyanide, diss., µg/L	200/40 µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<6.0	<6.0	<6.0	<6.0
pH, field, S.U.	NS	--	--	--	--	7.16	7.20	6.92	6.85	6.91	7.53	6.83	7.59	7.77	8.25	--	--	--	--
temp., field degrees C	NS	--	--	--	--	--	--	8.5	10.5	9.3	9.8	9.2	10.8	9.01	10.24	--	--	--	--
Ground water elevation	NS	937.62	938.38	938.46	936.61	934.90	934.90	932.41	934.65	932.96	936.50	935.21	934.23	935.31	936.32	937.02	936.23	936.37	939.82
Hardness mg/L	NS/390	193	190	170	200	210	232	224	224	218	237	275	233	215	260	--	--	220	258
Lead, diss., µg/L	15/1.5	<5.0	<5.0	<5.0	<5.0	--	--	--	--	--	--	--	--	--	--	1.7	<1.3	<1.3	<1.3
NO3+NO2 as N, mg/L	10/2 mg/L	0.07	<0.05	<0.05	<0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium, diss., µg/L	50/10	<3.0	<3.0	<3.0	<3.0	--	--	--	--	--	--	--	--	--	--	<1.2	<1.0	<1.0	<7.0
Sulfate, diss., mg/L	250/125 mg/L	19	13	12	14	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VOCs	Varies	Dichloromethane 0.2 µg/L	--	--	--	--	--	ND	--	ND	--	ND	--	ND	--	--	--	--	--
																		ND	--

NS- No Standard

ND- No Detect

-- Not Sampled

10 Indicates an ES Exceedance

0.026 Indicates a PAL Exceedance

Table 6
Groundwater Baseline Sampling Summary
Adams County Landfill Vertical Expansion
Alternative Geotechnical Investigation Program

		MW-3P																
		ES/PAL µg/L	Historic Sampling					2016 Feasibility Sampling										
			7/1/86	10/1/86	12/30/86	3/17/87	6/24/87	9/14/87	6/27/16	8/1/16	9/1/16	10/11/16						3/12/17
Public Health Parameters		Arsenic, diss., µg/L	10/1	<5.0	<5.0	<5.0	<1.0	--	--	--	--	--	--	--	--	--	--	--
		Barium, diss., mg/L	2/0.4 mg/L	<0.50	<1.0	<1.0	<1.0	--	--	--	--	--	--	--	--	--	--	--
		Chromium, diss., µg/L	100/10	<5.0	<5.0	<5.0	<5.0	--	--	--	--	<1.0	<2.0	<2.0	--	--	--	--
		Fluoride, diss., mg/L	4/0.8 mg/L	<0.1	<0.1	<0.1	0.19	--	--	--	--	--	--	--	--	--	--	--
		Mercury, diss., µg/L	2/0.2	<1.0	<1.0	<0.5	<0.5	--	--	--	--	0.091	0.052	0.087	<0.020	--	--	--
		Silver, diss. µg/L	50/10	<5.0	<5.0	<5.0	<5.0	--	--	--	--	<2.0	<2.5	<2.5	<2.5	--	--	--
Public Welfare Parameters		Copper, diss., µg/L	1300/130	<80	<80	<100	<80	--	--	--	--	<1.6	<3.9	<3.9	<3.9	--	--	--
		Manganese, diss., mg/L	0.05/0.025 mg/L	1.5	0.11	--	--	--	<0.05	--	--	<0.0016	<0.0022	<0.0022	<0.0022	--	--	--
		Zinc, diss., mg/L	5/2.5 mg/L	<0.05	<0.05	<0.05	<0.05	--	--	--	--	--	--	--	--	--	--	--
Detection Parameters		Alkalinity, sol., mg/L	NS/230	77	100	100	70	100	140	--	--	--	--	--	100	88	90	82
		Cadmium, diss., µg/L	5/0.5	<1.0	<1.0	<1.0	<1.0	--	--	--	--	<0.26	<0.40	<0.40	<0.40	--	--	--
		Chloride, diss., mg/L	250/125 mg/L	<1.0	1	2	<1.0	<1.0	<1.0	--	--	--	--	--	3.2	7.3	9.2	8.1
		COD, sol., mg/L	NS/30	226	20	23	10	<5.0	<5.0	--	--	--	--	--	--	--	--	--
		Conductivity, field at 25°C	NS/450	--	--	--	--	168	169	--	--	--	--	--	186	174	178	170
		Cyanide, diss., µg/L	200/40 µg/L	--	--	--	--	--	--	--	--	<6.0	<6.0	<6.0	<6.0	--	--	--
		pH, field, S.U.	NS	--	--	--	--	7.07	6.84	--	--	--	--	--	8.44	8.46	7.81	6.38
		temp., field degrees C	NS	--	--	--	--	--	--	--	--	--	--	--	9.12	10.4	9.13	10.21
		Ground water elevation	NS	937.41	937.38	937.96	936.46	936.40	934.75	936.96	936.18	936.32	939.77	939.59	939.30	936.42	938.55	939.38
		Hardness mg/L	NS/320	86	90	100	80	110	120	--	--	--	--	--	79.3	81.8	87.5	74.7
		Lead, diss., µg/L	15/1.5	<5.0	<5.0	<5.0	<5.0	--	--	1.9	<1.3	<1.3	<1.3	--	--	--	--	--
		NO3+NO2 as N, mg/L	10/2 mg/L	<0.05	0.05	<0.05	<0.05	--	--	--	--	--	--	--	--	--	--	--
		Selenium, diss., µg/L	50/10	<3.0	<3.0	<3.0	<3.0	--	--	<1.2	<1.0	<1.0	<7.0	--	--	--	--	--
		Sulfate, diss., mg/L	250/125 mg/L	8	9	8	10	--	--	--	--	--	--	--	--	--	--	--
VOCs		Dichloromethane 0.2 µg/L	Varies	--	--	--	--	--	--	--	--	--	--	--	ND	--	ND	--

NS- No Standard
 ND- No Detect
 -- Not Sampled
10 Indicates an ES Exceedance
0.026 Indicates a PAL Exceedance

Table 6
Groundwater Baseline Sampling Summary
Adams County Landfill Vertical Expansion
Alternative Geotechnical Investigation Program

Public Health Parameters	ES/PAL µg/L	MW-6																								
		Historic Sampling							Semiannual Sampling																	
		7/1/86	10/1/86	12/30/86	3/17/87	6/24/87	9/14/87	3/11/13	9/17/13	3/19/14	9/23/14	3/17/15	9/9/15	3/16/16	9/19/16	3/9/17	9/6/17	3/7/18	9/5/18	3/5/19	9/4/19	3/4/20	9/2/20	3/2/21	9/7/21	
Arsenic, diss., µg/L	10/1	<5.0	<5.0	<5.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Barium, diss., mg/L	2/0.4 mg/L	<0.5	<1.0	<1.0	<1.0	--	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
Chromium, diss., µg/L	100/10	<5.0	<5.0	<5.0	<5.0	--	--	--	--	--	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	
Fluoride, diss., mg/L	4/0.8 mg/L	<0.1	<0.1	<0.1	0.19	--	--	--	--	--	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	
Mercury, diss., µg/L	2/0.2	<1.0	<1.0	<0.5	<0.5	--	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
Silver, diss., µg/L	50/10	<5.0	<5.0	<5.0	<5.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Public Welfare Parameters																										
Copper, diss., µg/L	1300/130	<50	<80	<100	<80	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Manganese, diss., mg/L	0.05/0.025 mg/L	<0.05	<0.05	<0.05	<0.05	--	<0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Zinc, diss., mg/L	5/2.5 mg/L	<0.05	<0.05	<0.05	<0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Detection Parameters																										
Alkalinity, sol., mg/L	NS/230	70	80	82	70	100	90	200	210	210	200	200	220	240	240	220	190	270	200	140	130	150	140	150	130	
Cadmium, diss., µg/L	5/0.5	<1.0	<1.0	<1.0	<1.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Chloride, diss., mg/L	250/125 mg/L	<1.0	1	4	<1.0	<1.0	<1.0	3.3	3.3	3.5	3.8	4	3.5	2.5	3.7	3.2	3	4.7	3.1	2.3	2	1.9	2.1	2	1.3	
COD, sol., mg/L	NS/28	10	<5.0	14	14	<5.0	<5.0	<13	<13	<12	19	<15	<15	<14	<14	--	--	--	--	--	--	--	--	--	--	
Conductivity, field at 25°C	NS/470	--	--	--	--	155	198	712	347	453	462	426	423	419	435	386	326	450	365	295	244	291	301	302	282	
Cyanide, diss., µg/L	200/40 µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
pH, field, S.U.	NS	--	--	--	--	7.15	7.00	6.88	6.80	7.02	7.47	7.10	7.82	8.05	8.32	8.28	8.1	7.38	6.37	7.12	7.68	6.76	7.18	7.47	7.02	
Temp., field degrees C	NS	--	--	--	--	--	--	8.5	10.4	9.7	10.0	9.0	9.5	9.05	10.36	9.29	10.37	9.1	10.25	10.03	10.25	9.23	10.27	9.19	10.19	
Ground water elevation	NS	939.68	941.33	943.75	941.20	940.62	939.08	933.63	938.67	934.69	939.29	938.23	938.21	938.48	940.42	943.45	944.77	940.44	942.97	944.71	950.50	946.94	946.94	944.96	946.40	
Hardness, mg/L	NS/270	91	90	90	80	110	140	213	197	209	212	255	214	203	227	168	166	243	175	158	120	149	156	159	144	
Lead, diss., µg/L	15/1.5	<5.0	<5.0	<5.0	<5.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
NO3+NO2 as N, mg/L	10/2 mg/L	<0.05	<0.05	<0.05	<0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Selenium, diss., µg/L	50/10	<3.0	<3.0	<3.0	<3.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Sulfate, diss., mg/L	250/125 mg/L	7	7	6	8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
VOCs																										
Vaires	ND	--	--	--	--	--	--	Dichloromethane 0.85 µg/L		--	--	ND	--	ND	--	ND	--	ND	--	ND	--	ND	--	ND	--	
	--	--	--	--	--	--	--	Acetone 0.0082 mg/L		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	

NS- No Standard

ND- No Detect

-- Not Sampled

10 Indicates an ES Exceedance

0.026 Indicates a PAL Exceedance

NS- No Standard
ND- No Detect
-- Not Sampled
10 Indicates an ES Exceedance
0.026 Indicates a PAL Exceedance

Table 6
Groundwater Baseline Sampling Summary
Adams County Landfill Vertical Expansion
Alternative Geotechnical Investigation Program

	ES/PAL µg/L	MW-7																
		Historic Sampling								Semiannual Sampling								
		7/1/86	10/1/86	12/30/86	3/17/87	6/24/87	9/14/87	3/9/217	9/6/17	3/7/18	9/5/18	3/5/19	9/4/19	3/4/20	9/2/20	3/2/21	9/72021	
Public Health Parameters		Arsenic, diss., µg/L	10/1	<5.0	<5.0	<5.0	<5.0	---	---	---	---	---	---	---	---	---	---	
		Barium, diss., mg/L	2/0.4 mg/L	<0.5	<1.0	<1.0	<1.0	---	---	---	---	---	---	---	---	---	---	
		Chromium, diss., µg/L	100/10	<5.0	<5.0	<5.0	<5.0	---	---	---	---	---	---	---	---	---	---	
		Fluoride, diss., mg/L	4/0.8 mg/L	<0.1	<0.1	0.1	0.25	---	---	---	---	---	---	---	---	---	---	
		Mercury, diss., µg/L	2/0.2	<1.0	<1.0	<0.5	<0.5	---	---	---	---	---	---	---	---	---	---	
		Silver, diss.µg/L	50/10	<5.0	<5.0	<5.0	<5.0	---	---	---	---	---	---	---	---	---	---	
Public Welfare Parameters																		
		Copper, diss., µg/L	1300/130	<50	<80	<100	<80	---	---	---	---	---	---	---	---	---	---	
		Manganese, diss., mg/L	0.05/0.025 mg/L	<0.05	<0.05	---	---	<0.05	---	---	---	---	---	---	---	---	---	
		Zinc, diss., mg/L	5/2.5 mg/L	<0.05	<0.05	<0.05	<0.05	---	---	---	---	---	---	---	---	---	---	
Detection Parameters																		
		Alkalinity, sol., mg/L	NS/290	132	140	150	140	160	140	250	260	250	240	220	200	190	180	
		Cadmium, diss., µg/L	5/0.5	<1.0	<1.0	4	<1.0	---	---	---	---	---	---	---	---	---	---	
		Chloride, diss., mg/L	250/125 mg/L	<1.0	1	4	<1.0	<1.0	<1.0	0.92	2.9	2.8	1.7	2.1	2.8	4	3.2	
		COD, sol., mg/L	NS/30	<5.0	<5.0	14	21	7	<5.0	---	---	---	---	---	---	---	---	
		Conductivity, field at 25°C	NS/560	--	--	--	--	249	310	413	428	405	399	385	379	386	362	
		Cyanide, diss., µg/L	200/40 µg/L	--	--	--	--	---	---	---	---	---	---	---	---	---	---	
		pH, field, S.U.	NS	--	--	--	--	7.09	6.70	8.24	7.67	7.41	6.39	7.65	6.72	7.08	6.97	
		temp., field degrees C	NS	--	--	--	--	---	---	---	---	---	---	---	---	---	---	
		Ground water elevation	NS	940.80	939.47	941.23	939.85	940.06	938.35	942.03	943.24	940.37	941.72	947.22	945.52	945.48	944.52	
		Hardness mg/L	NS/370	160	170	150	150	170	190	182	222	218	198	190	195	202	184	
		Lead, diss., µg/L	15/1.5	<5.0	<5.0	<5.0	<5.0	---	---	---	---	---	---	---	---	---	---	
		NO3+NO2 as N, mg/L	10/2 mg/L	0.14	0.22	0.27	0.10	---	---	---	---	---	---	---	---	---	---	
		Selenium, diss., µg/L	50/10	<3.0	<3.0	<3.0	<3.0	---	---	---	---	---	---	---	---	---	---	
		Sulfate, diss., mg/L	250/125 mg/L	10	11	10	13	---	---	---	---	---	---	---	---	---	---	
		VOCs	Varies	ND	--	--	--	---	---	ND	ND	ND	ND	ND	ND	ND	ND	

NS- No Standard

ND- No Detect

-- Not Sampled

10 Indicates an ES Exceedance

0.026 Indicates a PAL Exceedance

Table 6

Groundwater Baseline Sampling Summary
Adams County Landfill Vertical Expansion
Alternative Geotechnical Investigation Program



Public Health Parameters		ES/PAL µg/L	MW-7P													
			Historic Sampling				Semiannual Sampling									
			7/1/86	10/1/86	12/30/86	3/9/17	9/6/17	3/7/18	9/5/18	3/5/19	9/4/19	3/4/20	9/2/20	3/2/21	9/7/2021	
Arsenic, diss., µg/L	10/1	<5.0	<5.0	<5.0	--	--	--	--	--	--	--	--	--	--	--	
Barium, diss., mg/L	2/0.4 mg/L	<0.5	<1.0	<1.0	--	--	--	--	--	--	--	--	--	--	--	
Chromium, diss., µg/L	100/10	<5.0	<5.0	<5.0	--	--	--	--	--	--	--	--	--	--	--	
Fluoride, diss., mg/L	4/0.8 mg/L	0.14	<0.1	0.1	--	--	--	--	--	--	--	--	--	--	--	
Mercury, diss., µg/L	2/0.2	<1.0	<1.0	<0.5	--	--	--	--	--	--	--	--	--	--	--	
Silver, diss.µg/L	50/10	<5.0	<5.0	<5.0	--	--	--	--	--	--	--	--	--	--	--	
Public Welfare Parameters																
Copper, diss., µg/L	1300/130	<50	<80	<100	--	--	--	--	--	--	--	--	--	--	--	
Manganese, diss., mg/L	0.05/0.025 mg/L	0.06	0.08	--	--	--	--	--	--	--	--	--	--	--	--	
Zinc, diss., mg/L	5/2.5 mg/L	<0.05	<0.05	<0.05	--	--	--	--	--	--	--	--	--	--	--	
Detection Parameters																
Alkalinity, sol., mg/L	NS/250	115	100	110	120	130	130	140	110	120	110	110	100	95		
Cadmium, diss., µg/L	5/0.5	<1.0	<1.0	<1.0			--	--	--	--	--	--	--	--	--	
Chloride, diss., mg/L	250/125 mg/L	<1.0	1	4	2	1.2	1.1	1	<1.0	1.1	1.1	<1.0	1	<1.0		
COD, sol., mg/L	NS/29	<5.0	6	13			--	--	--	--	--	--	--	--	--	
Conductivity, field at 25°C	NS/490	--	--	--	214	235	223	241	235	219	231	227	211	210		
Cyanide, diss., µg/L	200/40 µg/L	--	--	--			--	--	--	--	--	--	--	--	--	
pH, field, S.U.	NS	--	--	--	8.37	8.33	7.33	6.37	7.12	7.67	6.68	7.05	7.54	6.91		
temp., field degrees C	NS	--	--	--	9.39	10.31	9.2	10.16	9.52	10.18	9.71	10.17	9.39	10.25		
Ground water elevation	NS	933.28	933.51	933.64	935.35	934.98	932.45	934.37	935.19	937.48	936.15	936.65	935.11	935.91		
Hardness mg/L	NS/290	99	130	120	92.2	117	117	116	120	107	116	114	107	105		
Lead, diss., µg/L	15/1.5	<5.0	<5.0	<5.0	--	--	--	--	--	--	--	--	--	--	--	
NO3+NO2 as N, mg/L	10/2 mg/L	0.07	0.06	<0.05	--	--	--	--	--	--	--	--	--	--	--	
Selenium, diss., µg/L	50/10	<3.0	<3.0	<3.0	--	--	--	--	--	--	--	--	--	--	--	
Sulfate, diss., mg/L	250/125 mg/L	13	13	10	--	--	--	--	--	--	--	--	--	--	--	
VOCs	Varies	ND	--	--	ND	--	ND	--	ND	--	ND	--	ND	--	--	

NS- No Standard

ND- No Detect

-- Not Sampled

10 Indicates an ES Exceedance0.026 Indicates a PAL Exceedance

Table 6
Groundwater Baseline Sampling Summary
Adams County Landfill Vertical Expansion
Alternative Geotechnical Investigation Program

Public Health Parameters	ES/PAL µg/L	MW-9																	
		Historic Sampling									Semiannual Sampling								
		7/1/86	10/1/86	12/30/86	3/17/87	6/24/87	9/14/87	3/9/17	9/6/17	3/7/18	9/5/18	3/5/19	9/4/19	3/4/20	9/2/20	3/2/21	9/7/21		
Arsenic, diss., µg/L	10/1	<5.0	<5.0	<5.0	<5.0	--	--	--	--	--	--	--	--	--	--	--	--		
Barium, diss., mg/L	2/0.4 mg/L	<0.5	<1.0	<1.0	<1.0	--	--	--	--	--	--	--	--	--	--	--	--		
Chromium, diss., µg/L	100/10	<5.0	<5.0	<5.0	<5.0	--	--	--	--	--	--	--	--	--	--	--	--		
Fluoride, diss., mg/L	4/0.8 mg/L	<0.1	<0.1	0.1	0.15	--	--	--	--	--	--	--	--	--	--	--	--		
Mercury, diss., µg/L	2/0.2	<1.0	<1.0	<0.5	<0.5	--	--	--	--	--	--	--	--	--	--	--	--		
Silver, diss. µg/L	50/10	<5.0	<5.0	<5.0	<5.0	--	--	--	--	--	--	--	--	--	--	--	--		
Public Welfare Parameters																			
Copper, diss., µg/L	1300/130	<50	<80	<100	<80	--	--	--	--	--	--	--	--	--	--	--	--		
Manganese, diss., mg/L	0.05/0.025 mg/L	<0.05	<0.05	--	--	<0.05	<0.05	--	--	--	--	--	--	--	--	--	--		
Zinc, diss., mg/L	5/2.5 mg/L	<0.05	<0.05	<0.05	<0.05	--	--	--	--	--	--	--	--	--	--	--	--		
Detection Parameters																			
Alkalinity, sol., mg/L	NS	178	180	200	170	200	170	320	310	300	300	250	260	240	220	220	200		
Cadmium, diss., µg/L	5/0.5	<1.0	<1.0	<1.0	<1.0	--	--	--	--	--	--	--	--	--	--	--	--		
Chloride, diss., mg/L	250/125 mg/L	<1.0	1	4	<1.0	<1.0	1	2.8	3	2.5	2.4	2	1.9	1.5	1.6	1.7	1.7		
COD, sol., mg/L	NS	16	<5.0	<5.0	<5.0	8	<5.0	--	--	--	--	--	--	--	--	--	--		
Conductivity, field at 25°C	NS	--	--	--	--	275	345	516	501	464	492	467	460	437	426	405	390		
Cyanide, diss., µg/L	200/40 µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
pH, field, S.U.	NS	--	--	--	--	7.18	7.05	8.23	7.76	7.43	6.38	7.15	7.63	6.67	7.9	7.39	6.81		
temp., field degrees C	NS	--	--	--	--	--	--	8.63	10.13	9.35	10.24	9.24	10.13	9.54	10.26	9.6	10.24		
Ground water elevation	NS	938.61	938.92	940.42	938.89	938.51	936.94	943.33	942.89	939.36	941.65	944.45	949.67	946.81	945.42	944.71	945.49		
Hardness mg/L	NS	198	200	180	180	200	210	233	263	255	247	259	226	226	224	214	201		
Lead, diss., µg/L	15/1.5	<5.0	<5.0	<5.0	<5.0	--	--	--	--	--	--	--	--	--	--	--	--		
NO3+NO2 as N, mg/L	10/2 mg/L	<0.05	<0.05	<0.05	<0.05	--	--	--	--	--	--	--	--	--	--	--	--		
Selenium, diss., µg/L	50/10	<3.0	<3.0	<3.0	<3.0	--	--	--	--	--	--	--	--	--	--	--	--		
Sulfate, diss., mg/L	250/125 mg/L	7	9	9	12	--	--	--	--	--	--	--	--	--	--	--	--		
VOCs	Varies	ND	--	--	--	--	--	ND	--	ND	--	ND	--	ND	--	ND	--		

NS- No Standard
 ND- No Detect
 -- Not Sampled
10 Indicates an ES Exceedance
0.026 Indicates a PAL Exceedance

Table 6
Groundwater Baseline Sampling Summary
Adams County Landfill Vertical Expansion
Alternative Geotechnical Investigation Program



Public Health Parameters	ES/PAL µg/L	MW-16																											
		Historic Sampling								2016 Feasibility Sampling																			
		10/1/86	12/30/86	3/17/87	6/24/87	9/14/87	3/17/94	4/18/94	5/24/94	6/27/94	7/18/94	9/9/15	3/16/16	9/19/16	6/27/16	8/1/16	9/1/16	10/11/16	3/9/17	9/6/17	3/7/18	9/5/18	3/5/19	9/4/19	3/4/20	9/2/20	3/2/21		
Antimony, diss., µg/L	6/1.2	--	--	--	--	--	BDL	BDL	BDL	BDL	BDL	BDL	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Arsenic, diss., µg/L	10/1	<5.0	<5.0	<5.0	<5.0	<5.0	BDL	BDL	BDL	BDL	BDL	BDL	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Barium, diss., mg/L	2/0.4 mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	BDL	BDL	BDL	BDL	BDL	BDL	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Beryllium, diss., µg/L	4/0.4	--	--	--	--	--	BDL	BDL	BDL	BDL	BDL	BDL	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Chromium, diss., µg/L	100/10	<5.0	<5.0	<5.0	<5.0	<5.0	1	BDL	BDL	BDL	BDL	BDL	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Cobalt, diss., µg/L	40/8	--	--	--	--	--	BDL	BDL	BDL	BDL	BDL	BDL	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Fluoride, diss., mg/L	4/0.8 mg/L	<0.1	<0.1	0.19	<0.1	<0.1	BDL	BDL	BDL	BDL	BDL	BDL	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Mercury, diss., µg/L	2/0.2	<1.0	<0.5	<0.5	<0.2	<0.2	BDL	BDL	BDL	BDL	BDL	BDL	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Nickel, diss., µg/L	100/20	--	--	--	--	--	BDL	BDL	BDL	BDL	20	BDL	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Silver, diss.,µg/L	50/10	<5.0	<5.0	<5.0	<5.0	<5.0	BDL	BDL	BDL	BDL	BDL	BDL	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Thallium, diss., µg/L	2/0.4	--	--	--	--	--	BDL	BDL	BDL	BDL	BDL	BDL	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Vanadium, diss., µg/L	30/6	--	--	--	--	--	BDL	BDL	BDL	BDL	BDL	BDL	--	--	--	--	<3.9	<3.9	<0.0022	<0.0022	0.0035	--	--	--	--	--	--	--	
Public Welfare Parameters																													
Copper, diss., µg/L	1300/130	<80	<100	<80	<80	--	--	--	--	--	181	--	300	340	310	290	280	310	300	240	240	240	240	240	240	240	240	240	
Manganese, diss., mg/L	0.05/0.025 mg/L	<0.05	--	--	--	<0.05	--	--	--	--	--	--	--	--	--	--	<0.0016	<0.0022	<0.0022	0.0035	--	--	--	--	--	--	--	--	
Zinc, diss., mg/L	5/2.5 mg/L	<0.05	<0.05	<0.05	<0.05	--	0.001	BDL	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Detection Parameters																													
Alkalinity, sol., mg/L	NS/320	190	210	190	200	170	180	--	--	--	300	340	310	290	280	310	300	240	240	240	240	240	240	240	240	240	240	240	
Cadmium, diss., µg/L	5/0.5	<1.0	<1.0	<1.0	<1.0	--	0.23	0.25	BDL	0.12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Chloride, diss., mg/L	250/125 mg/L	2	5	<1.0	<1.0	1	BDL	--	--	BDL	--	<1.0	<1.0	0.95	47	--	--	--	2.6	2.8	2.1	1.9	2.3	2	--	2.3	2		
COD, sol., mg/L	NS/31	<5.0	14	12	6	<5.0	9	--	--	8	--	<15.0	75	47	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Conductivity, field at 25°C	NS/590	NR	NR	NR	330	325	410	417	370	357	371	543	541	517	--	--	463	457	497	493	453	406	437	463	441	--	--	--	
Cyanide, diss., µg/L	200/40 µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<6.0	<6.0	<6.0	--	--	--	--	--	--	--	--	
pH, field, S.U.	NS	NR	NR	NR	7.08	6.95	7.60	7.50	6.48	6.83	7.71	7.81	8.2	8.2	7.17	8.17	8.27	7.68	7.45	6.38	7.17	7.66	6.76	7.66	7.27	--	--	--	
Temp., field degrees C	NS	NR	NR	NR	NR	NR	NR	7.5	7.6	7.3	8.6	8.8	8.7	9.14	10.1	--	--	--	--	--	--	--	--	--	--	--	--	--	
Ground water elevation	NS	941.73	943.80	941.89	942.01	940.17	942.77	942.96	945.56	943.75	944.06	939.08	938.97	941.05	941.40	940.98	940.68	943.00	944.16	945.28	942.03	943.50	945.69	950.58	948.29	948.52	946.89		
Hardness mg/L	NS/260	210	160	190	210	220	220	--	--	--	203	--	282	267	286	--	--	--	--	--	--	--	--	--	--	250	234	--	
Lead, diss., µg/L	15/1.5	<5.0	<5.0	<5.0	<5.0	--	BDL	BDL	BDL	BDL	BDL	BDL	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
NO3+NO2 as N, mg/L	10/2 mg/L	--	<0.05	<0.05	0.09	--	0.42	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Selenium, diss., µg/L	50/10	<3.0	<3.0	<3.0	<5.0	--	BDL	BDL	BDL	BDL	BDL	BDL	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Sulfate, diss., mg/L	250/125 mg/L	11	11	12	11	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
VOCs	Varies	ND	--	--	--	--	ND	--	--	--	ND	ND	ND	ND	ND	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	

NS- No Standard

ND- No Detect

BDL- Below an unknown detection limit

-- Not Sampled

10 Indicates an ES Exceedance

0.026 Indicates a PAL Exceedance

Table 6

**Groundwater Baseline Sampling Summary
Adams County Landfill Vertical Expansion
Alternative Geotechnical Investigation Program**



Public Health Parameters		MW-17																			
		ES/PAL µg/L	Historic Sampling								2016 Feasibility Sampling										
			10/1/86	12/30/86	3/17/87	6/24/87	9/14/87	3/17/94	4/18/94	5/24/94	6/27/94	7/18/94	6/27/16	8/1/16	9/1/16	10/11/16	3/10/17	9/8/17	3/8/18	9/6/18	3/6/19
Antimony, diss. µg/L		6/1.2	--	--	--	--	--	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	
Arsenic, diss. µg/L		10/1	<5.0	<5.0	<5.0	<5.0	--	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	
Barium, diss. mg/L		2/0.4 mg/L	<1.0	<1.0	<1.0	<1.0	--	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	
Beryllium, diss. µg/L		4/0.4	--	--	--	--	--	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	
Chromium, diss. µg/L		100/10	<5.0	<5.0	<5.0	<5.0	--	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	
Cobalt, diss. µg/L		40/8	--	--	--	--	--	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	
Fluoride, diss. mg/L		4/0.8 mg/L	<0.1	0.2	0.2	<0.1	--	BDL	--	BDL	--	BDL	--	BDL	--	BDL	--	BDL	--	--	
Mercury, diss. µg/L		2/0.2	<1.0	<0.5	<0.5	<0.2	--	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	
Nickel, diss. µg/L		100/20	--	--	--	--	--	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	
Silver, diss. µg/L		50/10	<5.0	<5.0	<5.0	<5.0	--	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	
Thallium, diss. µg/L		2/0.4	--	--	--	--	--	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	
Vanadium, diss. µg/L		30/6	--	--	--	--	--	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	
Public Welfare Parameters																					
Copper, diss. µg/L		1300/130	<80	<100	<80	<80	--	--	--	--	--	--	<3.9	33.1	<3.9	<3.9	--	--	--	--	
Manganese, diss. mg/L		0.05/0.025 mg/L	<0.05	--	--	--	<0.05	--	--	--	--	--	<0.0016	0.0024	<0.0022	<0.0022	--	--	--	--	
Zinc, diss. mg/L		5/2.5 mg/L	<0.05	<0.05	<0.05	<0.05	--	BDL	BDL	--	--	--	--	--	--	--	--	--	--	--	
Detection Parameters																					
Alkalinity, sol., mg/L		NS/250	190	110	120	130	110	93	--	--	--	--	--	--	--	95	54	63	53	43	
Cadmium, diss., µg/L		5/0.5	<1.0	<1.0	<1.0	<1.0	--	BDL	0.15	BDL	0.14	BDL	--	--	--	--	--	--	--	--	
Chloride, diss., mg/L		250/125 mg/L	1	4	<1.0	<1.0	<1.0	BDL	--	--	--	--	--	--	--	1.2	1.2	1.1	<1.0	<1.0	
COD, sol., mg/L		NS/29	<5.0	11	10	<5.0	<5.0	BDL	--	--	--	--	--	--	--	--	--	--	--	--	
Conductivity, field at 25°C		NS/490	NR	NR	NR	230	218	230	242	231	225	180	--	--	--	200	127	139	112	107	
Cyanide, diss., µg/L		200/40 µg/L	--	--	--	--	--	--	--	--	--	--	<6.0	<6.0	<6.0	<6.0	--	--	--	--	
pH, field, S.U.		NS	NR	NR	NR	7.20	7.08	8.10	7.70	7.70	6.83	6.77	--	--	--	8.36	8.62	7.22	6.26	7.28	
temp., field degrees C		NS	NR	NR	NR	NR	NR	8.3	8.7	8.7	9.7	9.4	--	--	--	9.2	10.51	9.17	10.32	9.77	
Ground water elevation		NS	943.63	944.82	943.60	943.08	941.98	944.36	944.96	945.34	945.92	945.62	944.34	944.49	944.82	945.57	947.37	944.96	947.24	947.05	
Hardness mg/L		NS/370	160	120	130	150	170	105	--	--	--	1	--	--	--	80.6	54.8	66	48	50	
Lead, diss., µg/L		15/1.5	<5.0	<5.0	<5.0	<5.0	--	BDL	BDL	BDL	BDL	BDL	1	--	--	--	--	--	--	--	
NO3+NO2 as N, mg/L		10/2 mg/L	--	0.15	<0.05	0.12	--	5.09	--	--	--	--	--	--	--	--	--	--	--	--	
Selenium, diss., µg/L		50/10	<3.0	<3.0	<3.0	<5.0	--	BDL	BDL	BDL	BDL	BDL	--	--	--	--	--	--	--	--	
Sulfate, diss. mg/L		250/125 mg/L	9	15	13	10	--	--	--	--	--	--	--	--	--	--	--	ND	ND	ND	
VOCs		Varies	ND	--	--	--	--	ND	ND	ND	ND	ND	--	--	--	ND	ND	ND	ND	ND	

NS- No Standard

ND- No Detect

BDL- Below an unknown detection limit

-- Not Sampled

10 Indicates an ES Exceedance0.026 Indicates a PAL Exceedance

Table 6
Groundwater Baseline Sampling Summary
Adams County Landfill Vertical Expansion
Alternative Geotechnical Investigation Program

	ES/PAL µg/L	MW-17P															
		Historic Sampling								2016 Feasibility Sampling							
		9/14/87	12/17/87	3/2/88	6/8/88	3/12/13	9/18/13	3/20/14	9/24/14	3/18/15	9/10/15	3/17/16	9/20/16	6/27/16	8/1/16	9/1/16	10/11/16
Public Health Parameters																	
Arsenic, diss., µg/L	10/1	<5.0	BDL	BDL	BDL	--	--	--	--	--	--	--	--	--	--	--	--
Barium, diss., mg/L	2/0.4 mg/L	<1.0	BDL	BDL	BDL	--	--	--	--	--	--	--	--	--	--	--	--
Chromium, diss., µg/L	100/10	<5.0	--	--	--	--	--	--	--	--	--	--	--	<1.0	<2.0	<2.0	--
Fluoride, diss., mg/L	4/0.8 mg/L	0.2	0.5	0.4	0.4	--	--	--	--	--	--	--	--	--	--	--	--
Mercury, diss., µg/L	2/0.2	<0.5	--	--	--	--	--	--	--	--	--	--	--	0.090	0.046	0.097	<0.020
Silver, diss. µg/L	50/10	<5.0	--	--	--	--	--	--	--	--	--	--	--	<2.0	<2.5	<2.5	--
Public Welfare Parameters																	
Copper, diss., µg/L	1300/130	<80.0	--	BDL	BDL	--	--	--	--	--	--	--	--	2.7	<3.9	--	--
Manganese, diss., mg/L	0.05/0.025 mg/L	<0.05	--	--	--	--	--	--	--	--	--	--	--	<0.0016	<0.0022	<0.0022	--
Zinc, diss., mg/L	5/2.5 mg/L	<0.05	BDL	BDL	BDL	--	--	--	--	--	--	--	--	--	--	--	--
Detection Parameters																	
Alkalinity, sol., mg/L	NS/250	70	74	60	73	84	84	84	84	79	73	82	80	--	--	--	85
Cadmium, diss., µg/L	5/0.5	1.4	--	--	--	--	--	--	--	--	--	--	--	<0.26	<0.40	0.43	<0.40
Chloride, diss., mg/L	250/125 mg/L	<1.0	BDL	BDL	BDL	1.5	1.3	<1.3	1.3	1.1	<1.0	1.1	0.89	--	--	--	0.97
COD, sol., mg/L	NS/29	20	25	BDL	10	<13	28	<12	91	<15	<15	55	<14	--	--	--	--
Conductivity, field at 25°C	NS/370	168	178	186	167	204	217	314	207	221	157	162	157	--	--	--	162
Cyanide, diss., µg/L	200/40 µg/L	--	--	--	--	--	--	--	--	--	--	--	--	<6.0	<6.0	<6.0	--
pH, field, S.U.	NS	6.61	6.76	6.81	6.75	6.93	6.86	6.85	7.97	6.79	8.31	8.35	8.67	--	--	--	8.39
temp., field degrees C	NS	--	--	--	--	8.8	10	9.4	9.6	9.4	10.3	8.77	10.18	--	--	--	8.58
Ground water elevation	NS	934.70	933.50	933.27	934.08	932.36	934.55	932.86	936.19	935.03	934.11	934.86	937.05	936.90	936.13	936.17	9.17
Hardness mg/L	NS/290	93	110	80	76	87.8	82.1	86.1	87.8	88.4	76.7	70.2	80.3	939.59	939.11	939.33	10.49
Lead, diss., µg/L	15/1.5	<5.0	--	--	--	--	--	--	--	--	--	--	--	1.9	<1.3	<1.3	70.2
NO3+NO2 as N, mg/L	10/2 mg/L	<0.05	0.44	BDL	BDL	--	--	--	--	--	--	--	--	--	--	--	--
Selenium, diss., µg/L	50/10	<5.0	--	--	--	--	--	--	--	--	--	--	--	<1.2	<1.0	<1.0	--
Sulfate, diss., mg/L	250/125 mg/L	14	14	9	8	--	--	--	--	--	--	--	--	--	--	--	--
VOCs	Varies	ND	--	--	--	ND	--	ND	--	ND	--	ND	--	--	--	--	ND

NS- No Standard

ND- No Detect

BDL- Below an unknown detection limit

-- Not Sampled

10 Indicates an ES Exceedance

0.026 Indicates a PAL Exceedance

Table 6
Groundwater Baseline Sampling Summary
Adams County Landfill Vertical Expansion
Alternative Geotechnical Investigation Program

Public Health Parameters		ES/PAL µg/L	MW-18													
			Historic Sampling													
			10/1/86	12/30/86	3/17/87	6/24/87	9/14/87	3/9/17	9/6/17	3/7/18	9/6/18	3/5/19	9/4/19	3/4/20	9/20	3/3/21
Arsenic, diss., µg/L	10/1	<5.0	<5.0	<5.0	<5.0	--	--	--	--	--	--	--	--	--	--	--
Barium, diss., mg/L	2/0.4 mg/L	<1.0	<1.0	<1.0	<1.0	--	--	--	--	--	--	--	--	--	--	--
Chromium, diss., µg/L	100/10	<5.0	<5.0	<5.0	<5.0	--	--	--	--	--	--	--	--	--	--	--
Fluoride, diss., mg/L	4/0.8 mg/L	<0.1	0.10	0.20	<0.1	--	--	--	--	--	--	--	--	--	--	--
Mercury, diss., µg/L	2/0.2	<1.0	<0.5	<0.5	<0.2	--	--	--	--	--	--	--	--	--	--	--
Silver, diss. µg/L	50/10	<5.0	<5.0	<5.0	<5.0	--	--	--	--	--	--	--	--	--	--	--
Public Welfare Parameters																
Copper, diss., µg/L	1300/130	<80	<100	<80	<80	--	--	--	--	--	--	--	--	--	--	--
Manganese, diss., mg/L	0.05/0.025 mg/L	<0.05	--	--	<0.05	<0.05	--	--	--	--	--	--	--	--	--	--
Zinc, diss., mg/L	5/2.5 mg/L	<0.05	<0.05	<0.05	<0.05	--	--	--	--	--	--	--	--	--	--	--
Detection Parameters																
Alkalinity, sol., mg/L	NS/340	190	170	170	190	160	330	390	400	350	310	300	290	250	290	260
Cadmium, diss., µg/L	5/0.5	<1.0	<1.0	<1.0	<1.0	--	--	--	--	--	--	--	--	--	--	--
Chloride, diss., mg/L	250/125 mg/L	1	5	<1.0	<1.0	1	23	76	50	20	18	8	12	13	13	5.9
COD, sol., mg/L	NS/28	<5.0	<5.0	<5.0	6	<5.0	--	--	--	--	--	--	--	--	--	--
Conductivity, field at 25°C	NS/650	--	--	--	325	349	666	956	957	719	740	615	712	607	678	601
Cyanide, diss., µg/L	200/40 µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
pH, field, S.U.	NS	--	--	--	7.21	6.85	8.11	7.34	7.53	6.42	7.03	7.64	6.72	7.26	7.37	7.15
temp., field degrees C	NS	--	--	--	--	--	9.39	10.89	9.41	10.16	9.42	10.28	9.75	10.47	10.01	10.42
Ground water elevation	NS	940.35	942.28	940.90	941.13	939.21	944.09	944.92	942.04	943.89	944.05	947.60	946.30	947.36	945.23	946.00
Hardness mg/L	NS/420	210	190	200	210	210	227	402	407	275	339	265	309	276	307	272
Lead, diss., µg/L	15/1.5	<5.0	<5.0	<5.0	<5.0	--	--	--	--	--	--	--	--	--	--	--
NO3+NO2 as N, mg/L	10/2 mg/L	<0.05	<0.05	<0.05	0.12	--	--	--	--	--	--	--	--	--	--	--
Selenium, diss., µg/L	50/10	<3.0	<3.0	<3.0	<5.0	--	--	--	--	--	--	--	--	--	--	--
Sulfate, diss., mg/L	250/125 mg/L	15	16	17	15	--	--	--	--	--	--	--	--	--	--	--
VOCs	Varies	ND	--	--	--	--	ND	Tetrahydrofuran 3.4 µg/L	ND	ND	ND	ND	ND	ND	ND	--

Tetrahydrofuran also detected in September 2017 Trip Blank sample.

NS- No Standard

ND- No Detect

-- Not Sampled

10 Indicates an ES Exceedance

0.026 Indicates a PAL Exceedance

Table 6
Groundwater Baseline Sampling Summary
Adams County Landfill Vertical Expansion
Alternative Geotechnical Investigation Program

Public Health Parameters	ES/PAL µg/L	MW-18P															
		Historic Sampling						Semiannual Sampling									
		10/1/86	12/30/86	3/17/87	6/24/87	9/14/87	3/9/17	9/6/17	3/7/18	9/6/18	3/5/19	9/4/19	3/4/20	9/2/20	3/2/21	9/7/21	
Arsenic, diss., µg/L	10/1	<5.0	<5.0	<5.0	<5.0	--	--	--	--	--	--	--	--	--	--	--	--
Barium, diss., mg/L	2/0.4 mg/L	<1.0	<1.0	<1.0	<1.0	--	--	--	--	--	--	--	--	--	--	--	--
Chromium, diss., µg/L	100/10	<5.0	<5.0	<5.0	<5.0	--	--	--	--	--	--	--	--	--	--	--	--
Fluoride, diss., mg/L	4/0.8 mg/L	<0.1	<0.1	0.20	<0.1	--	--	--	--	--	--	--	--	--	--	--	--
Mercury, diss., µg/L	2/0.2	<1.0	<0.5	<0.5	<0.2	--	--	--	--	--	--	--	--	--	--	--	--
Silver, diss. µg/L	50/10	<5.0	<5.0	<5.0	<5.0	--	--	--	--	--	--	--	--	--	--	--	--
Public Welfare Parameters																	
Copper, diss., µg/L	1300/130	<80	<100	<80	<80	--	--	--	--	--	--	--	--	--	--	--	--
Manganese, diss., mg/L	0.05/0.025 mg/L	<u>0.10</u>	--	--	<0.05	--	--	--	--	--	--	--	--	--	--	--	--
Zinc, diss., mg/L	5/2.5 mg/L	<0.05	<0.05	<0.05	<0.05	--	--	--	--	--	--	--	--	--	--	--	--
Detection Parameters																	
Alkalinity, sol., mg/L	NS/260	130	140	110	130	120	140	140	150	150	130	180	160	160	170	170	
Cadmium, diss., µg/L	5/0.5	<1.0	<1.0	<1.0	<1.0	--	--	--	--	--	--	--	--	--	--	--	--
Chloride, diss., mg/L	250/125 mg/L	2	5	<1.0	<1.0	1	2	2.1	1.9	1.7	1.6	1.7	1.5	1.3	1.3	1.3	
COD, sol., mg/L	NS/28	<5.0	18	14	<5.0	<5.0	--	--	--	--	--	--	--	--	--	--	--
Conductivity, field at 25°C	NS/500	--	--	--	235	251	250	253	256	263	273	321	308	326	328	343	
Cyanide, diss., µg/L	200/40 µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
pH, field, S.U.	NS	--	--	--	7.12	6.80	8.41	8.24	7.41	6.38	7.13	7.71	6.72	7.28	7.42	7.16	
temp., field degrees C	NS	--	--	--	--	--	9.37	10.27	9.37	10.17	9.49	10.23	10.34	10.48	9.83	10.32	
Ground water elevation	NS	935.13	935.43	934.30	934.20	932.76	937.07	936.69	934.17	936.25	937.25	939.57	938.32	938.71	937.33	937.86	
Hardness mg/L	NS/300	100	120	130	140	200	112	125	133	123	145	160	161	170	172	175	
Lead, diss., µg/L	15/1.5	<5.0	<5.0	<5.0	<5.0	--	--	--	--	--	--	--	--	--	--	--	--
NO3+NO2 as N, mg/L	10/2 mg/L	4.5	0.36	<0.05	0.08	--	--	--	--	--	--	--	--	--	--	--	--
Selenium, diss., µg/L	50/10	<3.0	<3.0	<3.0	<5.0	--	--	--	--	--	--	--	--	--	--	--	--
Sulfate, diss., mg/L	250/125 mg/L	23	16	13	11	--	--	--	--	--	--	--	--	--	--	--	--
VOCs	Varies	ND	--	--	--	--	ND	--	ND	--	ND	--	ND	--	ND	--	--

NS- No Standard
 ND- No Detect
 -- Not Sampled
10 Indicates an ES Exceedance
0.026 Indicates a PAL Exceedance

NS- No Standard
ND- No Detect
BDL- Below an unknown detection limit
-- Not Sampled
10 Indicates an ES Exceedance
0.026 Indicates a PAL Exceedance



Table 6
Groundwater Baseline Sampling Summary
Adams County Landfill Vertical Expansion
Alternative Geotechnical Investigation Program

		MW-19P															
Public Health Parameters	ES/PAL µg/L	Historic Sampling				2016 Feasibility Sampling				Semiannual Sampling							
		9/14/87	12/17/87	06/27/16	08/01/16	09/01/16	10/11/16	03/09/17	09/06/17	03/07/18	09/06/18	03/05/19	09/04/19	03/04/20	09/02/20	03/02/21	9/7/2021
Arsenic, diss., µg/L	10/1	<5.0	BDL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium, diss., mg/L	2/0.4 mg/L	<1.0	BDL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium, diss., µg/L	100/10	<5.0	--	<1.0	<2.0	<2.0	<2.0	--	--	--	--	--	--	--	--	--	--
Fluoride, diss., mg/L	4/0.8 mg/L	0.4	BDL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury, diss., µg/L	2/0.2	<0.5	--	0.091	0.057	0.089	<0.020	--	--	--	--	--	--	--	--	--	--
Silver, diss., µg/L	50/10	<5.0	--	<2.0	<2.5	<2.5	<2.5	--	--	--	--	--	--	--	--	--	--
Public Welfare Parameters																	
Copper, diss., µg/L	1300/130	<80.0	--	2.7	<3.9	--	--	--	--	--	--	--	--	--	--	--	--
Manganese, diss., mg/L	0.05/0.025 mg/L	<0.05	--	<0.0016	<0.0022	<0.0022	<0.0022	--	--	--	--	--	--	--	--	--	--
Zinc, diss., mg/L	5/2.5 mg/L	<0.05	BDL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Detection Parameters																	
Alkalinity, sol., mg/L	NS/240	100	110	--	--	--	--	140	150	160	170	150	150	150	140	150	130
Cadmium, diss., µg/L	5/0.5	1.1	--	<0.26	<0.40	<0.40	<0.40	--	--	--	--	--	--	--	--	--	--
Chloride, diss., mg/L	250/125 mg/L	<1	BDL	--	--	--	--	1.4	2	1.8	1.6	1.6	1.7	1.5	1.4	1.3	1.2
COD, sol., mg/L	NS/29	<5	15	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Conductivity, field at 25°C	NS/460	225	265	--	--	--	--	250	268	268	291	290	278	291	291	296	289
Cyanide, diss., µg/L	200/40 µg/L	--	--	<6.0	<6.0	<6.0	<6.0	--	--	--	--	--	--	--	--	--	--
pH, field, S.U.	NS	7.14	7.19	--	--	--	--	8.47	8.22	7.39	6.27	7.11	7.69	6.75	6.71	7.59	6.93
temp., field degrees C	NS	--	--	--	--	--	--	9.03	10.29	9.5	10.21	9.54	10.4	10	10.51	9.51	10.37
Ground water elevation	NS	934.15	932.93	936.07	935.36	935.32	938.74	938.40	938.22	935.60	937.36	938.38	940.82	939.57	939.90	938.18	938.99
Hardness mg/L	NS/320	130	120	--	--	--	--	109	136	141	139	156	138	151	152	154	148
Lead, diss., µg/L	15/1.5	<5.0	--	<1.5	<1.3	<1.3	<1.3	--	--	--	--	--	--	--	--	--	--
NO3+NO2 as N, mg/L	10/2 mg/L	0.09	0.41	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium, diss., µg/L	50/10	<5.0	--	<1.2	<1.0	<1.0	<7.0	--	--	--	--	--	--	--	--	--	--
Sulfate, diss., mg/L	250/125 mg/L	23	14	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VOCs	Varies	ND	--	--	--	--	--	ND	--	ND	--	ND	--	ND	--	ND	--

NS- No Standard
ND- No Detect
BDL- Below an unknown detection limit
-- Not Sampled
10 Indicates an ES Exceedance
0.026 Indicates a PAL Exceedance

Table 6
Groundwater Baseline Sampling Summary
Adams County Landfill Vertical Expansion
Alternative Geotechnical Investigation Program

ES/PAL µg/L		MW-20																	
Public Health Parameters		3/11/13	9/17/13	3/19/14	9/23/14	3/17/15	9/9/15	3/16/16	9/19/16	3/9/17	9/6/17	3/7/18	9/5/18	3/5/19	9/4/19	3/4/20	9/2/20	3/2/21	9/7/21
Arsenic, diss. µg/L	10/1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Barium, diss., mg/L	2/0.4 mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chromium, diss., µg/L	100/10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Fluoride, diss., mg/L	4/0.8 mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mercury, diss., µg/L	2/0.2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Silver, diss.µg/L	50/10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Public Welfare Parameters																			
Copper, diss. µg/L	1300/130	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Manganese, diss., mg/L	0.05/0.025 mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Zinc, diss., mg/L	5/2.5 mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Detection Parameters																			
Alkalinity, sol., mg/L	NS/290	600	630	590	610	630	640	670	630	660	660	690	640	520	520	500	490	480	430
Cadmium, diss., µg/L	5/0.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chloride, diss., mg/L	250/125 mg/L	1.9	2.2	<1.3	2.5	1.1	<1.0	1.7	0.98	1.1	2.1	2.4	2	<1.0	1.9	1.8	<1.0	1.2	1.6
COD, sol., mg/L	NS/29	13	<13	110	<12	90	<15	250	<14	---	---	---	---	---	---	---	---	---	---
Conductivity, field at 25°C	NS/590	1696	834	974	1153	674	1084	1044	1012	1009	1014	1005	969	910	915	876	862	833	799
Cyanide, diss., µg/L	200/40 µg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
pH, field, S.U.	NS	6.53	6.94	6.86	7.15	6.87	7.10	7.25	7.74	7.56	6.96	7.48	6.35	7.18	7.68	6.76	6.6	7.33	6.85
temp., field degrees C	NS	9.1	10.5	9.5	10.4	9.3	9.7	8.96	10.15	9.26	10.72	9.18	10.1	9.84	10.35	9.67	10.31	9.92	10.16
Ground water elevation	NS	934.87	938.01	935.75	938.52	937.42	937.44	937.49	939.88	942.37	943.72	940.36	942.00	943.65	947.92	945.85	945.95	944.18	944.79
Hardness mg/L	NS/390	615	589	558	631	741	588	517	571	456	570	602	515	533	472	480	485	459	432
Lead, diss., µg/L	15/1.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
NO3+NO2 as N, mg/L	10/2 mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Selenium, diss., µg/L	50/10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Sulfate, diss., mg/L	250/125 mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
VOCs	Varies	ND	---	ND	---	ND	---	ND	---	ND	---	ND	---	ND	---	ND	---	ND	---

NS- No Standard
 ND- No Detect
 NR- Not Reported in GEMS (C&D Landfill opened in 1989 and closed in 2004)
 -- Not Sampled
10 Indicates an ES Exceedance
0.026 Indicates a PAL Exceedance

Table 6
Groundwater Baseline Sampling Summary
Adams County Landfill Vertical Expansion
Alternative Geotechnical Investigation Program

Public Health Parameters	ES/PAL µg/L	Historic Sampling																		Semiannual Sampling								
		MW-21																										
		3/11/13	9/17/13	3/19/14	9/23/14	3/17/15	9/9/15	3/16/16	9/19/16	3/9/17	9/6/17	3/7/18	9/5/18	3/5/19	9/4/19	3/4/20	9/2/20	3/2/21	9/7/21									
Arsenic, diss., µg/L	10/1	NR																										
Barium, diss., mg/L	2/0.4 mg/L	NR																										
Chromium, diss., µg/L	100/10	NR																										
Fluoride, diss., mg/L	4/0.8 mg/L	NR																										
Mercury, diss., µg/L	2/0.2	NR																										
Silver, diss.µg/L	50/10	NR																										
Public Welfare Parameters																												
Copper, diss., µg/L	1300/130	NR																										
Manganese, diss., mg/L	0.05/0.025 mg/L	NR																										
Zinc, diss., mg/L	5/2.5 mg/L	NR																										
Detection Parameters																												
Alkalinity, sol., mg/L	NS/290	490	490	490	450	470	500	540	500	540	540	530	510	440	420	410	420	390	330									
Cadmium, diss., µg/L	5/0.5	NR																										
Chloride, diss., mg/L	250/125 mg/L	4	4.4	3.1	4.5	3.5	2.4	3.5	3.2	2.6	4.7	6.1	4.7	4.2	5.1	3.9	2.8	2.1	2.3									
COD, sol., mg/L	NS/42	<13	<13	<12	4.5	<15	<15	240	<14																			
Conductivity, field at 25°C	NS/590	1684	845	1116	1084	656	1103	1076	1048	1069	1055	951	937	861	833	813	804	77.37	669									
Cyanide, diss., µg/L	200/40 µg/L	NR																										
pH, field, S.U.	NS	6.63	6.95	6.87	7.23	6.79	7.14	7.34	7.79	7.77	7.11	7.53	6.34	6.63	7.66	6.68	6.59	7.21	6.95									
temp., field degrees C	NS	9.2	10.2	9.7	10.2	9.5	9.6	8.85	10.19	9.25	10.74	9.27	10.27	9.25	10.33	9.96	10.41	9.75	10.27									
Ground water elevation	NS	933.66	937.45	935.62	937.86	936.92	936.91	936.95	939.35	941.79	942.77	939.89	941.24	942.68	946.42	944.75	944.89	943.26	943.82									
Hardness mg/L	NS/390	550	616	544	606	699	592	525	586	477	588	559	497	508	427	436	441	398	355									
Lead, diss., µg/L	15/1.5	NR																										
NO3+NO2 as N, mg/L	10/2 mg/L	NR																										
Selenium, diss., µg/L	50/10	NR																										
Sulfate, diss., mg/L	250/125 mg/L	NR																										
VOCs	Varies	ND	--	ND	--	ND	--	ND	--	ND	--	ND	--	ND	--	ND	--	ND	--									

NS- No Standard

ND- No Detect

NR- Not Reported in GEMS (C&D Landfill opened in 1989 and closed in 2004)

-- Not Sampled

10 Indicates an ES Exceedance

0.026 Indicates a PAL Exceedance

Table 6

**Groundwater Baseline Sampling Summary
Adams County Landfill Vertical Expansion
Alternative Geotechnical Investigation Program**



ES/PAL		MW-22																	
Public Health Parameters		3/11/13	9/17/13	3/19/14	9/23/14	3/17/15	9/9/15	3/16/16	9/19/16	3/9/17	9/6/17	3/7/18	9/5/18	3/5/19	9/4/19	3/4/20	9/2/20	3/3/21	9/7/21
Arsenic, diss., µg/L	10/1																		
Barium, diss., mg/L	2/0.4 mg/L																		
Chromium, diss., µg/L	100/10																		
Fluoride, diss., mg/L	4/0.8 mg/L																		
Mercury, diss., µg/L	2/0.2																		
Silver, diss.µg/L	50/10																		
Public Welfare Parameters																			
Copper, diss., µg/L	1300/130																		
Manganese, diss., mg/L	0.05/0.025 mg/L																		
Zinc, diss., mg/L	5/2.5 mg/L																		
Detection Parameters																			
Alkalinity, sol., mg/L	NS/290	820	550	650	570	650	670	730	630	640	700	720	670	570	560	610	610	640	710
Cadmium, diss., µg/L	5/0.5				NR														
Chloride, diss., mg/L	250/125 mg/L	31	3.3	2.4	2.9	1.6	3.0	2.8	2.1	2.4	3	3.3	2.9	1.4	2.5	2.4	<1.0	<1.0	1.7
COD, sol., mg/L	NS/29	91	<13	29	21	<15	160	300	<14										
Conductivity, field at 25°C	NS/590	1998	895	1367	1144	823	1750	1791	1151	1098	1348	1468	1341	1450	1354	1640	1770	1660	1860
Cyanide, diss., µg/L	200/40 µg/L				NR														
pH, field, S.U.	NS	6.58	6.94	6.85	7.14	6.71	6.81	6.95	7.62	7.58	6.83	7.58	6.34	7.12	7.65	6.63	6.55	6.98	6.83
temp., field degrees C	NS	9.3	10.3	9.8	10.4	9.5	9.5	8.8	10.27	9.07	10.7	9.26	10.31	9.74	10.49	9.48	10.15	8.24	10.67
Ground water elevation	NS	933.32	937.25	934.66	937.72	936.82	936.75	936.77	939.23	941.82	942.37	939.57	940.95	942.21	945.85	944.20	944.43	942.86	943.23
Hardness mg/L	NS/390	2010	582	941	645	1020	965	915	650	488	762	923	740	893	724	939	1070	988	1130
Lead, diss., µg/L	15/1.5																		
NO3+NO2 as N, mg/L	10/2 mg/L				NR														
Selenium, diss., µg/L	50/10																		
Sulfate, diss., mg/L	250/125 mg/L																		
VOCs	Varies	Chloromethane 0.33 µg/L	--	ND	--	ND	--	ND	--	ND	--	ND	--	ND	--	ND	--	ND	--

NS- No Standard

ND- No Detect

NR- Not Reported in GEMS (C&D Landfill opened in 1989 and closed in 2004)

-- Not Sampled

10 Indicates an ES Exceedance**0.026** Indicates a PAL Exceedance

Table 6

**Groundwater Baseline Sampling Summary
Adams County Landfill Vertical Expansion
Alternative Geotechnical Investigation Program**



		2016 Feasibility Sampling															MW-29	
ES/PAL µg/L		12/17/15	01/01/16	02/03/16	03/31/16	05/26/16	06/27/16	08/01/16	09/01/16	09/07/18	03/06/19	09/05/19	03/05/20	09/03/20	03/03/21	09/07/21		
Public Health Parameters	Arsenic, diss., µg/L	<0.50	<0.50	<0.50	<0.50	--	--	--	--	--	--	--	--	--	--	--		
	Barium, diss., mg/L	0.0145	0.0153	0.0156	0.0143	--	--	--	--	--	--	--	--	--	--	--		
	Chromium, diss., µg/L	<1.0	1.1	<1.0	<1.0	--	--	--	--	--	--	--	--	--	--	--		
	Fluoride, diss., mg/L	0.16	<0.12	<0.12	<0.12	--	--	--	--	--	--	--	--	--	--	--		
	Mercury, diss., µg/L	0.071	0.07	<0.020	<0.020	--	--	--	--	--	--	--	--	--	--	--		
	Silver, diss. µg/L	<2.0	<2.0	<2.0	<2.0	--	--	--	--	--	--	--	--	--	--	--		
Public Welfare Parameters																		
Copper, diss., µg/L	1300/130	<1.6	<1.6	<1.6	--	--	--	--	--	--	--	--	--	--	--	--		
Manganese, diss., mg/L	0.05/0.025 mg/L	0.0048	0.0027	0.0025	<0.0016	--	--	--	--	--	--	--	--	--	--	--		
Zinc, diss., mg/L	5/2.5 mg/L	0.002	<0.0019	<0.0019	<0.0019	--	--	--	--	--	--	--	--	--	--	--		
Detection Parameters																		
Alkalinity, sol., mg/L	NS/300	190	200	190	190	200	200	200	200	170	110	100	86	79	70	77		
Boron, diss., µg/L	1000/200	3.9	6.6	3.0	4.4	--	--	--	--	--	--	--	--	--	--	--		
Cadmium, diss., µg/L	5/0.5	<0.26	<0.26	<0.26	<0.26	--	--	--	--	--	--	--	--	--	--	--		
Chloride, diss., mg/L	250/125 mg/L	<1.0	1.2	<1.0	<1.0	1.7	1.8	1.7	1.5	1.3	1.3	1.2	1.2	1	1.2	<1.0		
COD, sol., mg/L	NS	<15	<15	<15	<14	--	--	--	--	--	--	--	--	--	--	--		
Conductivity, field at 25°C	NS/470	179.4	172.1	169.5	256	299	314	325	319	285	232	199	185	173	145	165		
Cyanide, diss., µg/L	200/40 µg/L	--	--	--	--	<6.0	<6.0	<6.0	<6.0	--	--	--	--	--	--	--		
pH, field, S.U.	NS	6.93	7.28	6.77	7.77	7.34	8.01	8.29	9.31	6.71	7.24	7.67	6.76	6.64	7.3	6.89		
temp., field degrees C	NS	10.4	8.9	9.4	8.5	10.3	9.1	10.8	11.1	10.18	9.38	10.17	9.92	10.11	10.25	10.27		
Ground water elevation	NS	938.24	938.62	938.64	939.21	942.24	941.48	942.07	941.68	944.53	945.92	949.16	948.51	948.69	947.33	947.13		
Hardness mg/L	NS/280	157	151	155	169	194	173	177	186	140	121	95.2	92.1	84.1	72.5	81.8		
Lead, diss., µg/L	15/1.5	<1.5	<1.5	<1.5	<1.5	--	--	--	--	--	--	--	--	--	--	--		
NO3+NO2 as N, mg/L	10/2 mg/L	<0.070	<0.070	<0.070	<0.045	--	--	--	--	--	--	--	--	--	--	--		
Selenium, diss., µg/L	50/10	<12	<1.2	<1.2	<12	--	--	--	--	--	--	--	--	--	--	--		
Sulfate, diss., mg/L	250/125 mg/L	8.2	8	7.8	8.9	--	--	--	--	--	--	--	--	--	--	--		
VOCs	Varies	ND	ND	--	--	--	--	--	--	--	ND	--	NI	--	ND	--		

NS- No Standard

ND- No Detect

-- Not Sampled

10 Indicates an ES Exceedance**0.026** Indicates a PAL Exceedance

Table 6

**Groundwater Baseline Sampling Summary
Adams County Landfill Vertical Expansion
Alternative Geotechnical Investigation Program**



		MW-30																	
		2016 Feasibility Sampling														Semiannual Sampling			
		ES/PAL	12/17/15	01/01/16	02/01/16	03/31/16	05/26/16	06/27/16	08/01/16	09/01/16	09/07/18	03/06/19	09/05/19	03/05/20	09/03/20	03/03/21			
Public Health Parameters		µg/L																	
Antimony, diss.	µg/L	6/1.2	<5.0	<1.2	<1.2	<1.2	--	--	--	--	--	--	--	--	--	--			
Arsenic, diss.	µg/L	10/1	<0.50	<0.50	<0.50	<0.50	--	--	--	--	--	--	--	--	--	--			
Barium, diss.	mg/L	2/0.4 mg/L	0.0087	0.0089	0.0086	0.0076	--	--	--	--	--	--	--	--	--	--			
Beryllium, diss.	µg/L	4/0.4	<0.29	<0.29	<0.29	<0.29	--	--	--	--	--	--	--	--	--	--			
Chromium, diss.	µg/L	100/10	1.7	1.1	1.7	1.0	--	--	--	--	--	--	--	--	--	--			
Cobalt, diss.	µg/L	40/8	<1.2	<1.2	<1.2	<1.2	--	--	--	--	--	--	--	--	--	--			
Fluoride, diss.	mg/L	4/0.8 mg/L	0.16	<0.12	0.16	0.15	--	--	--	--	--	--	--	--	--	--			
Mercury, diss.	µg/L	2/0.2	<0.020	0.074	<0.020	<0.020	--	--	--	--	--	--	--	--	--	--			
Nickel, diss.	µg/L	100/20	<1.2	<1.2	<1.2	1.4	--	--	--	--	--	--	--	--	--	--			
Silver, diss.	µg/L	50/10	<2.0	<2.0	<2.0	<2.0	--	--	--	--	--	--	--	--	--	--			
Thallium, diss.	µg/L	2/0.4	<0.40	<0.40	<0.40	<0.40	--	--	--	--	--	--	--	--	--	--			
Vanadium, diss.	µg/L	30/6	7.6	<1.5	1.7	<1.5	--	--	--	--	--	--	--	--	--	--			
Public Welfare Parameters																			
Copper, diss.	µg/L	1300/130	<1.6	<1.6	<1.6	<1.6	--	--	--	--	--	--	--	--	--	--			
Manganese, diss.	mg/L	0.05/0.025 mg/L	0.0088	0.0061	0.0036	0.0024	--	--	--	--	--	--	--	--	--	--			
Zinc, diss.	mg/L	5/2.5 mg/L	0.0061	<0.0019	<0.0019	<0.0019	--	--	--	--	--	--	--	--	--	--			
Detection Parameters																			
Alkalinity, sol.	mg/L	NS/210	96	99	95	97	97	97	110	110	130	110	99	82	82	76			
Boron, diss.	µg/L	1000/200	10.7	10.1	9.4	11.2	--	--	--	--	--	--	--	--	--	--			
Cadmium, diss.	µg/L	5/0.5	<0.26	<0.26	<0.26	<0.26	--	--	--	--	--	--	--	--	--	--			
Chloride, diss.	mg/L	250/125 mg/L	<1.0	<1.0	<1.0	<1.0	1.0	1.1	1.5	1.1	<1.0	1.2	<1.0	<1.0	1.1	<1.0			
COD, sol.	mg/L	NS	<15	<15	<15	<14	--	--	--	--	--	--	--	--	--	--			
Conductivity, field at 25°C		NS/350	112.7	108.4	113.5	140.7	153.7	166.5	184.4	167.5	221	211	188	171	174	161			
Cyanide, diss.	µg/L	200/40 µg/L	--	--	--	--	<6.0	<6.0	<6.0	<6.0	--	--	--	--	--	--			
pH, field, S.U.		NS	7.04	7.37	7.27	8.17	7.60	8.6	8.56	9.52	6.69	7.14	7.72	6.65	6.52	7.19			
temp., field degrees C		NS	10.3	7.4	10.6	10.2	10.8	10.5	12.1	11.1	10.09	9.71	10.14	9.64	10.28	9.03			
Ground water elevation		NS	940.62	940.84	940.92	941.10	943.30	943.75	943.65	943.23	945.05	947.31	950.70	949.97	950.50	949.10			
Hardness mg/L		NS/200	81.5	80.1	86.5	89.6	97.9	97.5	105	104	108	111	91.3	87.1	86.3	80.7			
Lead, diss., µg/L		15/1.5	4.5	<1.5	2.6	<1.5	<1.5	1.8	<1.3	<1.3	--	--	--	--	--	--			
NO3+NO2 as N, mg/L		10/2 mg/L	0.93	0.88	1.0	1.1	--	--	--	--	--	--	--	--	--	--			
Selenium, diss.	µg/L	50/10	<12	<1.2	<1.2	<1.2	--	--	--	--	--	--	--	--	--	--			
Sulfate, diss.	mg/L	250/125 mg/L	6.1	4.6	4.4	4.3	--	--	--	--	--	--	--	--	--	--			
VOCs		Varies	ND	ND	--	--	--	--	--	--	--	ND	ND	ND	ND	1,2,4 TMB - 0.62 m & p Xylene - 0.79 Toluene - 0.31			

NS: No Standard

ND: No Detect

-- Not Sampled

10 Indicates an ES Exceedance**0.026** Indicates a PAL Exceedance

Table 6

Groundwater Baseline Sampling Summary
Adams County Landfill Vertical Expansion
Alternative Geotechnical Investigation Program



2016 Feasibility Sampling																		
Public Health Parameters		MW-30P																
		ES/PAL µg/L	12/17/15	01/01/16	02/01/16	03/31/16	05/26/16	06/27/16	08/01/16	09/01/16	09/07/18	03/06/19	09/05/19	03/05/20	09/03/20	03/03/21	09/07/21	
Arsenic, diss., µg/L	10/1	<0.50	<0.50	<0.50	<0.50	--	--	--	--	--	--	--	--	--	--	--	--	
Barium, diss., mg/L	2/0.4 mg/L	0.0113	0.0125	0.0124	0.0104	--	--	--	--	--	--	--	--	--	--	--	--	
Chromium, diss., µg/L	100/10	1.7	1.7	1.7	1.4	--	--	--	--	--	--	--	--	--	--	--	--	
Fluoride, diss., mg/L	4/0.8 mg/L	0.17	0.14	0.16	0.12	--	--	--	--	--	--	--	--	--	--	--	--	
Mercury, diss., µg/L	2/0.2	0.062	0.076	<0.020	<0.020	--	--	--	--	--	--	--	--	--	--	--	--	
Silver, diss. µg/L	50/10	<2.0	<2.0	<2.0	<2.0	--	--	--	--	--	--	--	--	--	--	--	--	
Public Welfare Parameters																		
Copper, diss., µg/L	1300/130	<1.6	<1.6	<1.6	<1.6	--	--	--	--	--	--	--	--	--	--	--	--	
Manganese, diss., mg/L	0.05/0.025 mg/L	0.0292	0.0155	0.0125	0.0093	--	--	--	--	--	--	--	--	--	--	--	--	
Zinc, diss., mg/L	5/2.5 mg/L	0.0041	<0.0019	<0.0019	<0.0019	--	--	--	--	--	--	--	--	--	--	--	--	
Detection Parameters																		
Alkalinity, sol., mg/L	NS/220	110	120	110	120	120	120	130	120	130	150	130	140	130	120	130	74	
Boron, diss., µg/L	1000/200	<3.0	5.1	<3.0	3.4	--	--	--	--	--	--	--	--	--	--	--	--	
Cadmium, diss., µg/L	5/0.5	<0.26	<0.26	<0.26	<0.26	--	--	--	--	--	--	--	--	--	--	--	--	
Chloride, diss., mg/L	250/125 mg/L	<1.0	1.1	<1.0	<1.0	1.1	1.2	1.2	1.2	1.2	1.4	1.4	1.4	1.3	1.4	1.8	<1.0	
COD, sol., mg/L	NS	<15	<15	<15	<14	--	--	--	--	--	--	--	--	--	--	--	--	
Conductivity, field at 25°C	NS/370	124.7	116.8	131.0	172.0	186	198.2	195.3	197.5	259	266	262	262	264	260	264	171	
Cyanide, diss., µg/L	200/40 µg/L	--	--	--	--	<6.0	<6.0	<6.0	<6.0	--	--	--	--	--	--	--	--	
pH, field, S.U.	NS	6.64	7.32	7.09	7.93	7.42	8.65	8.36	9.44	6.69	7.22	7.52	7.52	6.64	6.54	7.09	6.78	
temp., field degrees C	NS	8.3	5.1	15.0	10.9	10.7	11.7	11.5	12.1	10.1	9.8	10.1	10.1	10.0	10.3	8.8	10.3	
Ground water elevation	NS	934.27	935.18	935.31	936.41	938.07	937.66	936.89	936.96	939.32	940.08	943.07	943.07	941.72	941.81	940.34	940.81	
Hardness mg/L	NS/220	104	96.6	102	108	121	114	116	124	128	143	130	135	132	132	135	82.1	
Lead, diss., µg/L	15/1.5	<1.5	<1.5	<1.5	<1.5	--	--	--	--	--	--	--	--	--	--	--	--	
NO3+NO2 as N, mg/L	10/2 mg/L	1.2	1.3	1.3	1.3	--	--	--	--	--	--	--	--	--	--	--	--	
Selenium, diss., µg/L	50/10	<12	<1.2	<1.2	<12	--	--	--	--	--	--	--	--	--	--	--	--	
Sulfate, diss., mg/L	250/125 mg/L	7.6	7	7.4	7.3	--	--	--	--	--	--	--	--	--	--	--	--	
VOCs	Varies	ND	ND	--	--	--	--	--	--	--	ND	--	--	ND	--	1,2,4 TMB - 0.42	--	

NS- No Standard

ND- No Detect

-- Not Sampled

10 Indicates an ES Exceedance**0.026** Indicates a PAL Exceedance