Upper Blackfoot Mining Complex
Groundwater Analytical Results
TO 19 - Section 35

Sample ID	Collection Date	Field Parameters						Physiochemical					Common Anions								Common Cations							
		SC (µmhos/cm)	pH (s.u.)	Temperature (oF)	Depth (ft)	DO (mg/L)	DO (% Sat)	SC (µmhos/cm)	pH (s.u.)	Hardness (mg/L)	Alkalinity, Total as CaCO3 (mg/L)		Sulfate (mg/L)		Bicarbonate as HCO3 (mg/L)		Carbonate as CO3 (mg/L)		Chloride (mg/L)		Calcium Diss. (mg/L)		Magnesium Diss. (mg/L)		Potassium Diss. (mg/L)		Sodium Diss. (mg/L)	
											result	flag	result	flag	result	flag	result	flag	result	flag	result	flag	result	flag	result	flag	result	flag
S35-MW01	8/3/10 11:30 AM	521	7.73	44.34	5.2	11.34	97.1	300	7.7	162	150		6		190		4	U	1	U	36	J	18		1		2	
S35-MW02	7/22/10 12:32 PM	682	7.98	50.61	73.2	10.23	94.5	428	7.7	238	220		5		270		4	U	2		72	J	15		3		4	
S35-MW03	8/3/10 10:15 AM				27.55			333	8.4	152	170		4		210		4	U	2		46	J	9		3		16	
S35-MW04	7/22/10 11:09 AM	671	8.07	59.82	38.15	9.5	91.8	381	7.8	185	200		4		230		4	U	4		55	J	12		6		6	
S35-MW06	7/22/10 10:26 AM	570	7.9	47.48	31.79	11.21	96.7	339	7.8	184	180		1		220		4	U	1	U	50	J	15		2		4	
S35-MW05	Dry																											

Notes:
SC - Specific Conductance
Flag Qualifiers: J - estimated concentration
U - the compound was analyzed for, but not detected

Table A-2 Groundwater Metals Analytical Summary

Upper Blackfoot Mining Complex
Groundwater Analytical Results
TO 19 - Section 35

Sample ID	Date Collected	Aluminum (mg/L)				Arsenic (mg/L)				Cadmium (mg/L)				Copper (mg/L)				Iron (mg/L)				Lead (mg/L)				Manganese (mg/L)				Zinc (mg/L)			
		Dissolved	flag	Total	flag	Dissolved	flag	Total	flag	Dissolved	flag	Total	flag	Dissolved	flag	Total	flag	Dissolved	flag	Total	flag	Dissolved	flag	Total	flag	Dissolved	flag	Total	flag	Dissolved	flag	Total	flag
S35-MW01	8/3/10 11:30 AM	0.03	U	3.46	J	0.003	U	0.005	J+	0.00008	U	0.00008	U	0.001	U	0.015	J	0.05	U	7.68	J	0.0005	U	0.022	J	0.008	J+	0.162	J	0.01	U	0.03	J
S35-MW02	7/22/10 12:32 PM	0.03	U	1.54	J	0.003	U	0.003	U	0.00008	U	0.00008	U	0.001		0.004	J	0.05	U	2.17	J	0.0005	U	0.0034	J	0.052	J+	0.111	J	0.01	U	0.02	J
S35-MW03	8/3/10 10:15 AM	0.03	U	3.98	J	0.003	U	0.004	J+	0.00008	U	0.00009		0.001	U	0.008	J	0.05	U	3.96	J	0.0005	U	0.005	J	0.702	J+	0.83	J	0.01	U	0.02	J
S35-MW04	7/22/10 11:09 AM	0.03	U	1.78	J	0.003	U	0.003	U	0.00013		0.00029		0.003		0.008	J	0.05	U	1.81	J	0.0005	U	0.0023	J	0.132	J+	0.189	J	0.01	U	0.02	J
S35-MW06	7/22/10 10:26 AM	0.03	U	0.8	J	0.003	U	0.003	U	0.00008	U	0.00009		0.003		0.005	J	0.05	U	1.1	J	0.0005	U	0.0009	J	0.014	J+	0.039	J	0.01	U	0.01	UJ
S35-MW05	Dry																																
Groundwater Standards (mg/L)	**Human Health**	--				**0.01**				**0.005**				**1.3**				**0.3***				**0.015**				**0.05***				**2.0**			

Notes:
-- - indicates no standard
- concentrations exceed human health groundwater standard.
Flag Qualifiers:
J+ =high estimated concentration
J = estimated concentration
U = the analyte was not detected
* - Secondary maximum contaminant level based on taste, odor, and staining.

Upper Blackfoot Mining Complex
Surface Water Analytical Results
TO 19 - Section 35

TerraGraphics Environmental Engineering, Inc.

Sample ID	Collection Date	Field Parameters							Physiochemical								Common Anions												Common Cations									
		Specific Conductance (µmhos/cm)	pH (s.u.)	Temperature (°F)	Dissolved Oxygen (mg/L)	Dissolved Oxygen (% Sat)	ORP (mV)	Discharge (cfs)	Specific Conductance (µmhos/cm)	pH (s.u.)	Hardness (mg/L)	Total Dissolved Solids (mg/L)		Total Suspended Solids (mg/L)		Alkalinity, Total as $CaCO_3$		Bicarbonate as HCO_3 (mg/L)		Carbonate as CO_3 (mg/L)		Chloride (mg/L)		Chloride, Dissolved (mg/L)		Sulfate (mg/L)		Sulfate, Dissolved (mg/L)		Calcium Diss. (mg/L)		Magnesium Diss. (mg/L)		Potassium Diss. (mg/L)		Sodium Diss. (mg/L)	
												result	flag	result	flag	result	flag	result	flag	result	flag	result	flag	result	flag	result	flag	result	flag	result	flag	result	flag	result	flag	result	flag
S35-SW01 (Nora Creek downstream)	6/9/10	230	8.07	55.17	11.1	104.9	186.7	0.60	127	8.1	62	82		10	U	64		76		4	U	1	U	1	U	3	J	3		16		5		1	U	2	
S35-SW02 (Nora Creek upstream)	6/9/10	217	7.33	51.09	8.67	78	197.2	0.41	120	7.9	59	78		10	U	60		68		4	U	1	U	1	U	4	J	3		15		5		1	U	2	
S35-SW03 (Blackfoot R. upstream)	6/9/10	321	8.09	53.26	10.94	101.2	202.5	22.69	178	8.1	87	106		10	U	67		77		4	U	2		1		21	J	20		20		9		1	U	2	
S35-SW04 (Blackfoot R. downstream)	6/9/10	322	8.11	53.29	10.91	100.8	228.1	NA	177	8	87	105		10	U	67		76		4	U	2		1		21	J	20		20		9		1	U	2	
S35-SW05 (unnamed int. creek)	6/9/10	242	8.06	52.79	11.57	106.3	124.9	1.02	133	8.1	64	90		10	U	67		75		4	U	1	U	1	U	4	J	3		16		6		1	U	2	
Surface Water Standards	Acute	--	--	--	--	--	--	--	--	6.5-8.5	--	--		--		--		--		--		--		--		--		--		--		--		--		--	
	Chronic	--	--	--	--	--	--	--	--	6.5-8.5	--	--		--		--		--		--		--		--		--		--		--		--		--		--	
	Human Health	--	--	--	--	--	--	--	--	6.5-8.5	--	--		--		--		--		--		--		--		--		--		--		--		--		--	

Notes:
Acute and Chronic levels are for aquatic life standards as listed in Circular DEQ-7, 2010.
Flag Qualifiers: U - the compound was analyzed for, but not detected

Upper Blackfoot Mining Complex
Surface Water Analytical Results - Metals
TO 19 - Section 35

TerraGraphics Environmental Engineering, Inc.

Sample ID	Collection Date	Aluminum (mg/L)				Arsenic (mg/L)				Cadmium (mg/L)*				Copper (mg/L)*				Iron (mg/L)				Lead (mg/L)*				Manganese (mg/L)				Zinc (mg/L)*			
		Dissolved	flag	Total	flag	Dissolved	flag	Total	flag	Dissolved	flag	Total	flag	Dissolved	flag	Total	flag	Dissolved	flag	Total	flag	Dissolved	flag	Total	flag	Dissolved	flag	Total	flag	Dissolved	flag	Total	flag
S35-SW01 (Nora Creek downstream)	6/9/10 4:04 PM	0.03	U	0.03		0.003	U	0.003	U	0.0001	U	0.0001	U	0.001		0.002		0.05	U	0.12		0.0005	U	0.0005	U	0.005	U	0.012		0.02		0.01	U
S35-SW02 (Nora Creek upstream)	6/9/10 4:46 PM	0.03	U	0.04		0.003	U	0.003	U	0.0001	U	0.0001	U	0.002		0.003		0.05	U	0.06		0.0005	U	0.0005	U	0.005	U	0.005	U	0.02		0.01	U
S35-SW03 (Blackfoot R. upstream)	6/9/10 6:01 PM	0.03	U	0.03	U	0.003	U	0.003	U	0.0003		0.0003		0.002		0.003		0.05	U	0.09		0.0005	U	0.0005	U	0.008		0.028		0.13		0.15	
S35-SW04 (Blackfoot R. downstream)	6/9/10 6:31 PM	0.03	U	0.03	U	0.003	U	0.003	U	0.0003		0.0003		0.002		0.002		0.05	U	0.07		0.0005	U	0.0005	U	0.008		0.02		0.13		0.13	
S35-SW05 (unnamed int. creek)	6/9/10 3:00 PM	0.03	U	0.06		0.003	U	0.003	U	0.0001	U	0.0001	U	0.001		0.002		0.05	U	0.1		0.0005	U	0.0005	U	0.005		0.012		0.02		0.01	U
Surface Water Standards	Acute	0.75				0.34				see Table below				see Table below				--				see Table below				--				see Table below			
	Chronic	0.087				0.15				see Table below				see Table below				1.0				see Table below				--				see Table below			
	Human Health	--				0.01				0.005				1.3				0.3**				0.015				0.05**				2.0			

Notes:
Acute and Chronic levels are for aquatic life standards as listed in Circular DEQ-7, 2010.
* - these aquatic life standards are hardness dependent.
** - Secondary maximum contaminant level based on taste, odor, and staining.
Flag Qualifiers:
U - the compound was analyzed for, but not detected.
Blackfoot River concentrations are consistent with the 6/2008 RI sampling results from approximately same area.

Hardness Adjusted Surface Water Aquatic Standards

Sample ID	Hardness (mg/L)	Cadmium (mg/L)		Copper (mg/L)			Lead (mg/L)			Zinc (mg/L)	
		Acute	Chronic	Acute	Chronic		Acute	Chronic		Acute	Chronic
S35-SW01	62	0.001312	0.000190	0.008923	0.006201		0.044427	0.001731		0.079912	0.079912
S35-SW02	59	0.001248	0.000183	0.008515	0.005943		0.041709	0.001625		0.076623	0.076623
S35-SW03	87	0.001852	0.000244	0.012278	0.008282		0.068381	0.002665		0.106481	0.106481
S35-SW04	87	0.001852	0.000244	0.012278	0.008282		0.068381	0.002665		0.106481	0.106481
S35-SW05	64	0.001355	0.000194	0.009194	0.006371		0.046259	0.001803		0.082090	0.082090

Upper Blackfoot Mining Complex
Test Pitting Analytical Results
TO 19 - Section 35

TerraGraphics Environmental Engineering, Inc.

LabID	Sample Depth (ft)	Aluminum SPLP (mg/L)	Arsenic SPLP (mg/L)	Cadmium SPLP (mg/L)	Copper SPLP (mg/L)	Iron SPLP (mg/L)	Lead SPLP (mg/L)	Manganese SPLP (mg/L)	Zinc SPLP (mg/L)	Aluminum (mg/kg)	Arsenic (mg/kg)	As SSL (mg/kg)	Cadmium (mg/kg)	Cd SSL (mg/kg)	Copper (mg/kg)	Cu SSL (mg/kg)	Iron (mg/kg)	Fe SSL (mg/kg)	Lead (mg/kg)	Pb SSL (mg/kg)	Manganese (mg/kg)	Mn SSL (mg/kg)	Zinc (mg/kg)	Zn SSL (mg/kg)
S35-**TP01**-0024-20100422	2	13 J+	0.011	0.0003 U	0.013	6.9 J+	0.006	0.27	0.07	10,200	10	91	1 U	167	12	12,000	10,700	4,652	10	250	644	1,193	59	16,857
S35-**TP02**-0024-20100426	2	9.6 J+	0.007	0.0004 U	0.012	7.4 J+	0.005 U	0.088	0.03	7,490	9	129	1 U	125	13	14,083	11,900	4,824	9	270	279	1,585	29	19,333
S35-**TP04**-0012-20100426	1	18 J+	0.008	0.0004 U	0.035	13 J+	0.007	0.084	0.05	10,000	10	125	1 U	125	28	10,400	15,800	3,646	12	257	235	1,399	34	13,600
S35-**TP04**-0038-20100426	3.2	9.2 J+	0.003	0.0004 U	0.017	5.8 J+	0.005 U	0.097	0.03	8,700	7	233	1 U	125	26	19,882	13,000	6,724	11	330	418	2,155	47	31,333
S35-**TP05**-0010-20100420	0.8	9.2 J+	0.004	0.0004 U	0.007	4.8 J+	0.005 U	0.11	0.04	12,300	6 J-	150	1 U	125	13	24,143	11,200	7,000	10 J-	300	334 J	1,518	63	31,500
S35-**TP06**-0092-20100420	7.7	7.3 J+	0.003 U	0.0004 U	0.007	5 J+	0.005 U	0.052	0.02	7,760	5 UJ	167	1 U	125	7	13,000	8,290	4,974	19 J-	570	441 J	4,240	26	26,000
S35-**TP07**-0010-20100420	0.8	25 J+	0.006	0.0004 U	0.02	12 J+	0.009	0.1	0.07	11,300	6	100	1 U	125	16	10,400	11,900	2,975	10	167	226	1,130	38	10,857
S35-**TP08**-0036-20100421	3	22 J+	0.01	0.0004 U	0.027	17 J+	0.012	0.27	0.05	6,880	7	70	1 U	125	15	7,222	12,700	2,241	8	100	271	502	28	11,200
S35-**TP11**-0138-20100421	11.5	5.5 J+	0.005	0.0004 U	0.01 UJ	4.3 J+	0.005 U	0.05	0.02	4,870	9 J-	180	1 U	125	11	14,300	11,600	8,093	8 J-	240	277 J	2,770	29	29,000
S35-**TP12**-0010-20100421	0.8	32 J+	0.007	0.0004 U	0.03 J+	18 J+	0.009	0.2	0.08	8,930	7 J-	100	1 U	125	12	5,200	12,900	2,150	9 J-	150	450 J	1,125	35	8,750
S35-**TP13**-0084-20100423	7	7.6 J+	0.007	0.0004 U	0.017	5.9 J+	0.005 U	0.086	0.03	6,480	7	100	1 U	125	14	10,706	11,900	6,051	9	270	276	1,605	30	20,000
S35-**TP14**-0036-20100423	3	15 J+	0.005	0.0004 U	0.011	9.8 J+	0.005 U	0.1	0.03	7,390	6	120	1 U	125	11	13,000	11,700	3,582	7	210	251	1,255	24	16,000
S35-**TP15**-0024-20100423	2	22 J+	0.006	0.0004 U	0.014	14 J+	0.009	0.24	0.05	8,380	6	100	1 U	125	10	9,286	12,700	2,721	8	133	276	575	33	13,200
S35-**TP16**-0030-20100423	2.5	21 J+	0.013	0.0004 U	0.02 J+	14 J+	0.006	0.15	0.06	7,570	13 J-	100	1 U	125	12	7,800	14,600	3,129	7 J-	175	270 J	900	41	13,667
S35-**TP17**-0048-20100423	4	3.2 J+	0.003 U	0.0004 U	0.01 UJ	2.4 J+	0.005 U	0.026	0.02	6,270	7 J-	233	1 U	125	7	9,100	11,400	14,250	11 J-	330	348 J	6,692	24	24,000
S35-**TP17**-0060-20100423	5	16 J+	0.005	0.0004 U	0.011 J+	12 J+	0.008	0.1	0.03	10,500	12 J-	240	1 U	125	22	26,000	25,900	6,475	28 J-	525	616 J	3,080	35	23,333
S35-**TP17**-0180-20100423	15	6.5 J+	0.004	0.0004 U	0.009 J+	9.1 J+	0.005 U	0.1	0.03	7,270	12 J-	300	1 U	125	41	59,222	29,000	9,560	25 J-	750	1920 J	9,600	70	46,667
S35-**TP18**-0030-20100422	2.5	4.6 J+	0.003	0.0004 U	0.01 UJ	3.5 J+	0.005 U	0.051	0.02	12,000	11 J-	367	1 U	125	15	19,500	17,400	14,914	12 J-	360	248 J	2,431	37	37,000
S35-**TP18**-0174-20100422	14.5	1.7 J+	0.004	0.0004 U	0.01 UJ	1.3 J+	0.005 U	0.006	0.01 U	8,530	9 J-	225	1 U	125	17	22,100	16,800	38,769	8 J-	240	147 J	12,250	36	72,000
S35-**TP19**-0048-20100422	4	40 J+	0.008	0.0004 U	0.02 J+	22 J+	0.011	0.26	0.08	11,900	8 J-	100	1 U	125	15	9,750	12,600	1,718	9 J-	123	326 J	627	36	9,000
S35-**TP22**-0010-20100420	0.8	3.8 J+	0.003 U	0.0005	0.01 UJ	1.7 J+	0.005 U	0.038	0.02	10,000	6 J-	200	1 U	100	15	19,500	11,700	20,647	9 J-	270	405 J	5,329	47	47,000
S35-**TP22**-0126-20100420	10.5	120 J+	0.044	0.0004 U	0.12 J+	88 J+	0.051	1.7	0.24	5,630	6 J-	14	1 U	125	11	1,192	7,890	269	9 J-	26	213 J	63	23	1,917
S35-**TP23**-0010-20100420	0.8	16 J+	0.004	0.0004	0.01 J+	8.9 J+	0.006	0.22	0.04	9,640	6 J-	150	1 U	125	12	15,600	12,000	4,045	9 J-	225	323 J	734	34	17,000
S35-**TP23**-0060-20100420	5	22 J+	0.009	0.0004 U	0.02 J+	16 J+	0.011	0.22	0.05	6,980	7 J-	78	1 U	125	12	7,800	11,100	2,081	9 J-	123	254 J	577	31	12,400
S35-**TP24**-0042-20100420	3.5	12 J+	0.011	0.0004 U	0.007 J+	6.2 J+	0.005 U	0.17	0.05	7,650	8 J-	73	1 U	125	15	27,857	12,200	5,903	9 J-	270	256 J	753	29	11,600
S35-**TP24**-0048-20100420	4	9.9 J+	0.008	0.0004 U	0.014	7.2 J+	0.005 U	0.14	0.02	6,910	6 J-	75	1 U	125	11	10,214	8,190	3,413	6 J-	180	215 J	768	21	21,000
S35-**TP26**-0010-20100421	0.8	13 J+	0.005	0.0004 U	0.008	6 J+	0.005 U	0.074	0.04	13,000	7	140	1 U	125	12	19,500	12,400	6,200	10	300	395	2,669	48	24,000
Regional Screening Level†										77,000	40 *		70		3,100		55,000		400		1,800		23,000	

† April 2009 Regional Screening Levels for Chemical Contaminants at Superfund Sites (MDEQ)
* - DEQ Action Level for Arsenic in surface soil (DEQ Remediation Division 2005).
Flag Qualifiers:
U - the compound was analyzed for, but not detected.
J - estimate
- Soil concentration exceeds the Regional Screening Level.
- Soil concentration exceeds the calculated soil screening level (SSL).

SSL (mg/kg) = [HHS (mg/L)/SPLP result (mg/L)] x soil concentration (mg/kg) x 10
Where 10 is the dilution-attenuation factor. Highlighted SSLs are samples with concentrations that exceed the calculated SSL.

The synthetic precipitation leaching procedure (SPLP) analysis is used to estimate the potential for soil to leach metals to groundwater. The SPLP results (mg/L) are used in combination with the results of a soil sample analysis (mg/kg) from the same location to estimate the soil screening level (SSL). The SSL is the site-specific metals concentration in soil that is used to estimate if metals will leach to groundwater. If a soil sample contains metals at a greater concentration than the SSL, then unacceptable levels of metals leaching to groundwater would be expected. If metals concentrations in a soil sample were less than the SSL, then the leaching of metals to the groundwater would be at a rate that would be acceptable to meet groundwater quality standards.

Upper Blackfoot Mining Complex
Test Pitting Analytical Results
TO 19 - Section 35

TerraGraphics Environmental Engineering, Inc.

LabID	Sample Depth (ft)	pH Saturated Paste (Std. Units)	Sulfur HCl Extractable %(w/w)	Sulfur HNO3 Extractable %(w/w)	Sulfur Hot Water Extractable %(w/w)	Sulfur Residual %(w/w)	Sulfur %(w/w)	Neutralization Potential tons/1000	Acid Potential (tons/1000)	Acid/Base Potential** (tons/1000)	Lime as CaCO3 (%)	SMP Lime Requirement (tons/1000)	SMP Buffer pH Std. Units	Sp. Conductance Saturated Paste (mmhos/cm)	Total Inorganic Carbon (mg/kg)
S35-**TP01**-0024-20100422	2	5.8	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	6	0.01 U	6	0	1 U	7.0	0.3	0.4
S35-**TP02**-0024-20100426	2	6.6	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	7	0.01 U	7	0	1 U	7.6	0.28	0.1 U
S35-**TP04**-0012-20100426	1	5.8	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	9	0.01 U	9	0	1 U	7.3	0.27	0.1
S35-**TP04**-0038-20100426	3.2	5.0	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	7	0.01 U	7	0	2	6.6	0.24	0.4
S35-**TP05**-0010-20100420	0.8	5.4	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	8	0.02	8	0	2	6.7	0.26	0.4
S35-**TP06**-0092-20100420	7.7	6.6	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	5	0.01 U	5	0	1 U	7.6	0.18	0.1 U
S35-**TP07**-0010-20100420	0.8	4.8	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	2	0.01 U	2	0	1	6.8	0.24	0.2
S35-**TP08**-0036-20100421	3	6.6	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	9	0.01 U	9	0	1 U	7.4	0.46	0.2
S35-**TP11**-0138-20100421	11.5	7.4	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	33	0.01 U	33	3	1 U	7.6	0.38	0.3
S35-**TP12**-0010-20100421	0.8	5.5	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	6	0.01 U	6	0	1 U	7.0	0.18	0.1
S35-**TP13**-0084-20100423	7	7.3	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	10	0.01 U	10	0	1 U	7.6	0.3	0.1
S35-**TP14**-0036-20100423	3	5.7	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	5	0.01 U	5	0	1 U	7.4	0.28	0.1 U
S35-**TP15**-0024-20100423	2	5.0	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	6	0.01 U	6	0	1 U	7.1	0.24	0.1
S35-**TP16**-0030-20100423	2.5	6.6	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	8	0.01 U	8	0	1 U	7.5	0.25	0.1 U
S35-**TP17**-0048-20100423	4	6.1	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	4	0.01 U	4	0	1 U	7.5	0.17	0.1 U
S35-**TP17**-0060-20100423	5	6.0	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	14	0.01 U	14	1	1 U	7.4	0.15	0.1 U
S35-**TP17**-0180-20100423	15	5.8	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	12	0.01 U	12	1	1 U	7.4	0.14	0.1 U
S35-**TP18**-0030-20100422	2.5	5.3	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	10	0.01 U	10	1	1 U	7.3	0.23	0.1 U
S35-**TP18**-0174-20100422	14.5	6.8	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	18	0.01 U	18	2	1 U	7.6	0.13	0.1 U
S35-**TP19**-0048-20100422	4	7.6	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	39	0.01 U	39	4	1 U	7.6	0.33	0.5
S35-**TP22**-0010-20100420	0.8	5.3	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	9	0.12	9	0	3	6.5	0.22	0.7
S35-**TP22**-0126-20100420	10.5	6.1	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	5	0.01 U	5	0	1 U	7.5	0.21	0.1 U
S35-**TP23**-0010-20100420	0.8	5.2	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	6	0.01 U	6	0	1	6.8	0.22	0.4
S35-**TP23**-0060-20100420	5	7.2	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	17	0.01 U	17	2	1 U	7.6	0.35	0.1
S35-**TP24**-0042-20100420	3.5	5.1	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	4	0.03	4	0	1 U	7.2	0.26	0.1 U
S35-**TP24**-0048-20100420	4	5.7	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	6	0.01 U	6	0	1 U	7.4	0.23	0.1 U
S35-**TP26**-0010-20100421	0.8	5.0	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	7	0.01 U	7	0	5	6.2	0.15	0.3
Regional Screening Level†		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Flag Qualifiers:
U - the compound was analyzed for, but not detected.
J - estimate

** Acid/Base Potential = NP - AP

Potentially Acid Generating:	NP:AP <1 and NNP < -20 tons/kton
Uncertain Acid Generation Potential:	NP:AP between 1 and 3 and/or NNP between -20 and +20 tons/kton
Unlikely to Generate Acid:	NP:AP >3 and NNP < +20 tons/kton

NP = Neutralization Potential
AP = Acidification Potental
NNP = Net Neutralization Potential = Acid/Base Potential

Table 1. Geotechnical Testing Summary
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Sample I.D.	Sample Date	Sample Location	Sample Depth (ft)	ASTM D2488 General Material Description	ASTM D2488 USCS Classification Based on Lab Testing	ASTM D2216 Moisture Content As Received (%)	ASTM D4318 Liquid Limit	ASTM D4318 Plastic Limit	ASTM D4318 Plasticity Index	ASTM D4318 Atterberg Classification	ASTM D698 Maximum Dry Unit Weight (pcf)	ASTM D698 Optimum Water Content (%)	Initial Wet Unit Weight (pcf)	Initial Dry Unit Weight (pcf)	ASTM D854 Specific Gravity (-) #10	ASTM C127 Specific Gravity (+) 3/4"	ASTM D5084 Method C Permeability (cm/sec)	CU Triaxial with Pore Pressure ASTM D4767 Method A Total Stress Angle of Internal Friction (deg.)	Total Stress Cohesion Intercept (psf)	Effective Stress Angle of Internal Friction (deg.)	Effective Stress Cohesion Intercept (psf)
TP01-0024-000-20100422	4/22/2010	Test Pit 1	2			12.88															
TP01-0096-000-20100422	4/22/2010	Test Pit 1	8																		
TP02-0024-000-20100426	4/26/2010	Test Pit 2	2			10.55															
TP02-0204-000-20100426	4/26/2010	Test Pit 2	17																		
TP03-0030-000-20100426	4/26/2010	Test Pit 3	2.5			10.84															
TP03-0210-000-20100426	4/26/2010	Test Pit 3	17.5			11.30															
TP04-0038-000-20100426	4/26/2010	Test Pit 4	3			12.56															
TP04-0060-000-20100426	4/26/2010	Test Pit 4	5																		
TP05-0066-000-20100420 5.5'	4/20/2010	Test Pit 5	5.5			7.87															
TP05-0144-000-20100420	4/20/2010	Test Pit 5	12	Lean Clay with Sand	CL	23.99	35	17	18	CL	117	13				2.35	1.8E-07				
TP06-0036-000-20100420	4/20/2010	Test Pit 6	3			12.66															
TP06-0092-000-20100420	4/20/2010	Test Pit 6	7.7			12.29															
TP07-0120-000-20100420	4/20/2010	Test Pit 7	10																		
TP08-0036-000-20100422	4/22/2010	Test Pit 8	3	Clayey Sand with Gravel	SC		26	17	9	CL	128	9				2.57					
TP08-0096-000-20100421	4/21/2010	Test Pit 8	8																		
TP08-0192-000-20100421	4/21/2010	Test Pit 8	16																		
TP09-0024-000-20100421	4/21/2010	Test Pit 9	2			11.79															
TP09-0199-000-20100421	4/21/2010	Test Pit 9	16.6																		
TP10-0048-000-20100422	4/22/2010	Test Pit 10	4			7.84															
TP10-0192-000-20100422	4/22/2010	Test Pit 10	16																		
TP11-0138-000-20100421	4/21/2010	Test Pit 11	11.50	Clayey Gravel with Sand	GC	10.40	22	14	8	CL	133	8				2.9					
TP11-0186-000-20100420	4/20/2010	Test Pit 11	15.5			10.93															
TP12-0168-000-20100420	4/20/2010	Test Pit 12	14			13.25															
TP13-0084-000-20100423 (A)	4/23/2010	Test Pit 13	7	Clayey Gravel with Sand									126.8	115.1							
TP13-0084-000-20100423 (B)	4/23/2010	Test Pit 13	7	Clayey Gravel with Sand	GC	10.30	23	15	8	CL	132	8	142.4	129.3	2.62	2.55	2.1E-07	14	265	36	0
TP13-0084-000-20100423 (C)	4/23/2010	Test Pit 13	7	Clayey Gravel with Sand									127.2	115.7							
TP14-0036-000-20100423 (A)	4/23/2010	Test Pit 14	3	Clayey Sand with Gravel									123.1	110.0							
TP14-0036-000-20100423 (B)	4/23/2010	Test Pit 14	3	Clayey Sand with Gravel	SC	14.78	29	15	14	CL	125	10	123.6	110.5	2.578	2.57		12	366	30	160
TP14-0036-000-20100423 (C)	4/23/2010	Test Pit 14	3	Clayey Sand with Gravel									123.9	112.4							
TP15-0060-000-20100423	4/23/2010	Test Pit 15	5	Well graded Gravel with Sand	GW	5.54	19	20	NP	ML											
TP15-0144-000-20100423	4/23/2010	Test Pit 15	12																		
TP16-0030-000-20100420	4/20/2010	Test Pit 16	2.5			11.49					130	8				2.58	7.6E-07				
TP16-0096-000-20100423	4/23/2010	Test Pit 16	8																		
TP17-0024-000-20100423	4/23/2010	Test Pit 17	2			12.99															
TP17-0096-000-20100423	4/23/2010	Test Pit 17	8			21.72	40	29	11	ML	102	22					2.6E-06				
TP18-0030-000-20100422	4/22/2010	Test Pit 18	1.5			7.11	36	20	16	CL											
TP18-0174-000-20100422	4/22/2010	Test Pit 18	14.5			11.03															
TP19-0048-000-20100422	4/22/2010	Test Pit 19	4			9.88															
TP19-0204-000-20100422	4/22/2010	Test Pit 19	15			8.87															
TP20-0048-000-20100422	4/22/2010	Test Pit 20	4			8.61															
TP20-0192-000-20100422	4/22/2010	Test Pit 20	16																		

Table 1. Geotechnical Testing Summary
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Sample I.D.	Sample Date	Sample Location	Sample Depth (ft)	ASTM D2488 General Material Description	ASTM D2488 USCS Classification Based on Lab Testing	ASTM D2216 Moisture Content As Received (%)	ASTM D4318 Liquid Limit	ASTM D4318 Plastic Limit	ASTM D4318 Plasticity Index	ASTM D4318 Atterberg Classification	ASTM D698 Maximum Dry Unit Weight (pcf)	ASTM D698 Optimum Water Content (%)	Initial Wet Unit Weight (pcf)	Initial Dry Unit Weight (pcf)	ASTM D854 Specific Gravity (-) #10	ASTM C127 Specific Gravity (+) 3/4"	ASTM D5084 Method C Permeability (cm/sec)	CU Triaxial with Pore Pressure ASTM D4767 Method A Total Stress Angle of Internal Friction (deg.)	Total Stress Cohesion Intercept (psf)	Effective Stress Angle of Internal Friction (deg.)	Effective Stress Cohesion Intercept (psf)
TP21-0132-000-20100420 (A)	4/20/2010	Test Pit 21	11	Clayey Gravel with Sand	GC								127.2	115.6							
TP21-0132-000-20100420 (B)	4/20/2010	Test Pit 21	11	Clayey Gravel with Sand	GC	10.77	23	15	8	CL	131	7	127.2	115.9	2.622	2.41		16	187	37	5
TP21-0132-000-20100420 (C)	4/20/2010	Test Pit 21	11	Clayey Gravel with Sand	GC								126.1	115.0							
TP21-0180-000-20100420	4/20/2010	Test Pit 21	15																		
TP22-0126-000-20100420	4/20/2010	Test Pit 22	10.5			16.31															
TP22-0072-000-20100420 (A)	4/20/2010	Test Pit 22	6	Clayey Gravel with Sand	GC								127.0	113.6							
TP22-0072-000-20100420 (B)	4/20/2010	Test Pit 22	6	Clayey Gravel with Sand	GC	10.39	26	14	12	CL	130	8	127.0	113.7	2.542	2.51	1.1E-07	11	508	29	272
TP22-0072-000-20100420 (C)	4/20/2010	Test Pit 22	6	Clayey Gravel with Sand	GC								127.2	114.2							
TP23-0060-000-20100420	4/20/2010	Test Pit 23	5			11.93	19	15	4	CL-ML											
TP23-0120-000-20100420	4/20/2010	Test Pit 23	10			8.17															
TP24-0042-000-20100420	4/20/2010	Test Pit 24	3.5			15.19					129	7				2.49	1.7E-06				
TP24-0048-000-20100420	4/20/2010	Test Pit 24	4			8.25															
TP26-0060-000-20100421	4/21/2010	Test Pit 26	5																		
TP26-0132-000-20100421	4/21/2010	Test Pit 26	11																		
MW01-0126	4/28/2010	MW01	10.5										133.1	123.1							
MW01-0246	4/28/2010	MW01	20.5										112.2	98.7							
MW01-0186	4/28/2010	MW01	15.5										138.2	126.5							
SB02 9.8-10.3'	7/13/2010	SB02	9.8-10.3										133.7	123.2							
SB02 14.8-15.3'	7/13/2010	SB02	14.8-15.3										115.3	104.0							
SB02 19.3-19.8'	7/13/2010	SB02	18.3-19.8										136.9	125.0							
SB04-0180	4/27/2010	SB04	15										136.3	122.6							
SB04-0252	4/27/2010	SB04	21										134.3	122.0							
SB04-0066	4/27/2010	SB04	5.5										119.3	113.5							
SB05 5.3-5.8'	7/13/2010	SB05	5.3-5.8										132.8	120.9							
SB05 10.3'-10.8'	7/13/2010	SB05	10.3-10.8										127.3	116.4							
SB05 14.8-15.3'	7/13/2010	SB05	14.8-15.3										149.0	133.0							
SB06 4.5-5.0'	7/14/2010	SB06	4.5-5.0										123.1	105.0							
SB06 9.5-10.0'	7/14/2010	SB06	9.5-10.0										120.9	99.3							

Table 2. Particle Size Distribution Summary
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Sample I.D.	Sample Date	Sample Location	Sample Depth (ft)	ASTM D2488 General Material Description	ASTM D2488 USCS Classification Based on Lab Testing	Particle Size Distribution ASTM D422 Passing 3" (%) Passing	Passing #4 (%) Passing	Passing #10 (%) Passing	Passing #200 (%) Passing	Passing 0.002 mm (%) Passing
TP02-0024-000-20100426	4/26/2010	Test Pit 2	2			100	68.9	58.7	32.7	14.0
TP04-0038-000-20100426	4/26/2010	Test Pit 4	3			94.7	55.4	50.7	28.6	NA
TP05-0066-000-20100420 5.5'	4/20/2010	Test Pit 5	5.5			100	42.6	26.8	10.9	NA
TP05-0144-000-20100420	4/20/2010	Test Pit 5	12	Lean Clay with Sand	CL	100	88.2	83.6	71.4	NA
TP08-0036-000-20100422	4/22/2010	Test Pit 8	3	Clayey Sand with Gravel	SC	100	66	50.9	31.9	10.0
TP09-0024-000-20100421	4/21/2010	Test Pit 9	2			100	59	48.6	25.5	8.5
TP10-0048-000-20100422	4/22/2010	Test Pit 10	4			95.9	47.3	29.4	7.1	NA
TP11-0138-000-20100421	4/21/2010	Test Pit 11	11.50	Clayey Gravel with Sand	GC	100	60	51.3	29.5	14.0
TP11-0186-000-20100420	4/20/2010	Test Pit 11	15.5			100	62.5	53.9	31.7	14.4
TP13-0084-000-20100423 (A)	4/23/2010	Test Pit 13	7	Clayey Gravel with Sand						
TP13-0084-000-20100423 (B)	4/23/2010	Test Pit 13	7	Clayey Gravel with Sand	GC	100	63.7	53.8	29.8	11.8
TP13-0084-000-20100423 (C)	4/23/2010	Test Pit 13	7	Clayey Gravel with Sand						
TP14-0036-000-20100423 (A)	4/23/2010	Test Pit 14	3	Clayey Sand with Gravel						
TP14-0036-000-20100423 (B)	4/23/2010	Test Pit 14	3	Clayey Sand with Gravel	SC	100	74.6	60.2	41.7	11.6
TP14-0036-000-20100423 (C)	4/23/2010	Test Pit 14	3	Clayey Sand with Gravel						
TP15-0060-000-20100423	4/23/2010	Test Pit 15	5	Well graded Gravel with Sand	GW	100	36	17.6	2.3	1.5
TP15-0144-000-20100423	4/23/2010	Test Pit 15	12			100	93.6	92.5	13.2	NA
TP16-0030-000-20100420	4/20/2010	Test Pit 16	1.5			100	50.2	29.8	15.4	7.0
TP21-0132-000-20100420 (A)	4/20/2010	Test Pit 21	11	Clayey Gravel with Sand	GC					
TP21-0132-000-20100420 (B)	4/20/2010	Test Pit 21	11	Clayey Gravel with Sand	GC	100	64.4	57.1	34	12.5
TP21-0132-000-20100420 (C)	4/20/2010	Test Pit 21	11	Clayey Gravel with Sand	GC					
TP22-0126 -000-20100420	4/20/2010	Test Pit 22	10.5			100	59.1	48.3	26.2	10.3
TP22-0072-000-20100420 (A)	4/20/2010	Test Pit 22	6	Clayey Gravel with Sand	GC					
TP22-0072-000-20100420 (B)	4/20/2010	Test Pit 22	6	Clayey Gravel with Sand	GC	100	61.6	49.5	30.8	10.5
TP22-0072-000-20100420 (C)	4/20/2010	Test Pit 22	6	Clayey Gravel with Sand	GC					
TP24-0042-000-20100420	4/20/2010	Test Pit 24	3.5			100	71.1	63.2	33.5	NA
TP26-0060-000-20100421	4/21/2010	Test Pit 26	5			100	53.9	36.8	5.9	NA
TP26-0132-000-20100421	4/21/2010	Test Pit 26	11			100	46.7	30.5	3.6	NA