Table 4.1 - Summary of Task 1 Groundwater Quality Sample Results
Mamm Creek Phase II Hydrogeologic Characterization

Site ID	Well Depth (ft)	Sample Date	Field pH	Field Cond (µS/cm)	Field Temp (ºC)	Field DO (mg/L)	Calcium, dissolved	Magnesium, dissolved	Sodium, dissolved	Potassium, dissolved	Iron, dissolved	Bicarbonate as $CaCO_3$	Carbonate as CaCO3	Chloride	Sulfate	NO_3/NO_2 as N	Fluoride	Selenium, dissolved	Methane	Bromide	Boron, dissolved	Strontium, dissolved	TDS, @180 deg	Hardness as $CaCO_3$	Geochemical signature
CBGWS - MCL																**10**	**4**	**0.05**							
CBGWS - SMCL			**6.5-8.5**								**0.3**			**250**	**250**				**2** (COGCC)				**500**		
703020	129	6/22/2007	7.09	1366	12.31	0.81	94	58.8	169	3.4	0.02 U	665	2 U	8 B	119	9.9	0.5 U	0.0176					**900**	477	Na-Mg-HCO_3
703024	160	6/22/2007	7.28	1159	11.88	4.72	88.1	61.6	114	3.6	0.02 U	499	2 U	10 B	200	2.91	2 U	0.0114					**770**	473	Mg-Na-HCO_3
703083	90	6/8/2007	7.25	3165	13.53	0.1	42.9	3.1	739	1.9 B	0.04 U	378	16 B	**370**	**1010**	0.02 U	2.2			3 B	0.11	1.7	**2400**	120	Na-SO_4
703183	430	6/23/2007	7.78	1263	12.87	3.55	11	5	318	1.1 B	0.1	649	12 B	14.1	52.4	0.87	3.8	0.0148					**840**	48	Na-HCO_3
703226	100	6/21/2007	7.39	1298	14.91	9.82	56.8	70.9	146	2.9	0.02 U	476	16 B	110	72.7	3.33	0.4 B	0.0216					**760**	433	Na-Mg-HCO_3
703248	U	6/14/2007	7.49	752	13.6	9.45	53.8	28.4	81	4.8	0.02 U	391	2 U	8.8	29	0.93	1.4	0.0035					470	251	Na-Ca-HCO_3
703256	65	6/12/2007	7.18	950	10.67	7.17	181	87.8	354	3.2	0.02 U	567	2 U	130	**880**	2.35	1.1	0.0268					**1910**	813	Na-Ca-SO_4
703260	190	6/12/2007	7.99	2435	14.7	1.21	43.7	2.8	717	1.5 B	0.04 U	179	8 B	130	**1510**	0.19	1.7			2 B	0.078	1.63	**2440**	121	Na-SO_4
703264	210	6/25/2007	7.56	769	13.46	9.84	62.2	40.2	57.5	3.4	0.04 B	274	8 B	43.9	64	4.1	0.4 B	0.0075					470	321	Mg-Ca-HCO3
703265	495	6/13/2007	7.43	1771	13.52	0.96	19.1	6.3	531	2 B	0.09	713	2 U	80.2	**305**	0.02 U	3.3	0.0089		0.4 B	0.18	0.8	**1340**	74	Na-HCO3
703266	180	6/22/2007	NR	NR	NR	NR	81.2	68.1	84.9	4.3	**1.32**	473	15 B	6.8	147	0.09 B	0.4 B	0.0012					**700**	483	Mg-Ca-HCO3
703803	430	7/13/2007	7.05	1262	13.81	6.84	89.3	41.8	149	1.6 B	0.02 U	543	2 U	89.5	30	1.82	0.9	0.0189					**750**	395	Na-Ca-HCO3
703866	30	7/12/2007	6.99	1101	12.36	0.91	73.3	47.6	132	0.4 B	0.02 U	523	2 U	27.5	69.1	0.36	1.2		0.017	0.2 B	0.17	1.46	**680**	379	Na-Mg-HCO3
703898	200	6/14/2007	8.01	1394	12.21	0.4	8.9	0.2 U	330	0.7 B	0.02 U	346	18 B	32.6	**307**	0.07 B	2.4	0.0043					**920**	22	Na-HCO3-SO4
703918	U	7/12/2007	6.83	691	12.21	10.39	74.2	42.6	30.8	3.5	0.02 U	384	2 U	3.5	17	0.38	0.6	0.0025					420	361	Ca-Mg-HCO3
703933	U	6/23/2007	7.55	1549	13.52	5.92	35.1	33.4	316	1.7 B	0.02 U	567	2 U	20 B	**290**	2.06	2 U	**0.202**					**1060**	225	Na-HCO3
703934	380	7/6/2007	7.49	2794	13.32	2.07	38.3	1 B	565	1.3 B	0.02 U	154	2 U	**470**	**490**	0.02 U	3.1	0.0132					**1700** H	100	Na-Cl (-SO4)
703956	U	6/13/2007	6.97	2589	12.56	0.62	66.4	50.6	144	0.8 B	0.02 U	532	2 U	7.5	94.2	0.75	0.9	0.0077					**690**	374	Na-Mg-HCO3
703961	U	6/14/2007	7.6	3380	14.49	5.62	51.4	2 B	829	3.6	0.04 U	177	2 U	172	**1490**	**15.7**	**4**	**0.792**		2 BH	0.046	2.22	**2690**	137	Na-SO4
703967	185	6/8/2007	7.2	1579	11.92	6.35	61.5	40.6	338	2.7	0.02 U	575	2 U	55.6	**378**	0.34	1.5	0.0322					**1230**	321	Na-HCO3
703983	130	6/14/2007	8.34	1156	13.5	0.19	7	1.3	291	0.8 B	0.06	271	18 B	203	55.9	0.02 U	**6.7**	0.0005	**3.93**				**760**	23	Na-Cl-HCO3
703996	U	7/12/2007	7.34	1742	11.41	0.18	26	15.5	390	0.7 B	0.03 B	590	2 U	143	116	0.03 B			**6.1**				**1080**	129	Na-HCO3
704001	U	7/12/2007	8.34	1156	13.87	0.19	318	166	289	5.6	0.1	463	2 U	130	**1530**	0.34	0.4 B	0.006					**2810**	1480	Ca-Mg-SO4
704010	U	7/13/2007	7.31	1861	12.87	2.53	63.4	23.8	387	3	0.02 U	709	2 U	82.4	225	7.3	0.9	0.0309	0.006	1 U	0.19	1.49	**1210**	256	Na-HCO3
704011	U	6/25/2007	7.7	747	13.93	1.08	34.9	54.6	71	4.2	0.02 U	376	15 B	9	30.1	2.51	0.2 B	0.0076					440	312	Mg-Na-HCO3
704023	U	6/25/2007	7.45	1440	13.62	0.21	41.5	5.7	316	1 B	0.02 B	394	18 B	110	170	0.02 U			1.6				**910** H	127	Na-HCO3
704033	143	6/14/2007	7.27	859	19.92	4.26	39.2	44.5	153	1.7 B	0.02 U	435	2 U	10.6	105	0.36	2.2	0.0044					**630**	281	Na-HCO3
704047	350	6/21/2007	7.55	653	15.39	6.18	25.6	35.3	74.8	5.4	0.02 U	279	16 B	20.6	32.8	2.84	0.4 B	0.0076					380	209	Na-Mg-HCO3
704050	375	6/12/2007	7.21	4664	13.01	0.58	115	60.4	1150	6.3	0.04 U	847	2 U	210	**2070**	**20.4**	1	**0.0505**	0.063				**3970**	536	Na-SO4
704051	U	6/12/2007	7.28	2850	18.08	0.17	84.9	36.5	667	2 B	0.04 U	565	2 U	128	**1310**	0.02 U	1.3			0.5 B	0.27	3.17	**2350**	362	Na-SO4
704053	100	7/12/2007	**6.26**	4207	14.12	0.91	477	286	324	17	0.1 U	441	2 U	125	**2500**	2.07	0.5 U	0.0218					**4290**	2370	Ca-Mg-SO4
704063	U	7/6/2007	NR	NR	NR	NR	53.9	75.2	70.4	5.1	0.02 U	524	2 U	12.9	32.6	5.53	0.2 B	0.0162					**620** H	444	Mg-HCO3
704069	180-190	7/6/2007	7.89	686	16.12	5.38	41.8	37.4	56.9	3.6	0.02 U	293	12 B	21.3	41.1	1.4	0.3 B	0.0024					430 H	258	Mg-Na-HCO3
704073	285	7/6/2007	7.44	2810	20.66	3.83	22.5	59.1	579	3.1	0.02 U	592	9 B	**250**	**550**	0.02 U			0.3				**1820** H	299	Na-HCO3-SO4
704074	U	7/13/2007	7.08	1041	14.53	6.38	91.4	34.4	122	0.7 B	0.02 U	514	2 U	10.6	71.6	0.27			0.005				**640**	370	Na-Ca-HCO3
704076	U	7/13/2007	7.78	2209	16.78	1.61	40.1	2.9	492	1.5 B	0.02 U	486	2 U	111	**479**	4.39	1.5	**0.0909**	1.9	1 U	0.11	1.07	**1450**	112	Na-SO4-HCO3
704084	125-150	6/21/2007	7.48	666	12.44	6.74	35.5	34.4	70.6	3.8	0.02 U	296	17 B	21.5	25.3	2.8	0.3 B	0.0087					390	230	Na-Mg-HCO3
704151	365	6/26/2007	7.5	1621	13.42	0.38	35.9	1.5	356	1 B	0.02 U	346	2 U	231	116	2.77	2	**0.0805**	**6.1**				**980**	96	Na-HCO3-Cl
704158	130	6/23/2007	6.79	2126	12.63	2.1	102	19.8	380	4.2	0.02 U	546	2 U	230	**340**	1.75	2 U	**0.0698**					**1400**	336	Na-HCO3-SO4
704204	135	7/12/2007	7.65	905	13.78	1.65	30.5	12.5	186	1.8 B	0.02 U	375	5 B	18.6	91.6	0.6	1.4	0.0124		0.1 B	0.07	0.53	**570**	128	Na-HCO3
704288	U	6/13/2007	7.7	1170	12.92	4.01	22.7	11.4	266	1.2 B	0.02 U	452	2 U	69.3	79.1	1.58	3.1	0.0063					**730**	104	Na-HCO3
704320	U	6/23/2007	7.26	1087	13.91	10.36	62.8	49.5	134	1.6 B	0.02 U	563	2 U	28.1	38.3	1.07	2.5	0.037					**670**	360	Na-Mg-HCO3
704322	U	6/23/2007	7.29	810	13.85	0.52	81.2	43.9	57.5	1.6 B	**1.92**	463	2 U	8.8	6.1	0.02 U	0.9	0.0014					490	383	Ca-Mg-HCO3
704327	U	6/22/2007	7.83	1235	13.71	8.03	12.4	0.5 B	313	1.2 B	0.02 U	527	40	30	93	2.63	0.8 B	**0.253**					**800**	33	Na-HCO3
704328	U	6/23/2007	8.2	1351	13.53	4.49	10.7	0.2 U	314	0.8 B	0.02 U	330	13 B	120	190	0.68	**4** B	0.0306					**860**	27	Na-HCO3-SO4
704330	310	6/23/2007	7.12	5470	13.19	0.44	235	2.9	909	2.1 B	0.04 U	61	2 U	**1790**	40 B	0.38			**11**				**3280**	599	Na-Cl
704332	U	6/23/2007	7.08	1068	11.74	0.75	69.6	37.2	145	2.8	0.02 U	483	2 U	12	101	1.18	0.5 B	0.0186	0.004				**700**	327	Na-Ca-HCO3
704374	U	6/22/2007	7.17	1538	13.12	2.23	120	73.5	162	3.5	0.03 B	539	2 U	70	**300**	3.05	2 U	0.0126					**1070**	602	Na-Mg-HCO3
704392	U	7/12/2007	NR	NR	NR	NR	48.9	24.3	438	1.7 B	**0.6**	442	2 U	**277**	**265**	0.02 U	3.5	0.0006		1 B	0.26	1.62	**1320**	222	Na-HCO3-Cl
704404	U	7/7/2007	7.08	3502	19.64	4.2	211	121	443	3 B	0.1 U	403	2 U	**460**	**740**	3.07	1.1			1.9	0.14	3.31	**2450** H	1020	Na-Ca-SO4-Cl
704423	220	6/14/2007	8.05	2391	13.17	5.72	23.8	5.9	650	1.9 B	0.02 U	189	6 B	77.7	**1130**	0.3	2.7			2 B	0.16	1.01	**1880**	84	Na-SO4
704426	215	6/26/2007	NR	NR	NR	NR	69.2	10.1	448	1.6 B	0.03 B	595	2 U	**332**	164	0.17	1.8	0.0014					**1440**	215	Na-HCO3-Cl
704434	U	6/15/2007	7.16	2499	13.79	4.26	87.8	25.9	451	2.6	0.02 U	233	2 U	**389**	**468**	0.04 B	2.3	0.0002 B		2 BH	0.09	2.27	**1570**	326	Na-Cl-SO4
704440	160	7/13/2007	7.55	747	14.79	5.69	41.7	48.9	53.6	3.4	0.02 U	347	2 U	16.2	30.4	3.57	0.2 B	0.0099					430	305	Mg-Na-HCO3
704444	100	7/12/2007	7.4	3935	11.52	4.99	256	153	546	8.2	**0.51**	275	2 U	200 B	**2310**	0.88	0.7	**0.149**					**3360**	1270	Na-Ca-SO4
704454	280	6/14/2007	7.45	2822	14.94	1.47	40.5	2.4	745	1.8 B	0.02 U	476	2 U	140	**1040**	0.71	1.7			0.6 B	0.13	1.59	**2220**	111	Na-SO4
704460	130	6/14/2007	7.36	3877	13.57	4.64	195	121	588	3.5	0.04 U	317	2 U	214	**1870**	3.5	1.4 B	**0.189**					**3020**	985	Na-SO4
704475	320	7/13/2007	7.38	3997	12.6	4.38	143	43.4	761	5	0.04 U	187	2 U	**340**	**1780**	5.09	0.2 B	0.0397		10 U	0.13	5.01	**2980**	536	Na-SO4
704477	320	6/22/2007	7.37	3023	14.82	0.35	61.5	19.2	640	3.5	0.03 B	566	17 B	200	**860**	0.05 B	2 U			2 B	0.119	1.98	**2100**	233	Na-SO4
704479	150	6/21/2007	7.2	12810	15.73	3.96	125	306	2880	14.2	0.02 U	796	2 U	**1790**	**4590**	**10.6**	2 U			4 B	0.5	5.73	**10100** H	1570	Na-SO4
704500	200	6/14/2007	7.53	1611	17.93	7.3	25.8	8.4	349	3.2	0.02 U	555	2 U	73.5	204	0.65	2.3	0.0161					**1020**	99	Na-HCO3
704501	U	6/14/2007	7.83	2261	17.21	4.83	73.9	44.2	480	10	0.06	621	2 U	107	**689**	0.02 U	0.8 B	0.0025					**1800**	366	Na-SO4-HCO3
704516	100	6/13/2007	7.61	2058	13.09	0.24	18.6	4.7	576	1.9 B	0.05 B	336	12 B	80	**750**	0.16	2.7			2 U	0.073	0.86	**1590**	66	Na-SO4
704526	200	6/25/2007	8.02	3015	13.91	7.74	37.4	4.2	677	1.6 B	0.05 B	93	2 U	**250**	**1080**	3.14	**4.2**	**0.0878**		1.3	0.055	1.41	**2060**	111	Na-SO4
704527	143	6/21/2007	7.21	605	13.85	6.73	49.6	39.2	26.4	3.1	0.02 U	282	2 B	20.3	19	2.36	0.2 B	0.0045					350	285	Mg-Ca-HCO3
704534	182	7/6/2007	7.25	2301	18.71	0.37	84	38.8	437	2.8	0.02 U	553	2 U	37.5	**700**	0.39	0.7		0.002 U	2 U	0.19	2.81	**1600** H	369	Na-SO4

Notes:
Except as indicated, all units are mg/L.
NR = Value not recorded.

U = Parameter not detected at concentration shown.
B = Parameter detected at approximate concentration between Minimum Detection Level and Quantitation Level
H = Hold time for sample exceeded.

Table 4.2 - Summary of Task 1 and 2 Gas Composition and Methane Isotope Laboratory Results
Mamm Creek Phase II Hydrogeologic Characterization

Task ID	Facility ID	Sample Date	He	H_2	Ar	O_2	CO_2	N_2	CO	He dilution factor *
1	703866	7/12/2007			1.57	4.84	11.22	82.31	0	0.73
1	703983	6/14/2007	0.0613	0	0.581	0.285	0.36	35.39	0	
1	703996	7/12/2007			0.686	0.0182	1.72	54.12	0	0.29
1	704023	6/25/2007	0.0164	0	0.977	0.721	1.42	84.25	0	
1	704050	6/12/2007			1.55	6.51	12.4	78.02	0	0.65
1	704073	7/6/2007			1.33	12.7	5.49	64.4	0.065	0.75
1	704074	7/13/2007			1.37	17.08	7.75	73.8	0	0.63
1	704076	7/13/2007			1.19	7.29	2.94	68.9	0	0.68
1	704151	6/26/2007	0.0064	0	0.525	0.673	1.07	31.92	0	
1	704330	6/23/2007	0.0046	0	0.0936	0.749	0.66	5.13	0	
1	704332	6/23/2007			1.57	5.46	9.18	83.73	0.063	0.63
2	05-045-09462	12/6/2007	0.0055	0	0	0.0244	1.43	0.21	0	
2	05-045-13527	12/6/2007	0.004	0.001	0	0	3.5	0.072	0	
2	05-045-09156	12/6/2007	0.0047	0.0014	0	0.0059	1.62	0.13	0	
2	05-045-07155	12/6/2007	0.0053	0.0036	0	0	0.62	0.11	0	

Task ID	Facility ID	Sample Date	C_1	C_2	C_2H_4	C_3	iC_4	nC_4	iC_5	nC_5	C_6+	$\delta^{13}C_1$	δDC_1	Specific Gravity	BTU
1	703866	7/12/2007	0.0603	0	0	0	0	0	0	0	0				
1	703983	6/14/2007	63.3	0.0211	0	0	0	0	0	0	0	-64.91	-236.5	0.71	642
1	703996	7/12/2007	43.1	0.348	0	0.0014	0.0024	0	0	0	0	-41.69	-176.3		
1	704023	6/25/2007	12.27	0.342	0	0.0055	0	0	0	0	0	-36.97	-119.6	0.93	130
1	704050	6/12/2007	1.52	0	0	0	0	0	0	0	0				
1	704073	7/6/2007	16.01	0.0085	0	0	0	0	0	0	0	-60.68	-126.1		
1	704074	7/13/2007	0.001	0	0	0	0	0	0	0	0				
1	704076	7/13/2007	19.68	0	0	0	0	0	0	0	0	-39.27	-167.8		
1	704151	6/26/2007	65.8	0.0087	0	0	0	0	0	0	0	-40.99	-182.6	0.704	667
1	704330	6/23/2007	93.31	0.0483	0	0	0	0	0	0	0	-44.68	-203.5	0.587	947
1	704332	6/23/2007	0.001	0	0	0	0	0	0	0	0				
2	05-045-09462	12/6/2007	84.81	8.38	0	3	0.667	0.68	0.237	0.184	0.369	-41.49	-195.5	0.675	1164
2	05-045-13527	12/6/2007	84.3	7.22	0	2.68	0.68	0.701	0.263	0.2	0.383	-41.39	-191.6	0.687	1134
2	05-045-09156	12/6/2007	83.99	8.94	0	3.43	0.704	0.689	0.197	0.131	0.155	-41.8	-197.7	0.677	1164
2	05-045-07155	12/6/2007	83.12	9.52	0	4.02	0.859	0.89	0.291	0.226	0.331	-41.67	-199.1	0.689	1209

Chemical analysis based on standards accurate to within 2%
* Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace.
Gas concentrations provided in molar percent
Isotopic values provided as per mil (parts per thousand) relative to accepted standards.

Table 4.3 - Summary of Task 2 Produced Water Sample Results
Mamm Creek Phase II Hydrogeologic Characterization

Site ID	Sample Date	Field pH	Field Cond (µS/cm)	Field Temp (ºC)	Field DO (mg/L)	Calcium, dissolved	Magnesium, dissolved	Sodium, dissolved	Potassium, dissolved	Iron, dissolved	Bicarbonate as $CaCO_3$	Carbonate as CaCO3	Chloride	Sulfate	NO_3/NO_2 as N	Fluoride	Bromide	Boron, dissolved	Strontium, dissolved	Sum of Anions (meq/L)	Sum of Cations (meq/L)	Ion Balance (%)	TDS, @180 deg	Hardness as $CaCO_3$
05-045-06934	12/6/2007	6.37	12050	1.29	5.92	174	18	4490	73	207	813	2 U	7100	10 U	0.2 U	2 U	52	2.8	47.6	216	222	1.4	14700	509
05-045-07155	12/6/2007	7.62	1294	3.1	22.6	19.3	1.4	220	2.2	0.06	142	2 U	311	0.5 U	0.02 U	0.2 B	2.1	0.57	4.42	11.6	10.9	-3.1	690	54
05-045-07366	12/6/2007	6.88	14740	1.75	19.3	818	44	5090	173	197	415	2 U	10000	10 U	0.2 U	2 U	63	1.13	121	289	286	-0.5	17600	2230
05-045-07585	12/6/2007	6.45	24780	17.2	10.28	414	28	6390	80	897	1630	2 U	11500 H	10 U	0.44	2 U	54	4	64.2	355	355	0	21000 H	1150
05-045-07627	12/6/2007	7.44	9197	14.61	3.62	85	9	2590	55	16.5	1480	2 U	3210	5 U	0.02 U	1 U	15	3.7	19.6	120	122	0.8	7390	249
05-045-09123	12/6/2007	7.28	14100	3.61	19.4	260	15	2680	40	3.7	452	2 U	4620	3 U	0.02 U	1.4 B	30	0.44	39.1	139	134	-1.8	8430	712
05-045-09156	12/6/2007	7.12	9622	12.9	7.73	140	7	3160	50	13.3	3730	2 U	2740	5 U	0.02 U	1 U	13	3.5	14.9	151	149	-0.7	8850	379
05-045-09158	12/6/2007	7.33	12780	3.44	18.33	282	21	4350	81	44	725	2 U	7610	10 U	0.16	2 U	35	2.2	55.7	228	213	-3.4	14200	791
05-045-09162	12/6/2007	7.5	25020	32.9	4.73	183	18	4680	44	14.2	1780	2 U	6450	10 U	0.02 U	2 U	32	1.9	35.4	217	219	0.5	13900	531
05-045-09275	12/6/2007	6.98	17540	17.54	4.5	672	60	4120	139	155	667	2 U	7200	10 U	0.2 U	2 U	36	0.38	94	215	234	4.2	13400	1930
05-045-09418	12/5/2007	8.16	16900	5.03	26.75	730	67	6640	1400	1.7	291	2 U	11800	10 U	0.02 U	2 U	38	1.14	145	337	374	5.2	21700	2100
05-045-10106	12/6/2007	6.58	22570	20.62	5.04	626	25	4090	97	0.2 U	1190	2 U	9860	9 B	0.05 B	1 U	31	2.6	149	300	219	-15.6	16300	1670
05-045-10260	12/6/2007	6.5	29700	30.23	7	528	32	5410	68	4.4	640	2 U	9450	5 U	0.04 B	1 U	53	1.36	130	278	272	-1.1	17200	1450
05-045-10760	12/5/2007	7.7	11930	20.38	7.15	21	3 B	4010	44	1.4	6010	2 U	1600	5 U	0.02 U	1 U	6	4.7	5.4	165	179	4.1	10100	65
05-045-10817	12/5/2007	7.18	9230	16.43	4.24	25	3 B	2940	37	0.3	5570	2 U	1070	6 B	0.02 U	0.5 U	4	3.8	4.5	142	132	-3.6	8630	75
05-045-11402	12/5/2007	7.49	9452	18	3.44	23	3 B	2370	24	1.8	6110	2 U	918	5 U	0.02 U	1 U	4 B	2.1	5.37	148	107	-16.1	8870	70
05-045-09158-A	12/6/2007					288	22	4480	84	110	763	2 U	7410	10 U	0.02 U	2 U	35	2.7	55.9	223	223	0	14300	810
05-045-11402-A	12/5/2007					34	4 B	3160	36	1.8	6060	2 U	925	5 U	0.02 U	1 U	4 B	2.7	7.4	147	142	-1.7	8930	101

Notes:
Except as indicated, all units are mg/L.
U = Parameter not detected at concentration shown.
B = Parameter detected at approximate concentration between Minimum Detection Level and Quantitation Level
H = Hold time for sample exceeded.
A for Site ID designates duplicate sample.

Table 4.4 - Summary of Quality Assurance/Quality Control Sample Results for Task 1 Sampling
Mamm Creek Phase II Hydrogeologic Characterization

Site ID	Sample Date	Calcium, dissolved	Magnesium, dissolved	Sodium, dissolved	Potassium, dissolved	Iron, dissolved	Bicarbonate as $CaCO_3$	Carbonate as CaCO3	Chloride	Sulfate	NO_3/NO_2 as N	Fluoride	Selenium, dissolved	Methane	Bromide	Boron, dissolved	Strontium, dissolved	TDS, @180 deg	Hardness as $CaCO_3$
CBGWS - MCL											10	4	0.05						
CBGWS - SMCL						0.3			250	250				2 (COGCC)				500	
703024	6/22/2007	88.1	61.6	114	3.6	0.02 U	499	2 U	10 B	200	2.91	2 U	0.0114					770	473
703024-A[1]	9/5/2007	90.2	63.5	116	3.9	0.02 U	499	2 U	9	172	4.45	0.4 B	0.0083					760	486
703803	7/13/2007	89.3	41.8	149	1.6 B	0.02 U	543	2 U	89.5	30	1.82	0.9	0.0189					750	395
703803-A	9/5/2007	100	47.8	138	1.7 B	0.05	544	2 U	99.9	29.7	0.87	0.9	0.0165					720	446
703866	7/12/2007	73.3	47.6	132	0.4 B	0.02 U	523	2 U	27.5	69.1	0.36	1.2		0.017	0.2 B	0.17	1.46	680	379
703866-A	9/6/2007	71.4	44.8	125	0.4 B	0.02 U	520	2 U	22.4	75.4	0.03 B			0.003				650	363
703866-A-DUP	9/6/2007	70.3	44.3	124	0.5 B	0.02 U	525	2 U	22.3	75.6	0.03 B			0.009				660	358
703967	6/8/2007	61.5	40.6	338	2.7	0.02 U	575	2 U	55.6	378	0.34	1.5	0.0322					1230	321
703967-A	9/5/2007	73	47.2	408	3.1	0.02 U	583	2 U	85	538	0.81	1.3	0.0448					1470	376
704011	6/25/2007	34.9	54.6	71	4.2	0.02 U	376	15 B	9	30.1	2.51	0.2 B	0.0076					440	312
704011-A	9/5/2007	31.6	51.8	69.7	3.7	0.02 U	374	12 B	8.8	28.6	1.41	0.3 B	0.0032					420	292
704011-A-DUP	9/5/2007	30.8	50.1	67.9	3.4	0.02 U	375	10 B	8.8	28.6	1.34	0.3 B	0.0037					420	283
704050	6/12/2007	115	60.4	1150	6.3	0.04 U	847	2 U	210	2070	20.4	1	0.0505	0.063				3970	536
704050-A	9/6/2007	65.8	35.9	706	3.7	0.02 U	528	2 U	170	1100	4.57			1.74				2410	312
704477	6/22/2007	61.5	19.2	640	3.5	0.03 B	566	17 B	200	860	0.05 B	2 U			2 B	0.119	1.98	2100	233
704477-A	9/5/2007	58.6	19.7	578	3.2	0.04 U	533	7 B	190	820	0.22	2			2 U	0.122	1.69	1930	227
704477-A-DUP	9/5/2007	56.6	19.1	623	3	0.04 U	539	2 U	168	751	0.18	2			2 B	0.118	1.82	1910	220
CC-EQ Blank	7/14/2007	0.2 U	0.2 U	0.3 U	0.3 U	0.02 U	2 U	2 U	0.5 U	0.5 U	0.02 U	0.1 U	0.0002 B					10 U	1
SK-EQ Blank	7/13/2007	0.2 U	0.2 U	0.3 U	0.3 U	0.02 U	2 U	2 U	0.5 U	0.5 U	0.02 U	0.1 U	0.0001 U					10 U	1
TASK1-EQ-A	9/6/2007	0.2 U	0.2 U	0.3 U	0.3 U	0.02 U	2 U	2 U	0.5 U	0.5 U	0.04 B	0.1 U	0.0001 U					10 U	1

Notes:
All units are mg/L.
[1] Sample ID 703024-A was submitted to the lab under ID number 703266-A. The sample location was subsequently verified to be 703024-A.
U = Parameter not detected at concentration shown.
B = Parameter detected at approximate concentration between Minimum Detection Level and Quantitation Level