Appendix A

Summary of Bedrock and Alluvial Groundwater Chemistry for Round Mountain and Gold Hill

Table A-1

Summary of Bedrock Groundwater Chemistry at Round Mountain

		DW-FF1				DW-27				DW-30				DW-34				DW-36			
Constituent	**Units**	**Mean**	**Range**	**N**	**D**	**Mean**	**Range**	**N**	**D**	**Mean**	**Range**	**N**	**D**	**Mean**	**Range**	**N**	**D**	**Mean**	**Range**	**N**	**D**
Metals																					
Aluminum (d)	mg/L	ND	<0.01 – <0.05	14	0	ND	<0.02 – <0.05	11	0	NC	<0.05 – 1.3	13	1	NC	<0.05 – 0.01	13	2	0.0626	<0.03 – 0.279	10	9
Antimony (d)	mg/L	0.0020	<0.005 – 0.003	6	5	NC	<0.003 – 0.001	11	2	0.0010	<0.005 – 0.006	13	4	NC	<0.005 – 0.003	13	1	0.0075	0.0059 – 0.009	10	10
Arsenic (d)	mg/L	0.042	0.02 – 0.058	14	14	0.105	0.08 – 0.155	11	11	0.417	0.057 – 0.625	13	13	0.148	0.079 – 0.242	13	13	0.065	0.047 – 0.075	10	10
Barium (d)	mg/L	0.0065	<0.01 – 0.014	14	12	0.0078	0.005 – 0.011	11	11	0.0091	<0.01 – 0.015	13	12	0.0759	0.056 – 0.097	13	13	0.0376	0.022 – 0.044	10	10
Beryllium (d)	mg/L	ND	<0.0001 – <0.002	14	0	ND	<0.0001 – <0.002	11	0	ND	<0.001 – <0.002	13	0	ND	<0.001 – <0.002	13	0	ND	<0.001 – <0.002	10	0
Bismuth (d)	mg/L		–				–				–				–				–		
Boron (d)	mg/L	0.21	0.18 – 0.23	8	8	0.26	0.217 – 0.28	6	6	0.22	0.16 – 0.25	7	7	0.40	0.38 – 0.418	8	8	0.23	0.218 – 0.24	6	6
Cadmium (d)	mg/L	ND	<0.0001 – <0.002	14	0	ND	<0.0001 – <0.002	11	0	ND	<0.001 – <0.002	13	0	ND	<0.001 – <0.002	13	0	ND	<0.001 – <0.002	10	0
Calcium (d)	mg/L	29.18	26.2 – 32.8	14	14	44.86	41.2 – 53.1	11	11	17.22	8.65 – 54.4	13	13	20.14	17 – 27.6	13	13	2.97	2.38 – 4.07	10	10
Chromium (d)	mg/L	ND	<0.001 – <0.01	14	0	ND	<0.001 – <0.01	11	0	ND	<0.001 – <0.006	13	0	ND	<0.001 – <0.006	13	0	ND	<0.001 – <0.006	10	0
Cobalt (d)	mg/L		–				–				–				–				–		
Copper (d)	mg/L	ND	<0.003 – <0.01	14	0	ND	<0.003 – <0.01	11	0	ND	<0.003 – <0.01	13	0	NC	<0.01 – 0.009	13	2	ND	<0.003 – <0.01	10	0
Gallium (d)	mg/L		–				–				–				–				–		
Iron (d)	mg/L	NC	<0.06 – 0.052	14	2	0.0775	<0.06 – 0.323	11	5	0.0965	<0.06 – 0.306	13	7	0.0822	<0.06 – 0.164	13	9	0.0146	<0.06 – 0.09	10	3
Lead (d)	mg/L	ND	<0.0001 – <0.005	14	0	NC	<0.005 – 0.0001	11	1	ND	<0.001 – <0.005	13	0	NC	<0.005 – 0.001	13	1	ND	<0.001 – <0.005	10	0
Lithium (d)	mg/L		–				–				–				–				–		
Magnesium (d)	mg/L	1.83	1.61 – 1.98	14	14	5.95	5.33 – 7.2	11	11	4.23	<0.5 – 53	13	8	0.10	<0.5 – 0.256	13	8	NC	<0.5 – 0.82	10	1
Manganese (d)	mg/L	0.001	<0.05 – 0.0047	14	3	0.005	<0.05 – 0.018	11	6	0.007	<0.05 – 0.0154	13	8	0.011	<0.05 – 0.0189	13	10	0.002	<0.05 – 0.0059	10	4
Mercury (d)	mg/L	ND	<0.0002 – <0.0002	8	0	ND	<0.0002 – <0.0002	6	0	ND	<0.0002 – <0.0002	7	0	ND	<0.0002 – <0.0002	8	0	ND	<0.0002 – <0.0002	6	0
Molybdenu (d)m	mg/L		–				–				–				–				–		
Nickel (d)	mg/L	ND	<0.005 – <0.01	14	0	ND	<0.005 – <0.01	11	0	ND	<0.005 – <0.01	13	0	ND	<0.005 – <0.01	13	0	ND	<0.005 – <0.01	10	0
Potassium (d)	mg/L	3.10	2.9 – 3.64	14	14	3.63	2.9 – 5.55	11	11	6.47	1.13 – 69.4	13	13	1.69	1.4 – 3.04	13	13	1.10	<1 – 4.38	10	7
Scandium (d)	mg/L		–				–				–				–				–		
Selenium (d)	mg/L	ND	<0.001 – <0.01	14	0	ND	<0.001 – <0.01	11	0	ND	<0.003 – <0.01	13	0	ND	<0.003 – <0.01	13	0	0.0140	<0.01 – 0.0992	10	3
Silver (d)	mg/L	ND	<0.001 – <0.005	14	0	ND	<0.001 – <0.005	11	0	ND	<0.001 – <0.005	13	0	ND	<0.001 – <0.005	13	0	ND	<0.001 – <0.005	10	0
Sodium (d)	mg/L	66	60 – 75.5	14	14	42	37.9 – 48.6	11	11	74	66.7 – 110	13	13	71	66.8 – 77.8	13	13	97	93 – 103	10	10
Strontium (d)	mg/L		–				–				–				–				–		
Thallium (d)	mg/L		–				–				–				–				–		
Tin (d)	mg/L		–				–				–				–				–		
Titanium (d)	mg/L		–				–				–				–				–		
Zinc (d)	mg/L	0.008	<0.05 – 0.032	14	5	0.072	<0.05 – 0.277	11	4	ND	<0.005 – <0.05	13	0	0.0636	<0.05 – 0.213	13	11	ND	<0.005 – <0.05	10	0
Alkalinity (HCO3) (t)	mg/L	113	97 – 126	14	14	116	101 – 130	11	11	100	47 – 274	13	13	102	100 – 104	13	13	119	108 – 136	10	10
Alkalinity (total)	mg/L	103	97 – 106	14	14	105	101 – 109	11	11	90	45 – 229	13	13	111	101 – 124	13	13	121	118 – 129	10	10
pH	s.u.	7.60	6.67 – 7.99	14	14	7.63	6.8 – 8.01	11	11	7.93	6.62 – 8.41	13	13	7.79	6.7 – 8.31	13	13	8.54	7.6 – 8.77	10	10
Sulfate (t)	mg/L	77.4	67 – 90	14	14	80.4	75.2 – 90	11	11	62.4	55.9 – 69.1	13	13	63.5	58.8 – 73.3	13	13	42.8	39.5 – 45	10	10
TDS (d)	mg/L	303	263 – 350	14	14	301	277 – 340	11	11	344	198 – 1624	13	13	262	226 – 298	13	13	278	251 – 338	10	10
Chloride (t)	mg/L	23.9	19.3 – 29	14	14	26.8	22.3 – 34	11	11	30.6	20.5 – 49.5	13	13	21.5	18.3 – 28	13	13	10.6	8 – 11.9	10	10
Fluoride (t)	mg/L	4.2	3.71 – 4.64	14	14	1.0	0.9 – 1.2	11	11	1.3	0.92 – 1.65	13	13	4.2	2.11 – 6.02	13	13	18.7	18.1 – 19.6	10	10
Nitrate-N (t)	mg/L	1.2667	0.875 – 1.61	13	13	0.0248	<0.05 – 0.063	11	5	ND	<0.05 – <0.05	12	0	ND	<0.05 – <0.05	11	0	ND	<0.05 – <0.05	9	0
Nitrite-N (d)	mg/L	ND	<0.01 – <0.05	8	0	ND	<0.01 – <0.05	6	0	ND	<0.05 – <0.05	7	0	ND	<0.05 – <0.05	8	0	ND	<0.05 – <0.05	6	0
NO2+NO3 as N (d)	mg/L	1.1523	0.888 – 1.51	8	8	NC	<0.02 – 0.06	6	2	ND	<0.02 – <0.02	7	0	ND	<0.02 – <0.02	8	0	NC	<0.02 – 0.04	6	1
WAD Cyanide (d)	mg/L	ND	<0.01 – <0.01	8	0	ND	<0.01 – <0.01	6	0	ND	<0.01 – <0.01	7	0	ND	<0.01 – <0.01	8	0	NC	<0.01 – 0.019	6	1
Phosphorous (d)	mg/L		–				–				–				–				–		
pH Field	s.u.	7.58	6.94 – 7.98	14	14	7.52	6.9 – 8.48	15	15	8.19	7.21 – 8.94	12	12	7.74	7.13 – 8.22	13	13	8.27	7.54 – 8.83	9	9
Specific Conductance	uS	420	366 – 506	7	7	348	46 – 468	4	4	378	336 – 454	9	9	411	343 – 456	10	10	460	401 – 530	7	7

Table A-1 (Continued)

Constituent	Units	DW-38				DW-41				DW-42				DW-43				DW-44			
		Mean	Range	N	D	Mean	Range	N	D	Mean	Range	N	D	Mean	Range	N	D	Mean	Range	N	D
Aluminum (d)	mg/L	0.0155	<0.05 – 0.086	13	4	NC	<0.05 – 0.01	10	2	ND	<0.01 – <0.03	7	0	0.0165	<0.03 – 0.061	8	3	NC	<0.03 – 0.12	6	1
Antimony (d)	mg/L	0.0048	<0.001 – 0.011	13	12	0.0026	<0.005 – 0.006	10	6	ND	<0.003 – <0.005	7	0	NC	<0.005 – 0.003	8	2	NC	<0.005 – 0.003	6	1
Arsenic (d)	mg/L	0.151	0.04 – 0.199	13	13	0.070	<0.005 – 0.102	10	8	0.214	0.109 – 0.635	7	7	0.219	0.171 – 0.255	8	8	0.053	0.027 – 0.083	6	6
Barium (d)	mg/L	0.0190	0.0094 – 0.059	13	13	0.0095	<0.005 – 0.042	10	6	0.0068	0.0052 – 0.0109	7	7	0.0173	0.0099 – 0.03	8	8	0.0073	<0.005 – 0.018	6	5
Beryllium (d)	mg/L	ND	<0.001 – <0.002	13	0	ND	<0.001 – <0.002	10	0	ND	<0.001 – <0.002	7	0	ND	<0.001 – <0.002	8	0	ND	<0.001 – <0.002	6	0
Bismuth (d)	mg/L		–				–				–				–				–		
Boron (d)	mg/L	0.23	0.22 – 0.247	8	8	0.23	0.209 – 0.26	6	6	0.26	0.25 – 0.283	6	6	0.25	0.24 – 0.27	5	5	0.26	0.218 – 0.28	4	4
Cadmium (d)	mg/L	ND	<0.001 – <0.002	13	0	ND	<0.001 – <0.002	10	0	ND	<0.001 – <0.002	7	0	ND	<0.001 – <0.002	8	0	ND	<0.001 – <0.002	6	0
Calcium (d)	mg/L	19.36	15.2 – 30.4	13	13	14.70	11.9 – 17.9	10	10	35.90	32 – 40.7	7	7	35.80	34.4 – 38.6	8	8	42.50	25 – 48.3	6	6
Chromium (d)	mg/L	NC	<0.006 – 0.001	13	2	ND	<0.001 – <0.006	10	0	ND	<0.001 – <0.006	7	0	ND	<0.001 – <0.006	8	0	ND	<0.001 – <0.006	6	0
Cobalt (d)	mg/L		–				–				–				–				–		
Copper (d)	mg/L	0.0015	<0.01 – 0.007	13	3	0.0031	<0.01 – 0.011	10	4	ND	<0.003 – <0.01	7	0	ND	<0.003 – <0.01	8	0	NC	<0.01 – 0.014	6	1
Gallium (d)	mg/L		–				–				–				–				–		
Iron (d)	mg/L	0.0512	<0.05 – 0.086	13	12	0.2486	<0.06 – 0.78	10	6	0.4393	0.182 – 1.28	7	7	0.2656	0.181 – 0.386	8	8	0.1785	0.029 – 0.393	6	6
Lead (d)	mg/L	ND	<0.001 – <0.005	13	0	NC	<0.005 – 0.002	10	2	ND	<0.001 – <0.005	7	0	ND	<0.001 – <0.005	8	0	ND	<0.001 – <0.005	6	0
Lithium (d)	mg/L		–				–				–				–				–		
Magnesium (d)	mg/L	0.59	<0.5 – 2.22	13	11	0.32	<0.5 – 1.19	10	8	3.96	3.18 – 4.95	7	7	4.27	4.15 – 4.55	8	8	5.78	1.43 – 7.02	6	6
Manganese (d)	mg/L	0.015	<0.05 – 0.041	13	9	0.003	<0.05 – 0.0154	10	4	0.217	0.149 – 0.374	7	7	0.077	0.0507 – 0.103	8	8	0.158	<0.002 – 0.268	6	5
Mercury (d)	mg/L	ND	<0.0002 – <0.0002	8	0	ND	<0.0002 – <0.0002	6	0	ND	<0.0002 – <0.0002	6	0	ND	<0.0002 – <0.0002	5	0	ND	<0.0002 – <0.0002	4	0
Molybdenu (d)m	mg/L		–				–				–				–				–		
Nickel (d)	mg/L	ND	<0.005 – <0.01	13	0	ND	<0.005 – <0.01	10	0	NC	<0.01 – 0.01	7	1	ND	<0.005 – <0.01	8	0	NC	<0.01 – 0.012	6	2
Potassium (d)	mg/L	2.29	1.7 – 3.96	13	13	2.58	2.26 – 3.18	10	10	3.17	2.9 – 3.56	7	7	3.37	3.22 – 3.65	8	8	3.28	2.9 – 3.86	6	6
Scandium (d)	mg/L		–				–				–				–				–		
Selenium (d)	mg/L	0.0035	<0.01 – 0.021	13	3	0.0035	<0.01 – 0.0064	10	6	ND	<0.003 – <0.01	7	0	ND	<0.003 – <0.01	8	0	ND	<0.003 – <0.01	6	0
Silver (d)	mg/L	ND	<0.001 – <0.005	13	0	ND	<0.001 – <0.005	10	0	ND	<0.001 – <0.005	7	0	ND	<0.001 – <0.005	8	0	ND	<0.001 – <0.005	6	0
Sodium (d)	mg/L	85	79 – 94.5	13	13	81	76.8 – 88.8	10	10	44	39.6 – 47.7	7	7	41	37.7 – 47.7	8	8	49	42.8 – 68.3	6	6
Strontium (d)	mg/L		–				–				–				–				–		
Thallium (d)	mg/L		–				–				–				–				–		
Tin (d)	mg/L		–				–				–				–				–		
Titanium (d)	mg/L		–				–				–				–				–		
Zinc (d)	mg/L	NC	<0.05 – 0.0065	13	2	NC	<0.05 – 0.025	10	2	0.0246	<0.005 – 0.073	7	4	ND	<0.005 – <0.05	8	0	NC	<0.05 – 0.0113	6	2
Alkalinity (HCO3) (t)	mg/L	104	93.2 – 121	13	13	100	89.8 – 117	10	10	106	102 – 111	7	7	114	99.8 – 137	8	8	113	100 – 133	6	6
Alkalinity (total)	mg/L	97	92.2 – 105	13	13	92	89.8 – 95.9	10	10	110	102 – 126	7	7	106	99.8 – 113	8	8	105	100 – 109	6	6
pH	s.u.	7.84	6.59 – 8.51	13	13	7.86	6.73 – 8.29	10	10	7.52	6.72 – 7.88	7	7	7.56	6.46 – 8.35	8	8	7.54	6.52 – 8.06	6	6
Sulfate (t)	mg/L	95.2	73.8 – 149	13	13	66.4	62.3 – 69.1	10	10	66.3	59.5 – 72.4	7	7	60.6	56.3 – 67.4	8	8	98.6	94.9 – 103	6	6
TDS (d)	mg/L	311	247 – 401	13	13	310	267 – 362	10	10	283	270 – 293	7	7	260	235 – 290	8	8	324	288 – 364	6	6
Chloride (t)	mg/L	24.2	19.8 – 28.3	13	13	21.2	18.2 – 25	10	10	21.1	18.2 – 25.2	7	7	19.7	18.5 – 21.2	8	8	30.7	26.9 – 38.8	6	6
Fluoride (t)	mg/L	5.0	3.67 – 5.96	13	13	9.3	8.97 – 9.76	10	10	1.7	1.51 – 1.76	7	7	2.0	1.86 – 2.13	8	8	1.4	1.14 – 1.95	6	6
Nitrate-N (t)	mg/L	ND	<0.05 – <0.05	12	0	0.6653	0.44 – 1.19	8	8	ND	<0.05 – <0.05	6	0	ND	<0.05 – <0.05	7	0	0.0656	<0.05 – 0.157	5	3
Nitrite-N (d)	mg/L	ND	<0.05 – <0.05	8	0	ND	<0.05 – <0.05	6	0	ND	<0.05 – <0.05	6	0	ND	<0.05 – <0.05	5	0	ND	<0.05 – <0.05	4	0
NO2+NO3 as N (d)	mg/L	ND	<0.02 – <0.02	8	0	0.4833	0.39 – 0.55	6	6	ND	<0.02 – <0.02	6	0	NC	<0.02 – 0.02	5	1	NC	<0.02 – 0.04	4	2
WAD Cyanide (d)	mg/L	ND	<0.01 – <0.01	8	0	ND	<0.01 – <0.01	6	0	ND	<0.01 – <0.01	6	0	ND	<0.01 – <0.01	5	0	ND	<0.01 – <0.01	4	0
Phosphorous (d)	mg/L		–				–				–				–				–		
pH Field	s.u.	7.69	7.32 – 8.11	11	11	7.93	6.97 – 8.35	10	10	7.37	6.76 – 7.6	5	5	7.49	6.69 – 8.51	7	7	7.53	7.06 – 8.64	6	6
Specific Conductance	uS	480	403 – 515	8	8	408	352 – 487	8	8	389	365 – 442	4	4	377	346 – 447	5	5	480	421 – 524	5	5

Table A-1 (Continued)

Constituent	Units	DW-46				DW-47				DW-48				DW-49				DW-50			
		Mean	Range	N	D	Mean	Range	N	D	Mean	Range	N	D	Mean	Range	N	D	Mean	Range	N	D
Aluminum (d)	mg/L	ND	<0.01 – <0.05	7	0	ND	<0.01 – <0.03	9	0	0.029	<0.03 – 0.065	7	4	0.022	<0.03 – 0.099	9	5	NC	<0.03 – 0.039	5	1
Antimony (d)	mg/L	0.0104	0.004 – 0.021	7	7	0.0299	0.02 – 0.0351	9	9	0.0070	0.0061 – 0.0074	7	7	0.0060	<0.005 – 0.016	9	8	NC	<0.005 – 0.005	5	1
Arsenic (d)	mg/L	0.133	0.072 – 0.182	7	7	0.096	0.08 – 0.128	9	9	0.051	0.043 – 0.0598	7	7	0.029	0.02 – 0.042	9	9	0.059	0.031 – 0.0945	5	5
Barium (d)	mg/L	0.0737	0.06 – 0.084	7	7	0.1038	0.1 – 0.114	9	9	0.0683	0.023 – 0.0867	7	7	0.0156	<0.01 – 0.0211	9	8	0.0123	0.0084 – 0.027	5	5
Beryllium (d)	mg/L	ND	<0.001 – <0.002	7	0	ND	<0.001 – <0.002	9	0	ND	<0.001 – <0.002	7	0	ND	<0.001 – <0.002	9	0	NC	<0.002 – 0.001	5	1
Bismuth (d)	mg/L		–				–				–			ND	<0.02 – <0.02	1	0		–		
Boron (d)	mg/L	0.26	0.248 – 0.268	5	5	0.26	0.25 – 0.268	7	7	0.24	0.23 – 0.25	4	4	0.23	0.22 – 0.24	6	6	0.29	0.288 – 0.29	3	3
Cadmium (d)	mg/L	ND	<0.001 – <0.002	7	0	ND	<0.001 – <0.002	9	0	ND	<0.001 – <0.002	7	0	ND	<0.001 – <0.002	9	0	NC	<0.002 – 0.001	5	1
Calcium (d)	mg/L	16.37	13.5 – 20.2	7	7	13.07	12.4 – 14.7	9	9	4.91	4.34 – 5.82	7	7	3.60	3.03 – 4.23	9	9	39.36	38.8 – 39.9	5	5
Chromium (d)	mg/L	ND	<0.001 – <0.006	7	0	ND	<0.001 – <0.006	9	0	ND	<0.001 – <0.006	7	0	ND	<0.001 – <0.006	9	0	NC	<0.001 – 0.001	2	1
Cobalt (d)	mg/L		–				–				–			ND	<0.006 – <0.006	1	0		–		
Copper (d)	mg/L	NC	<0.01 – 0.005	7	1	ND	<0.003 – <0.01	9	0	NC	<0.01 – 0.005	7	2	ND	<0.006 – <0.006	1	0	NC	<0.01 – 0.005	5	1
Gallium (d)	mg/L		–				–				–			ND	<0.02 – <0.02	1	0		–		
Iron (d)	mg/L	0.1674	0.069 – 0.34	7	7	0.1017	<0.06 – 0.302	9	7	NC	<0.06 – 0.071	7	1	19.1	18.4 – 20.2	9	9	0.2322	0.16 – 0.483	5	5
Lead (d)	mg/L	ND	<0.001 – <0.005	7	0	ND	<0.001 – <0.005	9	0	0.00803	<0.005 – 0.0206	7	4	ND	<0.02 – <0.06	9	0	NC	<0.005 – 0.001	5	1
Lithium (d)	mg/L		–				–				–			NC	0.281 – 0.281	1	1		–		
Magnesium (d)	mg/L	2.27	1.75 – 3.06	7	7	2.14	2.06 – 2.23	9	9	NC	<0.5 – 1.65	7	1	NC	<0.005 – 0.002	9	1	5.66	5.52 – 5.85	5	5
Manganese (d)	mg/L	0.019	<0.05 – 0.0277	7	6	0.016	0.01 – 0.0235	9	9	0.009	0.0041 – 0.0168	7	7	0.127	<0.5 – 0.94	9	3	0.072	0.01 – 0.117	5	5
Mercury (d)	mg/L	ND	<0.0002 – <0.0002	5	0	ND	<0.0002 – <0.0002	7	0	ND	<0.0002 – <0.0002	4	0	ND	<0.0002 – <0.0002	6	0	ND	<0.0002 – <0.0002	3	0
Molybdenu (d)m	mg/L		–				–				–			NC	0.0178 – 0.0178	1	1		–		
Nickel (d)	mg/L	ND	<0.005 – <0.01	7	0	ND	<0.005 – <0.01	9	0	NC	<0.01 – 0.017	7	2	ND	<0.005 – <0.01	9	0	NC	<0.01 – 0.005	5	2
Potassium (d)	mg/L	3.21	2.99 – 3.6	7	7	3.71	3.54 – 4.15	9	9	2.17	0.87 – 7.98	7	7	1.68	1.4 – 2.14	9	9	3.08	2.88 – 3.24	5	5
Scandium (d)	mg/L		–				–				–			ND	<0.002 – <0.002	1	0		–		
Selenium (d)	mg/L	ND	<0.003 – <0.01	7	0	ND	<0.003 – <0.01	9	0	NC	<0.005 – 0.0115	7	1	NC	<0.01 – 0.0353	9	2	0.0061	<0.005 – 0.021	5	4
Silver (d)	mg/L	ND	<0.001 – <0.005	7	0	ND	<0.001 – <0.005	9	0	ND	<0.001 – <0.005	7	0	ND	<0.001 – <0.005	9	0	NC	<0.005 – 0.001	5	1
Sodium (d)	mg/L	60	46.3 – 65.7	7	7	71	69.3 – 72.6	9	9	94	90.1 – 99.3	7	7	98	93.1 – 102	9	9	44	43.4 – 45.2	5	5
Strontium (d)	mg/L		–				–				–			NC	0.0933 – 0.0933	1	1		–		
Thallium (d)	mg/L		–				–				–				–				–		
Tin (d)	mg/L		–				–				–			ND	<0.05 – <0.05	1	0		–		
Titanium (d)	mg/L		–				–				–			ND	<0.005 – <0.005	1	0		–		
Zinc (d)	mg/L	0.8053	<0.05 – 2.74	7	4	ND	<0.005 – <0.05	9	0	NC	<0.05 – 0.026	7	2	ND	<0.005 – <0.05	9	0	0.0184	<0.05 – 0.05	5	4
Alkalinity (HCO3) (t)	mg/L	116	111 – 119	7	7	125	119 – 143	9	9	121	112 – 136	7	7	119	112 – 131	9	9	111	101 – 125	5	5
Alkalinity (total)	mg/L	123	115 – 139	7	7	120	117 – 123	9	9	113	112 – 118	7	7	122	118 – 128	9	9	102	101 – 103	5	5
pH	s.u.	7.73	6.99 – 8.36	7	7	7.42	6.49 – 8.07	9	9	8.04	7.12 – 8.52	7	7	8.50	7.57 – 8.91	9	9	7.41	6.57 – 8.25	5	5
Sulfate (t)	mg/L	45.9	39.8 – 52.8	7	7	50.8	48 – 53.8	9	9	46.3	43.5 – 49.5	7	7	42.6	39.4 – 44.1	9	9	78.5	71.3 – 87.3	5	5
TDS (d)	mg/L	231	210 – 263	7	7	254	236 – 281	9	9	346	255 – 642	7	7	298	270 – 324	9	9	278	252 – 295	5	5
Chloride (t)	mg/L	10.0	8.9 – 12.5	7	7	11.9	11.3 – 12.8	9	9	11.4	10.3 – 14.5	7	7	10.1	9.5 – 10.3	9	9	21.1	19.8 – 22.5	5	5
Fluoride (t)	mg/L	5.9	4.94 – 6.19	7	7	7.0	6.7 – 7.34	9	9	19.2	19 – 19.6	7	7	NC	<0.01 – 0.01	9	1	2.7	1.81 – 3.4	5	5
Nitrate-N (t)	mg/L	ND	<0.05 – <0.05	6	0	NC	<0.05 – 0.067	7	2	ND	<0.05 – <0.05	4	0	ND	<0.05 – <0.05	7	0	ND	<0.05 – <0.05	3	0
Nitrite-N (d)	mg/L	ND	<0.05 – <0.05	5	0	ND	<0.05 – <0.05	7	0	ND	<0.05 – <0.05	4	0	ND	<0.05 – <0.05	6	0	ND	<0.05 – <0.05	3	0
NO2+NO3 as N (d)	mg/L	ND	<0.02 – <0.02	5	0	NC	<0.02 – 0.03	7	2	ND	<0.02 – <0.02	4	0	ND	<0.02 – <0.02	6	0	ND	<0.02 – <0.02	3	0
WAD Cyanide (d)	mg/L	ND	<0.01 – <0.01	5	0	ND	<0.01 – <0.01	7	0	ND	<0.01 – <0.01	4	0	ND	<0.01 – <0.01	6	0	ND	<0.01 – <0.01	3	0
Phosphorous (d)	mg/L		–				–				–			ND	<0.05 – <0.05	1	0		–		
pH Field	s.u.	7.64	6.96 – 8.6	7	7	7.97	7.69 – 8.96	8	8	7.79	7.35 – 8.07	7	7	8.33	7.39 – 9.11	10	10	7.85	7.27 – 8.45	6	6
Specific Conductance	uS	363	323 – 394	6	6	309	7.03 – 524	10	10	338	2.31 – 423	7	7	418	384 – 507	9	9	395	390 – 400	4	4

Notes: N= Number of Samples D= Number of Detects Blank cells for Samples and Detects indicate no samples analyzed for this parameter NC for Mean indicates no mean was calculated because there were fewer than 3 detects.
Calculated means include non-detects at half the detection limit: ND for Mean indicates zero detects MCLs are Nevada primary and secondary standards and are based on Federal drinking water standards d: Dissolved t: Total.

Table A-2

Summary of Alluvial Groundwater Quality at Round Mountain

		BMW-1				BMW-3				DMW-2				DW-26				DW-28			
Constituent	**Units**	**Mean**	**Range**	**N**	**D**	**Mean**	**Range**	**N**	**D**	**Mean**	**Range**	**N**	**D**	**Mean**	**Range**	**N**	**D**	**Mean**	**Range**	**N**	**D**
Aluminum (d)	mg/L	ND	<0.02 – <0.05	15	0	ND	<0.02 – <0.05	15	0	NC	<0.03 – 0.022	6	1	ND	<0.01 – <0.05	14	0	NC	<0.05 – 0.011	16	1
Antimony (d)	mg/L	NC	<0.005 – 0.003	15	1	ND	<0.001 – <0.005	15	0	0.0056	<0.006 – 0.01	7	5	0.0010	<0.005 – 0.003	14	6	0.0013	<0.005 – 0.003	16	8
Arsenic (d)	mg/L	0.008	<0.025 – 0.017	37	30	0.004	<0.025 – 0.0062	37	28	0.062	0.05 – 0.078	15	15	0.042	0.02 – 0.058	14	14	0.053	0.03 – 0.066	16	16
Barium (d)	mg/L	0.0271	0.02 – 0.0528	15	15	0.0399	0.03 – 0.0444	15	15	0.0036	0.003 – 0.004	7	7	0.0065	<0.01 – 0.014	14	12	0.0079	<0.01 – 0.023	16	15
Beryllium (d)	mg/L	ND	<0.0005 – <0.005	15	0	ND	<0.0005 – <0.005	15	0	ND	<0.0005 – <0.002	6	0	ND	<0.0001 – <0.002	14	0	ND	<0.0001 – <0.002	16	0
Bismuth (d)	mg/L	0.057	<0.1 – 0.108	34	29	ND	<0.1 – <0.1	2	0		–				–				–		
Boron (d)	mg/L	ND	<0.0005 – <0.005	15	0	0.04	<0.1 – 0.062	34	27	0.20	0.17 – 0.22	7	7	0.21	0.18 – 0.23	8	8	0.22	0.191 – 0.24	10	10
Cadmium (d)	mg/L	ND	<0.0005 – <0.005	15	0	ND	<0.0005 – <0.005	15	0	ND	<0.0005 – <0.002	6	0	ND	<0.0001 – <0.002	14	0	ND	<0.0001 – <0.002	16	0
Calcium (d)	mg/L	34.75	29.4 – 56.4	15	15	25.31	24 – 27.3	15	15	6.65	5.65 – 8.1	7	7	29.18	26.2 – 32.8	14	14	22.49	18.4 – 25.4	16	16
Chromium (d)	mg/L	ND	<0.006 – <0.01	15	0	ND	<0.006 – <0.01	15	0	ND	<0.006 – <0.01	6	0	ND	<0.001 – <0.01	14	0	NC	<0.01 – 0.002	16	1
Cobalt (d)	mg/L		–			ND	<0.01 – <0.01	2	0		–				–				–		
Copper (d)	mg/L	ND	<0.003 – <0.01	15	0	ND	<0.003 – <0.01	15	0	NC	<0.01 – 0.01	7	1	ND	<0.003 – <0.01	14	0	ND	<0.003 – <0.01	16	0
Gallium (d)	mg/L		–			ND	<0.1 – <0.1	2	0		–				–				–		
Iron (d)	mg/L	0.0020	<0.1 – 0.01	15	3	0.0067	<0.1 – 0.03	15	6	0.1739	0.04 – 0.417	7	7	NC	<0.06 – 0.052	14	2	0.0278	<0.06 – 0.132	16	5
Lead (d)	mg/L	NC	<0.005 – 0.001	15	1	NC	<0.005 – 0.002	15	2	NC	<0.005 – 0.004	6	1	ND	<0.0001 – <0.005	14	0	NC	<0.005 – 0.001	16	1
Lithium (d)	mg/L		–			ND	<0.02 – <0.02	2	0		–				–				–		
Magnesium (d)	mg/L	3.42	2.66 – 5.5	34	34	6.16	5.62 – 6.85	34	34	0.58	0.44 – 0.8	7	7	1.83	1.61 – 1.98	14	14	0.96	0.69 – 1.57	16	16
Manganese (d)	mg/L	ND	<0.002 – <0.005	15	0	ND	<0.002 – <0.005	15	0	0.007	0.0057 – 0.0085	7	7	0.001	<0.05 – 0.0047	14	3	0.002	<0.05 – 0.005	16	6
Mercury (d)	mg/L	ND	<0.0002 – <0.0002	14	0	ND	<0.0002 – <0.0002	14	0	ND	<0.0002 – <0.0002	6	0	ND	<0.0002 – <0.0002	8	0	ND	<0.0002 – <0.0002	10	0
Molybdenu (d)m	mg/L		–			ND	<0.01 – <0.01	2	0		–				–				–		
Nickel (d)	mg/L	ND	<0.01 – <0.04	15	0	ND	<0.01 – <0.04	15	0	ND	<0.01 – <0.01	6	0	ND	<0.005 – <0.01	14	0	ND	<0.005 – <0.01	16	0
Potassium (d)	mg/L	0.81	<2 – 1.46	15	11	1.13	<2 – 1.6	15	14	ND	<0.1 – <0.1	1	0	3.10	2.9 – 3.64	14	14	2.93	2.6 – 3.38	16	16
Scandium (d)	mg/L		–			ND	<0.1 – <0.1	2	0		–				–				–		
Selenium (d)	mg/L	NC	<0.01 – 0.002	15	2	ND	<0.001 – <0.01	15	0	NC	<0.01 – 0.05	7	1	ND	<0.001 – <0.01	14	0	0.0008	<0.01 – 0.011	16	3
Silver (d)	mg/L	ND	<0.005 – <0.01	15	0	ND	<0.005 – <0.01	15	0	ND	<0.005 – <0.005	6	0	ND	<0.001 – <0.005	14	0	ND	<0.001 – <0.005	16	0
Sodium (d)	mg/L	13	10.2 – 18.3	15	15	13	12.1 – 14.1	15	15	92	87.7 – 97.2	7	7	66	60 – 75.5	14	14	77	64.9 – 86.3	16	16
Strontium (d)	mg/L		–			NC	0.19 – 0.19	2	2		–				–				–		
Thallium (d)	mg/L		–				–				–				–				–		
Tin (d)	mg/L		–			ND	<0.1 – <0.1	2	0		–				–				–		
Titanium (d)	mg/L		–			ND	<0.005 – <0.005	2	0		–				–				–		
Zinc (d)	mg/L	0.005	<0.1 – 0.034	14	4	NC	<0.1 – 0.01	15	1	0.124	0.021 – 0.649	9	9	0.008	<0.05 – 0.032	14	5	0.024	<0.05 – 0.142	16	7
Alkalinity (HCO3) (t)	mg/L	92	72 – 122	15	15	95	90 – 102	15	15	126	121 – 136	7	7	103	97 – 106	14	14	105	93 – 121	16	16
Alkalinity (total)	mg/L	92	72 – 122	15	15	95	90 – 102	15	15	129	122 – 136	7	7	113	97 – 126	14	14	97	93 – 102	17	17
pH	s.u.	7.75	6.64 – 8.2	37	37	8.01	6.69 – 8.4	37	37	8.41	8.3 – 8.6	15	15	7.60	6.67 – 7.99	14	14	7.60	6.59 – 8.14	17	17
Sulfate (t)	mg/L	31.3	19.2 – 59.3	34	34	21.7	18 – 30	34	34	44.5	40 – 50	7	7	77.4	67 – 90	14	14	75.7	69 – 90	16	16
TDS (d)	mg/L	161	109 – 249	37	37	137	114 – 153	37	37	300	273 – 321	15	15	303	263 – 350	14	14	309	274 – 350	16	16
Chloride (t)	mg/L	6.0	2.42 – 13.1	34	34	3.2	1.69 – 21	34	34	10.1	8 – 13	7	7	23.9	19.3 – 29	14	14	25.2	20.9 – 30	16	16
Fluoride (t)	mg/L	0.04	<0.1 – 0.2	37	13	0.1	<0.1 – 0.3	37	24	18.9	17.8 – 20	15	15	4.2	3.71 – 4.64	14	14	6.3	5.13 – 7	16	16
Nitrate-N (t)	mg/L	0.2440	0.17 – 0.433	15	15	0.2282	0.09 – 1.54	15	15	NC	<0.05 – 0.08	7	1	1.2667	0.875 – 1.61	13	13	1.3947	1.13 – 1.75	15	15
Nitrite-N (d)	mg/L	NC	<0.1 – 0.02	15	1	NC	<0.1 – 0.01	15	2	ND	<0.01 – <0.05	6	0	ND	<0.01 – <0.05	8	0	NC	1.2 – 1.2	1	1
NO2+NO3 as N (d)	mg/L	0.2345	0.15 – 0.428	15	15	0.1214	0.06 – 0.26	15	15	NC	<0.02 – 0.08	7	1	1.1523	0.888 – 1.51	8	8	1.3950	1.16 – 1.75	10	10
WAD Cyanide (d)	mg/L	ND	<0.01 – <0.02	15	0	ND	<0.01 – <0.02	15	0	ND	<0.01 – <0.01	14	0	ND	<0.01 – <0.01	8	0	ND	<0.01 – <0.01	10	0
Phosphorous (d)	mg/L		–			NC	0.01 – 0.01	2	2	3.26	3.15 – 3.3	7	7		–				–		
pH Field	s.u.	7.72	6.64 – 8.51	35	35	7.77	6.56 – 8.56	34	34	8.16	6.9 – 9.43	19	19	7.58	6.94 – 7.98	14	14	7.62	7.1 – 8.06	16	16
Specific Conductance	uS	244	18.3 – 429	37	37	215	209 – 218	3	3	433	340 – 490	21	21	420	366 – 506	7	7	492	389 – 666	11	11

Table A-2 (Continued)

Constituent	Units	DW-31				DW-32				DW-39				DW-40				GMW-1			
		Mean	Range	N	D	Mean	Range	N	D	Mean	Range	N	D	Mean	Range	N	D	Mean	Range	N	D
Aluminum (d)	mg/L	NC	<0.05 – 0.023	12	1	NC	<0.05 – 0.284	13	1	NC	<0.05 – 0.069	6	2	0.0095	<0.03 – 0.051	13	4	ND	<0.02 – <0.03	7	0
Antimony (d)	mg/L	0.0045	0.003 – 0.006	12	12	0.0021	<0.005 – 0.006	13	8	0.0032	<0.006 – 0.009	6	4	0.0028	<0.005 – 0.009	13	7	NC	<0.003 – 0.003	16	2
Arsenic (d)	mg/L	0.102	0.04 – 0.122	12	12	0.067	0.036 – 0.08	13	13	0.079	0.051 – 0.091	6	6	0.089	0.04 – 0.113	13	13	0.028	0.02 – 0.037	16	16
Barium (d)	mg/L	0.0025	<0.01 – 0.01	12	6	0.0023	<0.01 – 0.012	13	8	0.0115	<0.005 – 0.042	6	5	0.0010	<0.01 – 0.0029	13	5	0.0139	0.01 – 0.015	16	16
Beryllium (d)	mg/L	ND	<0.001 – <0.002	12	0	NC	<0.002 – 0.009	13	1	ND	<0.001 – <0.002	6	0	ND	<0.001 – <0.002	13	0	ND	<0.0005 – <0.002	7	0
Bismuth (d)	mg/L		–				–				–				–				–		
Boron (d)	mg/L	0.23	0.206 – 0.24	7	7	0.22	0.189 – 0.24	7	7	0.22	0.21 – 0.24	4	4	0.22	0.2 – 0.25	9	9	0.19	0.17 – 0.21	16	16
Cadmium (d)	mg/L	ND	<0.001 – <0.002	12	0	ND	<0.001 – <0.002	13	0	ND	<0.001 – <0.002	6	0	ND	<0.001 – <0.002	13	0	ND	<0.0005 – <0.002	7	0
Calcium (d)	mg/L	13.08	10.9 – 16.7	12	12	15.82	13.2 – 22.2	13	13	13.30	11.9 – 14.6	6	6	13.26	11 – 17.2	13	13	20.29	19.2 – 22.3	16	16
Chromium (d)	mg/L	ND	<0.001 – <0.006	12	0	ND	<0.001 – <0.006	13	0	ND	<0.001 – <0.006	6	0	ND	<0.001 – <0.006	13	0	ND	<0.006 – <0.01	7	0
Cobalt (d)	mg/L		–				–				–				–				–		
Copper (d)	mg/L	NC	<0.01 – 0.005	12	1	0.0012	<0.01 – 0.005	13	3	NC	<0.01 – 0.005	6	1	ND	<0.005 – <0.005	4	0	NC	<0.01 – 0.0038	15	1
Gallium (d)	mg/L		–				–				–				–				–		
Iron (d)	mg/L	0.1228	<0.06 – 0.294	12	8	0.2352	<0.06 – 1.42	13	6	0.0827	<0.06 – 0.172	6	5	0.2579	<0.06 – 1.56	13	6	NC	<0.06 – 0.01	15	2
Lead (d)	mg/L	0.00042	<0.005 – 0.003	12	3	NC	<0.005 – 0.002	13	1	NC	<0.005 – 0.002	6	1	ND	<0.001 – <0.005	13	0	0.00040	<0.005 – 0.002	15	4
Lithium (d)	mg/L		–				–				–				–			0.028	0.02 – 0.03	8	8
Magnesium (d)	mg/L	0.54	<0.5 – 2.89	12	9	0.07	<0.5 – 0.141	13	7	0.34	<0.5 – 0.96	6	5	0.22	<0.5 – 1.09	13	11	2.46	2.29 – 2.7	16	16
Manganese (d)	mg/L	0.001	<0.05 – 0.0069	12	3	0.004	<0.05 – 0.0401	13	4	0.004	<0.05 – 0.0087	6	4	0.005	<0.05 – 0.0275	13	6	0.005	<0.005 – 0.008	15	13
Mercury (d)	mg/L	ND	<0.0002 – <0.0002	7	0	ND	<0.0002 – <0.0002	7	0	ND	<0.0002 – <0.0002	4	0	ND	<0.0002 – <0.0002	9	0	ND	<0.0002 – <0.0002	7	0
Molybdenu (d)m	mg/L		–				–				–				–				–		
Nickel (d)	mg/L	NC	<0.01 – 0.013	12	2	ND	<0.005 – <0.01	13	0	ND	<0.005 – <0.01	6	0	ND	<0.005 – <0.01	13	0	ND	<0.01 – <0.01	7	0
Potassium (d)	mg/L	2.69	2.06 – 4.78	12	12	2.35	1.13 – 2.8	13	13	2.86	2.29 – 4.88	6	6	2.26	2.11 – 2.51	13	13	6.07	5.6 – 7.1	16	16
Scandium (d)	mg/L		–				–				–				–				–		
Selenium (d)	mg/L	ND	<0.003 – <0.01	12	0	0.0009	<0.01 – 0.0041	13	3	ND	<0.003 – <0.01	6	0	ND	<0.003 – <0.01	13	0	ND	<0.001 – <0.01	7	0
Silver (d)	mg/L	ND	<0.001 – <0.005	12	0	ND	<0.001 – <0.005	13	0	ND	<0.001 – <0.005	6	0	ND	<0.001 – <0.005	13	0	ND	<0.005 – <0.005	15	0
Sodium (d)	mg/L	78	68.6 – 89.8	12	12	80	66.7 – 89.2	13	13	77	73.6 – 82.1	6	6	77	73.9 – 84.8	13	13	38	35.6 – 46.6	16	16
Strontium (d)	mg/L		–				–				–				–			0.073	0.06 – 0.08	8	8
Thallium (d)	mg/L		–				–				–				–				–		
Tin (d)	mg/L		–				–				–				–				–		
Titanium (d)	mg/L		–				–				–				–				–		
Zinc (d)	mg/L	0.4100	<0.05 – 1.96	12	4	0.0265	<0.05 – 0.251	13	3	0.0304	<0.05 – 0.143	6	3	0.0026	<0.05 – 0.013	13	3	0.0035	<0.01 – 0.022	15	3
Alkalinity (HCO3) (t)	mg/L	103	86.6 – 123	12	12	102	91.1 – 116	13	13	96	93.5 – 97.2	6	6	99	92.9 – 112	13	13	84	81 – 87.5	16	16
Alkalinity (total)	mg/L	94	86.6 – 101	12	12	93	90.7 – 95.8	13	13	102	93.5 – 114	6	6	94	92 – 96.1	13	13	84	81 – 87.5	16	16
pH	s.u.	7.72	6.74 – 8.33	12	12	7.84	6.38 – 8.23	13	13	8.03	6.97 – 8.49	6	6	7.87	6.81 – 8.46	13	13	7.94	6.95 – 8.21	15	15
Sulfate (t)	mg/L	56.9	51 – 73.9	12	12	69.7	62.3 – 74.1	13	13	55.1	52.8 – 59.3	6	6	56.4	52.9 – 59.3	13	13	51.9	50 – 53.6	16	16
TDS (d)	mg/L	277	214 – 394	12	12	291	260 – 307	13	13	279	266 – 289	6	6	276	257 – 313	13	13	228	198 – 245	15	15
Chloride (t)	mg/L	17.0	14.6 – 24	12	12	22.5	19.9 – 27	13	13	17.5	15 – 20	6	6	16.7	15.5 – 18	13	13	8.5	7.8 – 9	8	8
Fluoride (t)	mg/L	11.6	11 – 12.9	12	12	8.8	8.08 – 9.7	13	13	11.4	10.9 – 11.9	6	6	11.8	11.1 – 13.6	13	13	0.8	0.65 – 1	15	15
Nitrate-N (t)	mg/L	0.3856	0.11 – 1.28	11	11	0.8055	0.624 – 1.61	11	11	0.2532	<0.05 – 0.39	5	4	0.2039	0.13 – 0.243	11	11	0.1755	0.06 – 0.226	14	14
Nitrite-N (d)	mg/L	ND	<0.05 – <0.05	7	0	ND	<0.05 – <0.05	7	0	ND	<0.05 – <0.05	4	0	NC	<0.05 – 0.108	9	2	NC	<0.05 – 0.02	15	1
NO2+NO3 as N (d)	mg/L	0.1304	0.1 – 0.23	7	7	0.7350	0.63 – 0.88	7	7	0.2940	0.22 – 0.47	4	4	0.1891	0.17 – 0.22	9	9	0.1866	0.15 – 0.21	16	16
WAD Cyanide (d)	mg/L	ND	<0.01 – <0.01	7	0	ND	<0.01 – <0.01	7	0	ND	<0.01 – <0.01	4	0	ND	<0.01 – <0.01	9	0	ND	<0.01 – <0.01	13	0
Phosphorous (d)	mg/L		–				–				–				–				–		
pH Field	s.u.	7.64	7.05 – 8.02	9	9	7.86	7.01 – 8.18	11	11	7.95	6.96 – 8.46	6	6	8.01	6.98 – 8.68	13	13	7.82	6.33 – 8.32	13	13
Specific Conductance	uS	380	335 – 451	7	7	424	383 – 503	9	9	409	373 – 467	5	5	398	335 – 475	11	11	271	31.3 – 340	15	15

Table A-3

Summary of Bedrock Groundwater Quality at Gold Hill

Metals		GHB-03-1				GHB-03-2				GHB-03-3				GHB-03-4				GHB-BPW			
Constituent	Units	Mean	Range	N	D	Mean	Range	N	D	Mean	Range	N	D	Mean	Range	N	D	Mean	Range	N	D
Aluminum (d)	mg/L	0.030	<0.02 – <0.05	17	3	ND	<0.02 – <0.05	16	0	ND	<0.02 – <0.05	16	0	NC	<0.02 – 0.061	17	1	NC	<0.02 – 0.402	3	2
Antimony (d)	mg/L	0.011	0.003 – <0.025	17	16	0.004	<0.003 – 0.008	16	12	0.055	0.041 – 0.0611	16	16	0.030	0.011 – 0.196	17	16	0.015	0.0079 – 0.0189	3	3
Arsenic (d)	mg/L	0.070	<0.005 – 0.096	17	16	0.177	0.14 – 0.291	16	16	0.208	0.193 – 0.262	16	16	0.052	0.0415 – 0.0649	17	16	0.067	0.053 – 0.077	3	3
Barium (d)	mg/L	0.016	0.0113 – 0.058	17	17	0.040	0.025 – 0.0514	16	16	0.022	0.0178 – 0.051	16	16	0.037	0.0288 – 0.049	17	16	0.014	0.0124 – 0.0158	3	3
Beryllium (d)	mg/L	ND	<0.001 – <0.002	17	0	ND	<0.001 – <0.002	16	0	ND	<0.001 – <0.002	16	0	ND	<0.001 – <0.002	17	0	ND	<0.002	3	0
Bismuth (d)	mg/L	ND	<0.02	4	0	ND	<0.02	4	0	ND	<0.02	4	0	ND	<0.02	4	0	ND	<0.02	3	0
Boron (d)	mg/L	0.374	0.335 – 0.395	15	15	0.443	0.416 – 0.497	15	15	0.395	0.376 – 0.422	15	15	0.562	0.529 – 0.602	15	15	0.369	0.347 – 0.384	3	3
Cadmium (d)	mg/L	ND	<0.001 – <0.002	17	0	ND	<0.001 – <0.002	16	0	ND	<0.001 – <0.002	16	0	ND	<0.001 – <0.002	17	0	ND	<0.002	3	0
Calcium (d)	mg/L	4.28	3.87 – 5.28	8	8	52.44	48.6 – 54.4	7	7	39.20	35.3 – 44	7	7	56.97	51.7 – 61.6	8	7	4.12	3.8 – 4.3	3	3
Chromium (d)	mg/L	ND	<0.001 – <0.006	17	0	ND	<0.001 – <0.006	16	0	ND	<0.001 – <0.006	16	0	ND	<0.001 – <0.006	17	0	ND	<0.006	3	0
Cobalt (d)	mg/L	ND	<0.006	4	0	NC	<0.006 – 0.0069	4	1	ND	<0.006	4	0	ND	<0.006	4	0	ND	<0.006	3	0
Copper (d)	mg/L	NC	<0.003 – <0.01	17	2	ND	<0.003 – <0.01	16	0	ND	<0.003 – <0.01	16	0	NC	<0.003 – <0.01	17	1	NC	<0.003 – 0.0031	3	1
Gallium (d)	mg/L	ND	<0.02	4	0	ND	<0.02	4	0	ND	<0.02	4	0	ND	<0.02	4	0	ND	<0.02	3	0
Iron (d)	mg/L	NC	<0.02 – 0.062	17	1	0.077	<0.02 – 0.115	16	14	0.115	<0.02 – 0.152	16	14	0.437	<0.05 – 0.513	17	15	NC	<0.02 – 0.141	3	2
Lead (d)	mg/L	NC	<0.001 – <0.008	17	1	ND	<0.001 – <0.0075	16	0	ND	<0.001 – <0.0075	16	0	ND	<0.001 – <0.0075	17	0	ND	<0.005	3	0
Lithium (d)	mg/L	0.462	0.443 – 0.478	4	4	0.037	0.0331 – 0.0415	4	4	0.036	0.0334 – 0.0389	4	4	0.062	0.0574 – 0.0644	4	4	0.462	0.436 – 0.49	3	3
Magnesium (d)	mg/L	0.27	0.176 – <0.5	8	6	7.51	6.99 – 8.07	7	7	5.09	4.5 – 6.27	7	7	10.67	9.78 – 11.6	8	7	0.23	0.143 – 0.397	3	3
Manganese (d)	mg/L	0.02	0.0093 – <0.05	17	15	0.17	<0.05 – 0.429	16	15	0.14	0.087 – 0.157	16	16	0.20	0.148 – 0.226	17	16	0.02	0.0103 – 0.0234	3	3
Mercury (d)	mg/L	ND	<0.0002	15	0	ND	<0.0002	15	0	0.0002	<0.0002 – 0.00035	15	3	ND	<0.0002	15	0	ND	<0.0002	3	0
Molybdenum (d)	mg/L	0.015	0.0141 – 0.0161	4	4	0.015	0.014 – 0.0149	4	4	0.034	0.0316 – 0.0373	4	4	1.300	1.08 – 1.69	4	4	0.015	0.0136 – 0.0154	3	3
Nickel (d)	mg/L	ND	<0.005 – <0.01	8	0	NC	<0.005 – 0.016	7	1	ND	<0.005 – <0.01	7	0	ND	<0.005 – <0.01	8	0	ND	<0.01	3	0
Potassium (d)	mg/L	1.78	1.4 – 2.64	8	8	1.76	1.7 – 1.8	7	7	1.83	1.7 – 1.9	7	7	2.36	2.2 – 2.59	8	7	1.60	1.60	3	3
Scandium (d)	mg/L	ND	<0.002	4	0	ND	<0.002	4	0	ND	<0.002	4	0	ND	<0.002	4	0	ND	<0.002	3	0
Selenium (d)	mg/L	NC	<0.005 – <0.04	17	1	ND	<0.005 – <0.04	16	0	ND	<0.005 – <0.04	16	0	ND	<0.005 – <0.04	17	0	ND	<0.01	3	0
Silver (d)	mg/L	ND	<0.001 – <0.005	17	0	ND	<0.001 – <0.005	16	0	ND	<0.001 – <0.005	16	0	ND	<0.001 – <0.005	17	0	ND	<0.005	3	0
Sodium (d)	mg/L	144.0	140 – 148	8	8	77.3	70.4 – 80.6	7	7	64.0	58 – 66.6	7	7	96.4	89.3 – 102	8	7	147.3	146 – 149	3	3
Strontium (d)	mg/L	0.088	0.0831 – 0.0923	4	4	0.429	0.408 – 0.454	4	4	0.337	0.319 – 0.353	4	4	0.473	0.441 – 0.508	4	4	0.100	0.0796 – 0.112	3	3
Thallium (d)	mg/L	ND	<0.001 – <0.002	17	0	ND	<0.001 – <0.002	16	0	ND	<0.001 – <0.002	16	0	ND	<0.001 – <0.002	17	0	ND	<0.002	3	0
Tin (d)	mg/L	ND	<0.05	4	0	ND	<0.05	4	0	ND	<0.05	4	0	ND	<0.05	4	0	ND	<0.05	3	0
Titanium (d)	mg/L	ND	<0.005	4	0	ND	<0.005	4	0	ND	<0.005	4	0	ND	<0.005	4	0	ND	<0.005	3	0
Vanadium (d)	mg/L	ND	<0.005	4	0	ND	<0.005	4	0	ND	<0.005	4	0	ND	<0.005	4	0	ND	<0.005	3	0
Zinc (d)	mg/L	ND	<0.005 – <0.05	17	0	0.011	<0.005 – <0.05	16	3	NC	<0.005 – <0.05	16	2	0.012	<0.005 – <0.05	17	7	NC	<0.005 – 0.0132	3	1

Table A-3 (Continued)

Constituent	Units	GHB-03-1				GHB-03-2				GHB-03-3				GHB-03-4				GHB-BPW			
		Mean	Range	N	D	Mean	Range	N	D	Mean	Range	N	D	Mean	Range	N	D	Mean	Range	N	D
Alkalinity (t)	mg/L	273	253 – 289	8	8	158	146 – 163	7	7	158	155 – 162	7	7	177	169 – 185	7	7	282	281 – 283	3	3
pH	s.u.	8.2	7.68 – 8.47	16	16	7.1	6.65 – 8.07	16	16	7.2	6.72 – 8.22	16	16	7.1	6.63 – 8.28	16	16	7.7	7.33 – 8.47	3	3
Sulfate (t)	mg/L	37.5	35.9 – 40.6	16	16	130.9	125 – 143	16	16	69.2	64.8 – 75	16	16	160.4	136 – 194	16	16	39.8	38.2 – 40.9	3	3
TDS (t)	mg/L	378	349 – 402	17	17	422	365 – 453	16	16	324	285 – 350	16	16	476	427 – 537	16	16	399	376 – 413	3	3
Bicarbonate as $CaCO_3$ (t)	mg/L	282	260 – 311	7	7	163	157 – 179	7	7	163	155 – 191	7	7	183	174 – 207	7	7	273	272 – 275	3	3
Carbonate as $CaCO_3$ (t)	mg/L	6	<4.3 – <9.7	7	5	ND	<1	6	0	ND	<1	6	0	ND	<1	6	0	9	5.2 – 11.8	3	3
Hydroxide, $CaCO_3$ (t)	mg/L	ND	<1	6	0	ND	<1	6	0	ND	<1	6	0	ND	<1	6	0	NC	<1 – 40.3	3	1
Chloride (t)	mg/L	18.8	17.5 – 20	17	17	38.7	35.9 – 41.1	16	16	33.3	31.3 – 35.2	16	16	40.9	37.8 – 44.3	16	16	18.7	18.6 – 18.9	3	3
Fluoride (t)	mg/L	7.8	7.14 – 8.29	17	17	0.7	0.607 – 0.77	16	16	0.8	0.659 – 0.806	16	16	1.0	0.879 – 1.12	16	16	8.0	7.74 – 8.22	3	3
Nitrate-N (t)	mg/L	ND	<0.05	17	0	0.410	0.296 – 0.779	16	16	NC	<0.05 – 0.279	16	1	ND	<0.05	16	0	ND	<0.05	3	0
Nitrite-N (t)	mg/L	ND	<0.05	15	0	ND	<0.05	15	0	ND	<0.05	15	0	ND	<0.05	15	0	ND	<0.05	3	0
NO_2+NO_3-N (t)	mg/L	NC	<0.02 – 0.03	15	2	0.422	0.28 – 0.83	15	15	ND	<0.02	15	0	NC	<0.02 – 0.09	15	1	ND	<0.02	3	0
Cyanide-WAD (t)	mg/L	NC	<0.01 – 0.042	15	1	ND	<0.01	15	0	ND	<0.01	15	0	ND	<0.01	15	0	ND	<0.01	3	0
Phosphorus (t)	mg/L	NC	<0.05 – 0.077	4	1	ND	<0.05	4	0	NC	<0.05 – 0.055	4	1	ND	<0.05	4	0	NC	<0.05 – 0.241	3	1
pH Field	s.u.	8	7.18 – 8.49	14	14	7	6.91 – 8.35	12	12	7	7.23 – 8.39	13	13	7	6.8 – 8.42	12	12	8	8.23 – 8.3	3	3
Electrical Conductivity	uS/cm	516	5.54 – 739	14	14	673	624 – 781	12	12	523	475 – 618	13	13	756	680 – 925	12	12	601	552 – 639	3	3
Temperature	^{o}F	96.5	90 – 103.6	5	5	64.8	56.5 – 69.5	3	3	68.0	59.7 – 73.5	3	3	62.3	53.8 – 69.2	3	3	101.9	98.1 – 104.7	3	3
Flow Rate	gpm	46.3	26.7 – 150	13	13	16.3	14.5 – 25	12	12	18.6	17.2 – 25	13	13	13.6	11.4 – 25	12	12		0.0		

Notes: N= Number of Samples D= Number of Detects Blank cells for Samples and Detects indicates zero ND for Mean indicates too few detects to generate a reliable mean MCLs are Nevada primary and secondary standards
NC for Mean indicates no mean was calculated because there were fewer than 3 detects. d= Dissolved t= Total.

Table A-4

Summary of Alluvial Groundwater Quality at Gold Hill

Metals		GHA-03-1				GHA-03-2				GHA-03-3				GHA-03-4				GHA-03-5				GHA-03-6			
Constituent	Units	Mean	Range	N	D	Mean	Range	N	D	Mean	Range	N	D	Mean	Range	N	D	Mean	Range	N	D	Mean	Range	N	D
Aluminum (d)	mg/L	0.072	<0.03 – 0.209	15	9	0.209	0.082 – 0.529	15	15	NC	<0.02 – 0.12	16	2	NC	<0.02 – 0.051	15	1	0.031	<0.02 – 0.102	16	3	0.085	<0.02 – 0.935	16	3
Antimony (d)	mg/L	0.006	<0.003 – 0.011	15	12	0.009	0.0069 – 0.012	15	15	NC	<0.001 – 0.005	16	1	NC	0.001 – <0.005	15	1	NC	0.001 – <0.006	16	1	NC	0.001 – <0.006	16	1
Arsenic (d)	mg/L	0.095	0.068 – 0.108	15	15	0.230	0.072 – 0.296	15	15	0.024	<0.019 – 0.028	16	6	0.019	0.009 – <0.025	15	4	0.032	0.0261 – 0.0412	16	16	0.022	0.005 – <0.025	16	7
Barium (d)	mg/L	0.009	0.007 – 0.018	15	15	0.006	0.0038 – 0.016	15	15	0.023	0.0195 – 0.031	16	16	0.026	0.0219 – 0.062	15	16	0.019	0.0124 – 0.045	16	16	0.180	0.135 – 0.267	16	16
Beryllium (d)	mg/L	ND	<0.001 – <0.002	15	0	ND	<0.001 – <0.002	15	0	NC	<0.001 – 0.0022	16	1	ND	<0.001 – <0.002	15	0	ND	<0.001 – <0.002	16	0	ND	<0.001 – <0.002	16	0
Bismuth (d)	mg/L	ND	<0.02	4	0	ND	<0.02	4	0	ND	<0.02	4	0	ND	<0.02	4	0	ND	<0.02	4	0	ND	<0.02	4	0
Boron (d)	mg/L	0.418	0.368 – 0.458	14	14	0.425	0.321 – 0.49	14	14	0.186	0.16 – 0.205	15	15	0.085	0.072 – 0.1	14	15	0.299	0.284 – 0.32	15	15	0.096	0.07 – 0.136	15	15
Cadmium (d)	mg/L	ND	<0.001 – <0.002	15	0	ND	<0.001 – <0.002	15	0	NC	<0.001 – 0.0026	16	1	ND	<0.001 – <0.002	15	0	ND	<0.001 – <0.002	16	0	ND	<0.001 – <0.002	16	0
Calcium (d)	mg/L	4.40	4.14 – 4.84	7	7	13.77	7.51 – 31.1	7	7	14.13	11.5 – 15.9	6	6	14.91	14 – 15.7	7	7	28.96	26.7 – 30.6	7	7	74.10	17.7 – 98.1	7	7
Chromium (d)	mg/L	NC	<0.001 – <0.006	15	1	ND	<0.001 – <0.006	15	0	ND	<0.001 – <0.006	16	0	ND	<0.001 – <0.006	15	0	ND	<0.001 – <0.006	16	0	ND	<0.001 – <0.006	16	0
Cobalt (d)	mg/L	ND	<0.006	4	0	ND	<0.006	4	0	ND	<0.006	4	0	ND	<0.006	4	0	ND	<0.006	4	0	NC	<0.006 – 0.0077	4	1
Copper (d)	mg/L	NC	<0.003 – <0.01	15	1	NC	<0.003 – <0.01	15	2	0.010	<0.003 – 0.023	16	7	ND	<0.003 – <0.01	15	0	NC	<0.003 – <0.01	16	1	NC	<0.003 – <0.01	16	1
Gallium (d)	mg/L	ND	<0.02	4	0	ND	<0.02	4	0	ND	<0.02	4	0	ND	<0.02	4	0	ND	<0.02	4	0	ND	<0.02	4	0
Iron (d)	mg/L	0.073	0.044 – 0.132	15	8	0.050	<0.02 – 0.1	15	5	0.049	<0.02 – <0.06	16	3	ND	<0.02 – <0.06	15	0	NC	<0.02 – 0.06	16	1	12.482	0.37 – 19.5	16	16
Lead (d)	mg/L	ND	<0.001 – <0.0075	15	0	ND	<0.001 – <0.0075	15	0	ND	<0.001 – <0.0075	16	0	ND	<0.001 – <0.0075	15	0	ND	<0.001 – <0.0075	16	0	ND	<0.001 – <0.0075	16	0
Lithium (d)	mg/L	0.152	0.134 – 0.164	4	4	0.337	0.223 – 0.401	4	4	0.010	0.0072 – 0.0155	4	4	0.008	0.0071 – 0.0094	4	4	0.044	0.0407 – 0.0468	4	4	0.009	0.0065 – 0.0113	4	4
Magnesium (d)	mg/L	0.51	0.231 – 1.81	7	7	NC	<0.04 – 0.59	7	1	1.40	1.26 – 1.49	6	6	1.88	1.78 – 2	7	7	1.96	1.77 – 2.3	7	7	13.30	3.91 – 17.1	7	7
Manganese (d)	mg/L	0.02	0.0094 – <0.05	15	14	0.01	<0.002 – <0.05	15	3	0.01	<0.004 – <0.05	16	8	NC	<0.002 – <0.05	15	2	NC	<0.002 – <0.05	16	1	3.84	<0.05 – 6.21	16	15
Mercury (d)	mg/L	0.0003	<0.0002 – 0.00057	14	7	ND	<0.0002	14	0	ND	<0.0002	15	0	ND	<0.0002	14	0	ND	<0.0002	15	0	ND	<0.0002	15	0
Molybdenum (d)	mg/L	0.021	0.0192 – 0.0232	4	4	0.019	0.016 – 0.0237	4	4	NC	<0.008 – 0.0099	4	2	ND	<0.008	4	0	0.010	0.0092 – 0.0103	4	4	0.016	0.011 – 0.0266	4	4
Nickel (d)	mg/L	ND	<0.005 – <0.01	7	0	ND	<0.005 – <0.01	7	0	NC	<0.005 – 0.011	6	1	NC	<0.005 – <0.01	7	1	ND	<0.005 – <0.01	7	0	0.016	<0.005 – 0.021	7	6
Potassium (d)	mg/L	NC	<1 – 1.79	7	1	2.94	2.3 – 5.17	7	7	1.62	1.44 – 1.8	6	6	1.05	<1 – 1.1	7	5	1.98	1.9 – 2.1	7	7	2.43	1.81 – 2.8	7	7
Scandium (d)	mg/L	ND	<0.002	4	0	ND	<0.002	4	0	ND	<0.002	4	0	ND	<0.002	4	0	ND	<0.002	4	0	ND	<0.002	4	0
Selenium (d)	mg/L	ND	<0.005 – <0.04	15	0	NC	<0.005 – <0.04	15	1	ND	<0.005 – <0.04	16	0	ND	<0.005 – <0.04	15	0	ND	<0.005 – <0.04	16	0	ND	<0.005 – <0.04	16	0
Silver (d)	mg/L	ND	<0.001 – <0.005	15	0	ND	<0.001 – <0.005	15	0	ND	<0.001 – <0.005	16	0	ND	<0.001 – <0.005	15	0	ND	<0.001 – <0.005	16	0	ND	<0.001 – <0.005	16	0
Sodium (d)	mg/L	101.4	98.8 – 107	7	7	136.0	125 – 148	7	7	35.6	30 – 41.6	6	6	19.2	17.5 – 20	7	7	54.1	47 – 57.3	7	7	90.7	31.5 – 118	7	7
Strontium (d)	mg/L	0.028	0.0266 – 0.0289	4	4	0.157	0.12 – 0.219	4	4	0.155	0.139 – 0.173	4	4	0.148	0.14 – 0.156	4	4	0.239	0.226 – 0.248	4	4	0.637	0.536 – 0.796	4	4
Thallium (d)	mg/L	ND	<0.001 – <0.002	15	0	ND	<0.001 – <0.002	15	0	ND	<0.001 – <0.002	16	0	ND	<0.001 – <0.002	15	0	ND	<0.001 – <0.002	16	0	ND	<0.001 – <0.002	16	0
Tin (d)	mg/L	ND	<0.05	4	0	ND	<0.05	4	0	ND	<0.05	4	0	ND	<0.05	4	0	ND	<0.05	4	0	ND	<0.05	4	0
Titanium (d)	mg/L	ND	<0.005	4	0	ND	<0.005	4	0	ND	<0.005	4	0	ND	<0.005	4	0	ND	<0.005	4	0	ND	<0.005	4	0
Vanadium (d)	mg/L	0.016	0.0153 – 0.0172	4	4	0.093	0.0662 – 0.136	4	4	0.008	0.0057 – 0.0094	4	4	0.006	0.0055 – 0.0064	4	4	0.006	0.0053 – 0.0061	4	4	ND	<0.005	4	0
Zinc (d)	mg/L	0.012	<0.005 – 0.05	15	4	NC	<0.005 – <0.05	15	1	0.012	<0.005 – <0.05	16	4	NC	<0.005 – <0.05	15	1	0.012	<0.005 – <0.05	16	4	0.026	0.015 – <0.05	16	15

Table A-4 (Continued)

Constituent	Units	GHA-03-1				GHA-03-2				GHA-03-3				GHA-03-4				GHA-03-5				GHA-03-6			
		Mean	Range	N	D	Mean	Range	N	D	Mean	Range	N	D	Mean	Range	N	D	Mean	Range	N	D	Mean	Range	N	D
Alkalinity (t)	mg/L	181	166 – 195	7	7	281	264 – 310	7	7	107	102 – 111	6	6	77	73.4 – 79.1	7	7	132	123 – 137	7	7	446	94.2 – 627	7	7
pH	s.u.	8.0	7.6119 – 8.32	15	15	10.0	9.612 – 11.3	15	15	7.1	6.5219 – 8.33	16	16	7.0	6.57 – 7.95	15	15	7.3	6.86 – 8.16	15	14	6.9	6.46 – 7.47	14	14
Sulfate (t)	mg/L	34.8	32.6 – 39.1	14	14	38.3	33 – 57.9	15	15	12.1	10.8 – 16.9	16	16	10.4	9.79 – 13	15	15	44.3	40 – 46.4	15	16	4.8	2.4 – 17.2	16	16
TDS (t)	mg/L	317	272 – 373	15	15	406	213 – 544	15	15	147	117 – 172	16	16	117	65 – 152	16	16	245	214 – 276	16	16	428	251 – 678	16	16
Bicarbonate as $CaCO_3$ (t)	mg/L	186	166 – 202	6	6	NC	<1 – 103	7	2	111	106 – 124	6	6	79	75.4 – 89.6	6	6	136	129 – 150	6	7	449	115 – 627	7	7
Carbonate as $CaCO_3$ (t)	mg/L	NC	<1 – 3.4	5	2	190	109 – 247	7	7	ND	<1 – <5	6	0	ND	<1	5	0	ND	<1	5	0	ND	<1	6	0
Hydroxide, $CaCO_3$ (t)	mg/L	ND	<1	6	0	75	<1 – 154	6	5	ND	<1	5	0	ND	<1	6	0	ND	<1	6	0	ND	<1	6	0
Chloride (t)	mg/L	16.1	15.1 – 17.3	15	15	16.2	14.5 – 23	15	15	5.9	5.41 – 6.3	16	16	5.1	4.81 – 5.5	16	16	22.9	21.1 – 25.5	16	16	8.1	5.52 – 13	16	16
Fluoride (t)	mg/L	5.0	4.56 – 5.5	15	15	9.5	6.34 – 10.2	15	15	0.3	0.262 – 0.42	16	16	0.2	0.15 – 0.256	16	16	0.6	0.548 – 0.698	16	16	1.8	0.16 – 11.3	16	16
Nitrate-N (t)	mg/L	0.138	0.107 – 0.217	15	15	NC	<0.05 – 0.588	15	2	0.080	<0.05 – 0.103	16	15	0.192	0.124 – 0.224	16	16	0.618	0.534 – 0.658	16	6	0.056	<0.05 – 0.079	16	6
Nitrite-N (t)	mg/L	ND	<0.05	14	0	ND	<0.05	14	0	ND	<0.05	15	0	ND	<0.05	15	0	ND	<0.05	15	0	ND	<0.05	15	0
NO_2+NO_3-N (t)	mg/L	0.109	0.09 – 0.2	14	14	ND	<0.02	14	0	0.045	<0.02 – 0.06	15	14	0.182	0.17 – 0.2	15	15	0.669	0.63 – 0.712	15	5	0.025	<0.02 – 0.08	15	5
Cyanide-WAD (t)	mg/L	ND	<0.01	14	0	ND	<0.01	14	0	ND	<0.01	15	0	ND	<0.01	15	0	NC	<0.01	15	1	NC	<0.01 – 0.02	15	1
Phosphorus (t)	mg/L	ND	<0.05	4	0	NC	<0.05 – 0.158	4	1	ND	<0.05	4	0	NC	<0.05 – 0.088	4	1		<0.05	4	4	0.151	0.13 – 0.171	4	4
pH Field	s.u.	8	7.87 – 8.65	12	12	10	9.6 – 11.35	16	16	8	7.24 – 8.7	14	14	8	7.14 – 8.37	14	14	8	7.47 – 8.42	14	14	6	5.28 – 8.4	13	13
Electrical Conductivity	uS/cm	439	413 – 510	12	12	665	515 – 1055	16	16	233	213 – 274	14	14	194	154 – 418	14	14	409	379 – 465	14	14	626	278 – 1098	13	13
Temperature	^{o}F	81.7	71.4 – 87.5	4	4	76.8	66 – 83.9	4	4	66.2	59 – 72.3	3	3	69.5	58.5 – 76.4	4	4	70.0	61.9 – 76.4	4	4	61.4	50.2 – 69.1	3	3
Flow Rate	gpm	7.7	3.2 – 30	11	11	1.6	0.05 – 8.7	16	16	7.7	2 – 12.4	14	14	15.3	11.4 – 30	13	13	13.5	10 – 30	13	13	3.6	1.17 – 10	13	13

Notes: N= Number of Samples D= Number of Detects Blank cells for Samples and Detects indicates zero ND for Mean indicates too few detects to generate a reliable mean
MCLs are Nevada primary and secondary standards NC for Mean indicates no mean was calculated because there were fewer than 3 detects. d=Dissolved t=Total

Appendix B

Noise Measurement Results and Field Monitoring Weather Conditions

Table B-1
Noise Measurement Results

Date	Start Time	Elapsed Time	Measured Noise Levels[1] (dBA)						Notes
			Min	Max	L_1	L_{50}	L_{90}	L_{eq}	
Location #1: North Property Line									
4/12/07	11:54:20	2:21	47.4	64.6	61.8	52.8	50.2	54.5	Windy.
4/12/07	12:03:28	3:35	36.5	68.2	61.9	45.5	41.2	50.0	Windy.
4/12/07	12:14:19	3:18	36.4	68.6	64.1	44.7	39.7	52.4	Windy.
4/12/07	12:34:24	22:05	35.0	79.9	62.0	50.6	44.6	53.6	Windy.
Location #2: West Side of Warehouse Building - Old Round Mountain									
4/12/07	13:13:54	10:59	36.8	58.0	53.5	45.3	40.8	46.8	
Location #3: South Side of Warehouse Building - Old Round Mountain									
4/12/07	13:34:33	11:08	35.0	53.5	50.8	43.3	39.8	44.6	Windy, but location sheltered.
Location #4: South Side of High School Football Field Grandstand									
4/12/07	18:11:25	03:00.0	39.5	58.0	51.2	46.5	42.1	48.0	Windy, but location sheltered.
Location #5: North Met Station									
4/12-13/07	21:34:46	06:25.0	29.3	76.4	48.1	44.9	38.2	49.1	Loading and hauling just inside north rim of Round Mountain Pit.

[1]See glossary for definitions.

Table B-2
Field Monitoring Weather Conditions

Date	Time[1]	Wind		Temperature (°F)	Relative Humidity (%)
		Speed[2]	Bearing[3]		
4/12/07	0:00	6.8	101	30	n.a.
4/12/07	1:00	6.9	105	29	n.a.
4/12/07	2:00	8.4	165	29	n.a.
4/12/07	3:00	6.5	142	29	n.a.
4/12/07	4:00	6.1	181	29	n.a.
4/12/07	5:00	9.7	284	30	n.a.
4/12/07	6:00	6.3	92	26	n.a.
4/12/07	7:00	8.7	14	26	n.a.
4/12/07	8:00	13.2	48	28	n.a.
4/12/07	9:00	13.1	4	31	n.a.
4/12/07	10:00	16.0	20	33	n.a.
4/12/07	11:00	20.0	6	35	30
4/12/07	12:00	24.5	6	37	30
4/12/07	13:00	22.6	5	37	30
4/12/07	14:00	23.4	357	39	30
4/12/07	15:00	22.8	2	40	30
4/12/07	16:00	22.6	3	40	30
4/12/07	17:00	23.5	359	40	30
4/12/07	18:00	21.2	357	37	35
4/12/07	19:00	19.8	1	35	n.a.
4/12/07	20:00	19.2	2	34	n.a.
4/12/07	21:00	12.0	17	33	n.a.
4/12/07	22:00	14.4	15	34	n.a.
4/12/07	23:00	14.0	5	33	n.a.
4/13/07	0:00	11.1	13	33	n.a.
4/13/07	1:00	13.3	25	33	n.a.
4/13/07	2:00	10.3	27	32	n.a.
4/13/07	3:00	10.1	355	30	n.a.
4/13/07	4:00	12.8	56	27	n.a.
4/13/07	5:00	9.4	70	26	n.a.
4/13/07	6:00	7.3	49	28	n.a.
4/13/07	7:00	8.3	29	33	n.a.
4/13/07	8:00	8.8	352	36	n.a.
4/13/07	9:00	10.9	348	38	n.a.
4/13/07	10:00	10.2	341	41	n.a.
4/13/07	11:00	10.2	347	44	n.a.
4/13/07	12:00	10.1	332	47	n.a.
4/13/07	13:00	9.0	343	50	n.a.
4/13/07	14:00	8.2	322	53	n.a.
4/13/07	15:00	6.9	325	55	n.a.
4/13/07	16:00	7.9	306	57	12
4/13/07	17:00	6.4	323	57	12
4/13/07	18:00	4.4	323	55	12
4/13/07	19:00	4.5	99	45	12
4/13/07	20:00	3.5	93	41	n.a.
4/13/07	21:00	3.1	115	39	n.a.
4/13/07	22:00	6.5	155	41	n.a.
4/13/07	23:00	10.5	158	43	n.a.

[1] Pacific Daylight Time.

[2] Miles Per Hour.

[3] Degrees.

Appendix C

Groundwater Calibration Data

Table C-1
Steady-state Water Level Targets

Location	X(ft)[1]	Y(ft)[1]	Target[2]
Carver-n	95342	140513	5678
Carver-s	95254	138407	5684
Eastwell1	86188	116383	5734
Fisher	99320	131893	5699
Flowingwell1	96260	145580	5653
Flowingwell3	93579	147289	5633
Flowingwell4	84108	142311	5694
Golf	88515	106309	5724
Gs-1	106068	105465	5891
Hadley-1	86473	111514	5729
Hadley-2	84738	110949	5728
Highway	84294	139756	5699
Hspe-n	90331	111454	5727
Hspe-s	90337	111085	5728
Jk-ranch	86636	131795	5709
MW-1	99510	109567	5735
MW-2	102477	113474	5741
MW -5	101478	118925	5729
MW -7	103216	109319	5743
MW -8	102642	110461	5740
MW -9	106105	108788	5824
MW -113	94207	96870	5720
MW -114	92858	93079	5720
MW -115	91974	89572	5720
MW -116	91174	88659	5767
MW -117	80910	85084	5723
MW -118	70548	52461	5689
Rib-mw	92335	115149	5734
Spring1	80462	142866	5714
Spring17	86873	135701	5683
Spring2	80676	144136	5714
Spring5	80886	147113	5714
GHA-03-3	115850	130065	5925
GHA-03-4	109557	133294	5691
Spring1	80462	142866	5714
Spring17	86873	135701	5683

Table C-1 (Continued)

Location	X(ft)[1]	Y(ft)[1]	Target[2]
Spring2	80676	144136	5714
Spring5	80886	147113	5714
GHA-03-1	115396	136513	5696
GHA-03-3	115850	130065	5925
GHA-03-4	109557	133294	5691
GHA-03-5	110898	137451	5686
GHA-03-6	106318	137921	5684
GHA-RW-1	115186	125288	5890
GHA-RW-2	114495	122053	5814
GHA-BPW	117599	135847	6183
McPherson	86114	95884	5724
Rogers	84287	96688	5724
Christens	86079	106608	5722
Jake's Well	105748	144616	5683
Howd-A	102374	156945	5625
Berg-Rog	80772	156060	5685

[1] Round Mountain horizontal datum.

[2] Steady-state target locations shown in Figure 7.21.

Table C-2
Transient Water-level Targets–Round Mountain

Location[1]	X (ft)[2]	Y (ft)[2]	Screen Center Elevation[3]	Number of Observations	Well Type
BMW-1	91796	119231	5665	72	Alluvial
BMW-3	92194	114920	5572	67	Alluvial
GMW-1	99367	109281	5650	68	Alluvial
GMW-2	102391	113149	5650	66	Alluvial
M/O2000-2	110874	107513	5043	59	Bedrock
M/O2000-3	115041	107165	6226	57	Bedrock
M/O2000-4	111306	109913	5291	39	Bedrock
M/O2000-5	108335	112255	5035	30	Bedrock
M/O2000-6	107106	114081	5381	62	Alluvial
M/O2000-8-900	106250	112680	5240	56	Alluvial
M/O2000-9	114885	106979	6266	9	Bedrock
M/O2001-1	105441	111199	5127	56	Alluvial
M/O2001-2	111703	112643	5256	44	Bedrock
M/O2002-1	105931	110702	5393	39	Alluvial
M/O2002-11	111759	109191	4703	26	Bedrock
M/O2002-13	109228	114347	5377	38	Bedrock
M/O2002-2	106146	111644	5408	39	Alluvial
M/O2002-3-743	106996	112658	5486	40	Alluvial
M/O2002-3-846	106996	112658	5363	41	Alluvial
M/O2002-4	107980	111303	4917	16	Bedrock
M/O2002-5	109672	109375	4917	43	Bedrock
M/O2002-6	108423	109335	5362	41	Bedrock
M/O2002-9	112675	109684	5244	42	Bedrock
M/O2003-1-920	106840	111659	5367	27	Alluvial
M/O2003-3-1300	107277	113474	4956	26	Bedrock
M/O2003-3-820	107277	113474	5417	27	Alluvial
M/O2003-7	110363	113071	4974	30	Bedrock
M/O2003-8	109651	110438	4842	30	Bedrock
M/O2004-1	110689	111062	5341	19	Bedrock
M/O2004-2	109789	113159	5100	17	Bedrock
MW-101	99390	109215	5726	63	Alluvial

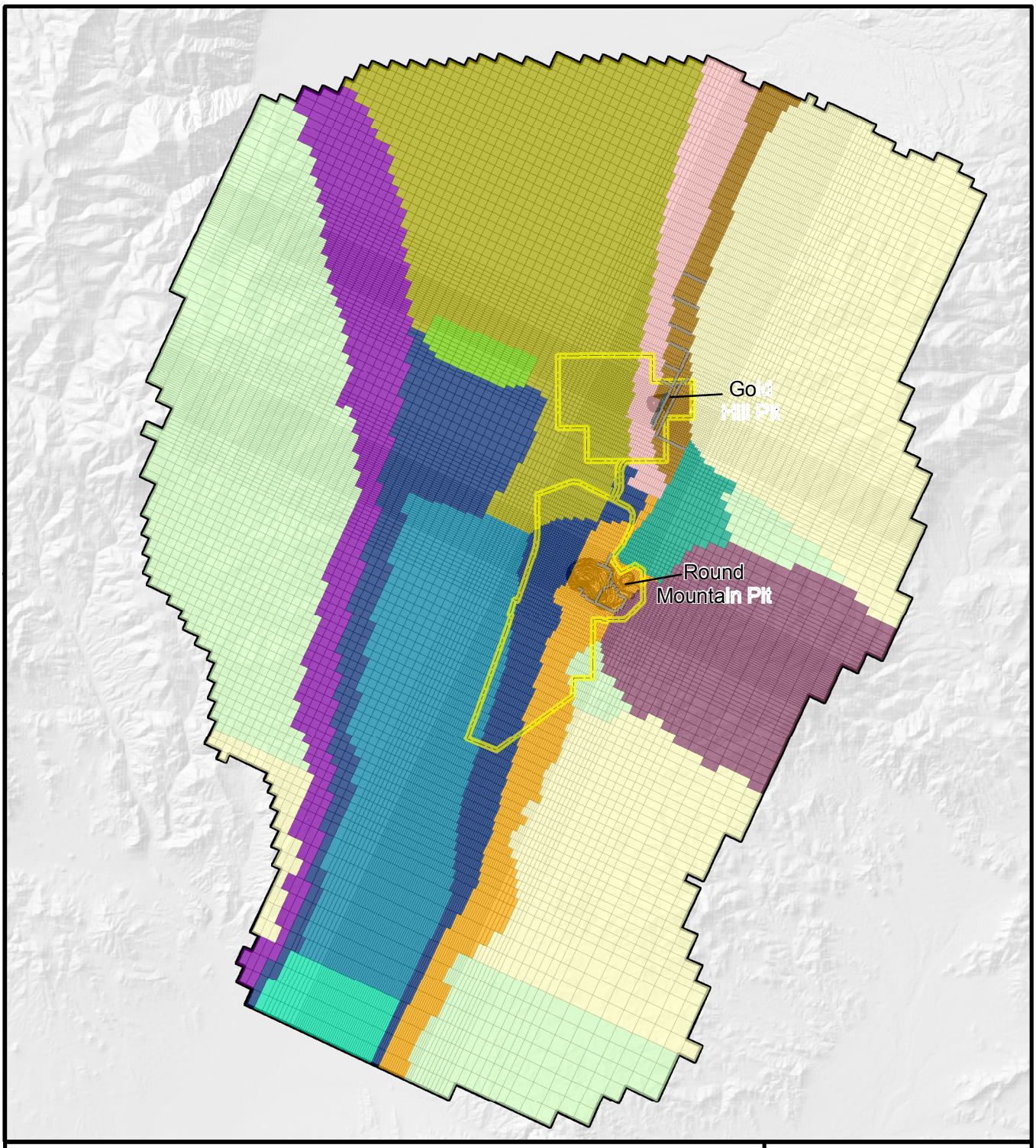
Table C-2 (Continued)

Location[1]	X (ft)[2]	Y (ft)[2]	Screen center Elevation[3]	Number of Observations	Well Type
MW-103	103948	118126	5451	48	Alluvial
MW-104	103799	115849	5710	70	Alluvial
MW-105	97266	102331	5650	50	Alluvial
MW-106	96472	100092	5678	17	Alluvial
MW-106A	96443	100094	5678	25	Alluvial
MW-108	97677	106019	5610	55	Alluvial
MW-2	104373	113242	6065	42	Alluvial
MW-4	104254	108549	5721	25	Alluvial
MW-8	102539	110117	5650	24	Alluvial
MW-9	105998	108449	5650	19	Alluvial
95-3	106480	112200	5687	79	Alluvial
96-1	104681	111034	5559	65	Alluvial

[1] Transient target locations shown in Figure 7.24.

[2] Round Mountain horizontal datum.

[3] Round Mountain vertical datum.



Legend

- Proposed Project Boundary
- Faults
- Extent of Active Model Cells

Hydraulic Conductivity (feet/day, Kh)

0.00002	0.01	0.13	0.6	15
0.003	0.03	0.2	1	75
0.006	0.05	0.4	3	100
0.008	0.08	0.5	12	

Source: WMC 2008.

N

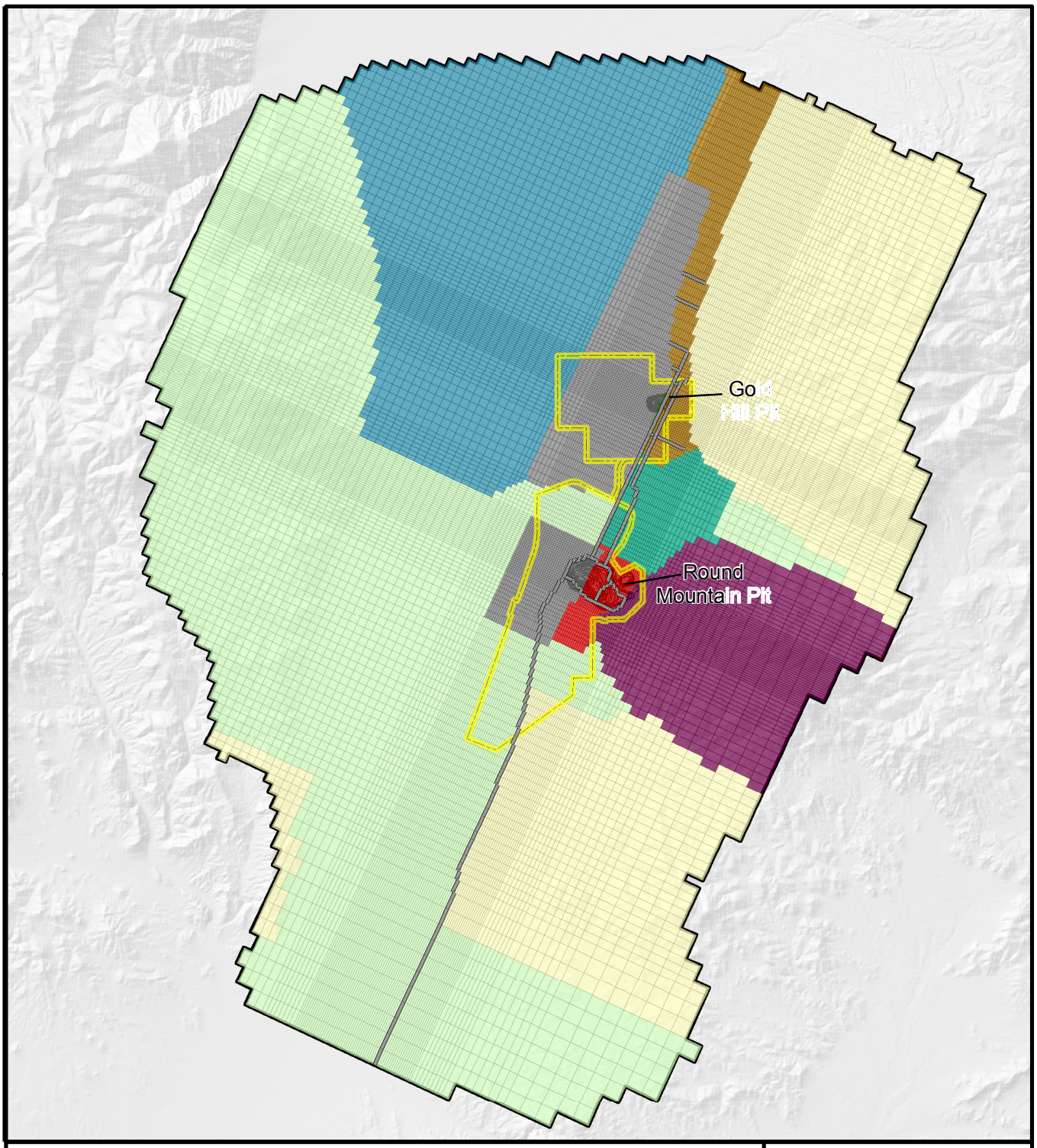
0 1 2 4 Miles

Round Mountain Expansion Project

Appendix C-1

Hydraulic Conductivity Zones Layer 1

02/16/2009



Legend

- Proposed Project Boundary
- Faults
- Extent of Active Model Cells

Hydraulic Conductivity (feet/day, Kh)

0.00002	0.01	0.13	0.6	15
0.003	0.03	0.2	1	75
0.006	0.05	0.4	3	100
0.008	0.08	0.5	12	

Source: WMC 2008.

N

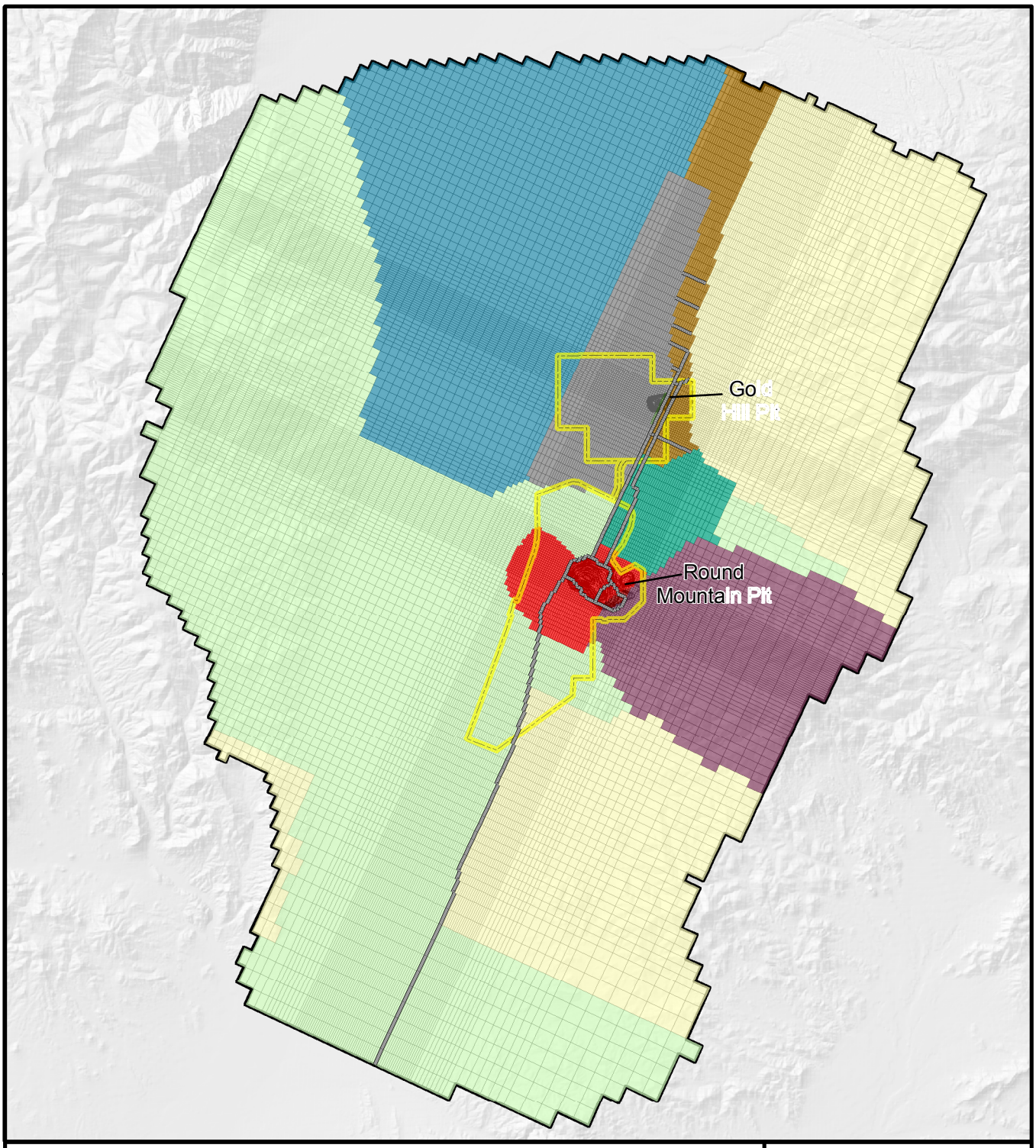
0 1 2 4 Miles

Round Mountain Expansion Project

Appendix C-2

Hydraulic Conductivity Zones Layer 2

02/16/2009



Legend

- Proposed Project Boundary
- Faults
- Extent of Active Model Cells

Hydraulic Conductivity (feet/day, Kh)

0.00002	0.01	0.13	0.6	15
0.003	0.03	0.2	1	75
0.006	0.05	0.4	3	100
0.008	0.08	0.5	12	

Source: WMC 2008.

N

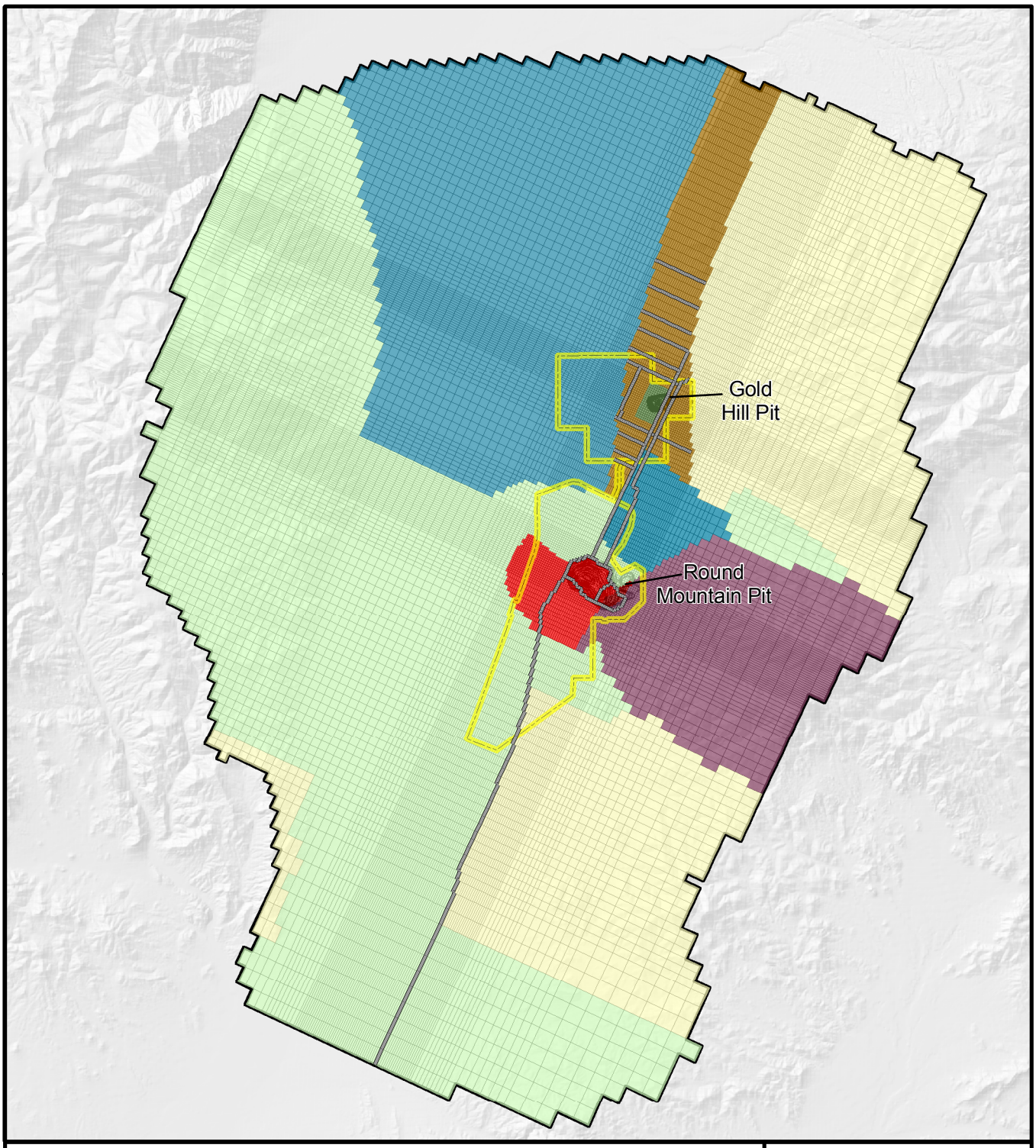
0 1 2 4 Miles

Round Mountain Expansion Project

Appendix C-3

Hydraulic Conductivity Zones Layer 3

02/16/2009



Legend

Proposed Project Boundary

Faults

Extent of Active Model Cells

Hydraulic Conductivity (feet/day, Kh)

0.00002	0.01	0.13	0.6	15
0.003	0.03	0.2	1	75
0.006	0.05	0.4	3	100
0.008	0.08	0.5	12	

Source: WMC 2008.

N

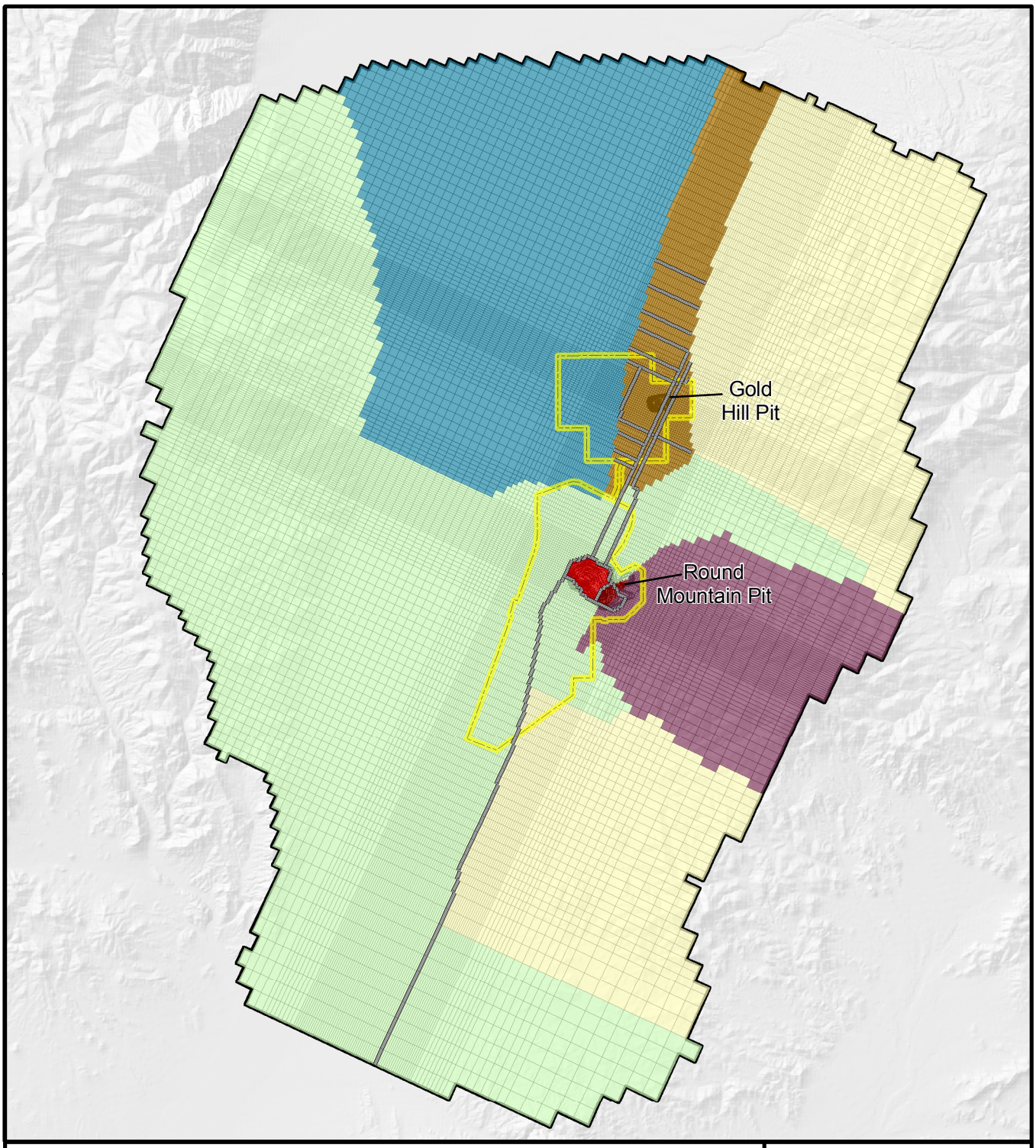
0 1 2 4 Miles

Round Mountain Expansion Project

Appendix C-4

Hydraulic Conductivity Zones Layer 4

02/16/2009



Legend

Proposed Project Boundary

Faults

Extent of Active Model Cells

Hydraulic Conductivity (feet/day, Kh)

0.00002	0.01	0.13	0.6	15
0.003	0.03	0.2	1	75
0.006	0.05	0.4	3	100
0.008	0.08	0.5	12	

Source: WMC 2008.

N

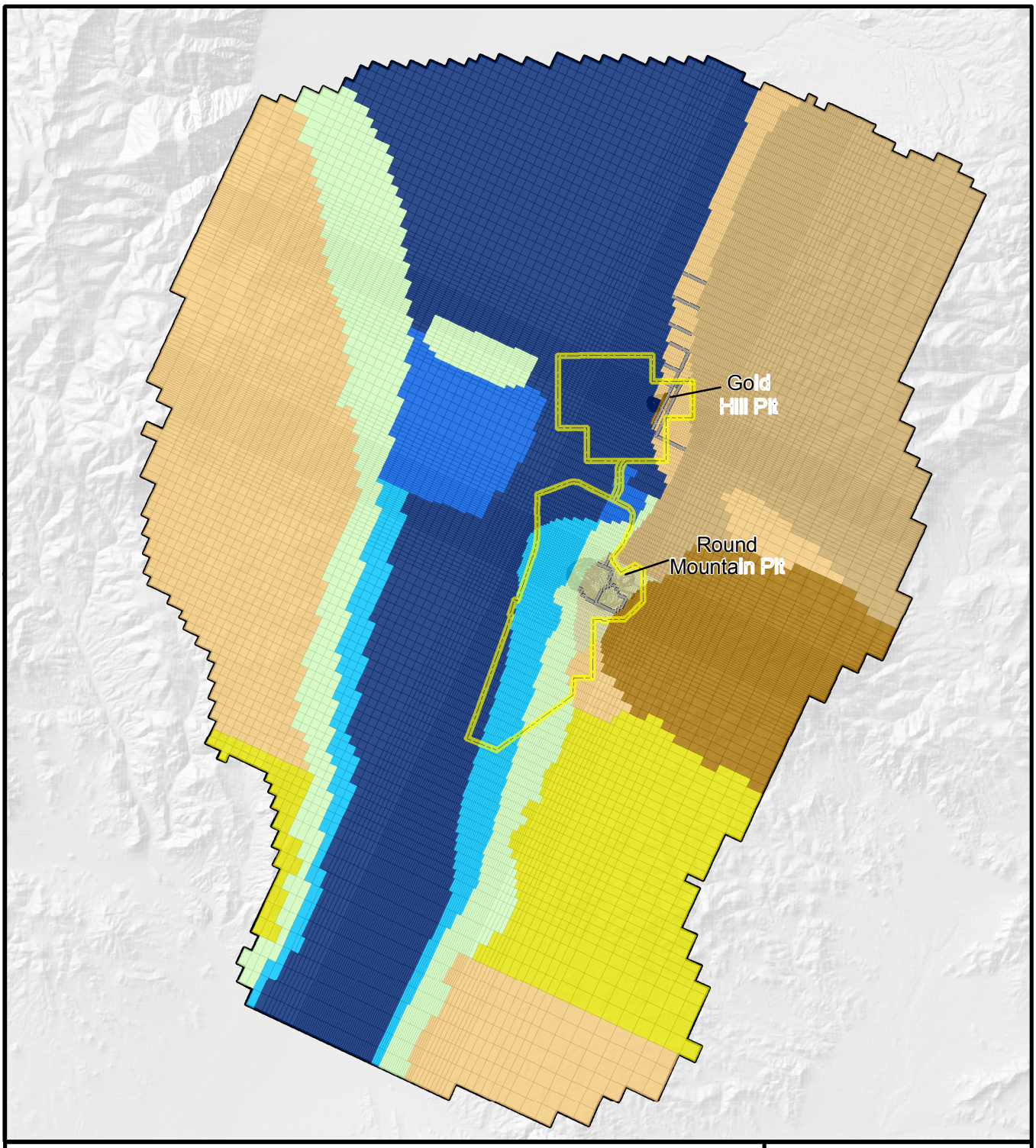
0 1 2 4 Miles

Round Mountain Expansion Project

Appendix C-5

Hydraulic Conductivity Zones Layer 5

02/16/2009



Legend

- Proposed Project Boundary
- Faults
- Extent of Active Model Cells

Storage Zones Ss / Sy (Layer 1)

1.0E-5 / 0.01	1.0E-5 / 0.1	1.0E-7 / 0.008
1.0E-5 / 0.05	1.0E-7 / 0.0035	1.0E-7 / 0.01
1.0E-5 / 0.07	1.0E-7 / 0.004	1.0E-7 / 0.015
1.0E-5 / 0.08	1.0E-7 / 0.005	1.0E-7 / 0.02

Source: WMC 2008.

N

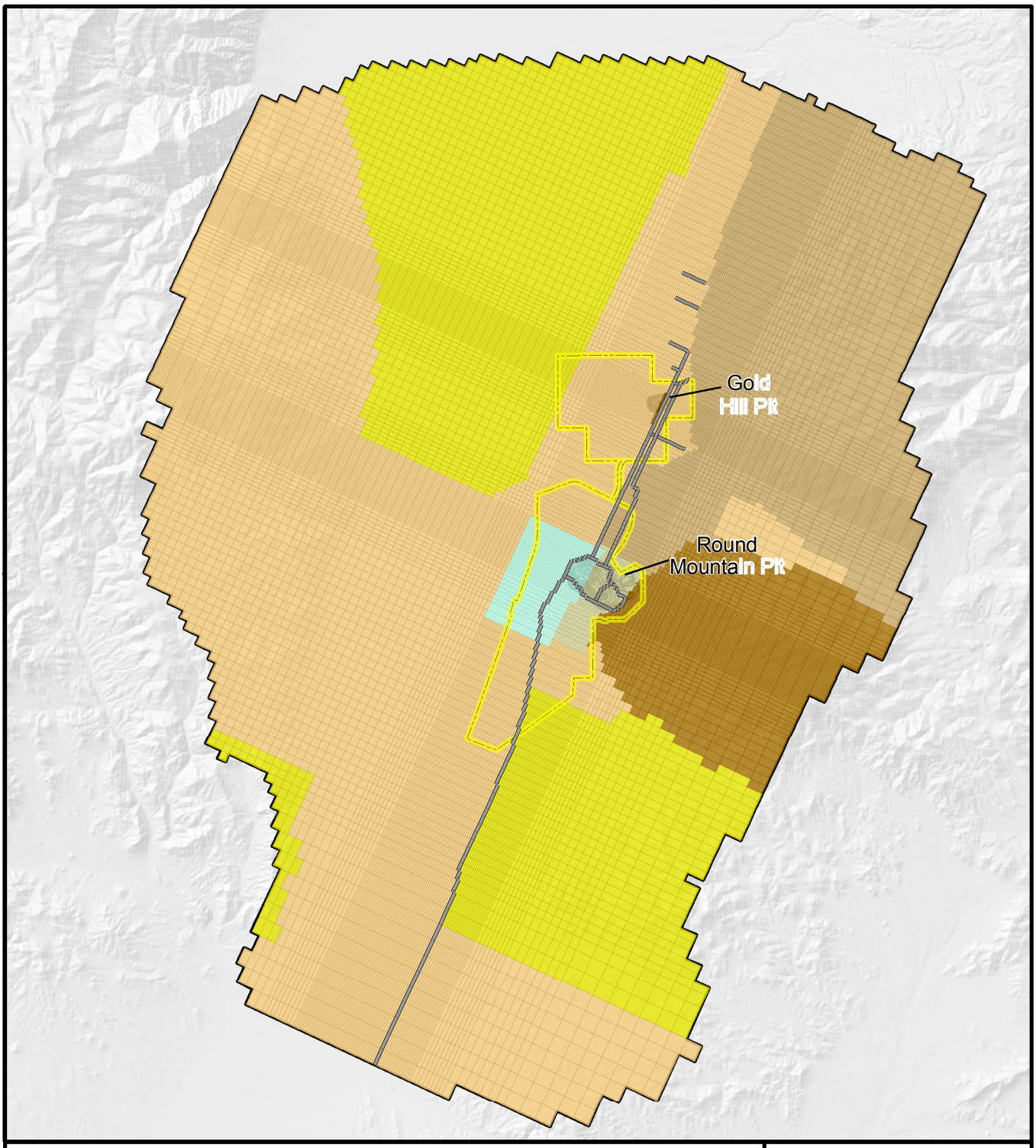
0 1 2 4 Miles

Round Mountain Expansion Project

Appendix C-6

Storage Zones Layer 1

02/16/2009



Legend

- Proposed Project Boundary
- Faults
- Extent of Active Model Cells

Storage Zones Ss / Sy (Layer 2)

1.0E-5 / 0.01	1.0E-5 / 0.1	1.0E-7 / 0.008
1.0E-5 / 0.05	1.0E-7 / 0.0035	1.0E-7 / 0.01
1.0E-5 / 0.07	1.0E-7 / 0.004	1.0E-7 / 0.015
1.0E-5 / 0.08	1.0E-7 / 0.005	1.0E-7 / 0.02

Source: WMC 2008.

N

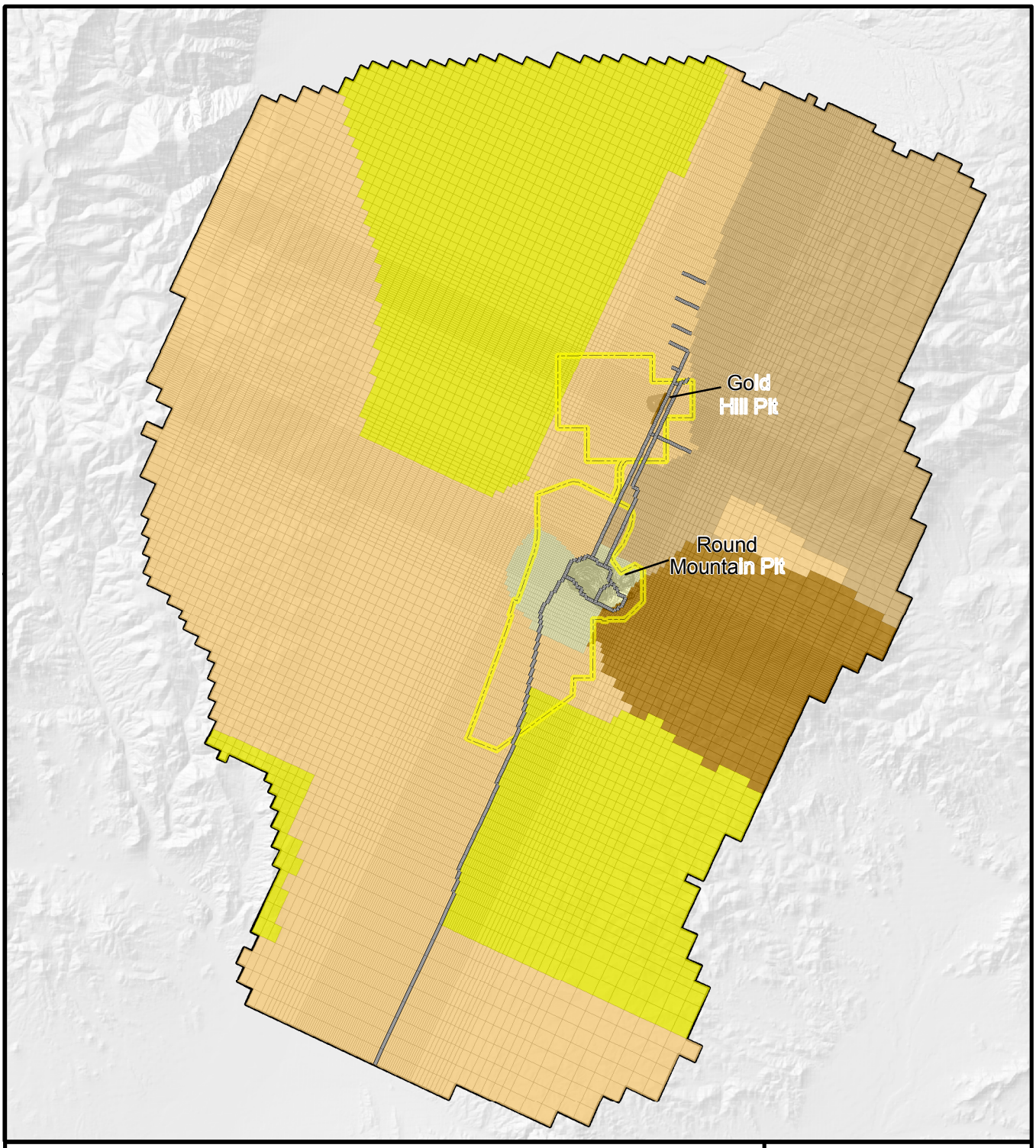
0 1 2 4 Miles

Round Mountain Expansion Project

Appendix C-7

Storage Zones Layer 2

02/16/2009



Legend

- Proposed Project Boundary
- Faults
- Extent of Active Model Cells

Storage Zones Ss / Sy (Layer 3)

1.0E-5 / 0.01	1.0E-5 / 0.1	1.0E-7 / 0.008
1.0E-5 / 0.05	1.0E-7 / 0.0035	1.0E-7 / 0.01
1.0E-5 / 0.07	1.0E-7 / 0.004	1.0E-7 / 0.015
1.0E-5 / 0.08	1.0E-7 / 0.005	1.0E-7 / 0.02

Source: WMC 2008.

N

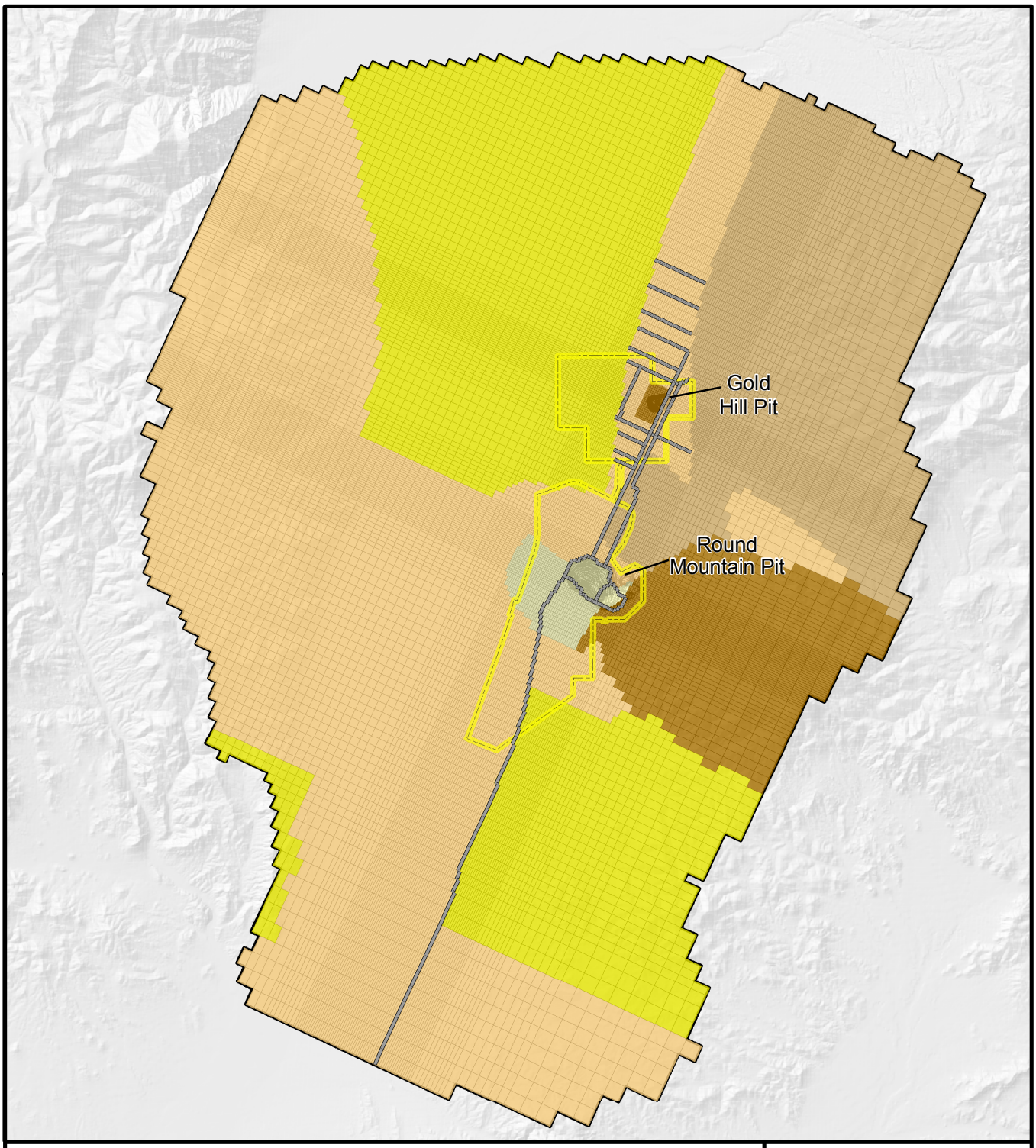
0 1 2 4 Miles

Round Mountain Expansion Project

Appendix C-8

Storage Zones Layer 3

02/16/2009



Legend

- Proposed Project Boundary
- Faults
- Extent of Active Model Cells

Storage Zones Ss / Sy (Layer 4)

1.0E-5 / 0.01	1.0E-5 / 0.1	1.0E-7 / 0.008
1.0E-5 / 0.05	1.0E-7 / 0.0035	1.0E-7 / 0.01
1.0E-5 / 0.07	1.0E-7 / 0.004	1.0E-7 / 0.015
1.0E-5 / 0.08	1.0E-7 / 0.005	1.0E-7 / 0.02

Source: WMC 2008.

N

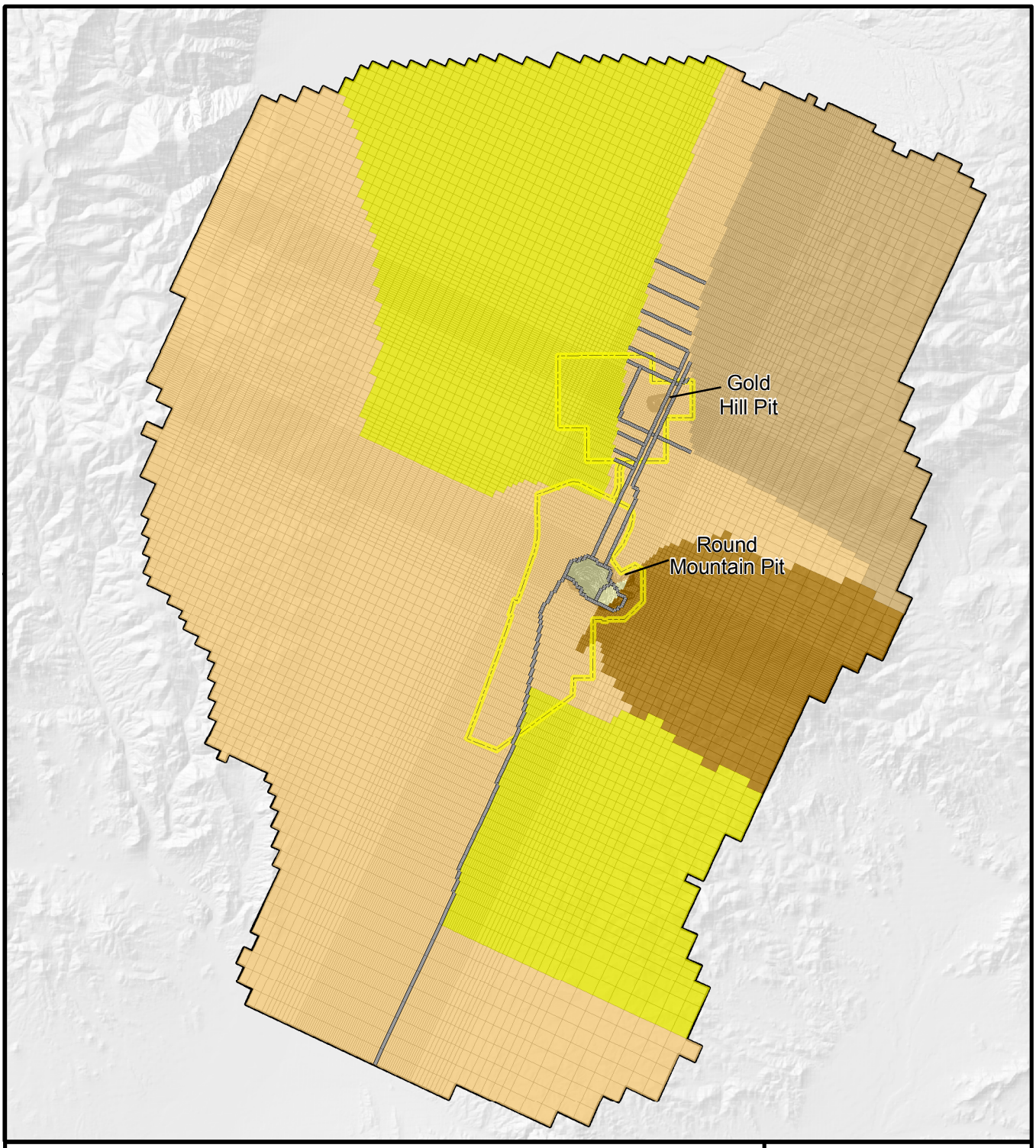
0 1 2 4 Miles

Round Mountain Expansion Project

Appendix C-9

Storage Zones
Layer 4

02/16/2009



Legend

- Proposed Project Boundary
- Faults
- Extent of Active Model Cells

Storage Zones Ss / Sy (Layer 5)

1.0E-5 / 0.01	1.0E-5 / 0.1	1.0E-7 / 0.008
1.0E-5 / 0.05	1.0E-7 / 0.0035	1.0E-7 / 0.01
1.0E-5 / 0.07	1.0E-7 / 0.004	1.0E-7 / 0.015
1.0E-5 / 0.08	1.0E-7 / 0.005	1.0E-7 / 0.02

Source: WMC 2008.

N

0 1 2 4 Miles

Round Mountain Expansion Project

Appendix C-10

Storage Zones Layer 5

02/16/2009

Appendix D

Pit Lake Geochemistry Data

Table D-1
Input Solution Chemistries Used for the Base Case Round Mountain Current and Expanded Pit Lake Chemistry Models

	Average Groundwater Composition				Scaled Pit Wall Runoff and Submergence									
	Alluvium	Granite	Undifferentiated Volcanics	Surface Water Run	Stebbins Hill	Type 1	Type 2	Type 28	Type 3	Type 4	Type 51	Type 52	Type 8	Type 9
Data Source	Average Alluvial DW Wells	Average Granite DW Wells	Average Volcanics DW Wells	In Average JC-1	MWMP	Average RM HCT (120127,120136)	Average RM HCT (120153,111308,120168)	MWMP	AVG RM HCT (110167 +110103,120187,120188)	AVG RM HCT (10148+11-17,111304, 120171)	RM HCT 111302	MWMP	MWMP	RM HCT 120110
Constituent														
pH (std units)	7.79	8.08	7.66	8.00	6.14	6.15	6.26	6.14	6.23	6.10	6.24	7.92	4.86	6.16
Alkalinity	98	114	104	99	0.85	0.52	0.59	0.85	0.95	0.42	0.77	5.60	0.01	0.41
Aluminum	0.01	0.02	0.02	0.01	0	0.002	0.002	0	0.002	0.004	0.002	0.035	0.087	0.005
Antimony	0.002	0.003	0.001	0	0	0.0001	0.0001	0	0.0001	0.0001	0.0001	0.0008	0.0013	0.0001
Arsenic	0.07	0.06	0.16	0	0.0024	0.0008	0.0018	0.0024	0.0002	0.0021	0.0023	0.0186	0.3347	0.0008
Barium	0.004	0.029	0.015	0.043	0	0.0001	0.0002	0	0.0003	0.0002	0.0001	0.0039	0.0011	0.0001
Beryllium	0.00007	0.00005	0.00006	0	0	0.00006	0.00006	0	0.00006	0.00006	0.00006	0	0.0014	0.00006
Bismuth	0	0	0	0	0	0.0018	0.0018	0	0.0018	0.0018	0.0018	0	0	0.0018
Boron	0.2	0.3	0.3	0.06	0.024	0.019	0.019	0.024	0.021	0.019	0.023	0.025	0.003	0.017
Cadmium	0.0003	0.0001	0.0001	0.001	0	0.00006	0.00006	0	0.00006	0.00006	0.00006	0	0	0.00006
Calcium	16.6	7.9	27.7	28.6	0.24	0.05	0.10	0.24	0.70	0.11	0.06	0.39	6.77	0.02
Chloride	20.3	14.4	20.9	3.5	0	0.006	0.006	0	0.006	0.006	0.006	0.604	0.078	0.006
Chromium	0.0004	0.0005	0.0004	0	0	0.0002	0.0002	0	0.0002	0.0002	0.0002	0	0	0.0002
Cobalt	0	0	0	0	0	0.0002	0.0002	0	0.0002	0.0002	0.0002	0.0002	0.0046	0.0002
Copper	0.001	0.001	0.001	0.002	0	0.0003	0.0003	0	0.0003	0.0003	0.0003	0	0	0.0003
Fluoride	8.57	1.48	2.31	0.34	0.03	0.01	0.01	0.03	0.04	0.01	0.02	0.19	0.03	0.02
Iron	0.08	0.07	0.15	0.01	0	0.002	0.002	0	0.002	0.002	0.002	0.016	0.104	0.002
Lead	0.0001	0.0002	0.00005	0.0025	0	0.0001	0.0001	0	0.0001	0.0001	0.0001	0	0.0003	0.0001
Lithium	0.002	0.3	0	0.01	0	0.0003	0.0003	0	0.0003	0.0003	0.0003	0.0025	0.0166	0.0003
Magnesium	0.40	0.06	3.17	3.98	0.034	0.011	0.013	0.034	0.044	0.019	0.007	0.045	1.036	0.002
Manganese	0	0.01	0.03	0.002	0	0.0001	0.0001	0	0.0003	0.0002	0.0001	0.0009	0.1042	0.0001
Mercury	0.0001	0.0001	0.0001	0	0	0.00001	0.00001	0	0.00001	0.00001	0.00001	0	0	0.00001
Nickel	0.002	0.003	0.002	0	0	0.0003	0.0003	0	0.0004	0.0003	0.0003	0	0.0011	0.0003
Nitrate (as NO_3)	0.57	0.05	0.02	0.02	0	0.001	0.001	0	0.002	0.001	0.001	0.153	0.001	0.001
Phosphorous	0	0	0	0.03	0	0.001	0.001	0	0.001	0.001	0.006	0.002	0	0.001
Potassium	2.67	1.84	3.44	0.50	0.11	0.01	0.03	0.11	0.07	0.07	0.04	0.38	3.57	0.01
Selenium	0.001	0.002	0.001	0	0	0.001	0.001	0	0.001	0.001	0.001	0	0	0.001
Silver	0.0005	0.0005	0.0004	0	0	0.0001	0.0001	0	0.0001	0.0001	0.0001	0	0	0.0001
Sodium	76.5	84.2	53.5	14.7	0.19	0.18	0.15	0.19	0.17	0.15	0.23	3.64	4.05	0.20
Strontium	0	0.1	0	0.2	0.0017	0.0005	0.0012	0.0017	0.0125	0.0007	0.0006	0.0044	0.0373	0.0001
Sulfate	64.8	52.9	68.3	29.6	0.50	0.01	0.05	0.50	1.39	0.29	0.01	2.96	34.97	0.01
Thallium	0	0	0	0	0	0.00003	0.00003	0	0.00003	0.00003	0.00003	0	0	0.00003
Tin	0	0	0	0	0	0.001	0.001	0	0.001	0.001	0.001	0	0	0.001
Titanium	0	0	0	0	0	0.0001	0.0001	0	0.0001	0.0001	0.0001	0.0009	0	0.0001
Vanadium	0	0	0	0	0	0.0001	0.0001	0	0.0001	0.0001	0.0001	0.0004	0	0.0001
Zinc	0.02	0.02	0.03	0.003	0	0.0003	0.0003	0	0.0003	0.0003	0.0003	0	0.0311	0.0003

All units are provided in mg/L unless otherwise stated.
Input concentrations are dissolved concentrations.
Input concentrations were set to 0 where constituent was below analytical detection.

Table D-2
Input Solution Chemistries Used for Round Mountain Current and Expanded Pit Lake Chemistry Models Sensitivity Analyses

	Groundwater Low TDS Composition			Groundwater High TDS Composition			Scaled Pit Wall Runoff and Submergence					
	Alluvium	Granite	Undifferentiated Volcanics	Alluvium	Granite	Undifferentiated Volcanics	Type 1	Type 2	Type 3	Type 4	Type 51	Type 9
Data Source	DW-39 (1/16/2006)	DW-FF (7/19/2005)	DW-38 (2/18/2004)	DW-32 (7/19/2005)	DW-36 (3/31/2003)	DW-43 (1/16/2006)	Average RM HCT (120127,120136)	Average RM HCT (120153,111308,120168)	AVG RM HCT (110167 +110103,120187,120188)	AVG RM HCT (10148+11-17,111304, 120171)	RM HCT 111302	RM HCT 120110
Constituent												
pH (std units)	6.97	7.03	7.82	6.38	8.41	6.46	6.1500	6.2633	6.2333	6.1000	6.2400	6.1600
Alkalinity	96	109	98	91	110	100	4.1891	4.7460	7.7163	3.4223	6.1989	3.3416
Aluminum	0	0	0	0.02	0.01	0.02	0.0194	0.0194	0.0194	0.0295	0.0194	0.0402
Antimony	0.004	0	0.003	0.004	0.002	0.002	0.0007	0.0007	0.0011	0.0007	0.0007	0.0007
Arsenic	0.09	0.04	0.2	0.08	0.11	0.17	0.0062	0.0143	0.0018	0.0166	0.0184	0.0062
Barium	0.005	0.067	0.01	0.003	0.069	0.014	0.0011	0.0013	0.0028	0.0013	0.0010	0.0005
Beryllium	0	0	0	0.001	0.0005	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Bismuth	0	0	0	0	0	0	0.0145	0.0145	0.0145	0.0145	0.0145	0.0145
Boron	0.2	0.3	0.2	0.2	0.3	0.3	0.1552	0.1505	0.1713	0.1505	0.1831	0.1341
Cadmium	0	0	0	0.001	0.0005	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Calcium	12.2	6.1	15.2	13.9	10.3	36.4	0.4274	0.8360	5.6855	0.9219	0.4591	0.1395
Chloride	15.6	10.9	23.3	19.9	11.3	21.2	0.0484	0.0484	0.0484	0.0484	0.0484	0.0484
Chromium	0	0	0	0.003	0.0005	0.003	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015
Cobalt	0	0	0	0	0	0	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015
Copper	0	0	0	0.005	0.005	0.005	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024
Fluoride	11.7	16.9	5.3	8.84	16.3	1.86	0.1131	0.1128	0.3038	0.1153	0.1743	0.1438
Iron	0	0	0.03	0.03	0.06	0.23	0.0145	0.0145	0.0145	0.0145	0.0145	0.0145
Lead	0	0	0	0.0015	0.0005	0.0015	0.0007	0.0007	0.0007	0.0007	0.0007	0.0007
Lithium	0	0	0	0	0	0	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024
Magnesium	0.18	0	0.19	0.13	0.13	4.36	0.0881	0.1012	0.3587	0.1548	0.0581	0.0145
Manganese	0.01	0.01	0.02	0	0.02	0.06	0.0010	0.0010	0.0025	0.0016	0.0010	0.0010
Mercury	0	0	0	0.0001	0.001	0.0001	0	0	0.0001	0	0	0
Nickel	0	0	0	0.005	0.005	0.005	0.0024	0.0024	0.0032	0.0024	0.0024	0.0024
Nitrate (as NO_3)	0.21	0	0	0.73	0.03	0.03	0.0121	0.0121	0.0161	0.0121	0.0121	0.0121
Phosphorous	0	0	0	0	0	0	0.0121	0.0121	0.0121	0.0121	0.0518	0.0121
Potassium	2.43	0.96	1.7	2.3	1.41	3.52	0.1211	0.2631	0.5440	0.5698	0.3148	0.1211
Selenium	0	0.02	0	0.003	0.002	0.002	0.0097	0.0097	0.0097	0.0097	0.0097	0.0097
Silver	0	0	0	0.0025	0.0005	0.0025	0.0012	0.0012	0.0012	0.0012	0.0012	0.0012
Sodium	80.3	88.1	80.3	81.8	92.5	39.8	1.4432	1.2285	1.3818	1.2269	1.8597	1.5981
Strontium	0	0	0	0	0	0	0.0038	0.0096	0.1009	0.0061	0.0047	0.0012
Sulfate	54.7	48.1	77.8	383	56	67.4	0.1090	0.4084	11.2128	2.3617	0.0726	0.0726
Thallium	0	0	0	0	0	0	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
Tin	0	0	0	0	0	0	0.0121	0.0121	0.0121	0.0121	0.0121	0.0121
Titanium	0	0	0	0	0	0	0.0012	0.0012	0.0012	0.0012	0.0012	0.0012
Vanadium	0	0	0	0	0	0	0.0012	0.0012	0.0012	0.0012	0.0012	0.0012
Zinc	0.01	0	0.01	0.01	0.01	0.01	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024

All units are provided in mg/L unless otherwise stated.
Input concentrations are dissolved concentrations.
Input concentrations were set to 0 where constituent was below analytical detection.

Table D-3
Round Mountain Expanded Pit Lake Chemistry Results,
Fluoride Sensitivity Scenario (SI=0)

Parameter/ Analyte	Nevada MCLs	Pit Lake (Time 2 yr)	Pit Lake (Time 10 yr)	Pit Lake (Time 25 yr)	Pit Lake (Time 100 yr)	Pit Lake (Time 200 yr)
pH (S.U.)	6.5–8.5	7.94	7.97	8.00	8.14	8.30
pE		4	4	4	4	4
Alkalinity, as $CaCO_3$		104	111	120	172	254
Chloride	400	21	22	23	34	50
Fluoride	2	6.4	6.3	6.3	5.8	5.3
Nitrate, as N	10	<0.01	<0.01	<0.01	<0.01	<0.01
Sulfate, as SO_4^{2-}	500	66	70	76	108	160
Aluminum	0.2	<0.01	<0.01	<0.01	<0.01	<0.01
Antimony	0.006	0.002	0.002	0.002	0.004	0.005
Arsenic	0.01	0.08	0.08	0.09	0.13	0.20
Barium	2	0.007	0.007	0.008	0.012	0.018
Beryllium	0.004	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Boron		0.23	0.24	0.26	0.38	0.56
Cadmium	0.005	<0.0005	<0.0005	<0.0005	<0.0005	0.0005
Calcium		17.4	17.9	18.5	23.8	32.8
Chromium	0.1	<0.006	<0.006	<0.006	<0.006	<0.006
Cobalt		<0.001	<0.001	<0.001	<0.001	<0.001
Copper	1.3	<0.003	<0.003	<0.003	<0.003	<0.003
Iron	0.6	<0.06	<0.06	<0.06	<0.06	<0.06
Lead	0.015	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Lithium		<0.004	<0.004	0.005	0.009	0.015
Magnesium	150	0.9	0.9	0.9	1.4	2.3
Manganese	0.1	0.007	0.007	0.007	0.011	0.018
Mercury	0.002	<0.0002	<0.0002	<0.0002	<0.0002	0.0002
Molybdenum		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Nickel	0.1	<0.01	<0.01	<0.01	<0.01	<0.01
Phosphorus		<0.05	<0.05	<0.05	<0.05	<0.05
Potassium		2.8	3.0	3.2	4.6	6.8
Selenium	0.05	<0.001	<0.001	<0.001	0.001	0.002
Silver	0.1	<0.005	<0.005	<0.005	<0.005	<0.005
Sodium		68	72	78	112	163
Strontium		0.002	0.003	0.003	0.006	0.011
Thallium	0.002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Tin		<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	5	0.02	0.02	0.02	0.03	0.04
TDS		245	260	278	393	573

All concentrations are in mg/L, unless otherwise noted. Nevada MCLs are provided for REFERENCE PURPOSES ONLY.
< Analyte concentration result is below typical analytical detection limits. Value shown is the detection limit.
TDS calculated as the sum of all dissolved constituents (alkalinity was converted to HCO_3- then multiplied by 0.4917 to account for volatilization of CO_2).

Table D-4
Round Mountain Expanded Pit Lake Chemistry Results,
Fluoride Sensitivity Scenario (SI=1)

Parameter/ Analyte	Nevada MCLs	Pit Lake (Time 2 yr)	Pit Lake (Time 10 yr)	Pit Lake (Time 25 yr)	Pit Lake (Time 100 yr)	Pit Lake (Time 200 yr)
pH, std units	6.5–8.5	7.94	7.97	8.00	8.14	8.27
pE		4	4	4	4	4
Alkalinity, as $CaCO_3$		104	111	120	172	236
Chloride	400	21	22	23	34	50
Fluoride	2	7.6	8.1	8.8	12.3	15.7
Nitrate, as N	10	<0.01	<0.01	<0.01	<0.01	<0.01
Sulfate, as SO_4^{2}	500	66	70	76	108	160
Aluminum	0.2	<0.01	<0.01	<0.01	<0.01	<0.01
Antimony	0.006	0.002	0.002	0.002	0.004	0.005
Arsenic	0.01	0.08	0.08	0.09	0.13	0.20
Barium	2	0.007	0.007	0.008	0.012	0.018
Beryllium	0.004	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Boron		0.23	0.24	0.26	0.38	0.56
Cadmium	0.005	<0.0005	<0.0005	<0.0005	<0.0005	0.0005
Calcium		18.7	19.8	21.2	30.7	38.0
Chromium	0.1	<0.006	<0.006	<0.006	<0.006	<0.006
Cobalt		<0.001	<0.001	<0.001	<0.001	<0.001
Copper	1.3	<0.003	<0.003	<0.003	<0.003	<0.003
Iron	0.6	<0.06	<0.06	<0.06	<0.06	<0.06
Lead	0.015	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Lithium		<0.004	<0.004	0.005	0.009	0.015
Magnesium	150	0.9	0.9	0.9	1.5	2.3
Manganese	0.1	0.007	0.007	0.007	0.011	0.018
Mercury	0.002	<0.0002	<0.0002	<0.0002	<0.0002	0.0002
Molybdenum		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Nickel	0.1	<0.01	<0.01	<0.01	<0.01	<0.01
Phosphorus		<0.05	<0.05	<0.05	<0.05	<0.05
Potassium		2.8	3.0	3.2	4.6	6.8
Selenium	0.05	<0.001	<0.001	<0.001	0.001	0.002
Silver	0.1	<0.005	<0.005	<0.005	<0.005	<0.005
Sodium		68	72	78	112	163
Strontium		0.002	0.003	0.003	0.006	0.011
Thallium	0.002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Tin		<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	5	0.02	0.02	0.02	0.03	0.04
TDS		248	263	284	407	578

All concentrations are in milligrams per liter, unless otherwise noted.
< Analyte concentration result is below typical analytical detection limits. Value shown is the detection limit.
Nevada MCLs are provided for REFERENCE PURPOSES ONLY.
TDS calculated as the sum of all dissolved constituents (alkalinity was converted to HCO_3- then multiplied by 0.4917 to account for volatilization of CO_2).

Table D-5
Round Mountain Expanded Pit Lake Chemistry Results,
High Groundwater Infill Sensitivity Scenario

Parameter/ Analyte	Nevada MCLs	Pit Lake (Time 2 yr)	Pit Lake (Time 10 yr)	Pit Lake (Time 25 yr)	Pit Lake (Time 100 yr)	Pit Lake (Time 200 yr)
pH (S.U.)	6.5–8.5	7.94	7.96	7.98	8.11	8.25
pE		4	4	4	4	4
Alkalinity, as $CaCO_3$		104	109	116	158	225
Chloride	400	20	21	23	31	44
Fluoride	2	7.8	8.2	8.7	9.8	9.1
Nitrate, as N	10	<0.01	<0.01	<0.01	<0.01	<0.01
Sulfate, as SO_4^{2}	500	66	69	73	99	141
Aluminum	0.2	<0.01	<0.01	<0.01	<0.01	<0.01
Antimony	0.006	0.002	0.002	0.002	0.003	0.005
Arsenic	0.01	0.08	0.08	0.08	0.12	0.17
Barium	2	0.006	0.007	0.007	0.010	0.016
Beryllium	0.004	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Boron		0.23	0.24	0.25	0.35	0.49
Cadmium	0.005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Calcium		18.3	19.2	20.2	26.2	33.7
Chromium	0.1	<0.006	<0.006	<0.006	<0.006	<0.006
Cobalt		<0.001	<0.001	<0.001	<0.001	<0.001
Copper	1.3	<0.003	<0.003	<0.003	<0.003	<0.003
Iron	0.6	<0.06	<0.06	<0.06	<0.06	<0.06
Lead	0.015	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Lithium		<0.004	<0.004	<0.004	0.007	0.013
Magnesium	150	0.8	0.8	0.8	1.3	2.1
Manganese	0.1	0.006	0.006	0.006	0.010	0.016
Mercury	0.002	<0.0002	<0.0002	<0.0002	<0.0002	0.0002
Molybdenum		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Nickel	0.1	<0.01	<0.01	<0.01	<0.01	<0.01
Phosphorus		<0.05	<0.05	<0.05	<0.05	<0.05
Potassium		2.8	2.9	3.1	4.2	6.0
Selenium	0.05	<0.001	<0.001	<0.001	0.001	0.002
Silver	0.1	<0.005	<0.005	<0.005	<0.005	<0.005
Sodium		68	72	77	103	144
Strontium		0.002	0.002	0.003	0.005	0.010
Thallium	0.002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Tin		<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	5	0.02	0.02	0.02	0.02	0.03
TDS		247	259	275	370	516

All concentrations are in milligrams per liter, unless otherwise noted.
< Analyte concentration result is below typical analytical detection limits. Value shown is the detection limit.
Nevada MCLs are provided for REFERENCE PURPOSES ONLY.
TDS calculated as the sum of all dissolved constituents (alkalinity was converted to HCO_3- then multiplied by 0.4917 to account for volatilization of CO_2).

Table D-6

Round Mountain Expanded Pit Lake Chemistry Results Low TDS Groundwater Sensitivity Scenario

Parameter/ Analyte	Nevada MCLs	Pit Lake (Time 2 yr)	Pit Lake (Time 10 yr)	Pit Lake (Time 25 yr)	Pit Lake (Time 100 yr)	Pit Lake (Time 200 yr)
pH (S.U.)	**6.5–8.5**	7.92	7.95	7.98	8.13	8.28
pE		4	4	4	4	4
Alkalinity, as $CaCO_3$		99	106	114	164	242
Chloride	400	17	18	19	28	41
Fluoride	2	10.8	11.6	12.4	12.6	12.6
Nitrate, as N	10	<0.01	<0.01	<0.01	<0.01	<0.01
Sulfate, as SO_4^{2}	500	59	63	67	97	145
Aluminum	0.2	<0.01	<0.01	<0.01	<0.01	<0.01
Antimony	0.006	0.004	0.004	0.004	0.006	0.009
Arsenic	0.01	0.11	0.11	0.12	0.17	0.26
Barium	2	0.006	0.007	0.008	0.012	0.019
Beryllium	0.004	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Boron		0.24	0.26	0.28	0.40	0.58
Cadmium	0.005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Calcium		13.0	13.8	14.6	15.8	17.7
Chromium	0.1	<0.006	<0.006	<0.006	<0.006	<0.006
Cobalt		<0.001	<0.001	<0.001	<0.001	<0.001
Copper	1.3	<0.003	<0.003	<0.003	<0.003	<0.003
Iron	0.6	<0.06	<0.06	<0.06	<0.06	<0.06
Lead	0.015	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Lithium		<0.004	<0.004	<0.004	<0.004	<0.004
Magnesium	150	0.2	0.2	0.2	0.4	0.6
Manganese	0.1	0.010	0.011	0.012	0.017	0.026
Mercury	0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Nickel	0.1	<0.01	<0.01	<0.01	<0.01	<0.01
Phosphorus		<0.05	<0.05	<0.05	<0.05	<0.05
Potassium		2.3	2.5	2.7	3.8	5.6
Selenium	0.05	<0.001	<0.001	<0.001	<0.001	0.001
Silver	0.1	<0.005	<0.005	<0.005	<0.005	<0.005
Sodium		73	78	83	120	177
Strontium		0.002	0.001	0.002	0.003	0.006
Thallium	0.002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Tin		<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	5	0.01	0.01	0.01	0.02	0.03
TDS		235	250	269	376	546

All concentrations are in milligrams per liter, unless otherwise noted.
< Analyte concentration result is below typical analytical detection limits. Value shown is the detection limit.
Nevada MCLs are provided for REFERENCE PURPOSES ONLY.
TDS calculated as the sum of all dissolved constituents (alkalinity was converted to HCO_3- then multiplied by 0.4917 to account for volatilization of CO_2).

Table D-7

Round Mountain Expanded Pit Lake Chemistry Results, High TDS Groundwater Sensitivity Scenario

Parameter/ Analyte	Nevada MCLs	Pit Lake (Time 2 yr)	Pit Lake (Time 10 yr)	Pit Lake (Time 25 yr)	Pit Lake (Time 100 yr)	Pit Lake (Time 200 yr)
pH (S.U.)	**6.5–8.5**	7.90	7.93	7.96	8.10	8.26
pE		4	4	4	4	4
Alkalinity, as $CaCO_3$		99	106	114	164	242
Chloride	400	20	22	23	33	49
Fluoride	2	7.9	8.4	9.2	12.1	11.5
Nitrate, as N	10	<0.01	<0.01	<0.01	<0.01	<0.01
Sulfate, as SO_4^{2}	500	336	356	386	542	776
Aluminum	0.2	<0.01	<0.01	<0.01	<0.01	<0.01
Antimony	0.006	0.003	0.004	0.004	0.005	0.008
Arsenic	0.01	0.09	0.10	0.10	0.15	0.23
Barium	2	0.006	0.006	0.007	0.011	0.015
Beryllium	0.004	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Boron		0.25	0.26	0.28	0.41	0.60
Cadmium	0.005	0.0010	0.0011	0.0012	0.0017	0.0024
Calcium		17.8	18.8	20.0	28.3	37.2
Chromium	0.1	<0.006	<0.006	<0.006	<0.006	0.0
Cobalt		<0.001	<0.001	<0.001	<0.001	<0.001
Copper	1.3	0.00	0.00	0.00	0.01	0.008
Iron	0.6	<0.06	<0.06	<0.06	<0.06	<0.06
Lead	0.015	0.0	0.0	0.0	0.0017	0.0023
Lithium		<0.004	<0.004	<0.004	<0.004	<0.004
Magnesium	150	0.8	0.9	0.9	1.4	2.4
Manganese	0.1	0.012	0.012	0.013	0.020	0.034
Mercury	0.002	<0.0002	<0.0002	<0.0002	<0.0002	0.0003
Molybdenum		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Nickel	0.1	<0.01	<0.01	<0.01	<0.01	0.01
Phosphorus		<0.05	<0.05	<0.05	<0.05	<0.05
Potassium		2.5	2.7	2.9	4.1	6.2
Selenium	0.05	0.0031	0.0033	0.0035	0.005	0.007
Silver	0.1	<0.005	<0.005	<0.005	<0.005	0.0
Sodium		196	209	226	318	456
Strontium		0.002	0.001	0.002	0.003	0.006
Thallium	0.002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Tin		<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	5	0.01	0.01	0.01	0.01	0.01
TDS		641	681	737	1038	1484

All concentrations are in milligrams per liter, unless otherwise noted.
< Analyte concentration result is below typical analytical detection limits. Value shown is the detection limit.
Nevada MCLs are provided for REFERENCE PURPOSES ONLY.
TDS calculated as the sum of all dissolved constituents (alkalinity was converted to HCO_3- then multiplied by 0.4917 to account for volatilization of CO_2).

Table D-8

Round Mountain Expanded Pit Lake Chemistry Results, 10 Pore Volume Sensitivity Scenario

Parameter/ Analyte	Nevada MCLs	Pit Lake (Time 2 yr)	Pit Lake (Time 10 yr)	Pit Lake (Time 25 yr)	Pit Lake (Time 100 yr)	Pit Lake (Time 200 yr)
pH (S.U.)	**6.5–8.5**	7.94	7.97	8.00	8.14	8.29
pE		4	4	4	4	4
Alkalinity, as $CaCO_3$		105	111	120	172	247
Chloride	400	21	22	23	34	50
Fluoride	2	7.6	8.1	8.8	9.6	9.2
Nitrate, as N	10	<0.01	<0.01	<0.01	<0.01	<0.01
Sulfate, as SO42-	500	66	70	76	108	160
Aluminum	0.2	<0.01	<0.01	<0.01	<0.01	<0.01
Antimony	0.006	0.002	0.002	0.002	0.004	0.005
Arsenic	0.01	0.08	0.08	0.09	0.13	0.20
Barium	2	0.007	0.007	0.008	0.012	0.018
Beryllium	0.004	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Boron		0.23	0.25	0.26	0.38	0.56
Cadmium	0.005	<0.0005	<0.0005	<0.0005	<0.0005	0.0005
Calcium		18.8	19.8	21.2	27.8	34.7
Chromium	0.1	<0.006	<0.006	<0.006	<0.006	<0.006
Cobalt		<0.001	<0.001	<0.001	<0.001	<0.001
Copper	1.3	<0.003	<0.003	<0.003	<0.003	<0.003
Iron	0.6	<0.06	<0.06	<0.06	<0.06	<0.06
Lead	0.015	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Lithium		<0.004	<0.004	0.005	0.009	0.015
Magnesium	150	0.9	0.9	0.9	1.5	2.3
Manganese	0.1	0.007	0.007	0.007	0.011	0.018
Mercury	0.002	<0.0002	<0.0002	<0.0002	<0.0002	0.0002
Molybdenum		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Nickel	0.1	<0.01	<0.01	<0.01	<0.01	<0.01
Phosphorus		<0.05	<0.05	<0.05	<0.05	<0.05
Potassium		2.8	3.0	3.2	4.6	6.8
Selenium	0.05	<0.001	<0.001	<0.001	0.001	0.002
Silver	0.1	<0.005	<0.005	<0.005	<0.005	<0.005
Sodium		68	72	78	112	163
Strontium		0.002	0.003	0.003	0.006	0.011
Thallium	0.002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Tin		<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	5	0.02	0.02	0.02	0.03	0.04
TDS		248	263	284	401	575

All concentrations are in milligrams per liter, unless otherwise noted.
< Analyte concentration result is below typical analytical detection limits. Value shown is the detection limit.
Nevada MCLs are provided for REFERENCE PURPOSES ONLY.
TDS calculated as the sum of all dissolved constituents (alkalinity was converted to HCO_3- then multiplied by 0.4917 to account for volatilization of CO_2).

Table D-9

Results: Round Mountain Expanded Pit Lake Chemistry Results, Scaling Sensitivity Scenario

Parameter/ Analyte	Nevada MCLs	Pit Lake (Time 2 yr)	Pit Lake (Time 10 yr)	Pit Lake (Time 25 yr)	Pit Lake (Time 100 yr)	Pit Lake (Time 200 yr)
pH (S.U.)	**6.5–8.5**	7.94	7.97	8.00	8.14	8.29
pE		4	4	4	4	4
Alkalinity, as $CaCO_3$		105	111	120	172	247
Chloride	400	21	22	23	34	50
Fluoride	2	7.6	8.1	8.8	9.6	9.2
Nitrate, as N	10	<0.01	<0.01	<0.01	<0.01	<0.01
Sulfate, as SO_4^{2-}	500	66	70	76	108	160
Aluminum	0.2	<0.01	<0.01	<0.01	<0.01	<0.01
Antimony	0.006	0.002	0.002	0.002	0.004	0.005
Arsenic	0.01	0.08	0.08	0.09	0.13	0.20
Barium	2	0.007	0.007	0.008	0.012	0.018
Beryllium	0.004	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Boron		0.24	0.25	0.27	0.38	0.57
Cadmium	0.005	<0.0005	<0.0005	<0.0005	<0.0005	0.0006
Calcium		18.8	19.8	21.2	27.9	34.7
Chromium	0.1	<0.006	<0.006	<0.006	<0.006	<0.006
Cobalt		<0.001	<0.001	<0.001	<0.001	<0.001
Copper	1.3	<0.003	<0.003	<0.003	<0.003	<0.003
Iron	0.6	<0.06	<0.06	<0.06	<0.06	<0.06
Lead	0.015	<0.0001	<0.0001	<0.0001	<0.0001	0.0001
Lithium		<0.004	<0.004	0.005	0.009	0.015
Magnesium	150	0.9	0.9	0.9	1.5	2.3
Manganese	0.1	0.007	0.007	0.007	0.011	0.018
Mercury	0.002	<0.0002	<0.0002	<0.0002	<0.0002	0.0002
Molybdenum		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Nickel	0.1	<0.01	<0.01	<0.01	<0.01	<0.01
Phosphorus		<0.05	<0.05	<0.05	<0.05	<0.05
Potassium		2.8	3.0	3.2	4.6	6.9
Selenium	0.05	0.0011	0.0011	0.0012	0.002	0.003
Silver	0.1	<0.005	<0.005	<0.005	<0.005	<0.005
Sodium		68	72	78	112	163
Strontium		0.003	0.003	0.003	0.006	0.011
Thallium	0.002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Tin		<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	5	0.02	0.02	0.02	0.03	0.04
TDS		248	264	284	401	575

All concentrations are in milligrams per liter, unless otherwise noted.
< Analyte concentration result is below typical analytical detection limits. Value shown is the detection limit.
Nevada MCLs are provided for REFERENCE PURPOSES ONLY.
TDS calculated as the sum of all dissolved constituents (alkalinity was converted to HCO_3- then multiplied by 0.4917 to account for volatilization of CO_2).

Table D-10

Gold Hill Pit Lake Chemistry Results, Fluoride Sensitivity (SI=0) Scenario

Parameter/ Analyte	Nevada MCLs	Pit Lake (Time 2 yr)	Pit Lake (Time 10 yr)	Pit Lake (Time 25 yr)	Pit Lake (Time 100 yr)	Pit Lake (Time 200 yr)
pH (S.U.)	**6.5–8.5**	8.09	8.16	8.16	8.18	8.21
pE		4	4	4	4	4.00
Alkalinity, as $CaCO_3$		158	190	195	207	236
Chloride	400	61	77	86	150	359
Fluoride	2	0.95	1.21	1.36	2.39	4.85
Nitrate, as N	10	<0.01	<0.01	<0.01	<0.01	<0.01
Sulfate, as SO_4^{2-}	500	156	198	222	388	934
Aluminum	0.2	<0.01	<0.01	<0.01	<0.01	<0.01
Antimony	0.006	0.03	0.04	0.04	0.07	0.17
Arsenic	0.01	0.03	0.04	0.04	0.07	0.15
Barium	2	0.036	0.041	0.037	0.025	0.015
Beryllium	0.004	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Boron		0.53	0.67	0.76	1.34	3.21
Cadmium	0.005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Calcium		55.2	65.4	65.9	71.1	83.3
Chromium	0.1	<0.006	<0.006	<0.006	<0.006	<0.006
Cobalt		0.002	0.002	0.001	0.002	0.01
Copper	1.3	<0.003	<0.003	<0.003	<0.003	<0.003
Iron	0.6	<0.06	<0.06	<0.06	<0.06	<0.06
Lead	0.015	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Lithium		0.06	0.08	0.09	0.15	0.36
Magnesium	150	10.1	12.9	14.5	25.5	61.3
Manganese	0.1	0.22	0.27	0.29	0.51	1.23
Mercury	0.002	0.0003	0.0003	0.0002	0.0003	0.0008
Molybdenum		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Nickel	0.1	<0.01	<0.01	<0.01	<0.01	0.01
Phosphorus		<0.05	<0.05	<0.05	<0.05	<0.05
Potassium		2.3	3.0	3.3	5.8	14.0
Selenium	0.05	<0.001	<0.001	<0.001	<0.001	<0.001
Silver	0.1	<0.005	<0.005	<0.005	<0.005	<0.005
Sodium		90	116	131	229	552
Strontium		0.47	0.59	0.66	1.16	2.78
Thallium	0.002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Tin		<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	5	0.01	0.02	0.02	0.02	0.06
TDS		472	589	642	1000	2158

All concentrations are in milligrams per liter, unless otherwise noted.
< Analyte concentration result is below typical analytical detection limits. Value shown is the detection limit.
Nevada MCLs are provided for REFERENCE PURPOSES ONLY.
TDS calculated as the sum of all dissolved constituents
(alkalinity was converted to HCO_3^- then multiplied by 0.4917 to account for volatilization of CO_2).

Table D-11

Gold Hill Pit Lake Chemistry Results, Fluoride Sensitivity (SI=1) Scenario

Parameter/ Analyte	Nevada MCLs	Pit Lake (Time 2 yr)	Pit Lake (Time 10 yr)	Pit Lake (Time 25 yr)	Pit Lake (Time 100 yr)	Pit Lake (Time 200 yr)
pH (S.U.)	**6.5–8.5**	8.09	8.16	8.16	8.18	8.21
pE		4	4	4	4	4.00
Alkalinity, as $CaCO_3$		158	190	195	207	236
Chloride	400	61	77	86	150	359
Fluoride	2	0.95	1.21	1.36	2.39	5.75
Nitrate, as N	10	<0.01	<0.01	<0.01	<0.01	<0.01
Sulfate, as SO_4^{2-}	500	156	198	222	388	934
Aluminum	0.2	<0.01	<0.01	<0.01	<0.01	<0.01
Antimony	0.006	0.03	0.04	0.04	0.07	0.17
Arsenic	0.01	0.03	0.04	0.04	0.07	0.15
Barium	2	0.036	0.041	0.037	0.025	0.015
Beryllium	0.004	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Boron		0.53	0.67	0.76	1.34	3.21
Cadmium	0.005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Calcium		55.2	65.4	65.9	71.1	83.9
Chromium	0.1	<0.006	<0.006	<0.006	<0.006	<0.006
Cobalt		0.002	0.002	0.001	0.002	0.01
Copper	1.3	<0.003	<0.003	<0.003	<0.003	<0.003
Iron	0.6	<0.06	<0.06	<0.06	<0.06	<0.06
Lead	0.015	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Lithium		0.06	0.08	0.09	0.15	0.36
Magnesium	150	10.1	12.9	14.5	25.5	61.3
Manganese	0.1	0.22	0.27	0.29	0.51	1.23
Mercury	0.002	0.0003	0.0003	0.0002	0.0003	0.0008
Molybdenum		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Nickel	0.1	<0.01	<0.01	<0.01	<0.01	0.01
Phosphorus		<0.05	<0.05	<0.05	<0.05	<0.05
Potassium		2.3	3.0	3.3	5.8	14.0
Selenium	0.05	<0.001	<0.001	<0.001	<0.001	<0.001
Silver	0.1	<0.005	<0.005	<0.005	<0.005	<0.005
Sodium		90	116	131	229	552
Strontium		0.47	0.59	0.66	1.16	2.78
Thallium	0.002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Tin		<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	5	0.01	0.02	0.02	0.02	0.06
TDS		472	589	642	1000	2159

All concentrations are in milligrams per liter, unless otherwise noted.
< Analyte concentration result is below typical analytical detection limits. Value shown is the detection limit.
Nevada MCLs are provided for REFERENCE PURPOSES ONLY.
TDS calculated as the sum of all dissolved constituents
(alkalinity was converted to HCO_3- then multiplied by 0.4917 to account for volatilization of CO_2).

Table D-12

Gold Hill Pit Lake Chemistry Results, Low Groundwater TDS Sensitivity Scenario

Parameter/ Analyte	Nevada MCLs	Pit Lake (Time 2 yr)	Pit Lake (Time 10 yr)	Pit Lake (Time 25 yr)	Pit Lake (Time 100 yr)	Pit Lake (Time 200 yr)
pH (S.U.)	**6.5–8.5**	8.09	8.16	8.16	8.18	8.20
pE		4	4	4	4	4.00
Alkalinity, as $CaCO_3$		158	189	193	205	232
Chloride	400	75	96	107	187	450
Fluoride	2	0.84	1.07	1.21	2.11	5.08
Nitrate, as N	10	<0.01	<0.01	<0.01	<0.01	<0.01
Sulfate, as SO_4^{2-}	500	136	173	193	338	811
Aluminum	0.2	<0.01	<0.01	<0.01	<0.01	<0.01
Antimony	0.006	0.02	0.03	0.03	0.05	0.13
Arsenic	0.01	0.04	0.04	0.04	0.07	0.17
Barium	2	0.033	0.041	0.043	0.029	0.018
Beryllium	0.004	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Boron		0.55	0.70	0.80	1.39	3.36
Cadmium	0.005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Calcium		55.2	65.0	65.5	70.5	82.9
Chromium	0.1	<0.006	<0.006	<0.006	<0.006	<0.006
Cobalt		0.002	0.002	0.001	0.002	0.01
Copper	1.3	<0.003	<0.003	<0.003	<0.003	<0.003
Iron	0.6	<0.06	<0.06	<0.06	<0.06	<0.06
Lead	0.015	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Lithium		0.06	0.08	0.09	0.15	0.36
Magnesium	150	10.1	12.9	14.5	25.4	61.1
Manganese	0.1	0.22	0.27	0.29	0.50	1.21
Mercury	0.002	0.0003	0.0003	0.0002	0.0003	0.0008
Molybdenum		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Nickel	0.1	<0.01	<0.01	<0.01	<0.01	0.01
Phosphorus		<0.05	<0.05	<0.05	<0.05	<0.05
Potassium		2.3	2.9	3.3	5.7	13.7
Selenium	0.05	<0.001	<0.001	<0.001	<0.001	<0.001
Silver	0.1	<0.005	<0.005	<0.005	<0.005	<0.005
Sodium		90	116	131	229	552
Strontium		0.48	0.60	0.67	1.16	2.79
Thallium	0.002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Tin		<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	5	0.01	0.01	<0.005	0.01	0.02
TDS		467	581	633	985	2123

All concentrations are in milligrams per liter, unless otherwise noted.
< Analyte concentration result is below typical analytical detection limits. Value shown is the detection limit.
Nevada MCLs are provided for REFERENCE PURPOSES ONLY.
TDS calculated as the sum of all dissolved constituents
(alkalinity was converted to HCO_3^- then multiplied by 0.4917 to account for volatilization of CO_2).

Table D-13

Gold Hill Pit Lake Chemistry Results, High Groundwater TDS Sensitivity Scenario

Parameter/ Analyte	Nevada MCLs	Pit Lake (Time 2 yr)	Pit Lake (Time 10 yr)	Pit Lake (Time 25 yr)	Pit Lake (Time 100 yr)	Pit Lake (Time 200 yr)
pH	**6.5–8.5**	8.10	8.16	8.17	8.18	8.21
pE		4	4	4	4	4.00
Alkalinity, as $CaCO_3$		160	191	196	209	236
Chloride	400	43	54	60	104	250
Fluoride	2	0.94	1.20	1.35	2.37	5.69
Nitrate, as N	10	<0.01	<0.01	<0.01	<0.01	<0.01
Sulfate, as SO_4^{2-}	500	188	239	267	468	1126
Aluminum	0.2	<0.01	<0.01	<0.01	<0.01	<0.01
Antimony	0.006	0.01	0.02	0.02	0.03	0.08
Arsenic	0.01	0.03	0.04	0.04	0.06	0.14
Barium	2	0.040	0.035	0.031	0.021	0.013
Beryllium	0.004	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Boron		0.52	0.66	0.75	1.32	3.17
Cadmium	0.005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Calcium		56.7	66.8	67.5	73.6	89.1
Chromium	0.1	<0.006	<0.006	<0.006	<0.006	<0.006
Cobalt		0.002	0.002	0.001	0.002	0.01
Copper	1.3	<0.003	<0.003	<0.003	<0.003	<0.003
Iron	0.6	<0.06	<0.06	<0.06	<0.06	<0.06
Lead	0.015	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Lithium		0.06	0.08	0.09	0.15	0.36
Magnesium	150	10.3	13.1	14.8	26.0	62.5
Manganese	0.1	0.24	0.29	0.32	0.56	1.33
Mercury	0.002	0.0003	0.0003	0.0002	0.0003	0.0008
Molybdenum		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Nickel	0.1	<0.01	<0.01	<0.01	<0.01	0.01
Phosphorus		<0.05	<0.05	<0.05	<0.05	<0.05
Potassium		2.3	3.0	3.3	5.8	14.0
Selenium	0.05	<0.001	<0.001	<0.001	<0.001	<0.001
Silver	0.1	<0.005	<0.005	<0.005	<0.005	<0.005
Sodium		92	118	134	235	565
Strontium		0.48	0.60	0.67	1.16	2.79
Thallium	0.002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Tin		<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	5	0.01	0.01	<0.005	0.01	0.02
TDS		491	611	667	1044	2262

All concentrations are in milligrams per liter, unless otherwise noted.
< Analyte concentration result is below typical analytical detection limits. Value shown is the detection limit.
Nevada MCLs are provided for REFERENCE PURPOSES ONLY.
TDS calculated as the sum of all dissolved constituents
(alkalinity was converted to HCO_3- then multiplied by 0.4917 to account for volatilization of CO_2).

Table D-14

Gold Hill Pit Lake Chemistry Results, 10 Pore Volume Sensitivity Scenario

Parameter/ Analyte	Nevada MCLs	Pit Lake (Time 2 yr)	Pit Lake (Time 10 yr)	Pit Lake (Time 25 yr)	Pit Lake (Time 100 yr)	Pit Lake (Time 200 yr)
pH (S.U.)	**6.5–8.5**	8.08	8.15	8.16	8.17	8.20
pE		4	4	4	4	4.00
Alkalinity, as $CaCO_3$		153	182	190	203	231
Chloride	400	63	80	88	152	363
Fluoride	2	0.96	1.22	1.37	2.40	5.76
Nitrate, as N	10	<0.01	<0.01	<0.01	<0.01	<0.01
Sulfate, as SO_4^{2-}	500	161	206	226	393	941
Aluminum	0.2	<0.01	<0.01	<0.01	<0.01	<0.01
Antimony	0.006	0.03	0.04	0.04	0.07	0.17
Arsenic	0.01	0.04	0.04	0.04	0.07	0.15
Barium	2	0.037	0.042	0.037	0.026	0.015
Beryllium	0.004	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Boron		0.53	0.67	0.76	1.34	3.21
Cadmium	0.005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Calcium		56.7	67.8	67.4	72.8	87.2
Chromium	0.1	<0.006	<0.006	<0.006	<0.006	<0.006
Cobalt		0.003	0.004	0.003	0.004	0.01
Copper	1.3	<0.003	<0.003	<0.003	<0.003	<0.003
Iron	0.6	<0.06	<0.06	<0.06	<0.06	<0.06
Lead	0.015	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Lithium		0.06	0.08	0.09	0.15	0.36
Magnesium	150	10.2	13.0	14.6	25.6	61.4
Manganese	0.1	0.24	0.31	0.32	0.54	1.27
Mercury	0.002	0.0005	0.0006	0.0004	0.0005	0.0011
Molybdenum		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Nickel	0.1	<0.01	<0.01	<0.01	<0.01	0.01
Phosphorus		<0.05	<0.05	<0.05	<0.05	<0.05
Potassium		2.4	3.1	3.4	5.9	14.1
Selenium	0.05	<0.001	<0.001	<0.001	<0.001	<0.001
Silver	0.1	<0.005	<0.005	<0.005	<0.005	<0.005
Sodium		90	116	131	229	552
Strontium		0.50	0.63	0.68	1.18	2.81
Thallium	0.002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Tin		<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	5	0.02	0.02	0.02	0.03	0.06
TDS		478	598	648	1006	2171

All concentrations are in milligrams per liter, unless otherwise noted.
< Analyte concentration result is below typical analytical detection limits. Value shown is the detection limit.
Nevada MCLs are provided for REFERENCE PURPOSES ONLY.
TDS calculated as the sum of all dissolved constituents
(alkalinity was converted to HCO_3- then multiplied by 0.4917 to account for volatilization of CO_2).

Table D-15

Gold Hill Pit Lake Chemistry Results, Low Groundwater Inflow Sensitivity Scenario

Parameter/ Analyte	Nevada MCLs	Pit Lake (Time 2 yr)	Pit Lake (Time 10 yr)	Pit Lake (Time 25 yr)	Pit Lake (Time 100 yr)	Pit Lake (Time 200 yr)
pH (S.U.)	**6.5–8.5**	8.09	8.16	8.17	8.18	8.19
pE		4	4	4	4	4.00
Alkalinity, as $CaCO_3$		158	189	195	206	219
Chloride	400	61	84	100	154	243
Fluoride	2	0.95	1.32	1.58	2.46	3.87
Nitrate, as N	10	<0.01	<0.01	<0.01	<0.01	<0.01
Sulfate, as SO_4^{2-}	500	156	217	259	400	629
Aluminum	0.2	<0.01	<0.01	<0.01	<0.01	<0.01
Antimony	0.006	0.03	0.04	0.05	0.07	0.12
Arsenic	0.01	0.03	0.04	0.05	0.07	0.10
Barium	2	0.036	0.039	0.034	0.025	0.019
Beryllium	0.004	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Boron		0.53	0.73	0.88	1.37	2.16
Cadmium	0.005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Calcium		55.2	66.5	67.8	72.0	78.2
Chromium	0.1	<0.006	<0.006	<0.006	<0.006	<0.006
Cobalt		0.002	0.003	0.002	0.003	0.00
Copper	1.3	<0.003	<0.003	<0.003	<0.003	<0.003
Iron	0.6	<0.06	<0.06	<0.06	<0.06	<0.06
Lead	0.015	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Lithium		0.06	0.08	0.10	0.15	0.24
Magnesium	150	10.1	14.0	16.9	26.2	41.2
Manganese	0.1	0.22	0.30	0.35	0.54	0.84
Mercury	0.002	0.0003	0.0004	0.0003	0.0004	0.0007
Molybdenum		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Nickel	0.1	<0.01	<0.01	<0.01	<0.01	<0.01
Phosphorus		<0.05	<0.05	<0.05	<0.05	<0.05
Potassium		2.3	3.2	3.9	6.0	9.4
Selenium	0.05	<0.001	<0.001	<0.001	<0.001	<0.001
Silver	0.1	<0.005	<0.005	<0.005	<0.005	<0.005
Sodium		90	126	151	235	370
Strontium		0.47	0.65	0.78	1.20	1.88
Thallium	0.002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Tin		<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	5	0.01	0.02	0.02	0.03	0.04
TDS		472	628	719	1024	1512

All concentrations are in milligrams per liter, unless otherwise noted.
< Analyte concentration result is below typical analytical detection limits. Value shown is the detection limit.
Nevada MCLs are provided for REFERENCE PURPOSES ONLY.
TDS calculated as the sum of all dissolved constituent
(alkalinity was converted to HCO_3- then multiplied by 0.4917 to account for volatilization of CO_2).

Table D-16

Results: Gold Hill Pit Lake Chemistry Results, Scaling Sensitivity Scenario

Parameter/ Analyte	Nevada MCLs	Pit Lake (Time 2 yr)	Pit Lake (Time 10 yr)	Pit Lake (Time 25 yr)	Pit Lake (Time 100 yr)	Pit Lake (Time 200 yr)
pH (S.U.)	**6.5–8.5**	8.07	8.13	8.14	8.15	8.14
pE		4	4	4	4	4.00
Alkalinity, as $CaCO_3$		152	180	186	194	205
Chloride	400	59	75	84	148	355
Fluoride	2	1.02	1.28	1.42	2.48	5.97
Nitrate, as N	10	<0.01	<0.01	<0.01	<0.01	<0.01
Sulfate, as SO_4^{2-}	500	200	240	255	440	1053
Aluminum	0.2	<0.01	<0.01	<0.01	<0.01	<0.01
Antimony	0.006	0.03	0.04	0.04	0.07	0.18
Arsenic	0.01	0.07	0.07	0.06	0.10	0.23
Barium	2	0.040	0.035	0.033	0.023	0.014
Beryllium	0.004	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Boron		0.53	0.67	0.76	1.34	3.22
Cadmium	0.005	<0.0005	<0.0005	<0.0005	<0.0005	0.00
Calcium		68.5	76.6	74.5	84.6	115.5
Chromium	0.1	<0.006	<0.006	<0.006	<0.006	<0.006
Cobalt		0.014	0.014	0.011	0.017	0.04
Copper	1.3	<0.003	<0.003	<0.003	<0.003	<0.003
Iron	0.6	<0.06	<0.06	<0.06	<0.06	<0.06
Lead	0.015	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Lithium		0.07	0.09	0.09	0.16	0.39
Magnesium	150	10.7	13.5	15.0	26.2	63.0
Manganese	0.1	0.45	0.49	0.46	0.78	1.85
Mercury	0.002	0.0022	0.0021	0.0017	0.0027	0.0063
Molybdenum		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Nickel	0.1	0.03	0.03	0.02	0.03	0.07
Phosphorus		<0.05	<0.05	<0.05	0.054	0.13
Potassium		3.0	3.6	3.8	6.6	15.7
Selenium	0.05	<0.001	<0.001	<0.001	<0.001	<0.001
Silver	0.1	<0.005	<0.005	<0.005	<0.005	<0.005
Sodium		91	116	131	230	553
Strontium		0.70	0.81	0.83	1.42	3.40
Thallium	0.002	0.0001	0.0001	0.0001	0.0002	0.0004
Tin		<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	5	0.04	0.04	0.03	0.05	0.12
TDS		526	636	679	1058	2294

All concentrations are in milligrams per liter, unless otherwise noted.
< Analyte concentration result is below typical analytical detection limits. Value shown is the detection limit.
Nevada MCLs are provided for REFERENCE PURPOSES ONLY.
TDS calculated as the sum of all dissolved constituents
(alkalinity was converted to HCO_3- then multiplied by 0.4917 to account for volatilization of CO_2).

Table D-17
Round Mountain Current Permitted Pit Lake
Chemistry Results, Fluoride Sensitivity (SI=0) Scenario

Parameter/ Analyte	Nevada MCLs	Pit Lake (Time 2 yr)	Pit Lake (Time 10 yr)	Pit Lake (Time 25 yr)	Pit Lake (Time 100 yr)	Pit Lake (Time 200 yr)
pH (S.U.)	**6.5–8.5**	7.97	7.99	8.03	8.20	8.33
pE		4	4	4	4	4
Alkalinity, as $CaCO_3$		112	117	129	197	273
Chloride	400	22	23	25	38	58
Fluoride	2	6.2	6.2	6.2	5.6	5.7
Nitrate, as N	10	<0.01	<0.01	<0.01	<0.01	<0.01
Sulfate, as SO_4^{2-}	500	71	74	82	124	188
Aluminum	0.2	<0.01	<0.01	<0.01	<0.01	<0.01
Antimony	0.006	0.002	0.002	0.003	0.004	0.006
Arsenic	0.01	0.09	0.09	0.10	0.15	0.23
Barium	2	0.008	0.008	0.008	0.014	0.022
Beryllium	0.004	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Boron		0.25	0.26	0.28	0.43	0.66
Cadmium	0.005	<0.0005	<0.0005	<0.0005	<0.0005	0.0006
Calcium		18.5	18.7	19.7	26.6	30.1
Chromium	0.1	<0.006	<0.006	<0.006	<0.006	<0.006
Cobalt		<0.001	<0.001	<0.001	<0.001	<0.001
Copper	1.3	<0.003	<0.003	<0.003	<0.003	<0.003
Iron	0.6	<0.06	<0.06	<0.06	<0.06	<0.06
Lead	0.015	<0.0001	<0.0001	<0.0001	<0.0001	0.0001
Lithium		<0.004	0.004	0.006	0.012	0.021
Magnesium	150	1.0	1.0	1.1	1.7	2.8
Manganese	0.1	0.008	0.008	0.008	0.013	0.022
Mercury	0.002	<0.0002	<0.0002	<0.0002	<0.0002	0.0003
Molybdenum		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Nickel	0.1	<0.01	<0.01	<0.01	<0.01	<0.01
Phosphorus		<0.05	<0.05	<0.05	<0.05	<0.05
Potassium		3.0	3.2	3.5	5.3	8.1
Selenium	0.05	<0.001	<0.001	0.0010	0.002	0.002
Silver	0.1	<0.005	<0.005	<0.005	<0.005	<0.005
Sodium		72	76	84	127	191
Strontium		0.003	0.003	0.004	0.007	0.013
Thallium	0.002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Tin		<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	5	0.02	0.02	0.02	0.03	0.04
TDS		262	274	300	448	649

All concentrations are in milligrams per liter, unless otherwise noted.
< Analyte concentration result is below typical analytical detection limits. Value shown is the detection limit.
Nevada MCLs are provided for REFERENCE PURPOSES ONLY.
TDS calculated as the sum of all dissolved constituents (alkalinity was converted to HCO_3- then multiplied by 0.4917 to account for volatilization of CO_2.

Table D-18

Round Mountain Current Permitted Pit Lake Chemistry Results, Fluoride Sensitivity (SI=1) Scenario

Parameter/ Analyte	Nevada MCLs	Pit Lake (Time 2 yr)	Pit Lake (Time 10 yr)	Pit Lake (Time 25 yr)	Pit Lake (Time 100 yr)	Pit Lake (Time 200 yr)
pH (S.U.)	**6.5–8.5**	7.97	7.99	8.03	8.20	8.29
pE		4	4	4	4	4
Alkalinity, as $CaCO_3$		112	117	129	197	253
Chloride	400	22	23	25	38	58
Fluoride	2	8.0	8.5	9.4	13.9	16.7
Nitrate, as N	10	<0.01	<0.01	<0.01	<0.01	<0.01
Sulfate, as SO_4^{2-}	500	71	74	82	124	188
Aluminum	0.2	<0.01	<0.01	<0.01	<0.01	<0.01
Antimony	0.006	0.002	0.002	0.003	0.004	0.006
Arsenic	0.01	0.09	0.09	0.10	0.15	0.23
Barium	2	0.008	0.008	0.008	0.014	0.022
Beryllium	0.004	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Boron		0.25	0.26	0.28	0.43	0.66
Cadmium	0.005	<0.0005	<0.0005	<0.0005	<0.0005	0.0006
Calcium		20.3	21.1	23.0	35.4	35.1
Chromium	0.1	<0.006	<0.006	<0.006	<0.006	<0.006
Cobalt		<0.001	<0.001	<0.001	<0.001	<0.001
Copper	1.3	<0.003	<0.003	<0.003	<0.003	<0.003
Iron	0.6	<0.06	<0.06	<0.06	<0.06	<0.06
Lead	0.015	<0.0001	<0.0001	<0.0001	<0.0001	0.0001
Lithium		<0.004	0.004	0.006	0.012	0.021
Magnesium	150	1.0	1.0	1.1	1.7	2.8
Manganese	0.1	0.008	0.008	0.008	0.013	0.022
Mercury	0.002	<0.0002	<0.0002	<0.0002	<0.0002	0.0003
Molybdenum		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Nickel	0.1	<0.01	<0.01	<0.01	<0.01	<0.01
Phosphorus		<0.05	<0.05	<0.05	<0.05	<0.05
Potassium		3.0	3.2	3.5	5.3	8.1
Selenium	0.05	<0.001	<0.001	0.0010	0.002	0.002
Silver	0.1	<0.005	<0.005	<0.005	<0.005	<0.005
Sodium		72	76	84	127	191
Strontium		0.003	0.003	0.004	0.007	0.013
Thallium	0.002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Tin		<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	5	0.02	0.02	0.02	0.03	0.04
TDS		265	278	306	465	653

All concentrations are in milligrams per liter, unless otherwise noted.
< Analyte concentration result is below typical analytical detection limits. Value shown is the detection limit.
Nevada MCLs are provided for REFERENCE PURPOSES ONLY.
TDS calculated as the sum of all dissolved constituents (alkalinity was converted to HCO_3- then multiplied by 0.4917 to account for volatilization of CO_2).

Table D-19
Round Mountain Current Permitted Pit Lake Chemistry Results,
High Groundwater Infill Sensitivity Scenario

Parameter/ Analyte	Nevada MCLs	Pit Lake (Time 2 yr)	Pit Lake (Time 10 yr)	Pit Lake (Time 25 yr)	Pit Lake (Time 100 yr)	Pit Lake (Time 200 yr)
pH (S.U.)	**6.5–8.5**	7.96	7.98	8.01	8.15	8.29
pE		4	4	4	4	4
Alkalinity, as $CaCO_3$		110	114	123	176	250
Chloride	400	22	22	24	34	51
Fluoride	2	8.1	8.5	9.2	9.6	9.3
Nitrate, as N	10	<0.01	<0.01	<0.01	<0.01	<0.01
Sulfate, as SO_4^{2}	500	69	72	78	111	165
Aluminum	0.2	<0.01	<0.01	<0.01	<0.01	<0.01
Antimony	0.006	0.002	0.002	0.003	0.004	0.005
Arsenic	0.01	0.08	0.08	0.09	0.13	0.20
Barium	2	0.007	0.007	0.008	0.012	0.019
Beryllium	0.004	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Boron		0.24	0.25	0.27	0.39	0.58
Cadmium	0.005	<0.0005	<0.0005	<0.0005	<0.0005	0.0005
Calcium		19.4	20.0	21.6	28.2	34.3
Chromium	0.1	<0.006	<0.006	<0.006	<0.006	<0.006
Cobalt		<0.001	<0.001	<0.001	<0.001	<0.001
Copper	1.3	<0.003	<0.003	<0.003	<0.003	<0.003
Iron	0.6	<0.06	<0.06	<0.06	<0.06	<0.06
Lead	0.015	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Lithium		<0.004	<0.004	0.005	0.010	0.018
Magnesium	150	0.9	0.9	0.9	1.5	2.4
Manganese	0.1	0.007	0.006	0.007	0.011	0.019
Mercury	0.002	<0.0002	<0.0002	<0.0002	<0.0002	0.0003
Molybdenum		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Nickel	0.1	<0.01	<0.01	<0.01	<0.01	<0.01
Phosphorus		<0.05	<0.05	<0.05	<0.05	<0.05
Potassium		2.9	3.0	3.3	4.7	7.1
Selenium	0.05	<0.001	<0.001	<0.001	0.001	0.002
Silver	0.1	<0.005	<0.005	<0.005	<0.005	<0.005
Sodium		72	75	81	114	168
Strontium		0.002	0.002	0.003	0.006	0.012
Thallium	0.002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Tin		<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	5	0.02	0.02	0.02	0.03	0.04
TDS		261	270	293	410	588

All concentrations are in milligrams per liter, unless otherwise noted.
< Analyte concentration result is below typical analytical detection limits. Value shown is the detection limit.
Nevada MCLs are provided for REFERENCE PURPOSES ONLY.
TDS calculated as the sum of all dissolved constituents (alkalinity was converted to HCO_3- then multiplied by 0.4917 to account for volatilization of CO_2).

Table D-20

Round Mountain Current Permitted Pit Lake Chemistry Results, Low TDS Sensitivity Scenario

Parameter/ Analyte	Nevada MCLs	Pit Lake (Time 2 yr)	Pit Lake (Time 10 yr)	Pit Lake (Time 25 yr)	Pit Lake (Time 100 yr)	Pit Lake (Time 200 yr)
pH (S.U.)	**6.5–8.5**	7.95	7.97	8.01	8.18	8.35
pE		4	4	4	4	4
Alkalinity, as $CaCO_3$		107	112	123	187	285
Chloride	400	18	19	21	32	49
Fluoride	2	11.5	12.2	12.4	12.6	12.7
Nitrate, as N	10	<0.01	<0.01	<0.01	<0.01	<0.01
Sulfate, as SO_4^{2-}	500	64	67	73	112	171
Aluminum	0.2	<0.01	<0.01	<0.01	<0.01	<0.01
Antimony	0.006	0.004	0.004	0.005	0.007	0.011
Arsenic	0.01	0.12	0.12	0.13	0.20	0.31
Barium	2	0.007	0.008	0.009	0.014	0.023
Beryllium	0.004	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Boron		0.26	0.27	0.30	0.45	0.68
Cadmium	0.005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Calcium		14.0	14.6	14.9	16.3	18.7
Chromium	0.1	<0.006	<0.006	<0.006	<0.006	<0.006
Cobalt		<0.001	<0.001	<0.001	<0.001	<0.001
Copper	1.3	<0.003	<0.003	<0.003	<0.003	<0.003
Iron	0.6	<0.06	<0.06	<0.06	<0.06	<0.06
Lead	0.015	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Lithium		<0.004	<0.004	<0.004	<0.004	<0.004
Magnesium	150	0.2	0.2	0.3	0.4	0.7
Manganese	0.1	0.011	0.012	0.013	0.020	0.031
Mercury	0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Nickel	0.1	<0.01	<0.01	<0.01	<0.01	<0.01
Phosphorus		<0.05	<0.05	<0.05	<0.05	<0.05
Potassium		2.5	2.6	2.9	4.3	6.5
Selenium	0.05	<0.001	<0.001	<0.001	<0.001	0.002
Silver	0.1	<0.005	<0.005	<0.005	<0.005	<0.005
Sodium		78	82	90	137	209
Strontium		0.002	0.002	0.002	0.004	0.007
Thallium	0.002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Tin		<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	5	0.01	0.01	0.01	0.02	0.03
TDS		253	265	289	428	639

All concentrations are in milligrams per liter, unless otherwise noted.
< Analyte concentration result is below typical analytical detection limits. Value shown is the detection limit.
Nevada MCLs are provided for REFERENCE PURPOSES ONLY.
TDS calculated as the sum of all dissolved constituents (alkalinity was converted to HCO_3- then multiplied by 0.4917 to account for volatilization of CO_2).

Table D-21

Round Mountain Current Permitted Pit Lake Chemistry Results, High TDS Sensitivity Scenario

Parameter/ Analyte	Nevada MCLs	Pit Lake (Time 2 yr)	Pit Lake (Time 10 yr)	Pit Lake (Time 25 yr)	Pit Lake (Time 100 yr)	Pit Lake (Time 200 yr)
pH (S.U.)	**6.5–8.5**	7.93	7.95	7.99	8.16	8.32
pE		4	4	4	4	4
Alkalinity, as $CaCO_3$		107	112	123	188	285
Chloride	400	22	23	25	38	57
Fluoride	2	8.3	8.9	9.8	11.9	11.3
Nitrate, as N	10	<0.01	<0.01	<0.01	<0.01	<0.01
Sulfate, as SO_4^{2-}	500	348	371	411	609	900
Aluminum	0.2	<0.01	<0.01	<0.01	<0.01	<0.01
Antimony	0.006	0.003	0.004	0.004	0.006	0.00902
Arsenic	0.01	0.10	0.10	0.11	0.18	0.27
Barium	2	0.007	0.007	0.008	0.013	0.014
Beryllium	0.004	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Boron		0.27	0.28	0.31	0.47	0.71
Cadmium	0.005	0.0011	0.0011	0.0012	0.0019	0.0029
Calcium		19.7	20.2	22.0	31.1	42.0
Chromium	0.1	<0.006	<0.006	<0.006	<0.006	0.0
Cobalt		<0.001	<0.001	<0.001	<0.001	<0.001
Copper	1.3	0.00	0.00	0.00	0.01	0.009
Iron	0.6	<0.06	<0.06	<0.06	<0.06	<0.06
Lead	0.015	0.0	0.0	0.0	0.0018	0.0027
Lithium		<0.004	<0.004	<0.004	<0.004	<0.004
Magnesium	150	1.0	1.0	1.0	1.7	2.9
Manganese	0.1	0.015	0.014	0.015	0.02	0.04
Mercury	0.002	<0.0002	<0.0002	<0.0002	0.0002	0.0004
Molybdenum		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Nickel	0.1	<0.01	<0.01	<0.01	<0.01	0.01
Phosphorus		<0.05	<0.05	<0.05	<0.05	<0.05
Potassium		2.7	2.8	3.1	4.7	7.3
Selenium	0.05	0.0033	0.0034	0.0038	0.0056	0.0084
Silver	0.1	<0.005	<0.005	<0.005	<0.005	0.0
Sodium		204	217	241	358	529
Strontium		0.002	0.002	0.002	0.004	0.007
Thallium	0.002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Tin		<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	5	0.01	0.01	0.01	0.01	0.01
TDS		670	711	787	1167	1722

All concentrations are in milligrams per liter, unless otherwise noted.
< Analyte concentration result is below typical analytical detection limits. Value shown is the detection limit.
Nevada MCLs are provided for REFERENCE PURPOSES ONLY.
TDS calculated as the sum of all dissolved constituents (alkalinity was converted to HCO_3- then multiplied by 0.4917 to account for volatilization of CO_2).

Table D-22
Round Mountain Current Permitted Pit Lake Chemistry Results,
10 Pore Volume Sensitivity Scenario

Parameter/ Analyte	Nevada MCLs	Pit Lake (Time 2 yr)	Pit Lake (Time 10 yr)	Pit Lake (Time 25 yr)	Pit Lake (Time 100 yr)	Pit Lake (Time 200 yr)
pH (S.U.)	**6.5–8.5**	7.97	7.99	8.03	8.20	8.32
pE		4	4	4	4	4
Alkalinity, as $CaCO_3$		112	118	129	197	267
Chloride	400	22	23	25	39	59
Fluoride	2	8.0	8.5	9.4	9.4	9.9
Nitrate, as N	10	<0.01	<0.01	<0.01	<0.01	<0.01
Sulfate, as SO_4^{2}	500	71	74	82	124	190
Aluminum	0.2	<0.01	<0.01	<0.01	<0.01	<0.01
Antimony	0.006	0.002	0.002	0.003	0.004	0.006
Arsenic	0.01	0.09	0.09	0.10	0.15	0.24
Barium	2	0.008	0.008	0.008	0.014	0.022
Beryllium	0.004	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Boron		0.25	0.26	0.29	0.44	0.67
Cadmium	0.005	<0.0005	<0.0005	<0.0005	<0.0005	0.0006
Calcium		20.4	21.1	23.1	30.7	31.7
Chromium	0.1	<0.006	<0.006	<0.006	<0.006	<0.006
Cobalt		<0.001	<0.001	<0.001	<0.001	<0.001
Copper	1.3	<0.003	<0.003	<0.003	<0.003	<0.003
Iron	0.6	<0.06	<0.06	<0.06	<0.06	<0.06
Lead	0.015	<0.0001	<0.0001	<0.0001	<0.0001	0.0001
Lithium		<0.004	0.004	0.006	0.012	0.021
Magnesium	150	1.0	1.0	1.1	1.7	2.9
Manganese	0.1	0.008	0.008	0.008	0.014	0.022
Mercury	0.002	<0.0002	<0.0002	<0.0002	<0.0002	0.0003
Molybdenum		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Nickel	0.1	<0.01	<0.01	<0.01	<0.01	<0.01
Phosphorus		<0.05	<0.05	<0.05	<0.05	<0.05
Potassium		3.0	3.2	3.5	5.3	8.1
Selenium	0.05	0.0010	<0.001	0.0011	0.002	0.002
Silver	0.1	<0.005	<0.005	<0.005	<0.005	<0.005
Sodium		72	76	84	127	193
Strontium		0.004	0.003	0.004	0.008	0.014
Thallium	0.002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Tin		<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	5	0.02	0.02	0.02	0.03	0.04
TDS		265	278	306	457	656

All concentrations are in milligrams per liter, unless otherwise noted.
< Analyte concentration result is below typical analytical detection limits. Value shown is the detection limit.
Nevada MCLs are provided for REFERENCE PURPOSES ONLY.
TDS calculated as the sum of all dissolved constituents (alkalinity was converted to HCO_3- then multiplied by 0.4917 to account for volatilization of CO_2**).**

Table D-23

Results: Round Mountain Current Permitted Pit Chemistry Results, Scaling Sensitivity Scenario

Parameter/ Analyte	Nevada MCLs	Pit Lake (Time 2 yr)	Pit Lake (Time 10 yr)	Pit Lake (Time 25 yr)	Pit Lake (Time 100 yr)	Pit Lake (Time 200 yr)
pH (S.U.)	**6.5–8.5**	7.97	7.99	8.03	8.20	8.31
pE		4	4	4	4	4
Alkalinity, as $CaCO_3$		112	118	129	197	265
Chloride	400	22	23	25	38	58
Fluoride	2	8.0	8.5	9.4	9.4	9.9
Nitrate, as N	10	<0.01	<0.01	<0.01	<0.01	<0.01
Sulfate, as SO_4^{2-}	500	71	74	82	124	188
Aluminum	0.2	<0.01	<0.01	<0.01	<0.01	<0.01
Antimony	0.006	0.002	0.002	0.003	0.004	0.006
Arsenic	0.01	0.09	0.09	0.10	0.15	0.23
Barium	2	0.008	0.008	0.008	0.014	0.022
Beryllium	0.004	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Boron		0.26	0.26	0.29	0.44	0.67
Cadmium	0.005	<0.0005	<0.0005	<0.0005	<0.0005	0.0006
Calcium		20.4	21.1	23.1	30.6	31.8
Chromium	0.1	<0.006	<0.006	<0.006	<0.006	<0.006
Cobalt		<0.001	<0.001	<0.001	<0.001	<0.001
Copper	1.3	<0.003	<0.003	<0.003	<0.003	<0.003
Iron	0.6	<0.06	<0.06	<0.06	<0.06	<0.06
Lead	0.015	<0.0001	<0.0001	<0.0001	<0.0001	0.0001
Lithium		<0.004	0.005	0.006	0.012	0.021
Magnesium	150	1.0	1.0	1.1	1.7	2.8
Manganese	0.1	0.008	0.008	0.008	0.013	0.022
Mercury	0.002	<0.0002	<0.0002	<0.0002	<0.0002	0.0003
Molybdenum		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Nickel	0.1	<0.01	<0.01	<0.01	<0.01	<0.01
Phosphorus		<0.05	<0.05	<0.05	<0.05	<0.05
Potassium		3.1	3.2	3.5	5.3	8.1
Selenium	0.05	0.0014	0.0012	0.0012	0.002	0.003
Silver	0.1	<0.005	<0.005	<0.005	<0.005	<0.005
Sodium		72	76	84	127	191
Strontium		0.005	0.004	0.004	0.008	0.014
Thallium	0.002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Tin		<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	5	0.02	0.02	0.02	0.03	0.04
TDS		266	279	306	456	651

All concentrations are in milligrams per liter, unless otherwise noted.
< Analyte concentration result is below typical analytical detection limits. Value shown is the detection limit.
Nevada MCLs are provided for REFERENCE PURPOSES ONLY.
TDS calculated as the sum of all dissolved constituents
(alkalinity was converted to HCO_3- then multiplied by 0.4917 to account for volatilization of CO_2).

Appendix E

Visual Contrast Worksheets and Visual Simulations

Form 8400-4
(September 1985)

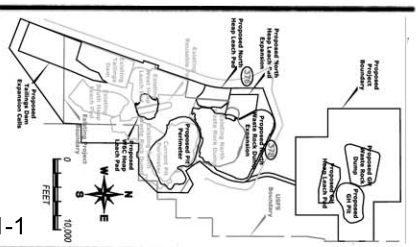
UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

VISUAL CONTRAST RATING WORKSHEET

Date	02/10/2007
District	Battle Mountain FO
Resource Area	Tonopah
Activity (program)	Mine, Mill, Heap, Waste Rock, Tailings, T-line, Road

SECTION A. PROJECT INFORMATION

1. Project Name: Round Mountain / Gold Hill Expansion SEIS
2. Key Observation Point: KOP#1
3. VRM Class: Class IV
4. Location
   - Township: 11, 10, 9 N
   - Range: 44, 43 E
   - Section: Multiple
5. Location Sketch



See Figure 1-1

SECTION B. CHARACTERISTIC LANDSCAPE DESCRIPTION

	1. LAND/WATER	2. VEGETATION	3. STRUCTURES
FORM	Inclined valley floor, steep-sided benches and pyramidal mountainous backdrops	Simple organic valley floor mosaics of grasses and complex irregular patterns of trees and grasses on mountain-sides	Narrow planar roads and rectangular t-lines; cubed buildings
LINE	Complex horizontal, inclined, angular mix of valley, mts., and mining	Horizontal, curvilinear, inclined angular	Horizontal, curved, linear roads and t-lines; t-lines vertical in foreground
COLOR	Light tans to dark, reddish browns and blacks	Light golds and tans to reddish browns and light sage greens to dark olive greens	Dark greys, strong yellow and white of paved roadways; light to dark tans of un-paved roadways; subtle to gleaming t-line
TEX-TURE	Fine valley patterns, moderate foothill and mt mosaics; moderate to course mining landforms	Fine valley grass and shrub patterns, moderate foothill and mt tree and grass mosaics; moderate-course mine veg/earth	Fine roads, t-lines, residential, and commerce

SECTION C. PROPOSED ACTIVITY DESCRIPTION

	1. LAND/WATER	2. VEGETATION	3. STRUCTURES
FORM	Inclined valley floor, inclined steep-sided benches and horizontal planar bench tops	Homogenous grass and shrub patterns in reclaimed areas - homogenous earth/ sparse veg. in difficult-to-reclaim areas	Narrow planar roads and rectangular t-lines; cubed buildings
LINE	Complex horizontal, inclined, and angular mix of valley floor and mining outlines	Horizontal, curvilinear, inclined angular	Horizontal, curved, linear roads and t-lines; t-lines vertical in foreground
COLOR	Light tans to dark, reddish browns and blacks	Light golds and tans to reddish browns and light sage greens to dark olive greens	Dark greys, strong yellow and white of paved roadways; light to dark tans of un-paved roadways; subtle to gleaming t-line
TEX-TURE	Moderate to course mining landforms	Fine valley grass and shrub patterns, moderate foothill and mt tree and grass mosaics; moderate-course mine veg/earth	Fine roads, t-lines, residential, and commerce

SECTION D. CONTRAST RATING ☐ SHORT TERM ☒ LONG TERM

1. DEGREE OF CONTRAST

ELEMENTS	FEATURES: LAND/WATER BODY (1) Strong	Moderate	Weak	None	VEGETATION (2) Strong	Moderate	Weak	None	STRUCTURES (3) Strong	Moderate	Weak	None
Form	x						x				x	
Line		x					x			x		
Color		x			x						x	
Texture		x				x						x

2. Does project design meet visual resource management objectives? ☒ Yes ☐ No (Explain on reverse side)

3. Additional mitigating measures recommended ☒ Yes ☐ No (Explain on reverse side)

Evaluator's Names: Merlyn Paulson
Date: 02/10/07

Round Mountain Expansion Project

Appendix E

Key Observation Point 1
Visual Simulation

12/04/08

Form 8400-4
(September 1985)

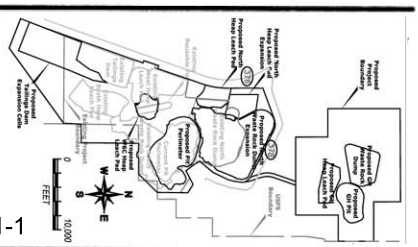
UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

VISUAL CONTRAST RATING WORKSHEET

Date	02/10/2007
District	Battle Mountain FO
Resource Area	Tonopah
Activity (program)	Mine, Mill, Heap, Waste Rock, Tailings, T-line, Road

SECTION A. PROJECT INFORMATION

1. Project Name: Round Mountain Expansion SEIS
2. Key Observation Point: KOP#2
3. VRM Class: Class IV
4. Location
   - Township: 11, 10, 9 N
   - Range: 44, 43 E
   - Section: Multiple
5. Location Sketch



See Figure 1-1

SECTION B. CHARACTERISTIC LANDSCAPE DESCRIPTION

	1. LAND/WATER	2. VEGETATION	3. STRUCTURES
FORM	Flat valley floor, steep-sided benches and pyramidal mountainous backdrops	Simple organic valley floor mosaics of grasses and complex irregular patterns of trees and grasses on mountain-sides	Narrow planar roads and rectangular t-lines; cubed buildings
LINE	Complex horizontal, inclined, angular mix of valley, mts., and mining	Horizontal, curvilinear, inclined angular	Horizontal, curved, linear roads and t-lines; t-lines vertical in foreground
COLOR	Light tans to dark, reddish browns and blacks	Light golds and tans to reddish browns and light sage greens to dark olive greens	Dark greys, strong yellow and white of paved roadways; light to dark tans of un-paved roadways; subtle to gleaming t-line
TEX-TURE	Fine valley patterns, moderate foothill and mt mosaics; moderate to course mining landforms	Fine valley grass and shrub patterns, moderate foothill and mt tree and grass mosaics; moderate-course mine veg/earth	Fine roads, t-lines, residential, and commerce

SECTION C. PROPOSED ACTIVITY DESCRIPTION

	1. LAND/WATER	2. VEGETATION	3. STRUCTURES
FORM	Flat valley floor, inclined steep-sided benches and horizontal planar bench tops	Homogenous grass and shrub patterns in reclaimed areas - homogenous earth/ sparse veg. in difficult-to-reclaim areas	Narrow planar roads and rectangular t-lines; cubed buildings
LINE	Complex horizontal, inclined, and angular mix of valley floor and mining outlines	Horizontal, curvilinear, inclined angular	Horizontal, curved, linear roads and t-lines; t-lines vertical in foreground
COLOR	Light tans to dark, reddish browns and blacks	Light golds and tans to reddish browns and light sage greens to dark olive greens	Dark greys, strong yellow and white of paved roadways; light to dark tans of un-paved roadways; subtle to gleaming t-line
TEX-TURE	Moderate to course mining landforms	Fine valley grass and shrub patterns, moderate foothill and mt tree and grass mosaics; moderate-course mine veg/earth	Fine roads, t-lines, residential, and commerce

SECTION D. CONTRAST RATING ☐ SHORT TERM ☒ LONG TERM

1. DEGREE OF CONTRAST

ELEMENTS	FEATURES: LAND/WATER BODY (1) Strong	Moderate	Weak	None	VEGETATION (2) Strong	Moderate	Weak	None	STRUCTURES (3) Strong	Moderate	Weak	None
Form	x						x				x	
Line	x						x			x		
Color	x				x						x	
Texture		x				x						x

2. Does project design meet visual resource management objectives? ☐ Yes ☒ No (Explain on reverse side)

3. Additional mitigating measures recommended ☒ Yes ☐ No (Explain on reverse side)

Evaluator's Names: Merlyn Paulson
Date: 02/10/07

Round Mountain Expansion Project

Appendix E

Key Observation Point 2
Visual Simulation

12/04/08