

# TABLES

**Table 1 Processes and Conditions Used in Each of the Four Model Scenarios.**

Process/Condition	Scenario 1	Scenario 2	Scenario 3	Scenario 4
<b>Water Balance</b>				
GW inflow	+	+	+	+
GW outflow	-	-	-	+
Precipitation	+	+	+	+
Runoff	+	+	+	+
Evaporation	+	+	-	-
Evapotranspiration	-	-	+	-
<b>Solute Balance</b>				
Aqueous loads				
Groundwater	+	+	+	+
Precipitation	+	+	+	+
Runoff	+	+	+	+
<b>Geochemical loads</b>				
Wall rock - prior/inundated	+/+	+/+	+/+	+/+
Rubble - prior/inundated	+/+	+/+	-	-
Floor - prior/inundated	+/+	+/+	+/+	+/+
Backfill - prior/inundated	-	-	+/+	+/+
Precipitates	+	+	+	+

+ Process included  
 - Process not included  
 +\* 15% infiltration instead of 100% used for water surface  
 +/- Process excluded after inundation

**Table 2 Mean Monthly Climate Data for the Continental Pit**

Month	Fort Bayard Avg. Precipitation (cm)	Fort Bayard Mean Temperature (°C)	Fort Bayard Avg. Max. Temperature (°C)	Fort Bayard Avg. Min. Temperature (°C)	Chino Mine Pan Evaporation (cm)	Continental Mine Precipitation (cm)	Continental Mine Lake Evaporation (cm)
Jan	2.18	3.76	11	-3.7	3.94	2.54	2.77
Feb	2.13	5.3	13	-2.5	8.53	2.49	5.97
Mar	1.78	7.8	15.9	-0.3	10.24	2.08	7.16
Apr	0.99	11.7	20.5	2.9	26.67	1.17	18.7
May	1.17	16.1	25.1	7.1	29.92	1.37	20.95
Jun	1.98	21.3	30.4	12.2	30.48	2.31	21.34
Jul	8.18	22.5	30.3	14.7	21.26	9.55	14.8
Aug	8.41	21.6	29.1	14	20.47	9.83	14.33
Sept	5.21	18.9	26.8	11	21.34	6.07	14.94
Oct	3.18	13.7	21.8	5.6	15.75	3.71	11.02
Nov	1.93	7.7	15.7	-0.3	9.91	2.26	6.93
Dec	2.67	4	11.4	-3.3	3.94	3.12	2.77
<b>Total</b>	<b>39.8</b>				<b>202.4</b>	<b>46.48</b>	<b>141.73</b>

Notes:

- (1) Fort Bayard Precipitation / Temperature Data Source: <http://www.wrcc.dri.edu>
- (2) Chino Mine Pan Evaporation Data Source: SMI, 1999.
- (3) Continental Mine Total Precipitation / Lake Evaporation Source: SMI, 1999.

**Table 3 Chemistry Used to Represent Ground Water Inflow**

<b>Constituent</b>	<b>Ground Water Inflow (MW-5) <sup>1</sup></b>
Aluminum	<0.10
Antimony	nm <sup>2</sup>
Arsenic	<0.01
Bicarbonate	353
Cadmium	0.0004
Calcium	211
Chloride	23.2
Chromium	0.003
Cobalt	<0.006
Copper	<0.005
Fluoride	nm
Iron	0.02
Lead	0.0018
Magnesium	16.1
Manganese	0.013
Mercury	nm
Molybdenum	nm
Nickel	0.005
Nitrate plus Nitrite	nm
pH	7.01
Potassium	3.1
Selenium	<0.005
Silicon	nm
Sodium	11.5
Sulfate	242
Zinc	0.12

1. Mean values from quarterly sampling conducted between 4/ 2000 and 4/2007  
 2. nm = not measured

**Table 4 Chemistry Used to Represent Precipitation**

<b>Constituent</b>	<b>Direct Precipitation (Gila Cliff Dwellings National Monument)</b>
Aluminum	nr <sup>1</sup>
Antimony	nr
Arsenic	nr
Bicarbonate	nr
Cadmium	nr
Calcium	0.20
Chloride	0.12
Chromium	nr
Cobalt	nr
Copper	nr
Fluoride	nr
Iron	nr
Lead	nr
Magnesium	0.02
Manganese	nr
Mercury	nr
Molybdenum	nr
Nickel	nr
Nitrate plus Nitrite	0.81
pH	4.90
Potassium	0.03
Selenium	nr
Silicon	nr
Sodium	0.075
Sulfate	0.95
Zinc	nr

<sup>1</sup> nr = not reported.

**Table 5 Chemistry Used to Represent Runoff**

Constituent	Runoff from Colorado Formation	Runoff from Paleozoic Carbonates
	Seep HSN-01 <sup>1</sup>	CF103 <sup>2</sup>
Aluminum	<0.05	<0.021
Antimony	<0.05	<0.002
Arsenic	0.06	<0.04
Bicarbonate	7	98
Cadmium	<0.005	<0.0024
Calcium	61	48.3
Chloride	5	7.21
Chromium	<0.005	<0.005
Cobalt	0.16	<0.005
Copper	0.024	0.006
Fluoride	nm <sup>3</sup>	0.18
Iron	55	<0.024
Lead	0.025	0.002
Magnesium	46	7.14
Manganese	3.1	0.066
Mercury	<0.0001	<0.0002
Molybdenum	<0.005	0.105
Nickel	0.13	<0.017
Nitrate plus Nitrite	0.06	0.08
pH	4.83	8.08
Potassium	3.9	19.4
Selenium	<0.05	0.008
Silicon	11	nm
Sodium	13	25.6
Sulfate	440	99
Zinc	1.4	<0.002

1. Sample collected 2/28/96
2. Meteoric Water Mobility Test result for composite sample CF103 (SML,1999)
3. nm= not measured

**Table 6 Summary of ABA Tests on Samples Collected in 1999 from the Continental Pit Wall Rock**

<b>Formation</b>	<b>Sulfide Concentration (percent) Range (average)</b>	<b>Net Neutralizing Potential (kg CaCO<sub>3</sub>/T) Range (average)</b>
Abo & Syrena	0.04 – 0.80 (0.25)	6.3 – 115 (57.5)
Beartooth Quartzite	<0.01 – 0.19 (0.08)	-5.4 – 0.2 (-1.9)
Colorado	<0.01 – 0.19 (0.04)	-5.4 – 0.2 (-0.45)
Continental Breccia	0.42	125
El Paso Limestone	0.20 – 3.83 (0.99)	5.2 – 634 (187)
Fusselman & Montoya Dolomites	<0.01 – 0.56 (0.33)	102 – 958 (343)
Hanover-Fierro Stock	<0.01 – 0.13 (0.08)	12.4 – 19.6 (15.2)
Lake Valley Limestone – Marble Alteration	0.06 – 0.50 (0.24)	10.7 – 965 (491)
Oswaldo Formation <sup>1</sup>	<0.01 – 1.02 (0.36)	17.6 – 788 (313)
Oswaldo Parting Shale	0.03 – 0.12 (0.08)	27.1 – 27.6 (27.4)
Percha Shale	0.15 – 0.16 (0.16)	12.7 – 26.9 (19.8)

**Table 7 Summary of Characteristics of Samples Used in HCT**

<b>Formation HCT Sample</b>	<b>Percent Sulfide</b>	<b>NNP</b>	<b>Minimum pH</b>	<b>Maximum pH</b>
Abo & Syrena WRC-02	0.04	78.5	7.08	8.49
Colorado WRC-01	<0.01	0.2	5.71	8.18
Fusselman & Montoya WRC-04	0.26	140	8.49	9.81
Hanover-Fierro WRC-06	<0.01	19.6	7.32	8.68
Lake Valley WRC-03	0.5	29.8	7.27	8.64
Lake Valley WRC-05	0.06	965	7.94	8.66
Hanover Mountain WRC-09	0.01	-0.3	2.52	4.35



**Table 8 Grouping of Wall Rock Types into Categories Characterized by Humidity Cell Tests.**

<b>Humidity Cell Test Group</b>	<b>Formation Assignees</b>	<b>Rock Type</b>	<b>% Sulfide Range (Average)</b>	<b>NNP Range (Average)</b>
<b>WRC-01</b>	<b>Colorado</b>	<b>Shale, sandstone</b>	<b>&lt;0.01</b>	<b>0.2</b>
	Colorado	Shale, sandstone	<0.01 – 0.16 (0.03)	-5.4 – 2.7 (-0.45)
	Beartooth	Quartzite	<0.01 – 0.19 (0.08)	-5.4 – 0.2 (-1.9)
	Bliss	Quartzite	ND	ND
<b>WRC-02</b>	<b>Abo &amp; Syrena</b>	<b>Shale, Limestone</b>	<b>0.04</b>	<b>79</b>
	Abo & Syrena	Shale, Limestone	0.04 – 0.8 (0.25)	6 - 115 (58)
	Percha	Shale	0.15 – 0.16 (0.16)	13 - 27 (20)
	Oswaldo POB	Parting shale	0.03 – 0.12 (0.08)	27-28 (28)
<b>WRC-03</b>	<b>Lake Valley</b>	<b>Limestone</b>	<b>0.5</b>	<b>30</b>
<b>WRC-05</b>		<b>Marble</b>	<b>0.06</b>	<b>965</b>
	Lake Valley	Limestone Marble	0.06 – 0.5 (0.24)	11-965 (491)
	Oswaldo POA	Limestone	<0.01 – 1.02 (0.36)	17.6 – 788 (313)
	Marble alteration	Marble	ND	ND
<b>WRC-04</b>	<b>Fusselman &amp; Montoya</b>	<b>Dolomite</b>	<b>0.26</b>	<b>140</b>
	Fusselman & Montoya	Dolomite	<0.01-0.56 (0.33)	140-958 (343)
	El Paso	Limestone	0.2-3.8 (0.99)	5-634 (187)
	Continental	Breccia	0.42	125
<b>WRC-06</b>	<b>Hanover-Fierro</b>	<b>Granodiorite</b>	<b>&lt;0.01</b>	<b>20</b>
	Hanover-Fierro	Granodiorite	<0.01-0.13 (0.08)	12-20 (15)
	Pre-stock dikes		ND	ND
<b>WRC-09</b>	<b>Colorado (Hanover Mtn)</b>	<b>Oxidized leach cap</b>	<b>0.01</b>	<b>-0.3</b>
	Colorado	Oxidized leach cap	<0.01 – 0.01 (0.06)	-0.11 – 0.89 (0.61)

ND = No data

Bold indicates the samples used in the humidity cell tests and their characteristics. Non-bold indicates the range of characteristics of the wall rock types assigned to that humidity cell test group.

**Table 9 Cumulative Sulfate Release Equations and Scaling Factors**

<b>Material</b>	<b>Cumulative Sulfate Release Equation as Function of years (mg/m<sup>2</sup>)</b>	<b>Sulfide Concentration Scaling Factor</b>	<b>Wetting - Drying Cycle Scaling Factor</b>	<b>Adjusted Sulfate release Equation (mg/m<sup>2</sup>)</b>
WRC-02	$\text{mg/m}^2 = 13 \cdot y + 26$	6.3	1.5	$\text{mg/m}^2 = 120 \cdot y + 26$
WRC-03	$\text{mg/m}^2 = 162 \cdot y + 17$	0.5	1.5	$\text{mg/m}^2 = 120 \cdot y + 17$
WRC-04	$\text{mg/m}^2 = 513 \cdot y + 229$	1.3	1.5	$\text{mg/m}^2 = 1,000 \cdot y + 229$
WRC-05	$\text{mg/m}^2 = 127 \cdot y + 10$	4	1.5	$\text{mg/m}^2 = 760 \cdot y + 10$
WRC-06	$\text{mg/m}^2 = 16 \cdot y + 18$	8	1.5	$\text{mg/m}^2 = 190 \cdot y + 18$
WRC-09	$\text{mg/m}^2 = 171 \cdot y + 332$	1	1.5	$\text{mg/m}^2 = 260 \cdot y + 332$

**Table 10 Areal Release Rates for Solutes from Humidity Cell Tests.**

<b>Constituent</b>	<b>WRC-02 mg/m<sup>2</sup>/yr</b>	<b>WRC-03 &amp; WRC05 mg/m<sup>2</sup>/yr</b>	<b>WRC-04 mg/m<sup>2</sup>/yr</b>	<b>WRC-06 mg/m<sup>2</sup>/yr</b>	<b>WRC09 mg/m<sup>2</sup>/yr</b>
Aluminum	0.98	1.3	1.5	0.85	250
Antimony*	0.033	0.033	0.033	0.033	0.033
Arsenic*	0.65	0.65	0.65	0.65	0.65
Barium	0.20	0.29	0.29	0.23	0.78
Beryllium*	0.033	0.033	0.033	0.033	0.033
Alkalinity	870	990	8200	850	0
Cadmium*	0.033	0.033	0.033	0.033	0.033
Calcium	270	350	56	200	100
Chloride	17	26	36	56	120
Copper	0.16	1.1	0.33	1.1	110
Fluoride	1.6	1.6	26	4.1	1.6
Iron	3.3	1.8	1.3	2.1	50
Lead	0.065	0.026	0.041	0.016	0.98
Magnesium	44	46	2700	61	27
Manganese	0.49	1.0	0.23	0.21	3.4
Mercury*	0.003	0.003	0.003	0.003	0.003
Nickel*	0.33	0.33	0.33	0.33	0.33
Potassium	28	28	88	66	160
Selenium*	0.81	0.81	0.81	0.81	0.81
Silver*	0.081	0.081	0.081	0.081	0.081
Sodium	82	100	53	110	98
Thallium*	0.016	0.016	0.016	0.016	0.016
Zinc	0.54	0.37	0.15	0.20	33
Sulfate**	120	120, 760	1000	190	260

\* Indicates all samples had non-detectable concentrations. Release rate calculated from detection limit.

\*\* Values from slope of cumulative release equations in Table 10.

**Table 11      Precipitation, Infiltration and Horizontal Weathering Depths.**

<b>Precipitation (cm)</b>	<b>Vertical Infiltration (cm)</b>	<b>Horizontal Weathering (cm)</b>
0.03	0.8	1
0.05	1.5	2
0.25	7.6	10
0.51	17.8	23
0.76	25.4	33
1.02	33.0	43
1.27	43.2	56
1.52	50.8	66
1.78	58.4	76
2.03	68.6	89
2.29	76.2	99
2.54	83.8	109
4.06	135	175

**Table 12 Minerals Allowed to Precipitate Upon Oversaturation**

<b>Mineral Name</b>	<b>Mineral Formula</b>
Amorphous aluminum oxide	Al(OH) <sub>3</sub>
Anglesite	PbSO <sub>4</sub>
Barite	BaSO <sub>4</sub>
Calcite	CaCO <sub>3</sub>
Cerrusite	PbCO <sub>3</sub>
Amorphous chromium hydroxide	Cr(OH) <sub>3</sub>
Ferrihydrite	Fe(OH) <sub>3</sub>
Gypsum	CaSO <sub>4</sub> .2H <sub>2</sub> O
Nickel hydroxide	Ni(OH) <sub>2</sub>
Otavite	CdCO <sub>3</sub>
Rhodochrosite	MnCO <sub>3</sub>
Smithsonite	ZnCO <sub>3</sub>
Tenorite	CuO

**Table 13 Effects of Temperature and pCO<sub>2</sub> on PHREEQC Predictions**

Constituent	5 Years Summer Epilimnion T = 22° C pCO <sub>2</sub> = -3.5	5 Years Summer Hypolimnion T = 4° C pCO <sub>2</sub> = -2.5	5 Years Winter T = 4° C pCO <sub>2</sub> = -3.5	200 Years Summer Epilimnion T = 22° C pCO <sub>2</sub> = -3.5	200 Years Summer Hypolimnion T = 4° C pCO <sub>2</sub> = -2.5	200 Years Winter T = 4° C pCO <sub>2</sub> = -3.5
<b>Bulk Chemistry</b>						
Alkalinity	28	116	39	27	106	36
pH	7.8	7.4	7.9	7.7	7.3	7.8
<b>Major Ions</b>						
Na	47	47	47	78	78	78
K	14	14	14	25	25	25
Mg	57	57	57	124	124	124
Ca	391	420	395	663	679	663
Cl <sup>-</sup>	78	78	78	137	137	137
HCO <sub>3</sub> <sup>-</sup>	34	139	47	32	127	43
SO <sub>4</sub> <sup>2-</sup>	830	830	830	1471	1446	1465
NO <sub>3</sub> <sup>-</sup>	0.1	0.1	0.1	1.9	1.9	1.9
<b>Trace Elements</b>						
Ag	0.005	0.005	0.005	0.004	0.004	0.004
Al	0.24	0.24	0.24	0.35	0.35	0.35
As	<i>0.009</i>	<i>0.016</i>	<i>0.009</i>	<i>0.001</i>	<i>0.005</i>	<i>0.001</i>
Ba	0.009	0.005	0.004	0.007	0.004	0.004
Be	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Cd	0.004	0.004	0.004	0.004	0.004	0.004
Cr	0.010	0.010	0.010	0.017	0.017	0.017
Cu	<i>0.006</i>	<i>0.009</i>	<i>0.006</i>	<i>0.003</i>	<i>0.005</i>	<i>0.003</i>
F	0.13	0.13	0.13	0.37	0.37	0.37
Fe	0.0001	0.0011	0.0004	0.0001	0.0013	0.0004
Hg	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
Mn	0.21	0.21	0.21	0.37	0.37	0.37
Ni	0.042	0.043	0.042	0.056	0.057	0.056
Pb	<i>0.0010</i>	<i>0.0016</i>	<i>0.0011</i>	<i>0.0009</i>	<i>0.0013</i>	<i>0.0009</i>
Sb	0.003	0.003	0.003	0.004	0.004	0.004
Se	0.063	0.063	0.063	0.060	0.060	0.060
Tl	0.0011	0.0011	0.0011	0.0008	0.0008	0.0008
Zn	<i>0.43</i>	<i>0.44</i>	<i>0.43</i>	<i>0.72</i>	<i>0.76</i>	<i>0.72</i>

Italicized concentrations indicate a change in predicted concentrations for regulated constituents.

All concentration units in mg/L.

Alkalinity (mg CaCO<sub>3</sub>/L)

pO<sub>2</sub> = -0.78 atm in all calculations

**Table 14 Summary of Predicted Inflows and Outflows for the Non-expanded Continental Pit Lake**

<b>Time (Year)</b>	<b>Depth of Water (m)</b>	<b>Elevation (m)</b>	<b>Lake Volume (m<sup>3</sup>)</b>	<b>Precipitation (m<sup>3</sup>/yr)</b>	<b>Ground Water Inflow (m<sup>3</sup>/yr)</b>	<b>Wall Rock Run-off (m<sup>3</sup>/yr)</b>	<b>Evaporation (m<sup>3</sup>/yr)</b>
5	35	1949	501,000	11,095	238,000	11,571	33,720
10	52	1966	1,950,000	34,695	224,000	11,571	105,000
50	81	1995	5,570,000	78,257	197,000	11,571	238,000
100	89	2003	7,600,000	89,317	190,000	11,571	271,000
200	94	2008	7,950,000	94,251	185,000	11,571	286,000
300	95	2009	8,020,000	95,290	184,000	11,571	290,000

**Table 15 Predicted Bulk Chemical Compositions for the Non-expanded Continental Pit Lake**

Constituent	Units	10 yrs	50 yrs	100 yrs	200 yrs	300 yrs
Ag	mg/L	0.002	0.002	0.003	0.004	0.004
Al	mg/L	0.09	0.13	0.18	0.30	0.42
Alkalinity	mg CaCO <sub>3</sub> / L	391	617	853	1535	2208
As	mg/L	0.024	0.032	0.039	0.062	0.080
Ba	mg/L	0.006	0.008	0.009	0.011	0.013
Be	mg/L	0.0008	0.0010	0.0011	0.0014	0.0016
Ca	mg/L	274	418	581	1061	1544
Cd	mg/L	0.001	0.002	0.002	0.004	0.005
Cl	mg/L	30	46	64	117	171
Cr	mg/L	0.004	0.006	0.008	0.015	0.023
Cu	mg/L	0.021	0.028	0.034	0.050	0.062
F	mg/L	0.06	0.16	0.21	0.32	0.38
Fe	mg/L	0.84	1.42	2.05	3.88	5.73
Hg	mg/L	7.E-05	9.E-05	1.E-04	1.E-04	1.E-04
K	mg/L	6	9	12	22	31
Mg	mg/L	23	44	61	107	148
Mn	mg/L	0.1	0.1	0.2	0.3	0.5
Na	mg/L	18	27	37	67	97
Ni	mg/L	0.02	0.02	0.03	0.05	0.07
NO <sub>3</sub>	mg/L	0.06	0.39	0.74	1.66	2.62
Pb	mg/L	0.004	0.005	0.007	0.013	0.018
Sb	mg/L	0.001	0.002	0.002	0.003	0.004
Se	mg/L	0.023	0.030	0.035	0.051	0.063
SO <sub>4</sub> <sup>2</sup>	mg/L	321	495	689	1259	1832
Tl	mg/L	0.0004	0.0005	0.0005	0.0007	0.0008
Zn	mg/L	0.18	0.27	0.38	0.70	1.01



**Table 16 Predicted Equilibrated Chemical Compositions for the Non-expanded Continental Pit Lake Compared with New Mexico Surface Water Standards <sup>1</sup>**

Constituent	Units	New Mexico Surface Water Standards			10 yrs	50 yrs	100 yrs	200 yrs	300 yrs
		Irrigation	Livestock Watering	Wildlife Habitat					
Ag	mg/L	2	-- <sup>2</sup>	--	0.002	0.002	0.003	0.004	0.004
Al	mg/L	5	--	--	0.091	0.133	0.176	0.303	0.425
Alkalinity	mg CaCO <sub>3</sub> /L	--	--	--	38	35	33	30	30
As	mg/L	0.1	0.2	--	0.003	0.002	0.001	0.001	0.001
Ba	mg/L	--	--	--	0.006	0.008	0.007	0.006	0.006
Be	mg/L	--	--	--	1.E-05	1.E-05	9.E-06	8.E-06	6.E-06
Ca	mg/L	--	--	--	159	229	314	572	724
Cd	mg/L	0.01	0.05	--	0.001	0.002	0.002	0.004	0.005
Cl	mg/L	--	--	--	30	46	64	118	172
Cr	mg/L	0.1	1	--	0.004	0.006	0.008	0.015	0.021
Cu	mg/L	0.2	0.5	--	0.004	0.004	0.003	0.003	0.003
F	mg/L	--	--	--	0.06	0.16	0.21	0.32	0.38
Fe	mg/L	--	--	--	1.E-04	1.E-04	1.E-04	1.E-04	2.E-04
Hg	mg/L	--	--	0.01	7.E-05	9.E-05	1.E-04	1.E-04	1.E-04
K	mg/L	--	--	--	6	9	12	22	31
Mg	mg/L	--	--	--	23	44	61	107	149
Mn	mg/L	--	--	--	0.08	0.12	0.17	0.32	0.46
Na	mg/L	--	--	--	18	27	37	67	97
Ni	mg/L	--	--	--	0.016	0.022	0.029	0.048	0.065
NO <sub>3</sub>	mg/L	--	--	--	0.06	0.39	0.75	1.67	2.63
Pb	mg/L	5	0.1	--	6.E-04	6.E-04	7.E-04	8.E-04	1.E-03
pH	s.u.	--	--	--	7.97	7.91	7.87	7.78	7.74
Sb	mg/L	--	--	--	0.001	0.002	0.002	0.003	0.004
Se	mg/L	0.13 (0.25 <sup>3</sup> )	0.05	--	0.02	0.03	0.04	0.05	0.06
SO <sub>4</sub>	mg/L	--	--	--	321	496	691	1264	1569
Tl	mg/L	--	--	--	4.E-04	5.E-04	5.E-04	7.E-04	8.E-04
Zn	mg/L	2	25	--	0.17	0.25	0.35	0.62	0.89

1. New Mexico Water Quality Commission, Title 20, Chapter 6, Part 4: Standards for interstate and intrastate surface waters
2. No standard established
3. 0.25 mg/L if Sulfate is present at > 500 mg/L
4. Highlighted cells indicate exceedance of New Mexico surface water standards

**Table 17 Summary of Predicted Inflows and Outflows for the Expanded Continental Pit Lake.**

<b>Time (Year)</b>	<b>Depth of Water (m)</b>	<b>Elevation (m)</b>	<b>Lake Volume (m<sup>3</sup>)</b>	<b>Precipitation (m<sup>3</sup>/yr)</b>	<b>Ground Water Inflow (m<sup>3</sup>/yr)</b>	<b>Wall Rock Run-off (m<sup>3</sup>/yr)</b>	<b>Evaporation (m<sup>3</sup>/yr)</b>
5	35	1864	549,000	11,233	284,000	16,777	34,139
10	59	1888	1,580,000	23,249	271,000	16,777	70,658
50	113	1942	7,200,000	76,397	226,000	16,777	232,000
100	131	1960	10,600,000	94,658	215,000	16,777	288,000
200	142	1971	13,100,000	101,000	207,000	16,777	307,000
300	145	1974	13,800,000	107,000	204,000	16,777	327,000

**Table 18 Predicted Bulk Chemical Compositions for the Expanded Continental Pit Lake**

Constituent	Units	10 yrs	50 yrs	100 yrs	200 yrs	300 yrs
Ag	mg/L	0.005	0.002	0.002	0.003	0.003
Al	mg/L	0.17	0.12	0.15	0.21	0.28
Alkalinity	mg CaCO <sub>3</sub> / L	590	536	691	1055	1449
As	mg/L	0.055	0.030	0.034	0.046	0.058
Ba	mg/L	0.018	0.007	0.007	0.008	0.009
Be	mg/L	0.002	0.001	0.001	0.001	0.001
Ca	mg/L	407	375	482	737	1019
Cd	mg/L	0.003	0.002	0.002	0.003	0.004
Cl	mg/L	44	41	53	81	112
Cr	mg/L	0.006	0.005	0.007	0.011	0.015
Cu	mg/L	0.07	0.03	0.03	0.04	0.04
F	mg/L	0.13	0.09	0.12	0.19	0.24
Fe	mg/L	1.8	1.8	2.5	4	5.6
Hg	mg/L	2.E-04	8.E-05	8.E-05	1.E-04	1.E-04
K	mg/L	9	8	10	16	22
Mg	mg/L	34	34	46	71	97
Mn	mg/L	0.18	0.15	0.19	0.29	0.41
Na	mg/L	30	25	31	48	65
Ni	mg/L	0.04	0.02	0.03	0.04	0.05
NO <sub>3</sub>	mg/L	0.06	0.25	0.50	1.03	1.60
Pb	mg/L	0.006	0.005	0.006	0.010	0.013
Sb	mg/L	0.003	0.002	0.002	0.003	0.004
Se	mg/L	0.06	0.03	0.03	0.04	0.05
SO <sub>4</sub> <sup>2</sup>	mg/L	481	446	575	883	1220
Tl	mg/L	0.0011	0.0004	0.0004	0.0005	0.0006
Zn	mg/L	0.28	0.26	0.34	0.52	0.71

**Table 19 Predicted Equilibrated Chemical Compositions for the Expanded Continental Pit Lake Compared with New Mexico Surface Water Standards <sup>1</sup>**

Constituent	Units	New Mexico Surface Water Standards			10 yrs	50 yrs	100 yrs	200 yrs	300 yrs
		Irrigation	Livestock Watering	Wildlife Habitat					
Ag	mg/L	2	-- <sup>2</sup>	--	0.005	0.002	0.002	0.003	0.003
Al	mg/L	5	--	--	0.174	0.121	0.145	0.212	0.283
Alkalinity	mg CaCO <sub>3</sub> / L	--	--	--	36	36	34	31	30
As	mg/L	0.1	0.2	--	0.008	0.001	0.000	0.000	0.000
Ba	mg/L	--	--	--	0.009	0.007	0.007	0.007	0.006
Be	mg/L	--	--	--	3.E-05	8.E-06	6.E-06	5.E-06	4.E-06
Ca	mg/L	--	--	--	226	212	268	405	558
Cd	mg/L	0.01	0.05	--	0.003	0.002	0.002	0.003	0.004
Cl	mg/L	--	--	--	44	41	53	82	113
Cr	mg/L	0.1	1	--	0.006	0.005	0.007	0.010	0.014
Cu	mg/L	0.2	0.5	--	0.010	0.003	0.002	0.002	0.002
F	mg/L	--	--	--	0.128	0.09	0.125	0.19	0.24
Fe	mg/L	--	--	--	1.E-04	1.E-04	1.E-04	1.E-04	1.E-04
Hg	mg/L	--	--	0.01	2.E-04	8.E-05	8.E-05	1.E-04	1.E-04
K	mg/L	--	--	--	9	8	10	16	22
Mg	mg/L	--	--	--	34	34	46	72	97
Mn	mg/L	--	--	--	0.18	0.15	0.19	0.29	0.41
Na	mg/L	--	--	--	30	25	32	48	66
Ni	mg/L	--	--	--	0.034	0.022	0.025	0.036	0.048
NO <sub>3</sub>	mg/L	--	--	--	0.06	0.25	0.50	1.03	1.60
Pb	mg/L	5	0.1	--	0.001	4.E-04	4.E-04	5.E-04	5.E-04
pH	s.u.	--	--	--	7.91	7.92	7.89	7.83	7.78
Sb	mg/L	--	--	--	0.003	0.002	0.002	0.003	0.004
Se	mg/L	0.13 (0.25 <sup>3</sup> )	0.05	--	0.06	0.03	0.03	0.04	0.05
SO <sub>4</sub>	mg/L	--	--	--	482	447	576	885	1225
Tl	mg/L	--	--	--	1.E-03	4.E-04	4.E-04	5.E-04	6.E-04
Zn	mg/L	2	25	--	0.26	0.23	0.29	0.44	0.60

1. New Mexico Water Quality Commission, Title 20, Chapter 6, Part 4: Standards for interstate and intrastate surface waters
2. No standard established
3. 0.25 mg/L if Sulfate is present at > 500 mg/L
4. Highlighted cells indicate exceedance of New Mexico surface water standards