TABLES

Table 1. EPA Method 6010B/7471A Total Metals Results
Pine Mountain Mine EE/CA

Red - Exceeds most stringent NRSRL, Exceeds most singent NRSRL and GPL

Sample I.D	Latitude	Longitude	Date Collected	Date Analyzed	Mercury (mg/kg)[1]	Arsenic (mg/kg)	Antimony (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Thallium (mg/kg)	Zinc (mg/kg)
DSS -1-S	33°58'43"N	111°27'02"W	1/12/2004	1/15/2004 (Hg) 1/19/2004 (As)	51	**31**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DSS-2-S	33°58'42"N	111°27'02"W	1/12/2004	1/20/2004 (Hg) 1/19/2004 (As)	**160**	**35**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DSS-3-S	33°58'42"N	111°27'03"W	1/12/2004	1/15/2004 (Hg) 1/19/2004 (As-Zn)	39	**40**	7.4	0.72	<0.50	4.9	50	47	18	<5.0	<0.50	<5.0	72
DSS-4-S	33°58'41"N	111°27'04"W	1/12/2004	1/15/2004 (Hg) 1/19/2004 (As)	**72**	**30**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DSS-5-S	33°58'41"N	111°27'04"W	1/12/2004	1/15/2004 (Hg) 1/19/2004 (As-Zn)	43	**22**	<5.0	0.66	<0.50	3.2	40	46	11	<5.0	<0.50	<5.0	41
DSS-6-S	33°58'39"N	111°27'05"W	1/12/2004	1/15/2004 (Hg) 1/19/2004 (As)	49	**24**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Area RT																	
RT-1-S	33°58'46"N	111°26'56"W	1/13/2004	1/16/2004 (Hg) 1/20/2004 (As)	**1300**	**180**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RT-2-S	33°58'46"N	111°26'56"W	1/13/2004	1/16/2004 (Hg) 1/20/2004 (As)	**670**	**39**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RT-3-S	33°58'46"N	111°26'56"W	1/13/2004	1/16/2004 (Hg) 1/20/2004 (As)	56	**36**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RT-4-S	33°58'46"N	111°26'56"W	1/13/2004	1/16/2004 (Hg) 1/21/2004 (Ag) 1/20/2004 (As-Zn)	67	**37**	11	1.1	<0.50	4.1	29	63	21	<5.0	<0.50	<5.0	96
RT-5-S	33°58'46"N	111°26'56"W	1/13/2004	1/16/2004 (Hg) 1/19/2004 (As)	34	**21**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RT-6-S	33°58'46"N	111°26'57"W	1/13/2004	1/16/2004 (Hg) 1/19/2004 (As)	27	**38**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RT-7-S	33°58'46"N	111°26'57"W	1/13/2004	1/16/2004 (Hg) 1/19/2004 (As)	50	**43**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RT-8-S	33°58'46"N	111°26'57"W	1/13/2004	1/16/2004 (Hg) 1/20/2004 (Cr) 1/19/2004 (As-Zn)	55	**48**	6.7	0.93	<0.50	6	68	40	24	<5.0	<0.50	<5.0	98
RT-9-S	33°58'46"N	111°26'57"W	1/12/2004	1/20/2004	**220**	**33**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RT-10-S	33°58'46"N	111°26'57"W	1/12/2004	1/15/2004 (Hg) 1/19/2004 (As)	9.3	**67**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RT-11-S	33°58'45"N	111°26'57"W	1/12/2004	1/15/2004 (Hg) 1/19/2004 (As)	19	**46**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RT-12-S	33°58'46"N	111°26'58"W	1/12/2004	1/15/2004 (Hg) 1/19/2004 (As-Zn)	22	**59**	8.9	0.74	<0.50	5.1	67	49	25	<5.0	<0.50	<5.0	63
RT-13-S	33°58'45"N	111°26'58"W	1/12/2004	1/15/2004 (Hg) 1/19/2004 (As)	9.5	**53**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RT-14-S	33°58'45"N	111°26'58"W	1/12/2004	1/15/2004 (Hg) 1/19/2004 (As)	13	**30**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RT-15-S	33°58'45"N	111°26'58"W	1/12/2004	1/15/2004 (Hg) 1/19/2004 (As)	18	**32**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RT-16-S	33°58'44"N	111°26'59"W	1/12/2004	1/15/2004 (Hg) 1/19/2004 (As-Zn)	32	**38**	5.4	0.75	<0.50	4	74	28	20	<5.0	<0.50	<5.0	63
RT-17-S	33°58'44"N	111°26'59"W	1/12/2004	1/15/2004 (Hg) 1/19/2004 (As)	**120**	**39**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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Pine Mountain Mine EE/CA

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Sample I.D	Latitude	Longitude	Date Collected	Date Analyzed	Mercury (mg/kg)[1]	Arsenic (mg/kg)	Antimony (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Thallium (mg/kg)	Zinc (mg/kg)
RT-18-S	33°58'44"N	111°27'00"W	1/12/2004	1/15/2004 (Hg) 1/19/2004 (As)	39	43	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RT-19-S	33°58'43"N	111°27'00"W	1/12/2004	1/20/2004 (Hg) 1/19/2004 (As)	110	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RT-20-S	33°58'43"N	111°27'01"W	1/12/2004	1/15/2004 (Hg) 1/19/2004 (As)	40	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Area RB																	
RB-1-S	33°58'46"N	111°26'55"W	1/13/2004	1/16/2004 (Hg) 1/19/2004 (As-Zn)	64	21	<5.0	0.66	1.8	3.5	37	49	6.4	<5.0	<0.50	<5.0	63
RB-2-S	33°58'46"N	111°26'55"W	1/13/2004	1/20/2004	270	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RB-3-S	33°58'46"N	111°26'55"W	1/13/2004	1/20/2004	100	24	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RB-4-S	33°58'45"N	111°26'55"W	1/13/2004	1/22/2004 (Hg) 1/21/2004 (Ag) 1/20/2004 (As-Zn)	280	16	<5.0	0.69	0.75	14	31	44	13	<5.0	<0.50	<5.0	92
RB-5-S	33°58'46"N	111°26'55"W	1/13/2004	1/16/2004 (Hg) 1/20/2004 (As)	540	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RB-6-S	33°58'45"N	111°26'55"W	1/13/2004	1/16/2004 (Hg) 1/21/2004 (Ag) 1/21/2004 (Se) 1/20/2004 (As-Zn)	5700	64	<5.0	0.76	4	26	120	180	60	<5.0	<0.50	<5.0	1200
RB-7-S	33°58'45"N	111°26'55"W	1/13/2004	1/22/2004 (Hg) 1/20/2004 (As)	8400	65	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RB-8-S	33°58'46"N	111°26'55"W	1/13/2004	1/22/2004 (Hg) 1/21/2004 (Ag) 1/21/2004 (Se) 1/20/2004 (As-Zn)	1800	22	<5.0	0.56	1.2	26	180	55	23	<5.0	<0.50	<5.0	66
RB-9-S	33°58'46"N	111°26'55"W	1/13/2004	1/22/2004 (Hg) 1/20/2004 (As)	57	18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RB-10-S	33°58'45"N	111°26'55"W	1/13/2004	1/22/2004 (Hg) 1/20/2004 (As)	400	15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Area USS																	
USS-1-S	33°59'08"N	111°26'48"W	1/13/2004	1/22/2004 (Hg) 1/20/2004 (As)	0.2	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
USS-2-S	33°59'05"N	111°26'48"W	1/13/2004	1/22/2004 (Hg) 1/20/2004 (As)	0.17	5.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
USS-3-S	33°59'03"N	111°26'48"W	1/13/2004	1/22/2004 (Hg) 1/20/2004 (As)	0.21	5.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
USS-4-S	33°59'00"N	111°26'48"W	1/13/2004	1/21/2004 (Hg) 1/21/2004 (Ag) 1/20/2004 (As-Zn)	0.26	12	<5.0	<0.40	<0.50	22	26	8.1	31	<5.0	<0.50	<5.0	65
Area BS																	
BS-6-S	33°58'59"N	111°26'45"W	1/14/2004	1/22/2004	0.58	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BS-6-1	33°58'59"N	111°26'45"W	1/14/2004	1/22/2004	0.055	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BS-21-S	33°59'02"N	111°26'45"W	1/14/2004	1/22/2004	0.14	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BS-21-1	33°59'02"N	111°26'45"W	1/14/2004	1/22/2004	0.025	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BS-27-S	33°59'05"N	111°26'45"W	1/14/2004	1/22/2004	0.29	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BS-27-1	33°59'05"N	111°26'45"W	1/14/2004	1/22/2004	0.03	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BS-33-S	33°59'06"N	111°26'45"W	1/14/2004	1/22/2004	0.2	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BS-33-1	33°59'06"N	111°26'45"W	1/14/2004	1/22/2004	0.067	5.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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Sample I.D	Latitude	Longitude	Date Collected	Date Analyzed	Mercury (mg/kg)[1]	Arsenic (mg/kg)	Antimony (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Thallium (mg/kg)	Zinc (mg/kg)
BS-45-S	33°59'10"N	111°26'45"W	1/14/2004	1/28/2004 (Hg) 1/22/2004 (As)	0.094	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BS-45-1	33°59'10"N	111°26'45"W	1/14/2004	1/22/2004	0.062	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BS-46-S	33°59'10"N	111°26'44"W	1/14/2004	1/22/2004 (Hg) 1/26/2004 (Ag) 1/27/04 (Sb) 1/22/2004 (As-Zn)	0.15	<5.0	<5.0	<0.40	<0.50	16	17	8.9	17	<5.0	<0.50	<5.0	44
BS-46-1	33°59'10"N	111°26'44"W	1/14/2004	1/22/2004	0.049	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BS-32-S	33°59'06"N	111°26'47"W	1/14/2004	1/22/2004	0.12	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BS-32-1	33°59'06"N	111°26'47"W	1/14/2004	1/22/2004	0.053	7.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BS-20-S	33°59'03"N	111°26'45"W	1/14/2004	1/22/2004 (Hg) 1/26/2004 (Ag) 1/27/2004 (Sb) 1/22/2004 (As-Zn)	0.54	<5.0	<5.0	<0.40	<0.50	51	26	10	41	<5.0	<0.50	<5.0	82
BS-20-1	33°59'03"N	111°26'45"W	1/14/2004	1/22/2004	0.1	5.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BS-48-S	33°59'12"N	111°26'49"W	1/14/2004	1/22/2004 (Hg) 1/26/2004 (Ag) 1/26/2004 (Se) 1/27/2004 (Sb) 1/22/2004 (As-Zn)	0.15	**28**	<5.0	0.45	1	120	65	12	47	<5.0	<0.50	<5.0	61
BS-48-1	33°59'12"N	111°26'49"W	1/14/2004	1/22/2004	0.17	**17**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BS-47-S	33°59'12"N	111°26'51"W	1/14/2004	1/22/2004	0.15	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BS-47-1	33°59'12"N	111°26'51"W	1/14/2004	1/22/2004	0.12	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BS-42-S	33°59'10"N	111°26'52"W	1/14/2004	1/22/2004	0.36	**13**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BS-42-1	33°59'10"N	111°26'52"W	1/14/2004	1/22/2004	0.29	**32**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BS-41-S	33°59'10"N	111°26'54"W	1/14/2004	1/22/2004	0.17	**39**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BS-41-1	33°59'10"N	111°26'54"W	1/14/2004	1/22/2004	0.33	**57**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BS-9-S	33°59'01"N	111°26'57"W	1/15/2004	1/22/2004 (Hg) 1/276/2004 (Se) 1/27/2004 (Sb) 1/22/2004 (As-Zn)	0.61	**230**	9.8	0.71	1.3	18	110	24	84	<5.0	20	<5.0	140
BS-9-1	33°59'01"N	111°26'57"W	1/15/2004	1/22/2004	4.6	**370**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BS-29-S	33°59'07"N	111°26'53"W	1/15/2004	1/22/2004	0.4	**78**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BS-29-1	33°59'07"N	111°26'53"W	1/15/2004	1/22/2004	0.43	**110**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BS-35-S	33°59'09"N	111°26'54"W	1/15/2004	1/22/2004	0.25	**130**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BS-35-1	33°59'09"N	111°26'54"W	1/15/2004	1/22/2004	0.18	**120**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BS-17-S	33°59'03"N	111°26'54"W	1/15/2004	1/28/2004 (Hg) 1/27/2004 (As)	0.42	**72**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BS-17-1	33°59'03"N	111°26'54"W	1/15/2004	1/28/2004 (Hg) 1/27/2004 (As)	0.5	**50**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BS-36-S	33°59'08"N	111°26'52"W	1/15/2004	1/28/2004 (Hg) 1/27/2004 (As)	0.24	**36**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BS-36-1	33°59'08"N	111°26'52"W	1/15/2004	1/28/2004 (Hg) 1/27/2004 (As)	0.21	**55**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BS-31-S	33°59'07"N	111°26'50"W	1/15/2004	1/28/2004 (Hg) 1/27/2004 (As)	0.41	**50**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BS-31-1	33°59'07"N	111°26'50"W	1/15/2004	1/28/2004 (Hg) 1/27/2004 (As)	0.3	**84**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BS-3-S	33°58'59"N	111°26'52"W	1/15/2004	1/28/2004 (Hg) 1/27/2004 (As)	0.5	7.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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BS-3-1	33°58'59"N	111°26'52"W	1/15/2004	1/28/2004 (Hg) 1/27/2004 (As)	0.069	**10**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BS-25-S	33°59'05"N	111°26'50"W	1/15/2004	1/28/2004 (Hg) 1/27/2004 (As)	0.33	**13**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BS-25-1	33°59'05"N	111°26'50"W	1/15/2004	1/28/2004 (Hg) 1/27/2004 (As)	0.071	6.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Area PF																	
PF-40-S	33°58'49"N	111°26'47"W	1/15/2004	1/28/2004 (Hg) 1/27/2004 (As)	37	**18**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PF-33-S	33°58'48"N	111°26'46"W	1/15/2004	1/28/2004 (Hg) 1/27/2004 (As)	9	7.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PF-32-S	33°58'47"N	111°26'48"W	1/15/2004	1/28/2004 (Hg) 1/27/2004 (As)	5.5	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PF-31-S	33°48'47"N	111°26'50"W	1/15/2004	1/28/2004 (Hg) 1/27/2004 (As)	**82**	**18**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PF-22-S	33°58'45"N	111°26'52"W	1/19/2004	1/30/2004 (Hg) 1/29/2004 (As-Zn)	4.2	**17**	<5.0	0.47	0.52	5.8	26	36	8.6	<5.0	<0.50	<5.0	36
PF-21-S	33°58'45"N	111°26'54"W	1/19/2004	1/28/2004 (Hg) 1/29/2004 (As)	2.8	**10**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PF-14-S	33°58'43"N	111°26'55"W	1/19/2004	1/28/2004 (Hg) 1/29/2004 (As)	6.2	6.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PF-07-S	33°58'41"N	111°26'57"W	1/19/2004	1/28/2004 (Hg) 1/29/2004 (As-Zn)	4.6	**11**	<5.0	0.62	0.56	16	21	16	19	<5.0	<0.50	<5.0	40
PF-05-S	33°58'42"N	111°27'06"W	1/19/2004	1/29/2004	0.77	**13**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PF-11-S	33°58'44"N	111°27'07"W	1/19/2004	1/29/2004	0.84	5.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PF-12-S	33°58'44"N	111°27'05"W	1/19/2004	1/29/2004	0.72	7.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PF-20-S	33°58'46"N	111°27'03"W	1/19/2004	1/29/2004	0.28	**13**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PF-28-S	33°58'47"N	111°27'02"W	1/19/2004	1/29/2004	0.47	**17**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PF-27-S	33°58'47"N	111°27'04"W	1/19/2004	1/29/2004	0.38	8.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PF-25-S	33°58'47"N	111°27'08"W	1/19/2004	1/29/2004	0.12	**16**	<5.0	<0.40	0.92	42	47	13	45	<5.0	<0.50	<5.0	70
PF-34-S	33°58'49"N	111°27'06"W	1/19/2004	1/29/2004	0.12	8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PF-35-S	33°58'49"N	111°27'04"W	1/19/2004	1/29/2004	0.13	**19**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PF-39-S	33°58'50"N	111°26'56"W	1/19/2004	1/29/2004	0.3	9.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PF-44-S	33°58'51"N	111°26'57"W	1/19/2004	1/29/2004	0.12	9.4	<5.0	<0.40	0.76	28	41	15	46	<5.0	<0.50	<5.0	79
PF-38-S	33°58'50"N	111°26'58"W	1/19/2004	1/29/2004	0.46	9.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RSRL			12/4/97 - A.A.C R18-7-205		NL [2]	10	31	1.4	38	2,100	2,800	400	1,500	380	380	NL	23,000
NRSRL			12/4/97 - A.A.C R18-7-205		NL [2]	10	680	11	850	4,500	63,000	2,000	34,000	8,500	8,500	NL	510,000
GPL[3]					12	290	35	23	29	590	NL	290	590	290	NL	12	NL
Background					4.6	370											

Notes:

1. Results are reported in milligrams per kilogram (mg/kg)
2. The ADEQ 12/4/97 RSRLs and NRSRLs do not include a listing for total mercury. Speciation is required to evaluate RSRLs and NRSRLs.
3. Minimum Groundwater Protection Level (GPL) as established by "A Screening Method to Determine Soil Concentrations Protective of Groundwater Quality, ADEQ, September 1996)

Table 2. Mercury and Arsenic Speciation and SPLP Results
Pine Mountain Mine EE/CA

Sample I.D	Date Collected	Mercury Speciation[1]							SPLP Mercury (mg/L)[3]	Site Specific Total Hg GPL (mg/kg)[4]
		Total Mercury[2] (ug/g)	Extractable Inorganic (ug/g)	Extractable Organic (ug/g)	Total Extractable (ug/g)	Non-Extractable Non-Mobile (ug/g)	Non-Extractable Semi-Mobile (ug/g)	Total Non-Extractable (ug/g)		
Area DSS										
DSS-2-S	1/12/2004	65.099	1.668	0.002	1.670	53.641	9.789	63.429	0.0062	6150.81
DSS-3-S	1/12/2004	NA	NA	NA	NA	NA	NA	NA	NA	NA
DSS-4-S	1/12/2004	63.483	0.566	0.006	0.572	59.833	3.078	62.911	<0.0020	37188.34
Area RT										
RT-1-S	1/13/2004	250.976	2.169	0.003	2.172	199.96	48.844	248.804	0.063	2333.68
RT-2-S	1/13/2004	566.620	7.000	0.009	7.009	483.51	76.101	559.611	0.078	4255.46
RT-9-S	1/12/2004	151.486	19.994	0.007	20.001	74.496	57.016	131.485	0.027	3286.69
RT-12-S	1/12/2004	NA	NA	NA	NA	NA	NA	NA	NA	NA
RT-13-S	1/12/2004	NA	NA	NA	NA	NA	NA	NA	NA	NA
RT-17-S	1/12/2004	36.854	0.621	0.001	0.622	30.924	5.308	36.232	0.0041	5265.63
RT-20-S	1/12/2004	NA	NA	NA	NA	NA	NA	NA	NA	NA
Area RB										
RB-6-S	1/13/2004	**3,583.489**	83.820	0.032	83.852	2,713.613	786.025	3,499.637	**0.56**	3748.59
RB-7-S	1/13/2004	**7,105.270**	755.812	0.686	756.498	3,518.085	2,830.687	6,348.772	**1.5**	2774.84
Area USS										
USS-1-S	1/13/2004	0.308	0.008	0.0007	0.009	0.064	0.235	0.299	<0.0020	180.25
Area BS										
BS-6-S	1/14/2004	0.769	0.008	0.002	0.010	0.35	0.409	0.759	<0.0020	450.48
BS-20-S	1/14/2004	0.381	0.007	0.003	0.010	0.121	0.25	0.371	<0.0020	223.19
BS-9-S	1/15/2004	0.915	0.008	0.001	0.009	0.376	0.53	0.906	<0.0020	536.01
BS-9-1	1/15/2004	2.799	0.265	0.002	0.267	0.292	2.24	2.532	<0.0020	1639.65
BS-29-S	1/15/2004	NA	NA	NA	NA	NA	NA	NA	NA	NA
BS-35-S	1/15/2004	NA	NA	NA	NA	NA	NA	NA	NA	NA
BS-17-S	1/15/2004	NA	NA	NA	NA	NA	NA	NA	NA	NA
BS-3-S	1/15/2004	0.127	0.008	0.0004	0.008	0.045	0.074	0.119	<0.00020	746.31
Area PF										
PF-40-S	1/15/2004	16.365	1.431	0.008	1.439	9.605	5.322	14.926	0.002	4793.31
PF-33-S	1/15/2004	3.299	0.008	0.003	0.011	0.68	2.608	3.288	0.0043	449.43
PF-31-S	1/15/2004	41.246	3.934	0.012	3.946	22.509	14.791	37.300	0.0054	4474.43
PF-22-S	1/19/2004	NA	NA	NA	NA	NA	NA	NA	NA	NA
PF-14-S	1/19/2004	3.022	0.234	0.004	0.238	0.784	2.00	2.784	<0.0020	1770.29
PF-35-S	1/19/2004	NA	NA	NA	NA	NA	NA	NA	NA	NA
RSRL	12/4/97 - A.A.C R18-7-205	NL	23	6.5	NL	NL	6.7	NL	N/A	N/A
Residential	EPA Region 9	NL	23	6.1	NL	N/A	NL	NL	N/A	N/A
NRSRL	12/4/97 - A.A.C R18-7-205	NL	510	68	NL	NL	180	NL	N/A	N/A
Nonresidential	EPA Region 9	NL	310	62	NL	N/A	NL	NL	N/A	N/A
Recreational			2,320	770		N/A				
GPL		12	N/A	N/A		N/A	N/A	N/A	0.2	N/A

Notes:

1. Mercury and arsenic speciation data are reported in micrograms per gram (ug/g), which is equivalent to milligrams per kilogram (mg/kg) or parts per million (ppm).
2. Total mercury and arsenic concentrations reported in this table represent a summation of the speciation data. Total mercury and arsenic concentrations may be different than those reported in Table 1 due to soil heterogeneity.
3. SPLP data reported in milligrams per liter (mg/L).
4. Site specific total Hg GPL calculated as follows: GPL = $(292.9)RC_{w,}$ where R = Total Hg/SPLP Hg and C_w = Hg aquifer water quality standard of 0.002 mg/L.
5. Site specific extractable Hg GPL calculated as follows: GPL = $(292.9)RC_{w,}$ where R = Total Extractable Hg/SPLP Hg and C_w = Hg aquifer water quality standard of 0.002 mg/L.
6. Site specific Total As GPL calculated as follows: GPL = $(292.9)RC_{w,}$ where R = Total As/SPLP As and C_w = As aquifer water quality standard of 0.050 mg/L.
7. Site specific AsIII GPL calculated as follows: GPL = $(292.9)RC_{w,}$ where R = AsIII/SPLP As and C_w = As aquifer water quality standard of 0.050 mg/L.

Black - Exceeds RSRL, Red - Exceeds Site-Specific GPL, Green - Exceeds NRSRL, Blue - Exceeds SPLP Standard

NA - not analyzed.

Table 3. Mercury Speciation Results
Pine Mountain Mine EE/CA

Sample I.D	Date Collected	Distribution	Total Mercury[2]	Extractable Inorganic Hg	Extractable Organic Hg	Total Extractable Hg	Non-Extractable Non-Mobile Hg	Non-Extractable Semi-Mobile Hg	Total Non-Extractable Hg
Area DSS									
DSS-2-S	1/12/2004	Concentration (ug/g)	65.099	1.668	0.002	1.670	53.641	9.789	63.429
		% of total extractable Hg	N/A	99.88	0.12	100	N/A	N/A	N/A
		% of total non-extractable Hg	N/A	N/A	N/A	N/A	84.57	15.43	100
		% of total Hg	100	2.56	0.003	2.57	82.40	15.04	97.43
DSS-4-S	1/12/2004	Concentration (ug/g)	63.483	0.566	0.006	0.572	59.833	3.078	62.911
		% of total extractable Hg	N/A	98.95	1.05	100	N/A	N/A	N/A
		% of total non-extractable Hg	N/A	N/A	N/A	N/A	95.11	4.89	100
		% of total Hg	100	0.89	0.009	0.90	94.25	4.85	99.10
Percentage Range for Area DSS				0.89 - 2.56	0.003 - 0.009	0.90 - 2.57	82.40 - 94.25	4.85 - 15.04	97.43 - 99.10
Area RT									
RT-1-S	1/13/2004	Concentration (ug/g)	250.976	2.169	0.003	2.172	199.96	48.844	248.804
		% of total extractable Hg	N/A	99.86	0.14	100	N/A	N/A	N/A
		% of total non-extractable Hg	N/A	N/A	N/A	N/A	80.37	19.63	100
		% of total Hg	100	0.86	0.001	0.87	79.67	19.46	99.13
RT-2-S	1/13/2004	Concentration (ug/g)	593.162	33.542	0.009	33.551	483.51	76.101	559.611
		% of total extractable Hg	N/A	99.97	0.03	100	N/A	N/A	N/A
		% of total non-extractable Hg	N/A	N/A	N/A	N/A	86.40	13.60	100
		% of total Hg	100	5.65	0.002	5.66	81.51	12.83	94.34
RT-9-S	1/12/2004	Concentration (ug/g)	151.486	19.994	0.007	20.001	74.496	57.016	131.485
		% of total extractable Hg	N/A	99.97	0.03	100	N/A	N/A	N/A
		% of total non-extractable Hg	N/A	N/A	N/A	N/A	56.66	43.36	100
		% of total Hg	100	13.20	0.005	13.20	49.18	37.64	86.80
RT-17-S	1/12/2004	Concentration (ug/g)	36.854	0.621	0.001	0.622	30.924	5.308	36.232
		% of total extractable Hg	N/A	99.84	0.16	100	N/A	N/A	N/A
		% of total non-extractable Hg	N/A	N/A	N/A	N/A	85.35	14.65	100
		% of total Hg	100	1.69	0.003	1.69	83.91	14.40	98.31
Percentage Range for Area RT				0.86 - 13.20	0.001 - 0.005	1.69 - 13.20	49.18 - 83.91	12.83 - 37.64	86.80 - 99.13
Area RB									
RB-6-S	1/13/2004	Concentration (ug/g)	3,583.489	83.820	0.032	83.852	2,713.613	786.025	3,499.637
		% of total extractable Hg	N/A	99.96	0.04	100	N/A	N/A	N/A
		% of total non-extractable Hg	N/A	N/A	N/A	N/A	77.54	22.46	100
		% of total Hg	100	2.34	0.001	2.34	75.73	21.93	97.66
RB-7-S	1/13/2004	Concentration (ug/g)	7,105.270	755.812	0.686	756.498	3,518.085	2,830.687	6,348.772
		% of total extractable Hg	N/A	99.91	0.09	100	N/A	N/A	N/A
		% of total non-extractable Hg	N/A	N/A	N/A	N/A	55.41	44.59	100
		% of total Hg	100	10.64	0.010	10.65	49.51	39.84	89.35
Percentage Range for Area RB				2.34 - 10.64	0.001 - 0.010	2.34 - 10.65	49.51 - 75.73	21.93 - 39.84	89.35 - 97.66

Table 3. Mercury Speciation Results
Pine Mountain Mine EE/CA

Sample I.D	Date Collected	Distribution	Total Mercury[2]	Extractable Inorganic Hg	Extractable Organic Hg	Total Extractable Hg	Non-Extractable Non-Mobile Hg	Non-Extractable Semi-Mobile Hg	Total Non-Extractable Hg
Area USS									
USS-1-S	1/13/2004	Concentration (ug/g)	0.308	0.008	0.0007	0.009	0.064	0.235	0.299
		% of total extractable Hg	N/A	91.95	8.05	100	N/A	N/A	N/A
		% of total non-extractable Hg	N/A	N/A	N/A	N/A	21.40	78.60	100
		% of total Hg	100	2.60	0.227	2.83	20.80	76.37	97.17
Area BS									
BS-6-S	1/14/2004	Concentration (ug/g)	0.769	0.008	0.002	0.010	0.35	0.409	0.759
		% of total extractable Hg	N/A	80.00	20.00	100	N/A	N/A	N/A
		% of total non-extractable Hg	N/A	N/A	N/A	N/A	46.11	53.89	100
		% of total Hg	100	1.04	0.260	1.30	45.51	53.19	98.70
BS-20-S	1/14/2004	Concentration (ug/g)	0.381	0.007	0.003	0.010	0.121	0.25	0.371
		% of total extractable Hg	N/A	70.00	30.00	100	N/A	N/A	N/A
		% of total non-extractable Hg	N/A	N/A	N/A	N/A	32.61	67.39	100
		% of total Hg	100	1.84	0.787	2.62	31.76	65.62	97.38
BS-9-S	1/15/2004	Concentration (ug/g)	0.915	0.008	0.001	0.009	0.376	0.53	0.906
		% of total extractable Hg	N/A	88.89	11.11	100	N/A	N/A	N/A
		% of total non-extractable Hg	N/A	N/A	N/A	N/A	41.50	58.50	100
		% of total Hg	100	0.87	0.109	0.98	41.09	57.92	99.02
BS-9-1	1/15/2004	Concentration (ug/g)	2.799	0.265	0.002	0.267	0.292	2.24	2.532
		% of total extractable Hg	N/A	99.25	0.75	100	N/A	N/A	N/A
		% of total non-extractable Hg	N/A	N/A	N/A	N/A	11.53	88.47	100
		% of total Hg	100	9.47	0.071	9.54	10.43	80.03	90.46
BS-3-S	1/15/2004	Concentration (ug/g)	0.127	0.008	0.0004	0.008	0.045	0.074	0.119
		% of total extractable Hg	N/A	95.24	4.76	100	N/A	N/A	N/A
		% of total non-extractable Hg	N/A	N/A	N/A	N/A	37.82	62.18	100
		% of total Hg	100	6.28	0.314	6.59	35.32	58.08	93.41
Percentage Range for Area BS				0.87 - 9.47	0.071 - 0.787	0.98 - 9.54	10.43 - 45.51	53.19 - 80.03	90.46 - 99.02
Area PF									
PF-40-S	1/15/2004	Concentration (ug/g)	16.365	1.431	0.008	1.439	9.605	5.322	14.926
		% of total extractable Hg	N/A	99.44	0.56	100	N/A	N/A	N/A
		% of total non-extractable Hg	N/A	N/A	N/A	N/A	64.35	35.66	100
		% of total Hg	100	8.74	0.049	8.79	58.69	32.52	91.21
PF-33-S	1/15/2004	Concentration (ug/g)	3.299	0.008	0.003	0.011	0.68	2.608	3.288
		% of total extractable Hg	N/A	72.73	27.27	100	N/A	N/A	N/A
		% of total non-extractable Hg	N/A	N/A	N/A	N/A	20.68	79.32	100
		% of total Hg	100	0.24	0.091	0.33	20.61	79.05	99.67

Table 3. Mercury Speciation Results
Pine Mountain Mine EE/CA

Sample I.D	Date Collected	Distribution	Total Mercury[2]	Extractable Inorganic Hg	Extractable Organic Hg	Total Extractable Hg	Non-Extractable Non-Mobile Hg	Non-Extractable Semi-Mobile Hg	Total Non-Extractable Hg
PF-31-S	1/15/2004	Concentration (ug/g)	41.246	3.934	0.012	3.946	22.509	14.791	37.300
		% of total extractable Hg	N/A	99.70	0.30	100	N/A	N/A	N/A
		% of total non-extractable Hg	N/A	N/A	N/A	N/A	60.35	39.65	100
		% of total Hg	100	9.54	0.029	9.57	54.57	35.86	90.43
PF-14-S	1/19/2004	Concentration (ug/g)	3.022	0.234	0.004	0.238	0.784	2.00	2.784
		% of total extractable Hg	N/A	98.32	1.68	100	N/A	N/A	N/A
		% of total non-extractable Hg	N/A	N/A	N/A	N/A	28.16	71.84	100
		% of total Hg	100	7.74	0.132	7.88	25.94	66.18	92.12
Percentage Range for Area PF				0.24 - 9.54	0.029 - 0.132	0.33 - 9.57	20.61 - 58.69	32.52 - 79.05	90.43 - 99.67
RSRL	12/4/97 - A.A.C R18-7-205		NL	23	6.5	NL	NL	6.7	NL
Residential	EPA Region 9		NL	23	6.1	NL	NL	NL	NL
NRSRL	12/4/97 - A.A.C R18-7-205		NL	510	68	NL	NL	180	NL
Non-residential	EPA Region 9			310	62	NL		NL	NL
Recreational				2310	770				

Notes:

1. Mercury speciation data are reported in micrograms per gram (ug/g), which is equivalent to milligrams per kilogram (mg/kg) or parts per million (ppm).
2. Total mercury concentrations reported in this table represent a summation of the speciation data. Total mercury and arsenic concentrations may be different than those reported in Table xx due to soil heterogeneity.

N/A - not applicable

Table 4.
Retort Tailings SPLP Mercury Speciation
Pine Mountain Mine EE/CA

Sample I.D	Date Collected	Total Hg (mg/L)[1]	Extractable Organic Hg (mg/L)	Extractable Inorganic Hg (mg/L)	Total Dissolved Extractable Hg (mg/L)
Area RT					
RT-1-S	1/13/2004	0.063	0.0000120	0.00127	0.00129
RT-2-S	1/13/2004	0.078	0.0000456	0.00205	0.00209
RT-9-S	1/12/2004	0.027	0.0000471	0.00152	0.00157
RT-17-S	1/12/2004	0.0041	0.00000195	0.000176	0.000178
GW Standard		0.20	0.20	0.20	0.20
PBC SWQS[2]		0.42	NL	NL	NL
A&We SWQS[3]		NL	0.005	0.005	0.005

1. SPLP data is reported in milligrams per liter (mg/L).
2. Partial body contact (PBC) surface water quality standard (SWQS) per A.A.C R18-11-105.
3. Aquatic and wildlife ephemeral stream AWQS per A.A.C R18-11-105.

Table 5. Total Metals Water Analytical Results
Pine Mountain Mine EE/CA

Sample I.D	Date Collected	Total Mercury (mg/L)[1]	Total Arsenic (mg/L)	Total Antimony (mg/L)	Total Beryllium (mg/L)	Total Cadmium (mg/L)	Total Chromium (mg/L)	Total Copper (mg/L)	Total Lead (mg/L)	Total Nickel (mg/L)	Total Selenium (mg/L)	Total Silver (mg/L)	Total Thallium (mg/kg)	Total Zinc (mg/L)
Spring Samples														
Mine Spring	1/14/2004	<0.0002	<0.050	<0.050	<0.0040	<0.0050	<0.010	<0.020	<0.050	<0.050	<0.050	<0.0050	<0.050	<0.050
Horse Camp	1/14/2004	<0.0002	<0.050	<0.050	<0.0040	<0.0050	<0.010	<0.020	<0.050	<0.050	<0.050	<0.0050	<0.050	<0.050
Partial Body Contact (PBC)[2]		0.42	0.42	0.56	2.8	0.7	0.10	1.30	0.015	28	7	7	0.112	420

Notes:

1. Results are reported in milligrams per liter (mg/L)
2. PBC surface water quality standard as promulgated by A.A.C R18-11-105 and R18-11-Appendix A

Table 6. Dissolved Metals Water Analytical Results
Pine Mountain Mine EE/CA

Sample I.D	Date Collected	Hardness $CaCO_3$ (mg/L)[1]	Dissolved Mercury (mg/L)	Dissolved Arsenic (mg/L)	Dissolved Cadmium		Dissolved Copper		Dissolved Lead		Dissolved Nickel		Dissolved Silver		Dissolved Zinc	
					Conc. (mg/L)	A&We[3] (mg/L)	Conc. (mg/L)	A&We[4] (mg/L)	Conc. (mg/L)	A&We[5] (mg/L)	Conc. (mg/L)	A&We[6] (mg/L)	Conc (mg/L)	A&We[7] (mg/L)	Conc (mg/L)	A&We[8] (mg/L)
Spring Samples																
Mine Spring	1/14/2004	390	<0.0002	<0.050	<0.0050	0.282	<0.020	0.084	<0.050	0.578	<0.050	13.151	<0.0050	0.036	<0.050	3.523
Horse Camp	1/14/2004	330	<0.0002	<0.050	<0.0050	0.235	<0.020	0.072	<0.050	0.486	<0.050	11.418	<0.0050	0.027	<0.050	3.058
Aquatic and Wildlife Ephemeral (A&We)[2]			0.005	0.44	see above	see above	see above	see above	see above	see above	see above	see above	see above	see above	see above	see above

Notes:

1. Results are reported in milligrams per liter (mg/L)
2. A&We surface water quality standard as promulgated by A.A.C R18-11-105 and R18-11-Appendix A
3. A&We for cadimum calculated by: $(e^{(1.128[\ln(\text{hardness})]-0.9691)})x(1.136672-\ln(\text{hardness})x(0.041838))$
4. A&We for copper calculated by: $(e^{(0.9422[\ln(\text{hardness})]-1.1514)})x(0.96)$
5. A&We for lead calculated by: $(e^{(1.273[\ln(\text{hardness})]-0.7131)})x(1.1.46203-\ln(\text{hardness})x(0.145712))$
6. A&We for nickel calculated by: $(e^{(0.8460[\ln(\text{hardness})]+4.4389)})x(0.998)$
7. A&We for silver calculated by: $(e^{(1.72[\ln(\text{hardness})]-6.52)})x(0.85)$
8. A&We for zinc calculated by: $(e^{(0.8473[\ln(\text{hardness})]+3.1342)})x(0.978)$

Table 7: Mercury Vapor Concentrations in Retort Building (ng/m3)

Region 9 PRG	Readings	Sample Identification												
		L1	H1	L2	H2	L3	H3	L4	H4	L5	H5	UL1	UH1	UL2	UH2
310	1st Reading (ng/m3)	121	568	434	567	201	269	219	472	36	568	1	1	2	2
	2nd Reading (ng/m3)	184	549	230	397	419	240	162	493	32	526	1	0	7	1
	Average	152.5	558.5	332	482	310	254.5	190.5	482.5	34	547				
		Mean	334.35												
	Exceeds Ambient Air PRG														

Table 5. Total Metals Water Analytical Results
Pine Mountain Mine EE/CA

Table 8A Chemical-Specific Applicable or Relevant and Appropriate Requirements Pine Mountain Mine			
Standard, Requirement Criteria, or Limitation	**Citation**	**Description**	**Applicable/Relevant and Appropriate?**
FEDERAL			
Safe Drinking Water Act	40 USC § 300		
National Primary Drinking Water Regulations	40 CFR Part 141	Establishes health-based standards, maximum contaminant levels (MCLs), for public water systems.	Not an ARAR, the State of Arizona has been delegated this program. State of Arizona standards are equal to or more stringent than Federal standards. MCLs apply to public water systems and are measured at the tap. They are not applicable. Drinking water is not a pathway of concern at this Site, and there are no sources of drinking water (private, community, or public) located within a mile of the Site. Groundwater is not used for drinking water at the Site. Therefore these requirements are not relevant and appropriate.
National Secondary Drinking Water Regulations-	40 CFR Part 143	Establishes aesthetic standards (secondary MCLs) for public water systems.	Not an ARAR, the State of Arizona has been delegated this program. State of Arizona standards are equal to or more stringent than Federal standards. SMCLs also apply to public water systems and are measured at the tap. They are not applicable. No sources of drinking water (private, community, or public) are located within a mile of the Site. Moreover, secondary MCLs are non-enforceable limits intended as guidelines for use by states in regulating water supplies. They address contaminants that may affect the aesthetic qualities of drinking water (color, odor, taste). Therefore, they are not applicable or relevant and appropriate.

Table 8A Chemical-Specific Applicable or Relevant and Appropriate Requirements Pine Mountain Mine			
Standard, Requirement Criteria, or Limitation	**Citation**	**Description**	**Applicable/Relevant and Appropriate?**
Clean Water Act	33 USC §§ 1251 1387		
National Ambient Water Quality Criteria	40 CFR Part 131	Sets criteria for water quality based on toxicity to aquatic organisms and human health.	Not an ARAR, the State of Arizona has been delegated this program. State of Arizona standards are equal to or more stringent than Federal standards. Additionally, water at the site is not used for drinking water. CERCLA section 121(d)(2)(B)(1) lists, among other factors, the purposes for which the criteria were developed and the designated or potential use of the water as factors in determining whether AWQC are relevant and appropriate. AWQC for human health were developed for drinking water and consuming fish on one hand and on consuming fish only, on the other. AWQC were also developed for the protection of aquatic life. Neither of these purposes is relevant and appropriate to the circumstances at the Site.
Clean Air Act	40 USC § 7409		
National Primary and Secondary Ambient Air Quality Standards	40 CFR Part 50	Establishes air quality levels that protect public health.	Not an ARAR. State or local fugitive dust control standards may apply as action-specific ARAR.
Risk Management Criteria for Metals at BLM Mining Sites	Ford, K.L, 1996, *Risk Management Criteria for Metals at BLM Mining Sites (Technical note 390) and BLM, 1998, Interim Revision of Wildlife Management Criteria*	BLM risk management criteria for metals at mining sites used to evaluate the potential risk posed by these metals; criteria have been developed for human, livestock, and wildlife receptors.	TBC

Table 8A Chemical-Specific Applicable or Relevant and Appropriate Requirements Pine Mountain Mine			
Standard, Requirement Criteria, or Limitation	**Citation**	**Description**	**Applicable/Relevant and Appropriate?**
Preliminary Remediation Goals (PRGs) for soil and water	US Environmental Protection Agency (EPA) Region 9	PRGs are tools for evaluating and cleaning up contaminated sites. They are risk-based concentrations that are intended to assist risk assessors and others in initial screening-level evaluations of environmental measurements. The PRGs contained in the Region 9 PRG Table are generic; they are calculated without site specific information. However, they may be re-calculated using site specific data. PRGs are EPA guidelines, not legally enforceable standards.	Not an ARAR. Region 9's PRGs are guidelines, not duly promulgated, legally enforceable standards. Thus, they cannot be ARARs. [Support - S*ee* Section 121(d)(2)(1) of CERCLA(must be standard, requirement, criteria or limitation "under any Federal environmental *law"*; must be *"promulgated* standard, requirmement, criteria or limitation under a State environmental of facility siting law"' NCP, 40 CFR § 300.5(defininig "applicable requirements" and "relevant and appropriate" as requirments "*promulgated"* under federal environmental or state environmental or facility siting laws.) Region 9 expressly recognizes that they are not *de facto* cleanup standards and should not be applied as such. EPA Region 9 website, "Superfund, Preliminary Remediation Goals" http://epa.gov/region9/waste/sfund/prg/index.html.]
STATE AND LOCAL			
Arizona Soil Remediation Levels (SRLs)	A.A.C R18-7-204, R18-7-205, and R18-7-206	Anyone conducting remediation in Arizona must remediate soil so that concentrations of contaminants remaining in the soil after remediation is less than one of the following: • The background remediation standards prescribed in A.A.C R18-7-204 • Predetermined remediation standards prescribed in A.A.C R18-7-205 • The site specific remediation standards prescribed in A.A.C R18-7-206	Applicable

Table 8A Chemical-Specific Applicable or Relevant and Appropriate Requirements Pine Mountain Mine			
Standard, Requirement Criteria, or Limitation	**Citation**	**Description**	**Applicable/Relevant and Appropriate?**
Arizona Groundwater Protection Levels (GPL)	ADEQ 1996	The GPLs were developed in 1996 as a first level of screening for groundwater protection. The GPLs for metals are those minimum metals concentrations that are protective of groundwater quality. The GPLs for metals are considered conservative because of the assumption that all metal leaches to groundwater regardless of the depth to groundwater. If site specific data are available on the relationship between total metals and the site-specific leachability fraction of those metals, then alternate GPLs can be calculated.	The GPLs are not promulgated by rule. Therefore, they are not an ARAR. However, they may be considered depending upon site specific circumstances (TBCs). TBCs are not ARARs.
Arizona Surface Water Quality Standards (SWQS)	A.A.C R18-11	Per R18-11-101, the normally dry drainage that passes through the subject site is defined as an "ephemeral water". Therefore, according to R18-11-105, the SWQSs for the drainage passing through the subject site are the aquatic and wildlife ephemeral (A&We) and partial body contact (PBC) standards. Anti-degradation provisions in R18-11-107 require that existing water uses be maintained and protected.	Applicable. Soil leachability data can be used to determine compliance with SWQSs.
Arizona Aquifer Water Quality Standards	A.A.C R18-11-401	The AWQSs are standards developed to protect groundwater by preventing discharges of pollutants to aquifers that are above certain levels, endanger human health, or impair the uses of the aquifer. All Arizona aquifers are identified as drinking water aquifers unless they have been specifically exempted.	Applicable Soil leachability data and calculation of site-specific GPLs can be used to determine compliance with the AWQSs.
Arizona Safe Drinking Water Standards	A.A.C. R18-4-101 et seq	The ADEQ has primacy for drinking water rules and programs and incorporates the federal standards into its rules. The standards establish primary and secondary MCLs.	Not an ARAR. No sources of drinking water (private, community, or public) within a mile of the Site.

Table 8B Location-Specific Applicable or Relevant and Appropriate Requirements Pine Mountain Mine			
Standard, Requirement Criteria, or Limitation	**Citation**	**Description**	**Applicable/Relevant and Appropriate?**
FEDERAL			
National Historic Preservation Act	16 USC § 470; 36 CFR Part 800 40 CFR 6.301(b)	Requires Federal Agencies to take into account the effect of any Federally assisted undertaking or licensing on any property with historic, architectural, archeological, or cultural value that is included in or eligible for inclusion in the National Register of Historic Places.	Applicable
Executive Order 11593	16 USC § 469 40 CFR § 6.301(c)	Provides for the inventory and nomination of historical and archeological sites.	Applicable
Federal Land Policy and Management Act of 1976	43 USC 1701	Provides for multiple use and inventory, protection, and planning for cultural resources on public lands.	Relevant and appropriate
Floodplain Management Executive Order No. 11988	40 CFR Part 6, Appendix A 40 CFR 6.302(b)	Requires Federal agencies to evaluate the potential effects of actions they may take in a floodplain to avoid the adverse impacts associated with direct and indirect development of a floodplain to the extent possible.	Not in a floodplain, not an ARAR.
STATE AND LOCAL			
Arizona Antiquities Act	ARS 41-841 to 41-846, 41-865	Land upon which historic or prehistoric ruins, burial grounds, archeological or vertebrate paleontology sites, including fossilized footprints, inscriptions made by human agency or any other archeological, paleontological or historic feature is situated.	Not an ARAR. Requires that any survey, excavation, construction, or other like activity on any lands owned or controlled by the state which discovers the existence of any archeological, paleontological, or historic site or object that is at least 50 years old shall take all reasonable steps to secure and maintain its preservation. Requirements are applicable to lands owned or controlled by State. However, The site is located on Federal land and not on State land.

Table 8B Location-Specific Applicable or Relevant and Appropriate Requirements Pine Mountain Mine			
Standard, Requirement Criteria, or Limitation	**Citation**	**Description**	**Applicable/Relevant and Appropriate?**
Arizona State Historic Preservation Act	ARS 41-862 to 41-864	Requires that the state historic preservation officer review and comment on any plans of a state agency which involve lands that are included on or may qualify for inclusion on the Arizona Register of Historic Places	Potential ARAR for State lands that are included on or may qualify for inclusion on the Arizona Register of Historic Places. However, Site is on Federal land,.

Table 8C Action-Specific Applicable or Relevant and Appropriate Requirements, Pine Mountain Mine			
Standard, Requirement Criteria, or Limitation	**Citation**	**Description**	**Applicable/Relevant and Appropriate?**
FEDERAL			
Archeological and Historic Preservation Act	16 USC § 469 40 CFR 6.301(c)	Establishes procedures to provide for preservation of significant scientific, prehistoric, historic, and archeological data that might be destroyed through alteration of terrain as a result of a Federal construction project or a Federally licensed activity or program.	Applicable
The Archaeological Resources Protection Act of 1979	43 CFR 7	Regulates requirements for authorized removal of archaeological resources from public or tribal lands.	Applicable
Native American Graves Protection and Repatriation Act	25 USC 3001-3013 43 CFR Part 10	Regulations that pertain to the identification, protection, and appropriate disposition of Native American human remains, funerary objects, sacred objects, or objects of cultural patrimony.	Applicable or Relevant and Appropriate depending upon the facts of the discovery and location of the removal action
Protection of Wetlands Executive Order No. 11990	40 CFR Part 6; Appendix A, 40 CFR 6.302(a)	Avoid adverse impacts associated with the destruction or loss of wetlands and avoid support of new construction in wetlands if a practicable alternative exists.	No wetlands are present, not an ARAR.
Dredge and Fill Regulations	33 USC § 1344, 33 CFR 323.1 et. seq.	Prohibits discharge of dredged or fill material into waters of the United States without a permit	No dredge and fill activities anticipated in waters of the United States; requirement not an ARAR.
Fish and Wildlife Coordination Act	16 USC Chapter 49, §§ 2901-2912; 40 CFR 6.302(g)	Requires consultation when Federal department or agency proposes or authorizes any modification of any stream or other water body to assure adequate protection of fish and wildlife resources.	No actions anticipated that will result in the control or structural modification of any natural stream or body of water; requirement not an ARAR.
Endangered Species Act	16 USC §§ 1531-1543; 40 CFR 6.302 (h); 50 CFR Part 402	Activities may not jeopardize the continued existence of any threatened or endangered species or destroy or adversely modify a critical habitat.	Applicable

Table 8C Action-Specific Applicable or Relevant and Appropriate Requirements, Pine Mountain Mine			
Standard, Requirement Criteria, or Limitation	**Citation**	**Description**	**Applicable/Relevant and Appropriate?**
Migratory Bird Treaty Act	16 USC §§ 703 et seq.	Establishes federal responsibility for the protection of the international migratory bird resource and requires continued consultation with the USFWS during remedial design and remedial construction to ensure that the cleanup of the site does not unnecessarily impact migratory birds.	Applicable
Bald Eagle Protection Act	16 USC §§ 668 et seq.	Requires continued consultation with the USFWS during remedial design and remedial construction to ensure that any cleanup of the site does not unnecessarily adversely affect the bald or golden eagle.	Applicable
Clean Water Act National Pollutant Discharge Elimination System	33 USC § 1342 40 CFR Part 122.26	Prohibits discharge of pollutants to waters of U.S. without a permit. In general, Part 122 provides permit requirements for the discharge of pollutants from any point source into waters of the United States. Part 122.26 requires permits for storm-water discharges.	Not an ARAR – authority for this program has been delegated by the EPA to the State of Arizona. The discussion is provided under State and Local Requirements as the AZPDES program
Surface Mining Control and Reclamation Act	30 USC §§ 1201-1328	The Surface Mining Control and Reclamation Act of 1977 (SMCRA) governs activities associated with coal exploration and mining.	No coal mining activities, not an ARAR.
Hazardous Materials Transportation Act	49 USC §§ 1801-1813 49 CFR Parts 10, 171-177	Regulates transportation of hazardous materials.	Applicable if any hazardous materials are transported offsite.

Table 8C Action-Specific Applicable or Relevant and Appropriate Requirements, Pine Mountain Mine			
Standard, Requirement Criteria, or Limitation	**Citation**	**Description**	**Applicable/Relevant and Appropriate?**
Resource Conservation and Recovery Act	46 USC § 7601		
Hazardous waste and other RCRA Subtitle C requirements	40 CFR 260 et seq	Establishes criteria for management of hazardous wastes, land disposal restrictions, closure requirements for RCRA units, etc.	Not an ARAR. The State of Arizona is fully authorized by EPA to implement RCRA, Subtitle C. RCRA Subtitle C hazardous waste requirements are not applicable to solid wastes from the extraction, beneficiation or procession of ores and minerals pursuant to the Bevill Amendment, Reports to Congress, and 40 CFR § 261.4(b)(7). The requirements are also not relevant and appropriate; waste materials and conditions at the Site are not sufficiently similar to the materials and situations regulated by RCRA subtitle C hazardous waste requirements that such requirements would be well suited to the Site.
Solid Waste and other RCRA Subtitle D requirements Disposal of Solid Waste (non-municipal)	RCRA 42 U.S.C. § 6901 *et seq*; 40 CFR 257	Facility or practices in floodplains will not restrict flow of basic flood waters, reduce the temporary water storage capacity of the floodplain or otherwise result in a wash-out of solid waste.	Relevant and Appropriate. The State of Arizona is fully authorized by EPA to implement RCRA, Subtitle D. However, for non-municipal waste landfills, Arizona incorporates Part 257 by reference at ARS 49-762-.07.
Municipal Solid Waste Landfills (MSWLF) – Unstable Areas	40 CFR 258.15	Owners or operators of new MSWLF units, existing MSWLF units, and lateral expansions located in an unstable area must demonstrate that engineering measures have been incorporated into the MSWLF unit's design to ensure that the integrity of the structural components of the MSWLF unit will not be disrupted.	Relevant and Appropriate. AZ has delegated authority for Subtitle D, but same as ARS 49-772. Waste may be placed in an unstable area if engineering measures have been incorporated into the design to ensure that the integrity of the structural components of the unit will not be disrupted.

Table 8C Action-Specific Applicable or Relevant and Appropriate Requirements, Pine Mountain Mine			
Standard, Requirement Criteria, or Limitation	**Citation**	**Description**	**Applicable/Relevant and Appropriate?**
Municipal Solid Waste Landfill – Closure Criteria	40 CFR 258.60	Owners/operators of all MSWLF units must install a final cover system that is designed to minimize infiltration and erosion. The final cover system must (1) Have a permeability less than or equal to the permeability of any bottom liner system or natural subsoils present, or a permeability no greater than 1 x 10^{-5} cm/sec, whichever is less, and 2) Minimize infiltration by the use of an infiltrate ion layer that contains a minimum 18-inches of earthen material, and (3) Minimize erosion of the final cover by the use of an erosion layer containing a minimum 6-inches of earthen material capable of sustaining native plants.	Applicable and relevant as mandated by the Forest Service.
Occupational Exposure to Asbestos	29 CFR Parts 1910 and 1926.	Establishes OSHA requirements for asbestos-related work in the construction and demolition industry. Requirements on exposure limits, work practices and engineering controls to provide worker safety in handling, removal, disposal, or other workplace exposure to asbestos.	OSHA requirements must be complied with but are not ARARs. *See e.g.* NCP Premable, "In response, there are two principal reasons for the treatment of OSHA standards as non-ARARs in the NCP. First, as discussed below, Congress appears to have intended that certain OSHA standards apply directly to all CERCLA response actions. Second, EPA believes that OSHA is more properly viewed as an employee protection law rather than an "environmental" law, and thus the process in CERCLA section 121(d) for the attainment or waiver of ARARs would not apply to OSHA standards." NCP Preamble, discussing changes to 40 CFR § 300.150.
National Emission Standards for Hazardous Air Pollutants (NESHAP) - Asbestos Standards for Demolition and Renovation	40 CFR Part 61.145	Establishes standards and requirements for asbestos that may be present in a structure that is scheduled for demolition or renovation.	Federal program that is managed by Maricopa County Environmental Services, Air Quality Division. Applicable, asbestos presence to be determined during the removal action.
Fugitive Dust Emissions	40 CFR Section 50.6	Establishes standards for PM-10	Maricopa County has jurisdiction over this program. Relevant and Appropriate for those removal alternatives generating fugitive dust.

Table 8C Action-Specific Applicable or Relevant and Appropriate Requirements, Pine Mountain Mine			
Standard, Requirement Criteria, or Limitation	**Citation**	**Description**	**Applicable/Relevant and Appropriate?**
STATE AND LOCAL			
Arizona Mined Land Reclamation Statute and Regulations	ARS Title 27, Chapter 5		
Approval of Reclamation Plan	**ARS 27-953**	Reclamation plans for exploration operations shall include requirements: 1) to reclaim access roads; 2) plugging holes drilled for exploration purposes; 3)reshaping drill pads; 4)reclaiming mud pits; and 5) backfilling of exploration trenches and pits; and 6) reshaping of areas balded by mechanized equipment.	Relevant and appropriate to the extent specific conditions addressed by this provision exist at Pine Mountain. UNC does not believe there are any drill holes, mud pits, or drill pads present at the Pine Mountain Site.
Submissions and Contents of Reclamation Plan	**ARS 27-971**	Specifies contents of an approvable reclamation plan.	This is an administrative requirement and therefore not an ARAR per EPA guidance.
Reclamation Plan Approval Criteria	**ARS 27-973**	State shall approve a reclamation plan if plan provides for surface disturbances that are necessary to achieve a safe and stable condition for post-mining land use and that are compatible with good engineering practices. The state inspector shall consider the technical and economic practicability of the proposed reclamation measures.	Relevant and appropriate
Soil Conservation	**ARS 27-974**	Prior to disturbing soils in an area expected to be re-vegetated, the owner/operator shall conserve the soil as reasonably available from the area to support the stated re-vegetation.	Relevant and appropriate
Contents of Reclamation Plan	**A.A.C. R11-2-501**	Reclamation plans shall include measures that are necessary to achieve the post-mining land use, such as procedures to aid in development of vegetation. The type, density and diversity of vegetation shall depend on what is technically and economically practicable. Maps of surface disturbances including listed features shall be included in the plan.	Relevant and appropriate

Table 8C Action-Specific Applicable or Relevant and Appropriate Requirements, Pine Mountain Mine			
Standard, Requirement Criteria, or Limitation	**Citation**	**Description**	**Applicable/Relevant and Appropriate?**
Mined Land Reclamation – Public Safety Standards	**A.A.C. R11-2-601**	Reclamation activities at mining units shall be designed to reduce hazards to the public safety. The owner or operator shall maintain structures or excavations at reclamation site in a safe manner and restrict public access. Hazards to the public safety shall be reduced by constructing barriers and posting warning signs.	Relevant and appropriate
Mined Land Reclamation - Erosion Control and Topographic Contouring	**A.A.C. R11-2-602**	Mining units shall be reclaimed to a stable condition for erosion and seismic activity. Grading and other topographic contour methods shall be conducted, as necessary, to establish final land forms, which are stable under static and dynamic conditions as certified by a qualified engineer considering seismic conditions and safety.	Relevant and appropriate
Roads	**A.A.C R11-2-603**	Reclamation measures for roads that are not approved in the reclamation plan for post-mining use shall include restricting vehicular traffic, restoring surface drainage patterns to pre-mining use; removing bridges and culverts or protecting them from erosion. Roadbeds shall be ripped, plowed and scarified and revegetated as necessary.	Only relevant and appropriate to the extent that removal alternatives include restricting site access via destruction of pre-existing site road maintained for the last 3 decades by the Forest Service.
Revegetation	**A.A.C R11-2-701**	If revegetation is part of the reclamation plan, the plan shall describe the season , species and amounts per acre of seeds and flora and planting methods. Plan shall describe methods for mulching, irrigation, pest control, disease control or growth management if such methods are employed.	This provision primarily contains administrative requirements. To the extent that removal alternatives contain revegetation requirements, season , species, amounts per acre of seeds and flora, planting methods, and methods for mulching, irrigation, pest control, disease control or growth management will be addressed as appropriate.

Table 8C Action-Specific Applicable or Relevant and Appropriate Requirements, Pine Mountain Mine			
Standard, Requirement Criteria, or Limitation	**Citation**	**Description**	**Applicable/Relevant and Appropriate?**
Revegetation Standards	**A.A.C. R11-2-702**	Where surface disturbances result in compaction of soil, ripping, disking or other means shall be used in revegetated areas to reduce compaction and establish a suitable root zone. Revegetation shall be conducted to establish plant species to support the post-mining use. Planting shall be conducted during a favorable season. Soil stabilization or irrigation measures may be used.	Relevant and appropriate
Soil Conservation	**A.A.C R11-2-703**	If soil conservation is required, stockpiles of conserved soil shall be marked with legible signs and shall be stabilized if necessary to prevent erosion.	Relevant and appropriate
Redistribution of Soils	**A.A.C.R11-2-704**	Before redistribution of soil, the regarded land shall be treated if necessary to reduce the potential for slippage of the redistributed material or to enhance root penetration. Soils and other materials shall be redistributed in a manner that prevents excessive compaction and achieves a thickness consistent with approved post-mining use.	Relevant and appropriate
Off-site soil	**A.A.C.R11-2-705**	Soil may be brought in from an off-site location and may include any growth media that will support vegetation, will provide a stable growing surface, and will not create a hazard to public safety.	Relevant and appropriate

Table 8C Action-Specific Applicable or Relevant and Appropriate Requirements, Pine Mountain Mine			
Standard, Requirement Criteria, or Limitation	**Citation**	**Description**	**Applicable/Relevant and Appropriate?**
Arizona Hazardous Waste Statutes and Rules	**ARS, Title 49, Chapters 1-5**		
Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal (TSD) Facilities	A.A.C R18-8-260 et seq.	Requirements for proper handling, treatment, storage, and disposal of hazardous wastes.	Not applicable or relevant and appropriate to mine waste materials at the site, including retort tailings per the Bevill Amendment. Reports to Congress,, 40 CFR § 261.4(b)(7) and A.A.C. R18-8-261 (incorporating by reference 40 CFR § 261.4(b)(7), and the preamble to the NCP. Potentially applicable if hazardous waste is generated during a removal action.
Closure Requirements	A.A.C R18-8-264	Closure of hazardous waste repositories must meet protective standards. Regulations to minimize contaminant migration, provide leachate collection and prevent contaminant exposure will be met.	Not applicable or relevant and appropriate. Hazardous waste requirements in A.A.C R18-8-264 are not applicable or relevant and appropriate based upon the Bevill Amendment, Reports to Congress, 40 CFR § 261.4(b)(7),, equivalent provisions incorporated by reference into the Arizona Administrative Code, and the preamble to the NCP. High volume/low toxicity mine waste materials at the Site, including retort tailings, are not sufficiently similar to hazardous wastes for closure requirements for hazardous waste to be well suited to the Site. Additionally, there are no RCRA regulated hazardous waste units present.
Land Disposal Restrictions (LDRs)	A.A.C R18-8-268	LDRs place specific restrictions (conc. or trmt) on RCRA hazardous wastes prior to placement in a land disposal unit. .	Applicable if hazardous waste is generated during the removal action and such waste is to be disposed of in a land disposal unit. Not applicable or relevant and appropriate to the mine waste materials at the Site, including the retort tailings, as hazardous wastes are not sufficiently similar to the mine wastes at the Site to conclude that LDRs are well suited to such wastes.

Table 8C Action-Specific Applicable or Relevant and Appropriate Requirements, Pine Mountain Mine			
Standard, Requirement Criteria, or Limitation	**Citation**	**Description**	**Applicable/Relevant and Appropriate?**
Methods of Disposal	R18-13-312	Disposal of refuse requirements, including requirements for sanitary landfill cover, burning of refuse, incineration, garbage grinding, hog feeding, and manure disposal	Applicable in the event that disposal of "refuse" as defined in R18-13-302 in a sanitary landfill, through incineration, composting, garbage grinding, hog feeding, or manure disposal occurs as part of the removal action.
Institutional controls	ARS §149-158	Restrictions on property use; enforcement of engineering and institutional controls	Applicable
AZPDES	AZPDES rules at 18 A.A.C. 9, Part 9, effective on Feb. 2, 2004 (page 82).	On Dec. 5, 2002, Arizona became one of 45 states with authorization from EPA to operate the National Pollutant Discharge Elimination System (NPDES) Permit Program (Section 402 of the Clean Water Act) on the state level. Under the Arizona Pollutant Discharge Elimination System (AZPDES) Permit Program, all facilities that discharge pollutants from any point source into waters of the United States (navigable waters) are required to obtain or seek coverage under an AZPDES permit. Pollutants can enter waters of the United States from a variety of pathways, including agricultural, domestic and industrial sources. For regulatory purposes these sources are generally categorized as either point source or nonpoint sources.	Permits are not required for removal actions conducted on-site pursuant to section 121(e) of CERCLA. No discharges of pollutants from a point source to waters of the United States anticipated. Thus, point source discharge requirements are not an ARAR. Substantive requirements of a Storm Water Pollution Prevention Plan as detailed in Arizona's General Permit for Construction Activity are to be considered applicable or relevant and appropriate.

TABLE 9 – REMOVAL ACTION ALTERNATIVE ANALYSIS					
Alternative Number	**Description**	**Effectiveness**	**Implementability**	**Cost Range**	**Ability to Achieve RAOs**
1	• No Action	Comparison of soil and vapor analytical data to ARAR-based and risk-based cleanup goals indicate the overall protection of human health and the environment from all mercury species will be achieved. Therefore, Alternative 1 will provide short- and long-term effectiveness and will be in compliance with ARARs. The retort tailings are in the process of natural reclamation and will meet a condition of long-term equilibrium.	No additional work is required. Therefore, implementability is rated as 'high'. Action-specific ARARs are not triggered.	$0	Data indicate chemical-specific ARARs and risk-based cleanup goals would be met. No unacceptable risk exists at the site based upon the risk assessment. Therefore, Alternative 1 would meet the RAOs.
2	• No Action for RT/DSS ROI • Limit Access	Comparison of soil and vapor analytical data to ARAR-based and risk-based cleanup goals indicate the overall protection of human health and the environment from all mercury species will be achieved. Therefore, Alternative 2 would provide short- and long-term effectiveness and would be in compliance with ARARs. The retort tailings are in the process of natural reclamation and would meet a condition of long-term equilibrium. Though access limitations would be difficult to maintain on public lands, temporary fences and gates could be used to minimize vehicular traffic on the access road, thus allowing the road to be naturally reclaimed. Elimination of the access road would discourage most recreational users from visiting the Site, thus minimizing physical safety hazard concerns with retort building.	Initial implementability is considered 'moderate' due to installation and maintenance of fences and gates. Implementability level would increase to high upon removal of fences and gates and reclamation of the access road. Action-specific ARARs are not triggered.	$30,000-$50,000	Data indicate chemical-specific ARARs and risk-based cleanup goals would be met. No unacceptable risk exists at the site based upon the risk assessment. Therefore, Alternative 2 would meet the RAOs
3	• No Action for RT/DSS AOI • Limited Soil Removal around Retort Building	As for Alternatives 1 and 2, Alternative 3 would provide short-term and long-term effectiveness and would be in compliance with ARARs. Though access limitations are difficult to maintain on public lands, temporary fences and gates can be used to minimize vehicular traffic on the access road, thus allowing the road to be naturally reclaimed. Elimination of the access road will discourage most recreational users from visiting the Site, thus minimizing physical safety hazard concerns with retort building; however, removal of physical safety hazards is not an authorized objective under CERCLA.	Technical feasibility and availability of services and materials to implement the limited soil removal is considered 'high' because access road improvements for equipment are not necessary. The limited amount of soil disturbance would not encompass any action-specific ARARs, except for RCRA off-site disposal requirements.	$56,600-$89,900	Alternative 3 would meet the RAOs.

TABLE 9 – REMOVAL ACTION ALTERNATIVE ANALYSIS					
Alternative Number	**Description**	**Effectiveness**	**Implementability**	**Cost Range**	**Ability to Achieve RAOs**
4	• No Action for RT/DSS AOI • Demolish Retort Building to Concrete Slab • Limited Soil Removal around Retort Building	As for Alternatives 1-3, Alternative 4 would provide short-term and long-term effectiveness; would result in reduction of toxicity, mobility, and volume of contaminants; and, would be in compliance with ARARs. Alternative 4 would remove the physical safety hazards associated with the retort building; however, removal of physical safety hazards is not an authorized objective under CERCLA.	Though Alternative 4 is technically feasible and materials and services are readily available, implementability is considered moderate due to necessary improvements to the access road. Action-specific ARARs include off-site disposal, archeological/historic resources, fugitive dust emissions, and asbestos.	$550,000-$825,000	Alternative 4 will achieve the RAOs.
5	• No Action for RT/DSS AOI • Complete Removal of Retort Building • Limited Soil Removal around Retort Building	As for Alternatives 1-4, Alternative 5 would provide short-term and long-term effectiveness, would result in reduction of toxicity, mobility, and volume of contaminants; and, would be in compliance with ARARs. Alternative 5 would remove the physical safety hazards associated with the retort building; however, removal of physical safety hazards is not an authorized objective under CERCLA.	Same as Alternative 4.	$665,500 - $998,250	Alternative 5 would achieve the RAOs.
6	• In-Place Closure for RT AOI • On-site Consolidation of DSS AOI • Complete Removal of Retort Building • Limited Soil Removal around Retort Building	Alternative 6 would also provide short-term effectiveness, would result in reduction of toxicity, mobility, and volume of contaminants; and, would comply with ARARs. Alternative 6 would minimize erosion and downstream migration of the retort tailings. Long-term inspection and monitoring would be required and long-term effectiveness is considered moderate due to unpredictability of catastrophic events such as range fires and runoff events in excess of a 100 year event. These types of events could reduce the effectiveness of Alternative 6 due to increased erosion. Alternative 6 would remove the physical safety hazards associated with the retort building; however, removal of physical safety hazards is not an authorized objective under CERCLA.	Though Alternative 6 is technically feasible and materials and services are readily available, implementability is considered moderate due to necessary improvements to the access road and disturbance to local ecology. Action-specific ARARs include off-site disposal, archeological/historic resources, fugitive dust emissions, asbestos, NPDES, and Arizona Mined Land Reclamation Rules.	$1,791,894 - $2,449,362	Alternative 6 would achieve the RAOs.
7	• On-site Consolidation of RT/DSS AOI • Complete Removal of Retort Building • Limited Soil Removal around Retort Building	Alternative 7 would remove the retort tailings from the drainage. Therefore, Alternative 7 would provide short-term and long-term effectiveness, would result in reduction of toxicity, mobility, and volume of contaminants; and, would comply with ARARs. Alternative 7 would eliminate erosion and downstream migration of the remaining retort tailings, if any. Alternative 7 would remove the physical safety hazards associated with the retort building; however, removal of physical safety hazards is not an authorized objective under CERCLA.	Though Alternative 7 is technically feasible and materials and services are readily available, implementability is considered moderate due to necessary improvements to the access road and disturbance to local ecology. Action-specific ARARs include off-site disposal, archeological/historic resources, fugitive dust emissions, asbestos, NPDES, and Arizona Mined Land Reclamation Rules.	$1,036,200 - $1,466,960	Alternative 7 wwould achieve the RAOs.

TABLE 9 – REMOVAL ACTION ALTERNATIVE ANALYSIS					
Alternative Number	**Description**	**Effectiveness**	**Implementability**	**Cost Range**	**Ability to Achieve RAOs**
8	• Off-site Disposal of RT/DSS AOI • Complete Removal of Retort Building • Limited Soil Removal around Retort Building	Same as Alternative 7. Retort tailings would not remain on-site.	Though Alternative 7 is technically feasible and materials and services are readily available, implementability is considered moderate due to necessary improvements to the access road and disturbance to local ecology. Additionally, more than 600 loads of retort tailings would be transported to a landfill, thus affecting highway traffic in the area. Action-specific ARARs include off-site disposal, archeological/historic resources, fugitive dust emissions, asbestos, NPDES, and Arizona Mined Land Reclamation Rules.	$1,914,200 - $2,608,100	Alternative 8 would achieve the RAOs.