TABLE 1: PRECIPITATION IN EMERY COUNTY, UTAH (2010 Water Year)

	Castle Dale* (Elev. 5800')		Huntington Plant (Elev. 6500')		East Mountain (Elev. 8985')	
	Precip. (inches)	*% of Normal*	*Precip. (inches)*	*% of Normal*	*Precip. (inches)*	*% of Normal*
2009						
October	0.3	34	0.49	42	0.34	25
November	0.0	0	0.03	5	0.14	10
December	1.5	381	0.49	83	1.52	113
2010						
January	1.5	234	1.22	146	2.09	155
February	0.8	136	0.88	125	1.04	77
March	0.7	106	0.56	78	1.16	86
April	0.1	20	0.03	5	0.43	32
May	0.2	29	0.34	36	0.59	44
June	0.5	105	0.36	53	0.79	58
July	0.1	19	0.27	27	0.50	37
August	0.3	32	0.09	7	0.60	44
September	0.1	11	0.06	6	0.00	0
TOTALS	**6.02**	**78**	**4.82**	**49**	**9.20**	**73**
Mean Monthly	0.50	---	0.40		0.77	---

NR - No Record

* Tranferred Site from Hunter Plant to Castle Dale

TABLE 2: COMPARISON OF 2009 AND 2010 PRECIPITATION (Inches)

	2010		*2009*		*2010 As*
Station	***Amount***	***% of Normal***	***Amount***	***% of Normal***	***% of 2009***
Castle Dale	6.02	78	4.79	63	126
Huntington Plant	4.82	49	7.94	80	61
East Mountain	9.20	73	10.58	84	87

TABLE 3: CASTLE DALE PRECIPITATION

Elevation - 5,800 Feet

YEAR	*OCT*	*NOV*	*DEC*	*JAN*	*FEB*	*MAR*	*APR*	*MAY*	*JUN*	*JUL*	*AUG*	*SEPT*	*ANNUAL*
70-71	0.41	0.32	0.22	0.31	0.62	0.00	0.21	0.76	0.16	0.19	0.54	0.05	3.79
71-72	1.63	0.21	0.94	0.00	0.00	0.00	0.47	0.00	0.92	0.17	0.67	0.85	5.86
72-73	2.65	1.17	0.27	0.42	0.71	0.97	1.18	0.23	0.54	0.91	0.42	0.07	9.54
73-74	0.17	0.19	0.14	0.94	0.08	0.09	0.00	0.00	0.05	1.41	0.11	0.25	3.43
74-75	1.89	0.63	0.18	0.29	0.23	0.85	0.06	0.21	1.01	1.34	0.11	0.31	7.11
75-76	0.13	0.36	0.02	0.08	0.42	0.01	1.21	0.86	0.04	0.43	0.13	0.66	4.35
76-77	0.10	0.00	0.00	0.37	0.00	0.00	0.06	1.41	0.09	2.16	0.84	0.36	5.39
77-78	0.31	0.16	0.44	1.39	1.69	1.36	0.60	0.53	0.00	0.15	0.11	0.10	6.84
78-79	0.13	2.68	0.47	1.52	0.66	1.64	0.05	0.74	0.04	0.00	1.50	0.00	9.43
79-80	0.01	0.11	0.26	1.96	1.58	1.12	0.67	1.72	0.04	0.41	1.58	2.63	12.09
10-Year	0.74	0.58	0.29	0.73	0.60	0.60	0.45	0.65	0.29	0.72	0.60	0.53	6.78
80-81	1.23	0.25	0.00	0.01	0.08	1.93	0.15	0.53	0.21	0.74	0.57	1.56	7.26
81-82	1.44	0.31	0.20	1.13	0.09	0.91	0.00	0.12	0.15	0.97	2.16	1.17	8.65
82-83	0.16	0.79	1.06	1.07	0.46	0.96	0.25	0.23	0.30	1.25	0.40	0.74	7.67
83-84	0.49	1.24	1.07	0.22	0.22	0.33	0.36	0.08	0.78	0.95	1.38	0.34	7.46
84-85	1.69	0.21	1.18	0.34	0.16	0.96	1.02	0.72	0.19	1.78	0.11	0.88	9.24
85-86	0.98	1.54	0.55	0.07	0.63	0.55	0.44	0.08	0.26	0.72	1.47	0.78	8.07
86-87	1.08	0.10	0.07	0.48	0.45	0.74	0.53	1.03	0.80	2.50	1.65	0.09	9.52
87-88	1.54	1.02	0.66	1.29	0.00	0.63	1.96	0.82	0.30	0.32	0.71	0.66	9.91
88-89	0.70	0.02	0.49	0.45	0.22	0.42	0.02	0.33	0.42	0.70	2.11	0.56	6.44
89-90	0.17	0.03	0.03	0.23	0.72	0.61	0.38	0.09	0.44	0.68	0.81	1.54	5.73
20-Year	0.85	0.57	0.41	0.63	0.45	0.70	0.48	0.52	0.34	0.89	0.87	0.68	7.39
90-91	0.72	0.00	0.27	0.18	0.12	0.85	0.13	0.92	0.90	0.89	1.01	2.13	8.12
91-92	0.20	0.60	0.13	0.43	1.48	1.11	0.31	1.66	0.26	0.04	0.79	0.92	7.93
92-93	0.62	0.37	0.81	2.32	1.77	1.44	0.45	1.85	0.19	0.03	0.54	0.20	10.59
93-94	1.46	0.68	0.18	0.04	0.40	0.07	0.68	0.35	0.03	0.13	0.91	1.30	6.23
94-95	1.70	0.21	-	0.96	0.24	0.80	1.42	1.69	0.61	0.87	1.42	0.47	10.39
95-96	0.00	0.16	0.19	0.71	0.40	1.47	0.02	0.86	0.44	0.51	0.01	2.06	6.83
96-97	0.73	1.30	0.54	1.17	0.18	0.00	0.91	0.59	1.61	1.13	2.77	2.50	13.43
97-98	0.43	0.38	0.05	0.35	2.04	0.04	0.29	0.13	0.55	1.54	0.86	1.16	7.82
98-99	1.71	0.76	0.00	0.17	0.28	0.00	1.64	0.19	0.54	1.15	2.50	1.14	10.08

TABLE 3: CASTLE DALE PRECIPITATION

Elevation - 5,800 Feet

99-00	0.00	0.00	0.12	0.41	1.19	0.50	0.03	0.76	0.40	0.28	1.00	0.39	5.08
30-Year	0.82	0.53	0.36	0.64	0.57	0.68	0.52	0.65	0.41	0.81	0.97	0.86	7.81
00-01	2.89	0.09	0.10	1.14	1.03	0.47	0.23	0.53	0.23	0.81	0.82	0.76	9.10
01-02	0.16	0.75	0.17	0.00	0.05	0.02	0.16	0.00	0.26	0.18	0.18	2.55	4.48
02-03	0.78	0.74	0.28	0.02	0.37	1.22	0.08	0.56	0.12	0.00	0.87	0.30	5.34
03-04	0.29	0.56	0.91	0.30	1.84	0.00	2.02	0.10	0.82	0.41	0.39	1.03	8.67
04-05	2.14	1.67	0.51	2.01	1.11	0.17	0.19	0.40	2.11	0.15	0.58	1.00	12.04
05-06	1.37	0.26	0.06	0.61	0.16	1.51	0.13	0.03	0.19	0.32	0.83	0.42	5.89
06-07	3.80	0.01	0.43	0.40	0.01	0.24	0.52	0.40	0.05	0.43	3.04	1.22	10.55
07-08	0.43	0.03	1.33	0.49	0.93	0.00	0.11	0.50	0.35	0.03	0.29	0.68	5.17
08-09	0.36	0.22	0.91	0.07	0.37	0	0.59	0.7	0.69	0.07	0.21	0.6	4.79
09-10	0.32	0.00	1.53	1.46	0.8	0.65	0.1	0.17	0.46	0.13	0.3	0.1	6.02
40-Year	0.93	0.50	0.43	0.65	0.59	0.62	0.49	0.57	0.44	0.67	0.92	0.86	7.66
Average*	0.94	0.52	0.40	0.62	0.59	0.62	0.50	0.58	0.44	0.69	0.93	0.88	7.70

* Historical Average. Does not include current report year.

TABLE 4: HUNTINGTON PLANT PRECIPITATION

Elevation - 6,500 Feet

Water Year	*OCT*	*NOV*	*DEC*	*JAN*	*FEB*	*MAR*	*APR*	*MAY*	*JUN*	*JUL*	*AUG*	*SEPT*	*TOTAL*
70-71	---	---	---	---	---	0.08	0.29	0.16	0.11	0.57	0.63	0.43	2.27
71-72	2.26	0.59	1.62	0.04	0.00	0.32	0.28	0.16	0.77	0.40	0.66	1.07	8.17
72-73	4.27	1.28	0.34	0.49	0.80	2.42	0.50	0.17	0.97	1.09	1.94	0.12	14.39
73-74	0.08	0.02	0.37	0.20	0.03	0.01	0.00	0.00	0.00	0.09	0.00	0.07	0.87
74-75	0.68	1.19	1.13	1.01	0.30	0.80	0.03	0.75	1.44	2.62	0.31	0.24	9.50
75-76	0.23	0.95	0.03	0.20	0.23	0.00	2.34	0.86	0.02	0.73	0.19	0.85	6.63
76-77	0.56	0.00	0.00	0.35	0.00	0.00	0.00	1.76	0.00	2.08	0.96	0.70	6.41
77-78	0.66	0.12	0.82	1.45	1.00	1.36	0.94	0.72	0.12	0.05	0.72	0.77	8.73
78-79	0.02	2.65	0.25	1.21	0.52	2.50	0.00	0.84	0.05	0.09	3.32	0.20	11.65
79-80	0.17	0.14	0.15	2.88	3.63	0.68	1.13	1.88	0.65	0.18	0.38	2.22	14.09
80-81	1.20	0.06	0.00	0.00	0.00	0.62	0.08	1.75	0.48	0.00	0.58	1.53	6.30
81-82	1.12	0.25	1.30	1.63	0.20	0.73	0.00	0.17	0.00	0.08	0.71	1.91	8.10
82-83	0.20	0.60	0.67	0.16	0.65	1.87	0.08	0.40	0.00	1.61	0.39	1.15	7.78
83-84	0.76	0.76	2.13	0.10	0.15	1.18	0.72	0.17	1.04	0.74	1.39	0.46	9.60
84-85	2.07	0.34	1.74	0.49	0.27	0.53	0.44	1.08	0.42	3.21	0.04	0.81	11.44
85-86	0.77	1.28	0.64	0.01	0.98	0.28	0.43	0.10	0.17	0.42	0.55	1.08	6.71
86-87	0.38	0.15	0.05	0.81	0.66	0.13	1.22	1.48	1.01	2.14	0.65	0.00	8.68
87-88	1.36	1.35	0.51	1.77	0.00	0.10	1.35	0.94	0.83	0.04	0.13	0.92	9.30
88-89	0.31	0.13	0.83	0.68	0.28	0.21	0.20	0.22	1.28	0.78	1.72	0.74	7.38
89-90	0.21	0.28	0.42	0.51	1.18	0.94	1.30	1.35	0.65	1.30	1.27	2.35	11.76
90-91	0.45	0.03	0.43	0.44	0.37	0.68	0.13	3.13	0.60	1.14	1.87	2.38	11.61
91-92	0.21	0.99	0.37	1.20	1.98	1.55	0.47	1.92	1.97	2.99	1.53	0.60	15.78
92-93	1.93	1.02	1.67	2.32	1.71	1.87	0.46	0.65	0.31	0.08	1.68	0.46	14.16
93-94	2.11	0.88	0.23	0.12	0.88	1.17	1.69	0.53	0.05	Tr.	2.14	1.69	11.49
94-95	1.33	0.26	0.33	1.10	0.26	1.05	2.65	2.67	1.17	0.32	2.81	1.48	15.42
95-96	NA	NA	0.90	1.10	0.86	1.52	0.46	1.41	0.72	1.15	0.19	2.18	----
96-97	0.69	1.31	0.63	1.61	0.05	0.00	0.90	1.11	1.20	2.31	3.28	2.49	15.58
97-98	1.92	0.53	0.00	1.27	1.89	0.15	1.13	1.28	0.90	1.27	1.17	1.60	13.11
98-99	2.59	2.29	0.00	0.48	0.37	0.00	2.11	0.29	0.74	1.91	3.41	1.47	15.66
99-00	0.00	0.05	0.10	0.33	1.06	0.88	0.13	0.89	1.83	0.86	2.19	0.80	9.12
00-01	3.04	0.07	0.26	1.69	1.09	0.85	0.46	NR	NR	NR	NR	NR	
01-02	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
02-03	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
03-04	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
04-05	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
05-06	0.82	0.74	0.80	1.40	0.39	0.00	0.00	0.67	0.22	0.62	2.11	0.72	8.49
06-07	4.47	0.09	0.32	0.35	0.25	0.58	0.40	0.64	1.07	0.71	0.32	0.35	9.55
07-08	0.94	0.01	0.97	0.67	1.42	0.04	0.02	1.10	0.42	0.40	0.58	0.78	7.35
08-09	0.30	0.49	0.18	0.42	0.56	0.00	0.79	0.96	1.95	0.62	1.09	0.58	7.94
09-10	0.49	0.03	0.49	1.22	0.88	0.56	0.03	0.34	0.36	0.27	0.09	0.06	4.82
Average*	1.15	0.63	0.59	0.84	0.71	0.72	0.66	0.95	0.68	0.99	1.20	1.04	9.85

* Historical Average. Does not include current report year.

TABLE 5: ELECTRIC LAKE PRECIPITATION

Elevation - 8,350 Feet

Water Year	*OCT*	*NOV*	*DEC*	*JAN*	*FEB*	*MAR*	*APR*	*MAY*	*JUN*	*JUL*	*AUG*	*SEPT*	*TOTAL*
70-71	2.46	2.35	6.41	1.13	1.66	0.36	1.05	0.66	0.47	0.40	2.15	0.78	19.88
71-72	3.49	1.69	4.07	3.35	0.58	0.70	1.02	0.28	1.49	0.70	0.80	2.91	21.08
72-73	4.18	3.43	3.27	0.97	2.09	2.74	3.67	1.42	0.85	0.82	1.23	1.15	25.82
73-74	0.79	1.90	3.52	2.70	1.12	1.52	2.49	0.20	0.13	2.09	0.06	0.09	16.61
74-75	2.27	0.62	1.73	2.10	2.37	3.42	1.23	3.21	1.08	1.93	0.49	0.25	20.70
75-76	1.31	2.57	0.82	1.44	2.23	1.35	1.47	2.00	1.23	1.07	0.54	1.19	17.22
76-77	1.00	0.25	0.14	0.76	1.14	2.00	0.05	3.00	0.90	2.28	1.31	1.26	14.09
77-78	1.47	2.10	3.20	3.68	2.74	3.16	2.46	1.18	0.30	0.10	0.24	0.77	21.40
78-79	0.40	3.18	2.66	2.90	2.18	2.53	0.72	1.67	0.19	0.96	2.29	0.32	20.00
79-80	1.55	2.23	0.37	4.95	6.01	3.34	1.27	3.09	0.12	0.37	0.38	1.80	25.48
10-Year	1.89	2.03	2.62	2.40	2.21	2.11	1.54	1.67	0.68	1.07	0.95	1.05	20.23
80-81	1.45	0.98	0.32	1.30	1.04	3.20	1.45	3.06	0.39	1.61	2.73	1.44	18.97
81-82	4.18	1.44	4.79	5.26	1.66	5.06	1.11	1.40	0.59	1.26	2.29	5.38	34.42
82-83	1.88	3.68	2.76	2.41	4.00	4.30	2.35	2.81	1.35	1.34	1.50	2.88	31.26
83-84	2.15	4.81	7.43	1.27	1.56	2.77	3.23	1.73	3.41	2.55	2.26	1.47	34.64
84-85	2.92	2.63	3.24	1.54	1.09	3.54	1.95	1.19	0.89	3.04	0.03	4.35	26.41
85-86	4.40	6.62	1.99	1.81	8.54	2.48	3.79	1.62	0.26	1.01	1.68	2.73	36.93
86-87	1.86	1.98	0.55	2.14	2.07	2.47	1.03	2.93	0.79	2.12	1.22	0.49	19.65
87-88	1.39	1.68	3.50	3.06	0.72	3.32	2.14	1.60	0.86	1.04	2.23	1.16	22.70
88-89	1.20	2.68	1.91	1.52	1.99	3.55	0.35	0.06	1.54	1.43	1.37	1.19	18.79
89-90	1.21	1.88	0.70	2.00	4.06	2.30	2.00	0.81	1.87	1.08	0.62	1.87	20.40
20-Year	2.08	2.44	2.67	2.31	2.44	2.71	1.74	1.70	0.94	1.36	1.27	1.67	23.32
90-91	1.32	0.90	1.64	1.49	1.64	4.24	3.06	2.60	0.57	1.04	1.39	2.70	22.56
91-92	1.43	2.10	0.87	0.72	2.21	1.95	0.54	1.55	1.01	0.59	1.64	1.02	15.63
92-93	1.51	1.33	3.60	5.01	4.76	2.25	2.49	2.40	1.57	0.48	1.32	0.60	27.32
93-94	2.10	2.19	0.90	1.00	4.00	1.10	2.81	0.99	0.10	0.25	0.75	2.32	18.51
94-95	2.40	4.26	1.60	3.25	1.90	3.84	3.94	5.07	2.04	1.00	2.53	1.95	33.78
95-96	1.54	1.38	3.54	5.84	3.25	3.23	1.75	1.73	0.90	1.09	0.45	2.20	26.90
96-97	1.43	2.35	3.90	4.00	1.31	0.77	1.97	2.03	1.03	0.64	1.98	4.45	25.86
97-98	2.30	1.88	2.00	3.65	3.60	2.86	1.80	1.82	2.30	2.01	1.86	1.68	27.76
98-99	3.65	2.98	1.15	4.05	1.70	1.44	4.95	2.03	1.28	2.90	3.54	1.20	30.87
99-00	0.15	0.38	1.61	4.19	4.45	1.98	0.66	2.12	2.32	0.00	2.60	1.65	22.11
30-Year	1.98	2.28	2.47	2.65	2.59	2.59	1.96	1.88	1.06	1.24	1.45	1.78	23.93
00-01	3.47	1.21	2.19	1.54	2.80	0.79	2.41	1.49	0.37	1.56	3.40	1.01	22.24
01-02	1.35	3.40	1.12	1.08	0.82	2.31	1.68	0.40	0.35	0.58	0.20	3.60	16.89
02-03	2.64	2.08	2.69	0.25	2.07	2.89	2.72	1.47	0.80	0.33	2.24	0.59	20.77
03-04	0.66	2.49	3.71	2.12	2.69	0.66	2.19	0.12	1.30	0.72	0.39	0.45	17.50
04-05	4.35	2.59	2.05	3.94	2.53	2.01	1.41	1.90	1.26	0.65	1.23	1.40	25.32
05-06	1.53	2.26	3.92	2.92	1.70	5.59	4.72	0.50	0.95	0.90	1.03	1.88	27.90
06-07	3.49	2.52	1.06	0.43	2.48	1.80	1.40	1.44	0.73	1.70	2.18	1.62	20.85
07-08	2.45	1.60	4.07	NA	NA	NA	NA	NA	1.15	1.47	0.30	0.87	11.91
*08-09**	-	-	-	-	-	-	-	-	-	-	-	-	-
*09-10**	-	-	-	-	-	-	-	-	-	-	-	-	-
40-Year	2.09	2.28	2.50	2.48	2.51	2.54	2.04	1.72	1.02	1.19	1.43	1.70	23.19
Average**	2.09	2.28	2.51	2.48	2.50	2.53	2.01	1.73	1.01	1.19	1.42	1.69	23.14

NOTE: Climatic Station was moved from a point one mile above the dam site to a point 500 feet below dam site on November 15, 1973.
October, November, and December 70-71 were estimated by correlation with Clear Creek Weather Station.

* No Precipitation data was collected from Electric Lake site.
** Historical Average. Does not include current report year.

TABLE 6: EAST MOUNTAIN PRECIPITATION

Elevation - 8,985 Feet

Water Year	*OCT*	*NOV*	*DEC*	*JAN*	*FEB*	*MAR*	*APR*	*MAY*	*JUN*	*JUL*	*AUG*	*SEPT*	*TOTAL*
80-81	1.28	0.39	0.05	0.29	0.52	2.77	0.64	0.87	0.11	0.57	0.85	2.55	10.90
81-82	1.93	0.53	0.97	3.22	0.14	1.67	0.00	0.45	0.09	1.86	1.10	2.61	14.57
82-83	0.38	2.90	1.39	1.30	1.81	1.98	0.92	0.71	0.61	1.27	4.83	1.62	19.71
83-84	0.76	2.43	2.42	0.27	0.65	1.22	0.50	0.22	1.18	1.90	2.33	0.64	14.53
84-85	3.27	0.97	1.67	0.49	0.59	1.77	1.35	1.73	0.28	2.47	0.12	2.31	17.02
85-86	1.15	2.38	0.87	0.30	2.10	1.43	1.05	0.38	0.53	0.87	2.24	1.63	14.92
86-87	1.57	0.39	0.16	1.37	1.37	1.65	1.16	1.77	0.58	2.49	1.16	0.06	13.73
87-88	2.77	1.91	1.29	1.42	0.00	0.99	2.08	1.03	0.81	0.45	0.96	0.91	14.61
88-89	0.61	0.43	1.56	1.00	0.68	1.03	0.26	0.47	0.43	1.19	2.44	0.49	10.59
89-90	0.28	0.39	0.16	0.74	2.08	1.75	1.03	0.26	0.67	0.88	1.03	1.62	10.90
10-Year	1.40	1.27	1.05	1.04	0.99	1.63	0.90	0.79	0.53	1.40	1.71	1.44	14.15
90-91	0.48	0.26	0.66	0.34	0.39	2.34	0.59	1.83	0.21	1.01	1.48	3.11	12.69
91-92	0.49	1.07	0.07	0.61	1.73	2.39	0.56	2.19	0.95	0.85	0.48	0.35	11.74
92-93	1.57	0.57	1.53	4.10	2.34	2.01	0.33	0.72	0.19	0.04	0.82	0.14	14.37
93-94	2.23	1.12	0.14	0.32	1.35	0.34	2.65	0.36	0.39	0.10	0.83	1.49	11.33
94-95	1.86	1.42	0.65	1.37	0.66	0.79	3.75	2.29	1.19	0.34	1.52	0.62	16.46
95-96	0.18	0.46	0.64	1.39	1.18	2.23	0.21	1.14	0.30	0.58	0.35	3.46	12.12
96-97	1.50	1.63	1.66	2.49	1.56	0.00	0.40	0.91	0.15	0.15	1.30	2.43	11.75
97-98	0.24	0.84	0.23	0.97	3.34	0.71	0.81	0.37	0.04	0.78	0.57	2.16	11.06
98-99	3.01	1.08	0.00	0.75	0.34	0.07	2.82	0.36	1.21	2.08	2.24	0.78	14.73
99-00	0.04	0.05	0.28	0.48	3.27	1.56	0.15	0.72	0.59	0.03	2.03	0.96	10.16
20-Year	1.28	1.06	0.82	1.16	1.30	1.43	1.06	0.94	0.53	1.00	1.43	1.50	13.39
00-01	3.48	0.62	0.39	1.96	1.21	1.03	1.12	1.39	0.19	0.58	1.09	0.12	13.17
01-02	0.11	0.40	0.18	0.03	0.19	0.10	0.16	0.00	0.06	0.26	0.69	4.15	6.34
02-03	0.73	0.82	0.75	0.01	0.96	1.20	0.37	0.57	0.37	0.06	1.59	0.94	8.36
03-04	0.27	0.86	1.95	0.21	2.73	0.00	1.94	0.12	1.27	0.49	0.67	0.38	10.89
04-05	2.56	2.06	1.16	3.47	1.41	0.63	1.19	1.04	1.36	0.44	0.83	1.07	17.22
05-06	1.44	0.64	0.98	0.87	0.41	3.67	0.44	0.03	0.55	0.58	0.50	0.48	10.59
06-07	3.66	0.21	0.48	0.25	0.18	0.96	0.98	0.19	0.05	0.70	0.89	0.99	9.54
07-08	0.87	1.74	1.44	0.95	1.36	0.27	0.47	1.06	0.17	0.16	1.53	0.12	10.14
08-09	0.47	0.54	1.51	0.42	1.48	0.18	0.93	2.10	1.26	0.49	0.75	0.45	10.58
09-10	0.34	0.14	1.52	2.09	1.04	1.16	0.43	0.59	0.79	0.50	0.60	0.00	9.20
30-Year	1.32	0.98	0.89	1.12	1.24	1.26	0.98	0.86	0.55	0.81	1.26	1.29	12.46
Average*	**1.35**	**1.00**	**0.87**	**1.08**	**1.24**	**1.27**	**0.99**	**0.87**	**0.54**	**0.82**	**1.28**	**1.33**	**12.58**

* Historical average values. Does not include current report year.

TABLE 7: TEMPERATURES IN EMERY COUNTY, UTAH (2010 Water Year)

	Castle Dale**		Huntington Plant		East Mountain	
2009	*Average Temperature**	*Departure From Normal*	*Average Temperature**	*Departure From Normal*	*Average Temperature**	*Departure From Normal*
October	47.1	-1.3	49.9	0.2	44.8	3.5
November	37.4	1.9	40.2	2.0	38.5	9.0
December	-	-	24.3	-1.8	21.4	-0.9
2010						
January	17.6	-3.2	20.5	-6.3	26.4	2.6
February	21.7	-6.2	29.6	-1.4	27.2	2.0
March	37.4	-1.0	38.6	0.5	36.0	5.1
April	48.6	2.1	43.9	-0.4	44.1	6.5
May	53.6	-1.9	58.3	2.1	49.8	2.6
June	68	3.5	60.7	-2.2	66.3	8.9
July	72.1	1.2	74.4	1.8	72.2	7.2
August	69.1	0.5	69.4	0.2	67.7	4.7
September	63.3	3.4	64.1	2.0	64.7	11.2
AVERAGE	48.7	-0.1	47.8	-0.3	46.6	5.2

* Temperatures reported in degrees Fahrenheit.

** Tranferred Site from Hunter Plant to Castle Dale in 2008

TABLE 8: COMPARISON OF 2009 AND 2010 TEMPERATURES*

	2009		*2010*		*2010*
Station	***Average Temperature***	***Departure From Normal***	***Average Temperature***	***Departure From Normal***	***Departure From 2009***
Castle Dale	49.3	1.66	48.7	-0.09	-0.6
Huntington Plant	46.1	-1.6	47.8	-0.3	1.7
East Mountain	43.6	2.2	46.6	5.2	3.0
Average Departure From Normal		0.7		1.6	

* Temperatures reported in degrees Fahrenheit.

TABLE 9: HUNTINGTON CREEK WATER FLOWS (2010 Water Year)

	*Huntington Creek Below Electric Lake**	*Huntington Creek At Plant**
Total Yearly Flow (Acre Feet)	10,588	36,698
Mean Discharge in Cubic Feet Per Second (CFS)	14.6	51
Maximum Discharge (CFS)	42.1	273
Date of Maximum Discharge	05-Oct-10	07-Jun-10
Minimum Discharge (CFS)	5.5	3.9
Date of Minimum Discharge	09-Apr-10	03-Dec-10

*Influenced by upstream storage in Electric Lake.

TABLE 10: DISCONTINUED

TABLE 11: HUNTINGTON CREEK WATER QUALITY *

HCC01 - ABOVE POWER PLANT

2010** SAMPLE DATES	ACIDITY	ALKALINITY BICARBONATE	CALCIUM	CARBONATE	CHLORIDE	CONDUCTIVITY (umhos/cm)	DISSOLVED OXYGEN	HARDNESS	IRON TOTAL	IRON DISSOLVED	MAGNESIUM	MANGANESE	OIL & GREASE	PH (units)	POTASSIUM	SODIUM	SULFATE	TSS	TDS
20100317	0	200	61.45	15	15	539	9.1	272	0.15	0	28.86	0	0	8.5	1.7	13.71	58	42	320
20100609	0	155	48.82	0	3	321	9.6	169	1.43	0	11.55	0.004	0	8.47	0.73	3.72	13	128	188
20100920	0	158	44.93	0	5	338	8.8	164	0.23	0	12.68	0.003	0	8.61	0.89	4.31	16	21	196
20101207	0	211	61.78	0	13	526	11	269	0.09	0	27.98	0	0	8.52	1.69	11.69	52	9	322
No. of Analysis	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
2010**																			
MIN	0	155	45	0	3	321	8.80	164	0.09		11.55	0.00		8.47	0.73	4	13	9	188
MAX	0	211	62	15	15	539	11.00	272	1.43		28.86	0.00		8.61	1.70	14	58	128	322
MEAN	0	181	54	4	9	431	9.63	219	0.48		20.27	0.00		8.53	1.25	8	35	50	257
2009**																			
MIN	0	154	47	0	5	358	8	189	0		14	0		8	1	4	19	5	219
MAX	0	218	65	7	16	563	9	289	0		31	0		9	2	13	59	13	341
MEAN	0	184	56	3	10	454	9	235	0		23	0		9	1	9	40	10	278
2008**																			
MIN		144	52.7	0.0	4.0	361	7.80	185	0.12		12.94	0.01		8.34	0.78	3.89	15.0	0.0	229
MAX		216	65.8	15.0	20.0	630	15.10	306	1.05		34.36	0.07		8.60	2.08	15.49	83.0	11.0	399
MEAN		181	58.5	7.7	11.0	498	10.73	243	0.39		23.53	0.03		8.51	1.52	9.11	45.8	5.7	296
2007**																			
MIN		152	49	8	5	401	10.89	188	0.13		16	0.01		8.23	0.70	4	18	13	193
MAX		207	61	8	12	599	13.12	260	0.30		27	0.03		8.51	1.68	11	54	19	301
MEAN		181	56	8	9	486	11.80	226	0.23		21	0.02		8.40	1.39	7	36	15	250
2006**																			
MIN		157	47		5	387	11.61	177	0.12		14	0.00		7.99	0.75	4	19	8	209
MAX		233	73		20	701	14.32	324	8.77		35	0.02		8.43	1.93	18	85	969	467
MEAN		198	61		11	531	13.17	252	2.34		24	0.01		8.19	1.32	10	47	251	306
2005**																			
MIN		161	49		3	362	9.42	178	0.08		14	0.01		8.28	0.69	3	15	14	204
MAX		221	65		21	641	12.43	291	0.49		31	0.05		8.45	2.36	18	66	38	366
MEAN		193	58		10	484	10.87	232	0.27		21	0.02		8.34	1.46	10	38	28	280
2004**																			
MIN		154	44	6	5	332	5.27	173	0.12		15	0.01		8.41	0.84	5	17	13	153
MAX		245	59	6	15	485	14.66	245	0.28		24	0.09		8.63	1.74	13	45	37	287
MEAN		196	53	6	9	425	10.27	215	0.22		20	0.05		8.48	1.25	8	33	23	237
2003**																			
MIN		193	46	5	6	222	4.73	206	0.11		19	0.01		8.25	1.16	7	27	6	200
MAX		237	58	5	14	525	7.01	250	0.70		26	0.03		8.56	1.96	13	51	17	321
MEAN		216	53	5	9	395	6.20	221	0.29		22	0.02		8.42	1.54	10	37	11	250
2002**																			
MIN		195	45	8	5	358	10.65	178	0.20		16			8.40	1	7	20	17	153
MAX		232	52	8	11	461	13.62	216	2.10		21			8.58	1	10	38	143	276
MEAN		217	49	8	8	413	11.86	199	0.83		19			8.46	1	9	30	63	230
2001**																			
MIN	126	170	43	5	5	348	8.20	153	0.10		11			8.43	1	5	14	7	196
MAX	400	265	58	5	15	574	8.20	248	0.50		25			8.61	2	15	45	37	290
MEAN	218	220	50	5	10	459	8.20	201	0.30		19			8.52	2	9	30	21	243
2000**																			
MIN		176	41	6	3	304	5.40	148	0.20		11			8.28	1	2	10	10	168
MAX		254	57	6	18	490	12.00	233	0.20		22			8.53	1	13	36	27	285
2010**																			
HISTORICAL 1990-2009																			
MIN	0.0	126	32.7	0.1	1.0	210	3.8	118	0.01	0.00	9.00	0.00	0.0	7.10	0.01	1.00	2.0	0.00	134
MAX	25.0	400	102.6	38.0	45.0	701	15.1	392	13.30	0.25	44.70	0.30	7.0	8.90	5.00	55.00	130.0	969.00	467
MEAN	4.9	217.1	56.6	4.7	12.1	409.4	8.6	220.8	0.50	0.09	19.35	0.05	2.5	8.38	1.34	8.04	31.7	31.54	238
No. of Analysis		111	111	72	110	121	116	111	100	61	111	75	57	121	93	110	111	113	121

* Quality parameters are reported as mg/l unless otherwise noted.

** Data: Database input restricted to values greater then laboratory minimum detection limit.

TABLE 12: HUNTINGTON CREEK WATER QUALITY *

HCC02 - @ POWER PLANT (BELOW DEER CREEK CONFLUENCE)

2010** SAMPLE DATES	ACIDITY	ALKALINITY BICARBONATE	CALCIUM	CARBONATE	CHLORIDE	CONDUCTIVITY (umhos/cm)	DISSOLVED OXYGEN	HARDNESS	IRON TOTAL	IRON DISSOLVED	MAGNESIUM	MANGANESE	OIL & GREASE	PH (units)	POTASSIUM	SODIUM	SULFATE	TSS	TDS
20100317	0	209	59.31	21	36	687	9.3	291	0.09	0	34.69	0	0	8.56	3.54	35.91	85	6	414
20100609	0	150	48.78	0	4	326	9.7	170	1.62	0	11.78	0.003	0	8.48	0.8	4.28	14	134	194
20100920	0	160	46.75	0	7	371	8.7	177	0.25	0	14.74	0.003	0	8.62	1.27	7.48	23	28	213
20101207	0	221	56.75	0	19	602	10.9	266	0.1	0	30.1	0	0	8.55	2.84	23.69	70	11	352
No. of Analysis	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
2010**																			
MIN	0	150	47	0	4	326	8.70	170	0.09		12	0.00		8.48	0.80	4	14	6	194
MAX	0	221	59	21	36	687	10.90	291	1.62		35	0.00		8.62	3.54	36	85	134	414
MEAN	0	185	53	5	17	496.5	9.65	226	0.52		23	0.00		8.55	2.11	18	48	45	293
2009**																			
MIN	0	155	47	0	7	370	8	194	0		15	0		8	1	6	22	10	229
MAX	0	227	64	9	33	686	9	306	0		35	0		9	3	28	78	17	422
MEAN	0	189	56	2	17	516	8	246	0		26	0		9	2	16	53	14	319
2008**																			
MIN		4	4	0	4	4	4.00	4	0.12		4	0.00		4.00	0.92	4	4	4	4
MAX		227	64	9	33	686	9.20	306	4.00		35	4.00		8.61	4.00	28	78	17	422
MEAN		144	43	4	15	393.875	7.42	187.4375	1.14		20	1.00		7.39	2.50	13	39	11	243
2007**																			
MIN		158	48	10	5	412	10.15	185	0.14		16	0.01		8.27	1	4	19	8	192
MAX		215	61	10	22	681	14.04	270	0.24		29	0.03		8.56	2	19	66	15	330
MEAN		187	55	10	12	514.75	11.83	228.5	0.19		22	0.02		8.41	2	10	40	11	261
2006**																			
MIN		157	47		6	400	11.50	179	0.10		15	0.00		8.07	1	5	20	8	215
MAX		235	73		76	899	14.31	332	11.93		36	0.01		8.48	2	51	86	1420	498
MEAN		200	61		27	596.5	13.31	258.25	3.10		25	0.01		8.31	1	20	48	363	318
2005**																			
MIN		164	48	5	4	372	9.49	182	0.08		15	0.01		8.34	1	5	17	8	223
MAX		220	63	5	32	674	14.78	284	0.38		31	0.05		8.48	2	29	73	37	389
MEAN		194	56	5	14	498	11.79	229.75	0.23		22	0.02		8.40	2	14	41	26	289
2004**																			
MIN		153	45	6	6	336	5.61	177	0.15		16			8.29	1	5	18	12	166
MAX		226	58	6	51	609	14.61	248	0.57		25			8.59	2	32	47	41	368
MEAN		192	53	6	20	463.5	10.25	217.25	0.34		20			8.42	1	15	35	26	265
2003**																			
MIN		221	47	5	7	422	4.70	212	0.11		19			8.16	1	8	28	7	213
MAX		251	56	7	19	634	6.96	250	0.78		26			8.57	2	16	53	50	318
MEAN		234	53	6	13	511.25	6.22	226.5	0.31		23			8.44	2	12	39	21	258
2002**																			
MIN		198	44	5	6	369	10.08	180	0.20		17			8.42	1	8	22	16	172
MAX		248	53	6	16	569	13.84	227	1.60		23			8.58	2	14	43	128	300
MEAN		226	49	6	11	457.25	11.88	204.75	0.75		20			8.48	1	11	33	79	251
2001**																			
MIN		172	44	8	6	364	8.20	159	0.10		12	0.05		8.30	2	6	16	9	200
MAX		284	59	8	32	642	8.20	259	0.60		27	0.05		8.65	2	23	52	33	338
MEAN		226	50	8	19	507	8.20	207.75	0.37		20	0.05		8.50	2	14	35	21	268
2000**																			
MIN		175	41	5	5	316	5.90	148	0.10		11			8.27	1	3	14	15	169
MAX		279	60	5	34	587	11.90	261	0.20		27			8.52	2	22	65	27	339
MEAN		226	50	5	17	456	10.03	206.5	0.17		20			8.36	2	12	36	21	257
HISTORICAL 1990-2008																			
MIN	0	151	32	0	1	210	3.8	129	0.01	0	8	0	0	7.14	0.01	1	4	0	161
MAX	33	310	91.7	37	76	899	15	448	11.93	0.21	39.9	1	5.1	8.98	5	51.2	150	1420	498
MEAN	5.4	220.2	58.0	4.5	15.3	447.4	8.6	232.7	0.5	0.1	20.8	0.1	2.3	8.4	1.7	10.7	39.5	37.2	262.2
No. of Analysis	62	110	110	77	109	120	115	110	102	61	110	73	58	120	91	110	110	114	120

* Quality parameters are reported as mg/l unless otherwise noted.

** Data: Database input restricted to values greater then laboratory minimum detection limit.

TABLE 13: HUNTINGTON CREEK WATER QUALITY *

HCC04 - @ RESEARCH FARM

2010** SAMPLE DATES	ACIDITY	ALKALINITY BICARBONATE	CALCIUM	CARBONATE	CHLORIDE	CONDUCTIVITY (umhos/cm)	DISSOLVED OXYGEN	HARDNESS	IRON TOTAL	IRON DISSOLVED	MAGNESIUM	MANGANESE	OIL & GREASE	PH (units)	POTASSIUM	SODIUM	SULFATE	TSS	TDS
20100317	0	203	59	26	37	690	9	291	0	0	35	0.00	0	8.57	3.36	36	88	7	411
20100609	0	152	48	0	4	327	10	167	2	0	12	0.00	0	8.45	0.82	5	15	142	188
20100920	0	162	48	0	8	378	9	183	0	0	16	0.00	0	8.61	1.24	8	25	30	222
20101207	0	222	54	0	22	610	11	254	0	0	29	0.00	0	8.53	2.59	23	74	12	366
No. of Analysis	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
2010**																			
MIN		152	48	0	4	327	8.70	167	0.08	0.00	12	0.00	0.00	8.45	0.82	5	15	7	188
MAX		222	59	26	37	690	10.80	291	1.78	0.00	35	0.00	0.00	8.61	3.36	36	88	142	411
MEAN		185	52	7	18	501.25	9.63	223.75	0.55	0.00	23	0.00	0.00	8.54	2.00	18	51	48	297
2009**																			
MIN		149	47	0	7	376	8	197	0	0	16	0	0	8	1	6	23	5	234
MAX		226	67	13	45	737	9	325	0	0	38	0	0	9	3	34	95	21	450
MEAN		187	57	7	24	556	9	258	0	0	28	0	0	9	2	21	61	13	341
2008**																			
MIN		4	4		4	4	4.00	4	0.00		4	0.00		4.00	0.92	4	4	4	4
MAX		226	67		45	737	9.20	325	4.00		38	4.00		8.60	4.00	34	95	21	450
MEAN		142	44		20	418.1875	7.47	195.875	1.10		21	1.00		7.38	2.48	16	46	11	257
2007**																			
MIN		161	49		7	428	10.18	189	0.15		16	0.01		8.31	1	6	23	8	208
MAX		212	62		25	700	13.79	279	0.26		31	0.03		8.59	3	22	73	38	370
MEAN		187	56.5		15.0	536.25	11.99	235.75	0.20		22.99	0.02		8.44	1.60	12.36	45.8	19.0	283.3
2006**																			
MIN		159	48		8	420	11.58	184	0.12		16	0.01		8.02	1	7	25	6	215
MAX		235	78		104	1036	14.59	366	16.43		42	0.01		8.50	3	70	109	1370	589
MEAN		199	63		38	663	13.52	274	4.46		28	0.01		8.33	2	27	61	358	351
2005**																			
MIN		163	48		4	378	9.07	186	0.10		15	0.00		8.06	1	5	19	38	225
MAX		215	68		48	784	12.69	312	0.42		35	0.05		8.47	2	34	97	57	459
MEAN		191	59		21	545	10.34	244	0.26		24	0.02		8.32	1	16	53	45	323
2004**																			
MIN		153	45	6	7	360	5.46	179	0.11		16	0.02		8.41	1	7	22	15	205
MAX		248	60	7	54	640	14.64	262	0.46		27	0.03		8.61	2	33	65	40	384
MEAN		198	55	7	23	493	10.25	226	0.25		22	0.02		8.49	1	16	44	24	287
2003**																			
MIN		211	49	5	11	444	4.65	218	0.11	0.01	20	0.01		8.34	1	10	34	7	282
MAX		251	61	6	38	658	7.07	282	0.84	0.01	32	0.03		8.57	2	26	79	56	377
MEAN		233	56	6	24	530	6.28	244	0.34	0.01	26	0.02		8.49	2	18	56	25	307
2002**																			
MIN		196	44	6	8	397	10.24	184	0.20		18			8.41	1	10	25	17	197
MAX		240	57	8	27	722	13.60	254	1.60		27			8.59	2	21	70	103	343
MEAN		224	51	7	18	524	11.89	220	0.63		23			8.50	1	15	47	55	289
2001**																			
MIN		181	46	5	8	382	8.30	168	0.10		13			8.36	2	8	20	8	197
MAX		294	67	5	51	727	8.30	303	0.30		33			8.59	2	35	87	29	432
MEAN		232	54	5	27	556	8.30	227	0.20		23			8.46	2	20	50	18	298
2000**																			
MIN		175	42	8	7	328	6.50	4	0.20		12			8.35	2	3	17	10	187
MAX		268	61	8	32	640	11.80	268	0.20		29			8.45	2	23	74	31	371
MEAN		225	52	8	20	484	9.80	173	0.20		21			8.38	2	13	45	21	276
HISTORICAL 1991-2008																			
MIN	0.0	96	35.3	0.0	2.0	220	4.2	145	0.01	0.00	9.90	0.000	0.0	7.35	0.01	2.00	9.0	0.00	170
MAX	29.0	326	108.1	44.0	104.0	1036	14.7	397	16.43	0.37	42.00	0.30	5.0	8.94	10.70	91.00	185.0	1370.00	589
MEAN	4.9	226	61.2	4.8	20.1	486.5	8.5	248.4	0.57	0.09	23.09	0.05	2.2	8.39	1.67	14.80	56.1	34.62	295.4
No. of Analysis	69	117	117	81	117	134	130	116	105	67	117	77	58	135	99	117	117	128	135

* Quality parameters are reported as mg/l unless otherwise noted.

**Data: Database input restricted to values greater then laboratory minimum detection limit.

TABLE 14: DEER CREEK SURFACE WATER QUALITY *

DCR01 - ABOVE THE MINE

2010** SAMPLE DATES	ACIDITY	ALKALINITY BICARBONATE	CALCIUM	CARBONATE	CHLORIDE	CONDUCTIVITY (umhos/cm)	HARDNESS	IRON TOTAL	IRON DISSOLVED	MAGNESIUM	MANGANESE	OIL & GREASE	PH (units)	POTASSIUM	SODIUM	SULFATE	TSS	TDS
2010**	NO SAMPLES DURING 2010																	
2009**	NO SAMPLES DURING 2009																	
2008**																		
MIN	0	205	39.54	18	4	529	207	0	0	26.31	0	na	8.71	0.96	32.66	34		268
MAX	0	205	39.54	18	4	529	207	0	0	26.31	0	na	8.71	0.96	32.66	34		268
MEAN	0	205	39.54	18	4	529	207	0	0	26.31	0	na	8.71	0.96	32.66	34		268
2007**	NO SAMPLES DURING 2007																	
MIN																		
MAX																		
MEAN																		
2006**																		
MIN		238	43		6	538	223	0.06		28			8.39	1	30	35	15	279
MAX		283	49		8	720	259	0.06		33			8.59	1	47	68	15	406
MEAN		261	46		7	629	241	0.06		31			8.49	1	39	52	15	343
2005**																		
MIN		258	49	5	5	567	268	0.23		31	0		8.18	1	30	37	27	328
MAX		278	56	5	7	702	268	0.23		35	0		8.46	1	61	63	27	403
MEAN		268	53	5	6	635	268	0.23		33	0		8.32	1	45	50	27	366
2004**																		
MIN		244	43		4	505	213			26				1	33	34	11	314
MAX		244	43		4	505	213			26				1	33	34	11	314
MEAN		244	43		4	505	213			26				1	33	34	11	314
2003**	NO FLOW DURING 2003																	
2002**	NO FLOW DURING 2002																	
2001**																		
MIN		317	41	8	5	620	222	0.20		26			8.30		31	41	35	307
MAX		321	46	8	7	662	226	0.20		30			8.72		45	63	35	366
MEAN		319	44	8	6	641	224	0.20		28			8.51		38	52	35	337
2000**																		
MIN		307	39		4	547	218			28			8.45		42	46	6	329
MAX		325	41		6	615	233			33			8.48		48	74	6	378
MEAN		316	40		5	581	226			31			8.47		45	60	6	354
HISTORICAL 1978-2008																		
MIN	0.1	205	2.2	0.1	3.5	360	193.00	0.00	0.00	19.3	0.00	0.10	6.97	0.0	13.40	10	0.5	231
MAX	137.0	397	107.2	19.0	176.0	1580	599.00	40.10	0.35	83.9	0.24	5.00	8.81	4.3	111.60	255	3592	897
MEAN	11.2	304	53.3	5.9	16.7	594.5	275.73	0.80	0.08	34.0	0.04	1.17	8.04	1.2	33.81	60.3	91.8	346.09
No. of Analysis	27	45	45	33	46	85	45	75	21	45	67	25	86	35	45	47	78	86

* Quality parameters are reported as mg/l unless otherwise noted.

** Data: Database input restricted to values greater then laboratory minimum detection limit.

TABLE 15: DEER CREEK SURFACE WATER QUALITY *

DCR06 - BELOW THE MINE

2010* SAMPLE DATES	ACIDITY	ALKALINITY BICARBONATE	CALCIUM	CARBONATE	CHLORIDE	CONDUCTIVITY (umhos/cm)	HARDNESS	IRON TOTAL	IRON DISSOLVED	MAGNESIUM	MANGANESE	OIL & GREASE	PH (units)	POTASSIUM	SODIUM	SULFATE	TSS	TDS
20100317	0	251	58.43	33	103	1169	367	0.09	0	53.7	0	0	8.61	9.59	109.73	175	0	686
20100609	0	261	58.61	0	64	994	354	0.1	0	50.46	0.002	0	8.61	8.59	78.36	170	6	612
20100920	0	274	53.36	0	41	894	316	0.06	0	44.29	0	0	8.64	7.51	61.56	151	0	555
20101207	0	277	49.08	10	40	941	315	0.13	0	46.68	0	0	8.59	8.4	75.51	161	11	585
No. of Analysis	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
2010**																		
MIN		251	49.1	0.0	40	894	315	0	0	44	0	0	9	8	62	151	0	555
MAX		277	58.6	33.0	103	1169	367	0	0	54	0	0	9	10	110	175	11	686
MEAN		266	54.9	10.8	62	1000	338	0	0	49	0	0	9	9	81	164	4	610
2009**																		
MIN		245	51	0	38	860	326	0	0	48	0	0	8	5	57	115	0	510
MAX		368	70	12	107	1142	413	0	0	62	0	0	9	9	91	211	22	707
MEAN		285	60	3	63	982	379	0	0	56	0	0	8	7	68	157	12	598
No. of Analysis		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
MIN		229	50	0	45	827	325	0	0	49	0	0	8	5	50	93	0	466
MAX		267	63	26	149	1279	387	0	0	56	0	0	9	7	109	151	7	744
MEAN		247	56	12	90	1027	350	0	0	51	0	0	9	6	74	123	4	588
2007**																		
MIN		243	54		30	871	332	0		46	0			5	39	74	71	431
MAX		276	66		79	988	371	1		50	0			7	64	126	71	540
MEAN		265	62		51	951	353	1		48	0			6	47	96	71	486
2006**																		
MIN		235	49		65	937	281	0		39	0			2	62	71	5	510
MAX		289	75		409	2255	406	0		57	0			6	275	113	25	1172
MEAN		267	60		179	1344	350	0		48	0			4	127	96	12	703
2005**																		
MIN		246	43		45	720	278	0		37	0			2	46	59	32	429
MAX		267	65		209	1472	375	0		51	0			6	136	109	56	791
MEAN		257	53		89	969	315	0		45	0			4	70	85	44	543
2004**																		
MIN		247	48	6	62	799	307	0			0			4	49	85	102	445
MAX		343	63	7	431	1876	351	4			0			6	254	101	216	1042
MEAN		278	54	7	196	1196	326	1			0			5	122	92	159	662
2003**																		
MIN	10	256	52.8	6	94	435	340	0.03		48			8.46	5.01	69	102	12	511
MAX	10	371	57.8	17	136	969	358	0.12		52			8.63	5.63	91	110	12	602
MEAN	10	316	55.8	10	109	780	348	0.07		51			8.57	5.35	77	106	12	563
2002**																		
MIN		266	41.0		49	735	279	0.20		43			8.50	5.00	48	87	6	400
MAX		338	53.0		93	932	322	0.20		46			8.66	5.00	68	112	6	559
MEAN		303	49.0		73	860	306	0.20		45			8.56	5.00	59	98	6	501
2001**																		
MIN		298	47.0		39	777	261	0.10		35			8.40	2.00	36	77	6	452
MAX		327	68.0		177	1364	396	0.10		55			8.65	5.00	137	136	9	779
MEAN		309	55.0		101	1015	320	0.10		44			8.50	4.00	80	108	8	565
2000**																		
MIN		286	51.0		59	858	309	0.10		44			8.19	5.00	50	99	5	494
MAX		332	65.0		77	945	389	0.70		55			8.41	6.00	57	161	63	551
MEAN		313	56.3	6	68	889	341	0.40		49			8.31	5.33	53	128	25	520
HISTORICAL 1978-2008																		
MIN	0.1	162	2.4	0.0	5.0	420	243.00	0.00	0.00	27.140	0.0	0.00	6.92	1.00	28.1	59.00	0	273
MAX	90.0	456	191.9	38.0	1112.0	4590	990.00	170.00	1.22	124.00	0.3	9.00	8.94	10.30	758.0	610	20540	2460
MEAN	6.3	304.8	73.2	5.4	103.5	1031.7	403.7	1.6	0.1	52.6	0.0	1.5	8.3	4.8	83.3	162.9	198.4	628.9
No. of Analysis	62	108	108	80	109	154	108	129	55	108	102	62	155	108	108	110	136	155

* Quality parameters are reported as mg/l unless otherwise noted.

** Data: Database input restricted to values greater then laboratory minimum detection limit.

TABLE 16: MEETINGHOUSE CANYON WATER QUALITY *

MHC01 - LEFT FORK

2010** SAMPLE DATES	ACIDITY	ALKALINITY BICARBONATE	CALCIUM	CARBONATE	CHLORIDE	CONDUCTIVITY (umhos/cm)	HARDNESS	IRON TOTAL	IRON DISSOLVED	MAGNESIUM	MANGANESE	OIL & GREASE	PH (units)	POTASSIUM	SODIUM	SULFATE	TSS	TDS
2010**	NO FLOW DURING 2010 - ELK SPRING AND SPRING 89-61 WAS DEVELOPED BY NEWUSSD IN 2009																	
2009**	NO FLOW DURING 2009 - ELK SPRING AND SPRING 89-61 WAS DEVELOPED BY NEWUSSD IN 2009																	
2008**																		
MIN		183	36.18		3.0	451	208	0.72		28.53			8.62	1.13	9.8	22	25	249
MAX		183	36.18		3.0	451	208	0.72		28.53			8.62	1.13	9.8	22	25	249
MEAN		183	36.18		3.0	451	208	0.72		28.53			8.62	1.13	9.8	22	25	249
2007**																		
MIN		191	37		4.0	485	221	0.33		31.60			8.39	0.90	10.0	28	31	223
MAX		191	37		4.0	485	221	0.33		31.60			8.39	0.90	10.0	28	31	223
MEAN		191	36.5		4.0	485	221	0.33		31.60			8.39	0.90	10.0	28.0	31.0	223
2006**																		
MIN		199	42		5.0	437	219	0.07		27.40			8.37	0.93	8.2	26	22	222
MAX		207	43		5.0	498	229	0.14		29.41			8.59	1.05	10.5	30	22	262
MEAN		203	43		5.0	468	224	0.11		28.41			8.48	0.99	9.4	28	22	242
2005**																		
MIN		204	41		4.0	446	237	0.40		30.80	0.006		8.41	0.94	8.9	33		261
MAX		215	51		5.0	532	255	0.56		32.80	0.012		8.56	1.21	11.6	42		301
MEAN		210	46		4.5	489	246	0.48		31.80	0.009		8.49	1.08	10.2	38		281
2004**																		
MIN		210	49		3.0	420	221	0.10		23.90	0.007		8.40	0.71	6.5	18		264
MAX		210	49		3.0	420	221	0.10		23.90	0.007		8.40	0.71	6.5	18		264
MEAN		210	49		3.0	420	221	0.10		23.90	0.007		8.40	0.71	6.5	18		264
2003**	NO FLOW DURING 2003																	
2002**	NO FLOW DURING 2002																	
2001**																		
MIN		236	34	5	3.2	438	200	0.30		27.00			8.56		9.0	28	7	257
MAX		240	40	8	3.6	517	211	0.30		28.00			8.71		11.0	31	29	265
MEAN		238	37	7	3.4	478	206	0.30		27.50			8.64		10.0	30	18	261
2000**																		
MIN		241	34	5	3.0	395	199	0.40		26.00			8.29	1.00	7.0	20	50	212
MAX		262	37	5	3.0	398	204	1.20		29.00			8.47	1.00	11.0	24	66	239
MEAN		252	36	5	3.0	397	202	0.80		27.50			8.38	1.00	9.0	22	58	226
HISTORICAL 1986-2008																		
MIN	0.0	183	2.2	0.0	1.0	300	175.00	0.02	0.00	17.200	0.0	0.00	7.03	0.01	3.8	8.00	0.1	183
MAX	49.0	307	80.4	34.0	47.5	557	350.00	1.20	0.30	36.50	0.1	10.90	8.81	1.62	14.0	100.00	175	304
MEAN	6.6	235	44.7	6.0	6.8	425	229.33	0.28	0.08	27.30	0.0	1.58	8.26	0.94	8.6	31.12	31	245.83
No. of Analysis	22	42	42	34	42	42	42	39	23	42	24	22	42	33	42	42	39	42

* Quality parameters are reported as mg/l unless otherwise noted.

** Data: Database input restricted to values greater then laboratory minimum detection limit.

TABLE 17: MILL FORK CANYON WATER QUALITY *

MFU3 - ABOVE MILL FORK FAULT

2010** SAMPLE DATES	ACIDITY	ALKALINITY BICARBONATE	CALCIUM	CARBONATE	CHLORIDE	CONDUCTIVITY (umhos/cm)	HARDNESS	IRON TOTAL	IRON DISSOLVED	MAGNESIUM	MANGANESE	OIL & GREASE	PH (units)	POTASSIUM	SODIUM	SULFATE	TSS	TDS
20100608	0	191	54.75	0	2	393	206	3.85	0	16.9	0	0	8.53	0.86	5.84	15	409	221
No. of Analysis	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2010**																		
MIN	0	191	54.75	0	2	393	206.00	4	0.00	16.90	0	0.00	8.53	0.86	6	15	409	221
MAX	0	191	54.75	0	2	393	206.00	4	0.00	16.90	0	0.00	8.53	0.86	6	15	409	221
MEAN	0	191	54.75	0	2	393	206.00	4	0.00	16.90	0	0.00	8.53	0.86	6	15	409	221
2009**																		
MIN	0	209	62.60	9	2	453	251.00	0	0.00	23.11	0	0.00	8.49	0.98	6	23	0	261
MAX	0	209	62.60	9	2	453	251.00	0	0.00	23.11	0	0.00	8.49	0.98	6	23	0	261
MEAN	0	209	62.60	9	2	453	251.00	0	0.00	23.11	0	0.00	8.49	0.98	6	23	0	261
2008**																		
MIN	0.0	162	60.72	37	2	428	233	0.37	0	19.69	0.01	0	8.50	0.78	4.11	15	53	234
MAX	0.0	162	60.72	37	2	428	233	0.37	0	19.69	0.01	0	8.50	0.78	4.11	15	53	234
MEAN	0.0	162	60.72	37	2	428	233	0.37	0	19.69	0.01	0	8.50	0.78	4.11	15	53	234
2007**	No Flow During 2007																	
2006**																		
MIN		221	61.80		3	468	246	0.08		22.30			8.33	1	4.72	20	9	275
MAX		221	61.80		3	468	246	0.08		22.30			8.33	1	4.72	20	9	275
MEAN		221	61.80		3	468	246	0.08		22.30			8.33	1	4.72	20	9	275
2005**																		
MIN		187	64.20	20	2	431	240	0.22		19.40	0		8.46	1	4.35	17	50	247
MAX		187	64.20	20	2	431	240	0.22		19.40	0		8.46	1	4.35	17	50	247
MEAN		187	64.20	20	2	431	240	0.22		19.40	0		8.46	1	4.35	17	50	247
2004**																		
MIN		222	54.20		2	436	224	0.11		21.60			8.35	1	4.67	22		227
MAX		222	54.20		2	436	224	0.11		21.60			8.35	1	4.67	22		227
MEAN		222	54.20		2	436	224	0.11		21.60			8.35	1	4.67	22		227
2003**																		
MIN		251	61.40	7	3	455	241	0.10		21.40			8.38	1	4.79	23		272
MAX		251	61.40	7	3	455	241	0.10		21.40			8.38	1	4.79	23		272
MEAN		251	61.40	7	3	455	241	0.10		21.40			8.38	1	4.79	23		272
2002**	NO FLOW DURING 2002																	
2001**	NO FLOW DURING 2001																	
2000**	NO FLOW DURING 2000																	
HISTORICAL 1986-2008																		
MIN	0.0	162	54.2	7.0	2.0	428	224.00	0.08	0.000	19.4	0.00	0.00	8.33	1	4	15	9	227
MAX	0.0	251	64.2	37.0	3.0	468	246.00	0.37	0.000	22.3	0.00	0.00	8.50	1	5	23	53	275
MEAN	0.0	209	60.5	21.3	2.4	443.6	236.80	0.18	0.000	20.9	0.00	0.00	8.40	0.8	4.53	19.4	37.333	251
No. of Analysis	1	5	5	3	5	5	5	5	1	5	2	1	5	5	5	5	3	5

* Quality parameters are reported as mg/l unless otherwise noted.

** Data: Database input restricted to values greater then laboratory minimum detection limit.

TABLE 18: MILL FORK CANYON WATER QUALITY *

MFA1 - ABOVE MINE

2010** SAMPLE DATES	ACIDITY	ALKALINITY BICARBONATE	CALCIUM	CARBONATE	CHLORIDE	CONDUCTIVITY (umhos/cm)	HARDNESS	IRON TOTAL	IRON DISSOLVED	MAGNESIUM	MANGANESE	OIL & GREASE	PH (units)	POTASSIUM	SODIUM	SULFATE	TSS	TDS
20100608	0	191	54.76	0	2	387	206	3.29	0	16.82	0	0	8.56	0.85	5.89	15	379	226
No. of Analysis	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2010**																		
MIN	0	191	54.76	0	2	387	206	3.29	0	16.82	0	0	8.56	0.85	5.89	15	379	226
MAX	0	191	54.76	0	2	387	206	3.29	0	16.82	0	0	8.56	0.85	5.89	15	379	226
MEAN	0	191	54.76	0	2	387	206	3.29	0	16.82	0	0	8.56	0.85	5.89	15	379	226
2009**																		
MIN	0.0	206	61.23	10	2	443	246.00	0	0.00	23	0	0.00	8.61	0.96	6	23	8	264
MAX	0.0	206	61.23	10	2	443	246.00	0	0.00	23	0	0.00	8.61	0.96	6	23	8	264
MEAN	0.0	206	61.23	10	2	443	246.00	0	0.00	23	0	0.00	8.61	0.96	6	23	8	264
2008**																		
MIN		162	60.59	36	2	433	233	0.40		19.78			8.52	0.78	4.20	15	26	227
MAX		162	60.59	36	2	433	233	0.40		19.78			8.52	0.78	4.20	15	26	227
MEAN		162	60.59	36	2	433	233	0.40		19.78			8.52	0.78	4.20	15	26	227
2007**																		
MIN	No Flow During 2007																	
MAX																		
MEAN																		
2006**																		
MIN		220	63		3	463	251	0.08		23			8.47	1	4.84	20	12	265
MAX		220	63		3	463	251	0.08		23			8.47	1	4.84	20	12	265
MEAN		220	63		3	463	251	0.08		23			8.47	1	4.84	20	12	265
2005**																		
MIN		190	62	17	2	429	239	0.54		21	0		8.51	1	4.51	17	43	245
MAX		190	62	17	2	429	239	0.54		21	0		8.51	1	4.51	17	43	245
MEAN		190	62	17	2	429	239	0.54		21	0		8.51	1	4.51	17	43	245
2004**																		
MIN		215	54		2	436	223			22			8.54	1	4.77	23	5	219
MAX		215	54		2	436	223			22			8.54	1	4.77	23	5	219
MEAN		215	54		2	436	223			22			8.54	1	4.77	23	5	219
2003**																		
MIN		275	61	6	3	451	243	0.07		22			8.45	1	4.60	23	4	262
MAX		275	61	6	3	451	243	0.07		22			8.45	1	4.60	23	4	262
MEAN		275	61	6	3	451	243	0.07		22			8.45	1	4.60	23	4	262
2002**	NO FLOW DURING 2002																	
2001**	NO FLOW DURING 2001																	
2000**	NO FLOW DURING 2000																	
HISTORICAL 1986-2008																		
MIN	0.0	153	32.0	5.0	2.0	180	208	0.06	0.0	13.0	0.00	0.00	8	1	1	12	1	176
MAX	0.0	400	82.0	36.0	24.0	813	462	3.03	0.5	73.0	0.00	0.00	9	3	24	223	342	710
MEAN	0.0	273	57.7	13.7	9.4	514.3	298.1	0.59	0.2	37.5	0.00	0.00	8.2	1.66	9.7	61.6	44.5	334.9
No. of Analysis	1	24	25	5	24	25	25	19	3	25	1	1	26	22	25	25	23	25

* Quality parameters are reported as mg/l unless otherwise noted.

** Data: Database input restricted to values greater then laboratory minimum detection limit.

TABLE 19: MILL FORK CANYON WATER QUALITY *

MFB2 - BELOW MINE

2010** SAMPLE DATES	ACIDITY	ALKALINITY BICARBONATE	CALCIUM	CARBONATE	CHLORIDE	CONDUCTIVITY (umhos/cm)	HARDNESS	IRON TOTAL	IRON DISSOLVED	MAGNESIUM	MANGANESE	OIL & GREASE	PH (units)	POTASSIUM	SODIUM	SULFATE	TSS	TDS
20100608	0	203	55.21	0	2	414	219	4.37	0	19.71	0	0	8.54	1.04	6.54	22	416	258
20100909	0	272	64.02	22	9	732	399	0	0	58.11	0	0	8.56	3	14.76	104	0	432
No. of Analysis	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
2010**																		
MIN		203	55	0	2	414	219	0	0	20	0	0	9	1	7	22	0	258
MAX		272	64	22	9	732	399	4	0	58	0	0	9	3	15	104	416	432
MEAN		238	60	11	6	573	309	2	0	39	0	0	9	2	11	63	208	345
2009**																		
MIN		267	59	0	6	628	347	0	0	43	0	0	9	2	12	70	0	357
MAX		269	67	0	10	759	408	0	0	63	0	0	9	3	15	117	18	473
MEAN		268	63	0	8	694	378	0	0	53	0	0	9	2	13	94	9	415
2008**																		
MIN		283	67	0	10	810	441			66	0		8	3	16	132	0	504
MAX		293	75	18	11	918	474			70	0		9	3	17	148	0	546
MEAN		288	71	9	11	864	458			68	0		8	3	17	140	0	525
2007**																		
MIN		315	70		11	956	438			64	0.003		8.13	2.32	17.40	124	7	561
MAX		351	82		14	1040	519			77	0.003		8.33	3.60	20.40	177	7	579
MEAN		336	77		12	984	487			71	0.003		8.23	2.94	19.23	154	7	571
2006**																		
MIN		251	66		5	564	296	0		32	0.002		8.41	1.29	7.06	39	17	324
MAX		332	77		12	924	447	0		62	0.002		8.43	2.58	16.98	132	17	497
MEAN		292	71		9	744	372	0		47	0.002		8.42	1.94	12.02	86	17	411
2005**																		
MIN		200	56	16	3	461	258	1		23	0.018		8.46	0.97	5.12	22	54	280
MAX		274	66	22	9	730	350	1		51	0.018		8.48	2.33	12.90	77	54	415
MEAN		237	61	19	6	596	304	1		37	0.018		8.47	1.65	9.01	50	54	348
2004**																		
MIN		279	58	10	10	654	327	0		44	0.027		8.49	1.88	10.60	67		338
MAX		297	59	10	12	684	357	0		51	0.027		8.52	2.52	13.90	93		415
MEAN		288	59	10	11	669	342	0		47	0.027		8.51	2.20	12.25	80		377
2003**																		
MIN		354	71	9	14	715	375			48			8.41	2.20	12.20	86		415
MAX		354	71	9	14	715	375			48			8.41	2.20	12.20	86		415
MEAN		354	71	9	14	715	375			48			8.41	2.20	12.20	86		415
2002**	NO FLOW DURING 2002																	
2001**																		
MIN		318	52	7	11	746	330			45			8.46	2	12	76	5	382
MAX		338	58	8	14	763	340			51			8.59	3	14	106	5	433
MEAN		328	55	8	13	755	335			48			8.53	3	13	91	5	408
2000**	NO FLOW DURING 2000																	
HISTORICAL 1986-2008																		
MIN	0.0	183	1.0	0.0	2.0	240	227.0	0.00	0	14.0	0.0	0.00	7.27	0.70	5	16	0	204
MAX	0.0	412	81.6	37.0	17.0	1040	519.0	0.97	10	81.1	0.0	0.00	8.90	5.20	20	177	64	579
MEAN	0.0	309	58.7	13.4	9.1	591.9	334.3	0.30	2.08	46.4	0.0	0.00	8.24	2.05	11.0	70.91	17.4	376.3
No. of Analysis	3	40	40	15	41	42	41	21	8	41	6	2	42	40	41	41	26	40

* Quality parameters are reported as mg/l unless otherwise noted.

** Data: Database input restricted to values greater then laboratory minimum detection limit.

TABLE 20: RILDA CANYON SURFACE WATER QUALITY *

RCF1 - RILDA CANYON FLUME - RIGHT FORK

2010** SAMPLE DATES	ACIDITY	ALKALINITY BICARBONATE	CALCIUM	CARBONATE	CHLORIDE	CONDUCTIVITY (umhos/cm)	HARDNESS	IRON TOTAL	IRON DISSOLVED	MAGNESIUM	MANGANESE	OIL & GREASE	PH (units)	POTASSIUM	SODIUM	SULFATE	TSS	TDS
20100608	0	201	57.86	0	1	399	218	1.1	0	17.78	0	0	8.62	0.75	4.63	10	133	226
No. of Analysis	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1
2010**																		
MIN		201	58	0	1	399	218	1	0	18	0	0	9	1	5	10	133	226
MAX		201	58	0	1	399	218	1	0	18	0	0	9	1	5	10	133	226
MEAN		201	58	0	1	399	218	1	0	18	0	0	9	1	5	10	133	226
2009**																		
MIN		202	53	9	3	446	237	0	0	25	0	0	9	1	9	25	0	264
MAX		202	53	9	3	446	237	0	0	25	0	0	9	1	9	25	0	264
MEAN		202	53	9	3	446	237	0	0	25	0	0	9	1	9	25	0	264
2008**																		
MIN		198	52	0	2	446	228	0		0	0		0	1	1	9		0
MAX		202	53	9	3	453	228	237		24	25		9	9	9	24		252
MEAN		200	53	5	3	450	228	119		12	13		4	5	5	16		126
2007**																		
MIN		186	51		2	484	217	0.05		21.6	0.000		8.05	0.74	7.36	19		242
MAX		199	53		3	513	240	0.05		26.0	0.000		8.32	1.24	8.93	27		263
MEAN		193	52.4		2.5	498.5	228.5	0.05		23.8	0.000		8.19	0.99	8.15	23.0		252.5
2006**																		
MIN		207	56		3	434	228	0.25		19.7	0		8.46	0.86	5.00	15	16	240
MAX		213	59		3	488	231	0.25		22.1	0		8.49	1.01	8.06	23	16	259
MEAN		210	58		3	461	230	0.25		20.9	0		8.48	0.94	6.53	19	16	250
2005**																		
MIN		199	56		2	420	236	0.31		19.1	0		8.30	0.80	4.86	13	73	268
MAX		208	65		3	485	240	0.31		23.5	0		8.61	1.14	8.74	22	73	280
MEAN		204	60		3	453	238	0.31		21.3	0		8.46	0.97	6.80	18	73	274
2004**																		
MIN		195	46		2	394	193	0.06		18.7	0		8.44	0.77	5.36	16	6	145
MAX		204	51		3	433	220	0.06		22.9	0		8.60	1.02	8.02	25	6	233
MEAN		200	48		3	414	207	0.06		20.8	0		8.52	0.90	6.69	21	6	189
2003**																		
MIN	5	224	49	5	2	416	218	0.04		20.4			8.56	0.74	5.92	16	5	215
MAX	5	245	56	8	2	421	223	0.56		23.3			8.58	1.21	8.40	24	5	248
MEAN	5	235	52	7	2	419	221	0.30		21.9			8.57	0.98	7.16	20	5	232
2002**																		
MIN		269	50		2	430	215			22.0			8.62		9.00	22		229
MAX		269	50		2	430	215			22.0			8.62		9.00	22		229
MEAN		269	50		2	430	215			22.0			8.62		9.00	22		229
2001**																		
MIN		244	46	6	2	468	205	0.10		19.0			8.55		5.00	15	17	242
MAX		261	58	6	2	508	223	0.10		22.0			8.62		9.00	26	17	273
MEAN		253	52	6	2	488	214	0.10		20.5			8.59		7.00	21	17	258
2000**																		
MIN		252	53		2	420	223			22.0			8		6.00	20	13	266
MAX		252	53		2	420	223			22.0			8		6.00	20	13	266
MEAN		252	53		2	420	223			22.0			8		6.00	20	13	266
HISTORICAL 1989-2008																		
MIN	0.0	177	46.0	0.0	1.0	300	193.0	0.00	0.00	18.0	0.0	0.00	7.78	0.01	3.8	1.0	0	145
MAX	10.0	329	108.6	27.0	15.0	513	384.0	2.50	1.20	30.0	0.1	5.00	8.88	10.00	24.0	80.0	240	292
MEAN	3.5	237	58.5	9.1	4.4	428.9	237.2	0.46	0.15	22.2	0.0	2.52	8.45	1.48	7.9	21.7	47.3	249.53
No. of Analysis	11	34	34	26	34	34	34	23	12	34	12	10	34	27	34	33	21	34

* Quality parameters are reported as mg/l unless otherwise noted.

** Data: Database input restricted to values greater then laboratory minimum detection limit.

TABLE 21: RILDA CANYON SURFACE WATER QUALITY *

RCF3 - RILDA CANYON FLUME - ABOVE NEWUA SPRINGS

2010** SAMPLE DATES	ACIDITY	ALKALINITY BICARBONATE	CALCIUM	CARBONATE	CHLORIDE	CONDUCTIVITY (umhos/cm)	DISSOLVED OXYGEN	HARDNESS	IRON TOTAL	IRON DISSOLVED	MAGNESIUM	MANGANESE	OIL & GREASE	PH (units)	POTASSIUM	SODIUM	SULFATE	TSS	TDS
20100317	19	360	100.94	0	11	922	9.1	510	0.53	0	62.65	0.028	0	8.03	3.1	26.36	157	7	592
20100608	0	208	58.01	0	2	411	10.2	221	1.37	0	18.45	0	0	8.56	0.81	5.1	13	100	233
20100909	5	360	95.2	0	8	873	6.1	466	0.41	0	55.39	0.039	0	8.08	2.89	22.73	131	29	548
20101207	0	349	97.6	0	8	854	9.8	482	0.29	0.03	57.82	0.03	0	7.87	2.86	24.93	144	0	579
No. of Analysis	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
2010**																			
MIN	0	208	58.0		2.0	411	6.10	221	0.29		18.45	0.00		7.87	0.81	5.10	13.0	0.0	233
MAX	19	360	100.9		11.0	922	10.20	510	1.37		62.65	0.04		8.56	3.10	26.36	157.0	100.0	592
MEAN	6	319	87.9		7.3	765	8.80	420	0.65		48.58	0.02		8.14	2.42	19.78	111.3	34.0	488
2009**																			
MIN	0	217	62		2	462	8	251	0		23	0		8	1	7	26	6	288
MAX	15	374	108		10	1005	9	545	1		67	0		8	3	30	183	90	678
MEAN	9	330	91		8	840	8	448	1		53	0		8	3	22	130	31	550
2008**																			
MIN	0	179	61		2	470	9	242	1		22	0		8	1	5	18	8	247
MAX	20	378	115		10	1072	16	577	1		70	0		9	4	29	213	12	742
MEAN	10	322	97		8	911	12	471	1		55	0		8	3	23	147	10	571
2007**																			
MIN		285	77.6		6.0	834	10.09	378	0.20		44.70	0.02		7.54	1.86	15.60	90.0	5.0	438
MAX		400	132.0		12.0	1304	12.48	614	1.17		69.10	0.09		8.04	3.51	30.06	255.0	6.0	746
MEAN		370	111.2		10.2	1128.2	11.26	536.2	0.50		62.75	0.05		7.79	3.14	26.11	196.0	5.5	653
2006**																			
MIN		220	62		3.0	487	10.3	252	0.16		23.8	0		7.78	0.98	6.4	25	6	278
MAX		376	112		12.0	1073	12.5	563	0.30		69.0	0		8.18	3.32	26.8	185	18	626
MEAN		328	94		8.8	906	11.7	454	0.25		53.3	0		7.97	2.57	20.9	135	10	517
2005**																			
MIN		206	61	13.0	2.0	437	9.1	239	0.15		21.2	0		7.94	0.94	5.8	19	109	273
MAX		353	95	13.0	11.0	974	14.2	467	2.16		56.0	0		8.53	3.16	27.4	155	109	586
MEAN		310	83	13.0	7.8	805	11.6	392	0.68		44.8	0		8.13	2.32	19.9	111	109	486
2004**																			
MIN	8	217	53		3.0	450	6.0	225	0.17		22.6	0		7.92	0.94	7.1	29	19	217
MAX	15	448	102		12.0	948	13.3	505	0.27		60.7	0		8.31	2.82	27.3	176	19	613
MEAN	12	341	85		8.0	791	10.1	408	0.21		47.5	0		8.08	2.29	20.8	128	19	478
2003**																			
MIN	7	280	62		3.0	505	5.1	263	0.12		21.8			7.73	1.02	8.9	36	11	319
MAX	16	458	100		12.0	948	6.5	497	0.27		58.2			8.26	2.90	27.4	176	11	605
MEAN	12	406	89		8.5	823	6.0	430	0.20		40.9			8.05	2.40	22.3	133	11	512
2002**																			
MIN		423	90		8.0	885	9.2	447	0.10		54.0		2	8.02	2.00	25	151	8	563
MAX		433	94		9.0	936	12.8	474	0.30		58.0		4	8.12	3.00	27	172	8	624
MEAN		429	92		8.8	912	10.7	460	0.18		56.0		3	8.07	2.75	26	163	8	584
2001**																			
MIN		287	55		3.4	564		244	0.10		26.0			7.97	1.00	10	43	5	302
MAX		431	92		8.5	908		456	1.30		55.0			8.19	3.00	23	159	16	569
MEAN		380	78		6.7	792		377	0.53		44.0			8.10	2.33	18	116	11	474
2000**																			
MIN	38.0	281	56		3.0	500	9.9	251	0.10		27.0			7.88	2.00	8	44	5	199
MAX	38.0	418	87		8.0	882	10.8	431	0.10		52.0			8.17	3.00	24	140	14	570
MEAN	38.0	367	76		6.0	740	10.4	370	0.10		43.7			8.07	2.50	18	106	8	436
HISTORICAL 1989-2008																			
MIN	0.0	179	52.7	0.0	2.0	380	4.4	225	0.02	0.00	21.2	0.000	0.0	7.50	0.01	5.4	7.0	1.0	199
MAX	38.0	500	132.0	30.0	50.0	1304	15.5	748	3.00	0.41	70.2	0.20	5.0	8.83	5.00	30.1	255.0	250.0	746
MEAN	9.2	363	85.3	5.8	9.4	747.6	8.6	406.3	0.47	0.11	45.2	0.04	2.4	8.08	2.24	16.9	105.4	34.4	459
No. of Analysis	35	71	71	30	71	72	65	71	69	24	71	43	27	72	68	71	71	47	71

* Quality parameters are reported as mg/l unless otherwise noted.

** Data: Database input restricted to values greater then laboratory minimum detection limit.

TABLE 22: RILDA CANYON SURFACE WATER QUALITY *

RCW4 - RILDA CANYON FLUME - NEAR HIGHWAY 31

2010** SAMPLE DATES	ACIDITY	ALKALINITY BICARBONATE	CALCIUM	CARBONATE	CHLORIDE	CONDUCTIVITY (umhos/cm)	DISSOLVED OXYGEN	HARDNESS	IRON TOTAL	IRON DISSOLVED	MAGNESIUM	MANGANESE	OIL & GREASE	PH (units)	POTASSIUM	SODIUM	SULFATE	TSS	TDS
20100317	0	367	140.48	0	18	1551	9.2	925	0.26	0	139.37	0	0	8.29	5.03	33.43	552	10	1233
20100608	0	224	65.29	0	3	528	10.2	277	1.29	0	27.78	0	0	8.5	1.24	7.57	58	102	315
20100909	0	340	130.65	0	18	1372	6.7	816	0	0	119.03	0.002	0	8.3	4.88	30.77	443	0	1030
20101207	0	358	126.18	0	19	1427	10.5	808	0	0	119.75	0	0	8.33	4.77	30.91	482	0	1082
No. of Analysis	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
2010**																			
MIN		224	65.3		3.0	528	6.70	277	0.00		27.78	0.00		8.29	1.24	7.57	58.0	0.0	315
MAX		367	140.5		19.0	1551	10.50	925	1.29		139.37	0.00		8.50	5.03	33.43	552.0	102.0	1233
MEAN		322	115.7		14.5	1220	9.15	707	0.39		101.48	0.00		8.36	3.98	25.67	383.8	28.0	915
2009**																			
MIN		243	77.1		5.0	679	8.40	367	0.00		42.44	0.00		8.15	1.69	11.59	118.0	0.0	450
MAX		361	161.5		17.0	1683	9.20	1015	0.36		148.57	0.00		8.46	5.51	35.14	643.0	21.0	1393
MEAN		320	125.3		13.5	1331	8.80	778	0.09		112.93	0.00		8.32	4.23	27.27	444.0	5.3	1048
2008**																			
MIN		222	72		3	601	9	313	0		32	0		8	1	8	72	0	336
MAX		356	175		20	1890	14	1137	1		170	0		9	6	38	764	92	1532
MEAN		307	139		13	1447	11	852	0		122	0		8	5	28	503	23	1095
2007**																			
MIN		296	115.0		12.0	1392	10.12	678	0.07		94.80	0.00		7.98	2.99	24.10	349.0	5.0	868
MAX		373	172.0		25.0	2050	13.47	1060	0.07		155.00	0.00		8.37	5.25	37.10	698.0	5.0	1429
MEAN		339	153.4		18.8	1810.2	11.35	947.2	0.07		136.95	0.00		8.15	4.51	33.70	606.4	5.0	1292.6
2006**																			
MIN		242	70.2		5.0	592	10.41	313	0.35		33.40	0.00		8.20	1.45	9.65	61.0	26.0	351
MAX		337	114.0		16.0	1272	13.50	659	0.35		90.80	0.00		8.41	3.78	28.40	309.0	26.0	825
MEAN		305	96.1		12.0	1038	11.96	529	0.35		70.00	0.00		8.31	2.95	21.57	222.3	26.0	663.33
2005**																			
MIN		222	65.5		3.0	421	9.38	270	2.96		25.90	0.06		8.28	1.02	7.44	35.0	188.0	302
MAX		339	99.7		15.0	1129	15.87	550	2.96		73.00	0.06		8.55	3.13	27.50	239.0	188.0	729
MEAN		298	83.2		11.0	846	12.25	442	2.96		56.80	0.06		8.38	2.40	20.48	164.7	188.0	564.67
2004**																			
MIN	10	252	60.9		5.0	585	4.46	297	0.65		35.10	0.02	3.0	8.27	1.53	11.80	75.0	35.0	348
MAX	10	421	90.0		16.0	979	10.57	529	0.65		73.90	0.02	3.0	8.45	3.19	27.20	210.0	35.0	666
MEAN	10	325	74.3		10.3	796	8.19	415	0.65		55.77	0.02	3.0	8.33	2.45	20.47	147.3	35.0	511
2003**																			
MIN	22	326	73.9	10	8.0	662	5.38	361	0.07		42.80	0.01		8.23	1.84	15.60	102.0	5.0	451
MAX	22	448	94.3	10	17.0	1058	6.66	538	0.54		73.50	0.01		8.54	3.34	27.50	255.0	24.0	701
MEAN	22	394	84.4	10	13.8	906	6.22	476	0.24		64.28	0.01		8.38	2.85	24.23	194.5	14.5	584.25
2002**																			
MIN		389	81.0		17.0	970	9.17	495			67.00			8.23	3.00	26.00	179.0		616
MAX		421	87.0		19.0	1058	12.92	505			71.00			8.40	3.00	30.00	230.0		717
MEAN		398	84.8		18.5	995	10.70	501			69.75			8.30	3.00	28.25	207.8		652.5
2001**																			
MIN		311	62.0		8.4	724	8.20	307	0.20		37.00			8.23	2.00	15.00	97.0	17.0	386
MAX		426	85.0		19.0	1046	8.20	476	0.20		64.00			8.47	3.00	27.00	190.0	17.0	603
MEAN		385	76.3		14.8	907	8.20	419	0.20		55.50			8.34	2.75	23.00	156.8	17.0	536.5
2000**																			
MIN		325	63.0		6.0	630	6.20	318	0.10		39.00			8.19	2.00	14.00	83.0	5.0	376
MAX		420	76.0		16.0	907	14.00	415	0.10		59.00			8.32	3.00	26.00	157.0	7.0	572
MEAN		382	69.3		12.0	802	10.50	387	0.10		52.00			8.24	2.50	22.25	130.0	6.0	492
HISTORICAL 1989-2008																			
MIN	0.0	209	59.0	0.0	2.0	400	3.9	254	0.00	0.00	24.00	0.000	0.0	7.27	0.01	7.00	15.0	0.0	260
MAX	40.0	461	175.1	51.0	700.0	2050	15.9	1137	3.80	0.28	170.07	0.20	5.0	8.86	10.00	52.00	764.0	505.0	1532
MEAN	7.4	362	87.5	7.1	24.6	878.4	8.6	477.6	0.60	0.07	62.84	0.05	2.2	8.29	2.88	21.59	182.5	55.0	579.8
No. of Analysis	29	70	70	34	70	71	65	70	38	23	70	26	28	71	68	70	70	42	70

* Quality parameters are reported as mg/l unless otherwise noted.

** Data: Database input restricted to values greater then laboratory minimum detection limit.

TABLE 23: COTTONWOOD CANYON CREEK WATER QUALITY *

SW-1

2010** SAMPLE DATES	ACIDITY	ALKALINITY BICARBONATE	CALCIUM	CARBONATE	CHLORIDE	CONDUCTIVITY (umhos/cm)	HARDNESS	IRON TOTAL	IRON DISSOLVED	MAGNESIUM	MANGANESE	OIL & GREASE	PH (units)	POTASSIUM	SODIUM	SULFATE	TSS	TDS
20100610	17	384	97.54	0	20	1036	519	0.32	0	66.78	0.006	0	7.56	1.83	34.45	187	14	664
No. of Analysis	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2010**																		
MIN	1	1	1	0	1	1	1	0	0	1	0	0	1	1	1	1	1	1
MAX	17	384	98	1	20	1036	519	1	1	67	1	1	8	2	34	187	14	664
MEAN	9	193	49	1	11	519	260	1	1	34	1	1	4	1	18	94	8	333
2009**																		
MIN	12	358	95	0	20	992	527	0	0	70	0	0	8	2	35	169	6	663
MAX	14	400	100	0	22	1109	580	0	0	80	0	0	8	2	37	216	29	706
MEAN	13	379	97	0	21	1051	554	0	0	75	0	0	8	2	36	193	18	685
2008**																		
MIN		400	100		20	1109	0	580		0	80		0	8	2	37	216	29
MAX		400	100		20	1109	0	580		0	80		0	8	2	37	216	29
MEAN		400	100		20	1109	#DIV/0!	580		0	80		0	8	2	37	216	29
2007**																		
MIN		355	85		16	924	457	0		60	0		8	2	27	131	35	560
MAX		389	88		20	1026	513	0		71	0		8	2	34	149	35	630
MEAN		372	86		18	975	485	0		66	0		8	2	30	140	35	595
2006**																		
MIN		245	60		6	583	284	0		32	0		8	1	10	35	7	318
MAX		335	81		13	858	425	0		54	0		8	1	22	96	28	452
MEAN		302	72		10	755	369	0		46	0		8	1	17	71	14	405
2005**																		
MIN		237	60		5	535	281	0		31	0		8	1	11	37	9	336
MAX		372	83		14	968	456	0		60	0		8	2	25	125	17	565
MEAN		305	72		10	752	369	0		46	0		8	1	18	81	13	451
2004**																		
MIN		331	86		14	858	443			56			8	2	23	165	5	575
MAX		331	86		14	858	443			56			8	2	23	165	5	575
MEAN		331	86		14	858	443			56			8	2	23	165	5	575
2003**																		
MIN		442	95		20	1015	541	0		74	0		8	2	34	206	7	657
MAX		442	95		20	1015	541	0		74	0		8	2	34	206	7	657
MEAN		442	95		20	1015	541	0		74	0		8	2	34	206	7	657
2002**	NO FLOW DURING 2002																	
2001**																		
MIN		289	43		8	521	239	0		32			8.10	3.0	12.0	38	25	304
MAX		299	49		9	531	262	0		34			8.24	3.0	13.0	43	29	319
MEAN		294	46		9	526	251	0		33			8.17	3.0	12.5	41	27	312
2000**																		
MIN		289	43		8	521	239	0		32			8.10	3.0	12.0	38	25	304
MAX		299	49		9	531	262	0		34			8.24	3.0	13.0	43	29	319
MEAN		294	46		9	526	251	0		33			8.17	3.0	12.5	41	27	312
HISTORICAL 1977-2008																		
MIN	0.0	231	6.0	0.0	0.7	380.0	210.00	0.00	0.0	2	0.0	0.50	7.1	1.0	6.0	20.0	1	226
MAX	27.0	442	152.3	20.0	27.0	1026.0	541.0	15.90	0.4	78	1.3	358.00	8.7	21.0	60.0	238.7	1298	690
MEAN	5.7	337	67.1	5.6	12.5	690.7	343.1	0.82	0.1	40	0.1	11.10	8.0	2.8	20.2	75.8	65	386.8
No. of Analysis	46	91	90	21	91	52	58	81	19	91	64	41	86	87	90	91	81	91

* Quality parameters are reported as mg/l unless otherwise noted.

** Data: Database input restricted to values greater then laboratory minimum detection limit.

TABLE 24: COTTONWOOD CANYON CREEK WATER QUALITY *

SW-2

2010** SAMPLE DATES	ACIDITY	ALKALINITY BICARBONATE	CALCIUM	CARBONATE	CHLORIDE	CONDUCTIVITY (umhos/cm)	HARDNESS	IRON TOTAL	IRON DISSOLVED	MAGNESIUM	MANGANESE	OIL & GREASE	PH (units)	POTASSIUM	SODIUM	SULFATE	TSS	TDS
20100315	0	302	94.15	28	25	1062	559	0	0	78.63	0	0	8.33	6.24	42.08	258	0	736
20100610	0	335	90.49	0	23	1053	515	0	0	70.17	0	0	8.3	6.36	41.9	236	0	699
20100908	0	327	88.6	0	15	985	487	0.23	0	64.49	0.002	0	8.35	6.51	35.41	232	29	674
20101208	0	320	84.33	14	14	1016	480	0	0	65.49	0	0	8.29	6.67	39.1	230	0	689
No. of Analysis	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
2010**																		
MIN	0	302	84	0	14	985	480	0	0	64	0	0	8	6	35	230	0	674
MAX	0	335	94	28	25	1062	559	0	0	79	0	0	8	7	42	258	29	736
MEAN	0	321	89	11	19	1029	510	0	0	70	0	0	8	6	40	239	7	700
2009**																		
MIN	0	293	79	0	15	1001	490	0	0	69	0	0	8	5	36	220	0	630
MAX	9	340	101	5	22	1099	577	0	0	79	0	0	8	7	44	242	12	782
MEAN	2	318	88	1	18	1032	519	0	0	73	0	0	8	6	39	231	7	690
2008**																		
MIN	0	288	70	0	15	915	462	0		70	0		8	4	33	178	0	526
MAX	0	360	96	0	26	1162	549	0		75	0		8	7	43	244	10	718
MEAN	0	315	85	0	19	1034	507	0		71	0		8	6	37	218	3	652
2007**																		
MIN	8	287	78	5	14	995	464	0		65	0		8	3.59	34	170	16	597
MAX	8	326	92	26	22	1156	515	0		71	0		8	7.23	41	257	16	716
MEAN	8	305	87	16	17	1068	500	0		68	0		8	6.0575	37	231	16	680
2006**																		
MIN		244	57		8	597	289	0		35	0		8	1.39	12	45	5	331
MAX		327	86		23	1057	503	0		70	0		8	4.16	34	183	35	628
MEAN		298	75		17	905	432	0		59	0		8	3.19	28	138	20	520
2005**																		
MIN		233	58	9	7	558	282	0		34	0		8	1.46	12	46	5	333
MAX		331	92	9	42	1283	546	0		77	0		9	5.53	46	250	38	768
MEAN		303	75	9	22	971	446	0		63	0		8	4.03	32	174	18	593
2004**																		
MIN		287	73	8	16	908	448	1		60	0		8	3.51	33	214	10	602
MAX		345	87	8	45	1097	510	1		71	0		8	6.94	49	289	49	692
MEAN		310	81	8	28	1001	472	1		66	0		8	5.6825	41	243	30	659
2003**																		
MIN		356	78.0	6	16	993	479			69			8.26	5.01	38.9	238	6	630
MAX		391	91.2	7	25	1079	535			77			8.49	7.47	46.0	274	6	738
MEAN		372	85.1	7	22	1035	510			72			8.41	6.33	42.2	258	6	696
2002**																		
MIN		361	76.0	5	19	1021	474			68			8.25	6.00	43.0	249	15	702
MAX		398	87.0	8	28	1096	505			70			8.42	8.00	46.0	273	15	758
MEAN		375	80.0	7	24	1064	484			69			8.36	6.75	44.5	259	15	730
2001**																		
MIN		288	19.0	5	13	563	113	0.10		16			8.36	1.00	25.0	57	6	335
MAX		627	46.0	20	92	1251	271	0.50		38			8.62	5.00	268.0	103	29	786
MEAN		489	31.5	12	39	1037	192	0.30		28			8.50	3.50	171.8	87	14	642
2000**																		
MIN		288	19.0	5	13	563	113	0.10		16			8.36	1.00	25.0	57	6	335
MAX		627	46.0	20	92	1251	271	0.50		38			8.62	5.00	268.0	103	29	786
MEAN		489	31.5	12	39	1037	192	0.30		28			8.50	3.50	171.8	87	14	642
HISTORICAL 1977-2008																		
MIN	0.00	233	11.1	0.0	1.5	410	113.00	0.00	0.00	2.400	0.0	0.00	7.00	1	8.0	19.5	0	267
MAX	25.00	642	136.9	85.0	179.0	1709	631.00	16.20	1.25	109.00	1.4	39.00	8.93	25.6	268.0	289.0	1004	1170
MEAN	4.96	352	67.09	11.25	22.76	929.25	382.32	1.03	0.15	47.50	0.09	3.11	8.16	4.7	47.0	128.0	69	506
No. of Analysis	46	111	111	40	111	72	78	91	26	111	67	54	106	110	110	111	91	111

* Quality parameters are reported as mg/l unless otherwise noted.

** Data: Database input restricted to values greater then laboratory minimum detection limit.

TABLE 25: COTTONWOOD CANYON CREEK WATER QUALITY *
SW-3

2010** SAMPLE DATES	ACIDITY	ALKALINITY BICARBONATE	CALCIUM	CARBONATE	CHLORIDE	CONDUCTIVITY (umhos/cm)	HARDNESS	IRON TOTAL	IRON DISSOLVED	MAGNESIUM	MANGANESE	OIL & GREASE	PH (units)	POTASSIUM	SODIUM	SULFATE	TSS	TDS
2010**	NO FLOW DURING 2010																	
2009**	NO FLOW DURING 2009																	
2008**																		
MIN	1	1	1		1	1	1	0.08		1	0.016		1.00	1.00	1	1	0	1
MAX	10	466	124		303	2300	784	1.00		115	1.000		8.21	4.46	220	395	1	1498
MEAN	7	311	83		202	1534	523	0.39		77	0.344		5.81	3.31	147	264	0	999
2007**																		
MIN	6	352	110		330	2380	748	0		115	0		8	5	220	382	9	1515
MAX	6	375	117		336	2390	778	0		118	0		8	6	228	401	9	1544
MEAN	6	364	113		333	2385	763	0		117	0		8	5	224	392	9	1530
2006**																		
MIN		246	58		33	738	312	0		41	0		8	2	27	69	37	409
MAX		346	105		215	1914	668	0		99	0		8	4	140	279	37	1120
MEAN		296	81		124	1326	490	0		70	0		8	3	83	174	37	765
2005**																		
MIN		228	57	10	10	566	301	0		39	0		9	1	15	51	14	332
MAX		433	153	10	447	3070	913	0		129	0		9	5	221	444	23	1835
MEAN		331	105	10	229	1818	607	0		84	0		9	3	118	248	19	1084
2004**	NO FLOW DURING 2004																	
2003**	NO FLOW DURING 2003																	
2002**	NO FLOW DURING 2002																	
2001**																		
MIN		485	15	18	31	1230	99	0.30		15.0			8.52	4.00	233	112	12	774
MAX		602	32	48	607	2800	216	0.30		33.0			9.00	5.00	531	147	18	1563
MEAN		552	23	30	181	1652	159	0.30		24.8			8.75	4.50	325	130	15	988
2000**																		
MIN		485	15	18	31	1230	99	0.30		15.0			8.52	4.00	233	112	12	774
MAX		602	32	48	607	2800	216	0.30		33.0			9.00	5.00	531	147	18	1563
MEAN		552	23	30	181	1652	159	0.30		24.8			8.75	4.50	325	130	15	988
HISTORICAL 1977-2008																		
MIN	0.1	228	14.3	0.0	1.7	506	99.00	0.04	0.00	2.400	0.0	0.00	7.20	1	3	22.0	0	40
MAX	27.0	633	159.0	70.0	607.0	3070	913.00	19.00	0.43	129.00	2.5	114.00	9.00	30	531	444.0	5024	1835
MEAN	5.4	371	71.8	12.5	56.9	1298	424.84	1.06	0.13	51.17	0.1	4.69	8.15	4.28	84.0	170.3	132	637
No. of Analysis	47	95	94	37	94	56	62	84	24	95	60	61	90	93	94	95	80	95

* Quality parameters are reported as mg/l unless otherwise noted.

** Data: Database input restricted to values greater then laboratory minimum detection limit.

TABLE 26: GRIMES WASH WATER QUALITY *

GWR01 - RIGHT FORK

2010 **SAMPLE DATES	ACIDITY	ALKALINITY BICARBONATE	CALCIUM	CARBONATE	CHLORIDE	CONDUCTIVITY (umhos/cm)	HARDNESS	IRON TOTAL	IRON DISSOLVED	MAGNESIUM	MANGANESE	OIL & GREASE	PH (units)	POTASSIUM	SODIUM	SULFATE	TSS	TDS
2010**	NO SAMPLES COLLECTED DURING 2010 -NO FLOW																	
2009**	NO SAMPLES COLLECTED DURING 2009 -NO FLOW																	
2008**	NO SAMPLES COLLECTED DURING 2008 -NO FLOW																	
2007**	NO SAMPLES COLLECTED DURING 2007 -NO FLOW																	
2006**	NO SAMPLES COLLECTED DURING 2006 -NO FLOW																	
2005**	NO SAMPLES COLLECTED DURING 2005 -NO FLOW																	
2004**	NO SAMPLES COLLECTED DURING 2004 -NO FLOW																	
2003**	NO SAMPLES COLLECTED DURING 2003 -NO FLOW																	
2002**	NO SAMPLES COLLECTED DURING 2002 -NO FLOW																	
2001**	NO SAMPLES COLLECTED DURING 2001 -NO FLOW																	
2000**	NO SAMPLES COLLECTED DURING 2000 -NO FLOW																	
HISTORICAL 1979-2008																		
MIN	0.1	104	30.0	1.0	3.0	190	112	0.01	0.05	6.30	0.01	0.5	7.20	1.60	1.85	20.0	0.5	115
MAX	39.0	320	57.0	1.0	26.4	750	320	20.60	3.31	46.20	0.30	9.0	8.70	7.64	20.44	161.7	7116.0	700
MEAN	5.5	238	42.6	1.0	10.8	557	238	1.38	0.47	31.96	0.06	1.8	8.09	3.21	13.20	63.7	370.2	338
No. of Analysis	11	10	10	9	12	43	10	47	9	9	42	12	47	10	10	14	47	47

* Quality parameters are reported as mg/l unless otherwise noted.

** Data: Database input restricted to values greater then laboratory minimum detection limit.

TABLE 27: GRIMES WASH WATER QUALITY *

GWR02 - LEFT FORK

2010** SAMPLE DATES	ACIDITY	ALKALINITY BICARBONATE	CALCIUM	CARBONATE	CHLORIDE	CONDUCTIVITY (umhos/cm)	HARDNESS	IRON TOTAL	IRON DISSOLVED	MAGNESIUM	MANGANESE	OIL & GREASE	PH (units)	POTASSIUM	SODIUM	SULFATE	TSS	TDS
2010**	NO SAMPLES COLLECTED DURING 2010 -NO FLOW																	
2009**	NO SAMPLES COLLECTED DURING 2009 -NO FLOW																	
2008**	NO SAMPLES COLLECTED DURING 2008 -NO FLOW																	
2007**																		
MIN		297	56.2		11	810	359			53			8.3	1.1	40	129		527
MAX		297	56.2		11	810	359			53			8.3	1.1	40	129		527
MEAN		297	56.2		11	810	359			53			8.3	1.1	40	129		527
2006**																		
MIN		263	51	16	9	732	305	1		43	0		8.4	1.2	34	82	9	391
MAX		303	71	16	9	838	369	1		47	0		8.5	1.4	39	112	25	497
MEAN		283	61	16	9	785	337	1		45	0		8.4	1.3	37	97	17	444
2005**																		
MIN		286	55	9	9	803	330	0		47	0		8.5	1.4	38	101	5	450
MAX		304	69	25	9	818	380	0		50	0		8.6	1.8	40	117	53	491
MEAN		295	62	17	9	811	355	0		49	0		8.5	1.6	39	109	29	471
2004**	No flow during 2004																	
2003**	No flow during 2003																	
2002**	No flow during 2002																	
2001**																		
MIN		329	44.0	7.0	8.0	806	303	0.10		44.00			8.40	1.00	35.00	109.2	10.0	451
MAX		370	72.0	7.0	9.8	917	361	0.10		47.00			8.66	1.00	42.00	122.0	10.0	460
MEAN		350	58.0	7.0	8.9	861.5	332	0.10		45.50			8.53	1.00	38.50	115.6	10.0	455.5
2000**																		
MIN		296	40.0		10.0	691	302			49.00			8.48	2.00	42.00	136.0	17.0	423
MAX		296	40.0		10.0	691	302			49.00			8.48	2.00	42.00	136.0	17.0	423
MEAN		296	40.0		10.0	691	302			49.00			8.48	2.00	42.00	136.0	17.0	423
HISTORICAL 1979-2007																		
MIN	1.0	188	2.3	1.0	6.0	410	196	0.02	0.02	23.80	0.01	0.1	7.30	1.00	11.10	30.4	0.5	212
MAX	34.0	482	88.9	26.0	156.0	917	460	2.52	0.22	68.50	0.15	3.5	8.85	3.00	42.00	212.0	1428.0	570
MEAN	4.2	312	51.5	6.4	14.6	652	308	0.22	0.08	42.54	0.03	1.0	8.08	1.50	31.30	91.4	51.8	380
No. of Analysis	16	28	28	21	28	63	28	59	7	28	51	15	65	28	28	29	62	65

* Quality parameters are reported as mg/l unless otherwise noted.

** Data: Database input restricted to values greater then laboratory minimum detection limit.

TABLE 28: GRIMES WASH WATER QUALITY *

GWR03 - RIGHT FORK

2010** SAMPLE DATES	ACIDITY	ALKALINITY BICARBONATE	CALCIUM	CARBONATE	CHLORIDE	CONDUCTIVITY (umhos/cm)	HARDNESS	IRON TOTAL	IRON DISSOLVED	MAGNESIUM	MANGANESE	OIL & GREASE	PH (units)	POTASSIUM	SODIUM	SULFATE	TSS	TDS
2010**	NO SAMPLES COLLECTED DURING 2010 -NO FLOW																	
No. of Analysis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2009**																		
MIN	7	293	144	0	475	2810	931	0	0	139	0	0	8	8	262	578	0	1863
MAX	7	293	144	0	475	2810	931	0	0	139	0	0	8	8	262	578	0	1863
MEAN	7	293	144	0	475	2810	931	0	0	139	0	0	8	8	262	578	0	1863
2008**																		
MIN		335	158		397	2740	1004	0.17		148.2	0.007		8.18	8.06	236	561	22	1873
MAX		335	158		397	2740	1004	0.17		148.2	0.007		8.18	8.06	236	561	22	1873
MEAN		335	158		397	2740	1004	0.17		148.2	0.007		8.18	8.06	236	561	22	1873
2007**																		
MIN		275	80		204	1689	564	0.08		88	0.00		8.11	4.08	143	300	6	1082
MAX		340	157		517	3210	1049	0.09		161	0.01		8.50	8.66	294	622	6	2071
MEAN		311	131		397	2653	863	0.09		130	0.01		8.28	6.78	231	486	6	1685
2006**																		
MIN		277	64	15	29	900	363	0.07		48	0.00		8.40	1.66	45	122	10	512
MAX		282	66	15	73	1081	388	0.50		56	0.00		8.47	2.14	70	142	16	619
MEAN		280	65	15	51	991	376	0.29		52	0.00		8.44	1.90	57	132	13	565.5
2005**																		
MIN		257	70	7	35	856	373	0.07		48	0.00		8.34	2.09	48	134	11	581
MAX		308	145	16	360	2760	799	0.74		106	0.02		8.50	5.77	215	427	56	1620
MEAN		282	97	12	165	1622	537	0.50		71	0.01		8.44	3.57	116	244	34	974.3
2004**																		
MIN		311	122		183	1657	674	0.09	1.18	90	0.00		7.68	5.74	118	434	7	1159
MAX		394	192		539	3020	1048	2.62	1.18	144	0.04		8.21	7.73	252	653	134	2006
MEAN		349	167		433	2629	945	0.94	1.18	129	0.02		8.04	7.19	213	582	49	1758
2003**																		
MIN	10	356	133	7	182	1781	756	0.03	0.02	101	0.01	2	8.01	6.41	113	460		1242
MAX	12	447	163	7	294	2290	909	0.62	0.02	124	0.02	2	8.43	7.08	165	549		1579
MEAN	11	395	145	7	221	2006	842	0.19	0.02	116	0.01	2	8.26	6.75	136	517		1421
2002**																		
MIN		318	146		296	2250	859			118			7.84	7.00	171	538		1584
MAX		438	166		708	3650	1065			158			8.49	9.00	397	783		2449
MEAN		390	155		433	2737	930			132			8.07	7.67	248	631		1894
2001**																		
MIN		346	80		60	1169	418	0.80		53			7.87	2.00	59	172	6	601
MAX		423	143		651	3640	843	0.80		118			8.43	6.00	429	551	37	1985
MEAN		372	108		239	2151	623	0.80		86			8.24	4.50	194	361	22	1272
2000**																		
MIN		298	105		223	1895	563	0.50		73			8.15	5.00	150	392	10	1347
MAX		323	132		3226	9960	696	1.00		101			8.22	6.00	1870	464	70	5862
MEAN		311	116		1030	4136	650	0.75		88			8.20	5.25	630	432	43	2568
HISTORICAL 1979-2008																		
MIN	0.1	117	5.1	0.0	10.0	220	146.00	0.01	0.00	10.700	0.0	0.00	7.10	0.01	9.0	46.0	0.5	152
MAX	127.0	486	274.0	16.0	4531.0	12000	1165.00	22.60	2.26	160.80	0.9	27.00	8.81	12.80	3181.0	783.0	9702	7160
MEAN	12.0	342	126.1	2.6	297.0	1718.6	660.34	0.78	0.19	83.29	0.1	2.85	8.07	5.83	204.8	357.6	160.1	1089.51
No. of Analysis	59	94	94	53	96	134	94	121	55	94	100	55	138	93	94	97	116	136

* Quality parameters are reported as mg/l unless otherwise noted.

** Data: Database input restricted to values greater then laboratory minimum detection limit.

Table 29

EAST MOUNTAIN SPRINGS DISCHARGE

2010

Spring	Date Sampled	Flow (GPM)	Temp. C	Date Sampled	Flow (GPM)	Temp. C	Seasonal Net Change %
Sheba	07/14/2010	3.9	6.7	10/12/2010	0.6	9.5	-84.62
Elk Spring*	07/12/2010	Developed		10/12/2010	Developed		
Burnt Tree	07/13/2010	1.5	8.8	10/13/2010	1.2	7.8	-20.00
Jerk Water							
Pine Springs							
Pine Sp. Trough							
Ted's Tub	07/12/2010	18.0	8.5	10/12/2010	2.7	7.7	-85.00
79-1							
79-2	07/13/2010	1.2	6.7	10/13/2010	0.8	6.0	-33.33
79-3							
79-4							
79-5							
79-6							
79-7							
79-8							
79-9							
79-10	07/14/2010	5.2	9.4	10/13/2010	1.9	7.0	-63.46
79-11							
79-12	07/12/2010	Dry		10/12/2010	Dry		
79-13							
79-14							
79-15	07/12/2010	1.4	7.8	10/12/2010	Dry		
79-16							
79-17							
79-18							
79-19							
79-20							
79-21							
79-22							
79-23	07/13/2010	Dry		10/12/2010	Dry		
79-24	07/13/2010	Dry		10/12/2010	Dry		
79-25							
79-26	07/14/2010	Dry		10/13/2010	Dry		
79-27							
79-28	07/13/2010	0.8	8.4	10/13/2010	0.9	7.1	12.50
79-29	07/14/2010	0.3	7.3	10/13/2010	0.4	4.9	
79-30							
79-31							
79-32	07/14/2010	Dry		10/13/2010	Dry		0.00
79-33							
79-34	07/12/2010	4.5	6.9	10/12/2010	1.1	6.8	-75.56
79-35	07/12/2010	1.5	7.6	10/12/2010	0.8	7.4	-46.67
79-36							
79-37							
79-38	07/12/2010	2.6	14.2	10/12/2010	Seep		
79-39							
79-40	07/13/2010	Dry		10/13/2010	Dry		

Table 29

EAST MOUNTAIN SPRINGS DISCHARGE

2010

Spring	Date Sampled	Flow (GPM)	Temp. C	Date Sampled	Flow (GPM)	Temp. C	Seasonal Net Change %
80-41	07/13/2010	Seep		10/13/2010	Dry		
80-42							
80-43	07/13/2010	Dry		10/13/2010	Dry		
80-44	07/13/2010	Damp		10/13/2010	Dry		
80-45							
80-46	07/13/2010	Dry		10/13/2010	Dry		
80-47	07/13/2010	0.7	9.6	10/13/2010	0.6	7.1	-14.29
80-48	07/12/2010	0.4	9.8	10/12/2010	3.3	7.6	
80-49							
80-50	07/08/2010	Seep		10/19/2010	Seep		
82-51	07/13/2010	Dry		10/13/2010	Dry		
82-52	07/13/2010	Dry		10/12/2010	Dry		
84-53							
84-54							
84-55							
84-56	07/13/2010	Seep		10/13/2009	Dry		
85-57							
86-58							
86-59							
89-60	07/12/2010	1.9	19.0	10/12/2010	Dry		
89-61*	07/12/2010	Developed		10/12/2010	Developed		
89-62							
89-63							
89-64							
89-65	07/12/2010	2.0	5.8	10/12/2010	0.6	6.5	
89-66	07/12/2010	Dry		10/12/2010	Dry		
89-67	07/12/2010	4.0	5.6	10/12/2010	1.6	4.5	-60.00
89-68	07/12/2010	Seep	14.1	10/12/2010	Seep		
89-69							
89-70							
89-71							
91-72	07/08/2010	2.7	13.9	10/14/2010	3.7	14.4	37.04
91-73	07/08/2010	Dry		10/14/2010	Dry		

TOTAL FLOW FOR JULY **49.9** **TOTAL FLOW FOR OCTOBER** **16.5**
(W\OUT 80-50, 91-72 & 73)

Net % Change - Average -36.12
Net % Change - By Volume -66.93

*Note: Elk Spring and 89-61 was developed for culinary use by NEWUSSD in early 2009. Flow rates not included.

Table 29

EAST MOUNTAIN SPRINGS DISCHARGE

2010

Spring	Date Sampled	Flow (GPM)	Temp. C	Date Sampled	Flow (GPM)	Temp. C	Seasonal Net Change %
			MILL FORK 2010				
EM-216	07/22/2009	Seep		10/14/2010	Seep		
EMPOND	07/15/2010	3.6	8.1	10/12/2010	1.3	8.6	-63.89
GRANTS SPRING	07/15/2010	1.5	5.8	10/14/2010	0.7	6.3	-56.00
LITTLE BEAR	07/22/2010	297.0	8.6	10/21/2010	270.0	5.4	-9.09
JV-9	07/15/2010	1.3	8.4	10/20/2010	0.4	9.0	-72.31
JV-34	07/15/2010	9.3	16.0	10/20/2010	2.0	8.2	-78.49
MF-7	07/12/2010	33.3	5.1	10/19/2010	23.1	4.7	-30.63
MF-10	07/12/2010	18.8	3.8	10/12/2010	4.9	3.0	-73.94
MF-19B	07/12/2010	1.2	10.3	10/12/2010	0.4	5.1	
MF-213	07/12/2010	46.2	10.6	10/19/2010	22.2	7.8	-51.95
MF-219	07/15/2010	10.5	4.7	10/14/2010	4.9	5.1	-53.33
MFR-10	07/15/2010	23.1	7.4	10/14/2010	4.2	7.6	-81.82
MFR-30	07/15/2010	1.6	5.6	10/14/2010	Seep		
RR-5	07/19/2010	9.0	4.7	10/12/2010	0.4	5.6	-95.56
RR-15	07/15/2010	39.2	3.5	10/19/2010	8.6	4.5	-78.06
RR-23A	07/15/2010	49.6	4.3	10/19/2010	13.0	5.5	-73.79
SPI-26	07/19/2010	16.2	4.5	10/12/2010	5.5	7.3	-66.05
SPI-29	07/19/2010	0.9	4.2	10/12/2010	0.1	7.1	
UJV-101	07/15/2010	1.7	6.4	10/20/2010	0.9	7.4	-47.06
UJV-206	07/15/2010	1.6	8.2	10/20/2010	0.9	5.8	-43.75
UJV-213	07/15/2010	0.9	7.8	10/20/2010	0.2	9.2	-77.78
TOTAL FLOW FOR JULY		**566.5**			**363.6**		
				Net % Change - Average			-61.97
				Net % Change - By Volume			-35.81

Table 30: East Mountain Yearly Spring Discharge Variations (GPM)

SOUTHERN AREA

July Flow Data

Spring	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Burnt Tree	30.5	26.6	26.1	17.5	10.2	12.0	6.4	4.1	2.0	4.0	8.6	7.5	7.5	5.5	8.5	6.8	5.0	3.3	5.6	3.4	2.2	2.0	6.0	7.0	3.6	3.6	2.8	1.5
Elk Spring*	642.3	427.9	390.5	309.7	217.0	217.4	78.5	130.8	176.0	116.8	369.9	46.2	599.3	309.0	235.0	413.0	309.0	107.0	131.0	46.0	73.0	110.0	280.0	309.0	91.0	91.0	Developed	Developed
Sheba	22.9	19.7	14.4	8.6	11.4	10.4	1.1	8.1	10.1	6.3	11.0	0.9	10.6	14.9	4.8	7.2	6.1	2.6	2.9	0.4	3.0	3.1	6.5	5.0	1.3	1.3	2.6	3.9
Ted's Tub	89.0	48.0	39.1	31.6	69.0	60.0	5.0	13.0	21.0	13.6	51.0	6.0	76.2	36.7	42.9	83.2	30.0	20.0	24.0	3.0	10.7	15.0	32.0	38.0	11.9	32.0	11.8	18
79-2	9.1	9.7	5.5	2.9	4.0	2.1	2.7	3.9	2.4	2.3	7.5	1.7	2.6	2.0	2.1	2.1	2.2	1.9	1.9	0.1	1.2	2.0	2.0	2.6	1.2	2.1	1.5	1.2
79-10	37.1	20.0	33.3	26.1	26.1	25.0	7.0	10.2	12.5	10.5	30.0	4.0	30.0	17.6	14.0	24.0	20.0	5.2	10.3	1.3	5.5	5.7	16.0	21.0	3.2	11.4	5.9	5.2
79-15	42.9	26.1	18.2	18.2	14.6	12.7	2.9	3.0	5.0	4.1	20.7	2.0	33.3	11.0	13.6	18.3	15.0	6.3	10.5	0.1	4.8	7.6	12.0	15.0	3.9	15.8	0.7	1.4
79-23	20.0	3.6	6.8	0.6	damp	damp	dry	dry	damp	dry	damp	dry	no flow	dry	dry	0.2	dry	dry	dry	dry	dry	dry	Dry	Damp	Dry	Dry	Dry	Dry
79-24	9.3	6.1	5.0	4.3	damp	0.8	dry	dry	dry	dry	damp	dry	0.1	dry	dry	1.0	dry	dry	dry	dry	dry	dry	Dry	Dry	Dry	Dry	Dry	Dry
79-26	20.7	20.0	10.9	8.7	1.5	3.3	0.3	dry	damp	damp	10.0	dry	10.0	0.8	5.0	7.9	2.7	1.4	4.3	0.1	dry	dry	5.6	6.0	0.01	1.00	Dry	Dry
79-29	10.0	6.2	6.0	4.7	2.5	2.6	1.1	1.3	1.7	0.8	2.9	0.7	3.1	1.2	1.0	3.0	1.7	1.3	1.5	0.1	0.6	seep	1.0	0.6	0.2	1.0	0.6	0.3
79-32	3.3	3.1	2.7	1.3	1.0	0.6	0.5	damp	no flow	no flow	1.3	damp	1.0	0.6	1.0	2.2	1.0	0.4	0.6	0.1	0.1	seep	0.3	0.2	Seep	Seep	0.2	Dry
79-34	56.7	42.9	18.5	16.7	10.5	13.3	dry	dry	0.3	damp	13.0	dry	30.0	7.5	5.5	13.2	8.6	0.4	8.4	dry	1.8	2.0	13.5	17.4	0.5	13.9	3.7	4.5
79-35	15.0	10.5	10.5	7.8	6.3	2.7	dry	1.9	4.3	4.4	8.9	0.5	3.0	4.5	8.6	4.6	5.0	2.7	4.5	0.8	1.3	2.3	3.5	3.9	1.0	2.0	1.7	1.5
79-38	10.9	9.2	4.7	3.6	8.3	10.0	1.1	7.8	6.5	2.3	6.4	0.5	10.0	7.5	4.0	7.5	5.0	4.0	3.3	0.1	2.3	2.4	4.0	5.0	0.5	4.9	1.2	2.6
79-40	15.0	8.3	5.6	4.7	2.0	5.4	dry	dry	dry	dry	4.0	dry	2.0	0.5	1.4	2.0	1.7	dry	1.3	dry	dry	dry	1.0	1.2	Dry	Dry	Dry	Dry
80-41	10.9	15.0	5.8	4.1	2.5	3.9	dry	dry	dry	dry	4.0	dry	2.4	0.5	4.5	5.4	3.7	1.3	4.8	dry	dry	1.4	5.4	6.0	Seep	Seep	Damp	Seep
80-43	24.0	20.0	6.6	3.1	0.4	1.8	dry	dry	dry	dry	2.7	dry	1.5	damp	damp	0.5	0.1	dry	dry	dry	dry	dry	Seep	Seep	Dry	Damp	Dry	Dry
80-44	24.0	13.1	5.5	2.2	dry	0.5	dry	dry	dry	dry	1.4	dry	3.0	damp	0.2	0.5	0.1	0.5	0.5	dry	dry	damp	Damp	Damp	Damp	Damp	Damp	Damp
80-46	60.0	28.3	18.2	12.0	4.0	6.7	dry	dry	dry	dry	7.5	dry	5.0	damp	4.0	4.6	2.5	damp	2.1	dry	dry	seep	2.9	4.0	Dry	Dry	Dry	Dry
80-47	20.0	15.0	12.5	12.2	7.4	9.9	4.6	2.0	1.3	3.3	13.3	2.2	12.6	5.0	9.2	10.5	8.6	5.0	9.4	2.0	1.5	4.4	7.8	6.0	2.4	3.0	1.4	0.7
82-51	10.0	5.9	3.8	2.6	damp	damp	dry	dry	0.1	damp	3.2	damp	3.0	0.5	2.0	2.1	0.7	0.1	1.3	dry	0.1	seep	1.0	1.0	Dry	1.3	Dry	Dry
82-52	80.0	48.0	32.1	23.3	20.1	21.5	2.6	1.3	1.0	1.0	16.7	2.0	15.0	7.0	12.0	12.0	12.0	3.4	8.0	1.8	1.0	1.0	16.0	17.8	2.9	1.6	Seep	Dry
84-56	9.6	6.3	4.7	3.7	2.5	2.9	1.6	1.0	0.5	0.6	1.0	0.3	1.0	0.3	0.7	1.7	0.9	0.2	0.8	0.1	dry	seep	Seep	0.5	0.01	Damp	Seep	Seep
Totals	1273.2	839.5	687.0	530.2	421.3	425.5	115.4	188.4	244.7	170.0	595.0	74.5	862.2	432.6	379.9	633.5	441.6	167.0	237.0	59.4	109.1	158.9	416.5	467.2	123.6	185.9	34.1	40.8

xx No measurement - utilized yearly comparison.

*Note: Elk Spring and 89-61 was developed for culinary use by NEWUSSD in early 2009.

MILL FORK AREA

Spring	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
EM-216												0.3	0					0	0.5	0	Seep	Dry	Dry	1.8	0.0	Damp	Damp	Damp
EMPOND											3	6	0.5					0.8	2.3	1.3	3.3	3.5	6.7	4.3	2.3	4.0	4.0	1.3
GRANTS SPRING																				0.4	1.32	1.6	2.3	2.3	1.0	1.8	1.3	1.5
LITTLE BEAR*	430	409	357	383	388	340	332	270	296	243	419	218	418	443	447	477	428	395	373	240	284	385.0	350.0	396.0	349.0	378.0	366.0	297.0
JV-9																		1.5	1.8	0.8	1.6	1.4	1.7	2.2	1.2	1.6	3.0	1.3
JV-34																		3.6	47.2	0	4.3	9.5	37.0	80.0	8.6	42.8	17.3	9.3
MF-7											20	10						9.2	30	13.3	21.1	23.7	42.0	30.0	19.4	34.7	33.3	33.3
MF-10											0.5	0.25	10					6.8	27.3	14.3	60	35.3	40.0	54.0	19.2	46.2	33.4	18.8
MF-19B												0.25	0.5					0.4	0	1.3	1.3	1.9	2.3	1.4	0.5	1.9	1.2	1.2
MF-213																		17.6	26.1	20.1	27	33.0	68.0	55.0	29.3	58.30	46.2	46.2
MF-219																		2.1	5.6	2.4	2.7	3.1	5.0	2.3	4.0	2.0	5.3	10.5
MFR-10																			151	4.9	11.81	11.6	12.9	19.4	10.4	29.1	11.3	23.1
MFR-30																			26.6	0	0.75	1.0	1.2	2.3	0.1	2.3	1.2	1.6
RR-5												2	0					0	1.6	1.1	8.66	8.7	15.0	13.8	3.0	15.4	4.0	9.0
RR-15												20	10					8	13.9	12	24	26.0	10.6	37.0	17.1	32.4	21.1	39.2
RR-23A													5					10	15	11	26.6	42.0	34.0	32.0	30.0	8.7	31.6	49.6
SPI-26																		4.4	4.3	5.8	18.6	14.0	26.7	23.5	9.0	28.6	2.8	16.2
SPI-29																			0.5	0.4	1.6	1.7	1.0	0.8	0.3	1.0	0.7	0.9
UJV-101											0	0	0.3					0.8	3.9	0	1.1	1.5	1.6	0.8	0.7	1.3	1.3	1.7
UJV-206											0	0.5	0					2.1	2.6	1.5	1.1	2.4	6.0	7.9	3.2	3.40	2.5	1.6
Totals											442.5	257.3	444.3					462.3	733.2	330.6	500.8	606.9	664.0	766.8	508.4	693.5	587.5	563.3

*Note: Little Bear flow values for 2006 -2008 has been corrected.

Table 31a

Mode of Occurrence – East Mountain Springs – Southern Area

Occurrences

Stratigraphic Location	Permeable fluvial channels that intersect the land surface	Flow along permeable strata underlain by impermeable mudstone which intersects he land surface	Contact of permeable beds and the Roans Canyon Fault zone	Mode of Occurrence not identified
Base of Flagstaff		79-6, 79-7, 79-35, 86-58, 89-69	Sheba Springs, 79-1	
North Horn Formation	Ted's Tub, Burnt Tree, 79-2, 79-3, 79-8, 79-9, 79-11, 79-12, 79-13, 79-14, 79-15, 79-16, 79-17, 79-21, 79-22, 79-26, 79-27, 79-28, 79-29, 79-34, 79-39, 80-42, 80-43, 80-46, 80-47, 80-48, 80-53, 84-56, 86-59, 89-62, 89-63, 89-64, 89-65, 89-66, 89-67, 89-68, 89-71		Elk Springs, 79-10, 79-18, 79-19, 79-20, 84-54, 89-61, 89-70	
Base of North Horn Formation		79-23, 79-25, 79-32, 79-36, 79-37, 79-38, 84-55	79-30, 79-31	
Other Stratigraphic Horizons	Blackhawk Formation 80-50, 84-57, 91-73 Price River Formation Bear Canyon Fault Zone 82-51		Price River 80-49, Blackhawk 91-72	Flagstaff Limestone 79-4, 79-5, Pine Springs Trough Price River Formation 79-24, 79-33, 79-40, 80-41, 80-44, 80-45, 82-52, Jerk Water, 89-60 (Alpine)

Table 31b

Mode of Occurrence – East Mountain Springs – Mill Fork Area

Occurrences

Stratigraphic Location	Flow along permeable strata (fluvial channels) underlain by impermeable mudstone which intersects he land surface
Alluvium **Joes Valley Alluvium** **JV-1 through JV-35**	
Flagstaff Limestone	EM-221A
North Horn Formation	EM-216, EM-217, EM-218, EM-221B, EM-222,EM-223, EM-227, EM-228, EMPOND, GRANTS SPRING, JV-36, JV-37, JV-38, JV-39, JV-40, JV-41, JV-42, JV-43, JV-44, JV-45, JV-46, JV-47, JV-48, JV-49, JV-50, JV-51, JV-52, MF-10, MF-11, MF-12, MF-13, MF-14, MF-14A, MF-15, MF-16, MF-18, MF-18A, MF 18B, MF-18C, MF-19A, MF-19B, MF-19E, MF-19H, MF-19I, MF-21, MF-217, MF-218, MF-219, MF-220, MF-221, MFR-1, MFR-2, MFR-3, MFR-7, MFR-8, MFR-9, MFR-10, MFR-11, MFR-16, MFR-17, MFR-18, MFR-19, MFR-20, MFR-21, MFR-22, MFR-23, MFR-24, RR-2, RR-2A, RR-2B, RR-3, RR-4, RR-4A, RR-5, RR-6, RR-6A, RR-7A, RR-10, RR-11, RR-12, RR-14, RR-14A, RR-14B, RR-15, RR-16, RR-17, RR-18, RR-20, RR-21, RR-22, RR-23, RR-23A, RR-24, RR-24A, RR-25, RR-26, RR-27, RR-28, RR-30, RR-34, SP1-26, SP1-29, SP1-31, SP2-42, UJV-100, UJV-100A, UJV-104, UJV-105, UJV-202, UJV-203
Upper Price River Formation	EM-214, EM-215, MF-1, MF-4, MF-4A, MF-5, MF-20, MFR-4, MFR-5, MFR-12, MFR-13, MFR-14, MFR-15, MFR-26, MFR-27, MFR-28, MFR-29, MFR-30, MFR-31, MFR-32, RR-7, UJV-100C, UJV-105B, UJV-106, UJV-106A, UJV-109, UJV-109B, UJV-109 South, UJV-151, UJV-204, UJV-205, UJV-206, UJV-207, UJV-209, UJV-209A
Castle Gate Sandstone	MFR-6, UJV-101, UJV-208, UJV-210, UJV-211, UJV-212, UJV-213
Blackhawk Formation	MF-2, MF-3, MF-7, MF-8A, MF-213, MFR-2
Star Point Sandstone	Little Bear Spring

TABLE 32: TEMPERATURE COMPARISON

	EAST MOUNTAIN DEPARTURE FROM NORMAL	*ELECTRIC LAKE DEPARTURE FROM NORMAL*	*CASTLE DALE DEPARTURE FROM NORMAL*	*HUNTINGTON PLANT DEPARTURE FROM NORMAL*
1993				
JAN	-3.8	2.7	0.9	-0.8
FEB	-3.5	-2.9	0.5	-4.3
MAR	4.2	-3.6	7.2	-0.5
APR	-2.2	0.1	4.4	-2.0
MAY	4.1	2.8	8.9	1.6
JUN	-3.9	-2.2	5.8	-4.1
1994				
JAN	0.8	2.3	-1.2	6.3
FEB	-3.5	3.2	1.6	-3.5
MAR	6.1	6.6	10.1	5.0
APR	0.0	6.0	4.7	0.2
MAY	4.6	7.2	8.9	2.7
JUN	9.1	4.8	13.4	5.4
1995				
JAN	1.4	1.6	3.9	1.5
FEB	10.3	5.2	11.8	7.4
MAR	3.1	2.4	7.6	0.1
APR	3.4	-0.1	3.4	-2.0
MAY	2.2	-3.9	3.4	-5.5
JUN	1.1	-2.2	2.5	-6.6
1996				
JAN	5.1	2.1	3.5	2.4
FEB	7.7	-0.9	8.4	1.6
MAR	7.5	0.6	7.8	1.5
APR	3.0	2.6	5.4	1.1
MAY	8.5	3.6	8.0	2.2
JUN	8.5	5.2	9.6	1.2
1997				
JAN	-0.9	1.6	0.1	0.3
FEB	0.8	-5.7	-2.3	-4.2
MAR	8.8	6.2	8.1	2.2
APR	1.4	-0.7	3.2	-3.1
MAY	0.0	4.2	10.5	3.5
JUN	4.6	4.9	8.9	-0.6
1998				
JAN	4.2	2.0	6.9	5.4
FEB	-1.5	-3.1	4.6	-2.8
MAR	6.4	2.1	5.7	1.0
APR	0.6	-2.0	0.8	-2.9
MAY	5.0	0.3	5.3	-0.5
JUN	-2.3	-1.1	3.0	-6.1
1999				
JAN	7.8	5.4	8.9	8.0
FEB	4.7	-0.5	7.6	2.1
MAR	7.4	4.1	8.6	6.7
APR	-0.9	-3.7	-1.8	-1.9
MAY	-0.4	-1.0	4.9	-0.1
JUN	1.8	0.2	6.3	-3.1
2000				
JAN	2.5	3.6	10.0	4.0
FEB	4.4	-0.9	9.8	5.0
MAR	1.8	1.0	6.8	2.0
APR	8.6	7.2	7.0	6.0
MAY	9.2	7.4	11.0	5.9
JUN	5.8	3.3	8.8	2.8
2001				
JAN	-9.2	-2.6	1.3	1.0
FEB	-11.5	-2.0	1.0	-4.0
MAR	-7.8	4.4	9.0	1.9
APR	-8.5	3.0	2.2	-1.1
MAY	-3.9	6.5	9.5	
JUN	-6.0	3.7	9.0	
2002				
JAN	-4.7	-4.0	1.9	
FEB	-6.4	-8.1	2.0	
MAR	-1.0	-1.8	2.2	
APR	3.5	5.6	7.4	
MAY		3.0	7.8	
JUN	6.0	4.4	10.5	
2003				
JAN	12.6	1.9	10.1	
FEB	-1.8	-4.3	4.0	
MAR	3.4	1.7	6.2	
APR	3.1	0.3	3.9	
MAY	10.0	3.0	10.2	
JUN	2.7	1.9	8.0	
2004				
JAN	1.0	-3.8	-5.3	
FEB	-2.5	-6.4	0.4	
MAR	9.1	9.0	10.5	
APR	0.5	6.6	6.7	
MAY	5.7	3.0	8.1	

TABLE 32: TEMPERATURE COMPARISON

	EAST MOUNTAIN DEPARTURE FROM NORMAL	ELECTRIC LAKE DEPARTURE FROM NORMAL	CASTLE DALE DEPARTURE FROM NORMAL	HUNTINGTON PLANT DEPARTURE FROM NORMAL
JUN	1.7	2.0	7.5	
2005				
JAN	14.1	8.9	6.1	
FEB	6.3	-6.1	4.4	
MAR	7.2	-0.3	10.8	
APR	7.1	-2.0	2.6	
MAY	8.8	-0.1	8.7	
JUN	3.7	-3.5	0.2	
2006				
JAN	5.6	-7.2	2.3	3.9
FEB	2.3	-14.1	2.2	0.0
MAR	2.3	-3.4	0.3	-4.1
APR	7.3	3.0	6.5	2.6
MAY	11.2	6.0	12.1	3.7
JUN	4.3	5.2	9.8	2.2
2007				
JAN	8.0	9.4	1.1	1.3
FEB	6.9	-0.1	7.1	5.9
MAR	14.4	6.6	4.8	11.2
APR	5.6	5.3	2.4	2.8
MAY	7.1	3.3	1.7	2.0
JUN	9.9	4.2	2.6	4.4
2008				
JAN	5.1	NA	-2.9	-3.1
FEB	-6.6	NA	-2.6	-2.0
MAR	5.8	NA	-0.9	-2.5
APR	-3.4	NA	-1.7	-3.0
MAY	-5.1	NA	-1.4	-3.6
JUN	-4.2	-1.1	0.3	-0.5
2009				
JAN	9.6	NA	3.5	-3.1
FEB	3.4	NA	6.2	-0.6
MAR	-6.5	NA	2.3	0.9
APR	-3.4	NA	1.5	-1.2
MAY	6.8	NA	3.2	3.4
JUN	-2.7	NA	-0.4	-5.1
2010				
JAN	2.6	NA	-3.2	-6.3
FEB	2.0	NA	-6.2	-1.4
MAR	5.1	NA	-1.0	0.5
APR	6.5	NA	2.1	-0.4
MAY	2.6	NA	-1.9	2.1
JUN	8.9	NA	3.5	-2.2

YEAR	EAST MOUNTAIN	ELECTRIC LAKE	HUNTER PLANT	HUNTINGTON PLANT	TOTAL
1982		-2.8	0.0	1.2	-0.5
1983		-2.7	2.5	1.0	0.3
1984		-2.2	0.5	0.1	-0.5
1985	3.1	0.3	3.0	0.9	1.8
1986	2.9	3.4	6.3	3.2	4.0
1987	1.7	-0.5	3.2	1.1	1.4
1988	-0.2	-0.1	3.5	0.5	0.9
1989	0.0	-0.1	4.1	0.3	1.1
1990	2.3	1.8	7.3	1.2	3.2
1991	-1.9	-1.4	3.8	-2.5	-0.5
1992	1.9	6.5	6.6	1.8	4.2
1993	-0.9	-0.5	4.6	-1.7	0.4
1994	2.9	5.0	6.3	2.7	4.2
1995	3.6	0.5	5.4	-0.9	2.2
1996	6.7	2.2	7.1	1.7	4.4
1997	2.5	1.8	4.8	-0.3	2.2
1998	2.1	-0.3	4.4	-1.0	1.3
1999	3.4	0.8	5.8	2.0	3.0
2000	5.4	3.6	8.9	4.3	5.6
2001	-7.8	2.2	5.3		-0.1
2002	-0.5	-0.2	5.3		1.5
2003	5.0	0.8	7.1		4.3
2004	2.6	1.7	4.7		3.0
2005	7.9	-0.5	5.5		4.3
2006	5.5	-1.8	5.5	1.4	2.7
2007	8.6	4.8	3.3	4.6	5.3
2008	-1.4		-1.5	-2.5	-1.8
2009	1.2	NA	2.7	-0.9	0.99
2010	4.6	NA	-1.1	-1.3	0.73

Table 33
EAST MOUNTAIN
SPRING DISCHARGE RECESSION STUDY
YEAR 2010

SPRING		JUL	AUG	SEP	OCT
79-10	Flow (GPM)	5.2	4.0	2.0	1.9
	Temp. (C)	9.4	10.5	8.5	7.0
SHEBA SPRINGS	Flow (GPM)	3.9	2.7	0.2	0.6
	Temp. (C)	6.7	8.5	12.4	9.5
ELK SPRING*	Flow (GPM)	Developed and no longer applicable to recession study			
	Temp. (C)				
79-35	Flow (GPM)	1.5	1.5	0.9	0.8
	Temp. (C)	7.6	6.9	7.2	7.4
79-26	Flow (GPM)	Dry	Dry	Dry	Dry
	Temp. (C)				
79-29	Flow (GPM)	0.3	0.4	0.4	0.4
	Temp. (C)		8.7	8.5	4.9
84-56	Flow (GPM)	Seep	Seep	Dry	Dry
	Temp. (C)				
80-44	Flow (GPM)	Damp	Seep	Seep	Dry
	Temp. (C)				
80-46	Flow (GPM)	Dry	Dry	Dry	Dry
	Temp. (C)				
BURNT TREE	Flow (GPM)	1.5	1.4	1.1	1.2
	Temp. (C)	8.8	8.9	9.4	7.8
79-23	Flow (GPM)	Dry	Dry	Dry	Dry
	Temp. (C)				
82-52	Flow (GPM)	Dry	Damp	Damp	Dry
	Temp. (C)				

*Note: Elk Spring and 89-61 was developed for culinary use by NEWUSSD in early 2009.

Table 34a: East Mountain Springs Water Quality (Historical vs. 2010) *

Southern Area

PARAMETER	Burnt Tree Historical	Burnt Tree 2010	Elk Spring Historical	Elk Spring 2010	Sheba Springs Historical	Sheba Springs 2010	79-10 Historical	79-10 2010	79-23 Historical	79-23 2010	79-26 Historical	79-26 2010
Elevation	9260		9350		9740		9350		9035		9310	
Geologic Formation	TKn		TKn		Tf		Kpr		TKn		TKn	
Bicarbonate	324.79	273	283.50	238	286.70	275	309.64	256	413.13	no	322.64	no
Calcium	59.02	50.76	62.40	58.8	83.72	89.01	72.02	68.04	79.64	flow	54.44	flow
Carbonate	1.50	0	1.55	0	1.25	0	1.94	0	1.00	during	5.17	during
Chloride	5.53	4	4.59	2	4.63	2	4.98	3	11.27	2010	6.53	2010
Cond.(umhos/cm)	512.08	528	448.33	458	448.87	494	486.23	490	691.29		522.39	
Hardness	259.73	233	247.13	239	248.34	270	273.02	264			265.03	
Iron	0.13	0	0.10	0	0.17	0	0.29	0			0.50	
Magnesium	27.80	25.76	22.88	22.39	10.67	11.51	22.35	22.89	38.29		30.98	
Mangenese	0.04	0	0.05	0	0.04	0	0.05	0	0.01		0.04	
pH(units)	7.54	7.56	7.84	7.66	7.52	7.79	7.66	8.24	7.73		8.09	
Potassium	1.26	0.6	1.79	0.63	2.03	0	1.82	0.54	1.54		1.58	
Sodium	15.89	20.03	7.45	7.11	4.04	3.41	4.83	4.95	14.87		15.54	
Sulfate	18.74	13	16.67	8	15.24	5	11.40	8	27.19		20.18	
TDS	286.63	288	252.70	264	260.48	293	275.06	282	364.25		292.87	

PARAMETER	79-29 Historical	79-29 2010	79-35 Historical	79-35 2010	80-44 Historical	80-44 2010	80-46 Historical	80-46 2010	82-52 Historical	82-52 2010	84-56 Historical	84-56 2010
Elevation	9410		9585		8980		9350		8995		9335	
Geologic Formation	TKn		Tf		Kpr		TKn		Kpr		TKn	
Bicarbonate	319.89	257	306.09	257	442.70	no	347.71	no	412.02	no	345.41	no
Calcium	44.74	38.55	62.66	70.98	98.04	flow	61.36	flow	74.45	flow	61.40	flow
Carbonate	1.55	0	1.45	0	1.00	during	1.80	during	1.71	during	1.70	during
Chloride	18.23	19	10.86	2	10.86	2010	4.57	2010	10.11	2010	9.75	2010
Cond.(umhos/cm)	558.09	595	506.77	467	862.60		549.44		681.24		552.22	
Hardness	254.28	241	259.68	246	374.33		280.61		330.75		291.35	
Iron	0.40	0	0.39	0.06			0.10		0.20		0.69	
Magnesium	35.32	35.05	25.67	16.77	41.14		29.00		35.90		32.86	
Mangenese	1.04	0	0.58	0	0.02		0.03		0.04		0.05	
pH(units)	7.72	7.91	7.77	8.08	7.83		7.40		7.66		7.47	
Potassium	2.16	1.27	1.68	0.16	3.90		0.80		1.50		1.45	
Sodium	32.69	35.25	17.98	3.16	35.01		9.84		28.94		16.78	
Sulfate	38.04	37	26.79	4	135.96		16.32		44.09		27.81	
TDS	326.27	324	295.37	280	529.50		310.04		399.60		323.41	

* Quality parameters reported as mg/l unless otherwise noted

Table 34b: East Mountain Springs Water Quality (Historical vs. 2009) *

Mill Fork Area

PARAMETER	EM POND Historical	EM POND 2010	EMS JV34 Historical	EMS JV34 2010	EMS JV9 Historical	EMS JV9 2010	EMS MF 7 Historical	EMS MF 7 2010	EMS MF10 Historical	EMS MF10 2010	EMS MF19B Historical	EMS MF19B 2010
Elevation	10,280		8,692		8,618		8,580		10,250		10,111	
Geologic Formation	TKn		Alluvium		Alluvium		Kbh		TKn		TKn	
Bicarbonate	248.67	221	319.76	278	338.74	317	279.21	269	214.26	193	231.73	232
Calcium	59.51	56.1	83.44	73.39	87.89	86.15	72.90	74.01	55.72	49.19	65.61	67.75
Carbonate	0.00	0	0.00	0	0.00	0	0.00	0	1.00	0	4.80	0
Chloride	1.46	2	3.25	3	4.91	5	2.71	3	1.63	1	1.79	6
Cond.(umhos/cm)	468.50	414	599.94	533	696.00	516	583.26	581	419.47	387	454.13	451
Hardness	241.44	226	311.00	276	357.37	348	303.11	303	218.00	205	243.20	248
Iron - Total	0.41	0	0.49	0.17	0.10	0	0.02	1.18	0.00	0	0.60	0
Magnesium	22.57	20.95	24.96	22.51	34.74	32.37	29.40	28.69	19.14	19.98	19.27	19.07
Manganese - Total	0.00	0	0.01	0	0.01	0	0.00	0	0.00	0	0.04	0
pH (units)	7.97	8.11	8.10	8.24	7.32	7.89	7.81	7.88	8.10	8.35	8.27	8.43
Potassium	0.63	0.78	1.37	1.99	1.34	1.48	1.16	1.29	0.87	1	0.90	2.1
Sodium	2.24	2.04	7.54	8.14	7.17	7.87	6.08	8.05	2.20	2.42	1.82	1.97
Sulfate	4.99	4	16.77	15	51.41	53	45.83	53	7.30	9	6.80	7
TDS	253.33	237	328.29	314	386.68	401	326.95	362	230.47	228	244.20	281

PARAMETER	EMS MF213 Historical	EMS MF213 2010	EMS MF219 Historical	EMS MF219 2010	EMS MFR-10 Historical	EMS MFR-10 2010	EMS MFR-30 Historical	EMS MFR-30 2010	EMS RR-15 Historical	EMS RR-15 2010	EMS RR-23A Historical	EMS RR-23A 2010
Elevation	8,030		10,220		9,900		9,680		10,350		10,023	
Geologic Formation	Kbh		TKn		TKn		Kpr		TKn		TKn	
Bicarbonate	279.84	261	240.83	228	308.00		308.00		237.17	216	260.58	245
Calcium	65.34	64.19	66.19	64.02	84.19	no	84.19	no	58.87	54	69.93	68.39
Carbonate	1.80	0	0.00	0	0.00	flow	0.00	flow	0.00	0	0.00	0
Chloride	2.66	3	1.98	2	2.30	during	2.30	during	1.25	1	1.83	2
Cond.(umhos/cm)	551.11	518	500.61	469	629.80	2010	629.80	2010	441.11	419	501.11	476
Hardness	283.16	274	261.67	255	311.20		311.20		230.22	216	259.37	252
Iron - Total	0.07	1.16	0.29	0	0.48		0.48		0.17	0	0.34	1.19
Magnesium	29.16	27.7	23.40	23.01	24.52		24.52		20.22	19.61	20.58	19.69
Manganese - Total	0.00	0	0.01	0	0.01		0.01		0.00	0	0.00	0
pH (units)	7.95	8.21	7.84	8.04	7.93		7.93		7.91	7.83	7.60	7.64
Potassium	1.03	1.12	1.17	1.37	0.82		0.82		0.70	0.9	0.66	0.72
Sodium	5.55	6.14	2.40	2.42	12.91		12.91		2.87	3.69	2.80	3.17
Sulfate	25.45	28	27.65	27	32.20		32.20		6.47	8	11.95	14
TDS	294.47	312	272.56	275	351.80		351.80		241.67	259	276.42	286

PARAMETER	EMS RR-5 Historical	EMS RR-5 2010	EMS SP1-26 Historical	EMS SP1-26 2010	EMS SP1-29 Historical	EMS SP1-29 2010	EMS UJV101 Historical	EMS UJV101 2010	EMS UJV206 Historical	EMS UJV206 2010	GRANTS Historical	GRANTS 2010	LITTLE BEAR Historical	LITTLE BEAR 2010
Elevation	10,160		10,340		10,360		8,960		9,200		10,280		7,540	
Geologic Formation	TKn		TKn		TKn		Kcg		Kpr		TKn		Ksp	
Bicarbonate	218.57	199	213.21	195	277.15		240.79	243	258.22	235	238.47	217	288.13	277
Calcium	64.23	58.99	60.21	59.46	69.15	no	69.85	72.96	67.62	66.82	54.89	53.86	66.36	63.45
Carbonate	0.00	0	0.00	0	0.00	flow	0.00	0	0.00	0	0.00	0	0.00	0
Chloride	1.66	2	2.57	3	2.24	during	4.53	5	4.75	5	3.87	4	4.00	4
Cond.(umhos/cm)	444.61	402	431.16	393	506.77	2010	535.00	543	523.83	672	475.93	449	595.73	583
Hardness	231.22	212	213.79	210	266.62		269.71	277	266.39	259	246.40	240	316.47	294
Iron - Total	0.47	0.76	0.45	0.19	0.00		0.37	0	0.04	0	0.00	0	0.04	0
Magnesium	17.22	15.69	15.41	14.85	22.78		23.12	22.95	23.69	22.33	26.53	25.57	36.59	32.91
Manganese - Total	0.00	0	0.00	0	0.00		0.00	0	0.00	0	0.00	0	0.00	0
pH (units)	7.78	8.4	7.80	8.45	7.64		7.98	7.57	7.99	7.35	7.73	7.88	7.39	7.38
Potassium	0.56	0.99	0.71	0.76	1.28		1.24	1.44	1.55	1.88	1.55	1.44	1.70	1.54
Sodium	1.97	1.91	2.22	2.16	3.07		5.67	6.45	6.38	6.68	3.56	3.65	7.15	7.41
Sulfate	9.33	10	7.07	7	7.18		38.75	47	31.16	40	12.00	12	35.93	39
TDS	247.69	242	233.05	239	265.23		301.57	330	291.28	297	254.80	246	325.87	324

* Quality parameters reported as mg/l unless otherwise noted

TABLE 35: NEWUA - RILDA CANYON SPRING FLOW (GPM)
MONTHLY MEASUREMENTS

DATE	METER 2	METER 3	METER 4	TOTAL
09/06/1990	20	75	120	215
09/18/1990	15.8	78.9	91	186
11/07/1990	13.3	37.5*	20	71
11/14/1990	14.5	67.4	9.3	91
11-19-90**	13.6	57.7	6.3	78
04/08/1991	10.9	56.5	4.7	72
06/11/1991	10.9	107	136	253.9
07/17/1991	12.5	95	160	267.5
08/19/1991	9.3	95	160	264.3
09/10/1991	9.2	105	140	254.2
10/21/1991	7.5	85	55	147.5
11/20/1991	8	80	16.2	104.2
04/07/1992	8	46	7.7	61.7
05/18/1992	7.5	110	140	257.5
06/12/1992	7	100	180	287
07/20/1992	7	80	150	237
08/14/1992	7.1	90	110	207.1
09/03/1992	6	35	75	116
10/30/1992	5.5	45	2.6	53.1
05/13/1993	6	25	13	44
06/11/1993	8.6	90	150	248.6
07/29/1993	6	110	170	286
08/27/1993	4	96	170	270
09/28/1993	2	60	110	172
10/22/1993	3	30	55	88
05/24/1994	4.6	65	75	144.6
06/16/1994	5	100	160	265
07/18/1994	5.5	100	130	235.5
08/24/1994	2	70	80	152
09/13/1994	2.7	30	20	52.7
10/23/1994	2	30	1.5	33.5
12/14/1995	2	38	***	40
06/28/1995	8	over capacity	***	
07/21/1995	2	over capacity	***	
08/24/1995	4	over capacity		
09/15/1995	2.3	150	***	157.3
10/31/1995			NEWUA conducting maintenance	
11/30/1995	3.3	75	***	78.3
04/02/1996	8	100	***	108
05/17/1996	5	175	***	180
06/11/1996	5.5	175.0'	***	180
07/23/1996	5.5	200.0'	***	205
08/21/1996	4.5	150.0'	***	154.5
09/16/1996	4.5	150.0'	***	154.5
10/23/1996	3.8	80	***	83.8
11/14/1996	4	80	***	84
12/12/1996	4	100	***	104

1996 problems: Valve leating affected flow measurements

	METER 2	METER 3	TOTAL	NEWUA METER
04/28/1997	5.2	150	+ 150 ****	94.0 *****
05/29/1997	6	150	+ 150 ****	230
06/25/1997	6	150	+ 150 ****	300
07/17/1997	6	150	+ 150 ****	270
08/26/1997	5.5	150	+ 150 ****	270
09/12/1997	5.5	150	+ 150 ****	270
10/13/1997	5	150	+ 150 ****	180
11/18/1997	3.9	100	+100.0 ****	160
12/04/1997	4	100	+100.0 ****	150

	METER 2	METER 3	TOTAL	NEWUA METER
04/14/1998	6.7	100		120
05/27/1998	7.5	158		145
06/08/1998	10.3	+100.0 ****		280
07/06/1998	7.5	+100.0 ****		300
08/10/1998	7.1	+100.0 ****		300
09/14/1998	6.0	+100.0 ****		240
10/05/1998	6.0	+100.0 ****		200
11/09/1998	6.7	172		180
12/09/1998	5.0	95		150

	METER 2	METER 3	TOTAL	NEWUA METER
01/12/1999	5.0	120	125+	150
02/02/1999	6.3	90	96+	120
03/03/1999	6.6	80	87+	110
04/13/1999	5.0	65	70+	120
05/11/1999	5.5	100	106+	130
06/15/1999	6.6	150	157+	240
07/26/1999	6.9	170	177+	250
08/12/1999	6.7	200	207+	270
09/16/1999	6.0	200	206+	225
10/05/1999	4.0	200	204	200
11/17/1999	3.2	100	103	130
12/09/1999	2.5	80	83	110
01/12/2000	2.2	60	62.2+	110
02/03/2000	3.4	53	56.4+	120
03/09/2000	++	++	++	120
04/03/2000	++	++	++	150
05/05/2000	3	86	89+	270
06/22/2000	3	160	163+	270
07/06/2000	2.1	170	172.1+	340
08/09/2000	1.6	200	201.6*	280
09/13/2000	1.2	120	121.2*	160
10/10/2000	1.7	50	51.7*	130
11/28/2000	1.4	65	66.4*	100
12/05/2000	1.07	61	62.1*	100
01/05/2001	1.02	62.5	63.52*	100
02/05/2001	*Inaccessible*			90
03/13/2001	*Inaccessible*			60
04/23/2001	1.5	52	53.5	60
05/21/2001	1.9	140	141.9	150
06/29/2001	1.6	214	215.6	210
07/03/2001	1.2	200	201.2	210
08/14/2001	1.1	180	181.1	220
09/17/2001	1	162	163	180
10/17/2001	1.5	150	151.5	120
11/27/2001	1.6	100	101.6	100
12/12/2001	*Line Frozen*	40	40*	70
01/17/2002	1.5	45	47	60
02/11/2002	1.4	50	51	60
03/26/2002	0.5	33	34	60
04/12/2002	0.6	46	47	50
05/08/2002	0.5	40	41	55
06/25/2002	1.0	166	167	120
07/22/2002	0.7	170	171	210
08/16/2002	0.7	150	151	150
09/18/2002	0.5	60	61	90
10/16/2002	0.4	55	55	60

TABLE 35: NEWUA - RILDA CANYON SPRING FLOW (GPM)
MONTHLY MEASUREMENTS

DATE	METER 2	METER 3	METER 4	TOTAL
11/12/2002	0.4	51	51	60
12/15/2002	1.8	4[illegible]	48	60
01/17/2003	1.6	46	48	60
02/26/2003	1.6	33	35	60
03/12/2003	1.5	40	42	50
04/21/2003	1.3	50	51	60
05/22/2003	3.7	150	154	70
06/26/2003	3	222	225	205
07/10/2003	2.8	190	193	225
08/26/2003	2.2	190	192	220
09/24/2003	0.4	130	130	130.4
10/13/2003	1	75	76	76
11/17/2003	0.8	70	71	70.8
12/09/2003	0.8	38	39	38.8
01/27/2004				
02/27/2004				
03/15/2004	0.4	35.2	36	*****
04/26/2004	0.5	100	101	45
05/25/2004	0.4	136	136	120
06/29/2004	*****	120	120	*****
07/26/2004	*****	130	130	*****
08/06/2004	*****	125	125	100
09/09/2004	*****	142	142	100
10/12/2004	*****	30	30	96
11/30/2004	*****	*****	*****	83
12/14/2004	*****	*****	*****	73
01/13/2005	*****	*****	68	68
02/16/2005	*****	*****	65	65
03/11/2005	*****	*****	62	62
04/29/2005	*****	*****	85	85
05/10/2005	*****	*****	100	100
06/09/2005	*****	*****	230	230
07/06/2005	*****	*****	240	240
08/25/2005	*****	*****	233	233
09/22/2005	*****	*****	*****	*****
10/24/2005	*****	115	150	150
11/30/2005	*****	112	158	158
01/05/2006	*****	63	72	72
01/20/2006	*****	*Inaccessible*	72	72
02/23/2006	*****	*Inaccessible*	72	72
03/14/2006	*****	*Inaccessible*	83	83
04/25/2006	*****	100	102	102
05/23/2006	*****	200	160	160
06/20/2006	*****	200	230	230
07/26/2006	*****	230	240	240
08/09/2006	*****	210	235	235
09/27/2006	*****	150	*****	*****
10/26/2006	*****	103	150	150
11/17/2006	*****	100	158	158
12/07/2006	*****	107	125	125
01/10/2007	*****	*100*	140	140
02/20/2007	*****	*94*	130	130
03/26/2007	*****	*60*	125	125
04/17/2007	*****	70	115	115
05/10/2007	*****	95	250	250
06/29/2007	*****	190	270	270
07/17/2007	*****	170	++++	
08/20/2007	*****	162	++++	
09/20/2007	*****	127	++++	
10/26/2007	*****	60	150	150
11/14/2007	*****	60	115	115
12/05/2007	*****	50.8	95	95
01/15/2008	*****	*Inaccessible*	65	65
02/20/2008	*****	*Inaccessible*	65	65
03/24/2008	*****	*Inaccessible*	65	65
04/23/2008	*****	100	75	75
05/28/2008	*****	10	210	210
06/17/2008	*****	11	240	240
07/07/2008	*****	10	260	260
08/18/2008	*****	10	250	250
09/22/2008	*****	107	230	230
10/22/2008	*****	54	160	160
11/18/2008	*****	44	130	130
12/04/2008	*****	42	80	80
01/13/2009	*****	*Inaccessible*	75	75
02/17/2009	*****	*Inaccessible*	61	61
03/24/2009	*****	37	61	61
04/16/2009	*****	27	65	65
05/07/2009	*****	44	65	65
06/18/2009	*****	183	235	235
07/14/2009	*****	150	240	240
08/20/2009	*****	167	240	240
09/09/2009	*****	130	125	125
10/26/2009	*****	50	110	110
11/06/2009	*****	33	100	100
12/02/2009	*****	*****	120	120
01/12/2010	*****	*****	90	90
02/17/2010	*****	*****	80	80
03/17/2010	*****	*****	80	80
04/20/2010	*****	*****	85	85
05/28/2010	*****	*****	115	115
06/08/2010	*****	*****	210	210
07/09/2010	*****	180	210	210
08/12/2010	*****	190	420	420
09/09/2010	*****	130	300	300
10/27/2010	*****	26	210	210
11/12/2010	*****	43	165	165
12/07/2010	*****	40	160	160

* Flow not stabilized.
** Data collected during pump test.
*** Diverted through Meter 3.
**** Over capacity
***** Meter/Valve problems
\+ Meter 3 - Valve would not seat
++ Canyon Accessible
+++ Main Meter Not Working - Used Total of Meter 2 & 3
++++ Line Replacement

AVERAGE WATER QUALITY*

PARAMETER **	METER 2		METER 3		METER 4
	Historical	2010	Historical	2010	Historical
					Combined with Meter 3 in 1995
Bicarbonate	433.17	No Samples	373.45	304	356.38
Calcium	88.41	During	77.77	74.2	70.3
Carbonate	1.96	2010	1.52	0.0	0.7
Chloride	10.48	Problem	9.06	6.0	13.1
Cond.(umhos/cm)	792.43	With	721.91	694.5	535.5
Hardness	432.87	Valve	385.58	363	347.94
Iron - Total	0.46		0.35	0.12	0.13
Iron - Dissolved	0.12		0.08	0.00	0.06
Magnesium	51.47		46.47	43.05	41.86
Mangenese - Total	0.05		0.01	0.0015	-
Mangenese -Dissolved	0.10		0.04	0.0015	0.08
pH(units)	7.28		7.41	7.38	7.41
Potassium	2.68		1.99	1.97	2.13
Sodium	16.69		15.58	17.42	12.96
Sulfate	104.51		85.60	75.5	55.4
TDS	497.64		435.47	440	365.13

* Quality parameters reported as mg/l unless otherwise noted

** Data: Database input restricted to values greater then laboratory minimum detection limit.

Flow through Meter 4 was combined with Meter 3 in 1995

Table 37
TRAIL MOUNTAIN
SPRING DISCHARGE RECESSION STUDY
YEAR 2009

SPRING		JUL	AUG	SEP	OCT	Seasonal Net Change %
T-6	Flow (GPM)	Dry	Dry	Dry	Dry	0.0
18-2-1	Temp. (C)					
T-8	Flow (GPM)	Dry	Dry	Dry	Dry	0.0
17-21-1	Temp. (C)					
T-9	Flow (GPM)	2.8	3.3	3.2	2.9	-3.57
17-22-1	Temp. (C)	11.7	11.5	8.3	9.6	
T-10	Flow (GPM)	Seep	Seep	Seep	Seep	0.0
17-26-4	Temp. (C)					
T-14	Flow (GPM)	Dry	Dry	Dry	Dry	0.0
17-25-1	Temp. (C)					
T-14A	Flow (GPM)	Dry	Dry	Dry	Dry	0.0
17-26-5	Temp. (C)					
T-15	Flow (GPM)	Dry	Dry	Dry	Dry	0.0
17-35-1	Temp. (C)					
T-16	Flow (GPM)	Dry	Dry	Dry	Dry	0.0
17-35-2	Temp. (C)					
TM-23*	Flow (GPM)	0.0	0.0	0.0	0.0	0.0
	Temp. (C)					

JULY TOTAL	**2.8**	**OCTOBER TOTAL**	**2.9**
		Net Change - Average	**3.57**
TOTAL FOR JULY 2009 = 5.8 GPM		**Net Change - By Volume**	Same

FLOW FOR JULY 2009 WAS 207% GREATER THAN JULY 2010

TABLE 38: TRAIL MOUNTAIN YEARLY SPRING DISCHARGE VARIATIONS (GPM)

JULY FLOW DATA

Spring	*1988*	*1989*	*1990*	*1991*	*1992*	*1993***	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*	*2001*	*2002*	*2003*	*2004*	*2005*	*2006*	*2007*	*2008*	*2009*	*2010*
T-6 (18-2-1)	11	0.5	0.5	1.2	0.03	6	1.6	4.1	3.3	7.5	9.8	3.5	3	4.8	1.0	0.0	0.0	1.8	3.6	0.3	1.2	Dry	Dry
T-8 (17-21-1)	4.7	0.2	0.25	Dry	0.14	1.7	0.2	1.7	0.6	0.9	2.1	1.4	0.4	0.4	<0.1	<0.1	0	0.26	0.52	Dry	Dry	Dry	Dry
T-9 (17-22-1)	8	0.2	0.1	Dry	2.5	40	4	20	8.6	4.8	24	10.9	2.7	6	2.6	5.2	6.8	17	6	3.9	11.8	5.8	2.8
T-10 (17-26-4)	4.7	Dry	0.15	Dry	Dry	0.4	Damp	0.4	0.2	0.4	0.5	0.7	0.3	0.2	Seep	Seep	Seep	Seep	0.25	Seep	Seep	Seep	Seep
T-14 (17-25-1)	5	Dry	Dry	Dry	Dry	1.6	Damp	2	0.9	1	2.1	2.1	0.3	0.5	Seep	Dry	Dry	0	Damp	Dry	Dry	Dry	Dry
T-14A (17-26-5)	10	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Damp	Dry	0	0.0	0.0	0.0	0.0	0.0	Dry	Dry	Dry	Dry
T-15 (17-35-1)	2.1	0.2	0.5	0.75	0.33	1.6	0.5	1.2	0.8	1	3.3	2.3	0.9	0	0.0	0.0	0.0	0.0	0.0	Dry	Dry	Dry	Dry
T-16 (17-35-2)	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Damp	Damp	Dry	0	0.0	0.0	0.0	0.0	0.0	Dry	Dry	Dry	Dry
T-23 (17-14-4)	22**	4.0*	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	57.8****	84.4****	39.7****	0	0.0	0.0	0.0	17.7****	24.4****	Dry	Dry	Dry	Dry
TOTAL	67.5	5.1	1.5	1.95	2.67	51.3	6.3	29.4	14.4	15.6	99.6	105.3	47.2	11.9	3.6	5.2	6.8	36.76	46.6	Dry	13.0	5.8	2.8

* August measurement
** September measurement
*** First year monitored by PacifiCorp
**** Cottonwood Creek Gain/Loss Surveys

Table 39: Trail Mountain Springs Water Quality (Historical vs. 2010) *

PARAMETER	18-2-1 Historical	18-2-1 2010	17-21-1 Historical	17-21-1 2010	17-22-1 Historical	17-22-1 2010	17-26-4 Historical	17-26-4 2010	17-25-1 Historical	17-25-1 2010	17-26-5 ** Historical	17-26-5 ** 2010
Elevation	8395		9320		9210		8880		8155		9080	
Geologic Formation	TKn		TKn		TKn		TKn		Kcg		TKn	
Bicarbonate	396	No	390	No	313	257	396	Seep	546	No	404	no
Calcium	61.7	Flow	52.9	Flow	46.5	43.5	54.9	During	89.6	Flow	78.6	flow
Carbonate	1.36	During	1.39	During	3.23	0.00	8.33	2010	3.50	During	<.5	during
Chloride	45.5	2010	30.8	2010	9.7	8.0	28.8		31.5	2010	20.8	2009
Cond.(umhos/cm)	972		718		542	500	716		1169		860	
Hardness	389		244		256	239	333		486		442	
Iron	0.18		0.10		0.31	0.10	1.17		6.80		0.30	
Magnesium	57.06		27.93		34.20	31.57	47.48		59.30		59.75	
Mangenese	0.05		0.05		0.05	0.00	0.11		0.50		0.02	
pH(units)	8.15		7.59		7.77	8.11	8.03		7.85		7.75	
Potassium	1.58		2.06		1.46	1.02	1.81		2.29		1.93	
Sodium	66.51		61.32		20.24	19.07	33.28		66.70		31.07	
Sulfate	140.2		17.9		17.7	12.0	32.9		217.0		142.8	
TDS	583		394		294	293	398		723		515	

PARAMETER	17-35-1 Historical	17-35-1 2010	17-35-2 Historical	17-35-2 2010	17-14-4 Historical	17-14-4 2010
Elevation	8880		9000		7880	
Geologic Formation	TKn		TKn		Alluvium	
Bicarbonate	388	No	No	No	363	No
Calcium	41.6	Flow	Historical	Flow	65.9	Flow
Carbonate	5.71	During	Flow	During		During
Chloride	42.47	2010		2010	13.91	2010
Cond.(umhos/cm)	770				642	
Hardness	251				346	
Iron	0.67				0.19	
Magnesium	36.40				43.95	
Mangenese	0.08				0.02	
pH(units)	8.00				7.77	
Potassium	1.55				1.95	
Sodium	78.00				15.83	
Sulfate	45.2				61.9	
TDS	441				385	

TRAIL MOUNTAIN SPRINGS
CROSS REFERENCE

ARCO'S	ENERGY WEST
T-6	18-2-1
T-8	17-21-1
T-9	17-22-1
T-10	17-26-4
T-14	17-25-1
T-14A	17-26-5
T-15	17-35-1
T-16	17-35-2
TM-23	17-14-4

* Quality parameters reported as mg/l unless otherwise noted
** High TSS, Elevated Total Iron

TABLE 40: DEER CREEK IN-MINE WATER QUALITY *

2010*** SAMPLE DATES	ALKALINITY BICARBONATE	CALCIUM	CARBONATE	CHLORIDE	CONDUCTIVITY (umhos/cm)	HARDNESS	IRON DISSOLVED	MAGNESIUM	MANGANESE	PH (units)	POTASSIUM	SODIUM	SULFATE	TDS
TW-10														
20100310	323	98.36	0.0	7	894	505	0.0	62.96	0.0	8.14	3.1	19.94	168	604
20100622	327	93.13	0.0	7	872	468	0.0	57.08	0.0	8.09	3.09	19.52	153	568
20100927	335	94.08	0.0	7	859	477	0.0	58.79	0.0	8.08	3.09	19.13	165	550
20101206	330	92.4	0.0	7	857	454	0.0	54.2	0.0	8.17	2.88	19.31	152	540
2010* **														
MIN	323.0	92.4	0.0	7.0	857.0	454.0	0.0	54.2	0.0	8.1	2.9	19.1	152.0	540.0
MAX	335.0	98.4	0.0	7.0	894.0	505.0	0.0	63.0	0.0	8.2	3.1	19.9	168.0	604.0
MEAN	328.8	94.5	0.0	7.0	870.5	476.0	0.0	58.3	0.0	8.1	3.0	19.5	159.5	565.5
No. of Analysis	4	4	4	4	4	4	4	4	4	4	4	4	4	4
HISTORICAL 1988-2009														
MIN	294	69.0	0.0	4.0	500	329	0.00	37.60	0.000	6.90	0.74	14.90	40	240
MAX	475	120.3	23.0	25.0	1139	590	2.81	70.43	0.200	8.23	14.00	37.16	218	678
MEAN	399	90.8	2.3	7.8	821	429	0.18	48.89	0.035	7.76	3.06	18.76	113	502
MN-ME **														
20100310	312.0	76.2	0.0	4.0	671.0	354.0	0.0	39.8	0.0	7.5	1.4	16.3	44.0	375.0
20100622	314.0	73.3	0.0	4.0	650.0	334.0	0.0	36.8	0.0	7.4	1.3	15.9	43.0	383.0
20100927	312.0	74.7	0.0	4.0	644.0	340.0	0.0	37.3	0.0	7.4	1.3	15.6	45.0	358.0
20101206	311.0	71.4	0.0	4.0	640.0	324.0	0.0	35.4	0.0	7.4	1.2	15.7	44.0	362.0
2010* **														
MIN	311	71.42	0.0	4	640	324	0	35.40	0.0	7.42	1.23	15.57	43	358
MAX	314	76.24	0.0	4	671	354	0	39.82	0.0	7.48	1.36	16.27	45	383
MEAN	312	73.91	0.0	4	651	338	0	37.33	0.0	7.44	1.31	15.85	44	370
No. of Analysis	4	4	4	4	4	4	4	4	4	4	4	4.00	4	4
HISTORICAL 1991-2009														
MIN	279	61.3	0.0	0.4	450	279	0.00	18.70	0.000	6.60	0.01	9.81	27.00	313
MAX	714	211.0	5.0	30.0	950	732	1.17	77.10	1.210	8.40	5.00	55.03	350.00	505
MEAN	364	76.9	1.2	6.8	634	347	0.13	36.62	0.075	7.38	1.38	15.48	50.13	376

*** Quality parameters are reported as mg/l unless otherwise noted.**

**** Sample site intiated during 1991.**

***** 1997 Data: Database input restricted to values greater than laboratory minimum detection limit.**

TABLE 41: DEER CREEK MINE - DISCHARGE WATER QUALITY*

	2010**				Historical - (1976-2009)			
Parameters	***Minimum***	***Maximum***	***Mean***	***No. of Analysis***	***Minimum***	***Maximum***	***Mean***	***No. of Analysis***
Acidity	0	0	0	12	0.1	97	13.28	266
Chloride	9	110	25.25	12	0.7	285	18.39	406
Conductivity (umhos/cm)	775	1128	932.50	12	480	1900	896.69	420
Iron - Total	0.25	1.66	0.67	13	0.01	7.53	0.63	416
Oil & Grease	No Visual Oil & Grease Noted in 2010			0	0.1	48.8	3.21	238
pH (units)	7.39	7.5	7.43	12	6.52	8.51	7.49	408
Sulfate	**80**	**190**	**143.08**	12	13	518	173.54	414
TDS	466	658	572.50	12	289	1111	571.21	426
TSS	0	8	1.67	12	0	2784	50.52	355

* Quality parameters reported as mg/l unless otherwise noted.

** Data: Database input restricted to values greater than laboratory minimum detection limit.

TABLE 42: WILBERG/COTTONWOOD IN-MINE WATER QUALITY *

2010** SAMPLE DATES	ALKALINITY BICARBONATE	CALCIUM	CARBONATE	CHLORIDE	CONDUCTIVITY (umhos/cm)	HARDNESS	IRON DISSOLVED	MAGNESIUM	MANGANESE	PH (units)	POTASSIUM	SODIUM	SULFATE	TDS
2S XC-11	Mine Sealed May 2001 - In-Mine Monitoring Discontinued													
2010**														
MIN														
MAX														
MEAN														
No. of Analysis														
HISTORICAL 1983-2001														
MIN	403	116.0	0.1	6.0	1000	725	0.01	5.40	0.01	6.50	0.30	5.80	250.0	664
MAX	676	330.0	5.0	160.0	2600	1022	0.30	134.40	0.20	8.07	7.40	36.90	690.0	1328
MEAN	565	171.0	1.6	20.3	1495.0	868.0	0.13	105.50	0.05	7.23	4.22	22.56	412.0	1050
TMA XC-32	Mine Sealed May 2001 - In-Mine Monitoring Discontinued													
2010**														
MIN														
MAX														
MEAN														
No. of Analysis														
HISTORICAL 1983-2001														
MIN	379	114	1	7	1171	581	0.10	72	0.10	7.03	6	33	256	816
MAX	467	133	5	17	1352	688	0.70	90	0.20	8.20	10	44	491	993
MEAN	441.0	119.0	3.5	12.3	1259.0	609.0	0.2	75.7	0.1	7.27	7.5	39.2	338.5	868.4

*** Quality parameters are reported as mg/l unless otherwise noted.**

**** 1997 Data: Database input restricted to values greater then laboratory minimum detection limit.**

TMA001*

	2010				Historical - (2001-2010)			
	Min	Max	Mean	No. of Analysis	Min	Max	Mean	No. of Analysis
Acidity	0	0.00	0	12	6	6	6.00	1
Chloride	13	16	14.25	12	6	41	17.27	104
Conductivity (umhos/	1101	1118	1109.83	12	1062	1436	1170.15	104
Iron - Total	0	0	0	12	0	0.4	0.02	30
Oil & Grease	No Visual Oil & Grease Noted in 2010				0	0		0
pH (units)	7.31	7.47	7.39	12	6.2	8.08	7.38	103
Sulfate	230	244	235.92	12	215	322	263.44	104
TDS	706	766	741.75	12	696	803	757.93	104
TSS	0	0	0	12	0	14	2.35	26

* Discharge Re-located From Grimes Wash to TMA July 2001
ND - Not Detected

TABLE 44: TRAIL MOUNTAIN IN-MINE WATER QUALITY *

2010** SAMPLE DATES	ALKALINITY BICARBONATE	CALCIUM	CARBONATE	CHLORIDE	CONDUCTIVITY (umhos/cm)	HARDNESS	IRON DISSOLVED	MAGNESIUM	MANGANESE	PH (units)	POTASSIUM	SODIUM	SULFATE	TDS
UG-3	Mine Sealed April 2001 - In-Mine Monitoring Discontinued													
2010**														
MIN														
MAX														
MEAN														
No. of Analysis														
HISTORICAL 1985 - 2001														
MIN	260	26.0	0.1	2	380	151	0.03	19.6	0.03	7.41	2.1	33.0	15.0	252
MAX	344	49.3	25.0	16	696	222	0.20	29.0	0.20	8.48	5.0	61.0	130.0	424
MEAN	305	34.2	7.3	8.80	542	189	0.15	25.3	0.10	8.09	3.6	46.1	33.7	308

* Quality parameters are reported as mg/l unless otherwise noted.

** Data: Database input restricted to values greater then laboratory minimum detection limit.

TABLE 45 : TRAIL MOUNTAIN - DISCHARGE WATER QUALITY

@ COTTONWOOD CANYON PORTALS

	2010				Historical			
	Min	Max	Mean	No. of Analysis	Min	Max	Mean	No. of Analysis
pH	Mine Sealed April 2001 - No Discharge				7.8	8.53	8.26	67
Acidity					12	58	35	2
Bicarb. Alkalinity					341	922	753	48
Chloride					10	410	36.5	49
Conductivity					1116	1655	1464	55
Iron					0.3	2.3	0.55	71
Oil & Grease					2	2	2	2
Sulfate					50	292	152	48
TDS					671	1072	936	70
TSS					5	42	109	36

OLIPHANT PORTALS

	2010				Historical			
	Min	Max	Mean	No. of Analysis	Min	Max	Mean	No. of Analysis
pH	No Flow for 2010				7.54	8.91	8.1	45
Acidity					1	19	7.73	15
Bicarb. Alkalinity					214	327	282	45
Chloride					4	21	8.3	45
Conductivity					482	925	663	42
Iron					0.01	0.7	0.16	23
Oil & Grease					0.4	5	4.4	8
Sulfate					90	330	123	45
TDS					354	584	410	45
TSS					1	90	22.6	23

TABLE 46: WELLS - WATER QUALITY *

2010** SAMPLE DATES	ALKALINITY BICARBONATE	CALCIUM	CARBONATE	CHLORIDE	CONDUCTIVITY (umhos/cm)	HARDNESS	IRON DISSOLVED	MAGNESIUM	MANGANESE	PH (units)	POTASSIUM	SODIUM	SULFATE	TDS
DEER CREEK - DCWR-1														
20100317	659	114.15	0	775	18390	1032	0	181.38	0.002	7.79	16.26	5193.1	9706	16537
20100609	663	111.3	0	787	18340	976	0	169.41	0.012	7.6	15.3	5110.4	9816	16575
20100920	669	106.97	0	822	18600	928	0.05	160.46	0.013	7.63	15.84	4799.6	9872	16658
20101207	678	99.89	0	802	18620	850	0.15	145.95	0.011	7.67	28.13	4739.6	10146	16242
2010**														
MIN	659	100	0	775	18340	850	0	146	0	8	15	4740	9706	16242
MAX	678	114	0	822	18620	1032	0	181	0	8	28	5193	10146	16658
MEAN	667	108	0	797	18488	947	0	164	0	8	19	4961	9885	16503
No. of Analysis	4	4	4	4	4	4	4	4	4	4	4	4	4	4
HISTORICAL 1989-2009:														
MIN	531	95.0	0	17	17300	318	0.00	4.54	0.00	7.34	6.12	4500	6000	11466
MAX	935	880.10	83	1140	45000	3351	1.74	351.00	0.20	8.47	43.80	9978	18000	24189
MEAN	743.64	161.51	3.86	757.04	22203.81	1193.45	0.22	191.67	0.04	7.75	17.53	6014.71	11900.13	19161.80
WILBERG/COTTONWOOD - CWRW-1														
20100315	442	453.54	0	2579	18520	4862	0	905.75	0.111	7.36	37.42	3743.8	7993	17228
20100610	444	459.58	0	2693	18550	4620	0	843.21	0.089	7.32	34.89	3750.6	8190	17116
20100909	417	454.6	0	2649	18730	4583	0	837.28	0.06	7.19	37.05	3593.1	7846	16701
20101208	511	450.57	0	2914	19510	4462	0	810.32	0	7.46	49.15	3698.2	8729	17794
2010**														
MIN	417	451	0	2579	18520	4462	0	810	0	7	35	3593	7846	16701
MAX	511	460	0	2914	19510	4862	0	906	0	7	49	3751	8729	17794
MEAN	454	455	0	2709	18828	4632	0	849	0	7	40	3696	8190	17210
No. of Analysis	4	4	4	4	4	4	4	4	4	4	4	4	4	4
HISTORICAL 1989-2009:														
MIN	233	132	0.00	280	10,666	1629	0.00	137.7	0.000	6.90	8.0	851	750	5,231
MAX	864	1135	10	4020	120,000	8327	37.77	1717	2.480	8.33	122.0	8,812	24,000	30,440
MEAN	406	375	1.3	2313	21,610	3822	1.68	695	0.239	7.58	35.8	3,900	8,414	15,821
TRAIL MOUNTAIN TM-1B														
20100315	404	9.4	47	57	1028	62	0	9.43	0.008	8.56	2.35	218.79	12	624
20100610	432	8.58	21	57	1050	55	0	8.18	0.008	8.5	2.28	225.78	16	604
20100908	445	9.73	0	57	1013	59	0	8.37	0.01	8.34	2.41	209.54	10	613
20101208	438	8.54	19	59	1026	56	0	8.44	0.007	8.51	2.38	245.52	14	627
2010**														
MIN	404	8.54	0	57	1013	55	0	8.18	0.007	8.34	2.28	209.54	10	604
MAX	445	9.73	47	59	1050	62	0	9.43	0.01	8.56	2.41	245.52	16	627
MEAN	429.75	9.06	21.75	57.50	1029.25	58.00	0.00	8.61	0.01	8.48	2.36	224.91	13.00	617.00
No. of Analysis	4	4	4	4	4	4	4	4	4	4	4	4	4	4
HISTORICAL 1985-2009:														
MIN	304.0	2.4	0	16	783	7.0	0.00	1.0	0.000	7.43	1	5	0	402
MAX	1015.0	14	164	717	4580	72.0	0.20	10.7	0.2	9.55	15.7	1316	664	3,290
MEAN	498.03	8.77	26.9	66.69	1093.17	55.9	0.05	8.3	0.020	8.44	2.63	238.21	26.32	644

* Quality parameters are reported as mg/l unless otherwise noted.

** Data: Database input restricted to values greater than laboratory minimum detection limit.

STRAIGHT CANYON WATER QUALITY *

T-19

APPENDIX F

2010* SAMPLE DATES	ACIDITY	ALKALINITY BICARBONATE	CALCIUM	CARBONATE	CHLORIDE	CONDUCTIVITY (umhos/cm)	HARDNESS	IRON TOTAL	IRON DISSOLVED	MAGNESIUM	MANGANESE	OIL & GREASE	PH (units)	POTASSIUM	SODIUM	SULFATE	TSS	TDS
20100315	0	310	73.07	35	38	1322	636	0	0	110.21	0	0	8.39	5.74	87.43	374	0	931
20100610	0	330	73.05	38	37	1419	678	0	0	120.31	0	0	8.44	7.68	78.22	422	14	982
20100909	0	412	88.18	0	37	1591	857	0	0	154.72	0.004	0	8.4	10.39	72.49	481	6	1138
20101208	0	354	76.7	20	37	1420	662	0	0	114.23	0	0	8.27	6.59	91.27	424	0	1021
2010**																		
MIN	0	310	73	0	37	1322	636	0	0	110	0	0	8	6	72	374	0	931
MAX	0	412	88	38	38	1591	857	0	0	155	0	0	8	10	91	481	14	1138
MEAN	0.00	351.50	77.75	23.25	37.25	1438.00	708.25	0.00	0.00	124.87	0.00	0.00	8.38	7.60	82.35	425.25	5.00	1018.00
No. of Analysis	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
2009**																		
MIN	0	190	14	0	19	581	178	0	0	24	0	0	7	1	12	39	0	340
MAX	14	500	99	78	68	1840	993	5	0	162	0	5	9	30	125	609	420	1256
MEAN	5.76	362.59	53.42	15.06	36.63	1068.63	448.23	0.72	0.13	73.57	0.05	3.28	8.42	4.14	73.80	218.94	79.27	671.09
2008**																		
MIN		286	53	0	30	959	434	0		73	0		8	4	60	182	0	577
MAX		368	78	22	36	1494	732	0		131	0		9	8	78	434	7	1016
MEAN		326	66	7	33	1210	538	0		96	0		8	5	70	303	4	794
2007**																		
MIN	9	322	56	6	29	1016	420	2		68	0		8	3	68	179	158	622
MAX	9	364	99	49	43	1840	836	2		143	0		8	9	90	518	158	1154
MEAN	9	350	73	23	37	1398	611	2		104	0		8	6	82	355	158	898
2006**																		
MIN		290	43	13	19	843	338	0		56	0		8	2	36	99	13	456
MAX		312	62	13	30	1127	461	1		75	0		9	3	66	203	51	658
MEAN		298	52	13	25	944	387	1		62	0		8	3	51	139	31	526
2005**																		
MIN		287	42	17	22	827	360	0		62	0		9	2	44	124	33	498
MAX		329	68	24	37	1493	552	1		93	0		9	5	92	341	338	879
MEAN		306	55	20	28	1097	438	1		73	0		9	3	64	211	135	657
2004**																		
MIN		334	51.9	8	33	1060	429	0.07		73			8.41	3.93	63	271	10	698
MAX		430	95.7	8	38	1716	906	2.54		162			8.46	10.10	88	609	177	1256
MEAN		381	70.4	8	36	1326	617	0.90		107			8.43	6.09	78	393	94	913
2003**																		
MIN		376	64.1	5	32	1324	605	0.03	0.04	107		2	8.42	5.46	77	362	5	885
MAX		500	86.7	19	43	1646	836	0.08	0.04	154		2	8.67	9.48	90	542	8	1205
MEAN		425	74.7	12	36	1462	706	0.06	0.04	126		2	8.54	7.14	84	440	7	1026
2002**																		
MIN		410	58.0	5	33	1252	495	0.50		85			8.38	4.00	88	303	46	816
MAX		498	79.0	14	40	1674	786	0.50		143			8.55	9.00	90	520	46	1198
MEAN		459	68.0	8	37	1423	622	0.50		110			8.46	6.00	89	397	46	983
2001**																		
MIN		345	42.0	12	42	1105	400	0.30		68			8.18	3.00	103	181	7	722
MAX		424	58.0	23	53	1319	516	2.50		92			8.53	5.00	109	340	309	868
MEAN		393	50.8	16	48	1221	454	1.10		80			8.33	3.75	105	266	113	792
2000**																		
MIN		345	42.0	12	42	1105	400	0.30		68			8.18	3.00	103	181	7	722
MAX		424	58.0	23	53	1319	516	2.50		92			8.53	5.00	109	340	309	868
MEAN		393	50.8	16	48	1221	454	1.10		80			8.33	3.75	105	266	113	792
HISTORICAL 1988-2009																		
MIN	0.0	190	14.3	0.0	19.0	581	178	0.000	0.00	24	0.000	0.0	7.44	0.70	12	39.0	0.0	340
MAX	14.0	500	98.9	78.0	67.9	1840	993	5.10	0.38	162	0.20	5.0	8.87	30.20	125	609.0	420.0	1256
MEAN	4.7	362	54.5	14.6	36.6	1084	460	0.68	0.10	76	0.04	2.6	8.42	4.29	73.70	227.5	74.3	685.557
No. of Analysis	13	71	71	49	71	67	71	54	14	71	21	12	70	69	71	71	54	71

* Quality parameters are reported as mg/l unless otherwise noted.

** Data: Database input restricted to values greater than laboratory minimum detection limit.

INDIAN CREEK WATER QUALITY *

ICA

APPENDIX F

2010** SAMPLE DATES	ACIDITY	ALKALINITY BICARBONATE	CALCIUM	CARBONATE	CHLORIDE	CONDUCTIVITY (umhos/cm)	DISSOLVED OXYGEN	HARDNESS	IRON TOTAL	IRON DISSOLVED	MAGNESIUM	MANGANESE	OIL & GREASE	PH (units)	POTASSIUM	SODIUM	SULFATE	TSS	TDS
20101013	0	264	72.59	0	3	512		270	0.21	0	21.56	0		8.19	1.05	3.26	12	0	313
2009**																			
MEAN	5	262	72.65		2	511		278	0.09		23.39			8.22	1.05	3.32	11	0	277
2008**																			
MEAN		257	74.26		2	499		280	0.12		22.97	0.002		8.3	0.89	3.27	10	0	286
2007**																			
MEAN		251	72.0		2	496		274	0.30		22.8	0.02		8.02	1.07	3.01	14	26	294
2006**																			
MEAN		297	77.5		3	554		282	0.06		21.5	0.01		7.96	0.64	2.71	8		282
2005**																			
MEAN		265	80.8		3	571	10	294	0.07		23	0		8.30	1.56	3.27	8	5	291
2004**																			
MEAN		262	77.4		2	493		281	0.08		21.4	0.03		8.06	0.79	2.92	13	7	299
2003**																			
MEAN		312	71.5		2	493		271	0.02		22.4			8.24	0.91	2.93	19		265
2002**																			
MEAN		286	67.0		2	483		258			22.0			8.25		4.00	23		304
2001**																			
MEAN		327	71.0		3	633		264	0.20		21.0			8.21		3.00	9		289
2000**																			
MEAN		313	69.0		2	487		255	0.20		20.0			8.10		3.00	10	43	274
HISTORICAL 2000-2009																			
MIN	0	251.0	67.0	0.0	2	483	0	255.00	0.02	0.0	20.000	0.0		7.96	0.64	2.7	8.0	0	265
MAX	5	327.0	80.8	0.0	3	633	0	294.00	0.30	0.0	23.390	0.0		8.30	1.56	4.0	23.0	43	304
MEAN	3	283.2	73.3	0.0	2	522	-	273.70	0.13	0.0	21.991	0.0		8.17	0.99	3.1	12.5	13.5	286.1
No. of Analysis	2	10	10		10	10	1	10	9	1	10	6		10	7	10	10	6	10

* Quality parameters are reported as mg/l unless otherwise noted.

** Data: Database input restricted to values greater then laboratory minimum detection limit.

INDIAN CREEK WATER QUALITY *

ICB

APPENDIX F

2010** SAMPLE DATES	ACIDITY	ALKALINITY BICARBONATE	CALCIUM	CARBONATE	CHLORIDE	CONDUCTIVITY (umhos/cm)	DISSOLVED OXYGEN	HARDNESS	IRON TOTAL	IRON DISSOLVED	MAGNESIUM	MANGANESE	OIL & GREASE	PH (units)	POTASSIUM	SODIUM	SULFATE	TSS	TDS
20101013	0	240	63.17	0	3	457		246	0.32	0	21.48	0	0	8.32	1.08	4.37	13	25	288
2009**																			
MEAN		246	68		2	480		267	0.41		24	0.000		8.35	1.1	4.34	13	14	261
2008**																			
MEAN	7	236	66	0	2	465		259	0.25		23	0.006		8.27	0.9	3.99	11	0	276
2007**																			
MEAN		237	64.9		2.0	466		258	1.43		23	0.046		8.09	1.01	3.73	14.0	37	286
2006**																			
MEAN		239	72.0		3.0	527		268	0.24		22	0.005		8.25	0.61	3.62	9.0		278
2005**																			
MEAN		238	68.2	5	2.0	534	9	258	0.20		21	0.013		8.41	1.00	4.29	10.0	9	268
2004**																			
MEAN		258	73.4		2.0	490		271	0.72		21	0.025		7.94	0.75	3.29	12.0	10	284
2003**																			
MEAN		276	59.3		2.0	427		236	0.37		21			8.13	0.93	3.41	11.0	21	216
2002**																			
MEAN		282	57.0		2.0	432		233	0.40		22			8.21		4.00	8.0		235
2001**																			
MEAN		293	59.0		2.4	559		234	0.20		21			8.26		3.00	7.7	6	253
2000**																			
MEAN	12	301	65.0		2.0	468		245	0.10		20			8.19	1.00	3.00	9.0	9	266
HISTORICAL 2000-2009																			
MIN	0.0	236	57.0	0.0	2.0	427		233	0.10	0.00	20	0.000	0.0	7.94	0.61	3.00	7.7	0.0	216
MAX	12.0	301	73.4	5.0	3.0	559		271	1.43	0.00	24	0.023	0.0	8.41	1.05	4.34	14.0	37.0	286
MEAN	6.3	261	65.2	1.7	2.1	485		253	0.43	0.00	22	0.009	0.0	8.21	0.91	3.67	10.5	13.3	262.3
No. of Analysis	3	10	10	3	10	10		10	10		10	6		10	8	10	10	8	10

* Quality parameters are reported as mg/l unless otherwise noted.

** Data: Database input restricted to values greater then laboratory minimum detection limit.

INDIAN CREEK WATER QUALITY *
ICD
APPENDIX F

2010** SAMPLE DATES	ACIDITY	ALKALINITY BICARBONATE	CALCIUM	CARBONATE	CHLORIDE	CONDUCTIVITY (umhos/cm)	DISSOLVED OXYGEN	HARDNESS	IRON TOTAL	IRON DISSOLVED	MAGNESIUM	MANGANESE	OIL & GREASE	PH (units)	POTASSIUM	SODIUM	SULFATE	TSS	TDS
20101013	0	273	93.72	0	5	671		365	0.28	0	31.72	0	0	8.3	1.11	10.72	108	10	456
2009**																			
MEAN																			
2008**																			
MEAN		279	85.77		4	628		350	0.06		33.04	0.005	0	9.43	1.19	10.15	66	0	395
2007**																			
MEAN		256	96.8	6.0	4.0	717		388	0.12		35.60	0.02		8.17	1.39	10.30	130.0		484
2006**																			
MEAN		361	108.0		7	813	9	413	0.14		35	0.06	4.00	8.04	2.45	11.20	47	7	450
2005**																			
MEAN		361	108.0		7	813	9	413	0.14		35	0.06	4.00	8.04	2.45	11.20	47	7	450
No Flow During 2004																			
2003**																			
MEAN		307	81.5		3	624		329	0.13		30	0.009		8.21	1.05	8.87	108		367
2002**																			
MEAN		266	96.0		3	740		384	0.30		35			8.28		10.00	188		528
2001**																			
MEAN		379	80.0		4	753		323	0.10		30			8.29		10.00	43	10	369
2000**																			
MEAN		321	92.0		5	689		362			32			8.00	1.00	10.00	125		459
HISTORICAL 2000-2008																			
MIN	0	256.0	80.0	0.0	3	624		323.00	0.06		30.00	0.003	0.00	8.00	1.00	8.86	23.0	0	367
MAX	9	379.0	108.0	6.0	7	813		413.00	0.38		35.60	0.054	4.00	9.43	2.45	11.2	188.0	10	528
MEAN	5	307.11	91.05	2.0	4.34	706		362.78	0.18		32.92	0.023	1.33	8.29	1.39	9.94	90.78	6.25	426.44
No. of Analysis	1	9	9	2	9	9		9	8		9	6	2	9	7	9	9	4	9

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