TABLE 3-14
SUMMARY OF WATER QUALITY FOR SELECTED SPRINGS IN THE SOAPA STUDY AREA

Spring Site [1] (Period of Record)	Total Concentration Statistics[2,3]	Temp °C	pH SU	Alk mg/l	Cond uMHOS/cm	Hard mg/l	TDS mg/l	TSS mg/l	Turb NTU	Ag mg/l	As mg/l	Ba mg/l	Cd mg/l	Cr mg/l	Cu mg/l	Fe mg/l	Hg mg/l	Mn mg/l	Pb mg/l	Se mg/l	Zn mg/l
Spring - 1 (1991-1998)	No. of Samples	10	10	6	9	3	9	10	8	2	10	2	5	10	10	10	5	10	10	10	10
	Minimum	3.0	7.49	132.00	1675.00	1210	1100	3.6	0.30	0.005	0.011	bdl	bdl	bdl	bdl	bdl	bdl	0.06	bdl	bdl	bdl
	Average	11.4	7.93	160.00	2890.56	1556	2441	43.9	12.71	0.008	0.037	0.07	0.013	0.015	0.008	0.33	0.0006	0.16	0.025	0.006	0.038
	Maximum	17.7	8.64	234.00	5100.00	1749	3620	276.0	65.00	0.011	0.158	0.09	0.020	0.016	0.030	1.48	0.0009	0.45	0.170	0.012	0.143
	No. above Detection Limit	10	10	6	9	3	9	10	8	2	10	1	4	1	2	9	3	10	2	7	8
	No. above Water Standard[4]	0	0	0	0	0	9	4	2	1	2	0	4	1	0	2	3	10	2	6	0
Spring - 18 (1990-1996)	No. of Samples	12	12	8	12	3	11	12	11	4	12	4	6	12	12	12	6	12	12	12	12
	Minimum	3.4	7.50	59.60	113.00	76	85	bdl	0.20	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	0.02	bdl	bdl	bdl
	Average	10.8	8.03	140.83	310.56	170	231	8.7	5.64	bdl	0.003	0.07	bdl	bdl	0.005	0.54	bdl	0.05	bdl	0.002	0.010
	Maximum	17.6	8.49	217.00	560.00	250	361	26.0	18.00	bdl	0.009	0.08	bdl	0.008	0.020	2.96	bdl	0.14	bdl	0.002	0.030
	No. above Detection Limit	12	12	8	12	4	11	9	11	0	2	3	0	2	1	11	0	12	0	1	6
	No. above Water Standard[4]	0	0	0	0	0	0	1	1	0	0	0	0	0	0	5	0	5	0	0	0
Spring - 21 (1991-1998)	No. of Samples	13	13	8	13	4	12	13	12	3	13	3	6	13	13	13	6	13	12	13	13
	Minimum	7.0	7.93	121.00	128.00	250	120	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
	Average	12.0	8.19	208.38	370.38	255	272	18.4	4.01	bdl	0.002	0.09	0.004	bdl	0.006	0.23	0.0003	0.02	0.014	0.003	0.018
	Maximum	19.6	8.62	241.00	541.00	259	344	51.8	8.90	bdl	0.006	0.12	0.006	0.003	0.032	0.62	0.0005	0.05	0.080	0.005	0.120
	No. above Detection Limit	13	13	8	13	4	12	12	10	0	1	2	1	1	1	12	1	10	5	2	8
	No. above Water Standard[4]	0	0	0	0	0	0	3	0	0	0	0	1	0	0	4	1	2	5	1	0
Spring - 34 (1991-1998)	No. of Samples	13	13	8	13	4	12	13	12	3	13	3	6	13	13	13	6	13	13	13	13
	Minimum	6.5	7.30	226.00	133.00	263	242	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
	Average	13.3	7.90	254.13	524.92	307	363	44.1	9.63	bdl	0.003	0.08	0.004	bdl	0.013	0.98	0.0003	0.22	0.012	bdl	0.068
	Maximum	26.0	8.47	281.00	827.00	332	464	240.0	45.00	bdl	0.008	0.13	0.006	bdl	0.120	4.80	0.0005	1.20	0.080	0.001	0.320
	No. above Detection Limit	13	13	8	13	4	12	12	11	0	3	2	1	0	3	12	1	11	4	1	11
	No. above Water Standard[4]	0	0	0	0	0	0	4	4	0	0	0	1	0	0	5	1	7	4	0	1
Spring - 43 (1991-1996)	No. of Samples	19	20	16	19	12	19	20	19	11	20	11	13	20	20	20	14	20	20	20	20
	Minimum	17.0	6.75	135.00	300.00	121	280	bdl	bdl	bdl	bdl	0.11	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
	Average	53.9	7.82	243.06	758.95	175	392	36.6	7.60	bdl	0.011	0.24	0.004	0.015	0.007	0.55	0.0002	0.09	0.008	bdl	0.016
	Maximum	79.0	8.28	312.00	1200.00	195	452	166.0	42.00	bdl	0.021	0.34	0.007	0.130	0.050	2.80	0.0003	0.53	0.020	bdl	0.072
	No. above Detection Limit	19	19	16	19	12	19	16	18	0	19	11	3	2	6	19	3	17	3	0	11
	No. above Water Standard[4]	0	0	0	0	0	0	7	3	0	0	0	3	1	0	8	3	10	3	0	0
Spring - 44 (1992-1996)	No. of Samples	9	9	5	9	1	8	9	8	1	9	1	3	9	9	9	3	9	9	8	9
	Minimum	3.8	7.00	70.50	153.00	247	311	bdl	1.00	bdl	bdl	0.06	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
	Average	14.0	7.75	83.92	736.89	247	543	2537.2	445.90	bdl	0.008	0.06	bdl	bdl	0.004	0.49	bdl	0.38	0.009	bdl	0.015
	Maximum	26.4	8.60	126.00	1435.00	247	860	22330.0[7]	3540.00[7]	bdl	0.050	0.06	bdl	0.003	0.010	1.46	bdl	1.62	0.011	bdl	0.085
	No. above Detection Limit	9	9	5	9	1	8	8	8	0	3	1	0	1	1	8	0	8	2	0	4
	No. above Water Standard[4]	0	1	0	0	0	5	5	2	0	1	0	0	0	0	5	0	6	2	0	0
Spring - 50 (1991-1996)	No. of Samples	11	10	11	5	3	9	10	9	2	11	2	5	11	11	11	5	11	11	11	11
	Minimum	9.1	8.00	122.00	141.00	235	12	bdl	0.30	bdl	bdl	0.08	bdl	bdl	bdl	0.03	bdl	bdl	bdl	bdl	bdl
	Average	13.0	8.22	490.00	170.20	269	319	22.6	4.76	bdl	0.002	0.09	bdl	bdl	0.004	0.18	0.0003	0.04	0.006	0.003	0.047
	Maximum	20.8	8.37	654.00	189.00	291	454	71.6	15.20	bdl	0.007	0.09	bdl	0.005	0.008	0.46	0.0005	0.14	0.002	0.007	0.390
	No. above Detection Limit	11	10	11	5	3	9	9	9	0	2	2	0	1	1	11	1	10	2	5	7
	No. above Water Standard[4]	0	0	0	0	0	0	3	2	0	0	0	0	0	0	2	1	3	2	3	1
Spring - 52 (1992-1996)	No. of Samples	8	9	4	8	1	8	9	8	1	9	1	4	9	9	8	3	9	9	9	9
	Minimum	20.2	7.70	140.00	376.00	150	233	bdl	bdl	bdl	0.005	0.10	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
	Average	21.3	8.09	144.25	413.50	150	281	1.8	0.26	bdl	0.008	0.10	bdl	bdl	bdl	bdl	bdl	bdl	bdl	0.002	bdl
	Maximum	23.0	8.40	149.00	457.00	150	320	2.5	0.80	bdl	0.011	0.10	bdl	0.005	bdl	bdl	bdl	bdl	bdl	0.003	bdl
	No. above Detection Limit	8	9	4	8	1	8	3	3	0	9	1	0	1	0	0	0	0	0	2	0
	No. above Water Standard[4]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TABLE 3-14
SUMMARY OF WATER QUALITY FOR SELECTED SPRINGS IN THE SOAPA STUDY AREA

Spring Site [1] (Period of Record)	Total Concentration Statistics[2,3]	Temp °C	pH SU	Alk mg/l	Cond uMHOS/cm	Hard mg/l	TDS mg/l	TSS mg/l	Turb NTU	Ag mg/l	As mg/l	Ba mg/l	Cd mg/l	Cr mg/l	Cu mg/l	Fe mg/l	Hg mg/l	Mn mg/l	Pb mg/l	Se mg/l	Zn mg/l
MCD - 2 (1991-1996)	No. of Samples	10	10	8	10	3	10	11	10	2	11	2	5	11	11	11	5	11	11	11	11
	Minimum	5.3	7.60	85	92.00	135	109	bdl	bdl	bdl	bdl	0.07	bdl	bdl	bdl	0.12	bdl	0.02	bdl	bdl	0.011
	Average	12.9	7.99	123.75	319.60	162	242	21.4	2.50	bdl	0.002	0.08	bdl	bdl	bdl	0.47	0.0004	0.06	0.006	0.003	0.067
	Maximum	21.2	8.20	170	509.00	190	361	100.0	9.00	bdl	0.006	0.08	bdl	bdl	bdl	0.96	0.0006	0.13	0.005	0.006	0.160
	No. above Detection Limit	10	10	8	10	3	10	10	9	0	3	2	0	0	0	11	1	11	1	2	11
	No. above Water Standard[4]	0	0	0	0	0	0	2	0	0	0	0	0	0	0	6	1	7	1	2	1
Maximum Detection Limit		NR	NR	NR	NR	NR	NR	5	0.50	0.005	0.020	0.10	0.010	0.100	0.010	0.05	0.0010	0.05	0.050	0.010	0.020
Drinking Water Standards[5]			6.5-8.5 (s)				500(s)			0.050	0.050	2.0	0.005	0.100	1.3	0.3(s)	0.002	0.05(s)	0.05	0.05	5.0(s)
Aquatic Life Standards[6]			6.5-9.0					25-80	10	0.009(d)	0.18(d)-0.34(d)		0.0015(d)-0.006(d)	0.01(d)-0.015(d)	16.1(d)-25.3(d)	1.0	0.000012(d)-0.002		0.0016(d)-0.08(d)	0.005-0.02	0.145(d)-0.160(d)

Source: Newmont, 1999; NAC 445A.144

[1] See Figure 3-3 for location of springs.

[2] Average values were calculated assuming half detection limit for values below detection limit.

[3] Samples collected generally semi-annually through May 1998 after which chemistry analysis was ended. Results are for unfiltered samples only; Alk. = Alkalinity; Cond. = Conductivity (field); Hard. = Hardness; TDS = total dissolved solids; TSS = total suspended solids; Turb. = turbidity; Ag = silver; As = arsenic; Ba = barium; Cd = cadmium; Cr = chromium; Cu = Copper; Fe = iron; Hg = mercury; Mn = manganese; Pb = lead; Se = selenium; Zn = zinc; °C = degree celsius; SU = standard pH units (lab measured); mg/l = milligrams per liter; uMHOS/cm = microhoms per cemtimenter; NTU = nephelometric turbidity units; bdl = below detection limits.

[4] Based on strictest standard.

[5] All concentrations reported are primary drinking water standards unless followed by (s) indicating secondary standards.

[6] All standards for metals are for total recoverable, unless noted with (d) for dissolved fraction.

Ag, Cd, Cu, Pb, and Zn concentration standards are calculated based on a hardness of 175 mg/l, representative of Maggie Creek and the Humboldt River.

For As, Cd, Cr, Cu, Hg, Pb, Se, and Zn low values are 96-hour average concentration limits, high values are 1-hour average concentration limits. Both may be exceeded only once every 3 years.

For Ag and Fe single concentration limits must not be exceeded.

[7] Single high values (Spring -44) may be caused by sediment disturbed during the sampling process.