

Table 11. Trace elements detected in ground-water samples collected for the Southern Sierra Groundwater Ambient Monitoring and Assessment (GAMA) study, California, July to September 2006.

[The five-digit number in parentheses below the constituent name is the U.S. Geological Survey parameter code used to uniquely identify a specific constituent or property. Samples from the twenty-two slow and intermediate wells were analyzed. All analytes are listed in [table 3H](#). SOSA, Southern Sierra study unit grid-well; SOSAFP, Southern Sierra study unit flow-path well; AL-US, U.S. Environmental Protection Agency action level; HAL-US, U.S. Environmental Protection Agency Lifetime Health Advisory; MCL-CA, California Department of Public Health maximum contaminant level; MCL-US, U.S. Environmental Protection Agency maximum contaminant level; NL-CA, California Department of Public Health notification level; SMCL-CA, California Department of Public Health secondary maximum contaminant level; E, estimated value; LRL, laboratory reporting level; na, not available; V, analyte detected in sample and an associated blank thus data are not included in ground-water quality analyses; µg/L, microgram per liter; —, not detected]

GAMA well identifica- tion number	Alumi- num (µg/L) (01106)	Anti- mony (µg/L) (01095)	Arsenic (µg/L) (01000)	Barium (µg/L) (01005)	Beryl- lium (µg/L) (01010)	Boron (µg/L) (01020)	Cad- mium (µg/L) (01025)	Chro- mium (µg/L) (01030)	Cobalt (µg/L) (01035)	Copper (µg/L) (01040)	Iron (µg/L) (01046)	Lead (µg/L) (01049)
Threshold type¹	MCL-CA	MCL-US	MCL-US	MCL-CA	MCL-US	NL-CA	MCL-US	MCL-CA	na	AL-US	SMCL- CA	AL-US
Threshold level	1,000	6	10	1,000	4	1,000	5	50	na	1,300	300	15
LRL	1.6	0.20	0.12	0.2	0.06	8	0.04	0.040	0.040	0.4	6	0.08
Grid wells												
SOSA-03	E1	E0.12	*10.7	55	—	511	—	1.3	0.172	2.2	11	1.19
SOSA-07	—	—	*23.7	16	—	54	—	0.04	0.133	—	*934	0.22
SOSA-10	2.0	—	0.42	21	—	359	0.05	0.05	0.523	E0.3	239	1.03
SOSA-13	—	—	0.81	78	—	15	—	5.0	0.096	2.3	—	0.88
SOSA-15	—	—	E0.10	38	—	E8	E0.02	0.08	0.058	V0.8	—	4.07
SOSA-22	23	—	—	3	E0.05	E5	—	—	—	1.2	E3	0.08
SOSA-35	E1.0	—	*13.7	2	—	*1,280	E0.02	0.06	E0.029	1.7	229	0.35
Flow-path wells												
SOSAFP-01	—	—	0.92	74	—	51	—	5.8	0.153	V0.8	—	0.33
SOSAFP-02	—	—	*13.2	56	—	226	E0.04	0.05	0.447	E0.4	*4,200	0.43
SOSAFP-03	E0.9	—	1.90	33	—	74	—	3.2	0.087	V0.5	—	E0.04
SOSAFP-04	E1.0	—	1.20	99	—	30	—	2.7	0.142	1.2	—	0.52
SOSAFP-05	E1.0	—	1.30	78	—	42	—	1.4	0.062	1.9	—	1.69
SOSAFP-06	—	—	0.86	73	—	16	—	5.5	0.109	1.2	—	0.71
SOSAFP-07	—	0.25	0.95	76	—	68	0.29	2.6	0.24	1.3	—	0.29
SOSAFP-08	E0.9	—	0.82	74	—	57	0.05	3.3	0.186	2.2	—	0.25
SOSAFP-09	—	—	0.51	201	—	20	0.06	2.4	0.207	4.9	—	0.75
SOSAFP-10	—	—	1.10	49	—	23	0.07	8.4	0.14	V0.9	—	0.20
SOSAFP-11	—	—	0.68	108	—	28	E0.03	1.4	0.106	V0.9	E3	0.18
SOSAFP-12	—	—	0.89	44	—	64	E0.02	3.3	0.161	1.8	—	0.78
SOSAFP-13	—	—	0.59	77	—	116	E0.02	0.86	0.126	V0.9	14	0.75
SOSAFP-14	—	—	0.63	109	—	40	E0.02	2.1	0.144	1.4	9	2.03
SOSAFP-15	E1.0	—	0.85	118	—	22	—	5.4	0.226	1.4	E4	0.63

Table 11. Trace elements detected in ground-water samples collected for the Southern Sierra Groundwater Ambient Monitoring and Assessment (GAMA) study, California, July to September 2006—Continued.

[The five-digit number in parentheses below the constituent name is the U.S. Geological Survey parameter code used to uniquely identify a specific constituent or property. Samples from the twenty-two slow and intermediate wells were analyzed. All analytes are listed in [table 3H](#). SOSA, Southern Sierra study unit grid-well; SOSAFP, Southern Sierra study unit flow-path well; AL-US, U.S. Environmental Protection Agency action level; HAL-US, U.S. Environmental Protection Agency Lifetime Health Advisory; MCL-CA, California Department of Public Health maximum contaminant level; MCL-US, U.S. Environmental Protection Agency maximum contaminant level; NL-CA, California Department of Public Health notification level; SMCL-CA, California Department of Public Health secondary maximum contaminant level; E, estimated value; LRL, laboratory reporting level; na, not available; V, analyte detected in sample and an associated blank thus data are not included in ground-water quality analyses; µg/L, microgram per liter; —, not detected]

GAMA well identification number	Lithium (µg/L) (01130)	Manganese (µg/L) (01056)	Molybdenum (µg/L) (01060)	Nickel (µg/L) (01065)	Selenium (µg/L) (01145)	Silver (µg/L) (01075)	Strontium (µg/L) (01080)	Thallium (µg/L) (01057)	Tungsten (µg/L) (01155)	Uranium (µg/L) (22703)	Vanadium (µg/L) (01085)	Zinc (µg/L) (01090)
Threshold type¹	na	SMCL-CA	HAL-US	MCL-CA	MCL-US	SMCL-CA	HAL-US	MCL-US	na	MCL-US	NL-CA	SMCL-CA
Threshold level	na	50	40	100	50	100	4,000	2	na	30	50	5,000
LRL	0.6	0.2	0.4	0.06	0.08	0.2	0.4	0.04	0.06	0.04	0.10	0.6
Grid wells												
SOSA-03	46.2	0.4	2.8	3.19	0.23	—	425	—	0.46	3.98	7.1	7.2
SOSA-07	11.7	*329	6.3	0.47	—	—	86.6	—	1.3	0.55	0.30	15.6
SOSA-10	91.1	*90.7	21.4	1.50	0.30	—	253	—	0.06	3.52	0.94	2.1
SOSA-13	1.0	E0.1	1.1	0.42	0.71	—	294	—	0.2	1.51	11.2	3.8
SOSA-15	5.5	—	0.4	V0.25	0.10	—	334	—	0.12	1.17	0.70	13.5
SOSA-22	2.8	0.4	—	V0.07	—	—	69.1	—	—	0.07	0.24	V0.9
SOSA-35	98.6	3.6	14	V0.25	—	—	29.7	—	1.0	0.06	—	15.4
Flow-path wells												
SOSAFP-01	1.0	—	1.5	2.73	1.8	—	261	—	0.88	1.29	10.5	V1.2
SOSAFP-02	126	*2,250	4.3	2.99	—	—	368	—	0.09	7.59	0.15	5.4
SOSAFP-03	2.2	—	7.8	1.67	0.59	—	223	—	5.8	0.84	15.9	2.0
SOSAFP-04	1.1	—	4.9	1.85	1.5	—	334	—	1.1	1.50	12.8	12.0
SOSAFP-05	1.7	E0.1	4.9	0.36	0.37	—	220	—	22	1.17	11.5	3.4
SOSAFP-06	1.1	—	1.2	0.68	1.1	—	260	—	0.14	1.28	11.3	1.8
SOSAFP-07	1.6	0.2	16.8	2.97	1.7	0.5	344	—	—	4.75	13.6	4.8
SOSAFP-08	4.5	E0.1	14.6	2.59	1.3	—	243	—	—	2.97	15.0	2.3
SOSAFP-09	—	E0.1	11.0	2.70	1.1	—	313	E0.02	—	2.60	14.4	3.5
SOSAFP-10	1.5	E0.1	27.1	2.74	2.3	—	158	—	—	1.31	18.8	V0.9
SOSAFP-11	E0.5	E0.1	10.4	1.76	0.31	—	202	—	E0.04	0.77	16.1	3.3
SOSAFP-12	8.7	E0.1	23.8	2.94	1.6	—	173	—	0.07	0.96	16.4	2.6
SOSAFP-13	5.8	1.5	7.8	1.86	0.74	—	253	0.07	0.11	3.04	4.7	18.0
SOSAFP-14	3.5	3.2	3.8	1.94	1.3	—	310	—	0.48	4.47	6.8	2.6
SOSAFP-15	E0.4	0.3	2.8	3.83	2.4	—	263	—	0.09	2.04	7.9	15.4

*Value above lower threshold level.

¹Maximum contaminant level thresholds are listed as MCL-US when the MCL-US and MCL-CA are identical, and as MCL-CA when the MCL-CA is lower than the MCL-US or no MCL-US exists.