

TABLE 1
Gold King Mine Discharge (CC06) Dissolved Metal Concentrations
Concentrations in micrograms per liter (µg/L)

	8/10/15	8/13/15	8/15/15	8/17/15	8/19/15	8/22/15	8/24/15	8/26/15	8/28/15	8/31/15	9/3/15	9/7/15	9/14/15
Aluminum	35,000	36,000	34,000	33,000	32,000	32,000	31,000	30,000	29,000	29,000	29,000	25,000	25,000
Antimony	0.5 J	10	3.7	2 U	0.81 J *	3.2 *	0.57 J	0.53 J	0.58 J	0.67 J *	0.42 J	0.5 J	0.41 J
Arsenic	3.7	140	44	1.9 U	7.5	39	6.4 B	4.4 J	4.7	3.4	4.5	3.1	2.6
Barium	8.9	12	8.6	8.1 J	11 *	10 *	7.9	8.2	9.5	10 ^	8	9.6	11
Beryllium	11	11	11	0.75 U	12	11	9.3 * ^	9.2	10	10	7.9	9.3	11
Cadmium	65	66 B	82	74	94	82 *	69	65	78	76	60	69	81
Calcium	380,000	360,000	370,000 B	370,000 B	350,000	370,000 B	370,000	370,000	340,000	350,000 B	370,000	330,000 *	310,000 B
Chromium	2.7	8.6	5.5	5 U	2.8	4.6	2.9	2.5	2.6	2.5	2.7	2.2	2.6
Cobalt	110	110	110	110	120	120	120	120	110	100	120	95	100
Copper	6000 E	6100 E	4600 E	6800 B	6600 E	5900 E	6600 E	6200 E	6000	5600 E	6800	5200 E	5400 B E
Iron	120,000	370,000	150,000	110,000	110,000	130,000	97,000	100,000	94,000	93,000	95,000	79,000	81,000
Lead	32	78	42	27	31	38	25	28	29	30	26	28	30
Magnesium	33,000	26,000	27,000	26,000	25,000	27,000	26,000	25,000	24,000	24,000	25,000	22,000	22,000
Manganese	33,000 E	34,000 E	36,000	40,000	35,000 E	35,000 E	36,000 E	36,000 E	33,000	32,000 E	36,000	29,000 E	34,000 BE
Mercury	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U
Molybdenum	0.84 J	16	4.2	2.3 U	1.5	4.5 *	0.76 J	0.65 J	1.1	0.97 J	0.54 J	1.1	0.53 J
Nickel	72	69	69	79	66	63	80	68	63	61	75	54	58
Potassium	2700	2700	2400	2600	2600	2500	2600	2600	2400	2200 *	2600	2400 F1	2200
Selenium	0.58 J B	4.8	0.58 B ^	2.9 U	14 B * ^	5.3 * ^	2.5	2.9 U	3.5 B ^	11 B ^ *	1.1 J	12 B ^	5 B
Silver	0.1 U	0.33 J	0.1 J	0.5 U	0.1 U	0.1 U *	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Sodium	3900	480 U L	5300	5500	480 U	480 U	980 J	480 U	3900	4800 U	4800 U	4800 U	4800 U
Thallium	0.32	0.35	0.29	0.5 U	0.33	0.3	0.45	0.49	0.29	0.26 ^	0.25	0.27	0.28
Vanadium	2	87	38	3.5 J B	2.7	29	0.3 B * ^	2 B	1.4	1.2	1.4 B	0.89 J	0.8 J
Zinc	25,000 E	26,000 E	20,000 E	37,000	28,000 E	25,000 E	28,000 E ^	27,000EB*	26,000	23,000 E	28,000	21,000 E	23,000 BE

U Indicates the analyte was analyzed for but not detected.

J Result is less than the reporting limit but greater than or equal to the method detection limit and the concentration is an approximate value.

E Result exceeded calibration range.

^ ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.

B Compound was found in the blank and sample.

* Laboratory control sample or laboratory control sample duplicate outside acceptance limits.

L Laboratory control sample percent recovery was not within control limits.

TABLE 2
Gold King Mine Discharge (CC06) Total Metal Concentrations
Concentrations in micrograms per liter (µg/L)

	8/10/15	8/13/15	8/15/15	8/17/15	8/19/15	8/22/15	8/24/15	8/26/15	8/28/15	8/31/15	9/3/15	9/7/15	9/14/15
Aluminum	38000	36000	33000	33000	33000	33000	32000	30000	29000	29000	30000	28000	27000
Antimony	4.3	9.4	0.62 J	3.1 J	4.2 *	3.4 *	2.4	2.4	3.3	3.3	2.4	3	3.1 *
Arsenic	49	130 B	5.5	28	54	48	42	45	42	42	33	39	41
Barium	9.5	11 B	8.7	8 J	11 * ^	10 *	6.9	7	9.5	11	7.6	9.6	22
Beryllium	11	11	11	5	11	11	8.2	8.5	10	11	7.7	9.8	11
Cadmium	67	68	85	73	87	84 *	60	55	74	76	56	68	80 B *
Calcium	380000	380000	380000 B	360000 B	340000	370000 B	380000	340000	340000	370000	370000	350000 *	370000
Chromium	5.7	7 ^	3	5 U	4.9	5.2	4.2	4.1	4.3	4.6	4.5	4.2	4.2
Cobalt	120	110	110	110	110	120	120	110	100	110	120	110	100
Copper	6300 E	6000 E	4600 E	6800 B	6300 E	6300 E	6100 E	5800 E	6000	5800 E	6200 E	5500 E	5300 E
Iron	190000	310000	120000	140000	140000	140000	140000	120000	120000	120000	120000	120000	110000
Lead	51	69	29	36	43	41	38	36	40	41	37	38	55
Magnesium	28000	28000	27000	26000	24000	27000	27000	23000	25000	26000	24000	23000	26000
Manganese	34000 E	35000 E	36000	39000	35000 E	38000 E	35000 E	34000 E	32000	33000 E	36000 E	34000 E	22000 E
Mercury	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U
Molybdenum	4.8	14	0.77 J	5.8	6.5	5.4 *	3.5	3.3	4.9	5.2	3.5	5.2	4.5
Nickel	74	70	72	79	64	67	71	65	61	64	78	62	56
Potassium	2900	2700	2500	2600	2600	2600	2700	2400	2400	2200	2600	2400	2600
Selenium	2.5 ^	4.3 B ^	0.58 ^ B	3.8 J	14 B * ^	2.4 ^ *	7 J	6.1 J	8 B ^	6.3 B ^	2 J B * ^	3.9 B	1.3 J
Silver	0.15 J	0.3 J	0.1 U	0.5 U	0.15 J	0.1 J *	0.1 U	0.1 U	0.1 U	0.1 J	0.1 U	0.1 U	0.19 J
Sodium	4000	4800 U	5200	5300	480 U	480 U	870 J	480 U	3800	4800 U	4800 U	4800 U	4800 U
Thallium	0.33	0.35	0.29	0.5 U	0.34	0.31	0.44	0.33	0.29	0.28	0.26	0.26	0.32
Vanadium	44	71	2.5	34 B	35	36	30	26 B	29	30	24 B ^	29	29
Zinc	27000 E	26000 E	20000 E	36000	27000 E	26000 E	28000 E	25000 E	26000	24000 E	26000 E	23000 E	22000 E

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J Result is less than the reporting limit but greater than or equal to the method detection limit and the concentration is an approximate value.

E Result exceeded calibration range.

^ ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.

B Compound was found in the blank and sample.

* Laboratory control sample or laboratory control sample duplicate outside acceptance limits.

TABLE 3
Gold King Mine Discharge (CC06) Wet Chemistry
Concentrations in micrograms per liter (µg/L)

	8/10/15	8/13/15	8/15/15	8/17/15	8/19/15	8/22/15	8/24/15	8/26/15	8/28/15	8/31/15	9/3/15	9/7/15	9/14/15
Alkalinity	NA	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Chloride	NA	0.34 J	0.36 J	0.36 J	0.37 J	0.38 J	0.35 J	0.34 J	0.37 J	0.39 J	0.38 J	0.38 J	0.33 J
Fluoride	NA	11	10	11	12	10	10	10	11	10	10	10	11
Nitrate as N	NA	0.023 U	0.023 U H	0.046 U H	0.023 U H	0.023 U H	0.023 U	0.023 U H	0.023 U H	0.023 U H	0.023 U	0.023 U H	0.23 H
pH	NA	3.06 HF	2.93 HF	3.03 HF	2.92 HF	3.23 HF	3.11 HF	3.08 HF	2.9 HF	3.04 HF	3.1 HF	2.97 HF	2.91 HF
Sulfate	NA	1600	1600	1600	1700	1600	1800	1800	1900	1800	2000	2100	1600
Total Dissolved Solids	2600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Hardness	1100	1100	1100	1000	1000	1000	1100	950	950	1000	1000	920	1000
Total Suspended Solids	66	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

- U Indicates the analyte was analyzed for but not detected.
- J Result is less than the reporting limit but greater than or equal to the method detection limit and the concentration is an approximate value.
- HF Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.
- E Result exceeded calibration range.
- H Holding time exceeded.

TABLE 4
Summary Statistics
Gold King Mine Discharge Water Quality – August 10-September 14, 2015

	Average	Median	Minimum	Maximum
Alkalinity (mg/L)	5 U	5 U	5 U	5 U
Aluminum (µg/L)	31,083	31,000	27,000	36,000
Aluminum, Dissolved (µg/L)	30,417	30,500	25,000	36,000
Antimony (µg/L)	3.39	3.1	0.62 J	9.4
Antimony, Dissolved (µg/L)	1.95	0.625	0.41 U	10
Arsenic (µg/L)	45.8	42	5.5	130
Arsenic, Dissolved (µg/L)	21.8	4.6	1.9 U	140
Barium (µg/L)	10.2	9.55	6.9	22
Barium, Dissolved (µg/L)	9.49	9.55	7.9	12
Beryllium (µg/L)	9.6	10.5	5	11
Beryllium, Dissolved (µg/L)	9.37	10	0.75 U	12
Cadmium (µg/L)	72.2	73.5	55	87
Cadmium, Dissolved (µg/L)	74.7	75	60	94
Calcium (µg/L)	362,500	370,000	340,000	380,000
Calcium, Dissolved (µg/L)	355,000	365,000	310,000	370,000
Chloride (mg/L)	0.363 J	0.365J	0.33 J	0.39 J
Chromium (µg/L)	4.6	4.4	3	7
Chromium, Dissolved (µg/L)	3.71	2.75	2.2	8.6
Cobalt (µg/L)	111	110	100	120
Cobalt, Dissolved (µg/L)	111	110	95	120
Copper (µg/L)	5892	6000	4600	6800
Copper, Dissolved (µg/L)	5983	6050	4600	6800
Fluoride (mg/L)	10.5	10	10	12
Iron (µg/L)	141,667	120,000	110,000	310,000
Iron, Dissolved (µg/L)	125,750	98,500	79,000	370,000
Lead (µg/L)	41.9	39	29	69
Lead, Dissolved (µg/L)	34.3	29.5	25	78
Magnesium (µg/L)	25,500	26,000	23,000	28,000
Magnesium, Dissolved (µg/L)	24,917	25,000	22,000	27,000
Manganese (µg/L)	34,083	35,000	22,000	39,000
Manganese, Dissolved (µg/L)	34,667	35,000	29,000	40,000
Mercury (µg/L)	0.08 U	0.08U	0.08U	0.08U
Mercury, Dissolved (µg/L)	0.08 U	0.08 U	0.08U	0.08U
Molybdenum (µg/L)	5.21	5.05	0.77 J	14
Molybdenum, Dissolved (µg/L)	2.85	1.1	0.53 J	16
Nickel (µg/L)	67.4	66	56	79
Nickel, Dissolved (µg/L)	67.1	67	54	80
Nitrate as N (mg/L)	0.042	0.023 U	0.023 U	0.23
pH	3.02	3.04	2.9	3.23
Potassium (µg/L)	2525	2600	2200	2700
Potassium, Dissolved (µg/L)	2483	2550	2200	2700
Selenium (µg/L)	4.97	4.1	0.58	14

TABLE 4
Summary Statistics
Gold King Mine Discharge Water Quality – August 10-September 14, 2015

	Average	Median	Minimum	Maximum
Selenium, Dissolved (µg/L)	5.465	4.15	0.58	14
Silver (µg/L)	0.162	0.1	0.1	0.5
Silver, Dissolved (µg/L)	0.153	0.1	0.1	0.5
Sodium (µg/L)	3384	4800	480 U	5300
Sodium, Dissolved (µg/L)	3067	4350	480 U	5500
Sulfate (mg/L)	1758	1750	1600	2100
Thallium (µg/L)	0.331	0.315	0.26	0.5
Thallium, Dissolved (µg/L)	0.338	0.295	0.25	0.5
Total Hardness (mg/L)	1010	1000	920	1100
Vanadium (µg/L)	31.3	29.5	2.5	71
Vanadium, Dissolved (µg/L)	14.0	1.7	0.3	87
Zinc (µg/L)	25,750	26,000	20,000	36,000
Zinc, Dissolved (µg/L)	26,000	26,000	20,000	37,000

µg/L micrograms per liter

mg/L milligrams per liter

U Indicates the analyte was analyzed for but not detected.

Note: Averages were calculated using the method detection limit when the analyte was not detected.

TABLE 5
Flow from Gold King Mine – August 5 through September 21, 2015

Date	Flow	Total (gallons)	Date	Flow	Total (gallons)	Date	Flow	Total (gallons)
8/5/2015		3,000,000						
8/6/2015	748 gpm	538,560	8/23/2015	545 gpm	392,400	9/9/2015	547 gpm	393,840
	748 gpm	538,560		548 gpm	394,560		549 gpm	395,280
8/7/2015	756 gpm	544,586	8/24/2015	536 gpm	385,920	9/10/2015	556 gpm	400,320
	642 gpm	461,887		552 gpm	397,440		535 gpm	385,200
8/8/2015	587 gpm	422,546	8/25/2015	568 gpm	408,960	9/11/2015	556 gpm	400,586
	712 gpm	512,914		585 gpm	421,200		518 gpm	372,859
8/9/2015	825 gpm	593,777	8/26/2015	600 gpm	432,000	9/12/2015	556 gpm	399,973
	698 gpm	502,834		616 gpm	443,520		528 gpm	380,059
8/10/2015	689 gpm	496,339	8/27/2015	599 gpm	431,280	9/13/2015	520 gpm	374,400
	699 gpm	503,107		599 gpm	431,280		528 gpm	380,160
8/11/2015	644 gpm	463,795	8/28/2015	603 gpm	433,872	9/14/2015	562 gpm	404,597
	644 gpm	463,795		621 gpm	446,825		562 gpm	404,662
8/12/2015	646 gpm	465,185	8/29/2015	566 gpm	407,599	9/15/2015	557 gpm	400,716
	646 gpm	465,185		566 gpm	407,405		559 gpm	402,203
8/13/2015	662 gpm	476,935	8/30/2015	542 gpm	390,211	9/16/2015	562 gpm	404,640
	662 gpm	476,935		492 gpm	354,492		552 gpm	397,440
8/14/2015	661 gpm	475,805	8/31/2015	572 gpm	411,826	9/17/2015	584 gpm	420,480
	661 gpm	475,805		586 gpm	421,596		596 gpm	429,120
8/15/2015	342 gpm	246,413	9/1/2015	541 gpm	389,606	9/18/2015	597 gpm	429,840
	342 gpm	246,413		545 gpm	392,443		520 gpm	374,400
8/16/2015	471 gpm	339,394	9/2/2015	538 gpm	387,454	9/19/2015	656 gpm	472,320
	471 gpm	339,394		573 gpm	412,546		628 gpm	452,160
8/17/2015	584 gpm	420,307	9/3/2015	572 gpm	411,797	9/20/2015	615 gpm	442,800
	544 gpm	391,385		517 gpm	371,974		644 gpm	463,680
8/18/2015	606 gpm	436,320	9/4/2015	580 gpm	417,780	9/21/2015	551 gpm	396,720
	515 gpm	370,800		573 gpm	412,546		564 gpm	406,080
8/19/2015	631 gpm	454,320	9/5/2015	580 gpm	417,614	TOTAL		42,525,641
	605 gpm	435,600		551 gpm	396,418			
8/20/2015	647 gpm	465,840	9/6/2015	527 gpm	379,260			
	573 gpm	412,560		624 gpm	449,510			
8/21/2015	585 gpm	421,200	9/7/2015	522 gpm	375,898			
	597 gpm	429,840		537 gpm	386,820			
8/22/2015	543 gpm	390,960	9/8/2015	581 gpm	418,320			
	559 gpm	402,480		593 gpm	426,960			

gpm – gallons per minute

Notes: Twice daily measurements were used to calculate flow; each measurement represents 12 hours.

Flow in gallons per minute * 60 minutes/hour * 12 hours/measurement.

Flow from 8/5/2015 was estimated at 3,000,000 gallons