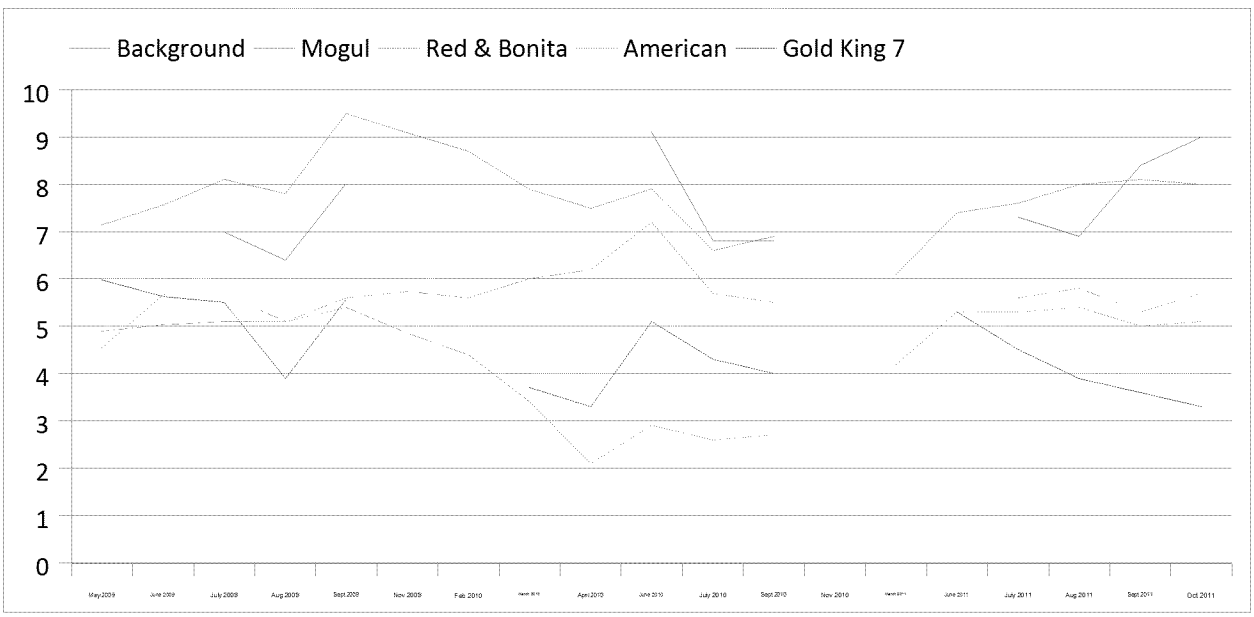

Background
Mogul
Red & Bonita
American
Gold King 7
10
9
8
7
6
5
4
3
2
1
0
May 2009
July 2009
Aug 2009
Sept 2009
Nov 2009
Feb 2010
April 2010
July 2010
Sept 2010
Nov 2010
June 2011
July 2011
Aug 2011
Oct 2011

Animas River Sampling Locations:

Sampling Location	Location Name	Latitude	Longitude	Elevation (HAE)	Description:
CC04	CC04	37 53 38.82 N	107 38 15.42 W	11313	North Fork of Cement Creek just upstream of confluence with the 7-Level mine adit. Sample upstream of the road switchback and upstream of the 7-Level flow that comes down the hill. Site was called CCOPP02 by EPA during May, June, and July 2009 sampling events.
CC02D	Mogul Adit	37 54 36.14 N	107 38 17.26 W	11376	Mogul Mine adit. Collect sample downstream of the mine pool at the 3-inch Parshall Flume.
CC03C	Red and Bonita Adit	37 53 50.16 N	107 38 37.90 W	10893	Red and Bonita mine adit at the portal. Do not take flow measurements at this site.
CC19	American Tunnel	37 53 27.50 N	107 38 54.39 W	10540	American Tunnel mine adit. Sample where flow comes out of the ground.
CC06	Upper Gold King 7-Level Adit	37 53 40.50 N	107 38 18.09 W	11386	7-Level mine adit upstream of the confluence with the North Fork of Cement Creek. Sample where flow comes out of the mine tunnel.
CC03D	CC03D	37 53 48.46 N	107 38 41.61 W	10776	Red and Bonita mine adit. Collect sample at culvert that goes under the road.

Exhibit 3: PHASE 1 2009 - 2011 CLTS: SUMMARY - Sample Collection Dates and Times

Location Name	Station ID	May 2009	June 2009	July 2009	Aug 2009	Sep 2009	Nov 2009	Feb 2010	March 2010	April 2010	May 2010	June 2010	Sept 2010	Nov 2010	March 2011	June 2011	July 2011	Aug 2011	Sept 2011	Oct 2011
		Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date
Blackglove	02B1F			07/15/09	08/18/09	09/23/09						7/14/2010	9/16/2010	11/3/2010						
Magic Little Adit	02B3D	06/20/09	06/17/09	07/15/09	08/18/09	09/23/09	11/18/09	2/18/2010	3/16/2010	4/14/2010	6/3/2010	7/14/2010	9/16/2010	11/4/2010		4/18/2011	7/20/2011	8/17/2011	9/14/2011	10/19/2011
Red and Bertie Adit	02B3C												9/16/2010	11/3/2010			7/19/2011	8/16/2011	9/13/2011	10/18/2011
American Tunnel	02B3	06/19/09	06/16/09	07/14/09	08/18/09	09/22/09	11/17/09	2/17/2010	3/16/2010	4/13/2010	6/2/2010	7/13/2010	9/14/2010	11/2/2010	3/16/2011	6/14/2011	7/19/2011	8/16/2011	9/13/2011	10/18/2011
T-Lever Adit	02B4	06/20/09	06/17/09	07/14/09	08/18/09	09/22/09	11/18/09	2/18/2010	3/16/2010	4/14/2010	6/2/2010	7/13/2010	9/14/2010	11/2/2010	3/16/2011	6/14/2011	7/19/2011	8/16/2011	9/13/2011	10/18/2011
Red and Bertie Collect	02B1B	06/19/09	06/17/09	07/14/09	08/18/09	09/22/09	11/18/09	2/18/2010	3/16/2010	4/14/2010	6/2/2010	7/13/2010	9/14/2010	11/2/2010	3/16/2011	6/14/2011	7/19/2011	8/16/2011	9/13/2011	10/18/2011

Field Conductivity and pH

ANIMAS RIVER 2009 - 2011 DATA SUMMARY - Field Measurements

Location Name	Station ID	May 2009 Flow cfs	June 2009 Flow cfs	July 2009 Flow cfs	Aug 2009 Flow cfs	Sept 2009 Flow cfs	Nov 2009 Flow cfs	Feb 2010 Flow cfs	March 2010 Flow cfs	April 2010 Flow cfs	June 2010 Flow cfs	July 2010 Flow cfs
Background	**CC01F**			1.11	0.101	0.200					4.61	0.389
Mogul Mine Adit	**CC02D**	0.259	0.108	0.178	0.109	0.109	0.123	0.154			0.138	0.095
Red and Bonita Adit	**CC03C**											
American Tunnel	**CC19**	0.318	0.309	0.231	0.212	0.221	0.278	0.178	0.204	0.204	0.24	0.24
7-Level Adit	**CC06**	0.423	0.498	0.436	0.358	0.562				0.333	0.558	0.485
Red and Bonita Culvert	**CC03D**	0.749	0.699	0.664	0.676	0.749				0.403	0.488	0.517

Field Conductivity and pH

Sept 2010 Flow cfs	Nov 2010 Flow cfs	March 2011 Flow cfs	June 2011 Flow cfs	July 2011 Flow cfs	Aug 2011 Flow cfs	Sept 2011 Flow cfs	Oct 2011 Flow cfs	May 2009 Temp °C	June 2009 Temp °C	July 2009 Temp °C	Aug 2009 Temp °C	Sept 2009 Temp °C
0.075				3.6	0.384	0.11	0.101			12.70	14.20	6.19
0.109	0.102		0.212	0.088	0.13	0.095	0.095	5.19	4.92	5.31	5.23	4.95
0.268	0.24	0.212	0.24	0.212	0.221	0.221	0.24	7.56	7.66	7.71	7.70	7.69
0.449	0.473		0.328	0.298	0.308	0.318	0.313	8.76	8.24	8.20	8.11	8.04
0.541	0.46		0.724	0.676	0.7			9.17	8.28	8.15	6.08	3.89

Field Conductivity and pH

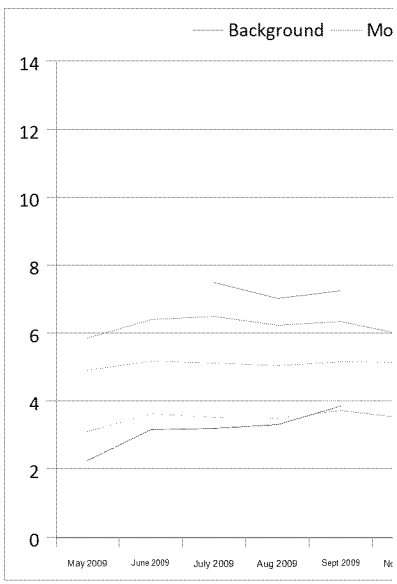
Nov 2009 Temp °C	Feb 2010 Temp °C	March 2010 Temp °C	April 2010 Temp °C	June 2010 Temp °C	July 2010 Temp °C	Sept 2010 Temp °C	Nov 2010 Temp °C	March 2011 Temp °C	June 2011 Temp °C	July 2011 Temp °C	Aug 2011 Temp °C	Sept 2011 Temp °C	Oct 2011 Temp °C
				0.31	12.45	12.3	1.1			10.51	13.58	2.8	1.62
4.86	4.76	5.13	5.08	4.38	5.33	5.3	5.1		4.99	5.42	5.3	5.26	5.11
						6.2	5.9			6.05	6.15	6.12	6.05
7.65	7.63	7.62	7.61	7.52	7.78	7.8	7.7	7.63	7.48	7.65	7.68	7.68	7.69
		7.96	7.98	8.5	8.19	8	8		8.56	8.42	8.13	8.02	7.95
2.09	3.22	6.85	9.4	6.83	16.78	14.2	6.4	8.94	8.06	9.59	8.26		

Field Conductivity and pH

May 2009 Cond µS/cm	June 2009 Cond µS/cm	July 2009 Cond µS/cm	Aug 2009 Cond µS/cm	Sept 2009 Cond µS/cm	Nov 2009 Cond µS/cm	Feb 2010 Cond µS/cm	March 2010 Cond µS/cm	April 2010 Cond µS/cm	June 2010 Cond µS/cm	July 2010 Cond µS/cm	Sept 2010 Cond µS/cm	Nov 2010 Cond µS/cm
		257	365	327					129	282	332	276
1274	1254	1296	1344	1347	1365	1345	1327	1322	785	1315	1357	1364
											2201	1578
2338	2426	2445	2425	2409	2511	1957	2428	2450	1430	2352	2451	2386
3076	2481	2476	2381	2175			1953	1955	3084	2443	2250	2064
2074	2051	2090	2098	2114	2169	2181	2207	2288	2207	2173	2188	2164

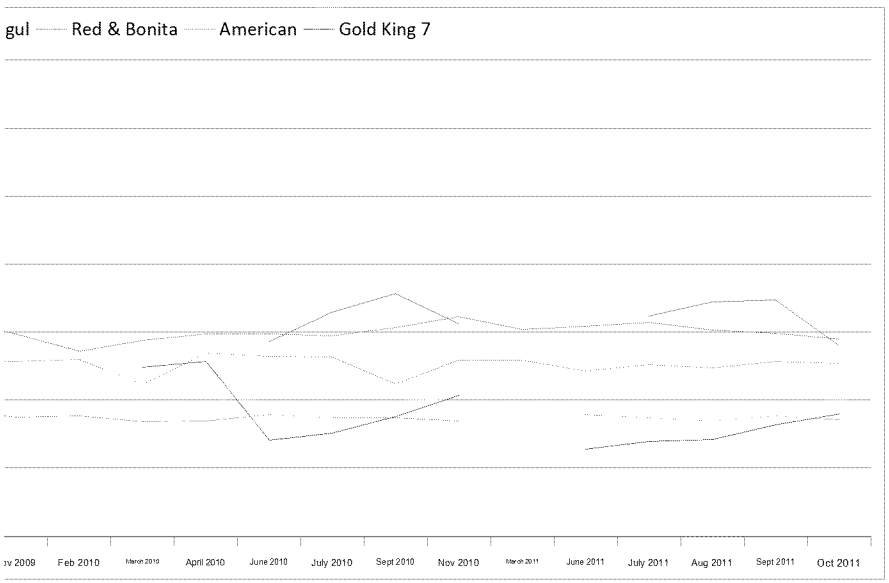
Field Conductivity and pH

March 2011 Cond µS/cm	June 2011 Cond µS/cm	July 2011 Cond µS/cm	Aug 2011 Cond µS/cm	Sept 2011 Cond µS/cm	Oct 2011 Cond µS/cm	May 2009 pH su	June 2009 pH su	July 2009 pH su	Aug 2009 pH su	Sept 2009 pH su	Nov 2009 pH su	Feb 2010 pH su
		221	362	365	293.2			7.49	7.02	7.24		
	1172	1255	1338	1419	1388	3.11	3.63	3.52	3.50	3.72	3.50	3.54
		2069	2083	2088	2104							
2395	2308	2389	2409	2379	2385	4.91	5.17	5.11	5.04	5.16	5.14	5.19
	3060	2835	2546	2326	2147	2.25	3.15	3.19	3.31	3.86		
2244	2026	2028	2076			5.86	6.40	6.50	6.22	6.35	5.95	5.44



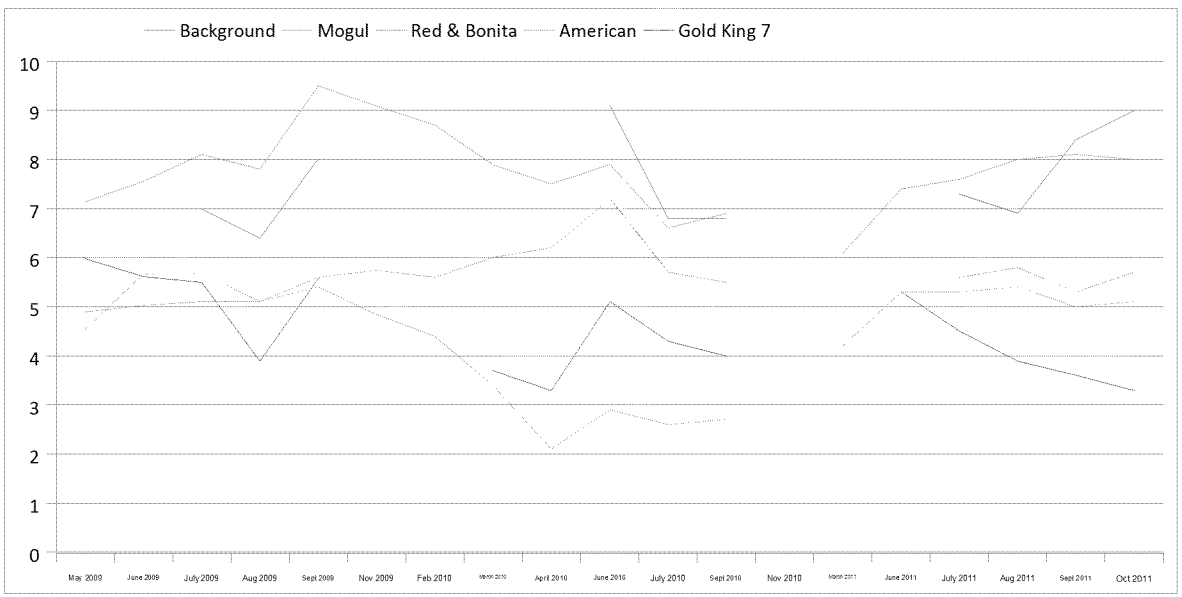
Field Conductivity and pH

March 2010 pH su	April 2010 pH su	June 2010 pH su	July 2010 pH su	Sept 2010 pH su	Nov 2010 pH su	March 2011 pH su	June 2011 pH su	July 2011 pH su	Aug 2011 pH su	Sept 2011 pH su	Oct 2011 pH su	May 2009 DO mg/l
		5.72	6.59	7.13	6.24			6.48	6.89	6.94	5.6	
3.36	3.38	3.58	3.48	3.48	3.38		3.58	3.48	3.39	3.53	3.42	4.9
				5.97	5.86			6.06	5.99	5.73	5.65	
4.46	5.38	5.29	5.26	4.47	5.17	5.18	4.86	5.04	4.95	5.13	5.08	4.6
4.96	5.13	2.82	3.03	3.52	4.13		2.55	2.79	2.84	3.27	3.59	6.0
5.76	5.94	5.94	5.89	6.14	6.46	6.07	6.17	6.28	6.05	5.96	5.79	7.1



Field Conductivity and pH

June 2009 DO mg/l	July 2009 DO mg/l	Aug 2009 DO mg/l	Sept 2009 DO mg/l	Nov 2009 DO mg/l	Feb 2010 DO mg/l	March 2010 DO mg/l	April 2010 DO mg/l	June 2010 DO mg/l	July 2010 DO mg/l	Sept 2010 DO mg/l	Nov 2010 DO mg/l	March 2011 DO mg/l	June 2011 DO mg/l
	7.0	6.4	8.0					9.1	6.8	6.8			
5.0	5.1	5.1	5.6	5.7	5.6	6	6.2	7.2	5.7	5.5			
										6.9			
5.7	5.7	5.1	5.4	4.9	4.4	3.4	2.1	2.9	2.6	2.7		4.2	5.3
5.6	5.5	3.9	5.6			3.7	3.3	5.1	4.3	4			5.3
7.6	8.1	7.8	9.5	9.1	8.7	7.9	7.5	7.9	6.6	6.9		6.1	7.4



Field Conductivity and pH

July 2011 DO mg/l	Aug 2011 DO mg/l	Sept 2011 DO mg/l	Oct 2011 DO mg/l
7.3	6.9	8.4	9
5.6	5.8	5.3	5.7
7	7	3.7	6.9
5.3	5.4	5	5.1
4.5	3.9	3.6	3.3
7.6	8	8.1	8

ANIMAS RIVER 2009 - 2011 DATA SUMMARY - Acidity, TSS, TDS

Location Name	Station ID	May 2009 Acidity mg/L	June 2009 Acidity mg/L	July 2009 Acidity mg/L	Aug 2009 Acidity mg/L	Sept 2009 Acidity mg/L
Background	**CC01F**			<10	<10	<10
Mogul Mine Adit	**CC02D**		130	160	170	150
Red and Bonita Adit	**CC03C**					
American Tunnel	**CC19**		360	380	390	380
7-Level Adit	**CC06**		470	440	410	330
Red and Bonita Culvert	**CC03D**		200	220	233	250

Traditionally, the character of acid mine drainage is determined by its acid

Nov 2009 Acidity mg/L	Feb 2010 Acidity mg/L	March 2010 Acidity mg/L	April 2010 Acidity mg/L	June 2010 Acidity mg/L	July 2010 Acidity mg/L	Sept 2010 Acidity mg/L
				<10	<10	<10
140	130	160		140	140	160
						210
350	360	380		380	380	360
		170		1000	420	310
210	200	240		240	230	190

ity (mg/L), which is measured by titrating AMD with sodium hydroxide solution from the AMD initial pH till pH 8.3. T

Nov 2010 Acidity mg/L	March 2011 Acidity mg/L	June 2011 Acidity mg/L	July 2011 Acidity mg/L	Aug 2011 Acidity mg/L	Sept 2011 Acidity mg/L
<10			<10	<10	<10
140		120	130	150	170
220			200	200	210
340	350	330	360	320	320
250		1100	850	550	410
220	250	230	170	190	180

hen calculate the moles of NaOH that consumed by one liter of AMD, and transfer the mole number into the weigh

Oct 2011 Acidity mg/L		May 2009 TSS mg/l	June 2009 TSS mg/l	July 2009 TSS mg/l	Aug 2009 TSS mg/l	Sept 2009 TSS mg/L	Nov 2009 TSS mg/L
<10				<20	<20	<20	
150			22	26	<20	25	<20
180							
350			24	26	<20	<20	<20
320			29	30	<20	20	
180			33	23	27	28	23

t of CaCO3. It is the value of acidity (mg/L) of AMD. Hence, the direct meaning of acidity is: weight of CaCO3 need

Feb 2010 TSS mg/l	March 2010 TSS mg/l	April 2010 TSS mg/l	June 2010 TSS mg/l	July 2010 TSS mg/l	Sept 2010 TSS mg/L	Nov 2010 TSS mg/L
			<20	<20	<20	<20
<20	<20		<20	<20	24	<20
					<20	<20
<20	<20		<20	<20	<20	27
	<20		<20	26	23	<20
22	22		28	24	25	27

ed to neutralize the pH of 1 liter AMD. Wikipedia. http://en.wikipedia.org/wiki/Acid_mine_drainage.

March 2011 TSS mg/L	June 2011 TSS mg/L	July 2011 TSS mg/L	Aug 2011 TSS mg/L	Sept 2011 TSS mg/L	Oct 2011 TSS mg/L
		<20	<20	<20	<20
	<20	<20	<20	<20	<20
		<20	<20	21	51
<20	28	31	82	<20	28
	<20	28	<20	<20	28
33	25	32	110	54	51

May 2009 TDS mg/l	June 2009 TDS mg/l	July 2009 TDS mg/l	Aug 2009 TDS mg/l	Sept 2009 TDS mg/L	Nov 2009 TDS mg/L	Feb 2010 TDS mg/l	March 2010 TDS mg/l
		44	250	220			
	1100	1100	1200	1200	1100	1100	1100
	2600	2900	2400	2600	2400	2300	2300
	2300	2200	2300	2100			1700
	2000	2000	2100	2100	2000	2100	2200

April 2010 TDS mg/l	June 2010 TDS mg/l	July 2010 TDS mg/l	Sept 2010 TDS mg/L	Nov 2010 TDS mg/L	March 2011 TDS mg/L	June 2011 TDS mg/L
	85	190	200	180		
	1000	1300	1100	1000		960
			2000	2000		
	2400	2500	2300	2300	2500	2500
	3100	2500	1900	1900		3500
	2100	2100	2000	2000	2100	2000

July 2011 TDS mg/L	Aug 2011 TDS mg/L	Sept 2011 TDS mg/L	Oct 2011 TDS mg/L
150	270	240	190
1100	1200	1100	1200
2100	2100	2200	2200
2500	2100	2500	2600
2900	2500	2300	2200
2000	2100	2100	2200

ANIMAS RIVER 2009 - 2011 DATA SUMMARY - Anions, TOC, DOC

Location Name	Sampling Station	May 2009 F mg/L	June 2009 F mg/L	July 2009 F mg/L	Aug 2009 F mg/L
Background	**CC01F**			0.28	<0.20
Mogul Mine Adit	**CC02D**	4.13	4.21	4.82	2.23
Red and Bonita Adit	**CC03C**				
American Tunnel	**CC19**	2.35	2.78	3.37	3.41
7-Level Adit	**CC06**	5.73	6.78	6.18	6.66
Red and Bonita Culvert	**CC03D**	6.73	5.6	0.45	6.03

Sept 2009 F mg/L	Nov 2009 F mg/L	Feb 2010 F mg/L	March 2010 F mg/L	April 2010 F mg/L	June 2010 F mg/L	July 2010 F mg/L	Sept 2010 F mg/L
<0.20					<0.20	<0.20	0.24
4.34	4.6	4.16	4.06	3.91	3.98	4.73	4.62
							2.54
3.32	2.84	3.52	3.39	3.64	2.66	3.78	3.02
7.2		6.97	7.55	6.11	3.41	5.78	5.92
6.69	6.67	<0.20	6.73	15.4	6.88	7.62	6.61

Nov 2010 F mg/L	March 2011 F mg/L	June 2011 F mg/L	July 2011 F mg/L	Aug 2011 F mg/L	Sept 2011 F mg/L	Oct 2011 F mg/L
0.35			0.2	0.2	0.2	0.2
4.81		3.9	4.5	4.8	4.5	4.7
6.73			6.4	6.4	6.2	6.4
3.35	3	3.2	3.2	3.2	3	3.1
7.12		4.6	5.9	4.3	5.7	7.5
6.8	6.1	6.8	6	6		

May 2009 Cl mg/L	June 2009 Cl mg/L	July 2009 Cl mg/L	Aug 2009 Cl mg/L	Sept 2009 Cl mg/L	Nov 2009 Cl mg/L	Feb 2010 Cl mg/L	March 2010 Cl mg/L
		<0.5	<0.5	<0.5			
<1.0	<2.0	<1.0	<0.5	<1.0	<1.0	<1.0	<1.0
<1.0	<2.5	0.5	0.5	0.5	<0.5	<0.5	<1.0
<1.0	<2.5	<1.0	<1.0	<1.0		<0.5	<0.5

April 2010 Cl mg/L	June 2010 Cl mg/L	July 2010 Cl mg/L	Sept 2010 Cl mg/L	Nov 2010 Cl mg/L	March 2011 Cl mg/L	June 2011 Cl mg/L	July 2011 Cl mg/L
	<0.5	<0.5	<0.1	<0.1			<0.5
<1.0	<1.0	<1.0	<0.2	<0.2		<1.0	<1.0
			<0.1	<0.1			<0.5
<0.5	<0.5	<0.5	<0.2	<0.1	<0.5	<0.5	<0.5
<0.5	<1.0	<1.0	<0.2	<0.2		<1.0	<1.0

Aug 2011 Cl mg/L	Sept 2011 Cl mg/L	Oct 2011 Cl mg/L	May 2009 SO4 mg/L	June 2009 SO4 mg/L	July 2009 SO4 mg/L	Aug 2009 SO4 mg/L
<0.5	<0.5	<0.5			100	155
<1.0	<1.0	<1.0	588	634	710	741
<0.5	<0.5	<0.5				
<0.5	<0.5	<0.5	1590	1470	1760	1790
<1.0	<1.0	<1.0	2020	1330	1590	1600

Sept 2009 SO4 mg/L	Nov 2009 SO4 mg/L	Feb 2010 SO4 mg/L	March 2010 SO4 mg/L	April 2010 SO4 mg/L	June 2010 SO4 mg/L	July 2010 SO4 mg/L	Sept 2010 SO4 mg/L
133					45	105	125
703	758	721	642	713	609	677	687
							655
1670	1390	1680	1530	1780	1980	1800	1530
1410		1250	1260	1750	2070	1440	1290

Nov 2010 SO4 mg/L	March 2011 SO4 mg/L	June 2011 SO4 mg/L	July 2011 SO4 mg/L	Aug 2011 SO4 mg/L	Sept 2011 SO4 mg/L	Oct 2011 SO4 mg/L
110			75.7	138	136	116
744		607	616	661	657	729
1420			1280	1290	1260	1360
1690	1460	1090	902	1600	1530	1630
1660		2110	3160	1540	1360	1370

May 2009 TOC mg/L	June 2009 TOC mg/L	July 2009 TOC mg/L	Aug 2009 TOC mg/L	Sept 2009 TOC mg/L	Nov 2009 TOC mg/L	Feb 2010 TOC mg/L	March 2010 TOC mg/L
						* No TOC results found for 2010 d	
		<0.50	<0.50	<0.50			
<0.50	<0.50	<0.50	<0.50	<0.50			
<0.50	<0.50	<0.50	<0.50	<0.50			
<0.50	<0.50	<0.50	<0.50	<0.50			

April 2010 TOC mg/L	June 2010 TOC mg/L	July 2010 TOC mg/L	Sept 2010 TOC mg/L	Nov 2010 TOC mg/L		May 2009 DOC mg/L	June 2009 DOC mg/L
ata							
						<0.50	<0.50
						<0.50	<0.50
						0.56	<0.50

July 2009 DOC mg/L	Aug 2009 DOC mg/L	Sept 2009 DOC mg/L	Nov 2009 DOC mg/L	Feb 2010 DOC mg/L	March 2010 DOC mg/L	April 2010 DOC mg/L	June 2010 DOC mg/L
				* No DOC results found for 2010 data			
<0.50	<0.50	0.68					
<0.50	<0.50	<0.50					
<0.50	<0.50	<0.50					
<0.50	0.58	<0.50					

July 2010 DOC mg/L	Sept 2010 DOC mg/L	Nov 2010 DOC mg/L

ANIMAS RIVER 2009 - 2011 DATA SUMMARY - Cations, Hardness

Location Name	Station ID	May 2009 Ca-d ug/L	June 2009 Ca-d µg/L	July 2009 Ca-d µg/L	Aug 2009 Ca-d µg/L	Sept 2009 Ca-d µg/L
Background	**CC01F**			41100	61600	54400
Mogul Mine Adit	**CC02D**	183000	171000	191000	207000	216000
Red and Bonita Adit	**CC03C**					
American Tunnel	**CC19**	455000	429000	456000	451000	447000
7-Level Adit	**CC06**	368000	382000	398000	392000	394000
Red and Bonita Culvert	**CC03D**	395000	382000	405000	408000	415000

Nov 2009 Ca-d µg/L	Feb 2010 Ca-d ug/L	March 2010 Ca-d µg/L	April 2010 Ca-d µg/L	June 2010 Ca-d µg/L	July 2010 Ca-d µg/L	Sept 2010 Ca-d µg/L	Nov 2010 Ca-d µg/L
				18100	46700	58300	48600
207000	223000	201000	210000	168000	197000	227000	229000
						445000	436000
400000	472000	464000	484000	407000	457000	470000	464000
	390000	404000	414000	344000	403000	403000	410000
425000	457000	411000	430000	398000	422000	453000	443000

March 2011 Ca-d µg/L	June 2011 Ca-d µg/L	July 2011 Ca-d µg/L	Aug 2011 Ca-d µg/L	Sept 2011 Ca-d µg/L	Oct 2011 Ca-d µg/L		May 2009 Mg-d ug/L
		35100	61800	60100	49300		
	178000	192000	202000	208000	212000		11500
		403000	398000	399000	401000		
432000	423000	438000	436000	424000	427000		31000
	351000	366000	359000	365000	361000		37000
432000	386000	391000	391000				

June 2009 Mg-d µg/L	July 2009 Mg-d µg/L	Aug 2009 Mg-d µg/L	Sept 2009 Mg-d µg/L	Nov 2009 Mg-d µg/L	Feb 2010 Mg-d ug/L	March 2010 Mg-d µg/L	April 2010 Mg-d µg/L
	3550	4940	4460				
10600	12200	13000	13300	13200	13900	12700	13000
30200	31300	31100	31000	27900	31900	31100	32400
26100	27000	25800	23900		19200	19800	19500

June 2010 Mg-d µg/L	July 2010 Mg-d µg/L	Sept 2010 Mg-d µg/L	Nov 2010 Mg-d µg/L	March 2011 Mg-d µg/L	June 2011 Mg-d µg/L	July 2011 Mg-d µg/L	Aug 2011 Mg-d µg/L
1740	3830	4740	4060			3480	5280
10200	12300	13900	14500		11600	12000	13100
		28200	27000			24900	25700
26500	32700	33000	30300	29600	29700	30500	31000
33800	26500	24900	22200		36300	33600	29000

Sept 2011 Mg-d µg/L	Oct 2011 Mg-d µg/L		May 2009 Hardness mg/L	June 2009 Hardness mg/L	July 2009 Hardness mg/L	Aug 2009 Hardness mg/L	Sept 2009 Hardness mg/L
5020	4220				117.2	174.1	154.2
12600	12900		504.3	470.6	527.1	570.4	594.1
24100	25100						
28400	28900		1263.7	1195.5	1267.5	1254.2	1243.8
24600	22700		1071.2	1061.3	1104.9	1085.0	1082.2

Nov 2009 Hardness mg/L	Feb 2010 Hardness mg/L	March 2010 Hardness mg/L	April 2010 Hardness mg/L	June 2010 Hardness mg/L	July 2010 Hardness mg/L	Sept 2010 Hardness mg/L	Nov 2010 Hardness mg/L
				52.4	132.4	165.1	138.1
571.2	614.0	554.2	577.9	461.5	542.5	624.0	631.5
1113.6	1309.9	1286.6	1341.9	1125.4	1275.7	1309.4	1283.3
	1052.9	1090.3	1114.0	998.1	1115.4	1108.8	1115.1

March 2011 Hardness mg/L	June 2011 Hardness mg/L	July 2011 Hardness mg/L	Aug 2011 Hardness mg/L	Sept 2011 Hardness mg/L	Oct 2011 Hardness mg/L	Avg Hard mg/L
		102.0	176.0	170.7	140.5	135
	492.2	528.8	558.3	571.2	582.5	551
		1108.8	1099.6	1095.5	1104.6	1104
1200.5	1178.5	1219.2	1216.3	1175.6	1185.2	1240
	1025.9	1052.2	1015.8	1012.7	994.9	1083

May 2009 K-d ug/L	June 2009 K-d µg/L	July 2009 K-d µg/L	Aug 2009 K-d µg/L	Sept 2009 K-d µg/L	Nov 2009 K-d µg/L	Feb 2010 K-d ug/L	March 2010 K-d µg/L
		<1000	<1000	<1000			
2130	2140	2330	2320	2320	2300	2150	2130
1840	2020	1920	1910	1850	1650	1670	1930
1640	1750	1890	2200	2020		1790	1760

April 2010 K-d µg/L	June 2010 K-d µg/L	July 2010 K-d µg/L	Sept 2010 K-d µg/L	Nov 2010 K-d µg/L	March 2011 K-d µg/L	June 2011 K-d µg/L	July 2011 K-d µg/L
	<1000	<1000	<170	<170			<1000
2110	1840	2200	2560	2340		2160	2290
			1860	1740			1740
1830	1720	1930	1950	1770	1950	1790	1790
1690	1590	1710	2160	1760		1570	1500

Aug 2011 K-d µg/L	Sept 2011 K-d µg/L	Oct 2011 K-d µg/L	May 2009 Na-d ug/L	June 2009 Na-d µg/L	July 2009 Na-d µg/L	Aug 2009 Na-d µg/L
<1000	<1000	<1000			1100	1420
2330	2460	2260	6070	5970	6380	6130
1750	1810	1740				
1770	1790	1650	10100	10400	10200	9920
2130	2010	1840	5130	5650	6050	5420

Sept 2009 Na-d µg/L	Nov 2009 Na-d µg/L	Feb 2010 Na-d ug/L	March 2010 Na-d µg/L	April 2010 Na-d µg/L	June 2010 Na-d µg/L	July 2010 Na-d µg/L	Sept 2010 Na-d µg/L
1350					830	1140	1400
6660	7120	6830	6680	6430	5430	6050	6760
							9140
10200	9490	9980	10600	10400	9290		10500
5820		5850	6090	6140	4740	5370	5730

Nov 2010 Na-d µg/L	March 2011 Na-d µg/L	June 2011 Na-d µg/L	July 2011 Na-d µg/L	Aug 2011 Na-d µg/L	Sept 2011 Na-d µg/L	Oct 2011 Na-d µg/L
1330			848	1400	1380	1280
6660		5920	5870	6230	6490	6540
8790			8490	8660	8720	8780
9630	10100	9820	9440	9930	9930	9840
5530		4910	4760	5440	5640	5460

Aluminum

ANIMAS RIVER 2009 - 2011 DATA SUMMARY - Aluminum

Location Name	Station ID	May 2009 Al-t µg/L	June 2009 Al-t µg/L	July 2009 Al-t µg/L	Aug 2009 Al-t µg/L	Sept 2009 Al-t µg/L	Nov 2009 Al-t µg/L	Feb 2010 Al-t µg/L	March 2010 Al-t µg/L	April 2010 Al-t µg/L	June 2010 Al-t µg/L	July 2010 Al-t µg/L	Sept 2010 Al-t µg/L
Background	**CC01F**			204	226	243					248	154	261
Mogul Mine Adit	**CC02D**	2880	3360	3610	3530	3250	3130	2910	2720	2420	2520	3250	3440
Red and Bonita Adit	**CC03C**												3310
American Tunnel	**CC19**	5680	5520	5510	5380	5510	5470	5480	4960	5100	5070	5310	4970
7-Level Adit	**CC06**	58300	32900	31800	28500	21500		8310	8240	7840	61600	30200	24200
Red and Bonita Culvert	**CC03D**	4030	3040	3380	3500	3520	3780	4410	3960	3820	3890	4050	3920
CC above Southfork	**CC18**												

Background	**CC01F**
Mogul Mine Adit	**CC02D**
Red and Bonita Adit	**CC03C**
American Tunnel	**CC19**
7-Level Adit	**CC06**
Red and Bonita Culvert	**CC03D**
CC above Southfork	**CC18**

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Nov 2010 Al-t µg/L	March 2011 Al-t µg/L	June 2011 Al-t µg/L	July 2011 Al-t µg/L	Aug 2011 Al-t µg/L	Sept 2011 Al-t µg/L	Oct 2011 Al-t µg/L
294			166	179	151	224
3180		2600	3420	3530	3490	3330
3130			4170	3290	4040	4010
5360	4840	5160	5180	4850	4750	4690
18600		57400	53500	36700	28700	21000
3990	3790	4130	3750	3360		

May 2009 Al-d ug/L	June 2009 Al-d µg/L	July 2009 Al-d µg/L	Aug 2009 Al-d µg/L	Sept 2009 Al-d µg/L	Nov 2009 Al-d µg/L	Feb 2010 Al-d ug/L
		180	204	181		
2850	3150	3630	3580	3320	3140	2910
5360	5530	5250	5240	5280	4830	5180
59000	33400	31900	28600	21600		7670
3320	1840	2000	2640	2440	3270	3920

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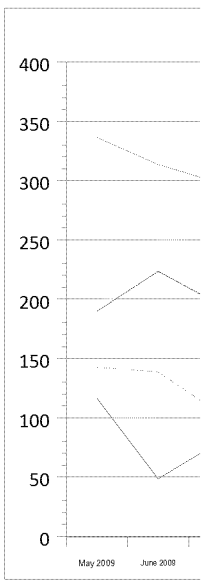
March 2010 Al-d µg/L	April 2010 Al-d µg/L	June 2010 Al-d µg/L	July 2010 Al-d µg/L	Sept 2010 Al-d µg/L	Nov 2010 Al-d µg/L	March 2011 Al-d µg/L	June 2011 Al-d µg/L	July 2011 Al-d µg/L	Aug 2011 Al-d µg/L	Sept 2011 Al-d µg/L	Oct 2011 Al-d µg/L	May 2009 Flow cfs
		<100	137	151	<25.0			<100	116	<100	<100	
2610	2510	2390	3110	3700	3230		2610	3400	3690	3480	3340	0.259
				3470	3060			4080	3480	3840	4050	
4810	4710	4200	5310	4930	4660	4870	4810	4900	4870	4680	4660	0.318
8040	7220	57700	30200	25700	17300		60000	52200	39200	28300	21700	0.423
2690	2280	2770	4050	2970	2000	2440	2890	2240	2450			0.749
												48.8

Flow in Gallons per Minu

116.05968

142.7184
189.79752
336.06144
21897.65325



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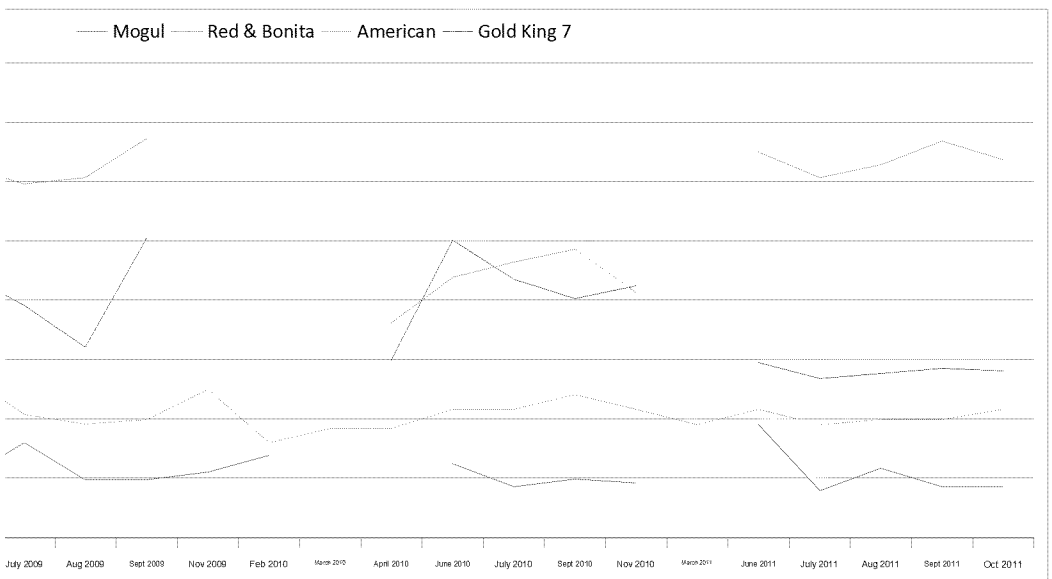
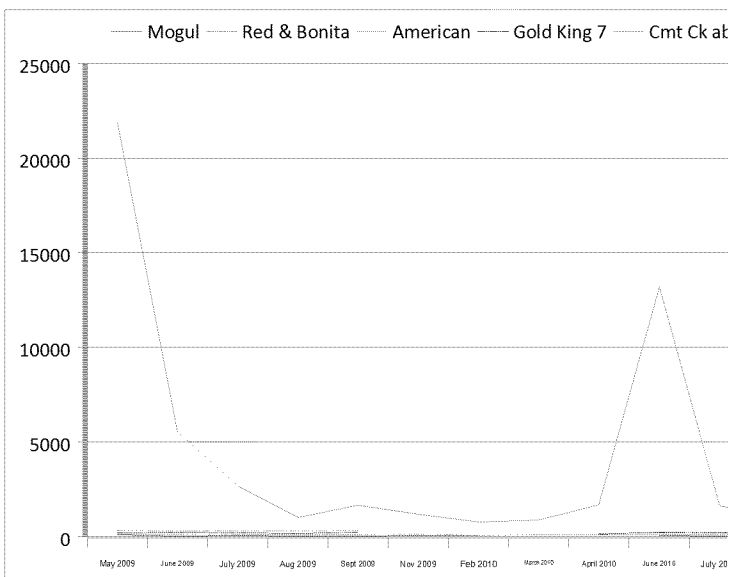
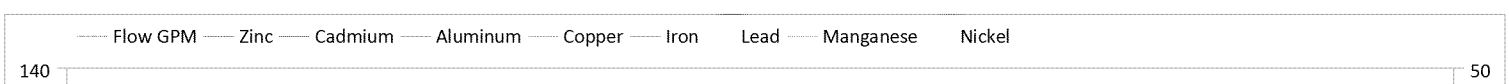
June 2009 Flow cfs	July 2009 Flow cfs	Aug 2009 Flow cfs	Sept 2009 Flow cfs	Nov 2009 Flow cfs	Feb 2010 Flow cfs	March 2010 Flow cfs	April 2010 Flow cfs	June 2010 Flow cfs	July 2010 Flow cfs	Sept 2010 Flow cfs	Nov 2010 Flow cfs	March 2011 Flow cfs	June 2011 Flow cfs	July 2011 Flow cfs
	1.11	0.101	0.200					4.61	0.389	0.075				3.6
0.108	0.178	0.109	0.109	0.123	0.154			0.138	0.095	0.109	0.102		0.212	0.088
0.309	0.231	0.212	0.221	0.278	0.178	0.204	0.204	0.24	0.24	0.268	0.24	0.212	0.24	0.212
0.498	0.436	0.358	0.562				0.333	0.558	0.485	0.449	0.473		0.328	0.298
0.699	0.664	0.676	0.749				0.403	0.488	0.517	0.541	0.46		0.724	0.676
12.3	5.94	2.29	3.66	2.67	1.77	1.99	3.76	29.4	3.59	2.31	2.42	1.63	46.2	14.3
	496.3728	45.18159	89.70973					2068.968	174.5832	33.66				1615.68
48.4704	79.84152	48.73968	48.73968	55.15752	69.1152			61.9344	42.636	48.9192	45.7776		95.1456	39.4944
138.6792	103.4484	95.32512	99.36432	124.72152	79.8864	91.5552	91.5552	107.712	107.712	120.2784	107.712	95.1456	107.712	95.1456
223.5024	195.48606	160.51332	252.41948				149.4504	250.4304	217.668	201.5112	212.2824		147.2064	133.7424
313.7112	297.99781	303.29545	336.06144				180.8664	219.0144	232.0296	242.8008	206.448		324.9312	303.3888
5520.24	2667.75696	1027.50516	1643.52804	1199.57508	794.376	893.112	1687.488	13194.72	1611.192	1036.728	1086.096	731.544	20734.56	6417.84







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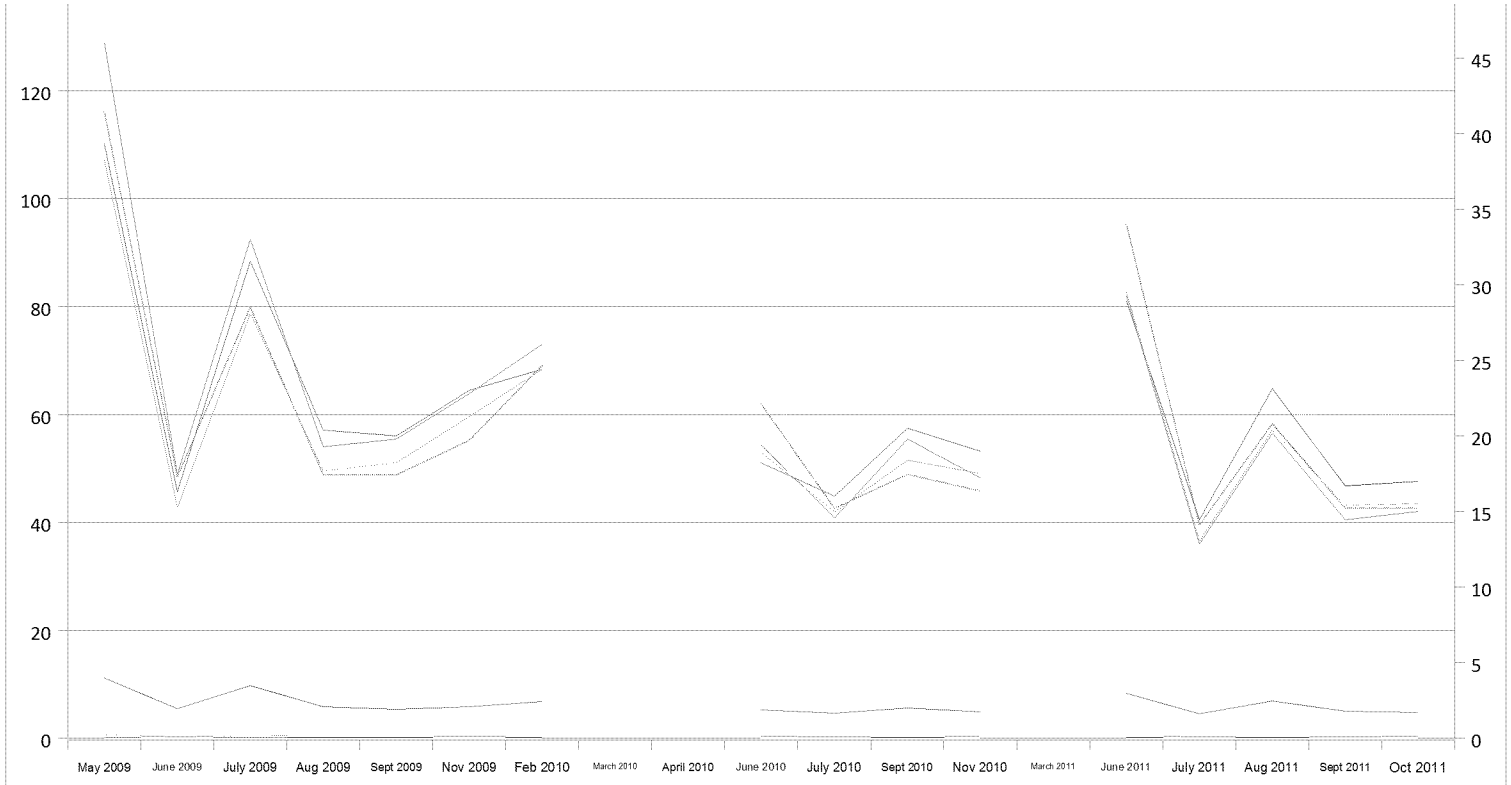
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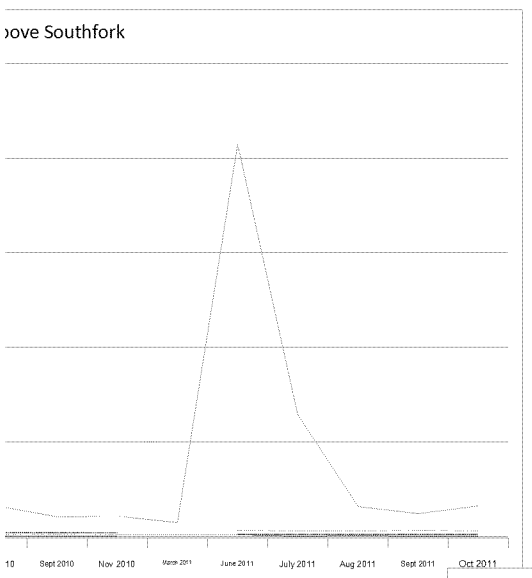
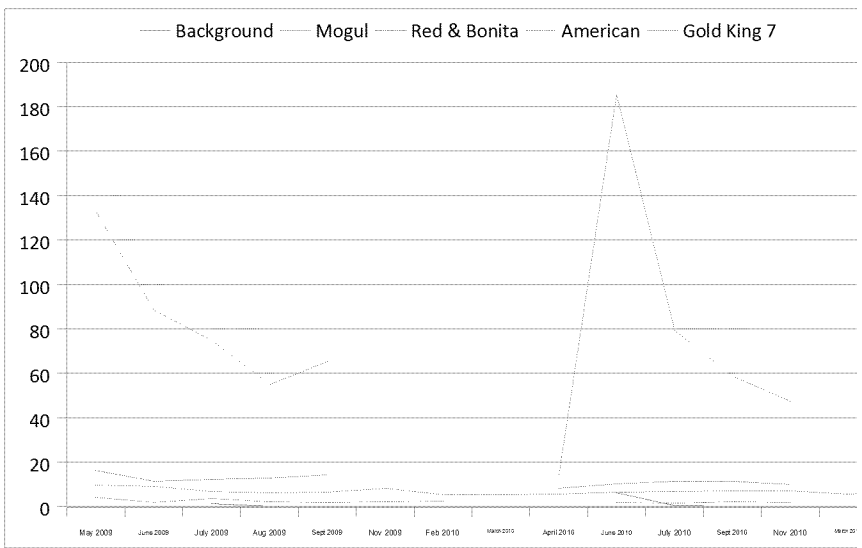
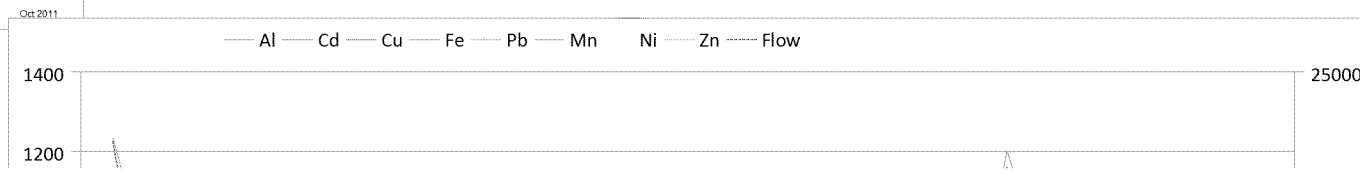
Formula= ug/l * cfs * 0.00539377493629927

Aug 2011 Flow cfs	Sept 2011 Flow cfs	Oct 2011 Flow cfs	May 2009 Al Load Lbs/day	June 2009 Al Load Lbs/day	July 2009 Al Load Lbs/day	Aug 2009 Al Load Lbs/day	Sept 2009 Al Load Lbs/day	Nov 2009 Al Load Lbs/day	Feb 2010 Al Load Lbs/day	March 2010 Al Load Lbs/day	April 2010 Al Load Lbs/day	June 2010 Al Load Lbs/day	July 2010 Al Load Lbs/day
0.384	0.11	0.101			1.22	0.123	0.262					6.2	0.3
0.13	0.095	0.095	4.02	1.96	3.46	2.07	1.90	2.07	2.4			1.9	1.7
0.221	0.221	0.24	9.74	9.20	6.85	6.16	6.58	8.20	5.3	5.5	5.6	6.6	6.9
0.308	0.318	0.313	133.0	88.4	74.7	55.0	65.2				14.1	185.4	79.0
0.7	0.744	0.709	16.3	11.5	12.1	12.8	14.2				8.3	10.2	11.3
3.52	2.68	3.59	460.5	203.7	163.5	119.0	164.7	123.7	86.0	90.5	131.0	304.5	100.5

172.3392	49.368	45.3288
58.344	42.636	42.636
99.1848	99.1848	107.712
138.2304	142.7184	140.4744
314.16	333.9072	318.1992
1579.776	1202.784	1611.192







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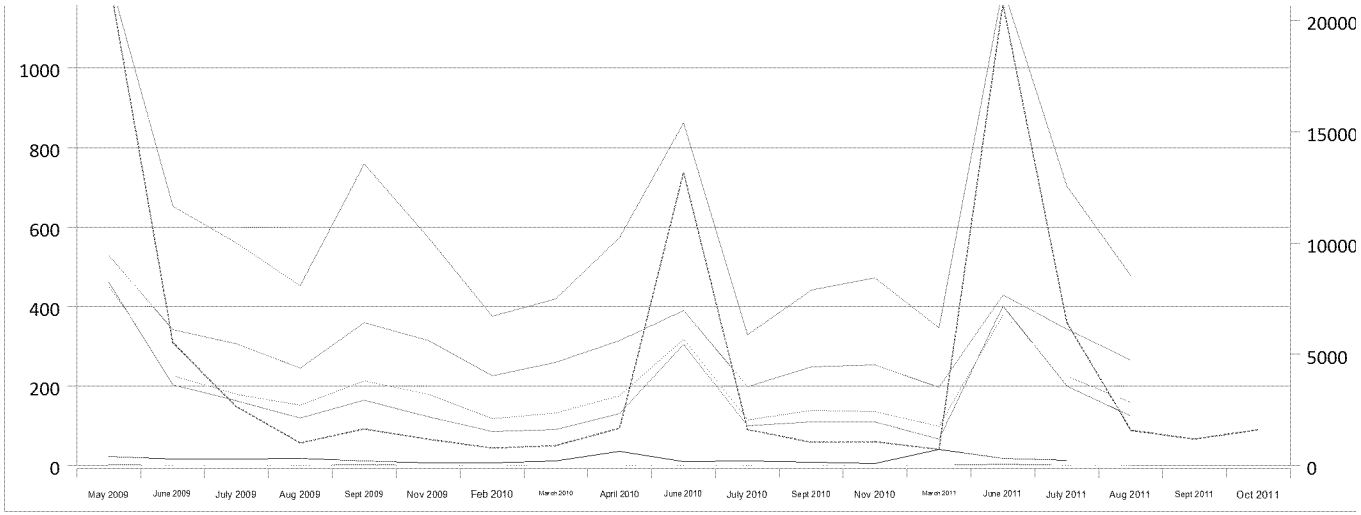
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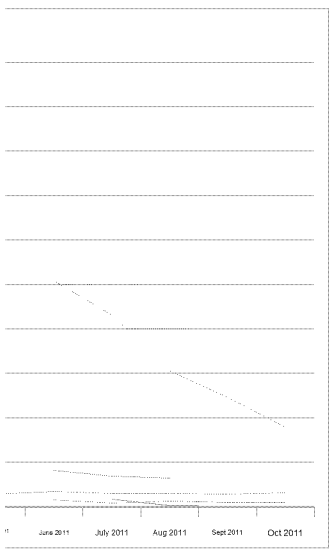
Sept 2010 Al Load Lbs/day	Nov 2010 Al Load Lbs/day	March 2011 Al Load Lbs/day	June 2011 Al Load Lbs/day	July 2011 Al Load Lbs/day	Aug 2011 Al Load Lbs/day	Sept 2011 Al Load Lbs/day	Oct 2011 Al Load Lbs/day
0.1				3.2	0.4	0.1	0.1
2.0	1.7		3.0	1.6	2.5	1.8	1.7
7.2	6.9	5.5	6.7	5.9	5.8	5.7	6.1
58.6	47.5		101.5	86.0	61.0	49.2	35.5
11.4	9.9		16.1	13.7	12.7		
110.8	110.4	66.6	401.2	200.5	124.5		



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Cadmium

ANIMAS RIVER 2009 - 2011 DATA SUMMARY - Cadmium

Location Name	Station ID	May 2009 Cd-t µg/L	June 2009 Cd-t µg/L	July 2009 Cd-t µg/L	Aug 2009 Cd-t µg/L	Sept 2009 Cd-t µg/L	Nov 2009 Cd-t µg/L	Feb 2010 Cd-t µg/L	March 2010 Cd-t µg/L	April 2010 Cd-t µg/L	June 2010 Cd-t µg/L	July 2010 Cd-t µg/L
Background	**CC01F**			1	1.2	1.5					2.1	1
Mogul Mine Adit	**CC02D**	41.3	57.2	62.1	60.8	58.4	50.1	43.2	40.8	41.4	40.3	54.3
Red and Bonita Adit	**CC03C**											
American Tunnel	**CC19**	2.6	2.5	2.5	2.5	2.5	2.3	2.3	2.3	2.4	2.3	2.1
7-Level Adit	**CC06**	111	59.9	61.4	66.2	64.4		38.3	37.7	41.4	136	61.5
Red and Bonita Culvert	**CC03D**	33.3	34.8	34.9	34.6	35.9	37.7	37.5	37.6	37.3	40.4	35.5
	CC18											

Cadmium

Sept 2010 Cd-t µg/L	Nov 2010 Cd-t µg/L	March 2011 Cd-t µg/L	June 2011 Cd-t µg/L	July 2011 Cd-t µg/L	Aug 2011 Cd-t µg/L	Sept 2011 Cd-t µg/L	Oct 2011 Cd-t µg/L	May 2009 Cd-d ug/L	June 2009 Cd-d µg/L	July 2009 Cd-d µg/L	Aug 2009 Cd-d µg/L	Sept 2009 Cd-d µg/L
1.6	3.1			1.2	1.1	1.1	2.6			0.9	1.2	1.6
57.6	54		36.8	50.1	60.4	58.4	54.1	40.6	51.8	63	61.8	58.5
31.3	32.3			32.7	28	32.9	50.6					
2.1	2.3	2	2.3	2.2	2.2	2.1	2.1	2.6	2.5	2.4	2.3	2.4
57.5	52.9		136	61.1	69.3	55.7	58.7	110	71.6	60.8	66.6	62.7
35.5	38	33	31.8	30	29			33.1	34.4	34.5	34.5	37.5

Cadmium

Nov 2009 Cd-d µg/L	Feb 2010 Cd-d ug/L	March 2010 Cd-d µg/L	April 2010 Cd-d µg/L	June 2010 Cd-d µg/L	July 2010 Cd-d µg/L	Sept 2010 Cd-d µg/L	Nov 2010 Cd-d µg/L	March 2011 Cd-d µg/L	June 2011 Cd-d µg/L	July 2011 Cd-d µg/L	Aug 2011 Cd-d µg/L	Sept 2011 Cd-d µg/L	Oct 2011 Cd-d µg/L
				1.9	1	1.7	3.2			1.1	1.1	1.1	2.7
52.5	43.5	39.3	41	38.9	56.3	55.7	54.2		37.5	51.7	63.6	60.3	51.4
						30.2	32.3			32.8	28.2	33.9	50.3
2.4	2.2	2.3	2.5	2.2	2.2	2	2.5	1.9	2.2	2	2.2	2.1	2
	35.9	36.1	41	133	63.2	56.9	53.3		138	62.2	72.2	60.3	58.8
37.3	38.1	36.5	40.9	39.3	37.2	34.1	38	34	33.2	28.6	29.6		

Cadmium

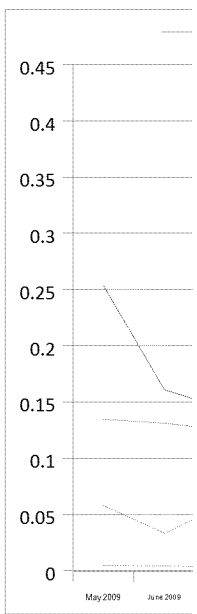
May 2009 Flow cfs	June 2009 Flow cfs	July 2009 Flow cfs	Aug 2009 Flow cfs	Sept 2009 Flow cfs	Nov 2009 Flow cfs	Feb 2010 Flow cfs	March 2010 Flow cfs	April 2010 Flow cfs	June 2010 Flow cfs	July 2010 Flow cfs	Sept 2010 Flow cfs	Nov 2010 Flow cfs
		1.11	0.101	0.200					4.61	0.389	0.075	
0.259	0.108	0.178	0.109	0.109	0.123	0.154			0.138	0.095	0.109	0.102
0.318	0.309	0.231	0.212	0.221	0.278	0.178	0.204	0.204	0.24	0.24	0.268	0.24
0.423	0.498	0.436	0.358	0.562				0.333	0.558	0.485	0.449	0.473
0.749	0.699	0.664	0.676	0.749				0.403	0.488	0.517	0.541	0.46

Cadmium

Values are formulas!

Formula= ug/l * cfs * 0.00539377493629927 | Formula= ug/l * cfs * 0.00

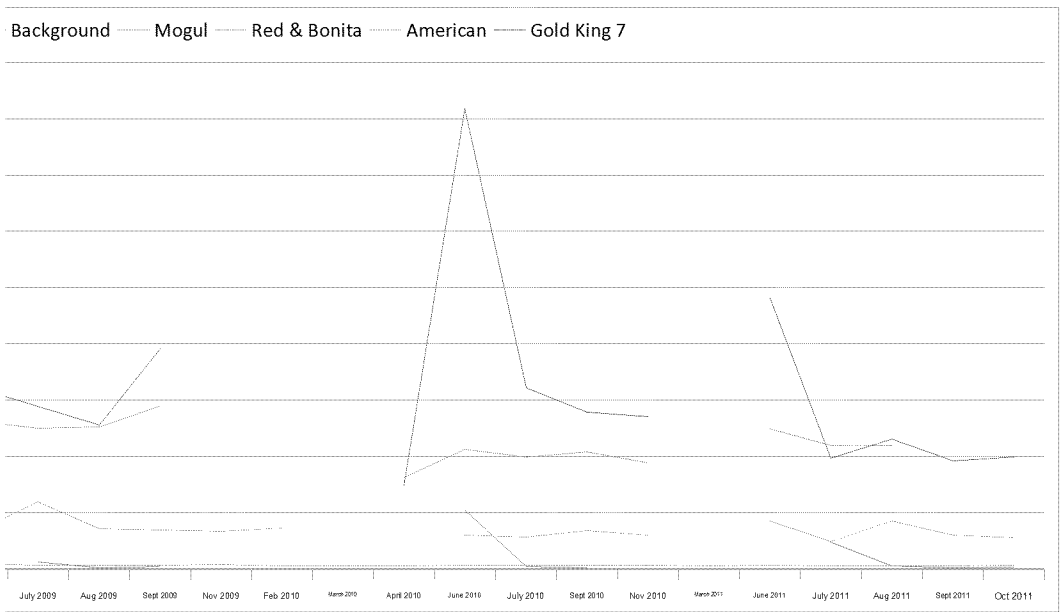
March 2011 Flow cfs	June 2011 Flow cfs	July 2011 Flow cfs	Aug 2011 Flow cfs	Sept 2011 Flow cfs	Oct 2011 Flow cfs	May 2009 Cd Load Lbs/day	June 2009 Cd Load Lbs/day	July 2009 Cd Load Lbs/day	Aug 2009 Cd Load Lbs/day	Sept 2009 Cd Load Lbs/day	Nov 2009 Cd Load Lbs/day	Feb 2010 Cd Load Lbs/day
		3.6	0.384	0.11	0.101			0.01	0.001	0.002		
	0.212	0.088	0.13	0.095	0.095	0.06	0.03	0.06	0.04	0.03	0.03	0.0
0.212	0.24	0.212	0.221	0.221	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.0
	0.328	0.298	0.308	0.318	0.313	0.3	0.2	0.1	0.1	0.2		
	0.724	0.676	0.7			0.1	0.1	0.1	0.1	0.1		
						1.42	0.69	0.51	0.37	0.54	0.39	0.27



Cadmium

539377493629927

March 2010 Cd Load Lbs/day	April 2010 Cd Load Lbs/day	June 2010 Cd Load Lbs/day	July 2010 Cd Load Lbs/day	Sept 2010 Cd Load Lbs/day	Nov 2010 Cd Load Lbs/day	March 2011 Cd Load Lbs/day	June 2011 Cd Load Lbs/day	July 2011 Cd Load Lbs/day	Aug 2011 Cd Load Lbs/day	Sept 2011 Cd Load Lbs/day	Oct 2011 Cd Load Lbs/day
		0.1	0.002	0.001				0.02	0.002	0.00	0.001
		0.03	0.03	0.03	0.03		0.04	0.02	0.04	0.03	0.03
0.0	0.003	0.003	0.003	0.003	0.003	0.002	0.003	0.003	0.003	0.003	0.003
	0.1	0.4	0.2	0.1	0.1		0.241	0.098	0.115	0.096	0.099
	0.1	0.1	0.1	0.1	0.1		0.1	0.1	0.1		
0.30	0.41	1.08	0.32	0.33	0.35	0.22	1.27	0.62	0.39		



Copper

ANIMAS RIVER 2009 - 2011 DATA SUMMARY - Copper

Location Name	Station ID	May 2009 Cu-t µg/L	June 2009 Cu-t µg/L	July 2009 Cu-t µg/L	Aug 2009 Cu-t µg/L	Sept 2009 Cu-t µg/L	Nov 2009 Cu-t µg/L	Feb 2010 Cu-t µg/L	March 2010 Cu-t µg/L	April 2010 Cu-t µg/L	June 2010 Cu-t µg/L	July 2010 Cu-t µg/L
Background	**CC01F**			25.4	25.6	28.3					44.2	24.4
Mogul Mine Adit	**CC02D**	33.9	50.4	45.5	31.4	30.9	21.6	16.9	17.9	19.7	22.6	31.6
Red and Bonita Adit	**CC03C**											
American Tunnel	**CC19**	7.9	7	6.2	6.3	6.6	6.5	5.9	8.9	6.6	<10.0	<10.0
7-Level Adit	**CC06**	10600	5680	5710	7150	5630		2430	2410	4060	12300	5360
Red and Bonita Culvert	**CC03D**	50.6	4.5	6.2	6.9	4.1	8.6	47.1	14.2	18	14.3	<10.0
	CC18											

Copper

Sept 2010 Cu-t µg/L	Nov 2010 Cu-t µg/L	March 2011 Cu-t µg/L	June 2011 Cu-t µg/L	July 2011 Cu-t µg/L	Aug 2011 Cu-t µg/L	Sept 2011 Cu-t µg/L	Oct 2011 Cu-t µg/L	May 2009 Cu-d ug/L	June 2009 Cu-d µg/L	July 2009 Cu-d µg/L	Aug 2009 Cu-d µg/L	Sept 2009 Cu-d µg/L
34.4	46.4			26.1	23.5	20.4	36.5			19.7	20.4	18
23.8	14.7		24.6	35.2	29.9	29.5	<20.0	32.5	54.2	44.1	31.7	29.1
<4.0	<4.0			<20.0	<20.0	<20.0	29.6					
<4.0	<4.0	<10.0	<10.0	<20.0	<20.0	<20.0	<20.0	7.3	6.4	6.1	6	6.6
5480	4020		12400	9930	8330	6420	5220	10100	5520	5520	7310	5440
17.8	11.3	16.7	38.2	<20.0	<20.0			41.1	<3.0	3.5	4.5	<3.0

Copper

Nov 2009 Cu-d µg/L	Feb 2010 Cu-d ug/L	March 2010 Cu-d µg/L	April 2010 Cu-d µg/L	June 2010 Cu-d µg/L	July 2010 Cu-d µg/L	Sept 2010 Cu-d µg/L	Nov 2010 Cu-d µg/L	March 2011 Cu-d µg/L	June 2011 Cu-d µg/L	July 2011 Cu-d µg/L	Aug 2011 Cu-d µg/L	Sept 2011 Cu-d µg/L	Oct 2011 Cu-d µg/L
				27.2	17.1	19.8	26.8			<20.0	<20.0	<20.0	22.9
24	16.2	18.3	19.9	22.3	32.2	22.1	14.5		24.3	33.3	30.8	30.4	<20.0
						<4.0	<4.0			<20.0	<20.0	<20.0	29.9
5.4	5.7	8.3	6.2	<10.0	<10.0	<4.0	<4.0	<10.0	<10.0	<20.0	<20.0	<20.0	<20.0
	2450	2620	2690	12100	4970	5540	3900		11900	9490	8370	6350	4950
8.9	41.8	11.2	13.8	11.4	<10.0	13.6	<4.0	11.5	30.3	<20.0	<20.0		

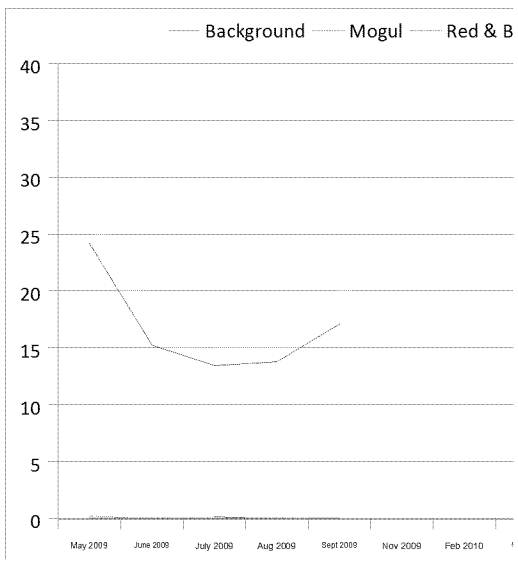
Copper

May 2009 Flow cfs	June 2009 Flow cfs	July 2009 Flow cfs	Aug 2009 Flow cfs	Sept 2009 Flow cfs	Nov 2009 Flow cfs	Feb 2010 Flow cfs	March 2010 Flow cfs	April 2010 Flow cfs	June 2010 Flow cfs	July 2010 Flow cfs	Sept 2010 Flow cfs	Nov 2010 Flow cfs
		1.11	0.101	0.200					4.61	0.389	0.075	
0.259	0.108	0.178	0.109	0.109	0.123	0.154			0.138	0.095	0.109	0.102
0.318	0.309	0.231	0.212	0.221	0.278	0.178	0.204	0.204	0.24	0.24	0.268	0.24
0.423	0.498	0.436	0.358	0.562				0.333	0.558	0.485	0.449	0.473
0.749	0.699	0.664	0.676	0.749				0.403	0.488	0.517	0.541	0.46

Copper

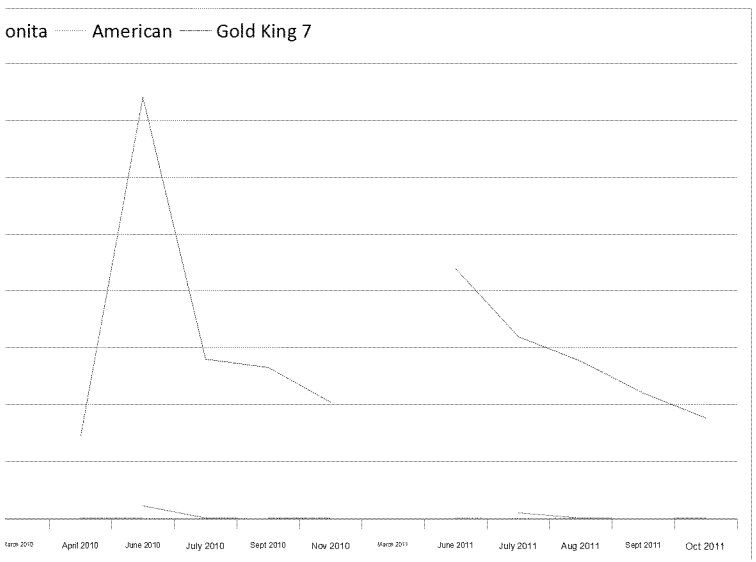
Formula= ug/l * cfs * 0.00539377493629927

March 2011 Flow cfs	June 2011 Flow cfs	July 2011 Flow cfs	Aug 2011 Flow cfs	Sept 2011 Flow cfs	Oct 2011 Flow cfs	May 2009 Cu Load Lbs/day	June 2009 Cu Load Lbs/day	July 2009 Cu Load Lbs/day	Aug 2009 Cu Load Lbs/day	Sept 2009 Cu Load Lbs/day	Nov 2009 Cu Load Lbs/day	Feb 2010 Cu Load Lbs/day
		3.6	0.384	0.11	0.101			0.15	0.014	0.031		
	0.212	0.088	0.13	0.095	0.095	0.05	0.03	0.04	0.02	0.02	0.01	0.0
0.212	0.24	0.212	0.221	0.221	0.24	0.01	0.01	0.01	0.01	0.01	0.01	0.0
	0.328	0.298	0.308	0.318	0.313	24.2	15.3	13.4	13.8	17.1		
	0.724	0.676	0.7			0.2	0.0	0.0	0.0	0.0		
						22.62	16.54	17.29	17.70	12.30	7.16	6.72



Copper

March 2010 Cu Load Lbs/day	April 2010 Cu Load Lbs/day	June 2010 Cu Load Lbs/day	July 2010 Cu Load Lbs/day	Sept 2010 Cu Load Lbs/day	Nov 2010 Cu Load Lbs/day	March 2011 Cu Load Lbs/day	June 2011 Cu Load Lbs/day	July 2011 Cu Load Lbs/day	Aug 2011 Cu Load Lbs/day	Sept 2011 Cu Load Lbs/day	Oct 2011 Cu Load Lbs/day
		1.1	0.1	0.01				0.5	0.05	0.01	0.02
		0.02	0.02	0.01	0.01		0.03	0.02	0.02	0.02	
0.0	0.0										
	7.3	37.0	14.0	13.3	10.3		21.9	16.0	13.8	11.0	8.8
	0.04	0.04		0.1	0.03		0.1				
11.42	36.63	9.53	11.61	8.95	4.65	40.62	18.90	13.67			



Iron

86700	76700	87700	88000	96700	96100	82300	93500	97600	89400	79900	81600	96500	87400

Iron

88000	84200	78800	80500	81200	85800	85800	94100	91600	83100	85600

Iron

87100	83100	84000	86100	92700	88800	82800	76900	82300	0.749	0.699

Iron

0.664	0.676	0.749	0.403	0.488	0.517	0.541	0.46		0.724	0.676

Iron

0.7	350.2	289.2	314.1	320.8	390.6	
	1234.27	652.82	561.08	453.20	758.49	573.79

Lead

ANIMAS RIVER 2009 - 2011 DATA SUMMARY - Lead

Location Name	Station ID	May 2009 Pb-t µg/L	June 2009 Pb-t µg/L	July 2009 Pb-t µg/L	Aug 2009 Pb-t µg/L	Sept 2009 Pb-t µg/L	Nov 2009 Pb-t µg/L	Feb 2010 Pb-t µg/L	March 2010 Pb-t µg/L	April 2010 Pb-t µg/L	June 2010 Pb-t µg/L	July 2010 Pb-t µg/L
Background	**CC01F**			3.3	1.5	1.9					11.5	2.5
Mogul Mine Adit	**CC02D**	147	174	202	212	238	213	184	189	181	168	193
Red and Bonita Adit	**CC03C**											
American Tunnel	**CC19**	4.7	3.9	3.3	3.2	3.6	3.3	3.4	5.4	4.1	4.2	4
7-Level Adit	**CC06**	24.7	18.1	21.5	24.9	16.3		1.9	1.8	1.8	21.3	19.6
Red and Bonita Culvert	**CC03D**	71.2	39.5	36.5	34	41.4	37.2	47.2	58.7	55.3	57.7	40
	CC18											

Lead

Sept 2010 Pb-t µg/L	Nov 2010 Pb-t µg/L	March 2011 Pb-t µg/L	June 2011 Pb-t µg/L	July 2011 Pb-t µg/L	Aug 2011 Pb-t µg/L	Sept 2011 Pb-t µg/L	Oct 2011 Pb-t µg/L	May 2009 Pb-d ug/L	June 2009 Pb-d µg/L	July 2009 Pb-d µg/L	Aug 2009 Pb-d µg/L	Sept 2009 Pb-d µg/L
1.8	1.4			7.1	1.9	1.6	1.5			2.3	<1.0	<1.0
232	231		170	189	229	235	254	142	160	207	227	241
86	88.1			84.2	163	101	134					
3.6	3	3	3.8	3.2	2.9	2.7	2.9	2.3	1.9	2	1.8	1.9
21.8	6.9		23.6	19.1	29.1	23.2	17.1	25.3	19.7	22.6	26.1	14.6
38.4	60.7	63.2	76.8	46.2	36.7			8.1	4.1	7.6	9.1	15.4

Lead

Nov 2009 Pb-d µg/L	Feb 2010 Pb-d ug/L	March 2010 Pb-d µg/L	April 2010 Pb-d µg/L	June 2010 Pb-d µg/L	July 2010 Pb-d µg/L	Sept 2010 Pb-d µg/L	Nov 2010 Pb-d µg/L	March 2011 Pb-d µg/L	June 2011 Pb-d µg/L	July 2011 Pb-d µg/L	Aug 2011 Pb-d µg/L	Sept 2011 Pb-d µg/L	Oct 2011 Pb-d µg/L
				<1.0	1.2	<0.2	<0.2			3.5	<1.0	<1.0	<1.0
219	189	182	178	153	186	219	238		174	186	228	236	242
						71.1	88.5			75.9	75.7	34.9	38.8
1.7	1.4	1.8	2	2.2	2.5	2.5	1.5	1.3	2	1.2	1.7	1.3	1.3
	1	1	<1.0	20.7	18.9	21.1	6.5		23.7	18.1	29	23.9	15
4.6	4.3	3.6	2.1	9	10.7	6.2	7.9	3.9	7.3	5.3	6.9		

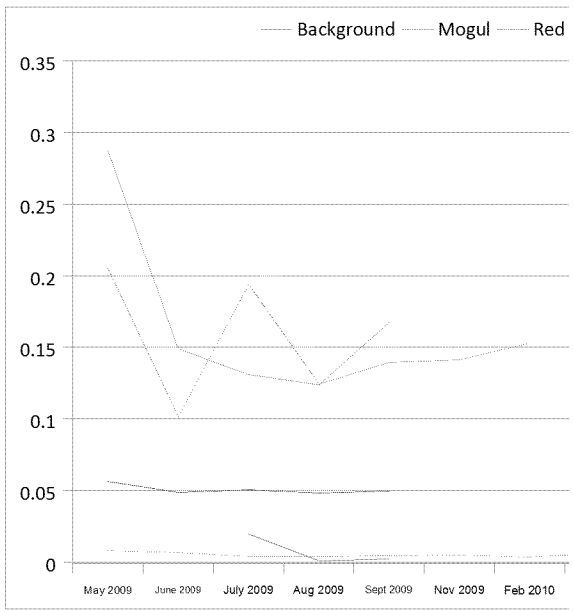
Lead

May 2009 Flow cfs	June 2009 Flow cfs	July 2009 Flow cfs	Aug 2009 Flow cfs	Sept 2009 Flow cfs	Nov 2009 Flow cfs	Feb 2010 Flow cfs	March 2010 Flow cfs	April 2010 Flow cfs	June 2010 Flow cfs	July 2010 Flow cfs	Sept 2010 Flow cfs	Nov 2010 Flow cfs
		1.11	0.101	0.200					4.61	0.389	0.075	
0.259	0.108	0.178	0.109	0.109	0.123	0.154			0.138	0.095	0.109	0.102
0.318	0.309	0.231	0.212	0.221	0.278	0.178	0.204	0.204	0.24	0.24	0.268	0.24
0.423	0.498	0.436	0.358	0.562				0.333	0.558	0.485	0.449	0.473
0.749	0.699	0.664	0.676	0.749				0.403	0.488	0.517	0.541	0.46

Lead

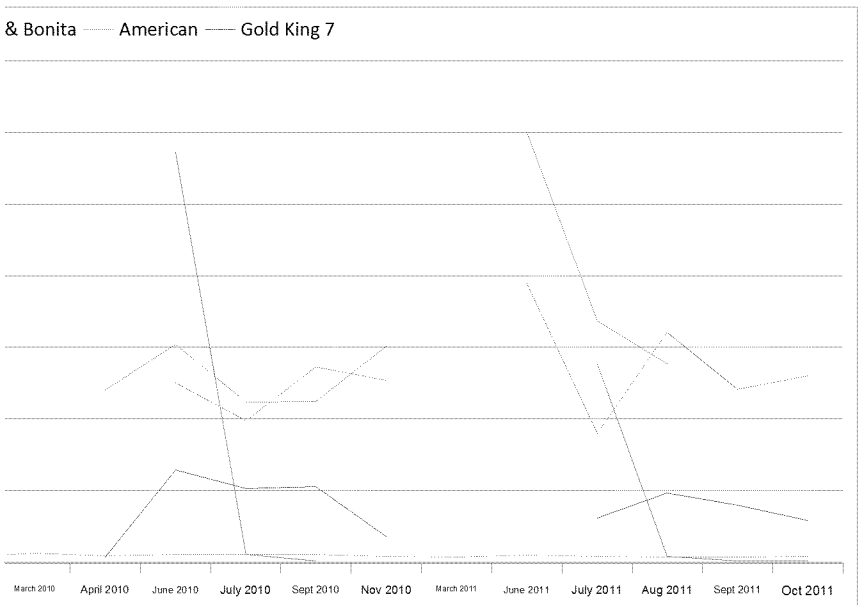
Formula= ug/l * cfs * 0.00539377493629927

March 2011 Flow cfs	June 2011 Flow cfs	July 2011 Flow cfs	Aug 2011 Flow cfs	Sept 2011 Flow cfs	Oct 2011 Flow cfs	May 2009 Pb Load Lbs/day	June 2009 Pb Load Lbs/day	July 2009 Pb Load Lbs/day	Aug 2009 Pb Load Lbs/day	Sept 2009 Pb Load Lbs/day	Nov 2009 Pb Load Lbs/day	Feb 2010 Pb Load Lbs/day
		3.6	0.384	0.11	0.101			0.02	0.001	0.002		
	0.212	0.088	0.13	0.095	0.095	0.21	0.10	0.19	0.12	0.14	0.14	0.2
0.212	0.24	0.212	0.221	0.221	0.24	0.01	0.01	0.00	0.00	0.00	0.00	0.0
	0.328	0.298	0.308	0.318	0.313	0.1	0.0	0.1	0.0	0.0		
	0.724	0.676	0.7			0.3	0.1	0.1	0.1	0.2		
						2.50	0.52	0.34	0.21	2.05	0.27	0.22



Lead

March 2010 Pb Load Lbs/day	April 2010 Pb Load Lbs/day	June 2010 Pb Load Lbs/day	July 2010 Pb Load Lbs/day	Sept 2010 Pb Load Lbs/day	Nov 2010 Pb Load Lbs/day	March 2011 Pb Load Lbs/day	June 2011 Pb Load Lbs/day	July 2011 Pb Load Lbs/day	Aug 2011 Pb Load Lbs/day	Sept 2011 Pb Load Lbs/day	Oct 2011 Pb Load Lbs/day
		0.3	0.01	0.001				0.1	0.004	0.001	0.001
		0.1	0.1	0.1	0.1		0.2	0.1	0.2	0.1	0.1
0.0	0.0	0.01	0.01	0.01	0.004	0.003	0.005	0.004	0.003	0.003	0.004
	0.0	0.1	0.1	0.1	0.02			0.03	0.05	0.04	0.03
	0.1	0.2	0.1	0.1	0.2		0.3	0.2	0.1		
0.29	0.36	1.52	0.25	0.23	0.27	0.23	3.49	0.97	0.31		



Manganese

ANIMAS RIVER 2009 - 2011 DATA SUMMARY - Manganese

Location Name	Station ID	May 2009 Mn-t µg/L	June 2009 Mn-t µg/L	July 2009 Mn-t µg/L	Aug 2009 Mn-t µg/L	Sept 2009 Mn-t µg/L	Nov 2009 Mn-t µg/L	Feb 2010 Mn-t µg/L	March 2010 Mn-t µg/L	April 2010 Mn-t µg/L	June 2010 Mn-t µg/L	July 2010 Mn-t µg/L
Background	**CC01F**			48	36.1	66					157	42
Mogul Mine Adit	**CC02D**	27400	26200	29300	30200	31100	32100	29400	30800	29200	25400	29200
Red and Bonita Adit	**CC03C**											
American Tunnel	**CC19**	49400	46600	49800	52000	50700	52000	46400	48300	50400	47800	47800
7-Level Adit	**CC06**	30200	28700	32200	34400	34900		28000	28400	26700	29500	29500
Red and Bonita Culvert	**CC03D**	33200	27900	32300	32500	34600	35700	34100	35100	36300	33200	31500
	CC18											

Manganese

Sept 2010 Mn-t µg/L	Nov 2010 Mn-t µg/L	March 2011 Mn-t µg/L	June 2011 Mn-t µg/L	July 2011 Mn-t µg/L	Aug 2011 Mn-t µg/L	Sept 2011 Mn-t µg/L	Oct 2011 Mn-t µg/L	May 2009 Mn-d ug/L	June 2009 Mn-d µg/L	July 2009 Mn-d µg/L	Aug 2009 Mn-d µg/L	Sept 2009 Mn-d µg/L
72.1	132			75.8	45.4	50	121			47.0	35.6	66.1
31300	31800		25800	27500	29100	30100	30300	26700	24200	28200	30300	31600
35900	33800			31100	29800	31200	32300					
47400	50400	48800	48400	49500	47000	46900	49000	48900	47200	49200	48800	49200
29300	31000		27000	29500	31600	34400	33500	30200	27700	31800	34200	33900
32700	35300	32900	31800	31400	29900			32300	30800	32100	32700	33700

Manganese

Nov 2009 Mn-d µg/L	Feb 2010 Mn-d ug/L	March 2010 Mn-d µg/L	April 2010 Mn-d µg/L	June 2010 Mn-d µg/L	July 2010 Mn-d µg/L	Sept 2010 Mn-d µg/L	Nov 2010 Mn-d µg/L	March 2011 Mn-d µg/L	June 2011 Mn-d µg/L	July 2011 Mn-d µg/L	Aug 2011 Mn-d µg/L	Sept 2011 Mn-d µg/L	Oct 2011 Mn-d µg/L
				148	40.5	73	125			73.6	45.1	55.9	120
31000	31100	29100	29100	24100	28500	33100	32900		26000	27200	29100	29900	30700
						36200	35000			30600	31400	30800	31500
44900	49500	50300	49700	44500	49900	51400	49100	47500	47700	47800	47600	47200	46500
	26500	27400	26200	27100	29600	31700	30700		28100	28900	30900	33600	32000
35000	35200	32900	32500	31700	32900	35700	34100	34400	31700	30400	30500		

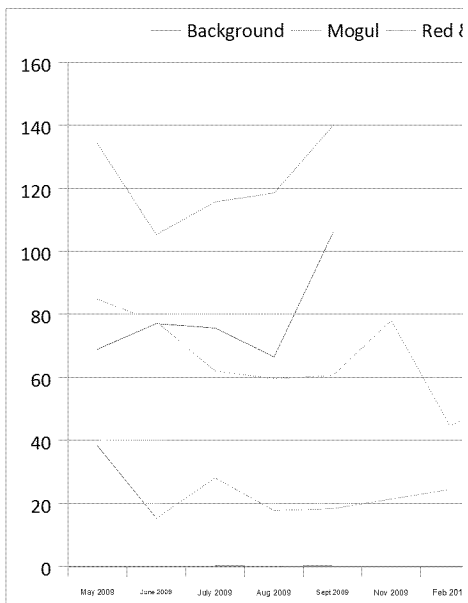
Manganese

May 2009 Flow cfs	June 2009 Flow cfs	July 2009 Flow cfs	Aug 2009 Flow cfs	Sept 2009 Flow cfs	Nov 2009 Flow cfs	Feb 2010 Flow cfs	March 2010 Flow cfs	April 2010 Flow cfs	June 2010 Flow cfs	July 2010 Flow cfs	Sept 2010 Flow cfs	Nov 2010 Flow cfs
		1.11	0.101	0.200					4.61	0.389	0.075	
0.259	0.108	0.178	0.109	0.109	0.123	0.154			0.138	0.095	0.109	0.102
0.318	0.309	0.231	0.212	0.221	0.278	0.178	0.204	0.204	0.24	0.24	0.268	0.24
0.423	0.498	0.436	0.358	0.562				0.333	0.558	0.485	0.449	0.473
0.749	0.699	0.664	0.676	0.749				0.403	0.488	0.517	0.541	0.46

Manganese

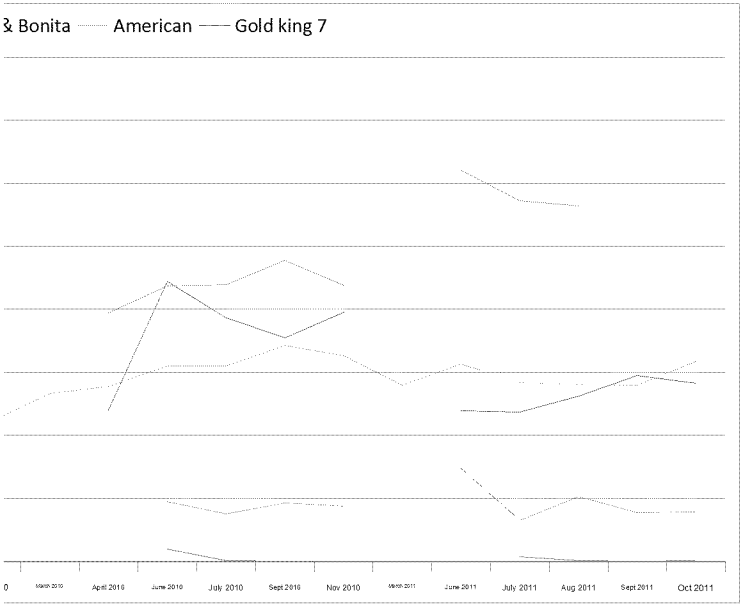
Formula= ug/l * cfs * 0.00539377493629927

March 2011 Flow cfs	June 2011 Flow cfs	July 2011 Flow cfs	Aug 2011 Flow cfs	Sept 2011 Flow cfs	Oct 2011 Flow cfs	May 2009 Mn Load Lbs/day	June 2009 Mn Load Lbs/day	July 2009 Mn Load Lbs/day	Aug 2009 Mn Load Lbs/day	Sept 2009 Mn Load Lbs/day	Nov 2009 Mn Load Lbs/day	Feb 2010 Mn Load Lbs/day
		3.6	0.384	0.11	0.101			0.29	0.020	0.071		
	0.212	0.088	0.13	0.095	0.095	38.22	15.26	28.11	17.69	18.22	21.28	24.4
0.212	0.24	0.212	0.221	0.221	0.24	84.73	77.67	61.91	59.57	60.55	77.94	44.5
	0.328	0.298	0.308	0.318	0.313	68.9	77.1	75.7	66.4	105.9		
	0.724	0.676	0.7			134.1	105.2	115.7	118.5	139.7		
						528.97	342.33	306.51	245.74	359.49	314.29	226.26



Manganese

March 2010 Mn Load Lbs/day	April 2010 Mn Load Lbs/day	June 2010 Mn Load Lbs/day	July 2010 Mn Load Lbs/day	Sept 2010 Mn Load Lbs/day	Nov 2010 Mn Load Lbs/day	March 2011 Mn Load Lbs/day	June 2011 Mn Load Lbs/day	July 2011 Mn Load Lbs/day	Aug 2011 Mn Load Lbs/day	Sept 2011 Mn Load Lbs/day	Oct 2011 Mn Load Lbs/day
		3.9	0.1	0.0	0.0			1.5	0.1	0.0	0.1
		18.9	15.0	18.4	17.5		29.5	13.1	20.4	15.4	15.5
				0.0	0.0						
53.1	55.5	61.9	61.9	68.5	65.2	55.8	62.7	56.6	56.0	55.9	63.4
	48.0	88.8	77.2	71.0	79.1		47.8	47.4	52.5	59.0	56.6
	78.9	87.4	87.8	95.4	87.6		124.2	114.5	112.9		
259.75	314.35	390.10	199.45	247.95	253.23	196.94	428.61	344.00	263.91		



Nickel

ANIMAS RIVER 2009 - 2010 DATA SUMMARY - Nickel

Location Name	Station ID	May 2009 Ni-t µg/L	June 2009 Ni-t µg/L	July 2009 Ni-t µg/L	Aug 2009 Ni-t µg/L	Sept 2009 Ni-t µg/L	Nov 2009 Ni-t µg/L	Feb 2010 Ni-t µg/L	March 2010 Ni-t µg/L	April 2010 Ni-t µg/L	June 2010 Ni-t µg/L	July 2010 Ni-t µg/L
Background	**CC01F**			<2	<2.0	<2.0					<4.0	<4.0
Mogul Mine Adit	**CC02D**	12	13.3	14	13.7	14.5	14.5	14.2	12.9	11.9	12.2	12.4
Red and Bonita Adit	**CC03C**											
American Tunnel	**CC19**	66	61.7	66	70.4	69.1	69.7	67.7	60.8	66.4	63.5	66.4
7-Level Adit	**CC06**	90	60.8	65	59.1	55.5		38	37.1	35	95.1	57.6
Red and Bonita Culvert	**CC03D**	52	44.1	50	52.5	53.8	57.1	56.9	59.1	56.5	55.1	52.3
	CC18											

Nickel

Sept 2010 Ni-t µg/L	Nov 2010 Ni-t µg/L	March 2011 Ni-t µg/L	June 2011 Ni-t µg/L	July 2011 Ni-t µg/L	Aug 2011 Ni-t µg/L	Sept 2011 Ni-t µg/L	Oct 2011 Ni-t µg/L	May 2009 Ni-d ug/L	June 2009 Ni-d µg/L	July 2009 Ni-d µg/L	Aug 2009 Ni-d µg/L	Sept 2009 Ni-d µg/L
<0.7	<0.7			<4.0	<4.0	<4.0	<4.0			<2.00	<2.0	<2.0
12.8	13.7		11.2	12	12.2	13	12	11.8	11	13.2	13.5	15.1
54.1	56.4			51.5	51.5	51.4	52.2					
64.1	69.6	68	62.7	67.4	65.7	64.3	63.1	64.1	61.5	64.6	63.2	69
52.6	46.7		94.1	85.8	68.5	60	51.9	91.1	57.6	63.8	59.9	55.6
53.2	56.9	55.4	51.3	50.6	48.9			51.9	47.7	47.9	50.4	55.5

Nickel

Nov 2009 Ni-d µg/L	Feb 2010 Ni-d ug/L	March 2010 Ni-d µg/L	April 2010 Ni-d µg/L	June 2010 Ni-d µg/L	July 2010 Ni-d µg/L	Sept 2010 Ni-d µg/L	Nov 2010 Ni-d µg/L	March 2011 Ni-d µg/L	June 2011 Ni-d µg/L	July 2011 Ni-d µg/L	Aug 2011 Ni-d µg/L	Sept 2011 Ni-d µg/L	Oct 2011 Ni-d µg/L
				<4.0	<4.0	<0.7	<0.7			<4.0	<4.0	<4.0	<4.0
14.2	14.7	13.3	12.4	8.8	10.2	14.1	13.1		10.8	12.6	12.6	12.5	12.3
						55.9	55.5			51.3	49.4	51.3	50.9
60	69.7	67.2	67.8	56.7	65.2	71.5	66.8	64.4	62.6	66.5	63.2	62.8	60.9
	36.4	38.1	37.4	94	53.7	55.2	47.7		93.2	86.2	68.2	59.6	49.9
57.3	59.4	55.9	54.7	52	49.5	56.6	57.1	56	50.9	49.2	49.5		

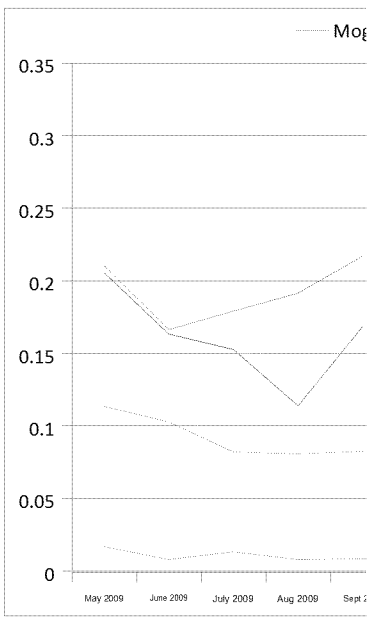
Nickel

May 2009 Flow cfs	June 2009 Flow cfs	July 2009 Flow cfs	Aug 2009 Flow cfs	Sept 2009 Flow cfs	Nov 2009 Flow cfs	Feb 2010 Flow cfs	March 2010 Flow cfs	April 2010 Flow cfs	June 2010 Flow cfs	July 2010 Flow cfs	Sept 2010 Flow cfs	Nov 2010 Flow cfs
		1.11	0.101	0.200					4.61	0.389	0.075	
0.259	0.108	0.178	0.109	0.109	0.123	0.154			0.138	0.095	0.109	0.102
0.318	0.309	0.231	0.212	0.221	0.278	0.178	0.204	0.204	0.24	0.24	0.268	0.24
0.423	0.498	0.436	0.358	0.562				0.333	0.558	0.485	0.449	0.473
0.749	0.699	0.664	0.676	0.749				0.403	0.488	0.517	0.541	0.46

Nickel

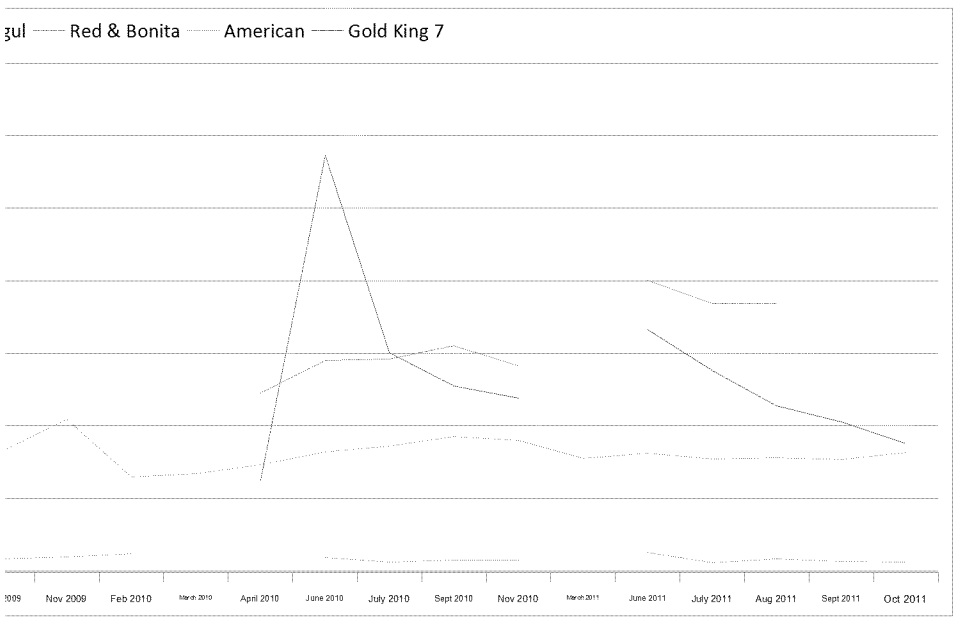
Formula= ug/l * cfs * 0.00539377493629927

March 2011 Flow cfs	June 2011 Flow cfs	July 2011 Flow cfs	Aug 2011 Flow cfs	Sept 2011 Flow cfs	Oct 2011 Flow cfs	May 2009 Ni Load Lbs/day	June 2009 Ni Load Lbs/day	July 2009 Ni Load Lbs/day	Aug 2009 Ni Load Lbs/day	Sept 2009 Ni Load Lbs/day	Nov 2009 Ni Load Lbs/day	Feb 2010 Ni Load Lbs/day
		3.6	0.384	0.11	0.101							
	0.212	0.088	0.13	0.095	0.095	0.02	0.01	0.01	0.01	0.01	0.01	0.0
0.212	0.24	0.212	0.221	0.221	0.24	0.11	0.10	0.08	0.08	0.08	0.10	0.1
	0.328	0.298	0.308	0.318	0.313	0.2	0.2	0.2	0.1	0.2		
	0.724	0.676	0.7			0.2	0.2	0.2	0.2	0.2		
						0.79	0.66	0.55	0.42	0.60	0.50	0.37



Nickel

March 2010 Ni Load Lbs/day	April 2010 Ni Load Lbs/day	June 2010 Ni Load Lbs/day	July 2010 Ni Load Lbs/day	Sept 2010 Ni Load Lbs/day	Nov 2010 Ni Load Lbs/day	March 2011 Ni Load Lbs/day	June 2011 Ni Load Lbs/day	July 2011 Ni Load Lbs/day	Aug 2011 Ni Load Lbs/day	Sept 2011 Ni Load Lbs/day	Oct 2011 Ni Load Lbs/day
		0.0	0.01	0.01	0.01		0.0	0.0	0.009	0.007	0.006
				0.00	0.00						
0.1	0.1	0.1	0.09	0.09	0.09	0.1	0.1	0.1	0.1	0.1	0.1
	0.1	0.3	0.2	0.1	0.1		0.2	0.1	0.1	0.1	0.1
	0.1	0.1	0.15	0.16	0.14		0.2	0.2	0.2		
0.40	0.48	1.01	0.33	0.40	0.41	0.32	1.05	0.69	0.47		



Zinc

ANIMAS RIVER 2009 - 2011 DATA SUMMARY - Zinc

Location Name	Station ID	May 2009 Zn-t µg/L	June 2009 Zn-t µg/L	July 2009 Zn-t µg/L	Aug 2009 Zn-t µg/L	Sept 2009 Zn-t µg/L	Nov 2009 Zn-t µg/L	Feb 2010 Zn-t µg/L	March 2010 Zn-t µg/L	April 2010 Zn-t µg/L	June 2010 Zn-t µg/L	July 2010 Zn-t µg/L	Sept 2010 Zn-t µg/L
Background	**CC01F**			193	185	279					379	180	262
Mogul Mine Adit	**CC02D**	28200	28000	32900	34800	34200	34700	29400	29200	27800	24500	31300	34900
Red and Bonita Adit	**CC03C**												16600
American Tunnel	**CC19**	19200	17900	19900	19600	20500	21400	19000	19700	20600	18700	18300	17800
7-Level Adit	**CC06**	40300	23800	24800	26300	23000		15200	16000	14500	44700	23500	19500
Red and Bonita Culvert	**CC03D**	15600	13600	15500	15800	16400	17400	16000	16500	17500	15500	14500	15300
	CC18												

Zinc

Nov 2010 Zn-t µg/L	March 2011 Zn-t µg/L	June 2011 Zn-t µg/L	July 2011 Zn-t µg/L	Aug 2011 Zn-t µg/L	Sept 2011 Zn-t µg/L	Oct 2011 Zn-t µg/L	May 2009 Zn-d ug/L	June 2009 Zn-d µg/L	July 2009 Zn-d µg/L	Aug 2009 Zn-d µg/L	Sept 2009 Zn-d µg/L	Nov 2009 Zn-d µg/L	Feb 2010 Zn-d ug/L	March 2010 Zn-d µg/L
661			238	179	188	505			175	179	259			
34500		25300	30500	33000	32600	33200	26400	25100	31600	33600	34700	32200	31200	28500
15200			14800	13400	14600	16100								
21000	20500	19100	19700	19000	18500	20800	19500	17800	20000	19500	20100	17400	19900	20600
20000		40200	33400	27500	24600	24400	40200	21900	24000	24800	22400		15500	15600
16600	15500	14800	14500	13400			14300	13600	15000	15000	16100	16400	16900	15500

Zinc

April 2010 Zn-d µg/L	June 2010 Zn-d µg/L	July 2010 Zn-d µg/L	Sept 2010 Zn-d µg/L	Nov 2010 Zn-d µg/L	March 2011 Zn-d µg/L	June 2011 Zn-d µg/L	July 2011 Zn-d µg/L	Aug 2011 Zn-d µg/L	Sept 2011 Zn-d µg/L	Oct 2011 Zn-d µg/L	May 2009 Flow cfs	June 2009 Flow cfs	July 2009 Flow cfs	Aug 2009 Flow cfs
	370	179	276	604			233	177	196	492			1.11	0.101
25800	22900	29800	36700	37800		25600	29800	32800	32900	33700	0.259	0.108	0.178	0.109
			16300	16800			14700	14200	14000	14600				
18400	17600	19700	20400	21400	18500	18900	19900	19500	18200	19300	0.318	0.309	0.231	0.212
13000	39300	22500	21700	20700		41900	32900	28600	23900	21100	0.423	0.498	0.436	0.358
14200	14900	14800	16500	17200	15500	14600	13600	14200			0.749	0.699	0.664	0.676

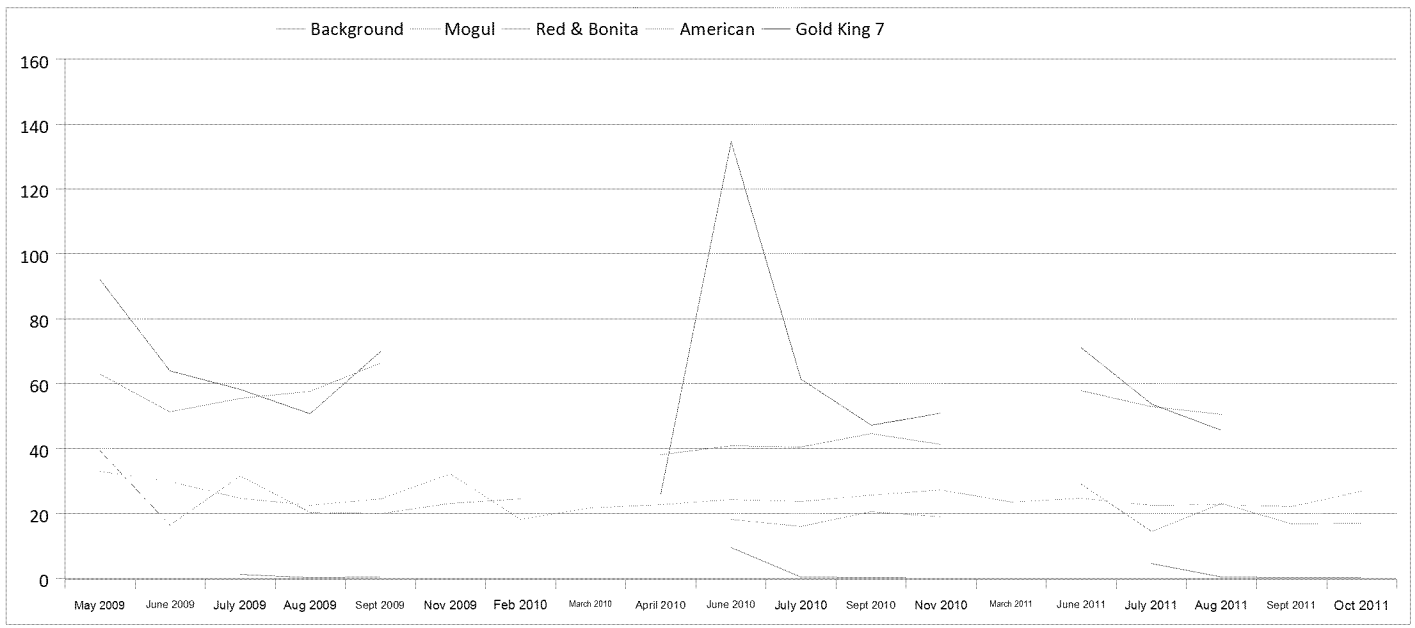
Zinc

Sept 2009 Flow cfs	Nov 2009 Flow cfs	Feb 2010 Flow cfs	March 2010 Flow cfs	April 2010 Flow cfs	June 2010 Flow cfs	July 2010 Flow cfs	Sept 2010 Flow cfs	Nov 2010 Flow cfs	March 2011 Flow cfs	June 2011 Flow cfs	July 2011 Flow cfs	Aug 2011 Flow cfs	Sept 2011 Flow cfs	Oct 2011 Flow cfs
0.200					4.61	0.389	0.075				3.6	0.384	0.11	0.101
0.109	0.123	0.154			0.138	0.095	0.109	0.102		0.212	0.088	0.13	0.095	0.095
0.221	0.278	0.178	0.204	0.204	0.24	0.24	0.268	0.24	0.212	0.24	0.212	0.221	0.221	0.24
0.562				0.333	0.558	0.485	0.449	0.473		0.328	0.298	0.308	0.318	0.313
0.749				0.403	0.488	0.517	0.541	0.46		0.724	0.676	0.7		

Zinc

Formula= ug/l * cfs * 0.00539377493629927

May 2009 Zn Load Lbs/day	June 2009 Zn Load Lbs/day	July 2009 Zn Load Lbs/day	Aug 2009 Zn Load Lbs/day	Sept 2009 Zn Load Lbs/day	Nov 2009 Zn Load Lbs/day	Feb 2010 Zn Load Lbs/day	March 2010 Zn Load Lbs/day	April 2010 Zn Load Lbs/day	June 2010 Zn Load Lbs/day	July 2010 Zn Load Lbs/day	Sept 2010 Zn Load Lbs/day	Nov 2010 Zn Load Lbs/day	March 2011 Zn Load Lbs/day	June 2011 Zn Load Lbs/day	July 2011 Zn Load Lbs/day
		1.15	0.100	0.301					9.4	0.4	0.1	0.0			4.6
39.33	16.31	31.57	20.38	20.03	23.00	24.4			18.2	16.0	20.5	19.0		28.9	14.5
											0.0	0.0			0.0
32.93	29.83	24.74	22.45	24.48	32.08	18.2	21.7	22.7	24.2	23.7	25.7	27.2	23.4	24.7	22.5
91.9	63.9	58.3	50.7	69.8				26.0	134.5	61.5	47.2	51.0		71.1	53.7
63.0	51.3	55.5	57.6	66.2				38.0	40.8	40.4	44.6	41.2		57.8	52.9
450.02	226.23	179.87	151.89	213.32	178.77	117.43	133.10	176.64	317.15	114.05	139.55	135.75	99.35	378.77	225.22



Zinc

Aug 2011 Zn Load Lbs/day	Sept 2011 Zn Load Lbs/day	Oct 2011 Zn Load Lbs/day
0.4	0.1	0.3
23.1	16.7	17.0
0.0		
22.6	22.1	26.9
45.7		
50.6		
158.72		

ANIMAS RIVER 2009 - 2011 DATA SUMMARY

Location Name	Station ID	May 2009 As-t µg/L	June 2009 As-t µg/L	July 2009 As-t µg/L	Aug 2009 As-t µg/L
Background	**CC01F**			<4.0	<4.0
Mogul Mine Adit	**CC02D**	<4.0	<4.0	<4.0	<4.0
Red and Bonita Adit	**CC03C**				
American Tunnel	**CC19**	<4.0	<4.0	<4.0	<4.0
7-Level Adit	**CC-06**	116	19.8	11.3	5.8
Red and Bonita Culvert	**CC03D**	<4.0	<4.0	<4.0	<4.0

Sept 2009 As-t µg/L	Nov 2009 As-t µg/L	Feb 2010 As-t µg/L	March 2010 As-t µg/L	April 2010 As-t µg/L	June 2010 As-t µg/L	July 2010 As-t µg/L	Sept 2010 As-t µg/L
<4.0					<4.0	<4.0	<1.0
<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<1.0
							<1.0
<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<1.0
<4.0		<4.0	<4.0	<4.0	144	10.8	<1.0
<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<1.0

Nov 2010 As-t µg/L	March 2011 As-t µg/L	June 2011 As-t µg/L	July 2011 As-t µg/L	Aug 2011 As-t µg/L	Sept 2011 As-t µg/L	Oct 2011 As-t µg/L
<1.0			<4.0	<4.0		
<1.0		<4.0	<4.0	<4.0		
<1.0			<4.0	<4.0		
<1.0	<4.0	<4.0	<4.0	<4.0		
<1.0		153	52.6	12.6		
<1.0	<4.0	<4.0	<4.0	<4.0		

May 2009 As-d ug/L	June 2009 As-d µg/L	July 2009 As-d µg/L	Aug 2009 As-d µg/L	Sept 2009 As-d µg/L	Nov 2009 As-d µg/L	Feb 2010 As-d ug/L	March 2010 As-d µg/L
		<4.0	<4.0	<4.0			
<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
111	21.3	5.5	<4.0	<4.0		<4.0	<4.0
<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0

April 2010 As-d µg/L	June 2010 As-d µg/L	July 2010 As-d µg/L	Sept 2010 As-d µg/L	Nov 2010 As-d µg/L	March 2011 As-d µg/L	June 2011 As-d µg/L	July 2011 As-d µg/L
	<4.0	<4.0	<1.0	<1.0			<4.0
<4.0	<4.0	<4.0	<1.0	<1.0		<4.0	<4.0
			<1.0	<1.0			<4.0
<4.0	<4.0	<4.0	<1.0	<1.0	<4.0	<4.0	<4.0
<4.0	139	5.6	<1.0	<1.0		160	44.1
<4.0	<4.0	<4.0	<1.0	<1.0	<4.0	<4.0	<4.0

Aug 2011 As-d µg/L	Sept 2011 As-d µg/L	Oct 2011 As-d µg/L		May 2009 Be-t µg/L	June 2009 Be-t µg/L	July 2009 Be-t µg/L	Aug 2009 Be-t µg/L
<4.0						<1	<1.0
<4.0				4	4.4	5	4.7
<4.0							
<4.0				4	3.6	4	3.7
8.4				8	7	8	9.4
<4.0				7	5.8	6	6.6

Sept 2009 Be-t µg/L	Nov 2009 Be-t µg/L	Feb 2010 Be-t µg/L	March 2010 Be-t µg/L	April 2010 Be-t µg/L	June 2010 Be-t µg/L	July 2010 Be-t µg/L	Sept 2010 Be-t µg/L
<1.0					<1.0	<1.0	<0.2
4.7	4.5	4.2	4	3.6	3.6	4.3	4.5
							7.4
3.9	3.9	3.8	3.5	3.7	3.7	3.7	3.3
8.6		4.1	4.1	3.6	8.8	6.8	8.1
7.0	7.4	7.4	7.6	7.4	7.1	7	7.1

Nov 2010 Be-t µg/L	March 2011 Be-t µg/L	June 2011 Be-t µg/L	July 2011 Be-t µg/L	Aug 2011 Be-t µg/L	Sept 2011 Be-t µg/L	Oct 2011 Be-t µg/L
<0.2			<1.0	<1.0		
4.3		3.5	4.3	4.4		
7.5			6.6	7.1		
3.6	3.4	3.8	3.8	3.6		
6.4		8	7.7	9.3		
7.3	7	6.8	6.5	6.3		

May 2009 Be-d ug/L	June 2009 Be-d µg/L	July 2009 Be-d µg/L	Aug 2009 Be-d µg/L	Sept 2009 Be-d µg/L	Nov 2009 Be-d µg/L	Feb 2010 Be-d ug/L	March 2010 Be-d µg/L
		<1.00	<1.0	<1.0			
3.74	4	4.71	4.6	4.7	4.4	4.2	3.9
3.45	3.6	3.58	3.6	3.8	3.4	3.9	3.6
7.97	6.8	8.18	9.1	8.5		3.8	3.9
5.93	5.3	5.45	5.8	6.2	6.9	7.2	6.4

April 2010 Be-d µg/L	June 2010 Be-d µg/L	July 2010 Be-d µg/L	Sept 2010 Be-d µg/L	Nov 2010 Be-d µg/L	March 2011 Be-d µg/L	June 2011 Be-d µg/L	July 2011 Be-d µg/L
	<1.0	<1.0	<0.2	<0.2			<1.0
3.8	3.5	4.2	4.7	4.3		3.6	4.4
			7.6	7.7			6.6
3.8	3.3	3.7	3.9	3.7	3.8	3.6	3.8
3.7	8.5	6.8	8.1	6.7		8.1	7.7
6.3	6.2	6.1	6.9	5.9	6.4	5.9	5.4

Aug 2011 Be-d µg/L	Sept 2011 Be-d µg/L	Oct 2011 Be-d µg/L		May 2009 Cr-t µg/L	June 2009 Cr-t µg/L	July 2009 Cr-t µg/L	Aug 2009 Cr-t µg/L
<1.0						<2	<2.0
4.6				<2	<2.0	<2	<2.0
6.9							
3.9				<2	<2.0	<2	<2.0
9.9				14	5.5	4.0	2.4
5.8				<2	<2.0	<2	<2.0

Sept 2009 Cr-t µg/L	Nov 2009 Cr-t µg/L	Feb 2010 Cr-t µg/L	March 2010 Cr-t µg/L	April 2010 Cr-t µg/L	June 2010 Cr-t µg/L	July 2010 Cr-t µg/L	Sept 2010 Cr-t µg/L
<2.0					<5.0	<5.0	<0.5
<2.0	<2.0	3.6	2.8	3.2	<5.0	<5.0	<0.5
							<0.5
<2.0	<2.0	4.8	3.3	3.2	<5.0	<5.0	<0.5
<2.0		2.8	2.5	<2.0	13.8	<5.0	<0.5
<2.0	<2.0	3.2	3.5	2.5	<5.0	<5.0	<0.5

Nov 2010 Cr-t µg/L	March 2011 Cr-t µg/L	June 2011 Cr-t µg/L	July 2011 Cr-t µg/L	Aug 2011 Cr-t µg/L	Sept 2011 Cr-t µg/L	Oct 2011 Cr-t µg/L
<0.5			<5.0	<5.0		
<0.5		<5.0	<5.0	<5.0		
<0.5			<5.0	<5.0		
<0.5	<5.0	<5.0	<5.0	<5.0		
<0.5		13.5	8.2	<5.0		
<0.5	<5.0	<5.0	<5.0	<5.0		

May 2009 Cr-d ug/L	June 2009 Cr-d µg/L	July 2009 Cr-d µg/L	Aug 2009 Cr-d µg/L	Sept 2009 Cr-d µg/L	Nov 2009 Cr-d µg/L	Feb 2010 Cr-d ug/L	March 2010 Cr-d µg/L
		<2.00	<2.0	<2.0			
<2.00	<2.0	<2.00	<2.0	<2.0	<2.0	<2.0	3
<2.00	<2.0	<2.00	<2.0	<2.0	<2.0	2.2	3.8
14.1	4.4	4.04	2.1	<2.0		2.9	3
<2.00	<2.0	<2.00	<2.0	<2.0	<2.0	<2.0	3.3

April 2010 Cr-d µg/L	June 2010 Cr-d µg/L	July 2010 Cr-d µg/L	Sept 2010 Cr-d µg/L	Nov 2010 Cr-d µg/L	March 2011 Cr-d µg/L	June 2011 Cr-d µg/L	July 2011 Cr-d µg/L
	<5.0	<5.0	<0.5	<0.5			<5.0
<2.0	<5.0	<5.0	<0.5	<0.5		<5.0	<5.0
			<0.5	<0.5			<5.0
<2.0	<5.0	<5.0	<0.5	<0.5	<5.0	<5.0	<5.0
<2.0	16.5	<5.0	<0.5	<0.5		12.6	8.3
<2.0	<5.0	<5.0	<0.5	<0.5	<5.0	<5.0	<5.0

Aug 2011 Cr-d µg/L	Sept 2011 Cr-d µg/L	Oct 2011 Cr-d µg/L		May 2009 Se-t µg/L	June 2009 Se-t µg/L	July 2009 Se-t µg/L	Aug 2009 Se-t µg/L
<5.0						<1.0	<1.0
<5.0				2.0	1.7	2.1	2.2
<5.0							
<5.0				2.2	1.9	2.0	1.8
<5.0				8.3	4.2	4.6	3.9
<5.0				1.7	1.3	1.4	1.5

Sept 2009 Se-t µg/L	Nov 2009 Se-t µg/L	Feb 2010 Se-t µg/L	March 2010 Se-t µg/L	April 2010 Se-t µg/L	June 2010 Se-t µg/L	July 2010 Se-t µg/L	Sept 2010 Se-t µg/L
<1.0					<1.0	<1.0	<0.2
2.0	1.3	1.9	1.7	1.6	1.6	1.7	1.7
							1.2
2.0	1.7	2	1.8	1.8	2.2	2	1.9
3.2		1.8	2.1	2	8.8	4.2	2.8
1.3	1.1	1.7	1.8	1.1	1.8	1.7	1.4

Nov 2010 Se-t µg/L	March 2011 Se-t µg/L	June 2011 Se-t µg/L	July 2011 Se-t µg/L	Aug 2011 Se-t µg/L	Sept 2011 Se-t µg/L	Oct 2011 Se-t µg/L
<0.2			<1.0	<1.0		
1.6		2	1.9	2.3		
1.4			1.5	1.6		
2	2.1	2.5	2.2	2.4		
2.7		10.4	7.7	5.9		
1.3	1.6	1.8	1.5	1.7		

May 2009 Se-d ug/L	June 2009 Se-d µg/L	July 2009 Se-d µg/L	Aug 2009 Se-d µg/L	Sept 2009 Se-d µg/L	Nov 2009 Se-d µg/L	Feb 2010 Se-d ug/L	March 2010 Se-d µg/L
		<1.0	<1.0	<1.0			
1.7	1.4	1.6	2.3	2	1.8	1.7	1.7
2.2	1.9	1.8	2.5	1.6	2.5	2.2	1.9
8.1	3.6	3.4	4.3	2.9		1.9	2
1.5	1.3	1.1	1.3	1.5	1.6	1.6	1.5

April 2010 Se-d µg/L	June 2010 Se-d µg/L	July 2010 Se-d µg/L	Sept 2010 Se-d µg/L	Nov 2010 Se-d µg/L	March 2011 Se-d µg/L	June 2011 Se-d µg/L	July 2011 Se-d µg/L
	<1.0	<1.0	<0.2	<0.2			<1.0
1.2	1.4	1.8	1.5	2.5		2.1	1.7
			1.2	1.7			1.7
1.7	2.3	2.1	1.6	2.2	1.9	2.3	2.2
1.7	8.2	3.9	2.6	3		10	6.8
1.2	1.6	1.8	1.2	1.7	1.4	1.8	1.4

Aug 2011 Se-d µg/L	Sept 2011 Se-d µg/L	Oct 2011 Se-d µg/L		May 2009 Ag-t µg/L	June 2009 Ag-t µg/L	July 2009 Ag-t µg/L	Aug 2009 Ag-t µg/L
<1.0						<0.5	<0.5
2.2				<0.5	<0.5	<0.5	<0.5
1.5							
2.1				<0.5	<0.5	<0.5	<0.5
5.5				<1.0	<0.5	<0.5	<0.5
1.4				<0.5	<0.5	<0.5	<0.5

Sept 2009 Ag-t µg/L	Nov 2009 Ag-t µg/L	Feb 2010 Ag-t µg/L	March 2010 Ag-t µg/L	April 2010 Ag-t µg/L	June 2010 Ag-t µg/L	July 2010 Ag-t µg/L	Sept 2010 Ag-t µg/L
<0.5					<0.5	<0.5	<0.1
<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1
							<0.1
<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1
<0.5		<0.5	<0.5	<0.5	<1.0	<0.5	<0.1
<0.5	<0.5	<0.5	0.7	<0.5	<0.5	<0.5	<0.1

Nov 2010 Ag-t µg/L	March 2011 Ag-t µg/L	June 2011 Ag-t µg/L	July 2011 Ag-t µg/L	Aug 2011 Ag-t µg/L	Sept 2011 Ag-t µg/L	Oct 2011 Ag-t µg/L
<0.1			<0.5	<0.5		
<0.1		<0.5	<0.5	<0.5		
<0.1			<0.5	<0.5		
<0.1	<0.5	<0.5	<0.5	<0.5		
<0.1		<2.0	<0.5	<0.5		
<0.1	<0.5	<0.5	<0.5	<0.5		

May 2009 Ag-d ug/L	June 2009 Ag-d µg/L	July 2009 Ag-d µg/L	Aug 2009 Ag-d µg/L	Sept 2009 Ag-d µg/L	Nov 2009 Ag-d µg/L	Feb 2010 Ag-d ug/L	March 2010 Ag-d µg/L
		<0.5	<0.5	<0.5			
<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
<1.0	<1.0	<0.5	<0.5	<0.5		<0.5	<0.5
<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

April 2010 Ag-d µg/L	June 2010 Ag-d µg/L	July 2010 Ag-d µg/L	Sept 2010 Ag-d µg/L	Nov 2010 Ag-d µg/L	March 2011 Ag-d µg/L	June 2011 Ag-d µg/L	July 2011 Ag-d µg/L
	<0.5	<0.5	<0.1	<0.1			<0.5
<0.5	<0.5	<0.5	<0.1	<0.1		<0.5	<0.5
			<0.1	<0.1			<0.5
<0.5	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.5
<0.5	<1.0	<0.5	<0.1	<0.1		<2.0	<0.5
<0.5	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.5

Aug 2011 Ag-d µg/L	Sept 2011 Ag-d µg/L	Oct 2011 Ag-d µg/L
<0.5		
<0.5		
<0.5		
<0.5		
<0.5		
<0.5		