STATE OF COLORADO

DIVISION OF RECLAMATION, MINING AND SAFETY
Department of Natural Resources

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COLORADO DIVISION OF RECLAMATION MINING & SAFETY

June 4, 2012

Mike Thompson
Rearden Steel LLC
18050 Road G
Cortez, CO
81321

RE: Mayday Idaho Mine Complex, Permit No. M-1981-185, Hydrologic Baseline Characterization

Dear Mr.Thompson:

This letter is a follow up to our telephone conversation of June 1, 2012 regarding the characterization of baseline ground and surface water hydrologic conditions at the Mayday Idaho Mine Complex. As you know, this site is a "Designated Mining Operation". As such, the operator is required to develop an Environmental Protection Plan for the site in accordance with Rule 6.4.21. This Rule requires submission of ground water quality and surface water quality and flow data that has been collected during a minimum of five successive calendar quarters. In order for the data to be acceptable to the Division, the detection limits for all regulated analytes must be at or below the regulatory limits set by the Water Quality Control Commission (WQCC).

Water sampling locations are shown on Figure G-1, dated October 10, 2011, which was submitted with the operator's response to the Division's sixth adequacy review letter for the CN-1 application. Your email dated May 30, 2012 contained results from past water sampling events that occurred at the site during the interval from May, 2010 to May, 2011. If flow data was gathered and it can be confirmed that the detection limits of the tests were below the regulatory limits for all of the regulated analytes, than the data collected from sample locations SW-1, SW-2, and DG-2 may be acceptable as the five quarters of baseline hydrologic data collection for these three points. Please inform the Division whether flow data was collected during the sampling events and whether the detection limits of the water quality tests met the above stated requirements. If so, future biannual sampling/testing at these points would be acceptable to the Division.

An insufficient number of samples were collected at sample locations DG-1 and WL-1. Surface water quality and flow data that has been collected during a minimum of five successive calendar quarters must be submitted for these two locations. As we discussed, moving the the DG-1 sample location downstream to a location closer to the affected area boundary may be beneficial.

The Idaho Spring sample point, WW-1, is considered a ground water sampling location so samples should be collected from this location at the point of emergence. Ground water quality data collected during a minimum five successive calendar quarters must be submitted for this location.

Your email dated May 31, 2012 contained a list of analytes to be used for future sampling events. This list is acceptable to the Division.

If you require additional information, have questions or concerns, please contact me at the DRMS Grand Junction Field Office.

Sincerely,

Dustin Czapla
Environmental Protection Specialist
Department of Natural Resources
Division of Reclamation, Mining and Safety
101 South 3rd, Suite 301
Grand Junction, CO 81501
Phone: (970) 243-6299
Fax: (970) 241-1516

Cc: Randy Oser

Czapla, Dustin

From: Mike Thompson [mt@reardonsteel.us]
Sent: Wednesday, May 30, 2012 4:42 PM
To: Czapla, Dustin
Cc: 'Randall Oser'; 'Mike Thompson'
Subject: RE: Mayday Idaho Mine Complex, M-1981-185, Analytes
Attachments: DRAFT, 2010-2011 wq data by sampling event.pdf; DRAFT, 2010-2011 wq data by location.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Dustin -

This email is just an FYI, I will send another email with specific questions.

Here's a brief summary of Wildcat's recent water quality sampling (refer to Figure G-1 of the 112 app for location map):

- May 2010: SW-1, SW-2, DG-1, DG-2, and Idaho Spring were sampled.
- Aug 2010: SW-1, SW-2, DG-1, and Idaho Spring were sampled; DG-2 was dry.
- Nov 2010: SW-1, SW-2, DG-2, and Idaho Spring were sampled; DG-1 was concealed by snow.
- Feb 2011: SW-1, SW-2 and DG-2 were sampled; Idaho Spring and DG-1 were concealed by snow
- May 2011: SW-1, SW-2, DG-1, DG-2, Idaho Spring, and the wetland adjacent to the New Access Road were all sampled.

Attached are 2 sets of spreadsheets, 1) organized by sample event and 2) organized by sample location.

It appears that the water quality results at each location are fairly similar with some expected seasonal fluctuations. Please review, and let us know your opinion of whether this sampling meets the required initial 5 quarters of surface water data. We want to make sure that you are privy to this surface water data, and avoid duplicative sampling efforts if we can.

Next I'm going to do a side by side comparison of the analyte lists from previous sampling and the surface water list that you emailed yesterday. I will be in touch soon with specific questions.

Thanks,

Mike

Mike Thompson

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mt@reardonsteel.us

From: Mike Thompson [mailto:mt@reardonsteel.us]
Sent: Tuesday, May 29, 2012 5:23 PM
To: 'Czapla, Dustin'
Cc: 'Randall Oser'
Subject: RE: Mayday Idaho Mine Complex, M-1981-185, Analytes

Thanks Dustin -

I should have our WQ summary pulled together by tonight or early morning to show you what we have to date.

Thanks,

Mike

From: Czapla, Dustin [mailto:Dustin.Czapla@state.co.us]
Sent: Tuesday, May 29, 2012 4:11 PM
To: Mike Thompson
Cc: Randall Oser
Subject: Mayday Idaho Mine Complex, M-1981-185, Analytes

Hello Mike,

To follow up on our conversation from earlier, the initial water quality sampling program should be comprehensive, and include the majority of the parameters regulated by the WQCC.

For groundwater samples, the following analytes must be included: all parameters listed in Tables 1-4 of the CDPHE WQCC (5 CCR 1002-41) Reg. 41, *The Basic Standards for Groundwater*, except for total coliforms, asbestos, chlorophenol, color, corrosivity, foaming agents, odor, phenol, gross alpha particle activity, and beta/photon emitters.

For surface water samples, the following analytes must be included: All parameters listed on Tables 2-4 of the CDPHE WQCC (5 CCR 1002-31) Reg. 31, *The Basic Standards and Methodologies for Surface Water*, except for total residual chlorine, sulfide, and asbestos.

After five quarters of sampling events, analytes that repeatedly register undetectable concentrations in the analyses, may be eliminated subject to DRMS approval.

Please let me know if you have any further questions.

Dustin Czapla
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Division of Reclamation, Mining and Safety
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SW-1

Analyte	Units	SW-1 May, 2010		SW-1 Aug, 2010		SW-1 Nov, 2010		SW-1 Feb, 2011		SW-1 May, 2011	
		Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
Aluminum, dissolved	mg/l									0.144	
Aluminum, total recov.	mg/l	0.06		<0.05		<0.10		<0.10		0.318	
Antimony, dissolved	mg/l	<0.0005		<0.0005		<0.0005		<0.0005		ND	
Arsenic, dissolved	mg/l	<0.0005		<0.0005		<0.0005		<0.0005		ND	
Arsenic, total	mg/l	<0.0005		0.0005		<0.0005		<0.0005		0.0007	
Barium, dissolved	mg/l	0.0364		0.0406		0.0505		0.0533			
Barium, total recov.	mg/l									0.0374	
Beryllium, dissolved	mg/l	<0.0005		<0.0005		<0.0005		<0.0005			
Beryllium, total recov.	mg/l									ND	
Boron, dissolved	mg/l	<0.1		0.2		0.3		1.0			
Boron, total recov.	mg/l									ND	
Cadmium, dissolved	mg/l	<0.00005		<0.00005		<0.00005		<0.00005		ND	
Cadmium, total	mg/l	<0.00005		<0.00005		<0.00005		<0.00005		0.00005	
Calcium, dissolved	mg/l	17.2		19.1		24.7		26.7		15.4	
Chromium, dissolved	mg/l	0.002		<0.001		0.003		0.001		ND	
Chromium, total	mg/l	<0.001		<0.001		<0.001		<0.001		ND	
Copper, dissolved	mg/l	0.0046		0.0036		0.0019		0.0005		0.007	
Iron, dissolved	mg/l									0.071	
Iron, total recov.	mg/l	0.08		0.10		<0.05		<0.05		0.386	
Lead, dissolved	mg/l	<0.0001		<0.0001		<0.0001		<0.0001		ND	
Lead, total	mg/l	0.0002		0.0003		<0.0001		<0.0001		0.0007	
Magnesium, dissolved	mg/l	2.1		2.4		3.0		3.2		1.97	
Manganese, dissolved	mg/l	0.0011		0.0043		<0.0005		<0.0005		0.0036	
Manganese, total	mg/l	0.0041		0.0127		<0.0005		0.0014		0.015	
Mercury, dissolved	mg/l	<0.0002		<0.0002		<0.0002		<0.0002		ND	
Molybdenum, total recov.	mg/l									0.0008	
Nickel, dissolved	mg/l	0.0005		<0.0005		0.0009		0.0019		ND	
Nickel, total	mg/l	0.0005		0.0006		0.0007		0.0009		ND	
Potassium, dissolved	mg/l	0.7		0.5		0.6		<0.5		ND	
Selenium, dissolved	mg/l	<0.001		<0.001		<0.001		<0.001			
Selenium, total	mg/l	<0.001		<0.001		<0.001		<0.001		ND	
Silver, dissolved	mg/l	<0.00005		<0.00005		0.00005		<0.00005		ND	
Sodium, dissolved	mg/l	0.9		0.9		1.2		1.3		ND	
Thallium, dissolved	mg/l	<0.00005		<0.00005		<0.00005		<0.00005		ND	
Uranium, dissolved	mg/l	0.00009		0.00012		0.00002		0.00018		0.0001	
Zinc, dissolved	mg/l	0.002		0.002		0.002		0.002		0.0028	
Zinc, total	mg/l	<0.001		0.011		0.002		0.004		0.0069	
Alkalinity as CaCO3	mg/l	47		45		48		52		ND	
Bicarbonate as CaCO3	mg/l	47		45		48		52		38	
Carbonate as CaCO3	mg/l	<10		<10		<10		<10		38	
Hydroxide as CaCO3	mg/l	<10		<10		<10		<10		ND	
Hardness as $CaCO_3$	mg/l	51.6		58		74		80		46.5	
Chloride	mg/l	<10		<10		<10		<10		ND	
Cyanide, WAD	mg/l									ND	
Fluoride	mg/l	0.2		<0.2		<0.2		<0.2		ND	
Nitrate as N	mg/l	0.07		0.11		0.13		0.15		0.023	
Nitrate/Nitrite as N	mg/l	0.07		0.11		0.13		0.15		0.023	
Nitrite as N	mg/l	<0.02		<0.02		<0.02		<0.02		ND	
pH	SU	7.69		7.76		7.41		7.46		7.61	
Sulfate	mg/l	11		15		25		26		12	
Sulfide	mg/l	<0.05		<0.05		<0.05		<0.05		ND	

SW-2

Analyte	Units	SW-2 May, 2010		SW-2 Aug, 2010		SW-2 Nov, 2010		SW-2 Feb, 2011		SW-2 May, 2011	
		Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
Aluminum, dissolved	mg/l									0.118	
Aluminum, total recov.	mg/l	0.27		0.11		<0.10		<0.10		0.277	
Antimony, dissolved	mg/l	<0.0005		<0.0005		<0.0005		<0.0005		ND	
Arsenic, dissolved	mg/l	<0.0005		<0.0005		<0.0005		<0.0005		ND	
Arsenic, total	mg/l	0.0010		0.0008		<0.0005		<0.0005		0.0006	
Barium, dissolved	mg/l	0.0373		0.0484		0.0516		0.0552			
Barium, total recov.	mg/l									0.037	
Beryllium, dissolved	mg/l	<0.0005		<0.0005		<0.0005		<0.0005			
Beryllium, total recov.	mg/l									ND	
Boron, dissolved	mg/l	<0.1		0.3		0.3		0.7			
Boron, total recov.	mg/l									ND	
Cadmium, dissolved	mg/l	<0.00005		<0.00005		<0.00005		<0.00005		ND	
Cadmium, total	mg/l	0.00007		<0.00005		<0.00005		<0.00005		ND	
Calcium, dissolved	mg/l	17.9		21.7		24.7		28.1		14.6	
Chromium, dissolved	mg/l	0.002		<0.001		0.003		0.001		ND	
Chromium, total	mg/l	<0.001		<0.001		<0.001		<0.001		ND	
Copper, dissolved	mg/l	0.0046		0.0024		0.0018		0.0005		0.0066	
Iron, dissolved	mg/l									0.059	
Iron, total recov.	mg/l	0.54		0.17		<0.05		<0.05		0.315	
Lead, dissolved	mg/l	<0.0001		<0.0001		<0.0001		<0.0001		ND	
Lead, total	mg/l	0.0021		0.0006		0.0002		<0.0001		0.0005	
Magnesium, dissolved	mg/l	2.2		2.8		3.1		3.5		1.94	
Manganese, dissolved	mg/l	0.0019		0.0012		<0.0005		<0.0005		0.0025	
Manganese, total	mg/l	0.0383		0.0193		0.0093		0.0017		0.0146	
Mercury, dissolved	mg/l	<0.0002		<0.0002		<0.0002		<0.0002		ND	
Molybdenum, total recov.	mg/l									0.0007	
Nickel, dissolved	mg/l	0.0005		<0.0005		0.0010		0.0018		ND	
Nickel, total	mg/l	0.0009		0.0006		0.0008		0.0008		ND	
Potassium, dissolved	mg/l	<0.5		<0.5		<0.5		<0.5		ND	
Selenium, dissolved	mg/l	<0.001		<0.001		<0.001		<0.001		ND	
Selenium, total	mg/l	<0.001		<0.001		<0.001		<0.001		ND	
Silver, dissolved	mg/l	<0.00005		<0.00005		0.00006		<0.00005		ND	
Sodium, dissolved	mg/l	0.9		1.1		1.2		1.3		ND	
Thallium, dissolved	mg/l	<0.00005		<0.00005		<0.00005		<0.00005		ND	
Uranium, dissolved	mg/l	0.00011		0.00011		0.00018		0.00018		0.0001	
Zinc, dissolved	mg/l	0.003		0.002		0.020		0.002		0.0031	
Zinc, total	mg/l	0.008		0.012		0.001		0.005		0.0045	
Alkalinity as CaCO3	mg/l	39		49		53		53		ND	
Bicarbonate as CaCO3	mg/l	39		49		53		53		38	
Carbonate as CaCO3	mg/l	<10		<10		<10		<10		38	
Hydroxide as CaCO3	mg/l	<10		<10		<10		<10		ND	
Hardness as $CaCO_3$	mg/l	53.76		66		74		85		44.5	
Chloride	mg/l	<10		<10		<10		<10		ND	
Cyanide, WAD	mg/l									ND	
Fluoride	mg/l	0.2		<0.2		0.2		<0.2		ND	
Nitrate as N	mg/l	0.08		0.11		0.12		0.13		0.035	
Nitrate/Nitrite as N	mg/l	0.08		0.11		0.12		0.13		0.035	
Nitrite as N	mg/l	<0.02		<0.02		<0.02		<0.02		ND	
pH	SU	7.75		7.53		7.57		7.69		7.72	
Sulfate	mg/l	10		16		26		26		12	
Sulfide	mg/l	<0.05		<0.05		<0.05		<0.05		ND	

DG-1

Analyte	Units	DG-1 May, 2010		DG-1 Aug, 2010		DG-1 Nov, 2010		DG-1 Feb, 2011		DG-1 May, 2011	
		Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
Aluminum, dissolved	mg/l					SNOW COVER, NO SAMPLE COLLECTED		SNOW COVER, NO SAMPLE COLLECTED		0.055	
Aluminum, total recov.	mg/l	0.07		<0.05						0.126	
Antimony, dissolved	mg/l	<0.0005		<0.0005						ND	
Arsenic, dissolved	mg/l	<0.0005		<0.0005						ND	
Arsenic, total	mg/l	<0.0005		<0.0005						ND	
Barium, dissolved	mg/l	0.0640		0.0951							
Barium, total recov.	mg/l									0.0712	
Beryllium, dissolved	mg/l	<0.0005		<0.0005							
Beryllium, total recov.	mg/l									ND	
Boron, dissolved	mg/l	<0.1		0.2							
Boron, total recov.	mg/l									ND	
Cadmium, dissolved	mg/l	<0.00005		<0.00005						ND	
Cadmium, total	mg/l	<0.00005		<0.00005						ND	
Calcium, dissolved	mg/l	20.5		31.9						22.7	
Chromium, dissolved	mg/l	0.005		<0.001						ND	
Chromium, total	mg/l	<0.001		<0.001						ND	
Copper, dissolved	mg/l	0.0005		0.0002						0.0003	
Iron, dissolved	mg/l									ND	
Iron, total recov.	mg/l	0.07		<0.05						0.091	
Lead, dissolved	mg/l	0.0002		<0.0001						ND	
Lead, total	mg/l	0.0002		<0.0001						ND	
Magnesium, dissolved	mg/l	4.2		8.0						5.38	
Manganese, dissolved	mg/l	0.0031		0.0013						ND	
Manganese, total	mg/l	0.0061		0.0017						0.0036	
Mercury, dissolved	mg/l	<0.0002		<0.0002						ND	
Molybdenum, total recov.	mg/l									ND	
Nickel, dissolved	mg/l	0.0007		0.0007						ND	
Nickel, total	mg/l	0.0009		0.0005						0.0006	
Potassium, dissolved	mg/l	0.5		0.7						ND	
Selenium, dissolved	mg/l	<0.001		<0.001						ND	
Selenium, total	mg/l	<0.001		<0.001						ND	
Silver, dissolved	mg/l	<0.00005		<0.00005						ND	
Sodium, dissolved	mg/l	1.3		1.0						1.1	
Thallium, dissolved	mg/l	<0.00005		<0.00005						ND	
Uranium, dissolved	mg/l	0.00008		0.00019						0.0002	
Zinc, dissolved	mg/l	0.007		<0.001						ND	
Zinc, total	mg/l	0.001		0.008						0.0067	
Alkalinity as CaCO3	mg/l	64		99						ND	
Bicarbonate as CaCO3	mg/l	64		97						75	
Carbonate as CaCO3	mg/l	<10		<10						77	
Hydroxide as CaCO3	mg/l	<10		<10						ND	
Hardness as $CaCO_3$	mg/l	68.48		113						78.7	
Chloride	mg/l	<10		<10						ND	
Cyanide, WAD	mg/l									ND	
Fluoride	mg/l	<0.2		<0.2						ND	
Nitrate as N	mg/l	0.29		0.10						0.176	
Nitrate/Nitrite as N	mg/l	0.29		0.10						0.176	
Nitrite as N	mg/l	<0.02		<0.02						ND	
pH	SU	8.01		8.17						8.08	
Sulfate	mg/l	<10		10						ND	
Sulfide	mg/l	<0.05		<0.05						ND	

DG-2

Analyte	Units	DG-2 May, 2010		DG-2 Aug, 2010		DG-2 Nov, 2010		DG-2 Feb, 2011		DG-2 May, 2011	
		Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
Aluminum, dissolved	mg/l			DRY, NO SAMPLE COLLECTED						0.064	
Aluminum, total recov.	mg/l	0.09				<0.10		<0.10		0.222	
Antimony, dissolved	mg/l	<0.0005				<0.0005		<0.0005		ND	
Arsenic, dissolved	mg/l	<0.0005				<0.0005		<0.0005		0.0005	
Arsenic, total	mg/l	0.0006				<0.0005		<0.0005		0.0008	
Barium, dissolved	mg/l	0.0725				0.0542		0.0546			
Barium, total recov.	mg/l									0.0783	
Beryllium, dissolved	mg/l	<0.0005				<0.0005		<0.0005			
Beryllium, total recov.	mg/l									ND	
Boron, dissolved	mg/l	<0.1				0.2		0.5			
Boron, total recov.	mg/l									ND	
Cadmium, dissolved	mg/l	<0.00005				<0.00005		<0.00005		ND	
Cadmium, total	mg/l	<0.00005				<0.00005		<0.00005		0.00007	
Calcium, dissolved	mg/l	26.8				25.3		30.3		25.1	
Chromium, dissolved	mg/l	0.004				0.003		<0.001		0.0012	
Chromium, total	mg/l	<0.001				<0.001		<0.001		ND	
Copper, dissolved	mg/l	0.0005				0.0015		0.0006		0.0003	
Iron, dissolved	mg/l									ND	
Iron, total recov.	mg/l	0.07				<0.05		<0.05		0.151	
Lead, dissolved	mg/l	0.0002				<0.0001		<0.0001		ND	
Lead, total	mg/l	0.0007				<0.0001		<0.0001		0.0012	
Magnesium, dissolved	mg/l	6.6				3.2		3.8		6.45	
Manganese, dissolved	mg/l	0.0012				0.0018		0.0034		0.0006	
Manganese, total	mg/l	0.0057				0.0091		0.0046		0.0081	
Mercury, dissolved	mg/l	<0.0002				<0.0002		<0.0002		ND	
Molybdenum, total recov.	mg/l									ND	
Nickel, dissolved	mg/l	0.0007				0.0010		0.0018		ND	
Nickel, total	mg/l	0.0010				0.0006		0.0009		0.0008	
Potassium, dissolved	mg/l	1.2				0.5		<0.5		ND	
Selenium, dissolved	mg/l	<0.001				<0.001		<0.001		ND	
Selenium, total	mg/l	<0.001				<0.001		<0.001		ND	
Silver, dissolved	mg/l	<0.00005				<0.00005		<0.00005		ND	
Sodium, dissolved	mg/l	1.1				1.2		1.4		ND	
Thallium, dissolved	mg/l	<0.00005				<0.00005		<0.00005		ND	
Uranium, dissolved	mg/l	0.00022				0.00017		0.00018		0.0002	
Zinc, dissolved	mg/l	0.004				0.005		0.001		0.009	
Zinc, total	mg/l	0.003				0.003		0.003		0.0237	
Alkalinity as CaCO3	mg/l	83				54		58		ND	
Bicarbonate as CaCO3	mg/l	81				54		58		92	
Carbonate as CaCO3	mg/l	<10				<10		<10		92	
Hydroxide as CaCO3	mg/l	<10				<10		<10		ND	
Hardness as $CaCO_3$	mg/l	94.1				76		91		89.2	
Chloride	mg/l	<10				<10		<10		ND	
Cyanide, WAD	mg/l									ND	
Fluoride	mg/l	<0.2				0.2		<0.2		ND	
Nitrate as N	mg/l	0.08				0.11		0.12		0.026	
Nitrate/Nitrite as N	mg/l	0.08				0.11		0.12		0.026	
Nitrite as N	mg/l	<0.02				<0.02		<0.02		ND	
pH	SU	8.21				7.58		7.78		7.95	
Sulfate	mg/l	10				26		26		10	
Sulfide	mg/l	<0.05				<0.05		<0.05		ND	

Idaho Spring

Analyte	Units	Idaho Spring May, 2010		Idaho Spring Aug, 2010		Idaho Spring Nov, 2010		Idaho Spring Feb, 2011		Idaho Spring May, 2011	
		Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
Aluminum, dissolved	mg/l							NOT SAMPLED		ND	
Aluminum, total recov.	mg/l	<0.05		<0.05		<0.10				ND	
Antimony, dissolved	mg/l	0.0009		0.0006		0.0008				0.0006	
Arsenic, dissolved	mg/l	0.0013		0.0009		0.0012				0.001	
Arsenic, total	mg/l	0.0015		0.0009		0.0014				0.001	
Barium, dissolved	mg/l	0.0059		0.0890		0.0766					
Barium, total recov.	mg/l									0.0733	
Beryllium, dissolved	mg/l	<0.0005		<0.0005		<0.0005					
Beryllium, total recov.	mg/l									ND	
Boron, dissolved	mg/l	<0.1		0.2		0.2					
Boron, total recov.	mg/l									ND	
Cadmium, dissolved	mg/l	<0.00005		<0.00005		0.00010				0.00006	
Cadmium, total	mg/l	0.00013		0.0007		0.00007				0.00009	
Calcium, dissolved	mg/l	28.3		39.9		39.0				28.7	
Chromium, dissolved	mg/l	0.005		<0.001		0.007				0.0014	
Chromium, total	mg/l	<0.001		<0.001		<0.001				ND	
Copper, dissolved	mg/l	0.0007		0.0006		0.0009				0.0005	
Iron, dissolved	mg/l									ND	
Iron, total recov.	mg/l	0.06		<0.05		<0.05				ND	
Lead, dissolved	mg/l	0.0009		0.0002		0.0002				0.0009	
Lead, total	mg/l	0.0046		0.0011		0.0006				0.0017	
Magnesium, dissolved	mg/l	7.8		11.0		12.9				8.66	
Manganese, dissolved	mg/l	0.0008		0.0011		<0.0005				0.0012	
Manganese, total	mg/l	0.0103		0.0048		<0.0005				0.0025	
Mercury, dissolved	mg/l	<0.0002		<0.0002		<0.0002				ND	
Molybdenum, total recov.	mg/l									ND	
Nickel, dissolved	mg/l	0.0008		0.0008		0.0013				ND	
Nickel, total	mg/l	0.0010		0.0007		0.0010				0.0005	
Potassium, dissolved	mg/l	1.3		1.0		1.3				ND	
Selenium, dissolved	mg/l	<0.001		<0.001		<0.001				ND	
Selenium, total	mg/l	<0.001		<0.001		<0.001				ND	
Silver, dissolved	mg/l	<0.00005		<0.00005		<0.00005				ND	
Sodium, dissolved	mg/l	1.2		1.7		1.8				1.21	
Thallium, dissolved	mg/l	<0.00005		<0.00005		<0.00005				ND	
Uranium, dissolved	mg/l	0.00061		0.00071		0.00087				0.0006	
Zinc, dissolved	mg/l	0.017		0.012		0.015				0.0121	
Zinc, total	mg/l	0.019		0.013		0.016				0.0143	
Alkalinity as CaCO3	mg/l	90		121		119				ND	
Bicarbonate as CaCO3	mg/l	88		119		117				91	
Carbonate as CaCO3	mg/l	<10		<10		<10				93	
Hydroxide as CaCO3	mg/l	<10		<10		<10				ND	
Hardness as $CaCO_3$	mg/l	102.8		145		151				107	
Chloride	mg/l	<10		<10		<10				ND	
Cyanide, WAD	mg/l									ND	
Fluoride	mg/l	<0.2		<0.2		<0.2				ND	
Nitrate as N	mg/l	0.17		0.13		0.14				0.057	
Nitrate/Nitrite as N	mg/l	0.17		0.13		0.14				0.057	
Nitrite as N	mg/l	<0.02		<0.02		<0.02				ND	
pH	SU	8.20		8.22		8.16				8.14	
Sulfate	mg/l	15		22		35				18	
Sulfide	mg/l	<0.05		<0.05		<0.05				ND	

Wetlands

Analyte	Units	Wetlands May, 2010 Result	Qualifier	Wetlands Aug, 2010 Result	Qualifier	Wetlands Nov, 2010 Result	Qualifier	Wetlands Feb, 2011 Result	Qualifier	Wetlands May, 2011 Result	Qualifier
Aluminum, dissolved	mg/l	NOT SAMPLED		NOT SAMPLED		NOT SAMPLED		NOT SAMPLED		ND	
Aluminum, total recov.	mg/l									0.125	
Antimony, dissolved	mg/l									ND	
Arsenic, dissolved	mg/l									ND	
Arsenic, total	mg/l									0.0016	
Barium, dissolved	mg/l										
Barium, total recov.	mg/l									0.104	
Beryllium, dissolved	mg/l										
Beryllium, total recov.	mg/l									ND	
Boron, dissolved	mg/l										
Boron, total recov.	mg/l									ND	
Cadmium, dissolved	mg/l									ND	
Cadmium, total	mg/l									0.00008	
Calcium, dissolved	mg/l									25.3	
Chromium, dissolved	mg/l									ND	
Chromium, total	mg/l									ND	
Copper, dissolved	mg/l									0.0015	
Iron, dissolved	mg/l									ND	
Iron, total recov.	mg/l									0.27	
Lead, dissolved	mg/l									ND	
Lead, total	mg/l									0.0049	
Magnesium, dissolved	mg/l									3.61	
Manganese, dissolved	mg/l									0.0022	
Manganese, total	mg/l									0.0125	
Mercury, dissolved	mg/l									ND	
Molybdenum, total recov.	mg/l									0.0008	
Nickel, dissolved	mg/l									ND	
Nickel, total	mg/l									0.0005	
Potassium, dissolved	mg/l									ND	
Selenium, dissolved	mg/l									ND	
Selenium, total	mg/l									ND	
Silver, dissolved	mg/l									ND	
Sodium, dissolved	mg/l									1.19	
Thallium, dissolved	mg/l									ND	
Uranium, dissolved	mg/l									0.0003	
Zinc, dissolved	mg/l									0.0033	
Zinc, total	mg/l									0.0165	
Alkalinity as CaCO3	mg/l									ND	
Bicarbonate as CaCO3	mg/l									59	
Carbonate as CaCO3	mg/l									59	
Hydroxide as CaCO3	mg/l									ND	
Hardness as $CaCO_3$	mg/l									78	
Chloride	mg/l									ND	
Cyanide, WAD	mg/l									ND	
Fluoride	mg/l									ND	
Nitrate as N	mg/l									ND	
Nitrate/Nitrite as N	mg/l									ND	
Nitrite as N	mg/l									ND	
pH	SU									7.36	
Sulfate	mg/l									24	
Sulfide	mg/l									ND	

Date Sampled: 5/19/10

Analytes	Units	SW-1		SW-1 Dup		Idaho Spring		DG-1		DG-2		Wetlands		SW-2	
		Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
Aluminium, dissolved	mg/l														
Aluminum, total recov.	mg/l	0.06		0.07		<0.05		0.07		0.09				0.27	
Antimony, dissolved	mg/l	<0.0005		<0.0005		0.0009		<0.0005		<0.0005				<0.0005	
Arsenic, dissolved	mg/l	<0.0005		<0.0005		0.0013		<0.0005		<0.0005				<0.0005	
Arsenic, total	mg/l	<0.0005		<0.0005		0.0015		<0.0005		0.0006				0.0010	
Barium, dissolved	mg/l	0.0364		0.0372		0.0059		0.0640		0.0725				0.0373	
Barium, total recov.	mg/l														
Beryllium, dissolved	mg/l	<0.0005		<0.0005		<0.0005		<0.0005		<0.0005				<0.0005	
Beryllium, total recov.	mg/l														
Boron, dissolved	mg/l	<0.1		<0.1		<0.1		<0.1		<0.1				<0.1	
Boron, total recov.	mg/l														
Cadmium, dissolved	mg/l	<0.00005		<0.00005		<0.00005		<0.00005		<0.00005				<0.00005	
Cadmium, total	mg/l	<0.00005		<0.00005		0.00013		<0.00005		<0.00005				0.00007	
Calcium, dissolved	mg/l	17.2		17.4		28.3		20.5		26.8				17.9	
Chromium, dissolved	mg/l	0.002		0.002		0.005		0.005		0.004				0.002	
Chromium, total	mg/l	<0.001		<0.001		<0.001		<0.001		<0.001				<0.001	
Copper, dissolved	mg/l	0.0046		0.0048		0.0007		0.0005		0.0005				0.0046	
Iron, dissolved	mg/l														
Iron, total recov.	mg/l	0.08		0.08		0.06		0.07		0.07				0.54	
Lead, dissolved	mg/l	<0.0001		<0.0001		0.0009		0.0002		0.0002				<0.0001	
Lead, total	mg/l	0.0002		<0.0001		0.0046		0.0002		0.0007				0.0021	
Magnesium, dissolved	mg/l	2.1		2.2		7.8		4.2		6.6				2.2	
Manganese, dissolved	mg/l	0.0011		0.0012		0.0008		0.0031		0.0012				0.0019	
Manganese, total	mg/l	0.0041		0.0045		0.0103		0.0061		0.0057				0.0383	
Mercury, dissolved	mg/l	<0.0002		<0.0002		<0.0002		<0.0002		<0.0002				<0.0002	
Molybdenum, total recov.	mg/l														
Nickel, dissolved	mg/l	0.0005		0.0005		0.0008		0.0007		0.0007				0.0005	
Nickel, total	mg/l	0.0005		0.0009		0.0010		0.0009		0.0010				0.0009	
Potassium, dissolved	mg/l	0.7		0.8		1.3		0.5		1.2				<0.5	
Selenium, dissolved	mg/l	<0.001		<0.001		<0.001		<0.001		<0.001				<0.001	
Selenium, total	mg/l	<0.001		<0.001		<0.001		<0.001		<0.001				<0.001	
Silver, dissolved	mg/l	<0.00005		<0.00005		<0.00005		<0.00005		<0.00005				<0.00005	
Sodium, dissolved	mg/l	0.9		0.9		1.2		1.3		1.1				0.9	
Thallium, dissolved	mg/l	<0.00005		<0.00005		<0.00005		<0.00005		<0.00005				<0.00005	
Uranium, dissolved	mg/l	0.00009		0.00010		0.00061		0.00008		0.00022				0.00011	
Zinc, dissolved	mg/l	0.002		0.004		0.017		0.007		0.004				0.003	
Zinc, total ***	mg/l	<0.001		0.013		0.019		0.001		0.003				0.008	
Alkalinity as CaCO3	mg/l	47		47		90		64		83				39	
Bicarbonate as CaCO3	mg/l	47		47		88		64		81				39	
Carbonate as CaCO3	mg/l	<10		<10		<10		<10		<10				<10	
Hydroxide as CaCO3	mg/l	<10		<10		<10		<10		<10				<10	
Hardness as CaCO3	mg/l	51.5962		52.5074		102.7855		68.4841		94.0984				53.7559	
Chloride	mg/l	<10		<10		<10		<10		<10				<10	
Cyanide, WAD	mg/l														
Fluoride	mg/l	0.2		0.2		<0.2		<0.2		<0.2				0.2	
Nitrate as N	mg/l	0.07		0.08		0.17		0.29		0.08				0.08	
Nitrate/Nitrite as N	mg/l	0.07		0.08		0.17		0.29		0.08				0.08	
Nitrite as N	mg/l	<0.02		<0.02		<0.02		<0.02		<0.02				<0.02	
pH	SU	7.69		7.76		8.20		8.01		8.21				7.75	
Sulfate	mg/l	11		11		15		<10		10				10	
Sulfide	mg/l	<0.05		<0.05		<0.05		<0.05		<0.05				<0.05	

NOT SAMPLED

SAMPLE DATE: 8/5 to 8/6/2010

Analyte	Units	SW-1		Idaho Spring		DG-1		DG-2		Wetlands		SW-2		SW-2 DUP	
		Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
Aluminum, dissolved	mg/l							DRY, NO SAMPLE COLLECTED		NOT SAMPLED					
Aluminum, total recov.	mg/l	<0.05		<0.05		<0.05						0.11		0.26	
Antimony, dissolved	mg/l	<0.0005		0.0006		<0.0005						<0.0005		<0.0005	
Arsenic, dissolved	mg/l	<0.0005		0.0009		<0.0005						<0.0005		<0.0005	
Arsenic, total	mg/l	0.0005		0.0009		<0.0005						0.0008		0.0009	
Barium, dissolved	mg/l	0.0406		0.0890		0.0951						0.0484		0.0508	
Barium, total recov.	mg/l														
Beryllium, dissolved	mg/l	<0.0005		<0.0005		<0.0005						<0.0005		<0.0005	
Beryllium, total recov.	mg/l														
Boron, dissolved	mg/l	0.2		0.2		0.2						0.3		0.2	
Boron, total recov.	mg/l														
Cadmium, dissolved	mg/l	<0.00005		<0.00005		<0.00005						<0.00005		<0.00005	
Cadmium, total	mg/l	<0.00005		0.0007		<0.00005						<0.00005		<0.00005	
Calcium, dissolved	mg/l	19.1		39.9		31.9						21.7		21.8	
Chromium, dissolved	mg/l	<0.001		<0.001		<0.001						<0.001		<0.001	
Chromium, total	mg/l	<0.001		<0.001		<0.001						<0.001		<0.001	
Copper, dissolved	mg/l	0.0036		0.0006		0.0002						0.0024		0.0026	
Iron, dissolved	mg/l														
Iron, total recov.	mg/l	0.10		<0.05		<0.05						0.17		0.40	
Lead, dissolved	mg/l	<0.0001		0.0002		<0.0001						<0.0001		<0.0001	
Lead, total	mg/l	0.0003		0.0011		<0.0001						0.0006		0.0012	
Magnesium, dissolved	mg/l	2.4		11.0		8.0						2.8		2.8	
Manganese, dissolved	mg/l	0.0043		0.0011		0.0013						0.0012		0.0020	
Manganese, total	mg/l	0.0127		0.0048		0.0017						0.0193		0.0479	
Mercury, dissolved	mg/l	<0.0002		<0.0002		<0.0002						<0.0002		<0.0002	
Molybdenum, total recov.	mg/l														
Nickel, dissolved	mg/l	<0.0005		0.0008		0.0007						<0.0005		<0.0005	
Nickel, total	mg/l	0.0006		0.0007		0.0005						0.0006		0.0006	
Potassium, dissolved	mg/l	0.5		1.0		0.7						<0.5		<0.5	
Selenium, dissolved	mg/l	<0.001		<0.001		<0.001						<0.001		<0.001	
Selenium, total	mg/l	<0.001		<0.001		<0.001						<0.001		<0.001	
Silver, dissolved	mg/l	<0.00005		<0.00005		<0.00005						<0.00005		<0.00005	
Sodium, dissolved	mg/l	0.9		1.7		1.0						1.1		1.2	
Thallium, dissolved	mg/l	<0.00005		<0.00005		<0.00005						<0.00005		<0.00005	
Uranium, dissolved	mg/l	0.00012		0.00071		0.00019						0.00011		0.00011	
Zinc, dissolved	mg/l	0.002		0.012		<0.001						0.002		0.002	
Zinc, total	mg/l	0.011		0.013		0.008						0.012		0.012	
Alkalinity as CaCO3	mg/l	45		121		99						49		45	
Bicarbonate as CaCO3	mg/l	45		119		97						49		45	
Carbonate as CaCO3	mg/l	<10		<10		<10						<10		<10	
Hydroxide as CaCO3	mg/l	<10		<10		<10						<10		<10	
Hardness as $CaCO_3$	mg/l	58		145		113						66		66	
Chloride	mg/l	<10		<10		<10						<10		<10	
Cyanide, WAD	mg/l														
Fluoride	mg/l	<0.2		<0.2		<0.2						<0.2		<0.2	
Nitrate as N	mg/l	0.11		0.13		0.10						0.11		0.10	
Nitrate/Nitrite as N	mg/l	0.11		0.13		0.10						0.11		0.10	
Nitrite as N	mg/l	<0.02		<0.02		<0.02						<0.02		<0.02	
pH	SU	7.76		8.22		8.17						7.53		7.71	
Sulfate	mg/l	15		22		10						16		15	
Sulfide	mg/l	<0.05		<0.05		<0.05						<0.05		<0.05	

SAMPLE DATE: 11/16/10

Analyte	Units	SW-1		Idaho Spring		DG-1		DG-2		Wetlands		SW-2	
		Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
Aluminum, dissolved	mg/l					SNOW COVER, NO SAMPLE COLLECTED				NOT SAMPLED			
Aluminum, total recov.	mg/l	<0.10		<0.10				<0.10				<0.10	
Antimony, dissolved	mg/l	<0.0005		0.0008				<0.0005				<0.0005	
Arsenic, dissolved	mg/l	<0.0005		0.0012				<0.0005				<0.0005	
Arsenic, total	mg/l	<0.0005		0.0014				<0.0005				<0.0005	
Barium, dissolved	mg/l	0.0505		0.0766				0.0542				0.0516	
Barium, total recov.	mg/l												
Beryllium, dissolved	mg/l	<0.0005		<0.0005				<0.0005				<0.0005	
Beryllium, total recov.	mg/l												
Boron, dissolved	mg/l	0.3		0.2				0.2				0.3	
Boron, total recov.	mg/l												
Cadmium, dissolved	mg/l	<0.00005		0.00010				<0.00005				<0.00005	
Cadmium, total	mg/l	<0.00005		0.00007				<0.00005				<0.00005	
Calcium, dissolved	mg/l	24.7		39.0				25.3				24.7	
Chromium, dissolved	mg/l	0.003		0.007				0.003				0.003	
Chromium, total	mg/l	<0.001		<0.001				<0.001				<0.001	
Copper, dissolved	mg/l	0.0019		0.0009				0.0015				0.0018	
Iron, dissolved	mg/l												
Iron, total recov.	mg/l	<0.05		<0.05				<0.05				<0.05	
Lead, dissolved	mg/l	<0.0001		0.0002				<0.0001				<0.0001	
Lead, total	mg/l	<0.0001		0.0006				<0.0001				0.0002	
Magnesium, dissolved	mg/l	3.0		12.9				3.2				3.1	
Manganese, dissolved	mg/l	<0.0005		<0.0005				0.0018				<0.0005	
Manganese, total	mg/l	<0.0005		<0.0005				0.0091				0.0093	
Mercury, dissolved	mg/l	<0.0002		<0.0002				<0.0002				<0.0002	
Molybdenum, total recov.	mg/l												
Nickel, dissolved	mg/l	0.0009		0.0013				0.0010				0.0010	
Nickel, total	mg/l	0.0007		0.0010				0.0006				0.0008	
Potassium, dissolved	mg/l	0.6		1.3				0.5				<0.5	
Selenium, dissolved	mg/l	<0.001		<0.001				<0.001				<0.001	
Selenium, total	mg/l	<0.001		<0.001				<0.001				<0.001	
Silver, dissolved	mg/l	0.00005		<0.00005				<0.00005				0.00006	
Sodium, dissolved	mg/l	1.2		1.8				1.2				1.2	
Thallium, dissolved	mg/l	<0.00005		<0.00005				<0.00005				<0.00005	
Uranium, dissolved	mg/l	0.00002		0.00087				0.00017				0.00018	
Zinc, dissolved	mg/l	0.002		0.015				0.005				0.020	
Zinc, total	mg/l	0.002		0.016				0.003				0.001	
Alkalinity as CaCO3	mg/l	48		119				54				53	
Bicarbonate as CaCO3	mg/l	48		117				54				53	
Carbonate as CaCO3	mg/l	<10		<10				<10				<10	
Hydroxide as CaCO3	mg/l	<10		<10				<10				<10	
Hardness as $CaCO_3$	mg/l	74		151				76				74	
Chloride	mg/l	<10		<10				<10				<10	
Cyanide, WAD	mg/l												
Fluoride	mg/l	<0.2		<0.2				0.2				0.2	
Nitrate as N	mg/l	0.13		0.14				0.11				0.12	
Nitrate/Nitrite as N	mg/l	0.13		0.14				0.11				0.12	
Nitrite as N	mg/l	<0.02		<0.02				<0.02				<0.02	
pH	SU	7.41		8.16				7.58				7.57	
Sulfate	mg/l	25		35				26				26	
Sulfide	mg/l	<0.05		<0.05				<0.05				<0.05	

SAMPLE DATE: 02-15-11

Analyte	Units	SW-1		Idaho Spring		DG-1		DG-2		Wetlands		SW-2	
		Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
Aluminum, dissolved	mg/l			SNOW COVER, NO SAMPLE COLLECTED		SNOW COVER, NO SAMPLE COLLECTED				NOT SAMPLED			
Aluminum, total recov.	mg/l	<0.10						<0.10				<0.10	
Antimony, dissolved	mg/l	<0.0005						<0.0005				<0.0005	
Arsenic, dissolved	mg/l	<0.0005						<0.0005				<0.0005	
Arsenic, total	mg/l	<0.0005						<0.0005				<0.0005	
Barium, dissolved	mg/l	0.0533						0.0546				0.0552	
Barium, total recov.	mg/l												
Beryllium, dissolved	mg/l	<0.0005						<0.0005				<0.0005	
Beryllium, total recov.	mg/l												
Boron, dissolved	mg/l	1.0						0.5				0.7	
Boron, total recov.	mg/l												
Cadmium, dissolved	mg/l	<0.00005						<0.00005				<0.00005	
Cadmium, total	mg/l	<0.00005						<0.00005				<0.00005	
Calcium, dissolved	mg/l	26.7						30.3				28.1	
Chromium, dissolved	mg/l	0.001						<0.001				0.001	
Chromium, total	mg/l	<0.001						<0.001				<0.001	
Copper, dissolved	mg/l	0.0005						0.0006				0.0005	
Iron, dissolved	mg/l												
Iron, total recov.	mg/l	<0.05						<0.05				<0.05	
Lead, dissolved	mg/l	<0.0001						<0.0001				<0.0001	
Lead, total	mg/l	<0.0001						<0.0001				<0.0001	
Magnesium, dissolved	mg/l	3.2						3.8				3.5	
Manganese, dissolved	mg/l	<0.0005						0.0034				<0.0005	
Manganese, total	mg/l	0.0014						0.0046				0.0017	
Mercury, dissolved	mg/l	<0.0002						<0.0002				<0.0002	
Molybdenum, total recov.	mg/l												
Nickel, dissolved	mg/l	0.0019						0.0018				0.0018	
Nickel, total	mg/l	0.0009						0.0009				0.0008	
Potassium, dissolved	mg/l	<0.5						<0.5				<0.5	
Selenium, dissolved	mg/l	<0.001						<0.001				<0.001	
Selenium, total	mg/l	<0.001						<0.001				<0.001	
Silver, dissolved	mg/l	<0.00005						<0.00005				<0.00005	
Sodium, dissolved	mg/l	1.3						1.4				1.3	
Thallium, dissolved	mg/l	<0.00005						<0.00005				<0.00005	
Uranium, dissolved	mg/l	0.00018						0.00018				0.00018	
Zinc, dissolved	mg/l	0.002						0.001				0.002	
Zinc, total	mg/l	0.004						0.003				0.005	
Alkalinity as CaCO3	mg/l	52						58				53	
Bicarbonate as CaCO3	mg/l	52						58				53	
Carbonate as CaCO3	mg/l	<10						<10				<10	
Hydroxide as CaCO3	mg/l	<10						<10				<10	
Hardness as $CaCO_3$	mg/l	80						91				85	
Chloride	mg/l	<10						<10				<10	
Cyanide, WAD	mg/l												
Fluoride	mg/l	<0.2						<0.2				<0.2	
Nitrate as N	mg/l	0.15						0.12				0.13	
Nitrate/Nitrite as N	mg/l	0.15						0.12				0.13	
Nitrite as N	mg/l	<0.02						<0.02				<0.02	
pH	SU	7.46						7.78				7.69	
Sulfate	mg/l	26						26				26	
Sulfide	mg/l	<0.05						<0.05				<0.05	

Sample Date: 05/16 to 05/17/11

Analyte	Units	SW-1		Idaho Spring		DG-1		DG-2		Wetlands		SW-2		SW-2 DUP	
		Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
Aluminum, dissolved	mg/l	0.144		ND		0.055		0.064		ND		0.118		0.13	
Aluminum, total recov.	mg/l	0.318		ND		0.126		0.222		0.125		0.277		0.274	
Antimony, dissolved	mg/l	ND		0.0006		ND		ND		ND		ND		ND	
Arsenic, dissolved	mg/l	ND		0.001		ND		0.0005		ND		ND		ND	
Arsenic, total	mg/l	0.0007		0.001		ND		0.0008		0.0016		0.0006		0.0007	
Barium, dissolved	mg/l														
Barium, total recov.	mg/l	0.0374		0.0733		0.0712		0.0783		0.104		0.037		0.0377	
Beryllium, dissolved	mg/l														
Beryllium, total recov.	mg/l	ND		ND		ND		ND		ND		ND		ND	
Boron, dissolved	mg/l														
Boron, total recov.	mg/l	ND		ND		ND		ND		ND		ND		ND	
Cadmium, dissolved	mg/l	ND		0.00006		ND		ND		ND		ND		ND	
Cadmium, total	mg/l	0.00005		0.00009		ND		0.00007		0.00008		ND		ND	
Calcium, dissolved	mg/l	15.4		28.7		22.7		25.1		25.3		14.6		14.6	
Chromium, dissolved	mg/l	ND		0.0014		ND		0.0012		ND		ND		ND	
Chromium, total	mg/l	ND		ND		ND		ND		ND		ND		ND	
Copper, dissolved	mg/l	0.007		0.0005		0.0003		0.0003		0.0015		0.0066		0.0068	
Iron, dissolved	mg/l	0.071		ND		ND		ND		ND		0.059		0.058	
Iron, total recov.	mg/l	0.386		ND		0.091		0.151		0.27		0.315		0.3	
Lead, dissolved	mg/l	ND		0.0009		ND		ND		ND		ND		ND	
Lead, total	mg/l	0.0007		0.0017		ND		0.0012		0.0049		0.0005		0.0006	
Magnesium, dissolved	mg/l	1.97		8.66		5.38		6.45		3.61		1.94		2	
Manganese, dissolved	mg/l	0.0036		0.0012		ND		0.0006		0.0022		0.0025		0.0024	
Manganese, total	mg/l	0.015		0.0025		0.0036		0.0081		0.0125		0.0146		0.0174	
Mercury, dissolved	mg/l	ND		ND		ND		ND		ND		ND		ND	
Molybdenum, total recov.	mg/l	0.0008		ND		ND		ND		0.0008		0.0007		0.0008	
Nickel, dissolved	mg/l	ND		ND		ND		ND		ND		ND		ND	
Nickel, total	mg/l	ND		0.0005		0.0006		0.0008		0.0005		ND		ND	
Potassium, dissolved	mg/l	ND		ND		ND		ND		ND		ND		ND	
Selenium, dissolved	mg/l			ND		ND		ND		ND		ND		ND	
Selenium, total	mg/l	ND		ND		ND		ND		ND		ND		ND	
Silver, dissolved	mg/l	ND		ND		ND		ND		ND		ND		ND	
Sodium, dissolved	mg/l	ND		1.21		1.1		ND		1.19		ND		ND	
Thallium, dissolved	mg/l	ND		ND		ND		ND		ND		ND		ND	
Uranium, dissolved	mg/l	0.0001		0.0006		0.0002		0.0002		0.0003		0.0001		0.0001	
Zinc, dissolved	mg/l	0.0028		0.0121		ND		0.009		0.0033		0.0031		0.0025	
Zinc, total	mg/l	0.0069		0.0143		0.0067		0.0237		0.0165		0.0045		0.0069	
Alkalinity as CaCO3	mg/l	ND		ND		ND		ND		ND		ND		ND	
Bicarbonate as CaCO3	mg/l	38		91		75		92		59		38		39	
Carbonate as CaCO3	mg/l	38		93		77		92		59		38		39	
Hydroxide as CaCO3	mg/l	ND		ND		ND		ND		ND		ND		ND	
Hardness as $CaCO_3$	mg/l	46.5		107		78.7		89.2		78		44.5		44.7	
Chloride	mg/l	ND		ND		ND		ND		ND		ND		ND	
Cyanide, WAD	mg/l	ND		ND		ND		ND		ND		ND		ND	
Fluoride	mg/l	ND		ND		ND		ND		ND		ND		ND	
Nitrate as N	mg/l	0.023		0.057		0.176		0.026		ND		0.035		0.031	
Nitrate/Nitrite as N	mg/l	0.023		0.057		0.176		0.026		ND		0.035		0.031	
Nitrite as N	mg/l	ND		ND		ND		ND		ND		ND		ND	
pH	SU	7.61		8.14		8.08		7.95		7.36		7.72		7.76	
Sulfate	mg/l	12		18		ND		10		24		12		12	
Sulfide	mg/l	ND		ND		ND		ND		ND		ND		ND	

Czapla, Dustin

From: Mike Thompson [mt@reardonsteel.us]
Sent: Thursday, May 31, 2012 7:23 PM
To: Czapla, Dustin
Cc: 'Randall Oser'; 'Mike Thompson'
Subject: RE: Mayday Idaho Mine Complex, M-1981-185, Analytes
Attachments: 2012, 05-31-12, surface water and groundwater analyte list.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Dustin -

Attached is a spreadsheet showing the analyte lists for future surface water and groundwater samples compared to previous sampling and your email from May 29th. Please let me know if you have any questions or concerns.

Once you have had a chance to review our 5 quarters of surface water data from 2010-2011, can you please let us know if DRMS going to require Wildcat to continue to conduct quarterly surface water sampling or can we trim it down to bi-annual or annual? We need to know in the next couple days if possible, so we can make arrangements with various labs to accommodate our sampling schedule (next week).

Also, please let me know if you would like any of the spreadsheets in excel.

Thanks,

Mike

From: Mike Thompson [mailto:mt@reardonsteel.us]
Sent: Wednesday, May 30, 2012 4:42 PM
To: 'Czapla, Dustin'
Cc: 'Randall Oser'; 'Mike Thompson'
Subject: RE: Mayday Idaho Mine Complex, M-1981-185, Analytes

Dustin -

This email is just an FYI, I will send another email with specific questions.

Here's a brief summary of Wildcat's recent water quality sampling (refer to Figure G-1 of the 112 app for location map):

- May 2010: SW-1, SW-2, DG-1, DG-2, and Idaho Spring were sampled.
- Aug 2010: SW-1, SW-2, DG-1, and Idaho Spring were sampled; DG-2 was dry.
- Nov 2010: SW-1, SW-2, DG-2, and Idaho Spring were sampled; DG-1 was concealed by snow.
- Feb 2011: SW-1, SW-2 and DG-2 were sampled; Idaho Spring and DG-1 were concealed by snow
- May 2011: SW-1, SW-2, DG-1, DG-2, Idaho Spring, and the wetland adjacent to the New Access Road were all sampled.

Attached are 2 sets of spreadsheets, 1) organized by sample event and 2) organized by sample location.

It appears that the water quality results at each location are fairly similar with some expected seasonal fluctuations. Please review, and let us know your opinion of whether this sampling meets the required initial 5 quarters of surface water data. We want to make sure that you are privy to this surface water data, and avoid duplicative sampling efforts if we can.

Next I'm going to do a side by side comparison of the analyte lists from previous sampling and the surface water list that you emailed yesterday. I will be in touch soon with specific questions.

Thanks,

Mike

Mike Thompson

REARDON STEEL LLC
18050 Road G, Cortez, Colorado 81321
Office: (970) 565 0278
Cell: (970) 426-2924
mt@reardonsteel.us

From: Mike Thompson [mailto:mt@reardonsteel.us]
Sent: Tuesday, May 29, 2012 5:23 PM
To: 'Czapla, Dustin'
Cc: 'Randall Oser'
Subject: RE: Mayday Idaho Mine Complex, M-1981-185, Analytes

Thanks Dustin -

I should have our WQ summary pulled together by tonight or early morning to show you what we have to date.

Thanks,

Mike

From: Czapla, Dustin [mailto:Dustin.Czapla@state.co.us]
Sent: Tuesday, May 29, 2012 4:11 PM
To: Mike Thompson
Cc: Randall Oser
Subject: Mayday Idaho Mine Complex, M-1981-185, Analytes

Hello Mike,

To follow up on our conversation from earlier, the initial water quality sampling program should be comprehensive, and include the majority of the parameters regulated by the WQCC.

For groundwater samples, the following analytes must be included: all parameters listed in Tables 1-4 of the CDPHE WQCC (5 CCR 1002-41) Reg. 41, *The Basic Standards for Groundwater*, except for total coliforms, asbestos, chlorophenol, color, corrosivity, foaming agents, odor, phenol, gross alpha particle activity, and beta/photon emitters.

For surface water samples, the following analytes must be included: All parameters listed on Tables 2-4 of the CDPHE WQCC (5 CCR 1002-31) Reg. 31, *The Basic Standards and Methodologies for Surface Water*, except for total residual chlorine, sulfide, and asbestos.

After five quarters of sampling events, analytes that repeatedly register undetectable concentrations in the analyses, may be eliminated subject to DRMS approval.

Please let me know if you have any further questions.

Dustin Czapla
Environmental Protection Specialist
Department of Natural Resources
Division of Reclamation, Mining and Safety
101 South 3rd, Suite 301
Grand Junction, CO 81501
Phone: (970) 243-6299
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List of Analytes for Surface Water and Groundwater Sampling at the May Day-Idaho Mine Complex as of May 31, 2012

Analyte	Future surface water sampling	Previous Quarterly Sampling	CDPHE SW Guide as modified by DRMS[3]	CDPHE GW Guide as modified by DRMS[3]	Future ground-water sampling
Aluminum, dissolved	√	√	√	√	√
Aluminum, total recov.		√			
Antimony, dissolved	√	√	√	√	√
Arsenic, dissolved	√	√	√	√	√
Arsenic, total	√	√			
Barium, dissolved	√	√	√	√	√
Barium, total recov.		√			
Beryllium, dissolved	√	√	√	√	√
Beryllium, total recov.		√			
Boron, dissolved		√		√	√
Boron, total recov.	√	√	√		
Cadmium, dissolved	√	√	√	√	√
Cadmium, total		√			
Calcium, dissolved		√			
Chromium, dissolved		√		√	√
Chromium, total	√[1]	√[1]			
Chromium (III), dissolved			√		
Chromium (VI), dissolved			√		
Cobalt, dissolved				√	√
Copper, dissolved	√	√	√	√	√
Iron, dissolved	√	√	√	√	√
Iron, total recov.	√	√			
Lead, dissolved	√	√	√	√	√
Lead, total	√	√			
Lithium, dissolved				√	√
Magnesium, dissolved	√	√	√		
Manganese, dissolved	√	√		√	√
Manganese, total		√			
Mercury, dissolved	√	√	√	√	√
Molybdenum, total recov.		√			
Molybdenum, dissolved	√	√	√	√	√
Nickel, dissolved	√	√	√	√	√
Nickel, total		√			
Potassium, dissolved		√			
Selenium, dissolved	√	√	√	√	√
Selenium, total		√			
Silver, dissolved	√	√	√	√	√
Sodium, dissolved		√			
Thallium, dissolved	√	√	√	√	√
Uranium, dissolved	√	√	√	√	√
Vanadium, dissolved				√	√
Zinc, dissolved	√	√	√	√	√
Zinc, total		√			
Ammonia (as N)	√		√		
Alkalinity as CaCO3	√	√			
Bicarbonate as CaCO3	√	√			
Carbonate as CaCO3	√	√			
HydroVide as CaCO3	√	√			
Hardness as $CaCO_3$	√	√	√		
Chloride	[2]	√	√		
Cyanide, WAD	√	√	√	√	√
Fluoride	√	√	√	√	√
Nitrate as N	√	√	√	√	√
Nitrate/Nitrite as N	√	√	√	√	√
Nitrite as N	√	√	√	√	√
pH (lab)	√	√		√	√
Sulfate	√	√	√	√	√
Sulfide	[2]	√	√		
TDS (lab)	√	√	√	√	√
TSS	√	√	√		
Temp (field)	√	√			√
pH (field)	√	√			√
Conductivity (field)	√	√			√
ORP (field)	√	√			√
Flow (when logistically possible)	√	√			√
TDS (field)	√	√			√

[1] Previous sampling has demonstrated that the valence state of Chromium (Cr) in waters to be sampled at the May Day-Idaho Mine Complex is inconsequential because total Cr levels are far below Cr(III) and Cr(VI) stds.

[2] DRMS will not require this analyte for future sampling (see email from D. Czapla to M. Thompson May 29, 2012, 4:11pm)

[3] DRMS excluded certain analytes from the CDPHE surface water and groundwater guides (see email from D. Czapla to M. Thompson May 29, 2012, 4:11pm)