STATE OF COLORADO

DIVISION OF RECLAMATION, MINING AND SAFETY Department of Natural Resources

1313 Sherman St., Room 215 Denver, Colorado 80203 Phone: (303) 866-3567 FAX: (303) 832-8106

June 4, 2012

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



John W. Hickenlooper Governor

Mike King Executive Director

Loretta Piñeda Director

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.

M. Thompson June 4, 2012 Page 2

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

REARDON STEEL LLC

18050 Road G, Cortez, Colorado 81321 Office: (970) 565 0278 Cell: (970) 426-2924 <u>mt@reardonsteel.us</u>

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 Fax: (970) 241-1516

SW-1

	1	SW-1	SW-1	SW-1	SW-1	SW-1
Analyte	Units	May, 2010	Aug, 2010	Nov, 2010	Feb, 2011	May, 2011
		Result Qualifier				
Aluminum, dissolved	mg/l	Result Qualifier	Result Qualifier	Result Quanter	Result Qualifier	0.144
Aluminum, total recov.		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		<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		0.0364	0.0406	0.0505	0.0533	0.0007
Barium, total recov.	mg/l	0.0304	0.0400	0.0303	0.0555	0.0374
Beryllium, dissolved	mg/l	<0.0005	<0.0005	<0.0005	<0.0005	0.0374
Beryllium, total recov.	mg/l		10.0003	10.0005	10.0000	ND
Boron, dissolved		<0.1	0.2	0.3	1.0	
Boron, total recov.	- 	<0.1	0.2	0.5	1.0	ND
Cadmium, dissolved	mg/i	<0.00005	<0.00005	<0.00005	<0.00005	ND
	mg/i			<0.00005	<0.00005	0.00005
Cadmium, total	mg/i	< 0.00005	< 0.00005	24.7	26.7	15.4
Calcium, dissolved		17.2	19.1 <0.001	0.003	0.001	ND
Chromium, dissolved		0.002				
Chromium, total	1.07	< 0.001	<0.001	< 0.001	<0.001	ND
Copper, dissolved		0.0046	0.0036	0.0019	0.0005	0.007
Iron, dissolved	mg/l					0.071
Iron, total recov.		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		0.0002	0.0003	<0.0001	<0.0001	0.0007
Magnesium, dissolved		2.1	2.4	3.0	3.2	1.97
Manganese, dissolved	1.01	0.0011	0.0043	<0.0005	<0.0005	0.0036
Manganese, total		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		0.0005	<0.0005	0.0009	0.0019	ND
Nickel, total		0.0005	0.0006	0.0007	0.0009	ND
Potassium, dissolved		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		47	45	48	52	ND
Bicarbonate as CaCO3		47	45	48	52	38
Carbonate as CaCO3		<10	<10	<10	<10	38
Hydroxide as CaCO3		<10	<10	<10	<10	ND
Hardness as CaCO ₃	mg/l	51.6	58	74	80	46.5
Chloride		<10	<10	<10	<10	ND
Cyanide, WAD	mg/l					ND
Fluoride		0.2	<0.2	<0.2	<0.2	ND
Nitrate as N		0.07	0.11	0.13	0.15	0.023
Nitrate/Nitrite as N		0.07	0.11	0.13	0.15	0.023
Nitrite as N		<0.02	<0.02	<0.02	<0.02	ND
	SU	7.69	7.76	7.41	7.46	7.61
pH Sulfate	-	11	15	25	26	12
Sulfide	mg/l mg/l	<0.05	<0.05	<0.05	<0.05	ND

SW-2

· · · · · · · · · · · · · · · · · · ·	1	SW-2	SW-2	SW-2	SW-2	SW-2
Analyte	Units		Aug, 2010	Nov, 2010	Feb, 2011	May, 2011
Analyte		Result Qualifier				
Aluminum, dissolved	mg/l	Result Qualifier	Result Quanner	Result Qualifier	Result Qualifier	0.118
Aluminum, total recov.		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		0.0010	0.0008	<0.0005	<0.0005	0.0006
Barium, dissolved		0.0373	0.0484	0.0516	0.0552	0.0000
Barium, total recov.	mg/l	0.0373	0.0484	0.0510	0.0332	0.037
Beryllium, dissolved		<0.0005	<0.0005	<0.0005	<0.0005	0.037
Beryllium, total recov.	mg/l mg/l	<0.0005	0.0005	10.0003	V.000	ND
Boron, dissolved		<0.1	0.3	0.3	0.7	
Boron, total recov.	mg/1	<0.1	0.5	0.5	0.7	ND
	mg/l	10 00005	-0.00005	<0.00005	<0.00005	ND
Cadmium, dissolved	mg/l	< 0.00005	<0.00005			ND
Cadmium, total	mg/l	0.00007	< 0.00005	<0.00005	< 0.00005	
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		0.0046	0.0024	0.0018	0.0005	0.0066
Iron, dissolved	mg/l				0.05	0.059
Iron, total recov.		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		0.0021	0.0006	0.0002	<0.0001	0.0005
Magnesium, dissolved	- -	2.2	2.8	3.1	3.5	1.94
Manganese, dissolved		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		<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		0.2	<0.2	0.2	<0.2	ND
Nitrate as N		0.08	0.11	0.12	0.13	0.035
Nitrate/Nitrite as N		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
L			16	26	26	12
Sulfate	mg/l	10		<0.05	<0.05	ND
Sulfide	mg/l	<0.05	<0.05	L0.02	10.05	טאן

DG-1

·····		DG-1	DG-1	DG-1	DG-1	DG-1
Analyte	Units	May, 2010	Aug, 2010	Nov, 2010	Feb, 2011	May, 2011
Analyse		Result Qualifier	Result Qualifier	Result Qualifier	Result Qualifier	Result Qualifier
Aluminum, dissolved	mg/l	Result Qualifier	Result Qualifier	Kesult Qualifier	Kesuit Quanner	0.055
Aluminum, total recov.		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		0.0640	0.0951			
Barium, total recov.		0.0040	0.0331			0.0712
	mg/l	<0.0005	<0.0005			0.0712
Beryllium, dissolved Beryllium, total recov.	mg/l	<0.0005	<0.0005			ND
Boron, dissolved	mg/l	<0.1	0.2			
	mg/l	<u><0.1</u>	0.2			ND
Boron, total recov.	mg/l	<0.00005	<0.00005			ND
Cadmium, dissolved	mg/l	<0.00005				ND
Cadmium, total	mg/l	<0.00005	< 0.00005			22.7
Calcium, dissolved		20.5	31.9			22.7 ND
Chromium, dissolved	- <u>-</u>	0.005	<0.001			ND
Chromium, total	mg/l	< 0.001	<0.001			
Copper, dissolved		0.0005	0.0002			0.0003
Iron, dissolved	mg/l		0.05			ND
Iron, total recov.	<u> </u>	0.07	<0.05		0	0.091
Lead, dissolved	mg/l	0.0002	<0.0001	LE	E.	ND
Lead, total	1-V'	0.0002	<0.0001	LEC		ND
Magnesium, dissolved	mg/l	4.2	8.0	OL	OL	5.38
Manganese, dissolved	mg/l	0.0031	0.0013	U U U		ND
Manganese, total		0.0061	0.0017	L L		0.0036
Mercury, dissolved	mg/l	<0.0002	<0.0002	SNOW COVER, NO SAMPLE COLLECTED	SNOW COVER, NO SAMPLE COLLECTED	ND
Molybdenum, total recov.	mg/l			S O	S O	ND
Nickel, dissolved	<u> </u>	0.0007	0.0007	ž	ž	ND
Nickel, total	mg/l	0.0009	0.0005	E E	L H	0.0006
Potassium, dissolved		0.5	0.7	8	6	ND
Selenium, dissolved	mg/l	<0.001	<0.001	Ŭ	Ŭ	ND
Selenium, total	mg/l	<0.001	<0.001	ð l	δ	ND
Silver, dissolved	mg/l	<0.00005	<0.00005	SS	SN	ND
Sodium, dissolved		1.3	1.0			1.1
Thallium, dissolved		<0.00005	<0.00005			ND
Uranium, dissolved	- <u></u>	0.00008	0.00019			0.0002
Zinc, dissolved		0.007	<0.001			ND
Zinc, total		0.001	0.008			0.0067
Alkalinity as CaCO3		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 CaCO₃	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		0.29	0.10	1		0.176
Nitrate/Nitrite as N		0.29	0.10			0.176
Nitrite as N		<0.02	<0.02			ND
pH	SU	8.01	8.17			8.08
Sulfate	_	<10	10	1		ND
Sulfide		<0.05	<0.05	1		ND
	1		1			1

DG-2

		DG-2	DG-2	DG-2	DG-2	DG-2
Analyte	Units	May, 2010	Aug, 2010	Nov, 2010	Feb, 2011	May, 2011
		Result Qualifier	Result Qualifier	Result Qualifier	Result Qualifier	
Aluminum, dissolved	mg/l	Result Qualifier	neount equanner	incount equation	Result Qualifier	0.064
Aluminum, total recov.		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		0.0006		<0.0005	< 0.0005	0.0008
Barium, dissolved		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	-012				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		0.004		0.003	<0.001	0.0012
Chromium, total	mg/l	<0.001		<0.001	<0.001	ND
Copper, dissolved		0.0005		0.0015	0.0006	0.0003
Iron, dissolved	mg/l	0.0005		0.0015	0.0000	ND
Iron, total recov.		0.07		<0.05	<0.05	0.151
Lead, dissolved		0.0002		<0.001	<0.0001	ND
Lead, total		0.0002		<0.0001	<0.0001	0.0012
		6.6	8	3.2	3.8	6.45
Magnesium, dissolved		0.0012	DRY, NO SAMPLE COLLECTED	0.0018	0.0034	0.0006
Manganese, dissolved	<u>~</u>		E E	0.0091	0.0046	0.0081
Manganese, total		0.0057	8	<0.0002	<0.0048	
Mercury, dissolved	mg/l	<0.0002	ÿ	<0.0002	<0.0002	ND
Molybdenum, total recov.	mg/l	0.0007	ž	0.0010	0.0018	ND ND
Nickel, dissolved		0.0007	SAI	0.0010	0.0018	
Nickel, total		0.0010	9	0.0006	0.0009	0.0008
Potassium, dissolved		1.2		0.5	<0.5	ND
Selenium, dissolved	mg/l	< 0.001	OR N	<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		1.1		1.2	1.4	ND
Thallium, dissolved	mg/l	<0.00005		<0.00005	<0.00005	ND
Uranium, dissolved		0.00022		0.00017	0.00018	0.0002
Zinc, dissolved		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		81		54	58	92
Carbonate as CaCO3		<10		<10	<10	92
Hydroxide as CaCO3	mg/l	<10		<10	<10	ND
Hardness as CaCO₃	mg/l	94.1		76	91	89.2
Chloride	mg/l	<10	1	<10	<10	ND
Cyanide, WAD	mg/l					ND
Fluoride	mg/l	<0.2		0.2	<0.2	ND
Nitrate as N		0.08		0.11	0.12	0.026
Nitrate/Nitrite as N		0.08		0.11	0.12	0.026
Nitrite as N		<0.02		<0.02	<0.02	ND
pH	SU	8.21		7.58	7.78	7.95
Sulfate		10		26	26	10
Sulfide		<0.05	1	< 0.05	<0.05	ND

Idaho Spring

Analyte Um Nav, 2010 Aug. 2010 Result Qualifier Nav. Qualifier <			Idaho Spring	Idaho Spring	Idaho Spring	Idaho Spring	Idaho Spring
Result Qualifier Result Qualifier Result Qualifier Result Qualifier Result Qualifier No No Aluminum, total recov. mg/1 0.005 <0.05 <0.008 0.0008 0.0006 0.0008 0.0012 0.0013 0.0009 0.0014 0.0013 0.0012 0.0014 0.0013 0.0009 0.0014 0.0013 0.0009 0.0014 0.0013 0.0005 0.0005 0.0005 0.0007 0.0007 0.0007 0.0007 0.0007 0.0007 0.0006 0.0006 0.0007 0.0007 0.0007 0.0007 0.0007 0.0007 0.0007 0.0007 0.0007 0.0007 0.0007 0.0007 0.0001 <td< th=""><th>Analyte</th><th>Units</th><th></th><th></th><th></th><th></th><th></th></td<>	Analyte	Units					
Aluminum, dissolved mg/l ND Aluminum, dissolved mg/l 0.005 0.10 ND Antimomy, dissolved mg/l 0.0013 0.0009 0.0014 0.0016 0.0016 Arsenic, dissolved mg/l 0.0015 0.0099 0.0014 0.001 0.0011 0.0011 0.0011 0.0011 0.0011 0.0011 0.0011 0.0011 0.0011 0.0011 0.0011 0.0011 0.0011 0.0011 0.0011 0.00011 0.00011 0.00011 0.00001 0.00001 0.00007 0.00001 0.00001 0.00001 0.0001	, , , , , , , , , , , , , , , , , , ,			-		-	
Aluminum, total recov. mg/l 0.009 0.006 0.0008 Artimory, disolved mg/l 0.0013 0.0006 0.0012 Arsenic, total mg/l 0.0015 0.0099 0.0014 Barium, disolved mg/l 0.0055 0.0099 0.0014 Barium, disolved mg/l 0.0005 <0.0005 <0.0005 Barium, disolved mg/l 0.0005 <0.0005 <0.0005 Beryllium, total recov. mg/l 0.2 0.2 Boron, tissolved mg/l 0.0005 <0.00017 Cadmium, dissolved mg/l 0.0005 <0.00017 Cadmium, dissolved mg/l 0.0001 <0.0017 Chromium, total mg/l 0.0007 0.0006 Chromium, total mg/l 0.0007 0.0002 Chromium, dissolved mg/l 0.0007 0.0002 Chromium, dissolved mg/l 0.0002 <0.0002 Lead, dissolved mg/l 0.0002 <0.0002 Lead, disso	Aluminum dissolved	mg/l	Kesult Qualifier	Result Qualifier	Result Qualifier	Kesult Qualmer	
Artimory, dissolved mg/l 0.0009 0.0008 0.0008 Arsenic, dissolved mg/l 0.0013 0.0009 0.0014 0.001 Arsenic, dissolved mg/l 0.0013 0.0009 0.0014 0.001 Barlum, total recov. mg/l 0.0005 <0.0005			<0.05	<0.05	<0.10		
Arsenic, dissolved mg/l 0.0013 0.0009 0.0012 Arsenic, total mg/l 0.0015 0.0099 0.0014 Barlum, dissolved mg/l 0.0025 0.0064 0.001 Barlum, total recov. mg/l 0.0005 <0.0005							
Arsenic, total mg/l 0.0015 0.0090 0.0014 Barlum, dissolved mg/l 0.0059 0.0890 0.00766 Barlum, talsaolved mg/l 0.0005 <0.0005							
Barium, dissolved mg/l 0.0059 0.0890 0.0766 Barlum, total recov. mg/l 0.0733 Beryllium, dissolved mg/l 0.0005 Beryllium, total recov. mg/l 0.0001 Boron, dissolved mg/l 0.00005 0.00007 Cadmium, dissolved mg/l 0.0007 0.00007 Cadmium, dissolved mg/l 0.0007 0.00007 Chromium, total mg/l 0.0007 0.0007 Chromium, total mg/l 0.0005 <0.001							
Barium, total recov. mg/l Co.0005 CO.0007 CO.0007 CO.00007 CO.0001 CO.0001 CO.00007 CO.00007 CO.0001 CO.00007 CO.00007 CO.0001 CO.0001 CO.00007 CO.0001 CO.0011 CO.0002 CO.0002 CO.0002 CO.0002 CO.0002 CO.0002 CO.0002 CO.0002 CO.0012 <							0.001
Beryllium, dissolved mg/l 0.0005 0.0005 0.0005 Beryllium, total recov. mg/l <0.1			0.0033	0.0850	0.0700		0.0722
Beryllum, total recov. mg/l Col. Col. Boron, dissolved mg/l 0.2 0.2 Boron, total recov. mg/l 0.00015 0.00017 Cadmium, dissolved mg/l 0.00013 0.00007 0.00007 Cadmium, total mg/l 0.001 0.0007 0.00007 Chromium, dissolved mg/l 0.001 0.0007 0.00017 Chromium, dissolved mg/l 0.001 0.0007 0.0001 0.0001 Cron, dissolved mg/l 0.005 <0.001			<0.0005	<0.0005	<0.0005		0.0755
Boron, disolved mg/l <0.2 0.2 Boron, total recov. mg/l Cadmium, dissolved mg/l 0.00005 0.00007 0.00007 Cadmium, dissolved mg/l 0.00013 0.0007 0.00007 0.00007 Chromium, dissolved mg/l 0.000 <0.001			<0.0005	0.0005	<0.0005		ND
Boron, total recov. mg/l Construction Second Se			<0.1	0.2	0.2		
Cadmium, dissolved mg/l 0.00005 0.00017 0.00007 Cadmium, total mg/l 0.00013 0.0007 0.00007 0.00007 Cadmium, tosolved mg/l 0.0005 <0.001			<0.1	0.2	0.2		
Cadmium, total mg/l 0.00013 0.0007 0.0007 Calcium, dissolved mg/l 28.3 39.9 39.0 28.7 0.0014 Chromium, dissolved mg/l 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.0005 0.0005 0.0005 0.0005 0.0005 0.0005 0.0005 0.0005 0.0005 0.0005 0.0005 0.0001 0.0001 0.0001 0.0001 0.0001 0.0001 0.0012 0.0001 0.0012 0.0002 0.0012 <td></td> <td></td> <td><0.00005</td> <td><0.00005</td> <td>0.00010</td> <td></td> <td></td>			<0.00005	<0.00005	0.00010		
Calcium, dissolved mg/l 28.3 39.9 39.0 28.7 Chromium, dissolved mg/l 0.005 <0.001							
Chromium, dissolved mg/l 0.005 <0.001 0.007 Chromium, total mg/l 0.001 <0.001							
Chromium, total mg/l <0.001 <0.001 <0.001 <0.001 <0.001 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.002 <0.0006 <0.0009 <0.0009 <0.0009 <0.0009 <0.0009 <0.0002 <0.0002 <0.0001 <0.0006 <0.0011 <0.0006 <0.0011 <0.0006 <0.0011 <0.0006 <0.0012 <0.0009 <0.0009 <0.0002 <0.0001 <0.0005 <0.0012 <0.00012 <0.0012 <0.0009 <0.0012 <0.0012 <0.0012 <0.0012 <0.0012 <0.0012 <0.0012 <0.0012 <0.0025 ND							
Copper, dissolved mg/l 0.0007 0.0006 0.0009 Iron, dissolved mg/l 0.6 <0.05							
Inc. Inc. <th< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th<>							
Iron, total recov. mg/l 0.06 <0.05 <0.05 Lead, dissolved mg/l 0.0009 0.0002 0.0002 0.0002 Magnares, dissolved mg/l 0.0046 0.0011 0.0005 0.0012 0.0017 8.66 0.0017 Manganese, total mg/l 0.0008 0.0011 <0.0005			0.0007	0.0006	0.0009		
Lead, dissolved mg/l 0.0009 0.0002 0.0002 0.0002 Lead, total mg/l 0.0046 0.0011 0.0006 0.0017 0.0017 0.0017 0.0012 0.0012 0.0012 0.0012 0.0017 0.0017 0.0013 0.0012 0.0012 0.0012 0.0012 0.0012 0.0012 0.0012 0.0012 0.0012 0.0012 0.002 0.0012 0.002 0.0012 0.0025 ND ND ND ND ND 0.0025 ND ND 0.0025 ND ND 0.0012 0.0012 0.0012 0.0025 ND ND ND ND ND ND ND 0.0005 ND ND </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>							
Lead, total mg/l 0.0046 0.0011 0.0006 Magnanesum, dissolved mg/l 7.8 11.0 12.9 8.66 0.0012 Manganese, dissolved mg/l 0.0008 0.0011 <0.0005							
Magnesium, dissolved mg/l 7.8 11.0 12.9 Manganese, dissolved mg/l 0.0008 0.0011 <0.0005							
Manganese, dissolved mg/l 0.0008 0.0011 <0.0005 Manganese, total mg/l 0.0103 0.0048 <0.0005							
Manganese, total mg/l 0.0103 0.0048 <0.0005 Mercury, dissolved mg/l <0.0002							
Nickel, dissolved mg/l 0.0008 0.0003 0.0013 Nickel, total mg/l 0.0010 0.0007 0.0010 0.0005 Potassium, dissolved mg/l 1.3 1.0 1.3 0.001 0.0001 Selenium, dissolved mg/l <0.001							
Nickel, dissolved mg/l 0.0008 0.0003 0.0013 Nickel, total mg/l 0.0010 0.0007 0.0010 0.0005 Potassium, dissolved mg/l 1.3 1.0 1.3 0.001 0.0005 Selenium, total mg/l <0.001		mg/l				E E	
Nickel, dissolved mg/l 0.0008 0.0003 0.0013 Nickel, total mg/l 0.0010 0.0007 0.0010 0.0005 Potassium, dissolved mg/l 1.3 1.0 1.3 0.001 0.0001 Selenium, dissolved mg/l <0.001			<0.0002	<0.0002	<0.0002	μ	
Nickel, total mg/l 0.0010 0.0007 0.0010 Potassium, dissolved mg/l 1.3 1.0 1.3 Selenium, dissolved mg/l <0.001	Molybdenum, total recov.					SA	
Potassium, dissolved mg/l 1.3 1.0 1.3 ND Selenium, dissolved mg/l <0.001		<u>X'</u>					
Potassium, dissolved mg/l 1.3 1.0 1.3 ND Selenium, dissolved mg/l <0.001						ġ	
Selenium, total mg/l <0.001 <0.001 <0.001 Silver, dissolved mg/l <0.00005	Potassium, dissolved	mg/l	1.3	1.0		<u> </u>	ND
Silver, dissolved mg/l <0.00005	Selenium, dissolved	mg/l		<0.001	<0.001		ND
Sodium, dissolved mg/l 1.2 1.7 1.8 Thallium, dissolved mg/l <0.00005	Selenium, total	mg/l	<0.001	<0.001	<0.001		ND
Thallium, dissolved mg/l <0.00005 <0.00005 <0.00005 Uranium, dissolved mg/l 0.00061 0.00071 0.00087 0.0006 Zinc, dissolved mg/l 0.017 0.012 0.015 0.0121 0.0121 Zinc, total mg/l 0.019 0.013 0.016 0.0143 0.0143 Alkalinity as CaCO3 mg/l 90 121 119 0.0143 0.0143 Bicarbonate as CaCO3 mg/l 10 <10	Silver, dissolved	mg/l	<0.00005	<0.00005	<0.00005		ND
Uranium, dissolved mg/l 0.00061 0.00071 0.00087 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	Sodium, dissolved	mg/l	1.2	1.7	1.8		1.21
Zinc, dissolved mg/l 0.017 0.012 0.015 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	Thallium, dissolved	mg/l	<0.00005	<0.00005	<0.00005		ND
Zinc, dissolved mg/l 0.017 0.012 0.015 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	Uranium, dissolved		0.00061	0.00071	0.00087		0.0006
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	Zinc, dissolved		0.017	0.012	0.015		0.0121
Alkalinity as CaCO3 mg/l 90 121 119 Bicarbonate as CaCO3 mg/l 88 119 117 Carbonate as CaCO3 mg/l <10				0.013	0.016		0.0143
Bicarbonate as CaCO3 mg/l 88 119 117 Carbonate as CaCO3 mg/l <10		mg/l	90				
Carbonate as CaCO3 mg/l <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10			88				
Hydroxide as CaCO3 mg/l <10							
Hardness as CaCO3 mg/l 102.8 145 151 107 Chloride mg/l <10							
Chloride mg/l <10 <10 <10 ND Cyanide, WAD mg/l mg/l ND ND Fluoride mg/l <0.2				And American America a			
Cyanide, WAD mg/l mg/l ND Fluoride mg/l <0.2							
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			-10	-10			
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 Nitrate Nitrite as N mg/l <0.02			<0.2	<0.2	<0.2		
Nitrate/Nitrite as N mg/l 0.17 0.13 0.14 0.057 Nitrite as N mg/l <0.02							
Nitrite as N mg/l <0.02 <0.02 <0.02 ND pH SU 8.20 8.22 8.16 8.14							
pH SU 8.20 8.22 8.16 8.14							
INDEALE INDEAL 112 112	<u> </u>						
Sufficie mg/l 15 22 55 16 Sulfide mg/l <0.05		mg/l					

Wetlands

		Wetlands	Wetlands	Wetlands	Wetlands	Wet	lands
Analyte	Units	May, 2010	Aug, 2010	Nov, 2010	Feb, 2011	May,	2011
		Result Qualifier	Result Qualifi	er Result Qualifier	Result Qualifier	Result	Qualifier
Aluminum, dissolved	mg/l					ND	•
Aluminum, total recov.	mg/l	1				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		-				ND	
Lead, total	mg/l					0.0049	
Magnesium, dissolved	mg/l					3.61	
	mg/l					0.0022	
Manganese, dissolved	mg/l	e l	â	<u>e</u>	e e e e e e e e e e e e e e e e e e e	0.0125	
Manganese, total	mg/l	L PLE	PLE	bre	L II	ND	
Mercury, dissolved	mg/l	SAMPLED	SAMPLED	SAMPLED	SAMPLED		
Molybdenum, total recov.	mg/l	s l	s	l s	s s	0.0008	
Nickel, dissolved	mg/l		Ц	L E		ND	
Nickel, total	mg/l	NOT	NOT	TON	TON	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			1		ND	

Date Sampled: 5/19/10

		SW-1	SW-1 Dup	Idaho Spring	DG-1	DG-2	Wetlands	SW-2
Analytes	Units	Result Qualifier	Result Qualifier	Result Qualifier	Result Qualifier	Result Qualifier	Result Qualifier	Result Qualifie
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						1	
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	1	0.00007
Calcium, dissolved	mg/l	17.2	17.4	28.3	20.5	26.8		17.9
Chromium, dissolved		0.002	0.002	0.005	0.005	0.004	1	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	1	0.0046
Iron, dissolved	mg/l							
Iron, total recov.		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
a second s	- A REAL PROPERTY AND ADDRESS OF	2.1	2.2	7.8	4.2	6.6		2.2
Magnesium, dissolved	mg/l	0.0011	0.0012	0.0008	0.0031	0.0012		0.0019
Manganese, dissolved	mg/l	the second second data and the second s	0.0045	0.0103	0.0051	0.0057	<u> </u>	0.0383
Manganese, total	mg/l	0.0041				<0.0002		<0.0002
Mercury, dissolved	mg/1	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	SAMPLED	<0.0002
Molybdenum, total recov.	mg/1	0.0005	0.0005	0.0000	0.0007	0.0007		0.0005
Nickel, dissolved	mg/1	0.0005	0.0005	0.0008	0.0007		NOT	(T
Nickel, total	mg/1	0.0005	0.0009	0.0010	0.0009	0.0010	ž	0.0009 <0.5
Potassium, dissolved	mg/l	0.7	0.8	1.3	0.5	1.2		
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	1	<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/1	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	1	10
Sulfide	mg/l	<0.05	<0.05	<0.05	<0.05	<0.05	1	<0.05

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

	1	SW-1	Idaho Spring	DG-1	DG-2	Wetlands	SW-2	SW-2 DUP
Analyte	Units	Result Qualifier	Result Qualifier		Result Qualifier	Result Qualifier	Result Qualifier	Result Qualifier
Aluminum, dissolved	mg/l	nesare quanter	Testit quanter	incount quanner	Classifi Quanner	The same againment		
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							
Bervllium, 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	L III		2.8	2.8
Manganese, dissolved	mg/l	0.0043	0.0011	0.0013	L L L	-	0.0012	0.0020
Manganese, total	mg/l	0.0127	0.0048	0.0017	GL		0.0193	0.0479
Mercury, dissolved	mg/l	< 0.0002	<0.0002	< 0.0002	DRV, NO SAMPLE COLLECTED	SAMPLED	<0.0002	<0.0002
Molybdenum, total recov.	mg/l				E E	SAL		
Nickel, dissolved	mg/l	<0.0005	0.0008	0.0007	A ≥		<0.0005	<0.0005
Nickel, total	mg/l	0.0006	0.0007	0.0005	S S	NOT	0.0006	0.0006
Potassium, dissolved	mg/l	0.5	1.0	0.7	ž	6	<0.5	<0.5
Selenium, dissolved	mg/l	<0.001	<0.001	<0.001	RY		<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	D	G-2	We	tlands	SV	V-2
		Result	Qualifier	Result	Qualifier	Result Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
Aluminum, dissolved	mg/l											
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/i	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		ļ		<0.001	
Copper, dissolved	mg/l	0.0019		0.0009			0.0015				0.0018	
Iron, dissolved	mg/l					1						
Iron. total recov.	mg/l	<0.05		<0.05		1	<0.05				< 0.05	
Lead, dissolved	mg/l	< 0.0001		0.0002		SNOW COVER, NO SAMPLE COLLECTED	< 0.0001				< 0.0001	
Lead, total	mg/l	<0.0001		0.0006			< 0.0001		1		0.0002	
Magnesium, dissolved	mg/l	3.0		12.9		3	3.2				3.1	
Manganese, dissolved	mg/l	<0.0005		<0.0005		8	0.0018			_	< 0.0005	
Manganese, total	mg/l	< 0.0005		< 0.0005		9	0.0091			8	0.0093	
Mercury, dissolved	mg/l	< 0.0002		<0.0002		5	< 0.0002			SAMPLED	< 0.0002	
Molybdenum, total recov.	mg/l	10.0002		-0.000		SAI				AP		
Nickel, dissolved	mg/l	0.0009		0.0013		<u>o</u>	0.0010				0.0010	
Nickel, total	mg/l	0.0007		0.0010			0.0006		1	NOT	0.0008	
Potassium, dissolved	mg/l	0.6		1.3			0.5		1	z	<0.5	
Selenium, dissolved	mg/l	<0.001		<0.001		2	<0.001		1		<0.001	
Selenium, total	mg/l	<0.001		<0.001		S S	<0.001	-	1		<0.001	
Silver, dissolved	mg/l	0.00005		<0.00005		<u>Q</u>	<0.00005		1		0.00006	
Sodium, dissolved	mg/l	1.2		1.8		5 I	1.2		1		1.2	
Thallium, dissolved	mg/l	<0.00005		<0.00005			<0.00005		1		<0.00005	
Uranium, dissolved	mg/l	0.00002		0.00087			0.00017				0.00018	
Zinc, dissolved	mg/l	0.0002		0.015			0.005		1		0.020	
Zinc, total	mg/l	0.002		0.015			0.003				0.001	
Alkalinity as CaCO3	mg/l	48		119			54				53	
Bicarbonate as CaCO3		48		117			54				53	
Carbonate as CaCO3	mg/l	<10		<10			<10				<10	
	mg/l	<10		<10			<10		1		<10	
Hydroxide as CaCO3	mg/l										74	
Hardness as CaCO ₃	mg/l	74		151			76					
Chloride	mg/l	<10		<10			<10		1		<10	
Cyanide, WAD	mg/i										0.0	
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

		SW	/-1	Idaho Spring	DG-1	DG-2	Wetlands	SW	/-2
Analyte	Units	Result	Qualifier		Result Qualifier	Result Qualifie	Result Qualifier	Result	Qualifier
Aluminum, dissolved	mg/l								
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	1	< 0.0005	
Arsenic, total	mg/l	<0.0005				<0.0005	-	<0.0005	
Barium, dissolved		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		1.0				0.5	1	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		0.001				<0.001	-	0.001	
Chromium, total	mg/l	< 0.001				<0.001	-	<0.001	
Copper, dissolved		0.0005				0.0006	-	0.0005	
Iron, dissolved	mg/l	0.0003					-		
Iron, total recov.	mg/l	<0.05				<0.05	-	<0.05	
Lead, dissolved	mg/l	< 0.0001		0	<u>.</u>	<0.0001	-	< 0.0001	
Lead, total	mg/l	< 0.0001		SNOW COVER, NO SAMPLE COLLECTED	SNOW COVER, NO SAMPLE COLLECTED	<0.0001		<0.0001	
Magnesium, dissolved		3.2			E E	3.8	-	3.5	
Manganese, dissolved	mg/l	< 0.0005		8	9	0.0034	-	<0.0005	
Manganese, total	mg/l	0.0014		<u> </u>	<u> </u>	0.0046	SAMPLED	0.0017	
Mercury, dissolved		< 0.0002		d b	5	<0.0002	- <u> </u>	< 0.0002	
Molybdenum, total recov.	mg/l	10.0002		SAI	SAI		- A		
Nickel, dissolved		0.0019		9	9	0.0018		0.0018	
Nickel, total		0.0009				0.0009	NOT	0.0008	
Potassium, dissolved	mg/l	<0.5		K L	L III	<0.5	Z	<0.5	
Selenium, dissolved	mg/l	<0.001		8	9	<0.001	-	<0.001	
Selenium, total	mg/l	<0.001		3	3	< 0.001	-	< 0.001	
Silver, dissolved	mg/l	<0.00005		l g	2	<0.00005	-	<0.00005	
Sodium, dissolved		1.3		l v	l v	1.4		1.3	
Thallium, dissolved	mg/l	< 0.00005				<0.00005	-	<0.00005	
Uranium, dissolved		0.00018				0.00018		0.00018	
Zinc, dissolved		0.002				0.001	-	0.002	
Zinc, total		0.004				0.003	-	0.005	
Alkalinity as CaCO3		52				58	-	53	
Bicarbonate as CaCO3		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	1	<0.2	
Nitrate as N		0.15		1		0.12	-	0.13	
Nitrate/Nitrite as N	mg/l	0.15				0.12	1	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	
	- M						1	<0.05	
Sulfide		<0.05		<u> </u>		<0.05	1	<0.05	

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

		SW-1	Idaho Spring	DG-1	DG-2	Wetlands	SW-2	SW-2	2 DUP
Anaiyte	Units	Result Qualifier	Result Qualifier		Result Qualifier	Result Qualifier	Result Qualifier	-	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		0.274	
Antimony, dissolved	mg/l	ND	0.0006	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	0.0007	0.001		0.0000				
Barium, total recov.	mg/l	0.0374	0.0733	0.0712	0.0783	0.104	0.037	0.0377	
Beryllium, dissolved	mg/l	0.0374	0.0755	0.0712					
Beryllium, total recov.	mg/l	ND	ND	ND	ND	ND	ND	ND	
Boron, dissolved	mg/l								
Boron, total recov.		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	
	mg/l	15.4	28.7	22.7	25.1	25.3	14.6	14.6	
Calcium, dissolved	mg/l	ND	0.0014	ND	0.0012	ND	ND	ND	
Chromium, dissolved	mg/l	ND	ND	ND	ND	ND	ND	ND	
Chromium, total	mg/l	0.007	0.0005	0.0003	0.0003	0.0015	0.0066	0.0068	
Copper, dissolved	mg/l		ND	ND	ND	ND	0.059	0.058	
Iron, dissolved	mg/l	0.071	ND	0.091	0.151	0.27	0.315	0.3	
Iron, total recov.	mg/l	0.386		ND	ND	ND	ND	ND	
Lead, dissolved	mg/l	ND	0.0009	ND	0.0012	0.0049	0.0005	0.0006	
Lead, total	mg/l	0.0007	0.0017	5.38	6.45	3.61	1.94	2	
Magnesium, dissolved	mg/l	1.97	8.66			0.0022	0.0025	0.0024	
Manganese, dissolved	mg/l	0.0036	0.0012	ND	0.0006		0.0025	0.0024	
Manganese, total	mg/l	0.015	0.0025	0.0036	0.0081	0.0125 ND	ND	ND	
Mercury, dissolved	mg/l	ND	ND	ND	ND		0.0007	0.0008	
Molybdenum, total recov.	mg/l	0.0008	ND	ND	ND	0.0008 ND	ND	ND	
Nickel, dissolved	mg/l	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			
Selenium, total	mg/l	ND	ND	ND	ND	ND	ND	ND ND	
Silver, dissolved	mg/l	ND	ND	ND	ND	ND	ND		
Sodium, dissolved	mg/l	ND	1.21	1.1	ND	1.19	ND	ND ND	
Thallium, dissolved	mg/l	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 <u>mt@reardonsteel.us</u>

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 Fax: (970) 241-1516

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
					V
Aluminum, dissolved	V	√ √	V	V	V
Aluminum, total recov. Antimony, dissolved	V	V	V	V	V
Arsenic, dissolved	V V	V	V V		v
Arsenic, total	V	V	· · · · · · · · · · · · · · · · · · ·		
Barium, dissolved		V	V	V	V
Barium, total recov.	· · · ·	V			
Beryllium, dissolved	V	V	V		V
Beryllium, total recov.		V			
Boron, dissolved		V		V	V
Boron, total recov.	V	V	V		
Cadmium, dissolved	V	√	٧	V	V
Cadmium, total		V			
Calcium, dissolved		V			
Chromium, dissolved		V		٧	V
Chromium, total	√¹	v ¹			
Chromium (III), dissolved			٧		
Chromium (VI), dissolved			٧		
Cobalt, dissolved				V	V
Copper, dissolved	V	V	√	V	V
Iron, dissolved	V	V	V	V	<u>v</u>
Iron, total recov.	V	√			
Lead, dissolved	V	V	V	V	V
Lead, total	V	V			
Lithium, dissolved				V	V
Magnesium, dissolved	V	V	V		
Manganese, dissolved	V	V		V	V
Manganese, total	_	V			
Mercury, dissolved	V	V	٧	٧	V
Molybdenum, total recov.		V			· · · · · · · · · · · · · · · · · · ·
Molybdenum, dissolved	V	V	V	V	V
Nickel, dissolved	V	V	V	٧	√
Nickel, total					
Potassium, dissolved Selenium, dissolved		V	V		V
Selenium, total	· · · · · · · · · · · · · · · · · · ·	V V		v	
Silver, dissolved	- V	V	√	V	V
Sodium, dissolved		V			
Thallium, dissolved	V	V	V	V	V
Uranium, dissolved	v	V	V	V	V
Vanadium, dissolved	- <u> </u>			V	V
Zinc, dissolved	V	V	V	V	V
Zinc, total		V			
Ammonia (as N)	V		V	Î	
Alkalinity as CaCO3	√	V			
Bicarbonate as CaCO3	V	V		1	
Carbonate as CaCO3	V	V			
HydroVide as CaCO3	٧	V			ļ
Hardness as CaCO ₃	V	√	√		l
Chloride	2	V	٧		
Cyanide, WAD	V	V	√	V	V
Fluoride	V	V	V	٧	V
Nitrate as N	V	V	V	V	V
Nitrate/Nitrite as N	V	V	V	V	V
Nitrite as N	V	V	√	V	V
pH (lab)	√	V	ļ	V	V
Sulfate	V	V	√	V	V
Sulfide	2	V	V		
TDS (lab)	. V	V	٧	V	V
TSS	V	V	V		
Temp (field)	V	V			√
pH (field)	٧	V			V
Conductivity (field)	V	V			V
ORP (field)	V	V			V
Flow (when logistically possible)	٧	V	l		V
TDS (field)	√	V	<u> </u>		٧

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)