

0017

Incomf
c/015/0032
OK

From: "Karla Knoop" <kknoop@jbrenv.com>
To: "Shaver, Dave" <dshaver@coalsource.com>, "Jeffrey Studenka" <jstuden...>
Date: 2/15/2008 7:46 AM
Subject: Crandall mine water discharge - lab report for Feb 11 sample & trend/compliance data
Attachments: crandall 002 Feb 11 08.pdf; Crandall 2008 UPDES compliance.xls; Crandall 2008 wq trends.xls

All,

Please see attached Crandall Canyon mine water discharge laboratory results for the sample taken earlier this week. Excel files showing trends and UPDES permit compliance are also attached.

Regards,
Karla Knoop, Hydrologist

jbr Environmental Consultants, Inc.

phone (435) 637-9645

fax (435) 637-8679

kknoop@jbrenv.com



General Offices: P.O. Box 995 Price, UT. 84501 (435)637-8855
 Laboratory: 65 North 300 East Price, UT. 84501

Report Date
 2/14/2008

Client
 UtahAmerican Energy Inc.
 Genwal Resources, Inc.
 PO Box 1077
 Price, UT. 84501
 Dave Shaver
 (435)888-4017

Sample I.D.
 002
Sampled By: KDK
Date: 2/11/2008 Time: 10:15
Received
Date: 2/11/2008 Time: 13:10

<u>Field Measurements</u>				
<u>Cond. uS</u>	<u>Temp. C</u>	<u>pH</u>	<u>D.O. ppm</u>	<u>Turbidity NTU</u>
1446	8.5	7.6	11.3	

Notes:

Lab I.D. #: 556 Mine Code 08 Site Code 40

Certificate of Analysis

<u>Analyte</u>	<u>Results</u>	<u>Units</u>	<u>MRL</u>	<u>Method</u>	<u>Date</u>	<u>Time</u>	<u>Analyst</u>
<u>Wet Chem.</u>							
Oil & Grease	<5	mg/L	5	EPA 413.1	2/13/2008	11:02	SB
Solids, Total Dissolved	1068	mg/L	20	EPA 160.1	2/12/2008	11:03	SB
Solids, Total Suspended	<4	mg/L	4	EPA 160.2	2/12/2008	11:03	SB
<u>Metals by ICP</u>							
Aluminum, Dissolved	0.05	mg/L	0.01	EPA 200.7	2/13/2008	15:43	SB
Boron, Dissolved	0.17	mg/L	0.05	EPA 200.7	2/12/2008	14:14	SB
Iron, Dissolved	0.036	mg/L	0.010	EPA 200.7	2/12/2008	14:14	SB
Iron, Total	0.765	mg/L	0.010	EPA 200.7	2/13/2008	12:17	SB
Manganese, Dissolved	0.109	mg/L	0.001	EPA 200.7	2/12/2008	14:14	SB
Nickel, Dissolved	0.122	mg/L	0.002	EPA 200.7	2/12/2008	14:14	SB
Zinc, Dissolved	0.219	mg/L	0.005	EPA 200.7	2/12/2008	14:14	SB

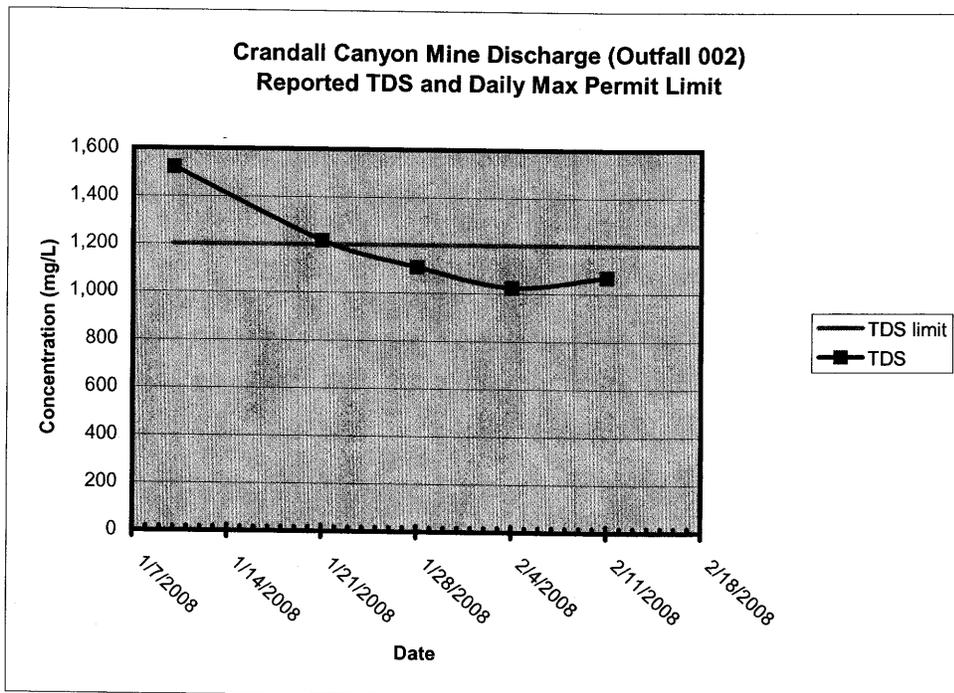

 Brandon Pierce
 Technical Director

All reported results meet the requirements of NELAC, except for Balance and Hardness.
 Balance and Hardness are calculated from certified results.

**UtahAmerican Energy, Inc., Genwal Resources, Inc., Crandall Canyon Mine
In-mine Groundwater Discharge
Comparison of 2008 Data with UPDES Daily Maximum Permit Effluent Limitations (mg/L)**

Date	Outfall	TDS		TSS		Fe (tot)		Oil & Grease	
		Limit	Reported	Limit	Reported	Limit	Reported	Limit	Reported
10-Jan-08	002	1,200	1,523	70	6	1.0	0.937	10	<5
21-Jan-08	002	1,200	1,218	70	10	1.0	2.204	10	<5
28-Jan-08	002	1,200	1,108	70	12	1.0	1.494	10	<5
4-Feb-08	002	1,200	1,025	70	4	1.0	0.815	10	<5
11-Feb-08	002	1,200	1,068	70	<4	1.0	0.765	10	<5
18-Feb-08	002	1,200		70		1.0		10	
14-Jan-08	001	1,200	1,687	70	10	1.0	0.758	10	<5

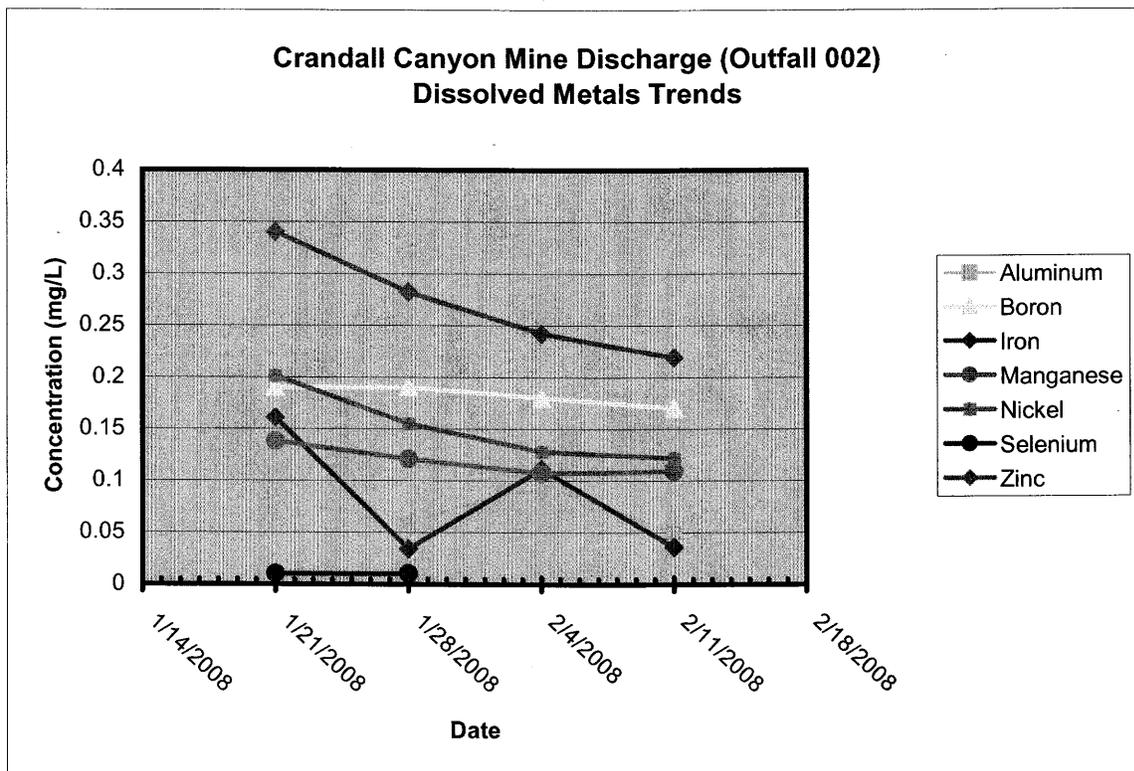
- Note 1: 14-Jan-08 sample is discharge from the sediment pond. It was influenced by water previously retained in pond as well as in-mine groundwater that had flowed overland to the pond.
- Note 2: In addition to the TDS daily maximum limit of 1,200 mg/L, the permit also has a limit of 500 mg/L for TDS 30-day average, and Genwal participates in a salinity offset program to ensure that this limit is in compliance.
- Note 3: In addition to the TSS daily maximum limit of 70 mg/L, the permit also has limit of 25 mg/L for TSS 30-day average and a limit of 35 mg/L for TSS 7-day average.



UtahAmerican Energy, Inc., Genwal Resources, Inc., Crandall Canyon Mine
In-mine Groundwater Discharge
TDS and Selected Trace Metals Trends - 2008 (mg/L)

Date	Outfall	TDS	Al (diss)	B (diss)	Fe (tot)	Fe (diss)	Mn (diss)	Ni (diss)	Se (diss)	Zn (diss)
10-Jan-08	002	1,523			0.937					
21-Jan-08	002	1,218		0.19	2.204	0.161	0.138	0.201	0.01	0.340
28-Jan-08	002	1,108	0.06	0.19	1.494	0.034	0.121	0.155	0.01	0.282
4-Feb-08	002	1,025	0.09	0.18	0.815	0.111	0.107	0.128		0.242
11-Feb-08	002	1,068	0.05	0.17	0.765	0.036	0.109	0.122		0.219
14-Jan-08	001	1,687	0.09	0.23	0.758	0.021	0.172	0.181	0.02	0.274

Notes: 14-Jan-08 sample discharge from the sediment pond. It was influenced by water previously retained in pond as well as in-mine groundwater that had flowed overland to the pond.
 Metals are reported as dissolved, except for iron, which is reported as total & dissolved.
 Selenium values reported in table as 0.01 are actually less than MRL of 0.01; shown as 0.01 for plotting ease.



From: "Karla Knoop" <kknoop@jbrenv.com>
To: "Shaver, Dave" <dshaver@coalsource.com>, "Jeffrey Studenka" <jstuden...>
Date: 2/15/2008 7:46 AM
Subject: Crandall mine water discharge - lab report for Feb 11 sample & trend/compliance data
Attachments: crandall 002 Feb 11 08.pdf; Crandall 2008 UPDES compliance.xls; Crandall 2008 wq trends.xls

All,

Please see attached Crandall Canyon mine water discharge laboratory results for the sample taken earlier this week. Excel files showing trends and UPDES permit compliance are also attached.

Regards,
Karla Knoop, Hydrologist

jbr Environmental Consultants, Inc.

phone (435) 637-9645

fax (435) 637-8679

kknoop@jbrenv.com

From: Jeffrey Studenka
To: Birdsey, Paul; Dean, Dana; Falk', 'Steve; Grubaugh-Littig, Pam; Harb...
Date: 2/15/2008 8:32 AM
Subject: Re: Crandall mine water discharge - lab report for Feb 11 sample & trend/compliance data

Once again, thank you Karla and Dave. These e-mails have been very helpful in evaluating the discharge water quality, and it is great to see the parameters of concern continue trending toward stabilization.

>>> "Karla Knoop" <kknoop@jbrenv.com> 2/15/2008 7:44 AM >>>
All,

Please see attached Crandall Canyon mine water discharge laboratory results for the sample taken earlier this week. Excel files showing trends and UPDES permit compliance are also attached.

Regards,
Karla Knoop, Hydrologist

jbr Environmental Consultants, Inc.
phone (435) 637-9645
fax (435) 637-8679 kknoop@jbrenv.com