

0014

*Incoming JK*  
*2/015/0032*

**From:** "Karla Knoop" <kknoop@jbrenv.com>  
**To:** "Shaver, Dave" <dshaver@coalsource.com>, "Jeffrey Studenka" <jstuden...  
**Date:** 2/8/2008 11:17 AM  
**Subject:** Crandall mine water discharge - lab report for Feb 4 sample & trend data  
**Attachments:** Crandall Feb 4 incomplete.pdf; Crandall 2008 wq trends.xls

All,

Dave Shaver asked me to send the attached Crandall Canyon mine water discharge laboratory results and the attached Excel file showing trends. (Please note that the lab report is incomplete: dissolved aluminum has to be re-analyzed by the lab and will not be available until next week.) The sample was taken on Monday, February 4th, from the pipe that is now collecting all of the mine water prior to its discharge to Crandall Creek. As seen, the discharge is now back in compliance with the UPDES Permit. We will repeat the sample collection and analysis this coming Monday, February 11th.

Regards,  
Karla Knoop

Karla Knoop, Hydrologist

JBR Environmental Consultants, Inc.

phone (435) 637-9645

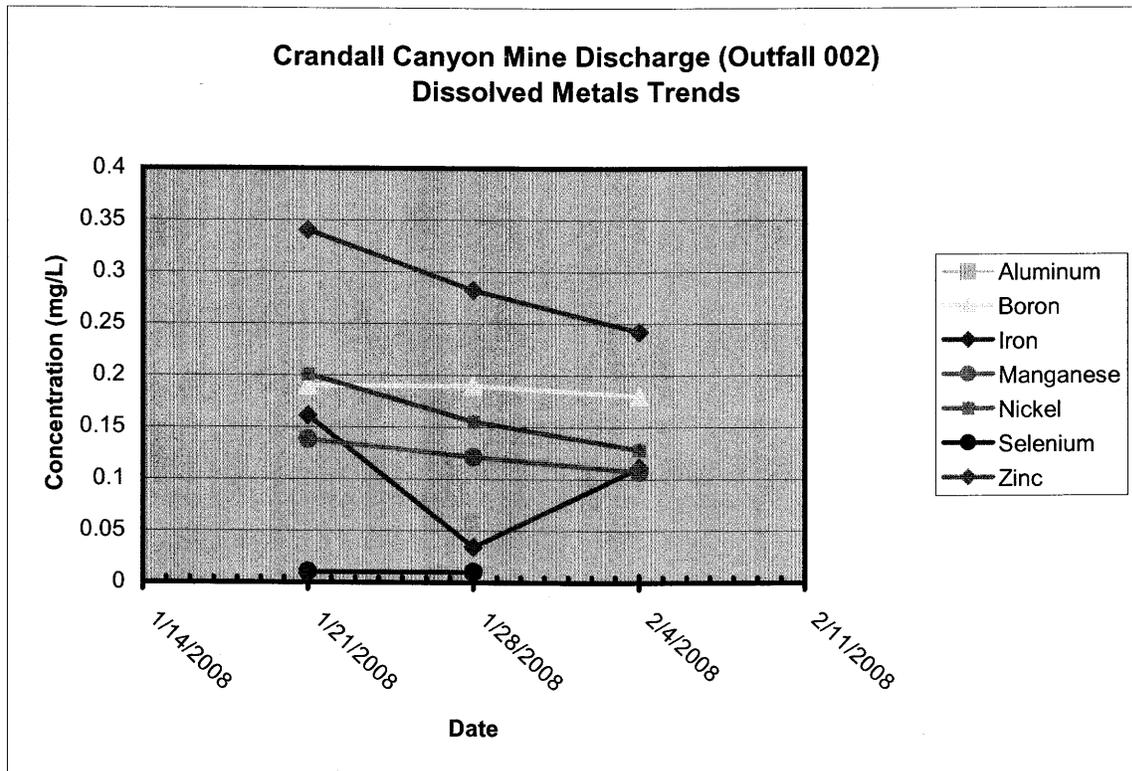
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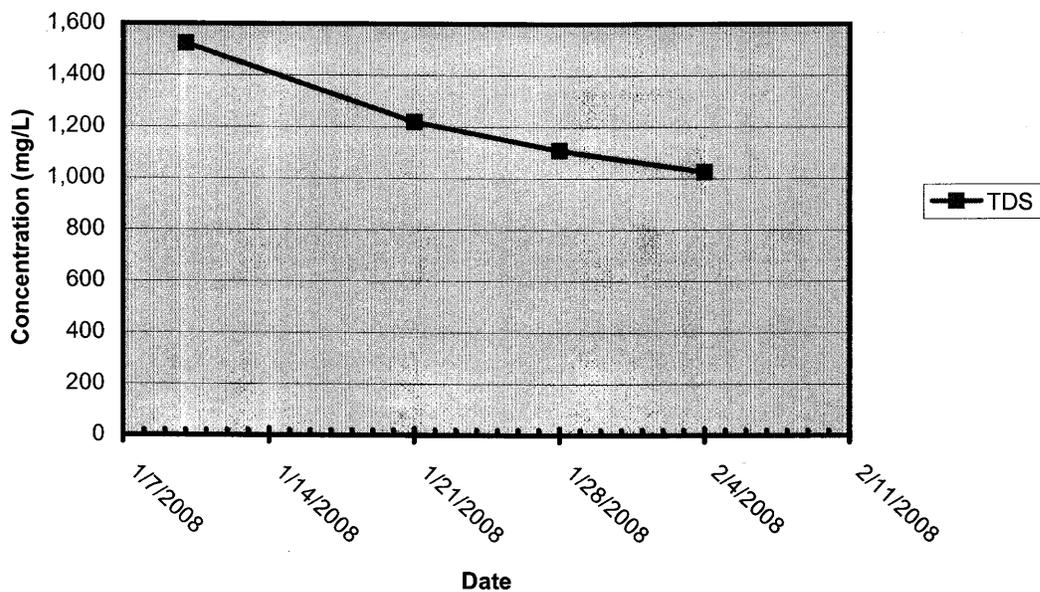
**UtahAmerican Energy, Inc., Genwal Resources, Inc., Crandall Canyon Mine**  
**In-mine Groundwater Discharge**  
**TDS and Selected Trace Metals Trends - 2008 (mg/L)**

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		0.18	0.815	0.111	0.107	0.128		0.242
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.



### Crandall Canyon Mine Discharge (Outfall 002) TDS Trend





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

Report Date

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: 2/4/2008 Time: 10:15  
Received  
Date: 2/4/2008 Time: 11:33

Field Measurements				
Cond. uS	Temp. C	pH	D.O. ppm	Turbidity NTU
1450	8	8.14	10.2	

Notes:  
 Incomplete Report - Results are not final.

Lab I.D. #: 547 Mine Code 08 Site Code 40

**Certificate of Analysis**

Analyte	Results	Units	MRL	Method	Date	Time	Analyst
<b>Wet Chem.</b>							
Oil & Grease	<5	mg/L	5	EPA 413.1	2/6/2008	11:18	SB
Solids, Total Dissolved	1025	mg/L	20	EPA 160.1	2/4/2008	11:56	SB
Solids, Total Suspended	4	mg/L	4	EPA 160.2	2/4/2008	11:56	SB
<b>Metals by ICP</b>							
Aluminum, Dissolved	N/A	mg/L	0.01	EPA 200.7			
Aluminum, Total	0.16	mg/L	0.01	EPA 200.7	2/7/2008	14:27	SB
Boron, Dissolved	0.18	mg/L	0.05	EPA 200.7	2/5/2008	12:37	SB
Boron, Total	0.18	mg/L	0.05	EPA 200.7	2/7/2008	14:27	SB
Iron, Dissolved	0.111	mg/L	0.010	EPA 200.7	2/5/2008	12:37	SB
Iron, Total	0.815	mg/L	0.010	EPA 200.7	2/7/2008	14:27	SB
Manganese, Dissolved	0.107	mg/L	0.001	EPA 200.7	2/5/2008	12:37	SB
Manganese, Total	0.107	mg/L	0.001	EPA 200.7	2/7/2008	14:27	SB
Nickel, Dissolved	0.128	mg/L	0.002	EPA 200.7	2/5/2008	12:37	SB
Nickel, Total	0.128	mg/L	0.002	EPA 200.7	2/7/2008	14:27	SB
Zinc, Dissolved	0.242	mg/L	0.005	EPA 200.7	2/5/2008	12:37	SB
Zinc, Total	0.242	mg/L	0.005	EPA 200.7	2/7/2008	14:27	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.