OGMCOAL DNR <ogmcoal@utah.gov>

Re: FW: Fwd: FW: Grassy Trail / UT00126 - RB&G's Monitoring Update (July 31, 2016)

Steve Christensen <stevechristensen@utah.gov> Mon, Aug 29, 2016 at 2:55 PM
To: "Madsen, Karin" <kmadsen@coalsource.com>
Cc: Bret Dixon <bretdixon@utah.gov>, OGMCOAL DNR <ogmcoal@utah.gov>, David Marble <davemarble@utah.gov>

Hi Karin,

Prior to re-submitting the seismic monitoring report, please review the weekly, monthly requirements that are to be included in the report (highlighted in yellow).

Note 1 on the last page discusses the process for reducing the monitoring requirements. I'm not aware that a "*collective consensus*" was made by Dam Safety, DOGM, BLM, East Carbon City and Sunnyside to reduce the monitoring requirements. I've CC'd Bret Dixon and David Marble at Dam Safety to weigh in on this in the event they're aware of a meeting to discuss a reduction in monitoring that I don't know about.

If such an agreement to reduce monitoring hasn't taken place, the weekly and monthly items of the monitoring plan are required.

Let me know if you have questions.

Regards,
Steve

On Fri, Aug 26, 2016 at 11:59 AM, Madsen, Karin <kmadsen@coalsource.com> wrote:

> Please see attached, Michael is going to re-do the report and send it out again
>
> **From:** Michael Hansen [mailto:mhansen@rbgengineering.com]
> **Sent:** Thursday, August 25, 2016 5:15 PM
> **To:** Madsen, Karin
> **Subject:** Re: Fwd: FW: Grassy Trail / UT00126 - RB&G's Monitoring Update (July 31, 2016)
>
> here is the table I forgot to attach
>
> Michael N. Hansen, P.G.
> Engineering Geologist
>
> RB&G ENGINEERING, INC.
>
> 1435 West 820 North
> Provo Ut. 84601
> Ph 801-374-5771
> SLC 801-521-5771
> Fax 801-374-5773

Cell 801-369-4477
mhansen@rbgengineering.com

>>> "Madsen, Karin" <kmadsen@coalsource.com> 8/25/2016 10:41 AM >>>

Sent from my Verizon Wireless 4G LTE smartphone

-------- Original message --------

From: Steve Christensen <stevechristensen@utah.gov>

Date: 08/25/2016 10:40 AM (GMT-07:00)

To: "Madsen, Karin" <kmadsen@coalsource.com>

Cc: Bret Dixon <bretdixon@utah.gov>, OGMCOAL DNR <ogmcoal@utah.gov>

Subject: Re: FW: Grassy Trail / UT00126 - RB&G's Monitoring Update (July 31, 2016)

Good morning Karin,

I wanted to follow up on the West Ridge monitoring requirements per Appendix 5-13A. The last report that was provided appears to be missing quite a few items. See attached.

Please follow up with RB&G and the city as soon as you can and address the missing data.

Regards,
Steve

On Fri, Aug 19, 2016 at 11:17 AM, Madsen, Karin <kmadsen@coalsource.com> wrote:
Good Morning Steve-

Please see the below response to your email questioning the April and May seismic data for Grassy Trail.

Thanks!

From: Michael Hansen [mailto:mhansen@rbgengineering.com]
Sent: Friday, August 19, 2016 11:15 AM
To: Madsen, Karin
Subject: Re: Grassy Trail / UT00126 - RB&G's Monitoring Update (July 31, 2016)

The only information that is actually missing are the reading from the piezometers, reservoir elevations and seepage readings. The city reads all of these and I only supplement with my own res elevations and seepage readings during site visits (there have been problems in the past with the Cities readings and calculations of the seepage... Dam safety preferred to see my numbers also).
The accelerometer located on the dam has been running continuously and has not recorded any MIS events since before February. While the inclinometer's were not read for a few months current readings show that there had not been any movement during that.

I'm not sure why the City has such a big gap in their readings. And I'm sorry that I didn't keep up on it to fill in those gaps and take my readings. I think there may have been some miscommunication as I was under the impression that when I submitted that Final Seismic Summary for the past few years that we would no longer be monitoring for the mine (my mistake).

However I did not turn off the accelerometer seismic monitoring equipment... I just let it keep running... Which I'm glad I did that way we did not miss any events, if there had been one.

So as far as the seismic and inclinometer data we are still covered for those months (which show no MIS events or slope movement) Unless the city has more piezo readings etc. that they haven't reported... Then the cities data is all that is missing.
In the meantime I will keep taking reading.

Thanks
Michael

Sent from my iPhone

On Aug 17, 2016, at 1:42 PM, Madsen, Karin <kmadsen@coalsource.com> wrote:

> Please see below. Can you retrieve the april and may data?
>
> **From:** Steve Christensen [mailto:stevechristensen@utah.gov]
> **Sent:** Wednesday, August 17, 2016 1:46 PM
> **To:** Madsen, Karin; Madsen, Karin
> **Subject:** Fwd: Grassy Trail / UT00126 - RB&G's Monitoring Update (July 31, 2016)
>
> Hi Karin,
>
> Quick question...it appears the latest RB&G report is missing the months of April and May. Do you know what's up with that?
>
> Steve
>
> p.s. If RB&G is going to e-mail these reports out, you might want to let Michael Hansen know to send DOGM one. Thanks.
>
> ---------- Forwarded message ----------
> From: **Bret Dixon** <bretdixon@utah.gov>
> Date: Wed, Aug 17, 2016 at 12:54 PM
> Subject: Grassy Trail / UT00126 - RB&G's Monitoring Update (July 31, 2016)
> To: Steve Christensen <stevechristensen@utah.gov>, Roddy Pirouznia <roddypirouznia@utah.gov>
>
> Steve - I didn't see your name on this latest email.
>
> Roddy - Please electronically store the attached .pdf file onto the Grassy Trail folder.
>
> Thanks,
> Bret

---------- Forwarded message ----------
From: **Michael Hansen** <mhansen@rbgengineering.com>
Date: Tue, Aug 9, 2016 at 1:18 PM
Subject: Grassy Trail Reservoir Monitoring update for July 31, 2016
To: Karin Madsen <kmadsen@coalsource.com>
Cc: "jmckenzi@blm.gov" <dhibbs@coalsource.com>, jmckenzi@blm.gov, mglasson@blm.gov, Stan_Perkes@blm.gov, Steve_Falk@blm.gov, steve_rigby@blm.gov, jllewelyn@co.carbon.ut.us, dhibbs@coalsource.com, ecc@emerytelcom.net, sunny1@emerytelcom.net, Brad Price <bprice@rbgengineering.com>, Rob johnson <rjohnson@rbgengineering.com>, bretdixon@utah.gov, danadean@utah.gov, davemarble@utah.gov, jblake@utah.gov, karlhouskeeper@utah.gov, marcstilson@utah.gov, stevedemczak@utah.gov, tomfaddies@utah.gov

Karin,
See attached Project Report for monitoring site visits up to July 31, 2016.
Michael

Michael N. Hansen, P.G.
Engineering Geologist

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1435 West 820 North
Provo UT. 84601
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Fax 801-374-5773
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(801) 538-5350
stevechristensen@utah.gov

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<MIS Project Report 7-31-16.pdf.txt>

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MRP Language Appendix 5-13A.pdf
2237K

APPENDIX 5-13A

GRASSY TRAIL MONITORING/INSPECTION PLAN FOR PANEL BLOCK #18-21

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GRASSY TRAIL DAM
MONITORING NOTIFICATION LIST

RB&G ENGINEERING

Brad Price	bprice@rbgengineering.com	
	Bus.	801 374-5771
	Cell	801 319-0539
Michael Hansen	mhansen@rbgengineering.com	
	Bus.	801 374-5771
	Cell	801 368-7317

DIVISION OF DAM SAFETY

Dave Marble	davemarble@utah.gov	
	Bus	801 538-7376
	Cell	801 580-5128
Bret Dixon	bretdixon@utah.gov	
	Bus.	801 538-7373
	Cell	801 673-5913

DIVISION OF OIL, GAS & MINING

Daron Haddock	daronhaddock@utah.gov	
	Bus.	801 538-5325
Steve Demzak	stevedemzak@utah.gov	
	Bus	435 613-3712

CARBON COUNTY EMERGENCY SERVICES

Jason Llewelyn	jason.llewelyn@carbon.utah.gov	
	Bus.	435 636-3251

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BUREAU OF LAND MANAGEMENT

Jeff McKenzie	jeff_mckenzie@blm.gov Bus. 801 539-4038
Steve Rigby	steve_rigby@blm.gov Bus. 435 636-3604
Steve Falk	steve_falk@blm.gov Bus. 435 636-3605

EAST CARBON CITY

Orlando Fontaine	ecc@emerytelcom.net Bus. 435 888-6613 Cell 435 630-6716

SUNNYSIDE CITY

Doug Parsons	suncity@emerytelcom.net Bus. 435 888-4444 Cell 435 613-6117

SUNNYSIDE COGENERATION

Rick Carter	rcarter@sscogen.com Bus. 435 888-4476 Cell 858 204-8949
Rusty Netz	Bus. 435 888-4476 Cell 435 636-6806

WEST RIDGE RESOURCES

David Hibbs	dhibbs@coalsource.com Bus. 435 888-4018 Cell 435 650-8922
Dave Shaver	dshaver@coalsource.com Bus. 435 888-4017 Cell 801 554-3398
Dana Marrelli	dmarrelli@coalsource.com Bus. 435 888-4026 Cell 435 650-9799

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GRASSY TRAIL DAM MONITORING/INSPECTION PLAN
PANEL BLOCK #18-21

(NOTE: The following monitoring plan was approved for and implemented during the previous mining of Longwall Panel #7, and has been updated accordingly for Panel Block 18-21.)

- *Prior to previous longwall mining of Panel #7, additional subsidence control monuments were established across the crest of the dam on 100' centers, across the face of the dam midway down the slope on 200' centers, and along the toe of the dam on 200' centers.*

- *Prior to previous longwall mining of Panel #7, the upper hillside accelerometer was removed, recalibrated, and relocated at the dam. The dam site accelerometer was removed, recalibrated, and relocated at a new location on the hillside approximately midway between the dam and the previous upper hillside location. In 2010, the hillside accelerometer was recalibrated and relocated northwest of the reservoir in the Left Fork of Whitmore canyon.*

- *Prior to previous longwall mining of Panel #7, a seepage collection system was installed at the seep area located along the east abutment of the dam. This system was designed to collect the entire flow of the seep to a common point to allow accurate measurement of the seepage flow.*

- *Prior to longwall mining of Panel Block 18-21 a complete set of premining baseline data will be established including:*
  - *-Peizometer readings.*
  - *-Accelerometer readings.*
  - *-Inclinometer readings.*
  - *-Relative elevations of all subsidence monitoring monuments located on the dam. (Absolute elevations of all monuments will be surveyed before, during and after extraction of longwall Panel Block 18-21)*
  - *-Flow rates at the east abutment seep, west abutment seep, and toe drain.*
  - *-Visual inspection of the dam, seeps, and slide area.*
  - *-Electronic photographs at predetermined designated viewpoints.*

- *RB&G will be responsible for compiling and distributing the following weekly, monthly, and event-driven inspection and monitoring reports. These reports will be generated in an electronic format and emailed on a timely basis to the Division of Dam Safety, Division of Oil, Gas & Mining, Bureau of Land Management, East Carbon City, Sunnyside City, and WEST RIDGE Resources (herein after referred to as the designated parties).*

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- ***Weekly basis:*** *After longwall mining has commenced in Panel Block 18-21 the following monitoring will be done on a weekly basis:*

  -Site reconnaissance/visual inspection, including reservoir level (to be taken by RB&G Engineering and/or East Carbon City, in cooperation)

  -Piezometer readings level (to be taken by RB&G Engineering and/or East Carbon City, in cooperation)

  -Accelerometer readings (to be taken by RB&G)

  -Flow rates at the east seep, west seep, and toe drains. (These flow rates will be determined by actual measurements not by visual estimates to be taken by RB&G Engineering and/or East Carbon City, in cooperation)

- ***Monthly basis:*** *In addition to the weekly monitoring the following monitoring will be conducted on a monthly basis:*

  -Inclinometer readings (to be taken by RB&G)

  -Relative elevations of subsidence monitoring monuments located on the dam. These surveys will be conducted by a registered professional surveyor under contract with West Ridge Resources.

  -Electronic reporting (emails) of the monthly accelerometer, piezometer and inclinometer measurements will be prepared by RB&G Engineering and will be sent out on a monthly basis to the designated parties. Emails of the monthly monument measurements will be prepared by West Ridge Resources or its contracted surveyor and will be sent on a monthly basis to the designated parties. If conditions warrant, Division of Dam Safety may require more frequent reporting of any or all data.

- ***Event-driven basis:*** *In addition to the weekly and monthly inspections the following measures will be taken on an event-driven basis:*

  -The University of Utah seismic readings will be monitored on a daily basis. This monitoring will be done by RB&G Engineering and/or West Ridge Resources, in cooperation. If any events are recorded greater than a magnitude 3.0 within 5 miles of the dam then, within 24 hours of such readings, a full site reconnaissance and visual inspection will be conducted, and accelerometer readings will be taken. If any accelerometer readings show a recorded value greater than 0.2g and/or 0.1g for any pga values

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recorded at the dam, then inclinometer readings, piezometer readings and drainflow measurements (east seep, west seep, and toe drain) will be taken at that time. The results of these measurements will be emailed immediately by RB&G Engineering to all designated parties.

- *The standardized form of the inspection/monitoring reports is included as an attachment.*

NOTE 1 *Monitoring and reporting will continue on the prescribed weekly, monthly, and event driven basis during the mining of Panel Block 18-21 as long as seismic events continue to be recorded. Based on the results of the monitoring, Utah Division of Dam Safety has the authority to increase the level or frequency of monitoring at any time as required to ensure safety of the dam and reservoir. At such time that the frequency and magnitude of the events diminishes sufficiently the agencies (Dam Safety, DOGM, BLM, East Carbon City, and Sunnyside City) will make a collective consensus determination to reduce, modify, and/or eliminate the various elements of the monitoring program.*

NOTE 2 *In the 2005 approval of Panel 7, BLM added a special stipulation #17 to the federal lease related specifically to the Grassy Trail Reservoir, stating, "The Lessee is and will remain liable for any and all damages or hazardous conditions resulting from the mining operations under the lease." The latest 2010 BLM approval for panel block 18-20 contains reference to this same lease stipulation #17*

NOTE 3 *It should also be noted that, as with previous mining of panel 7, the Utah Division of Dam Safety will have authority to stop any longwall mining of panel block 18-21 if it determines that mining-related seismicity or subsidence is creating, or has created, an unacceptable level of risk to the Grassy Trail dam or reservoir, based on monitoring at the time.*

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