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From: "Erik Petersen" <petersen@relia.net>
To: "Dana Dean" <danadean@utah.gov>
Date: 1/17/2008 4:59 PM
Subject: RE: Some Crandall Water Monitoring Questions

CC: "Shaver, Dave" <dshaver@coalsource.com>, "Pam Grubaugh-Littig" <pamg...
Hi Dana,

I'm glad you're being thorough. I think we all want this information to be complete and correct. Here are the answers to your questions:

1) Little Bear Spring; 22 Sep 2006
T = 8.5 degrees C
pH = 7.37
Cond = 533 uS

SP2-24; 29 Aug 2006
T= 4.1 degrees C
pH= 7.88
Cond= 374 uS
Flow = 2.64 gpm

The information above was included in the 2006 Annual Report, but I guess somehow it didn't make it into the EDI. I think, like we discussed a while back, this was because the EDI was not asking for those parameters upon input (i.e. it didn't flag the samples as missing those parameters and the lab didn't include those parameters in the ascii EDI file). Hopefully, we can get that fixed; otherwise, I guess I'll just have to do more double checking when entering the data. Sorry about the oversight.

2) Obviously, all of the in-mine monitoring wells are inaccessible at this point because the mine has been sealed. During 2006, according to Gary Gray, the monitoring wells were in sealed portions of the mine or otherwise inaccessible and could not be accessed. Several of the wells were previously damaged/destroyed/blocked by mining activities near the wells. MW-2 was impacted by mining activities several years back and has not been available for monitoring according to Gary Gray.

3) As far as I am aware, there are no mining-related activities in Crandall Canyon above the mine surface facilities and UPF-1. There is a Forest Service hiking trail that travels up the bottom of Crandall Canyon along the side of the creek. There is also a Forest Service trailhead parking area just below the location of UPF-1. I am also aware that there is oil and gas activity on top of East Mountain, but I don't know exactly where that may be currently occurring.

4) Regarding the TSS at Section 4 Creek in March of 2007, there was a lot of melting snow that day that probably contributed to the TSS. Additionally, that monitoring site is located on the steep hillside immediately above Huntington Creek. There is a lot of soft, dark, organic-rich sediment in the channel substrate at that location, and it's difficult not to stir it all up when I'm mucking about setting my pipe for the flow measurement. It is particularly difficult when the ground around the little brook is all wet and muddy from the snowmelt as it was on that day. I checked my field notes and I did not note anything out of the ordinary upstream between the monitoring point and spring SP-79 on that monitoring event.

5) If you look at the historic data for SP1-19, it is typical for that spring to have really big flows in June, and then the flows rapidly wane later in the season. I think it is a fracture controlled system that has a quick groundwater travel velocity relative to the storage volume. The spring always starts out with a bang then dies out quickly as the storage is depleted. I think that because of the rapid travel velocity the magnitude of the flow measurement may also be a function of exactly when in the quarter the spring was monitored relative to when the peak of the snowmelt for the season occurred.

I hope this answers your questions. Please feel free to contact me if you have any further questions.

Thanks,
Erik

P.S. Have a great weekend!

-----Original Message-----

From: Dana Dean [mailto:danadean@utah.gov]
Sent: Thursday, January 17, 2008 3:17 PM
To: dshaver@coalsource.com; Erik Petersen
Cc: Pam Grubaugh-Littig
Subject: Some Crandall Water Monitoring Questions

In order to complete onmy water monitoring reports for Crandall Canyon, I need some help. I have a few questions, and a few missing paramaters.

(1) missing parameters:

Little Bear Spring - 3Q 2006 - water temp., pH, Sp. conductivity
SP2-24 - 3Q 2006 - water temp., pH, Sp. conductivity, flow

(2) For the wells that are inaccessible, is that because they are mined through, in inaccessible areas of the mine, or blocked?

(3) Is there any type of activity taking place above UPF-1, mine related or not?

(4) Was there a storm or snowmelt event contributing to the high TSS at Section 4 Creek in March of 2007?

(5) Any known reason that SP1-19 was flowing high on 6/20/06?

I understand you are both busy with other things, but I would really appreciate it if you could get back to me as soon as practical.

Thanks, and have a good weekend.

Dana