

# WATER QUALITY MEMORANDUM

## Utah Coal Regulatory Program

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April 24, 2015

TO: Internal File

THRU: Steve Christensen, Permit Supervisor 

FROM: Keenan Storrar, Hydrologist 

RE: Fourth Quarter of 2014 Water Monitoring, PacifiCorp, Trail Mountain Mine, C/015/0009, Task ID #4752

The Trail Mountain Mine is currently idle. Task #4716 Reduction of Water Monitoring dropped a number of monitored sites. The task also updated the Water Monitoring Program table found in Appendix 7-1 of the APPENDICIES.pdf within the Trail Mountain MRP. The Deer Creek Mine Task #4782 'Transfer Well Monitoring' transferred monitoring wells CCCW – 1A, CCCW – 1S, CCCW – 2A, CCCW – 3A, CCCW – 3U, CCCW – 3L from the Deer Creek MRP to the Trail Mountain MRP. These wells monitor the Roans Canyon fault system and alluvium associated with the fault in Cottonwood Canyon Creek. It will be necessary to monitor these wells during the mining of the Cottonwood Tract of Trail Mountain (see Task #4762 for background).

### 1. Were data submitted for all of the MRP required sites?

**In-mine** YES  NO

The mine is sealed, so there is no monitoring of underground or in-mine water.

**Springs** YES  NO

The Permittee monitors springs 17-25-1 (T-14) and 17-26-4 (T-10) for operational and field parameters in July and October and field parameters in August and September.

**Streams** YES  NO

The Permittee monitors SW-1, SW-2 and SW-3 in Cottonwood Canyon for flow only during the first two months of each quarter and for operational parameters during the last month of each quarter.

**UPDES** YES  NO

There was no reported discharge from the two UPDES points during the Q4 2014. The mine was sealed in June 2001 and there has been no reported discharge at UPDES UT23728-002 (the mine-water discharge into Cottonwood Creek) since May 2001.

**Wells** YES  NO

TM-1B is monitored for water level monthly and for operational parameters quarterly (Figure 1). Since July 2004, the water level in TM-3 has been reported as piezometric head above the well casing by measuring the pressure on top of the sealed wellhead with a gauge (Figure 2). CCCW – 1A, CCCW –

1S, CCCW – 2A, CCCW – 3A, CCCW – 3U, CCCW – 3L are monitored for water level only (Figure 3).

**2. Were all required parameters reported for each site?**

<b>Springs</b>	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
<b>Streams</b>	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
<b>UPDES</b>	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
<b>Wells</b>	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>

**3. Were any irregularities found in the data?**

Listed parameters were outside two standard deviations.

<b>Springs</b>	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
<b>Streams</b>	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
<b>UPDES</b>	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
<b>Wells</b>	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>

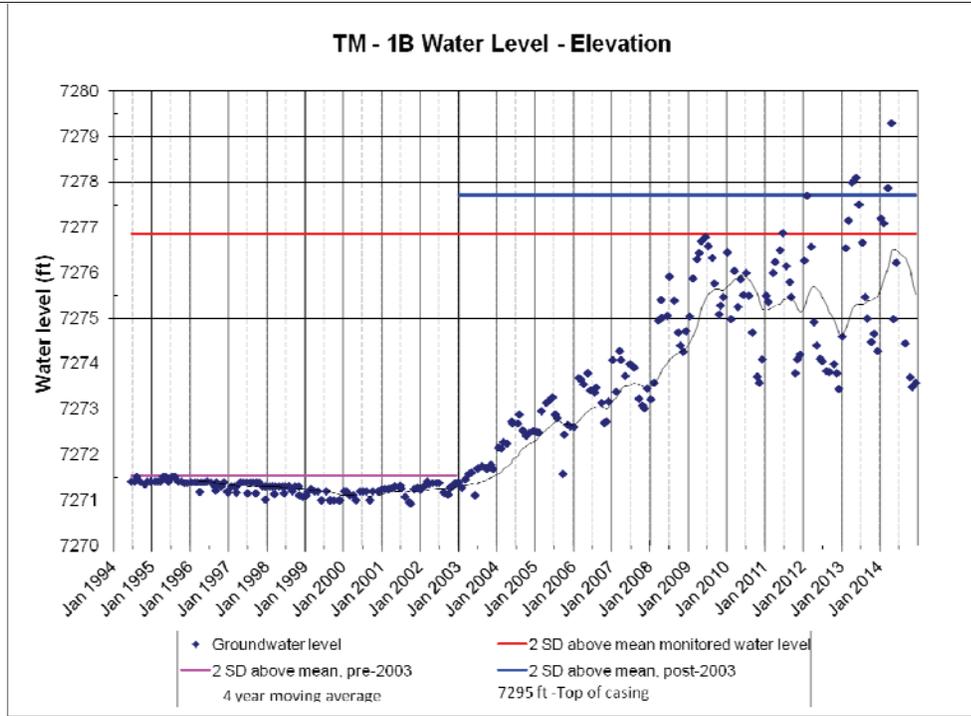


Figure 1. The head in TM-1B slowly began rising in early 2003. It's difficult to say where this value will come to rest.

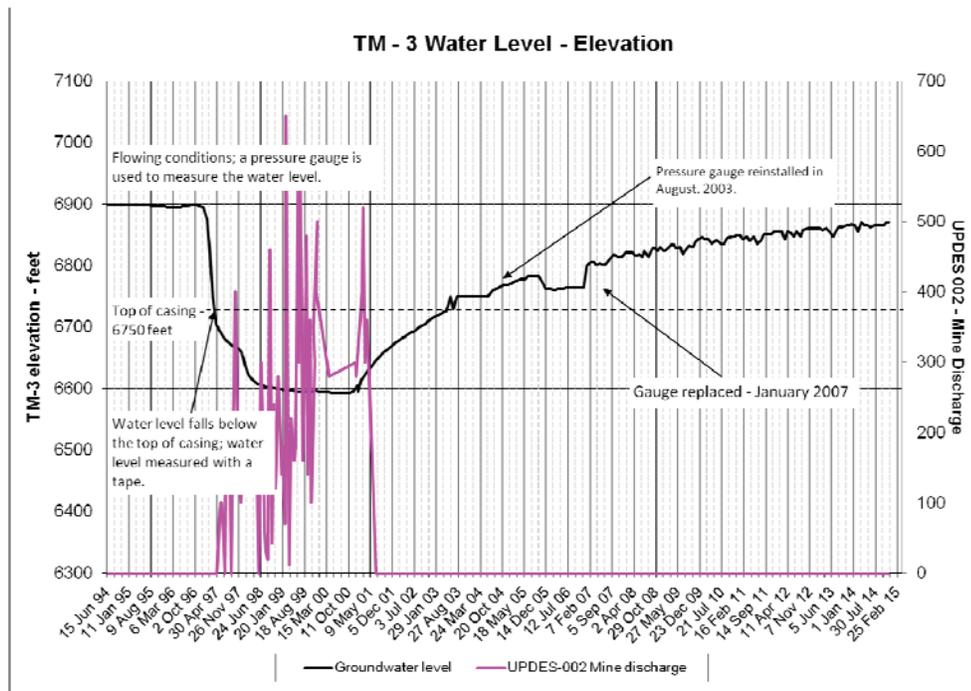


Figure 2. TM-3 water elevation peaked in June 2005, remained steady through October, dropped 18.5 ft in November and December 2005 and remained virtually unchanged during 2006. The pressure gauge was replaced in January 2007 and values jumped to approximately match the pre-2006 curve. During the first half of 2007 the curve was relatively flat, but it has been steadily climbing. The outgoing document Reduce Hydrologic Monitoring Sites, PacifiCorp, Deer Creek, C/015/0018, Task ID #4332 stipulates this well should not be released until 6,900 ft is reached.

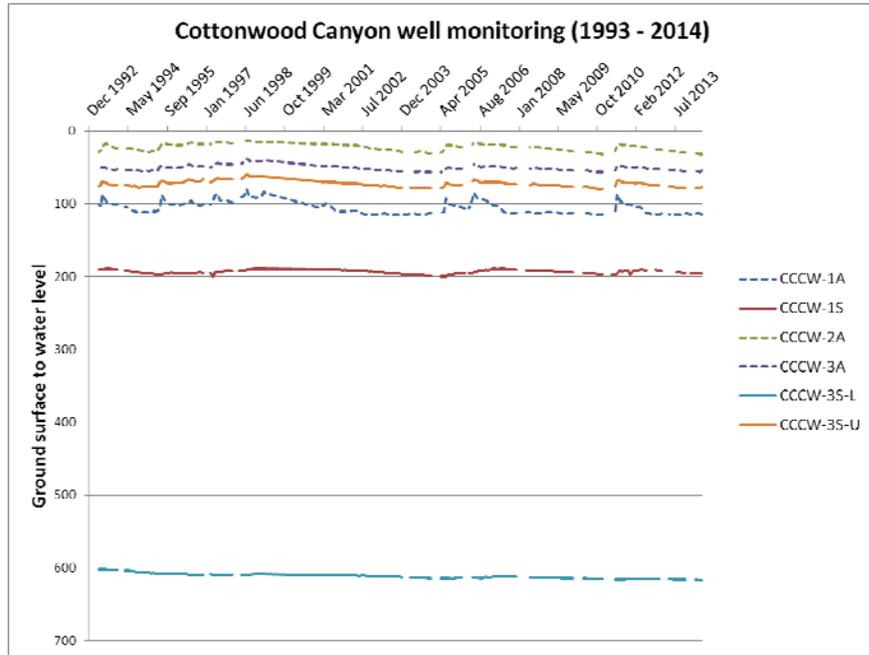


Figure 3. Water levels in Cottonwood Canyon Creek monitoring wells.

**4. On what date does the MRP require a five-year resampling of baseline water data.**

The next renewal will be on February 21, 2016. Baseline analyses were performed in 2001, 2006, and 2011. Analyses for baseline parameters will be repeated every 5 years conducted during 2016.

**5. Based on your review, what further actions, if any, do you recommend?**

**6. Does the Mine Operator need to submit more information to fulfill this quarter's monitoring requirements?** YES  NO

**7. Follow-up from last quarter, if necessary.** NA

**8. Did the Mine Operator respond adequately to queries about missing or irregular data?** YES  NO  NA