



STATE OF  
COLORADO

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## King Coal Mine, C1981-035, MR-48, Review Memo

1 message

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**Simmons - DNR, Leigh** <leigh.simmons@state.co.us>

Thu, May 16, 2019 at 4:09 PM

To: Rob Zuber <rob.zuber@state.co.us>

Cc: Jason Musick <jason.musick@state.co.us>

Rob,

My memo is attached

Leigh Simmons  
Environmental Protection Specialist



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**LDSMemoMR48\_1.pdf**

164K



Interoffice Memorandum

May 16, 2019

From: Leigh Simmons  
To: Rob Zuber

**Subject: King Coal Mine (Permit No. C-1981-035)  
MR-48**

As you requested, I reviewed the proposed revised pages submitted by GCC Energy, LLC. (GCC) with the MR-48 application, together with a Technical Memorandum from Resource Hydrogeologic Services (RHS), dated 2/12/19.

In general I find that the proposed work plan for responding to elevated levels of organic compounds in monitoring wells is sound in its methodology and detail.

The plan proposes to consider Total Organic Carbon (TOC) as an indicator parameter. Briefly, if TOC levels are anomalously high GCC will work through the following actions sequentially until the issue is resolved:

1. Identify and correct administrative errors, analytical errors and sampling errors
2. Re-sample the well and expand the lab analysis to include Benzene, Toluene, Ethylbenzene, Xylene, (BTEX) and Total Petroleum Hydrocarbons, (TPH), in order to determine whether or not the source is a hydrocarbon
3. Clean the sampling equipment
4. Rehabilitate the well
5. Replace the well with a new well 30-50 feet upgradient

In my opinion, it would be appropriate for the text to finish here (on Page 15, under the sub-heading Monitoring Well Abandonment and Replacement, in the middle of the first paragraph), however the text goes on:

*If the hydrocarbon detections are also present in the replacement well, it is likely that the source was present in the subsurface prior to the initial well installation and is thus considered baseline. This would be the case if the source is naturally present or if contamination was introduced to the aquifer upgradient at some time prior to GCC operations. In this case, the new well shall be retained for comparative purposes with the new well for a minimum of four quarters of laboratory analyses prior to abandonment.*



*If hydrocarbons are not observed in groundwater samples from the new well, it is likely that the hydrocarbons observed in the original well were introduced by drilling, well installation, development or sampling activities and do not represent baseline conditions. In this scenario, the original well shall be plugged and abandoned per Colorado Department of Water Resources (CDWR) standards and the appropriate GWS-09 abandonment report filed with CDWR. The new replacement well shall then be utilized for future GCC King II mine long-term groundwater performance monitoring.*

The text contemplates two possible scenarios:

- A. The new well shows decreased levels of TOC/BTEX/TPH compared to the original, suggesting that the original well was contaminated
- B. The new well shows similar levels of TOC/BTEX/TPH compared to the original, suggesting that the contamination is in the aquifer

Whilst I agree with this analysis, I don't accept the conclusions drawn from it. Specifically I don't accept the text highlighted in yellow, since it pre-emptively absolves GCC of any responsibility for potential future contamination of the aquifer, (which undermines the purpose of the monitoring program).

For simplicity, my suggestion is to request that GCC remove the quoted text, so that the section ends:

*...water quality results will be reviewed.*