



STATE OF  
COLORADO

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

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## New Elk Mine, C-1981-012, PR5 Adequacy Response

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

Wed, Oct 27, 2021 at 9:36 PM

To: "Ebert - DNR, Jared" <jared.ebert@state.co.us>

Cc: Jason Musick <jason.musick@state.co.us>, Rob Zuber - DNR <rob.zuber@state.co.us>

Jared,

My review memo is attached. I will scan the pdf document to laserfiche.

I've also attached a copy of the word document to help you prepare the adequacy letter.

Let me know if you have any questions.

Leigh Simmons  
Environmental Protection Specialist



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On Mon, Oct 18, 2021 at 11:46 AM Ebert - DNR, Jared <jared.ebert@state.co.us> wrote:  
[Quoted text hidden]

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### 2 attachments



**C1981012\_PR5\_LDSMemo\_1.pdf**  
331K



**C1981012\_PR5\_LDSMemo\_1.docx**  
1205K



Interoffice Memorandum

October 27, 2021

From: Leigh Simmons  
To: Jared Ebert

**Subject: New Elk Mine (Permit No. C-1981-012)  
PR-5**

As you requested, I reviewed the material submitted by New Elk Coal Company (NECC) with the PR-5 application and the initial adequacy review response to assess the proposed plan for compliance with Rule 2.05.6(3).

In order to inform myself I reviewed the complete PR-5 submission and correspondence to date, as well as the currently approved Permit Application Packet (PAP). I have focused my comments on issues relating to Rule 2.05.6(3), and have referenced other rules as necessary.

PR-5 seeks to expand the permit area to the east and north, and to change the mine plan to allow room and pillar mining in the Blue Seam. It does not propose new surface disturbance.

This adequacy review is relatively brief owing to the limited content of the application material submitted to date. A detailed technical review will be necessary when more material has been submitted.

Rule 2.04.7 Hydrology description

1. Minimal revisions have been proposed to section 2.04.7 of the PAP, however a complete description of the hydrology in the area of the mine is necessary before the consequences of mining can be assessed. It is clear at a cursory review that parts of section 2.04.7 are out of date (for example, Table 10 presents a groundwater user inventory, but the Colorado Division of Water Resources database contains many records of wells that have presumably not been included in the inventory, as is shown in Figure 1).

**Please review section 2.04.7 of the PAP and update it as necessary given the expansion to the permit area proposed with PR-5.**

2. Section 2.04.7 refers to Map 8, Regional Hydrology. The proposed revision to Map 8 is a scanned image of the currently approved Map 8, dated May 10, 2012, with the proposed permit boundary overlaid on it. The data on the map has not been updated.



**Please revise Map 8. Please update all data layers and all metadata on the map, in accordance with the requirements of Rule 2.10.**

Rule 2.05.6(3) Protection of hydrological balance

3. It is acknowledged in the introduction to the Probable Hydrologic Consequences (PHC) section of the currently approved PAP text that one of the factors that could impact the hydrologic balance of the area is subsidence. On page 2.05-71 the following text has been proposed to be added:

*The mining method and extraction of coal will use room and pillar mining. For the Blue Seam no secondary or retreat mining is planned, and subsidence will not occur, thus, no impacts to surface water resources or groundwater wells in the area of mining is anticipated.*

The assertion that the proposed Blue Seam mining will not cause subsidence has not been supported. Although it is accepted that the subsidence impacts of room and pillar mining without retreat mining will be less than with retreat mining, it cannot be true that there is no potential for subsidence under any circumstance.

The currently approved text mentions a minimum depth of cover of 450 feet over the Apache Seam, but does not discuss the depth of cover over the Blue Seam. Based on a review of the revised maps (Map 3 Blue Mine Plan, Map 6A Sheet 5 Blue Seam Depth of Cover, and Map 7 Coal Seam Cross Sections), it appears that the depth of cover above the Blue Seam could be quite shallow, particularly at the point where the proposed workings cross beneath the Purgatoire River. For example, Map 7 shows a depth of cover of 91 feet at A-19, and 82 feet at NE-01-10.

**The potential for subsidence associated with the updated mine plan should be thoroughly evaluated, as is required by Rule 2.05.6(6). It is likely that this will involve an engineering study similar to the 2011 Agapito study found in Exhibit 24. The results of this study should be referenced when evaluating the PHC.**

4. Also on page 2.05-71, the currently approved PAP text contains a paragraph beginning:

*Well records from CDWR indicate that there are 19 permitted wells in the Raton Formation within a one mile radius of the permit boundary...*

The text goes on to refer to Exhibit 8(4), which contains a 2011 report produced by Whetstone Associates. No revisions to the currently approved text or to Exhibit 8(4) have been proposed.

The Whetstone report was produced to examine the probable hydrologic impacts of an earlier revision to the mine plan (room and pillar mining in the Allen and Apache seams to the south and east of the previously approved mine plan), and forms the basis of the currently approved analysis of the probable hydrologic consequences of mining.

It is not reasonable to suppose that such a significant change to the mine plan as is proposed with PR-5 could be approved without a similarly detailed analysis

**A thorough analysis should be made of the Probable Hydrologic Consequences of the mine plan proposed with PR-5, as is required by Rule 2.05.6(3). It is likely that this will involve a**

study similar to the 2011 Whetstone study found in Exhibit 8(4). The PAP text should be updated with reference to the study.

5. The hydrologic monitoring plan is presented on pages 2.05-104 through -110 of the PAP. The currently approved plan was appropriate for the New Elk mine prior to PR-5, while it was inactive; it is not appropriate for an active mine, or for the mine plan proposed with PR-5.

Please review and update the hydrologic monitoring plan, in accordance with the performance standards given in Rule 4.05.13. Please also propose locations for Groundwater Points of Compliance as appropriate. It may be helpful to refer to the Division's Groundwater Monitoring and Protection Technical Bulletin for guidance; the technical bulletin is available from the DRMS website: <https://drms.colorado.gov/programs/coal-regulatory-program/coal-program-guidelines-and-technical-documents/technical>

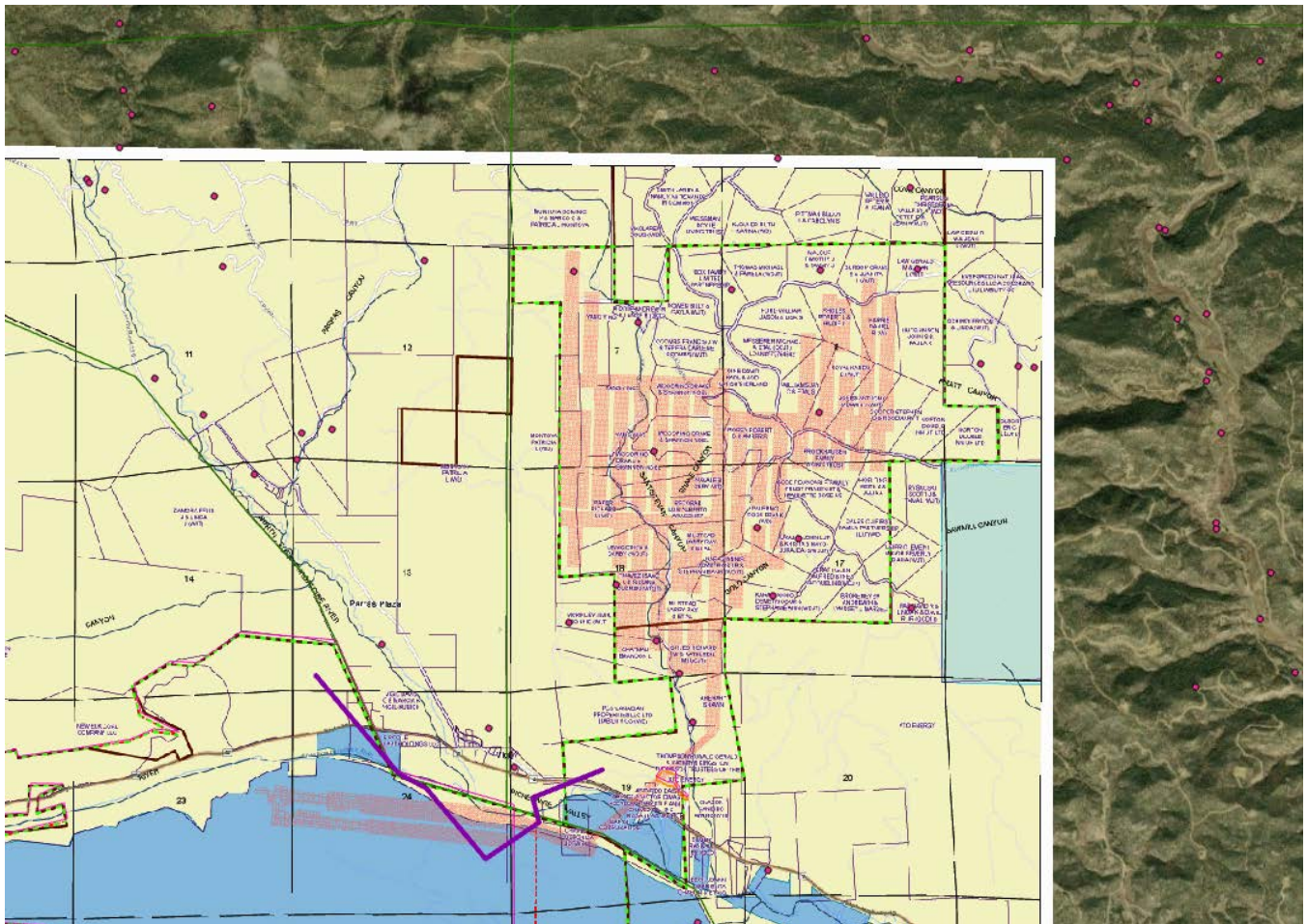


Figure 1: Screenshot showing records of constructed wells from DWR database with permit category "Residential" (pink dots) overlaid on proposed Map 1 and satellite image