



December 8, 2022

Basil Bear
Bowie Resources, LLC
P.O. Box 1488
Paonia, CO 81428

**Re: Bowie No. 1 Mine, Permit C-1981-038,
Review of 2021 Annual Hydrology Report**

Dear Mr. Bear:

The Division received the 2021 AHR for the Bowie No. 1 Mine on May 26, 2022. The Division reviewed this AHR in the context of Rules 4.05.1, 4.05.6, 4.05.11, and 4.05.13 (Regulations of the Colorado Mined Land Reclamation Board for Coal Mining).

Table 1 lists important logistical requirements of the Bowie No. 1 Mine water monitoring plan, and indicates if the requirement was met with the 2021 AHR.

Table 1 Requirements of the Bowie No. 1 Mine Water Monitoring Plan

Requirement	Source of Requirement (Rule or Page in PAP)	Requirement met for 2021?
Filing frequency of AHR - annually	Rule 4.05.13(4)(c)	Yes
Timely filing of hydrology report – submitted by April 30th each year	Section 2.05.6 of the Bowie No. 1 Mine PAP, page 120	No ¹
Sites sampled and sampling frequency at <u>surface</u> water monitoring sites	Volume 4 of PAP, Tables 1 and 2	Yes
Parameters sampled at <u>surface</u> water monitoring sites	Section 2.05.6 of the Bowie No. 1 Mine PAP, page 119	Yes
Sites sampled and sampling frequency at <u>groundwater</u> monitoring sites	Vol. 4 of PAP, Tables 3 and 4; Vol. 7, page 2.05-41 (loadout)	Yes
Parameters sampled at <u>groundwater</u> monitoring sites	Section 2.05.6 of the Bowie No. 1 Mine PAP, page 122	Yes

1. The submittal was late, but this had been agreed upon with the Division.

Analysis of Surface Water Data

Key receiving waters at the Bowie No. 1 Mine are Stevens Gulch and East Roatcap Creek. Analyses of data for the downstream sampling locations for these receiving waters are typically a primary focus of Division AHR reviews. However, both sites were dry during all sampling efforts.



Analysis of Springs Data

All six springs that are currently in the monitoring plan were dry during all monitoring efforts, and no data is reported in the 2021 AHR.

Analysis of Groundwater Data

The 2021 AHR includes groundwater data for three wells (all alluvial): MW01, MW02, and MW03. MW03 is down-gradient of the Coal Storage and Loadout areas, and the Division's review of the 2021 AHR focused on the data for that well. A comparison to Regulation #41 of the CDPHE Water Quality Standards is presented in Table 2. Several measured parameters for MW03 do not have CDPHE standards.

Table 2. 2021 AHR Data from MW03

Parameter	Units	Maximum Concentration from 2021	CDPHE Standard	Comments
Chloride	mg/L	6.28	250	
Sulfate	mg/L	28.7	250	
Iron, dissolved	mg/L	0.137	0.3	

The pH values in the data are all above 7.0 and below 8.0, within the acceptable range of 6.5 – 8.5.

The TDS values are below 750 mg/L and typical for this well. They are not considered problematic.

No water quality issues are identified in the data for MW03.

In the future, some aspects of the AHR should be clarified:

- In Table 2, total manganese is listed under lab parameters, but this is not included in the data for monitoring wells (e.g., MW-03). **Please clarify this in future AHRs.**
- It appears that much of the information in the Table of Contents (Table 6 of the 2021 AHR) is incorrect. **This should be revised in future AHRs.**

References

- CDPHE, Regulation No. 41 - The Basic Standards for Groundwater.

Thank you,

A handwritten signature in blue ink, appearing to read "Robert D. Zuber".

Robert D. Zuber, P.E.
Environmental Protection Specialist

Cc via email: Tamme Bishop, J.E. Stover & Associates, Inc.