



January 25, 2022

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

**Re: Bowie No. 2 Mine, Permit C-1996-083,
Review of Waste Bank Reports, Second Quarter 2022**

Dear Mr. Bear:

In July of 2021 the Division received the Waste Bank Reports for the Bowie No. 2 Mine for the second quarter of 2021. The submittal by Bowie Resources LLC (BRL) included:

- An inspection report and certification by Tamme Bishop (Colorado P.E. 43402) for Waste Bank Numbers 1, 2, 3, and 4
- An Instrument Monitoring report by Huddleston-Berry Engineering and Testing, LLC (HBET) for Waste Bank No. 2 (including an attachment by the Dowl Company)
- An Instrument Monitoring report by HBET for Waste Bank No. 3 (including an attachment by the Dowl Company)
- A Materials Testing report by HBET for Waste Bank No. 3.

The Division reviewed these reports in the context of the following rules in the Regulations of the Colorado Mined Land Reclamation Board for Coal Mining:

- 4.09.1(11)(a) – Waste Banks No. 2 and No. 3 were inspected for stability by a registered engineer during the placement and compaction of fill materials. Waste Bank No. 1 is noted as inactive.
- 4.09.1(11)(b) – A qualified registered engineer provided to the Division a certified report within two weeks after the visual inspection of the waste bank was completed. The inspection occurred on June 29, 2021 and was received by the Division on July 11, 2021.
- 4.09.1(11)(c) – This rule is not applicable during this phase of construction.
- 4.10 – All criteria for Rule 4.10 were met. In particular, the provisions of Rule 4.10.2 for site inspections was met.

The Division has the following observations and requests regarding the reports:

1. Waste Bank #2
 - a. The inspection report and certification by Tamme Bishop indicated no problems with this waste bank.



- b. No loose gob was on Waste Bank #2 at the time of the inspection (the top of the pile can serve as a drying area).
- c. In the Instrument Monitoring report, the data for the inclinometers reveal no significant changes from the first quarter of 2021.
- d. Vibrating wire piezometer (VWP) readings were provided for Gob Pile #2. For the second quarter of 2021, all five of the currently active piezometers showed no change or minor decreases in pore pressure from the previous quarter.
- e. For four of the VWPs, pore pressure recordings have shown limited variation in the last 10 years (per Figure 2, a graph of pore pressures over time). Small seasonal fluctuations can be seen in the data for VWP-05.
- f. VWP-06 readings have fluctuated more than the others. From 2008 to 2014 this instrument witnessed relatively large increases in pore pressure, but since 2014 pressures have declined to the initial level. This is likely explained by the schedule of the placement of gob material, as pressure increases correspond to times when there was significant dumping of material near VWP-06.
- g. At this time, the Division finds that there is no evidence of instability within this waste bank.**

2. Waste Bank #3

- a. The inspection report and certification by Tamme Bishop indicated no problems with this waste bank.
- b. Vibrating wire piezometer (VWP) readings were provided for Gob Pile #3. For the second quarter of 2021, all five of the currently active piezometers showed only minor changes in pore pressure from the previous quarter.
- c. Since installation in 2014, data for all but one of the VWPs show steady decreases in pore pressures. The pressure in VWP-B Deep has increased slightly since installation.
- d. Compaction testing
 - i. Compaction testing was done on June 2 and June 28, 2021.
 - ii. At all 36 locations where compaction testing was performed, the results for dry density were all at or above 90 percent of the maximum dry density (as required by Rule 4.10.4(3)(b)), indicating that BRL is compacting the waste material sufficiently.
- e. The submittal included a report on the construction of the east underdrain, which included photographs of the process and a certification by Tamme Bishop. The construction matches the specifications in Volume XI on page 4b (TR-122).
- f. At this time, the Division finds that there is no evidence of instability within this waste bank.**

3. Coverfill Survey

- a. Information was provided on coverfill volumes, and detailed surveys from 2019 and 2020 are referenced. **No issues were identified with this section of the report.**

If you have questions or comments, feel free to contact me at Rob.Zuber@state.co.us or 720.601.2276.

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.