



May 5, 2023

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, 2022**

Dear Mr. Bear:

The Division received Waste Bank Reports for the Bowie No. 2 Mine for all four quarters of 2022. Each quarter, Bowie Resources LLC (BRL) submitted:

- 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 Buckhorn Engineering)
- An Instrument Monitoring report by HBET for Waste Bank No. 3 (including an attachment by Buckhorn Engineering).
- A Soil Compaction Test Report by HBET (in 2022 there was no compaction testing in the second quarter).

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 and Waste Bank No. 4 are noted as inactive.
- 4.09.1(11)(b) – A qualified registered engineer provided to the Division certified reports after visual inspection of the waste bank was completed. The reports were not within two weeks after the inspection, but the Division does not find the slight tardiness a problem at this time.
- 4.09.1(11)(c) – This rule is not applicable during this phase of construction.
- 4.10.2 – All criteria for Rule 4.10.2 for site inspections was met.

The Division has the following observations regarding the reports:

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



- b. No loose gob was on Waste Bank #2 during any of the inspections (the top of the pile can serve as a drying area).
- c. In the Instrument Monitoring reports, the data for the inclinometers reveal no significant changes over the past four years. Data was reviewed for years 2019, 2020, 2021, and 2022. No movement was detected in the downslope direction (the “A” direction) during this time period. While changes were seen in instruments BG05_5 and BG05_7 in the “B” direction (the B direction is orthogonal to the downslope direction), the displacement was small: approximately one-half inch. The data should be monitored closely to look for larger displacement and to determine if it continues over time.
- d. For four of the VWPs, pore water pressure recordings have shown limited variation in the last 10 years (per Figure 2 in the Buckhorn Engineering report, a graph of pore pressures over time). Gradual decreases can be seen at some locations, and small seasonal fluctuations can be seen in the data for VWP-05.
- e. 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. This could also be due to lower precipitation. Either way, the declining pressure readings do not suggest a problem.
- f. **At this time, based on the reports, the Division finds that there is no evidence of instability within this waste bank.**

2. Waste Bank #3

- a. The inspection reports and certifications by Tamme Bishop indicated no problems with this waste bank.
- b. The readings for five active VWPs 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 the exception, VWP-B Deep, increased in 2016 and 2019, but is currently at the same pressure as in 2014.
- d. **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 November 2019 and November 2022 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.