February 3, 2020

Sent via electronic mail

Bryce West
Peabody Energy
701 Market Street
St. Louis, MO 63101-1826

Permit ID: C1988004B
Revision Type: Bond Release
Permitting Action: Determination
Subject: Acceptability Determination for SL7, Phase II-IV

Dear Mr. West:

The Department of Environmental Quality (DEQ) received Bond Release Application SL7 on July 26, 2018. DEQ reviewed the application and inspected the application area with regard to Phase II-IV criteria of the four-phase process leading ultimately to full and final bond release described in ARM 17.24.1116 and 82-4-235, MCA. Application SL7 is a request for full release on 5,472 acres at Big Sky Mine Area B. This includes 8 Phase II acres, 981 Phase III acres, and 3,219 acres undisturbed. All Phase I acres have already received approval through previous applications.

In order to determine compliance of bond release standards, the application was reviewed with respect to ARM 17.24.1116(6)(a-d) and 82-4-235(1), MCA. That review is explained below:

ARM 17.24.1116(6)(a): "reclamation phase I is deemed to have been completed when the permittee completes backfilling, regrading, and drainage control in accordance with the approved reclamation plan and when all drill holes that are not approved to be retained as monitoring wells or that were not completely mined have been plugged in accordance with ARM 17.24.1005;"

Big Sky Mine completed the majority of backfilling and grading operations prior to 2008, with remaining sediment pond reclamation completed in 2012. These areas were constructed in accordance with the drainage control plan in the permit. Thirty-eight monitoring wells were transferred to Western Energy Company in 2019. The remaining sixty-six wells, not approved to be retained, were abandoned in accordance with ARM 17.24.1005 in 2019.
Final reclamation was completed at Big Sky Mine Area B in 2012. Soil replacement and spoil and soil tillage was completed as planned.

(ii) at least two growing seasons (spring and summer for two consecutive years) have elapsed since seeding or planting of the affected area;

The latest two growing seasons elapsed in 2014 on the sediment traps and 2010 for the last reclamation fields.

(iii) vegetation is establishing that is consistent with the species composition, cover, production, density, diversity, and effectiveness required by the revegetation criteria in ARM 17.24.711, 17.24.713, 17.24.714, 17.24.716 through 17.24.718, 17.24.721, 17.24.723 through 17.24.726, 17.24.731, and 17.24.815 and the approved postmining land use;

Vegetation established met or exceeded standards as required in ARM 17.24.726, and all other applicable rules in the 700's. This was demonstrated with Application SL7, submitted July 26, 2018.

(iv) soils are protected from accelerated erosion by the established vegetation;

The cover of established reclamation is equal to or greater than reference area conditions, effectively preventing accelerated erosion.

(v) noxious weeds are controlled; and

Noxious weeds have been monitored annually. Additional treatments were conducted in 2018 and 2019 to tackle Canadian thistle in and outside of the disturbance footprint at Area B.

(vi) with respect to prime farmlands, production has been returned to the level required by ARM 17.24.815”.

No prime farmlands were impacted by Area B’s permit.

ARM 17.24.1116(6)(c): "reclamation phase III is deemed to have been completed when:

(i) the applicable responsibility period (which commences with the completion of any reclamation treatments as defined in ARM 17.24.725) has expired and the revegetation criteria in ARM 17.24.711, 17.24.713, 17.24.714, 17.24.716 through 17.24.718, 17.24.721, 17.24.723 through 17.24.726, 17.24.731, and 17.24.815, as applicable to and consistent with the approved postmining land use are met;
The applicable responsibility period, as defined in ARM 17.24.725(2) is ten growing seasons unless MCA 82-4-235(3) applies. All reclamation at Big Sky Mine Area B was completed in, or before, 2008, except for the sediment traps which were reclaimed in 2012. The 2008 and earlier reclamation had its responsibility period ending in 2018. The sediment traps, reclaimed in 2012, fall under the exception of 82-4-235(3)(a), MCA since they are water management facilities. As such, they are “not subject to the 10-year responsibility period”.

(ii) a stable landscape has been established consistent with the approved postmining land use;

Postmine land uses at Big Sky Mine Area B include grazing land and wildlife habitat. The area has had active grazing since reclamation activities were initiated. Wildlife use has been concurrent with active mining and reclamation activities. The adjacent landowners have been managing this area for grazing use since reclamation efforts were concluded. These land uses have been met for years and the area is stable and effective.

(iii) the lands are not contributing suspended solids to stream flow or runoff outside the permit area in excess of the requirements of ARM 17.24.633 or the permit; and

The lands within this permit area are not contributing suspended solids to streamflow or runoff outside the permit area in excess of the requirements of ARM 17.24.633. Sediment traps were the last mining feature to be reclaimed in 2012. According to Big Sky’s MPDES permit, MT0000884, the effluent limits in place at Big Sky Mine Area B are to follow their Sediment Control Plan using Best Management Practices (BMP’s). Big Sky Mine had no compliance issues with their permit. Since sediment traps were removed, in 2012, no discharges have been recorded.

(iv) as applicable, the provisions of a plan approved by the department for the sound future management of any permanent impoundment by the permittee or landowner have been implemented to the satisfaction of the department; or

Three permanent impoundments were established through the mining and reclamation process at Big Sky Mine Area B, (BLCPI, B3PI, and B9PI). BLCPI and B3PI are groundwater fed permanent ponds that are incised into the landscape without embankments. As such, DEQ has no requirements that future management plans would be necessary as there is no embankment to require maintenance. B9PI is a sediment trap that was subsequently converted into a permanent pond as it was fed by B3PI and a group of small wetlands. When this trap was converted to a pond, it was designed with a large spillway at a very low elevation. This means the pond has a limited capacity and the elevation of the spillway is very close to the general pond elevation. As the pond is designed, DEQ determined that a sound future management plan was not necessary.
Big Sky Mine Area B contained no areas of mining prior to May 3, 1978 and as such, 82-4-235(4), MCA does not apply.

*ARM17.24.1116(6)(d) reclamation phase IV is deemed to have been completed when:

(i) all disturbed lands within any designated drainage basin have been reclaimed in accordance with the phase I, II, and III requirements;

All disturbed lands within the permit area have been reclaimed in accordance with phase I, II, and III bond release as described above. As these constitute all disturbed acres within the permit area, they also amount to all acres within each designated drainage basin.

(ii) fish and wildlife habitats and related environmental values have been restored, reclaimed, or protected in accordance with the Act, the rules, and the approved permit;

As described in the Hydrologic Demonstration Report (HDR), submitted as part of Bond Release application SL7, wetlands in Area B are supporting macroinvertebrate life. These wetlands, along with reclamation areas support many non-aquatic wildlife species native to the area as well. According to wildlife data reported to the Montana Natural Heritage Program, Area B has had 42 mammal species, 156 bird species, 6 amphibian species, and 7 reptile species documented. No fish have been identified. Invertebrate data has only recently been added to the Montana Natural Heritage Program so the results of the study described in the HDR are not currently included, but that study found 39 macroinvertebrate species.

(iii) with respect to the hydrologic balance, disturbance has been minimized and offsite material damage has been prevented in accordance with the Act, the rules, and the approved permit;

DEQ’s hydrology review for the SL7 Phase IV bond release application involved reviewing the SL7 Application including the HDR and Supplemental Water Quality Assessment (SWQA), reviewing all monitoring data collected by Big Sky Coal Company in and around Area B, and conducting on-site inspections of hydrologic features. This review confirmed the overall conclusions of the HDR and SWQA.

Big Sky Coal Company has completed all reclamation in all designated drainage basins in Area B, as described above, and has minimized disturbance to the hydrologic balance and mitigated impacts to offsite water rights and beneficial water uses. Offsite impacts to water quantity and quality which occurred in the 1990’s were mitigated to the satisfaction of the affected landowner and water right holder.

Increased alluvial groundwater levels in Lee Coulee occurred downstream from MPDES discharge points in the mid-1990s. After discharges ceased, alluvial groundwater levels returned to near pre-mine levels. Substantial increases in TDS occurred in downgradient
alluvial wells in Lee Coulee in the 1990s due to increases in water levels from MPDES discharges. After these discharges ceased in 1997, TDS concentrations decreased but did not return to pre-mining levels. Over the past 10 years TDS concentrations in Lee Coulee near the permit boundary have shown a gradual increasing trend. The median TDS in the Lee Coulee alluvium near the permit boundary was 1,550 mg/L (SC = 1,940 µS/cm) before mining, and was 2,860 mg/L (SC = 3,080 µS/cm) in 2018.

This change in water quality, occurring at the level of the hydrologic unit, changes the classification of the affected hydrologic unit from Class II to III and would be defined as “material damage” under current law. Section 82-4-203(32), MCA; In re Signal Peak Energy (Bull Mountain Mine No. 1), BER-2-13-07-SM, Findings of Fact, Conclusions of Law and Order (Jan. 14, 2016) at ¶¶ 56; 66; 124. The Big Sky Permit was issued in 1988, however, while the definition of “material damage” was not added to MSUMRA until 2003 (2003 Mt. Laws, CH. 204 Sec. 2), was not effective until January 1, 2004, and was not declared to apply retroactively. Under such circumstances, DEQ may not apply the subsequently-enacted definition of material damage to a mine which was designed and permitted as required by applicable law in 1988. Section 1-2-109. MCA. Continental Oil Co. v. Montana Concrete Co. (1922), 63 Mont. 223, 207 P.116; Wallace v. Dept. of Fish, Wildlife and Parks (1995), 269 Mont. 364, 889 P.2d 817. In St. Vincent Hospital v. Blue Cross (1993), 261 Mont. 56, 862 P.2d 6. DEQ consequently may not withhold or condition bond release on the grounds that the change in the median TDS in the Lee Coulee alluvium near the permit boundary from 1,550 mg/L before mining to 2,860 mg/L in 2018 constitutes unprevented material damage.

(iv) alternative water sources to replace water supplies that have been adversely affected by mining and reclamation operations have been developed and are functional in accordance with the Act, the rules, and the approved permit;

Offsite impacts to water quantity and quality which occurred in the 1990’s were mitigated to the satisfaction of the affected party. Observed changes in water quality are consistent with the predictions in the permit and are unlikely to impact offsite water use. All affected water supplies have been replaced, and there were no impacts to alluvial valley floors.

(v) the reestablishment of essential hydrologic functions and agricultural productivity on alluvial valley floors has been achieved;

Pre-mine inventories of the permit area did not identify any areas as Alluvial Valley Floors, as described in 82-4-203(3)(a), MCA.

(vi) implementation of any alternative land use plan approved pursuant to ARM 17.24.821 and 17.24.823 has been successfully achieved; and

Big Sky Mine Area B had no alternate land use plans.
(vii) all other reclamation requirements of the Act, rules, and the permit have been met.

Big Sky Mine Area B has completed all reclamation activities described in their permit in accordance with both the Administrative Rules of Montana and the Act.

82-4-235. Determination of successful revegetation – final bond release. (1) Success of revegetation must be judged on the effectiveness of the vegetation for the approved postmining land use, the extent of cover compared to the cover occurring in the natural vegetation, and the requirements of 82-4-233. Standards for success are:

(a) for areas reclaimed for use as cropland, crop production must be at least equal to that achieved prior to mining based on comparison with historical data, comparable reference areas, or United States department of agriculture publications applicable to the area of the operation, as referenced in rules adopted by the board;

There were no areas of cropland in Big Sky Mine Area B.

(b) for areas reclaimed for use as pastureland or grazing land, the ground cover and production of living plants on the revegetated area must be at least equal to that of a reference area or other standard approved by the department as appropriate for the postmining land use;

Big Sky Coal Company utilized a DEQ approved reference community for their standard for successful reclamation. The reclaimed postmine communities of the permit area that are grazingland were measured against a reference community. Cover and production met or exceeded the 90% of the standard with 90% confidence as required in ARM 17.24.726(2). This is the approved method of ensuring reclamation success as determined by DEQ.

(c) for areas reclaimed for use as fish and wildlife habitat, forestry, or recreation, success of revegetation must be determined on the basis of approved tree density standards or shrub density standards, or both, and vegetative ground cover required to achieve the postmining land use;

Shrub density standards were also required for the permit area. BSCC created two standards for woody plant density. The first, established a minimum of 200 stems per acre across the entire permit area. The second was established for wildlife habitat, or roughly 10% of the reclaimed lands. This standard was set at 1,000 stems per acre. Both of these numbers were established using baseline inventories and study of adjacent areas. Both standards were met for Big Sky Area B.

(d) reestablished vegetation is considered effective if the postmining land use is achieved and erosion is controlled;

Postmining land use was discussed above in ARM 17.24.1116(6)(c)(ii).
(e) reestablished vegetation is considered permanent if it is diverse and effective at the end of the 10-year responsibility period specified under subsection (2); and

Diversity indexes were used to evaluate the reclamation area and were included in Application SL7. Though one did not pass, two did. According to Big Sky Area B’s permit, success of one of these tests is required for passing bond release. As the reclamation is meeting postmine land uses, it has demonstrated effectiveness for many years already.

(f) plant species composing the reestablished vegetation are considered to have the same seasonal characteristics of growth as the original vegetation, to be capable of regeneration and plant succession, and to be compatible with the plant and animal species of the area if those plant species are native to the area or are introduced species approved by the department as desirable and necessary to achieve the postmining land use.

The reclamation within the permit area has met these vegetative requirements as demonstrated with bond release applications SL4, SL5, SL6, and SL7. One of the diversity indexes mentioned above specifically relates to the number of native species. This test not only passed, but results were significantly above reference community results. Big Sky Coal Company used a “Similarity index” for demonstration of reclamation success. This compares how similar a native reference area is to reclamation. This test was passed in this and previous applications. Portions of Big Sky Area B also were involved in the Rosebud/Chalky wildfire in 2012. These areas recovered as quickly as the adjacent native areas, further demonstrating that the reclamation is “capable of regeneration and plant succession”.

As the foregoing explains, the applicant has met the criteria for bond release. DEQ has also taken into account the lack of any remaining reclamation, restoration or abatement work, ARM 17.24.1114(1). Offsite impacts to water quantity and quality, which occurred in the 1990’s, were mitigated to the satisfaction of the affected party, and the post-mining land use has been fully restored. DEQ has further taken into account that while past pollution of subsurface waters has occurred, impacts to water supplies were mitigated and no adverse impacts to post-mine land use were involved, ARM 17.24.1114(1)(c). While TDS concentrations in alluvium are variable as water quality in alluvial wells responds to changing water levels due to climatic variations, the essential hydrologic function of the hydrologic system has been reestablished. While increasing trends have been identified in water quality indicators in Bad Bob Gulch groundwater, existing spoil water quality and limited water quantity in Bad Bob Gulch compared to Lee Coulee makes it unlikely water quality outside the permit boundary will be degraded in a manner or to an extent that land uses or beneficial uses of water are adversely affected, or further violations of water quality standards or impacts to water will occur. Therefore, no pollution of surface or subsurface water is occurring or is likely to occur. As such, Big Sky Coal Company has met all hydrology related requirements for approval of the SL7 Phase IV bond release at Area B.
Big Sky Coal Company notified individuals and agencies consistent with 82-4-232(6)(a), MCA, and a public notice of the application was published weekly in the Forsyth Independent Press, beginning October 4, 2018 and ending October 25, 2018. No objection, comment, or request for hearing or informal conference concerning the application was received.

Pursuant to ARM 17.24.1113(1) and to confirm that the requirements for Phase II-IV had been met, DEQ conducted an inspection of the lands specified in Application SL7 on October 30, 2018. Individuals participating in the inspection were Michael Glenn (MT DEQ), Frank Bartlett (OSM), and Judd Stark (Catena Consulting).

During the inspection there were a few deficiencies identified. The first is that weed spraying had not occurred in the past year. The second was that survey markers had not yet been re-established in reclamation in accordance with the lease through BLM. The third was to remove boundary markers and any remaining trash from the permit area. All of these actions were completed in June and July of 2019 and verified in a follow-up inspection by DEQ in August of 2019.

Long term and recent monitoring data indicates no pollution of surface or subsurface water is occurring or is likely to occur. As such, Big Sky Coal Company has met all hydrology related requirements for approval of the SL7 Phase IV bond release at Area B.

Based upon the field inspections and the review of the application, DEQ has determined that, subject to final OSM concurrence, the permittee has fulfilled the requirements for bond release pursuant to ARM 17.24.1116 and 82-4-235(3)(a), MCA on 5,472 Phase IV acres including 8 Phase II acres, 981 Phase III acres, and 3,219 acres undisturbed, as depicted in the July 26, 2018 application. The Area B permit has established diverse, effective, and permanent vegetative communities that support the postmine land uses described in the permit and erosion is controlled.

Monetary release of $3,078,999.80 of bond is being sought at this time; $3,078,999.80 remains in place for SMP C1988004B. Release of the total liability under this application will result in total bond release for Big Sky Area B.

Please feel free to contact me with questions regarding this letter.

Sincerely,

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February 3, 2020
Page 9 of 9

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FC: 620.511B (SL7)
Please see attached correspondence. Have a great day!

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*The best laid schemes o' Mice an' Men,
Gang aft agley ~Robert Burns*