

Montana Department of
ENVIRONMENTAL QUALITY

"Healthy environment, healthy people"

Steve Bullock, Governor
Tracy Stone-Manning, Director

June 14, 2013 P. O. Box 200901 • Helena, MT 59620-0901 • (406) 444-2544 • Website: www.deq.mt.gov

Mr. Dusty Weber
Signal Peak Energy LLC
Bull Mountain Coal Mine #1
100 Portal Drive
Roundup, MT 59072

Permit ID: C1993017
Revision Type: Amendment
Permitting Action: Second Round Deficiency
Subject: AM3; Increase in Mine Permit Area; Life of Mine (+7,161 acres)

Dear Dusty:

The Department of Environmental Quality (DEQ) reviewed Signal Peak Energy LLC's (SPE) submittal received October 5, 2012 and updated November 30, 2012 and March 19, 2013. The application was determined complete on December 14, 2012, which began the acceptability review process.

The following deficiencies have been identified and must be addressed before DEQ can determine AM3 to be acceptable.

ARM 17.24.303 (1)(i): The document titled: 303-TXT_AMEND 3_20120901.pdf does not have (1)(i) included within it. ARM 17.24.303(1)(i) requires "for any coal mining operation owned or controlled by either the applicant or by any person who owns or controls the applicant ..." The application includes under 17.24.303(1)(i) the name of the proposed mine. This is what is required under ARM 17.24.303(1)(j). It appears as if the applicant has missed including ARM 17.24.303(1)(i) in the application. Please include ARM 17.24.303(1)(i) in the application and ensure that all subsequent sections of ARM 17.24.303 are included and properly labeled.

17.24.303(1)(n): Table 303-5 (Violation History) needs to be updated. It was last updated in 2010; however, SPE received 2 notices of non-compliance in 2012 prior to submittal of AM 3.

17.24.303(1)(t): Exhibit 303-3 needs to be updated with the current certificate of liability insurance.

17.24.303(1)(m): Exhibit 303-1 needs to be updated.

ARM 17.24.304: Attachment 5A is lacking Table and Figure numbering system.

Please incorporate unique Table and Figure labels and numbers in Attachment 5A, consistent with the rest of the Permit.

ARM 17.24.304(1)(f): SPE must present hydrologic descriptions including water quality information.

In Addendum 8, Maps 304(6)-11 through 15 require correction. Magnesium (Mg) is incorrectly labeled as "Ng" on the Stiff diagram legends.

ARM 17.24.304(1)(f)(ii): Submittal and presentation of surface water baseline (304) hydrologic data for the Fattig Creek drainage (Attachment 5A) is inadequate and incomplete.

Attachment 5A does not provide a 'narrative account' of hydrologic conditions observed in the Fattig Creek drainage, nor does it account for the conditions witnessed in the Fattig Creek drainage. Continuous recorder at station 53486 recorded stream flows from 2007 to present (as reported in Annual Hydrology Reports 2007-2012), yet no discussion or accounting of this data is provided. Also, field parameters were collected at station 53486 from 2007 through present, yet no discussion or accounting of these data are included. Station 52996 experienced significant stream flow from 2011 until recently (March 2013), yet there is no discussion of these conditions or any data from this time period.

SPE must include all relevant hydrologic data to establish baseline conditions for the Fattig Creek drainage, and provide a narrative account based on data and observations, suitable to meet the requirements of ARM 17.24.304(1)(f)(ii).

ARM 17.24.308 OPERATIONS PLAN: Formatting is inadequate (see sections 308-5 to 308-10 as an example). Section headings do not match TOC headings, page numbers do not match TOC pages. Indents and tabbed headings are not clear.

SPE must address formatting issues in Section 308 as appropriate. Formatting should be consistent throughout the application.

ARM 17.24.313 & 17.24.314: SPE must incorporate approved permit language (Sections 313 and 314) from MR157 into final the application upon approval of the minor revision.

ARM 17.24.313(1)(e) & 17.24.314(2)(d): SPE proposes to replace existing Appendix 313-2 Spring Mitigation Plan with a new 313-2 Appendix. DEQ approves the general mitigation plans in Appendix 313-2. Additionally, weekly monitoring commitments must be applied to all springs that have the potential to be impacted by undermining (see Table 314-3.1 Springs Potentially Requiring Mitigation Following Mining Impacts). Such weekly monitoring commitments must be identified in Appendix 313-2.

SPE must modify Appendix 313-2 to apply weekly monitoring commitments (similar to previous Appendix 313-2 Addenda) to all springs identified in Table 314-3.1, and modify Appendix 313-2 as appropriate to acknowledge mitigation commitments on all springs, not solely those identified in Table 314-3.1.

ARM 17.24.313(1)(e)

Appendix 313-2 does not include a timeline for immediate and temporary mitigation approaches. Previous timelines required the Permittee to provide the DEQ with plans and drawings for any temporary distribution systems within 3 weeks of impact, and to construct a temporary distribution system within 2 months of DEQ approval of temporary mitigation plans.

SPE must modify Appendix 313-2 to include a timeline for immediate and temporary mitigation for impacted springs.

ARM 17.24.313: Appendix 313-4 is outdated and must be updated with recent relevant information. Table 2-1 must be updated with information relevant to the proposed Amendment 3 permit area. Table 2-2 must be updated with the most current schedule. Any other information in the Appendix that references previous permit area coverage must be updated to include the proposed Amendment 3 area.

ARM 17.24.314(2)(d): Appendix 314-2 Spring Impact Analysis references tables that have not been updated for the new AM 3 area (Table 314-2-1, Table 314-2-2). Appendix 314-2 supplies the results of a Spring Impact Analysis and is supported by Appendix 313-4 Supporting Documentation for Spring Impact Analysis. Both documents must be updated to reflect the proposed Amendment 3 permit area

(referred to as the 'Anticipated Life-of-Mine'), and retained in the permit. SPE must update aforementioned permit sections as appropriate.

ARM 17.24.314(2)(d): Section 314, Table 314-12 references springs included in the (current) permit area and must be updated to include all springs in the Amendment 3 permit area. As Appendix 314-2 Spring Impact Analysis and Appendix 313-4 Supporting Documentation for Spring Impact Analysis are to be retained in the permit, tables within these documents must be updated. SPE must review these tables and documents to ensure consistency with the boundaries, and inclusion of springs within those boundaries, of proposed permit Amendment 3.

ARM 17.24.314: The numbering index on the TOC has some errors; e.g. 3.2 heading and Section 3.3 numbering is flawed.

ARM 17.24.314: Section 314, page 314-1: In the first sentence under the Introduction it states that, "...to prevent material damage to the hydrologic balance in the area adjacent to the permit area." According to ARM 17.24.314, the definition of material damage states, "...with respect to protection of the hydrologic balance, degradation or reduction by coal mining and reclamation operations of the quality or quantity of water outside of the permit area...".

SPE must change 'adjacent to the permit area' to 'outside the permit area'.

ARM 17.24.314(3): Section 314, pg. 314-5: Section 3.1.1 identifies Rehder Creek as having the potential for subsidence-related impacts. Please include Fattig Creek and Railroad Creek in this discussion as they also will overlie areas of potential subsidence.

ARM 17.24.314: Section 314, pg. 314-7: Heading 3.1.5.2 Sediment Ponds is incorrect and should be 3.2.2.2 Sediment Ponds.

ARM 17.24.314: Section 314, pg. 314-7: at the bottom of the page, it is stated that "*Plans are to temporarily store a small amount of coal processing waste in the existing PM coal fines pile located in PM Draw. Pond A (reference Table 314-6a) collects the sediment water runoff from the existing PM waste coal storage area. As required by Rule 17.24.505, the SPE will grade the waste coal storage area to ensure that at least 90 percent of the water stored during a 10-year/24-hour precipitation event can be pumped out within a reasonable period following the storm event.*" The PM coal fines pile is no longer in use and has been cleaned up. Since the PM coal fines pile has been removed, reference to the PM coal fines pile must be removed. Also, regarding sediment ponds and impoundments, Rule 17.24.505 requires that "the impoundment must be designed, and when operational must be managed, so that at least 90% of the water stored during the design precipitation event can be and is removed within the 10-day period following the event," not within a 'reasonable period of time after the event.'

ARM 17.24.314(2): Section 314, pg. 314-8: Under Section 3.1 Surface Water Control and Treatment Plan, Section 3.2.3 Undisturbed Areas is inadequate. Undisturbed areas include all areas on the mine permit, not solely the facilities area near the mine portal. Please provide a description of how surface water will be controlled and/or treated to minimize disturbance through undisturbed areas. Operational descriptions provided in this section do not provide an adequate explanation of how surface water controls will avoid future impacts to mine facilities away from the 'main' facilities area.

SPE must amend Section 3.2.3 to include a discussion of how surface water will be handled to minimize disturbance through undisturbed areas mine-wide.

ARM 17.24.314: Section 314, pg. 314-10: Per DEQ guidance, semi-annual hydrology reports are due to DEQ by May 31st, not June 30th; please correct.

ARM 17.24.314: Section 314, pg. 314-10, 11: Please remove the redundancy in Sections 6.0 and 6.1. A major portion of both sections read exactly the same.

SPE must rewrite these sections referencing applicable reclamation and mitigation plans established in Section 313 for springs and streams, taking care to be consistent with the approach described in Section 313.

ARM 17.24.314(3) Appendix 314-5 (PHC):

- References to Amendment 2 (AM2) and the projections that were set in the AM2 PHC are not appropriate, as the new PHC (Appendix 314-5) will supplant the previous PHC version. With the acceptance of the AM3 PHC, the AM2 PHC will no longer be valid as a component of the permit. Projections and conclusions of probable hydrologic consequences must be based on data and analysis provided in AM3, rather than referencing a previous PHC that will no longer be a component of the permit. References to projections or conclusions in Amendment 2 must be removed (see pg. 314-5-2, 5-23, 5-25, 5-26, 5-38, 5-41, and all of Section 5.0).

SPE must remove all reference to previous PHC versions, and derive and iterate conclusions and projections based on information, analysis, and supporting documentation included in the AM3 PHC.

- Section heading 3.4 Observations – Groundwater should be changed to 3.4 Observations – Groundwater Quantity to distinguish it from Section 3.5 Observations - Groundwater Quality.
- The discussion of alluvium in Section 3.4.1 primarily focuses on the recharge alluvial aquifers received from abnormally high precipitation of 2011. After a discussion of the increased recharge from the anomalous precipitation events of 2011, it is stated on page 314-5-16 that *“In summary, there is no evidence that dewatering associated with mining of the Mammoth coal has affected water levels in the alluvial deposits in the Bull Mountains Mine No. 1 vicinity...”* It should be noted that the anomalous precipitation in 2011 would have likely masked any water level impacts the alluvial aquifers may have experienced, and should not be used as evidence that impacts have not occurred. More accurately, the abnormally high precipitation of 2011 confounds interpretation of water level data to discern impacts. For instance, later in the document (pg. 314-5-23), the PHC does acknowledge that the precipitation events of 2011 acted to mask evaluation of drawdown of the Mammoth coal aquifer; *“It is unknown what the extent and magnitude of the drawdown would have been in this area if it were not for the recharge event that occurred in 2011.”* This same logic should be applied to evaluation of alluvial aquifers, with respect to 2011 precipitation events.

SPE must amend the aforementioned statements on pg. 314-5-16 to acknowledge that the lack of evidence is the result of extreme events, and that any potential impacts could not be discerned due to these abnormal precipitation events.

- The discussion of spring observations in Section 3.4.5 requires additional clarification. On page 314-5-27 it is stated that *“There presently is no evidence that flows of the springs have been impacted by current mining activity.”* This statement is misleading as, at the time of document production, only two springs (17415 and 17115) of approximately 140 monitored springs had been undermined. A significant and relevant observation that must be addressed is that, at the

time of document production, very few springs had actually been undermined (i.e. very little opportunity to actually impact spring flow and quality has occurred thus far); however, impacts to both occurred (SPE must discuss impacts that were observed and their significance). An accurate accounting of spring observations as they relate to potential mining impacts must include the location and timing of undermining with respect to the location of potentially affected springs. This observation also applies to section 3.5.5.

SPE must amend Section 3.4.5 and Section 3.5.5 to account for the schedule of spring undermining and the potentially affected springs.

- Table 4 (314A) Water Quality Standards Summary includes DEQ-7 Human Health Standards but does not include DEQ-7 Aquatic Life Standards for surface waters. Applicable standards for surface waters (ponds, and streams) include both Human Health Standards and Aquatic Life Standards. SPE must modify Table 4 (314A) to include Aquatic Life Standards as well as Human Health Standards.
- Attachment G, referenced on page 314-5-56 was not included in the submittal package. SPE must provide Attachment G for review.
- The discussion of the waste disposal area in Section 6.2.8 states that *“The potential for future off-site surface water quality impacts associated with breaching of the WDA is considered very unlikely at this stage, primarily because the event of 2011 was unique, and also because the pond was enlarged.”* The WDA pond was breached again in May of 2013. It would appear that the likelihood of pond breaching has been underestimated.

Rather than state the relative unlikelihood of WDA pond breaching, SPE should amend the language in this section to discuss the design capacity of the WDA pond, and the type of events responsible for recent breaching of the WDA pond, thereby justifying the adequacy of the WDA ponds to control surface runoff from the WDA.

- In several of the figures the area shown is restricted to the immediate vicinity of the mine and does not portray relevant information which lies outside the boundary of the figure, or within the AM3 boundary. For example:
 - Alluvial wells in the Fattig Creek drainage are not shown in Figure 8 (314A)
 - Alluvial well hydrographs for Fattig Creek are not provided in Figure 12-2 (314A)
 - Spring hydrographs are not provided for springs in AM3 area in Figure 16 (314A)
 - Spring water quality plots are not provided for springs in the AM3 area in Figure 18-5 (314A)
 - Hydrology subbasins are not complete for Fattig Creek and Railroad Creek in Figure 20 (314A)

Please check all figures, and figure titles, and expand the area shown on the figures as necessary to show all relevant features

- Page 1 of Figure 13-2 is not included in the document. Please include the missing figure.
- Figure 14-1 does not display the wells used as the basis for creating the potentiometric head contours. Please include the wells used to create the contours in this figure.
- Section 3.6.2.2 on page 315-5-36 describes water from the Madison Group wells as having a temperature of 165.4°Celsius. This is well over the boiling point of water. Please confirm that degrees Celsius are the correct units of temperature and not Fahrenheit.

- Section 4.0 does not discuss surface water drainages other than Rehder Creek and only Rehder Creek drainage sub-basins are shown on Figure 20. Please include all potentially affected surface water drainages in the surface water discussion and on Figure 20.
- Section 6.0 does not discuss the potential long term impacts of increased groundwater levels in the northern part of the mine if a mine pool forms postmining. Would the increased water levels postmining in the northeast corner of the mine affect surface water flows in Fattig Creek drainage (i.e. could there be new springs or increased flow from existing springs along Mammoth Coal subcrop)? How would potential flows from the mine portal impact the hydrologic balance of PM Draw? Please include discussion of the potential effects of the formation of a mine pool on the hydrologic balance.

ARM 17.24.314 Appendix 6 (Groundwater Model): The groundwater model report is lacking some details necessary to completely review the model. Questions remaining include, but are not limited to: Selection of model codes and packages, conceptual model and domain selection, details on boundary condition selection and properties, geologic control and justification for parameter zonation, transient model stress periods and simulation of mine progression, transient model calibration/verification, and post-mine water level trends. DEQ also has comments on: modifications/additions to figures, presentation of model calibration statistics, and sensitivity analyses.

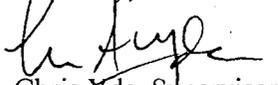
No immediate action is required, because additional modeling has been committed to in Attachment 3M. DEQ suggests a meeting be scheduled prior to initiation of the updated model simulation effort to discuss the questions and comments on groundwater modeling.

ARM 17.24.314(1) & (3): Please indicate a date in the permit text (Attachment 3M, Underburden Focused Modeling Effort) for completion of the supplemental groundwater investigation to address the deep underburden aquifer.

The 314 appendices table of contents page does not include Appendix 314-5 (PHC) and 314-6 (Groundwater Model), causing difficulty in locating the revised documents. Upon opening Volume 3, Section 314, Protection of the Hydrologic Balance, the materials listed include the PHC for AM2, increasing confusion during review. Please remove the AM2 version of the PHC in the next AM3 deficiency response.

Please feel free to contact Robert D. Smith at 406-444-7444 with questions regarding this letter.

Sincerely,



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