



WESTERN ENERGY COMPANY - *Rosebud Mine*
A Subsidiary of WESTMORELAND COAL COMPANY

P.O. Box 99 • 138 ROSEBUD LANE • Colstrip, MT 59323 • Phone: (406) 748-5100

July 30, 2018

Sent via ePermit system

Chris Yde, Section Supervisor
Department of Environmental Quality
Coal and Opencut Mining Bureau
1218 E 6th Ave
PO Box 200901
Helena, MT 59620

Permit ID: C1984003B
Revision Type: Permit
Permitting Action: Deficiency Response #2
Subject: AM 5; Acceptability Deficiency Response

Dear Chris:

The purpose of this letter is to respond and address the deficiency comments on C1984003B:

ARM 17.24.302(1): Permit layers are not tagged in most maps. Many required permit layers are not tagged in any map (example, mineral ownership). This renders the function in the e-permit to search by map layers useless. Please tag all relevant layers in all maps which contain them.

Response: Maps that were revised have had the appropriate layers tagged. Exhibit L1 and L2 were re-uploaded to the Map Summary section and the option of tagging layers was not available. WECO suggest an edit button to make this process easier for the user. Then when layers need to be updated but no other changes to the map are necessary, it would ease the process.

The format of some pdf exhibits is not acceptable and must be changed. For example, the Reclamation Plan map (Exhibit J) is too large of a file to view with the computer (refresh time is too long) or plot. Other maps with similar problems must also be changed. To “flatten” the image see the following link: <https://helpx.adobe.com/acrobat/kb/printing-complex-pdfs-acrobat.html>

Response: Please see Exhibit J. The exhibit was originally converted to a pdf through AutoCAD. The current version has been plotted to paper, scanned, and re-uploaded to ePermit system. This process made the file much smaller and should take care of the original problem.

WECO must add accuracy and clarity to the mine plan by making the following corrections:

There are discrepancies between Table 303-3, the narrative on page 1 of 308(1)(a) and what appears feasible on Exhibit A; for example, the narrative on page 1 of 308(1)(a) states that BXS 65-1 is a box cut, but Table 303 depicts BXS 65-1 being mined in 2019 and BXS 69 and 65 in

year 4 as box cuts. In addition, the dates set forth in Table 303-3 do not make sense for example: BXS 65-1 (year 19), BSX 66-1 (year 12) and BXS 89-1 (year 11). These discrepancies must be addressed. It may be helpful to add years 1 - 6 annotation to the mine passes on Exhibit A.

Add an explanation to Table 303-3 that identifies the “first year” number as the whole number, the second-year correlating to the "- 1" mine pass numbers on Exhibit A and the third-year correlating to a "- 2" numbers and so on as they appear on Exhibit A.

Table 303-3 references mine passes not found on Exhibit A. Corrections to mine passes BXS 104-1, 106-1, 108-1, and 110-1 must be made on either the exhibit or the table. Additionally, in Table 303-3 mine pass numbers cannot be abbreviated: numbers identifying mine passes must match exactly with what is depicted on Exhibit A.

[Response: Please see ARM 17.24.303\(1\)\(s\) Table 303-3. The table has been revised to add clarity to Exhibit A.](#)

The disturbance areas associated with stockpiles must be reviewed and changes made to Exhibit A where needed. For example, Table 308-1 on page 2 denotes 2.2 million yards of material will be stored in Spoil Stockpile SS-6 area which is only 13 acres in size. The stockpile would need to be over 100' tall (with vertical sides) to fit in the 13-acre disturbance area. It is not feasible for haul trucks to build such a stockpile; thus, a larger disturbance area is needed, or the amount of stored material adjusted.

[Response: The soil stockpiles were revised where needed on Exhibit A Approximate Mine Plan.](#)

There is a sequencing problem between the main haul road to the BXS pits and the mining of passes BX 6 through 19. The haul road must be constructed two years before mining is finished in pass BX 6. The inaccurate sequencing must be corrected or another haul route must be found. DEQ is not in support of the proposed haul route if an alternate route can be found which, pursuant to ARM 17.24.638(2)(a), disturbs “the smallest practicable area”.

Page 642-1 proposes leaving permanent impoundments. Pond PO-21C does not have a location or any general information associated with it. This must be clarified.

[Response: Pond PO-21C location and footprint have been depicted on Exhibit D Approximate Hydrological Control Plan.](#)

The “Typical Culvert Cross Sections” on pages 605-4 and 605-5 are not legible and must be re-done so all information presented on the figures is clear.

[Response: Please see ARM 17.24.605. The pages have been reinserted into the document. The images are now clear.](#)

The inconsistency between the narrative discussions for pond sizing to a 10-year, 24-hour event [pages 315-1, 639-1, and Appendix J (PHC) page 6] and the 100-year, 24-hour event used for the general pond designs requires additional explanation. Alternatively, all general designs could be changed to the 10-yr, 24-hr event. This issue should be discussed with DEQ.

[Response: Pages 315-1, 639-1, and Appendix J have been updated per this deficiency.](#)

The 1st paragraph on page 639-1 explains that details for sediment ponds and traps are found in Appendix J “located in Reclamation, Plans for Ponds and Embankments”. The reference should be changed to Appendix J, Reclamation, Plan for the Protection of the Hydrologic Balance. WECO should correct the reference and add a reference to, “Pond Specific Design and As-built Attachments located in Mining, Plans for Ponds and Embankments.”

[Response: Please see ARM 17.24.639. The references requested have been included in the text in the first paragraph.](#)

Page 313-1 of AM5 narrative addresses ARM 17.24.313(1)(f)(i): detailed drainage designs. Exhibits V1 thru V14 appear to be included in the application to address this regulation and as such must be referenced on page 313-1.

[Response: Please see ARM 17.24.313\(1\)\(f\)\(i\). The reference has been included as requested.](#)

The reference to a 1998 minor revision (MR 98-03-03) on page 321-2, for the use of up to 40% bottom ash in the road base, is not an acceptable format for addressing ARM 17.24.321(1)(e) and 601(7). In addition, any mention of ash in 505, 510, and 308(1)(c) does not include its' use as road base but only sanding and culvert bedding. WECO must remove narrative allowing use of any bottom ash in the road base or include a demonstration of compliance to the road performance standards in the permit. Please note and correct references to 313(1) in 505 and 510 because 313(1) is a dead end without any substantive information. If WECO is going to discontinue the use of bottom ash, appropriate narrative should detail how bottom ash was used in the permit area, where it was used, and during what time frame. There should also be a commitment to not using bottom ash after a specific date.

[Response: Please see ARM 17.24.321. The narrative stating that 40% bottom ash will be used as road base has been removed. A statement that no additional bottom ash will be used as of July 2018 at the Rosebud Mine was added to the narrative. See ARM 17.24.505 and ARM 17.24.510. The reference to ARM 17.24.313\(1\) now directs the reader to ARM 17.24.313\(1\)\(b\).](#)

Information on page 302-2 must be reviewed and updated. In addition, the acre numbers represented in the table are acres "to be permitted" and not total acres permitted.

[Response: Please see ARM 17.24.302. The application for has been updated with the current resident agent and the acres to be permitted. Please note, “to be permitted” is on the form that is provided by the Department. So no changes was made on the label of the table.](#)

ARM 17.24.303(1)(o): The attached table for Legal Right to Enter does not appear to match the permit information for Rosebud Area B and seems to be for a different permit. Please resolve this issue.

[Response: Please see 17.24.303\(1\)\(o\). The table for the Legal Right to Enter has been updated with the correct information.](#)

ARM 17.24.303(1)(s): The currently approved acres in Table 303-1 does not match what DEQ has in the database for Rosebud Mine Area B, which is 6,045. Please provide a reason for the discrepancy.

Response: After review of WECO's records ARM 17.24.303(1)(s) Table 303-1 Permit Acres; stepping back in reverse chronological order from (SL15 approved in 2016 through MR53 approved in 2013) WECO calculates the total permit acres are 6,052 acres.

SL15 6,052 (-186 acres)
AM4 6,238 (+ 49 acres)
MR67 6,189 (+ 42 acres)
MR65 6,147 (+ 82 acres)
MR53 6,065

ARM 17.24.303(1)(y): "17.24.303(1)(y)and(z).pdf" refers to maps included with Western Energy's annual reports for the information requested by this rule. A map containing this information could not be located in recent annual reports. Please include a specific reference to the annual report year and map name which contains this information, or include a map containing this information in the permit application.

Response: Please see Exhibit W Historic Mining Map located in the Admin, Historic Mining tab. The reference to Exhibit W has also been added to the text in ARM 17.24.303(1)(y)and (z).

ARM 17.24.303(1)(y)(i): See 17.24.303(1)(y)

Response: See response to ARM 17.24.303(1)(y).

ARM 17.24.303(1)(y)(ii): See 17.24.303(1)(y)

Response: See response to ARM 17.24.303(1)(y).

ARM 17.24.303(1)(y)(iii): See 17.24.303(1)(y)

Response: See response to ARM 17.24.303(1)(y).

ARM 17.24.303(1)(y)(iv): See 17.24.303(1)(y)

Response: See response to ARM 17.24.303(1)(y).

ARM 17.24.303(1)(y)(v): See 17.24.303(1)(y)

Response: See response to ARM 17.24.303(1)(y).

ARM 17.24.303(1)(z): See 17.24.303(1)(y)

Response: See response to ARM 17.24.303(1)(y).

ARM 17.24.304(1)(e): DEQ checked the baseline information contained in "Appendix B – Baseline Hydrology Data.pdf" by comparing the information presented in Attachment B with Attachments C and E. DEQ also compared Attachment E with Attachment F to the extent of confirming that each sampling event was reported in each attachment. DEQ did not verify that the results of individual analyses in Attachments E and F match. DEQ also cross checked with the

information in “02 Appendix F - Area B-Extension South Benthic Macro Report 2015_ERM.pdf” and “04 Appendix F - Area BXS Macro Survey_2016_10-13.pdf” on the Baseline - > Wildlife Survey page where appropriate. This review identified the following inconsistencies:

Field parameters from 2016 ERM macroinvertebrate sampling event not entered for surface water sites.

Response: The ERM 2016 report has data for sampling sites PO-300, PO-305, SP-300, SP-301 and SP-306. Field data for these site visits were added to the database and field data sheet. All SW, SP, and PO sites, 1/27/17 field sheet indicates all sites inaccessible, no entries in field data table.

Response: These data were added to the database and field data tables.

SW-301, 4/8/14, lab sample “SW-301” not listed in field data table.

Response: This sample was added to the field data table and database, as well as Attachment F spreadsheet.

SW-301, 12/11/14, field sheet notes top autosampler bottle empty, not in field data table.

Response: The database and field data table were updated as specified.

SW-301, 4/17/15, no field sheet.

Response: The calibration sheet for this event was added to Attachment B (field data sheets).

SW-301, 5/3/16, field data table omits decimal point from psi measurement.

Response: The database and field data table were updated as specified.

SW-301, 6/2/16, field sheet says “over” at bottom but reverse side not included, psi/depth readings not included in comments in field data table.

Response: Notes on reverse site and psi and depth readings were included in the comment section. Note that a continuous record of all psi and depth readings are included in the continuous recorder files submitted for the SW-301 and SW-302.

SW-301, 2/23/17, “flowing, immeasurable (mix of ice and water)” added to field sheets for BS and TS samples, this is not consistent with the RT and TB sample field sheets or with the field data table.

Response: Notes were added to all field data sheets to be consistent.

SW-301, 3/27/17, incorrect sample ID “SW-301-20170324-BB” in lab data table and lab sheet, correct sample ID “SW-301-20170327-BB” on field sheet, field data table, and COC.

Response: An updated lab sheet and lab data table are included in Attachment E.

SW-301, 4/5/17, psi/depth from field sheet not reported in field data table.

Response: The database and field data table were updated as specified.

SW-301, 5/31/17, no field sheet.

Response: The calibration sheet for this event was added to Attachment B (field data sheets).

SW-302, 8/28/13, no field data associated with lab sample "SW-302 Bottom."

Response: The field data sheet for this event could not be found. A placeholder field record was added to the database and field data table to show a sample was taken at this location on this date.

SW-302, 10/9/13, Bottom bottle EC in field data table (7140) does not match field EC for routine sample or field sheet (7170).

Response: The bottom bottle EC in database and field data table was corrected to 7170.

SW-302, 10/23/14, no EC, field sheet noted as illegible...appears to be 8.46 mS.

Response: The field sheet, database and field data table were updated as specified.

SW-302, 4/17/15, no field sheet.

Response: The calibration sheet for this event was added to Attachment B (field data sheets).

SW-302, 1/20/16, field sheet time 9:45, data table 21:45, field sheet comments say "rainy/snowy" not in field data table.

Response: The database and field data table were updated as specified.

SW-302, 6/2/16, first psi and depth values from field sheet not reported in field data table comments.

Response: The database and field data table were updated as specified.

SW-302, 9/27/16, psi/depth from field sheet not entered in field data table comments.

Response: The database and field data table were updated as specified.

SW-302, 4/5/17, psi/depth from field sheet not reported in field data table.

Response: The database and field data table were updated as specified.

SW-302, 5/31/17, no field sheet.

Response: The calibration sheet for this event was added to Attachment B (field data sheets).

SP-300, SP-302, & SP-303, 9/25/13, no field data associated with lab samples “SP-300”, “SP-302”, & “SP-303”.

Response: The field data sheets for this event could not be found. Placeholder field records were added to the database and field data table to show a sample was taken at this location on this date.

SP-300, 5/22/14, no lab sheet or data in lab data table for sample “SP-300”.

Response: The sample taken at SP-300 was erroneously labeled SP-301. No sample was taken at SP-301. The database, field data table and lab data table (Attachment F) were corrected to reflect this.

SP-300, 10/7/15, field blank listed on field sheet, and in lab sheets, but not in field data table.

Response: A field blank record was added to the database and field data table as specified.

SP-301, 5/22/14, lab sample “SP-301” not listed in field data table.

Response: The sample taken at SP-300 was erroneously labeled SP-301. No sample was taken at SP-301. The database and field data table were corrected to reflect this.

SP-302, 3/20/14, no field sheet.

Response: This field sheet could not be retrieved and this record was removed from the database and field data table.

SP-302, 2/14/17, event routine sample is dated 2/24/17 in field data table.

Response: The database and field data table were updated as specified.

SP-304, 4/14/16, flow <1 in field data table entered in water depth column.

Response: The field data table was corrected as specified.

SP-304, 5/17/16, flow <1 in field data table entered in water depth column.

Response: The field data table was corrected as specified.

SP-306, 9/21/16, field sheet says “Weir: not available, too marshy & wide” not in field data table comments.

Response: The database and field data table were updated as specified.

SP-309, 9/22/15, DO from ERM 2015 Table 2 entered as pH, correct pH value is 8.43.

Response: The database and field data table were updated as specified.

SP-309, 7/13/16 event is dated 7/16/16 in field data table.

Response: The database and field data table were updated as specified.

SP-310, 7/6/16 event is dated 7/13/16 in field data table.

Response: The database and field data table were updated as specified.

PO-300, PO-301, PO-302, & PO-303, 9/25/13, no field data associated with lab samples “PC-300”, “PC-301”, “PC-302”, & “PC-303”.

Response: The field data sheets for this event could not be found. Placeholder field records were added to the database and field data table to show a sample was taken at this location on this date.

PO-300, 8/28/14, pH in field data table (9.89) does not match field sheet (9.86).

Response: The database and field data table were updated as specified.

PO-300, 2/17/15, no data for sample “Field Duplicate” (Lab ID: S1502227-014) collected on this date in lab data table, comparison of lab results indicates this is the PO-300 duplicate.

Response: Data was added to the database and lab data table. The field data table comment was updated.

PO-300, 3/24/15, Temp in field data table (12.2) does not match field sheet (11.2).

Response: The database and field data table were updated as specified.

PO-301, 5/23/17, water depth in field data table appears inaccurate.

Response: The water depth was corrected in the database and field data table.

PO-303, Field Blank, 2/18/15, lab sheets indicate this field blank for SW suite but no entry for this field blank in field data tables, only SW sample collected this date was PO-303.

Response: An additional record was added to the database and field data table for this field blank. It was likely prepared at PO-303 and a note to this effect was added in comment.

PO-303, 5/17/16, status should be “wet”.

Response: The database and field data table were updated as specified.

PO-304, 5/7/15 event is dated 5/4/15 in field data table.

Response: The database and field data table were updated as specified.

All GW sites, 9/24/14 & 10/17/14, no field sheets for SWL events. The field data sheets for these events were added to Attachment B. In addition, November 2014 water levels were added to the database, field data table and Attachment B.

All GW Sites, 12/23/16, field data table comments say date approximate, SW field sheet indicate IML was on site 12/27/16.

Response: The database and field data table were updated as specified.

WA-228, 12/3/14, field blank AGFB4Q14 listed on field sheet but not assigned to this location in field data table.

Response: The field data table was updated as specified.

WA-228, 3/12/15, SWL on field sheet is 5.78, field data table is 5.87.

Response: The database and field data table were corrected.

WA-228, 2/22/17, field sheet shows well pumped at 1.5 gpm for 21 minutes (31.5gal), field data table lists volume purged as 40.5 gal.

Response: The database and field data table were corrected.

WA-229, 5/15/17, field sheet shows EC of 4340, field data table is 1340.

Response: The database and field data table were corrected.

WA-235, 10/13/16, "WA-236" in field data table comments, not on field sheet, meaning unknown.

Response: The database and field data table were updated to match field sheet.

WA-235, 2/22/17, field sheet shows well pumped at 1 gpm for 9 minutes (9 gal), field data table lists volume purged as 3 gal.

Response: The database and field data table were corrected.

WA-241, 2/23/17, field data table lists sample ID "WA-241" but field sheet states "insufficient water to sample" and no lab sheet for this sample found.

Response: The database and field data table were corrected.

WA-242, 11/1/16, "WD-203" in field data table comments, not on field sheet, meaning unknown.

Response: The database and field data table were updated to match field sheet.

WA-242, 3/29/17, initials recorded as "2017" in field data table.

Response: The database and field data table were corrected.

WD-203, 12/16/13, field sheet shows well purged dry, not in field data table comments.

Response: The database and field data table were updated as specified.

WD-203, 10/13/16, "WD-204" in field data table comments, not on field sheet, meaning

unknown.

[Response: The database and field data table were updated to match field sheet.](#)

WD-204, 3/21/14, field sheet shows well pumped at 9 gpm for 18 minutes (162 gal), field data table lists purge volume of 72 gal.

[Response: The field sheet shows WD-204 was pumped at 8 gpm for 17 minutes. The field data table lists purge volume as 136 gal. This is correct, and no changes were made.](#)

WD-204, 3/13/15, field sheet shows initial pumping rate of 8 gpm decreasing to 5 gpm after 17 minutes then 5 minutes of pumping at 5 gpm, even if a constant rate of 5 gpm is assumed, this results in 110 gal purged, field data table shows 81 gal.

[Response: The purge rate in database and field data table was corrected to 161 gal.](#)

WD-204, 2/22/17, field sheet shows well pumped at 8 gpm for 18 minutes (144 gal), field data table lists volume purged as 324 gal.

[Response: The purge rate in database and field data table was corrected to 144 gal.](#)

WD-205, 12/16/13, field sheet shows well pumped at 6 gpm for 14 minutes (84 gal), field data table lists purge volume of 144 gal.

[Response: The purge rate in database and field data table was corrected.](#)

WD-205, FB1Q14, 3/21/14, no entry in field data tables for this field blank, sample time follows WD-205 sample time.

[Response: The database and field data table were updated as specified.](#)

WD-205, 12/14/14, on sampling field sheet SWL = 65.33, field data table has 65.99, second field data table entry for SWL only shows correct SWL.

[Response: The database and field data table for 12/4/14 were updated as specified. The second field data table entry was removed.](#)

WD-205, 3/13/15, field blank FBG-1Q-15 time corresponds to WD-205 sampling times for routine and duplicate, field data table lists no location for this blank.

[Response: The database and field data table were updated as specified.](#)

WD-205, 9/2/15, field sheet shows well purged dry, not in field data table comments.

[Response: The database and field data table were updated as specified.](#)

WD-215, 9/15/16, field sheet states well was purged dry, not in field data table comments.

[Response: The database and field data table were updated as specified.](#)

WD-215, 10/13/16, "WD-216" in field data table comments, not on field sheet, meaning unknown.

Response: The database and field data table were updated to match field sheet.

WD-217, 2/23/17, sample ID WD-217 listed in field data table and lab data table no lab sheet found.

Response: Attachment E was updated with the missing lab sheet.

WM-203, 5/12/14, field sheet shows well pumped at 6 gpm for 16 minutes (96 gal), field data table lists purge volume of 36 gal.

Response: The database and field data table were updated as specified.

WM-204, 12/16/13, field sheet comment states well should be pumped at 4 gpm, field data table says 9 gpm.

Response: The database and field data table were updated as specified.

WM-212, 9/15/16, "Sample ID" listed as WM-215 in field data table and lab data table, WM-212 on lab sheet.

Response: The database, field data table and lab data table were updated to reflect the corrected lab report and field sheet. WO-188, 12/17/13, field sheet shows well pumped at 4 gpm for 42 minutes (168 gal), field data table lists purge volume of 56 gal.

Response: The database and field data table were updated as specified.

WO-188, 2/22/17, Routine and Field Duplicate, field sheet shows well pumped at 8 gpm for 21 minutes (168 gal), field data table lists volume purged as 56 gal.

Response: The database and field data table were updated as specified.

WO-188, 2/22/17, Field Duplicate, no time listed in field data table, lab sheet shows 12:25

Response: The database and field data table were updated as specified.

WO-190, 12/16/13, field sheet shows well pumped at 4 gpm for 14 minutes (56 gal), field data table lists purge volume of 28 gal.

Response: The database and field data table were updated as specified.

WO-190, 11/4/15, field data table lists sample ID as WO-199.

Response: The database and field data table sample ID were corrected to WO-190.

WO-190, 3/16/16, field sheet shows SWL of 77.33, field data table 77.83.

Response: The database and field data table were corrected as specified.

WO-196, 2/22/17, SWL on field sheet 163.49, field data table 163.44.

Response: The database and field data table were corrected as specified.

WO-196, 5/16/17, field sheet shows well pumped at 5 gpm for 25 minutes (125 gal), field data table lists volume purged as 75 gal.

Response: The database and field data table were corrected as specified.

WR-240, 3/21/14, final field EC reading likely wrong, earlier field EC readings are consistent with typical values for this well, should use 2700 in field data table and make note in comments.

Response: The database and field data table were corrected as specified.

WR-241, 3/13/15, field sheet shows well pumped at 9 gpm for 11 minutes (99 gal), field data table lists purge volume of 108 gal.

Response: The database and field data table were corrected as specified.

WR-246, 8/12/16, field sheet shows SWL 144.58, no entry in field data table.

Response: This water level measurement is approximately 20 feet higher than all other water levels obtained from this well. It likely erroneous and therefore it was not used. A note was added to the field sheet.

WR-246, 5/11/17, field sheet and field data table dated 5/11/17, lab sheet, lab data table, and COC show sample collection date of 5/15/17.

Response: The field sheets for this sample show all other wells in this well group were sampled 5/11/17. This date was assumed to be correct. A note was added to the lab data sheets and the sampling dates in the database and Attachment F were changed manually.

WR-249, 9/22/16, field sheet does not record volume purged, number of bails entered in purge volume column in field data table, this should be entered in comments, well purged dry, not noted in field data table comments, Sample ID WR-249 listed in field data table and lab data table, no lab sheet found.

Response: The volume of the bailer was confirmed with Inter-Mountain Laboratories to be 1 gallon, therefore no changes were made to the purged volume. A note was added to the field sheet. Well purged dry was added to field data comments. The missing lab sheet was added to Attachment E. WR-249, 2/22/17, "Sample ID" listed as WR-2349 in field data table, WR-249 on lab sheet and lab data table.

Please correct the above noted inconsistencies in the baseline data reporting. Additionally, field sheets for SWL only measurements are not really a field sheet, but rather a spreadsheet of field data. A copy of the paper field sheet should be included unless data is collected directly in electronic format.

Response: Copies of the paper field sheets are now included in Attachment B.

ARM 17.24.304(1)(f): See 17.24.304(1)(e).

Response: Please see 17.24.304(1)(e).

ARM 17.24.304(1)(f)(iii): "14.24.304(1)(f) Hydrologic Information.pdf" section 304(1)(f)(iii) refers to Appendix J Section 3.3, and Section 3.3 of "Appendix J - Protection of the Hydrologic Balance.pdf" on the Reclamation -> Plan for the Protection of the Hydrologic Balance page refers to Appendix O Section 4.3.5 and Appendix B. "01 Appendix B - Baseline Hydrology Data.pdf" contains no description of alternative water supplies, however this description is contained in "APPENDIX O - Probable Hydrologic Consequences.pdf" Section 4.3.5.

Please remove the reference to Appendix B from Section 3.3 of "Appendix J - Protection of the Hydrologic Balance.pdf" on the Reclamation -> Plan for the Protection of the Hydrologic Balance page.

Response: The reference to Appendix B in Section 3.3 has been revised to Appendix O (PHC). Additionally, the reference to Appendix B in Section 3.2 has been revised to Appendix O (PHC).

ARM 17.24.304(1)(i)(ii)(D): The language associated with this permit material is merely the ARM spelled out. This portion of the permit requires a narrative that addresses which existing land uses are present and those land use classifications under local law, if any. This may be covered in other permit material, but is not referenced for this rule. Please update this permit material to meet the requirements of the ARM's.

Response: Please see ARM 17.24.304(1)(i)(ii)(D). This deficiency is the same as in the first round of deficiencies. The language has not been revised. Please review.

ARM 17.24.305(1)(z): The location and extent of subsurface water, and the names and locations of surface water bodies, including springs, constructed or natural drains, and irrigation ditches, with the proposed mine plan and adjacent areas are depicted on maps in Appendix O. However, the maps in Appendix O do not contain the required certification per ARM 17.24.305(2)(a) and (b). Exhibit H contains some, but not all, of the information required by this rule. Please provide the maps in Appendix O with the required certification.

Response: Exhibit H has been removed and an affidavit certification has been added to Appendix O (PHC) to certify Figures 18, 20, 56, 59, 67, and 73.

ARM 17.24.305(2)(c): Topography line, haul road and ramp annotation must be made clear and legible on all pdf map exhibits. This annotation is especially critical on Exhibits A, B and U.

Response: Please see the above listed maps. WECO staff zoomed into the maps and could clearly read the annotations on the maps.

ARM 17.24.313(1): Please provide the material or a link to the material that is being referenced as "see below" or remove "313(1)" all together.

Response: The language in 17.24.313(1) was revised to reference the Reclamation tab of the ePermit system.

ARM 17.24.313(1)(c): DEQ acknowledges Western Energy's commitment to submit a revised bond after the PMT plan is acceptable.

Response: Noted.

ARM 17.24.313(1)(d)(i): A plan for back filling and grading must include diagrams, as necessary, to depict the final location of all overburden and parting materials. In accordance with this regulation, the permit must include a range diagram for the opening of the north-western part of the BXS pits and the BX6 through BX19 mine passes. In addition, the permit must either, include narrative commitments to include additional range diagrams prior to opening the other box cut areas or additional range diagrams must be added at his time.

Response: Please see ARM 17.24.313(1)(d)(i), a reference to Exhibit I and II has been included in the narrative. Reclamation cross section satisfies the diagram portion of this rule.

ARM 17.24.313(1)(d)(iv): The performance standards referenced in this rule include grading to the approximate original contour (AOC) of the land that existed prior to mining. WECO must include references to Exhibits B, T1, T2 and N (with the exhibit title) as supporting information to the performance standard of AOC. It would also be appropriate to add similar narrative, mentioning all four exhibits, to ARM 17.24.501(4).

Response: Please see ARM 17.24.313(1)(d). The references to Exhibit B, T1 and T2, and N with titles have been made. Also see ARM 17.24.501(4). The references have been included as requested.

Exhibits T1 and T2 will need to be revised once the PMT is acceptable. T1 stops at 24% slopes and should include all slopes and all disturbed area. The exhibits also need axis labels and must identify what area the figures are based (just affected area or the entire permit area).

Response: Please see Exhibits T1 and T2.

Pursuant to 313(1)(d)(iv), the topography depicted on Exhibit B must meet the performance standard of grading affected areas to the approximate original contour of the land prior to mining. Regarding this, WECO must address the following two concerns:

The original topography had many more second and third or higher order tributaries than depicted on the proposed PMT map. While narrative in 501(4) attempts to address this issue, ARM 17.24.313(1)(d)(iv) requires “a map showing the postmining topography that the applicant proposes to meet at the time of final bond release.” Additional tributaries must be added to more closely approximate the pre-mine drainage density condition. DEQ suggests the addition of a line designating approximate locations and lengths for these tributaries without contour line alterations. Consultation with the DEQ is recommended because we are not looking for restoration of all lines depicted on pre-mine map, but what meets the definition of approximate original topography.

Drainage Rich 7 must be more incised than depicted to approximate the original topography.

There are several large areas where grading would be delayed because ramp locations do not correlate with the PMT plan. Pursuant to ARM 17.24.601(1), roads (which includes ramps) must "not delay or prevent recontouring and revegetation on immediately adjacent spoils". The location of Ramps SW3-A, SW5, and SW6 must be changed to better match the topography or the PMT must be changed.

Ramps SW5, SW3-A and SW3 are 8,000 feet to over 11,000 feet in length and cross the drainage divide between Armells Creek and Rosebud Creek. The permit contains a commitment to bring all but the last ~3,000 feet of ramps up to reclamation grade. A portion of these ramps may need to be left well below the grade of reclamation until mining is complete. This is allowed under the performance standards of ARM 17.24.601(1) after WECO documents and justifies, and DEQ approves, the need to delay recontouring of "immediately adjacent spoils". The narrative discussion of ramps must document the areas that will not "immediately" be brought up to grade and specify why. Specific reasons would include a discussion about the drainage divide, specific elevations, something about grades and any other supporting information.

[Response: Please see Exhibit B Approximate Postmine Topography with Drainage Basins. The PMT has been revised per requests in this deficiency.](#)

ARM 17.24.313(1)(f)(i): The detailed drainage designs in "Area B AM5 EXHIBIT V1 thru V14 Drainage Design.pdf" meet the requirements of this rule, but are based on a previous version of the postmine topography. Please update these exhibits when all deficiencies regarding the postmine topography have been resolved.

[Response: Please see Exhibit V1 through V14. These exhibits have been updated. Also, Exhibit V1 through V14 were reference in ARM 17.24.313\(1\)\(f\)\(i\).](#)

ARM 17.24.313(1)(f)(ii): WECO made several changes to the postmine drainages to increase diversity in response to the previous comment. Please consider the following additional comments on postmine drainages:

Drainage Rich 64 is significantly shortened in the PMT by making a near-right angle turn at the edge of the pit to join the main channel of Richard Coulee, also at a near right angle. Please extend this drainage further into reclamation to join the main channel of Richard Coulee near drainages Rich 67 or Rich 66.

Drainage Rich 7 in Section 28 follows a straight valley for nearly one mile (between Rich 16 and Rich 22). Please revise the PMT in this area to allow for more sinuosity of this valley.

In "Appendix J – Protection of the Hydrologic Balance.pdf" on the Reclamation -> Plan for the Protection of the Hydrologic Balance page, changes were made to Exhibit J-1 resulting in the following deficiencies:

Exhibits J-1 sheets 1-3 are missing, these exhibits were the premine channel cross sections for East Fork Armells Creek.

Response: Exhibit J-1 sheets 1-3 have been included.

Exhibit J-1 Sheets 4-7 are labeled Exhibits V-4 to V-7, and are plotted in the CAD screen display colors which make it very hard to see some items.

Response: Exhibit J-1 Sheets 4-7 have been updated.

On Exhibit J-1 Sheet 4 (labeled Exhibit V-4), the topography is inaccurate and does not match CAD file. Please correct these issues with Exhibit J-1.

Response: Exhibit J-1 sheet 4 has been updated.

ARM 17.24.313(1)(g)(i): The first paragraph under 17.24.313(1)(g)(i) references Exhibit P and says it is located in the Map Summary section. I was not able to find Exhibit P in either the .dwg files or the .pdf map summary lists.

Response: Please see ARM 17.24.313(1)(g). The reference Exhibit P has been changes to Appendix G, Figure 1 Baseline Soils Map.

In the third sentence of the last paragraph of 17.24.313(1)(g)(I) a reference is in place for ARM 17.24.313(5)(a). This is not an actual rule. Please correct the reference.

Response: Please see ARM 17.24.313(1)(g)(i). The reference to ARM 17.24.313(5)(a) has been revised to ARM 17.24.313(1)(h).

ARM 17.24.313(1)(g)(iii)(A): There needs to be a table or other representation of the salvageable soil volumes available for reclamation. The soil survey represents soil types and acreages; however, there is not a salvage volume represented. There is no new table in soil volumes I or II, or representation under this rule.

Please add the salvageable soil volumes to the soil tracking volume I, the soil survey map soil types table, a table under this rule header, or reference to where this information is located.

Response: Please see 02 Appendix G Soils Resource Report - Volume I. On page 32 the Area B Balance for AM5 as of 07/2018 has been included per this deficiency. Also, the table has been reference in ARM 17.24.313(1)(g)(iii)(A) per request.

ARM 17.24.313(1)(h)(iv): Kentucky bluegrass is an introduced species that has been included in the Lowland seed mixture that was not addressed in the permit material for ARM 17.24.313(1)(h)(iv). Please include Kentucky bluegrass, and any other introduced species from approved seed mixes, in the permit narrative associated with this rule.

Response: Please see ARM 17.24.313.(1)(h)(iv). Introduced species have been included in the narrative.

ARM 17.24.313(1)(h)(viii): This deficiency has not been addressed. This language still directs to ARM 17.24.313(1)(h)(iv) instead of ARM 17.24.313(1)(h)(v) as it is explained in the deficiency response letter. Please update this permit material with the appropriate language.

Response: Please see ARM 17.24.313(1)(h)(viii). The reference has been revised per this request.

ARM 17.24.313(1)(h)(x): This item has not been addressed. ARM 17.24.726(3) was updated in 2014 to read that "Areas [...] must meet or exceed the performance standards in (1) and (2) in any two years after year six of the phase III bond period of responsibility." This does not match with what is currently listed under this rule and must be properly addressed.

Response: Please see ARM 17.24.313(1)(h)(x). The language has been revised to correspond with the rule.

ARM 17.24.314(2)(d): In "Appendix P - Rosebud MQAP.pdf", Appendix P-1, Section 12.2, on page 32, please change "DEQ's Coal Program" to "DEQ's Coal Section".

Response: Please see Appendix P. The requested changes have been made.

ARM 17.24.314(3): Groundwater Models

Because the groundwater models' primary function is to support the PHC, groundwater model attachments should be uploaded on the Reclamation -> Plan for the Protection of the Hydrologic Balance page under "Probable Hydrologic Consequences Attachments."

A complete review of the groundwater models could not be conducted because the MODFLOW files for the following simulations could not be located:

RB-Mine-2016-existing permit 2093.gvw
RB-Mine-2016-existing permit and AM5 2093.gvw
RB-Mine-2016-Steady-State-Final_01-05-2017.gvw

With this submittal WECO included separate copies of the above listed GWV files, but still did not include the MODFLOW files associated with these simulations.

Additionally, in this submittal all MODFLOW input and output files were omitted from "Electronic Deliverables - Appendix I.zip" Please include the MODFLOW files for all model simulations.

The steady state model initial heads are based on a head save file which was also not included:

"D:\Projects\2016-326-Rosebud-Mine-Model\SS-2017-final-heads-Copy.hds"

Response: All MODFLOW input and output files, and groundwater vistas files are supplied with this submittal.

Comments based only on review of the model reports are included below:

Appendix I-A - Rosebud Mine Model Report.pdf

Table GM-1 lists a well called WO-184 tested at AM5, however according to DEQ's records WO-184 is not located in this area. Please correct this table.

Response: The table was corrected.

In Table GM-3, several wells are presented in italics, but no explanation of the significance of this difference is described.

Response: The italics were removed.

On Figure GM-14 page 1 in Layer 3 the blue area representing Lee and Richard Coulee Alluvium is labeled $T = 1,500$, however in the steady state GWV file provided, $T = 7,500$ in this zone.

Response: The figure was corrected.

On Figure GM-14 page 2 in Layer 5 the light blue area is labeled $T = 60$, however in the steady state GWV file provided, $T = 68$ in this zone.

Response: The figure was corrected. The report text associated with this change was corrected as well.

There appears to be a positive skew in the Layer 5 residuals for higher observed values (see Figure GM-12, page 2). Additionally, positive residuals are clustered in the AM5 area in Layer 1 (see Figure GM-13, page 1). Please evaluate if any reasonable changes can be made to provide a more random distribution of residuals.

Response: The calibration effort focused significantly attempting to minimize the residuals for all model layers. In the case of AM5, the sub-McKay was extremely difficult to represent in the calibration process. The best explanation of the skew is associated with the lack of hydraulic communication that occurs because of the presence of low permeability mudstone/claystones between shallower and deeper strata. Hence, because of these challenges, the calibration focused on representing water levels in the Rosebud coal. From that perspective as Table GM-6 demonstrates, the calibration was successful. In general, the ability to represent the water levels in the sub-McKay observation wells has been challenging throughout the mine.

The following deficiencies were identified in "Appendix O - Probable Hydrologic Consequences.pdf":

Citations to rules and statute in Section 1.3 are incorrect. This fifth bullet on Probable Hydrologic Consequences should refer to ARM 17.14.314(3) and 82-4-222, MCA (MSUMRA, not SMCRA governs coal mining in Montana). ARM 17.24.304(e) and (f) cover hydrologic baseline data.

Response: Section 1.3 revised per the comment.

In Section 3.2.4.2.4, on page 25, the third paragraph states "Streams are classified according to flow conditions as perennial, intermittent or ephemeral. Designated beneficial uses and water quality standards are applicable depending on the classification." Stream classifications are defined by ARM 17.30.611(1)(c) and are not dependent on flow conditions. Please change the terms "classified" and "classification" in this paragraph to "characterized" and "characterization."

Response: The text has been revised per the comment.

Section 3.2.4.2.9, on page 33, is titled “Summary of EFAC Flow Classification.” Please change “Classification” to “Characterization.”

[Response: The text has been revised per the comment.](#)

Section 3.2.4.2.10, on page 36, is titled “EFAC Classification Transition.” Please change this to “EFAC Flow Regime Transition.”

[Response: The text has been revised per the comment.](#)

In Section 3.2.4.4.1, on page 41, the first sentence refers to Figure 38 for locations of monitoring wells, however the monitoring wells are displayed on figure 37. Please correct this reference.

[Response: The text has been revised per the comment.](#)

Section 3.2.9 and Section 3.3.8 should be updated when DEQ finalizes the AVF determination for Richard Coulee.

[Response: Comment noted.](#)

There are two Sections 3.3.2.1 and 3.3.2.2 in the document. Please correct these section numbers to eliminate duplication.

[Response: The subsection numbering has been corrected per the comment.](#)

Section 3.3.4.5 does not discuss all of the potential impacts of mining on some wetlands:

Wetland G300 will be physically disturbed by haul road construction (buried by fill). Wetland G012 is located within the disturbance boundary and will likely be disturbed. Please expand the discussion of probable impacts to wetlands to be more descriptive and include all probable impacts of mining, similar to discussions included for wetlands in the Area F PHC. Additionally, WECO should develop a wetlands mitigation plan like that developed for Area F.

[Response: Please see the wetland mitigation plan, Appendix N-1 Fish and Wildlife Report located in the Fish and Wildlife Plan section.](#)

In Section 3.3.5, on page 93, the fifth paragraph states the source of groundwater to the Lee Coulee Reservoir will continue to be undisturbed overburden sandstones after mining. However, the PHC provides no additional evidence supporting this conclusion. While it is true that the strata immediately adjacent the Lee Coulee Reservoir will not be disturbed, AM5 adds a considerable amount of spoil replacing the overburden sandstones upgradient from the reservoir which could influence water quality in the reservoir. Excavations for AM5 mining and Pond Lee-1 both substantially disturb the overburden within approximately 1/2 mile of the reservoir. Please provide more detail on the source area for water in the Lee Coulee Reservoir and a quantitative analysis of how mining and related disturbance will affect water quality in the reservoir.

[Response: Additional narrative and a new attachment has been added to the PHC to provide an](#)

[estimate of the changes to water quality at the Lee Coulee Pond.](#)

Section 4.2.3.5, on pages 120 through 123, contains several references to the October 2012 edition of Circular DEQ-7. Such references are also contained in tables 22, 28, 33, 41, 45, and 46. Circular DEQ-7 was updated in May 2017, please reference the current edition and change the citation in Section 6.0.

[Response: the narrative and tables have been revised per the comment.](#)

In Section 4.2.3.5, on page 122, in the paragraph on arsenic it is unclear where the discussion of WI-153 ends and the discussion of WS-203 begins. Please clarify.

[Response: The narrative was revised per the comment.](#)

Section 4.3.3.1 discusses the Big Sky and “S” wells in the SW ¼ of Section 13 as separate entities. Data from these wells are also displayed separately in Attachment K and Attachment N. It is DEQ’s understanding that BRC1313, BIN1317, and BMC1314 are the same wells as S-24, S-23, and S-22, respectively. If this is the case, please treat these wells as single wells with multiple designations, rather than as separate wells. Please note that MBMG has also collected water quantity and quality data from these wells which may not be included in the Rosebud and Big Sky Mines’ databases.

[Response: Well log data from Big Sky Mine, WECO and GWIC were compared to confirm that the above wells are the same. The wells are now referred to as S-22, S-23 and S-24 with alternate designations BMC1314, BIN1317 and BRC1313, respectively. The narrative, Appendix K and N, as well as Table 43 were revised. Additional water levels \(for the 1990-2015 period\) were obtained from GWIC and entered into the database, as well as field data for 10 samples taken from these wells, and five additional TDS concentrations, which were not previously present in the WECO database.](#)

Section 4.4.2, on page 136, discusses impacts of mining on alluvial groundwater generally, but neither this section or Section 4.4.3 include any discussion of the effects of replacing alluvium with spoil on groundwater flow. Typically, spoil would be expected to have a lower permeability than alluvium. Please discuss the probable impacts on groundwater flow of replacing the alluvium in Lee and Richard Coulees with spoil.

[Response: Additional narrative in a new subsection \(4.4.3\) discussing impacts to the alluvium has been added to the PHC.](#)

Section 4.4.5, on page 140, discusses prediction of spoil water quality for AM5 based on the average overburden TDS. However, overburden TDS within the AM5 area is variable based on location. TDS concentrations in overburden are much lower in the Lee Coulee mine area versus the Richard Coulee mine area. It would be more accurate to derive two separate estimates of spoil water quality for these areas.

[Response: The Section 4.4.5 narrative as well as Table 49 were updated with two separate estimates of spoil water quality.](#)

In Section 4.4.5, on pages 141 through 143, the discussion of migration of spoil water, while now

providing numerical estimates still does not demonstrate the probable outcome of AM5 mining. The geochemical processes postulated by Clark, 1995, were not well supported by the limited field data reported in his study. In fact, the field data collected at the nearby Big Sky Mine showed no changes in TDS as spoil water flowed into the unmined McKay coal. The estimate that postmine TDS at the permit boundary would fall halfway between the predicted spoil TDS and premine overburden/Rosebud coal TDS is not based on any reasonable scientific assumptions or analysis. Please provide an analysis which estimates the postmining changes in TDS at the permit boundary in both the Rosebud coal and the Richard Coulee alluvium as a result of mining in the Richard Coulee mine area.

Response: We interpret the Clark field data results from Big Sky Mine to be generally inconclusive as there were issues with the limited field test as described in the paper. Except for one of the coal wells, a declining trend in TDS with distance is indicated (see Clark Figure 5). We also believe that the assumption that TDS concentrations will attenuate due to hydraulic and geochemical processes as the spoils groundwater seeps through adjoining coal is reasonably supported in the scientific literature. Additional narrative (Section 4.4.6) and an attachment (R) have been included in the PHC to address this comment.

In Table 21 the row "Count" for the Upper Fossil Site is listed under the Peep Site statistics. Please correct this table.

Response: Table 21 has been revised per the comment.

In Table 25 the first row of page 1 (BGDSG, 4/27/98) is repeated on all subsequent pages. Please correct this table.

Response: Table 25 has been revised per the comment.

In Table 41 the first six rows from page 1 (S-24 through WA-218) are repeated on all subsequent pages. Please correct this table.

Response: Table 41 has been revised per the comment.

In Table 48, the final column is titled "Final Rate per." It appears a word is missing, please clarify.

Response: Table 48 has been revised per the comment.

DEQ will evaluate the conclusions of Anticipated Impact and Rationale columns in Table 36 and Table 51, and Comments and Potentially Impacted columns in Table 50 when all other deficiencies which may affect these conclusions are resolved.

Response: The comment is noted.

Figure 45 contains a legacy reference to Figure 13. Please correct this reference to Figure 46.

Response: Figure 45 has been revised per the comment.

Figure 59 has two locations and labels for each AM5 monitored pond. Please remove duplicates.

Response: Figure 59 has been revised per the comment.

In Figure 60 the label for Fossil Fork is in the wrong location. Please correct this figure.

Response: Figure 60 has been revised per the comment.

In Attachment H, Table H-1, the top and bottom of the text for notes 7 is cut off. Additionally notes 10 through 12 are cited in the wrong location in the table. Please correct this table.

In Attachment J, Figure 5A, the graph for WO-180 is blank. Please correct this graph.

Response: The figure has been revised per the comment.

In Attachment K, Figure 5, there is no leader line for the WM-213 graph. Please correct this figure.

Response: The figure has been revised per the comment.

ARM 17.24.314(3)(a): See ARM 17.24.314(3).

Response: Please see WECO's response to ARM 17.24.314(3).

ARM 17.24.314(3)(b): See ARM 17.24.314(3).

Response: Please see WECO's response to ARM 17.24.314(3).

ARM 17.24.314(3)(b)(i): See ARM 17.24.314(3).

Response: Please see WECO's response to ARM 17.24.314(3).

ARM 17.24.314(3)(b)(ii): See ARM 17.24.314(3).

Response: Please see WECO's response to ARM 17.24.314(3).

ARM 17.24.314(3)(b)(iii): See ARM 17.24.314(3).

Response: Please see WECO's response to ARM 17.24.314(3).

ARM 17.24.314(3)(b)(iv): See ARM 17.24.314(3).

Response: Please see WECO's response to ARM 17.24.314(3).

ARM 17.24.314(3)(b)(iv)(A): See ARM 17.24.314(3).

Response: Please see WECO's response to ARM 17.24.314(3).

ARM 17.24.314(3)(b)(iv)(B): See ARM 17.24.314(3).

Response: Please see WECO's response to ARM 17.24.314(3).

ARM 17.24.314(3)(b)(iv)(C): See ARM 17.24.314(3).

Response: Please see WECO's response to ARM 17.24.314(3).

ARM 17.24.314(3)(b)(iv)(D): See ARM 17.24.314(3).

Response: Please see WECO's response to ARM 17.24.314(3).

ARM 17.24.314(3)(b)(iv)(E): See ARM 17.24.314(3).

Response: Please see WECO's response to ARM 17.24.314(3).

ARM 17.24.314(3)(c): See ARM 17.24.314(3).

Response: Please see WECO's response to ARM 17.24.314(3).

ARM 17.24.314(4): See ARM 17.24.314(3).

Response: Please see WECO's response to ARM 17.24.314(3).

ARM 17.24.314(5): DEQ will evaluate if there are cumulative impacts of the Rosebud and Big Sky mines on the Rosebud Creek drainage. To support this evaluation please provide an estimate of the postmine equilibrium spoil water quality and the postmine steady state groundwater flux out of spoil in the Rosebud Creek drainage for Area B, Area E, Area D, and Pit 6. WECO may also provide the same estimates for Big Sky Mine Area A and Area B.

Response: This information will be submitted to DEQ as a separate deliverable.

ARM 17.24.315(1): Pursuant to ARM 17.24.315(1), general plans must be submitted for each water impoundment. A general plan must be submitted if Western Energy is planning for flood control impoundments (ARM 17.24.642) upslope of the mining in Richard Coulee: Rich 56, 57, 58, 59 ~ 700 acres and Rich 64, 69, 70, 71 ~ 600 acres.

Response: Ponds Rich-4, Rich-5, and Rich-6 have been added as flood control impoundments. Exhibit D, Approximate Hydrological Control, has been updated. These ponds are not considered as sedimentation ponds therefore none of the other pond designs changed.

ARM 17.24.315(1)(a)(v): Narrative for this rule or Appendix J must include "a schedule setting forth the dates that any detailed design plans for structures ... will be submitted to the department." If all ponds are fully incised and no embankment or discharge control structures are required, then this should be added to the narrative waiving the requirement for a schedule setting forth submittal dates.

Response: This portion of section 315 has been updated.

ARM 17.24.321(1): The haul road located mostly in mine pass BSX 92 requires relocation

before year 7 when this pass is mined and construction of a new haul road begins. At a minimum, the timing of the next haul road must be discussed and a corridor in which the haul road will be located must be depicted on Exhibit A. The Department would assume the second road would be established in the locality of reclaimed Richard Coulee.

[Response: Please see ARM 17.24.303\(1\)\(s\) Table 303-3. The revised timing table has resolved this issue.](#)

ARM 17.24.321(1)(a): No information regarding this rule was provided for the haul road which runs through Section 13, 24, and 25 leading to the mine area in the Fossil Fork tributary of Lee Coulee. This road will be used to transport coal from a separate mine area for more than six months, thus is a haul road, not a ramp road. See ARM 17.24.301(108). Please provide a design for this haul road similar to the haul road leading to the Richard Coulee mine area.

Road cross sections, Figure 8a through 8e on pages 321-4 through 321-8 in the current permit, are required to address this regulation and must be added to AM5.

[Response: Please see Exhibit A Approximate Mine Plan. The road has been updated.](#)

ARM 17.24.325(2)(b): DEQ has not yet made written findings concerning this rule. Further evaluation of the subsequent rules will be completed after DEQ's determination is complete.

[Response: Noted.](#)

ARM 17.24.325(2)(b)(i): Review contingent on DEQ's determination pursuant to 17.24.325(2)(b).

[Response: Noted.](#)

ARM 17.24.325(2)(b)(ii): Review contingent on DEQ's determination pursuant to 17.24.325(2)(b).

[Response: Noted.](#)

ARM 17.24.325(2)(b)(ii)(A): Review contingent on DEQ's determination pursuant to 17.24.325(2)(b).

[Response: Noted.](#)

ARM 17.24.325(2)(b)(ii)(B): Review contingent on DEQ's determination pursuant to 17.24.325(2)(b).

[Response: Noted.](#)

ARM 17.24.325(2)(b)(ii)(C): Review contingent on DEQ's determination pursuant to 17.24.325(2)(b).

[Response: Noted.](#)

ARM 17.24.325(2)(b)(iii): Review contingent on DEQ's determination pursuant to 17.24.325(2)(b).

Response: Noted.

ARM 17.24.325(2)(c): Review contingent on DEQ's determination pursuant to 17.24.325(2)(b).

Response: Noted.

ARM 17.24.325(3)(a)(i): Review contingent on DEQ's determination pursuant to 17.24.325(2)(b).

Response: Noted.

ARM 17.24.325(3)(a)(ii): Review contingent on DEQ's determination pursuant to 17.24.325(2)(b).

Response: Noted.

ARM 17.24.325(3)(a)(ii)(A): Review contingent on DEQ's determination pursuant to 17.24.325(2)(b).

Response: Noted.

ARM 17.24.325(3)(a)(ii)(B): Review contingent on DEQ's determination pursuant to 17.24.325(2)(b).

Response: Noted.

ARM 17.24.325(3)(a)(ii)(C): Review contingent on DEQ's determination pursuant to 17.24.325(2)(b).

Response: Noted.

ARM 17.24.325(3)(a)(iii): Review contingent on DEQ's determination pursuant to 17.24.325(2)(b).

Response: Noted.

ARM 17.24.325(3)(b): Review contingent on DEQ's determination pursuant to 17.24.325(2)(b).

Response: Noted.

ARM 17.24.325(3)(b)(i): Review contingent on DEQ's determination pursuant to 17.24.325(2)(b).

Response: Noted.

ARM 17.24.325(3)(b)(ii): Review contingent on DEQ's determination pursuant to

17.24.325(2)(b).

Response: Noted.

ARM 17.24.325(3)(c)(i): Review contingent on DEQ's determination pursuant to 17.24.325(2)(b).

Response: Noted.

ARM 17.24.325(3)(c)(ii): Review contingent on DEQ's determination pursuant to 17.24.325(2)(b).

Response: Noted.

ARM 17.24.325(3)(c)(ii)(A): Review contingent on DEQ's determination pursuant to 17.24.325(2)(b).

Response: Noted.

ARM 17.24.325(3)(c)(ii)(B): Review contingent on DEQ's determination pursuant to 17.24.325(2)(b).

Response: Noted.

ARM 17.24.325(3)(c)(ii)(C): Review contingent on DEQ's determination pursuant to 17.24.325(2)(b).

Response: Noted.

ARM 17.24.325(3)(c)(ii)(D): Review contingent on DEQ's determination pursuant to 17.24.325(2)(b).

Response: Noted.

ARM 17.24.325(3)(c)(ii)(E): Review contingent on DEQ's determination pursuant to 17.24.325(2)(b).

Response: Noted.

ARM 17.24.325(3)(d): Review contingent on DEQ's determination pursuant to 17.24.325(2)(b).

Response: Noted.

ARM 17.24.325(3)(d)(i): Review contingent on DEQ's determination pursuant to 17.24.325(2)(b).

Response: Noted.

ARM 17.24.325(3)(d)(ii): Review contingent on DEQ's determination pursuant to

17.24.325(2)(b).

Response: Noted.

ARM 17.24.325(3)(d)(iii): Review contingent on DEQ's determination pursuant to 17.24.325(2)(b).

Response: Noted.

ARM 17.24.325(3)(d)(iv): Review contingent on DEQ's determination pursuant to 17.24.325(2)(b).

Response: Noted.

ARM 17.24.325(3)(d)(v): Review contingent on DEQ's determination pursuant to 17.24.325(2)(b).

Response: Noted.

ARM 17.24.325(3)(d)(vi): Review contingent on DEQ's determination pursuant to 17.24.325(2)(b).

Response: Noted.

ARM 17.24.325(3)(d)(vii): Review contingent on DEQ's determination pursuant to 17.24.325(2)(b).

Response: Noted.

ARM 17.24.325(3)(e): Review contingent on DEQ's determination pursuant to 17.24.325(2)(b).

Response: Noted.

ARM 17.24.325(3)(e)(i): Review contingent on DEQ's determination pursuant to 17.24.325(2)(b).

Response: Noted.

ARM 17.24.325(3)(e)(i)(A): Review contingent on DEQ's determination pursuant to 17.24.325(2)(b).

Response: Noted.

ARM 17.24.325(3)(e)(i)(B): Review contingent on DEQ's determination pursuant to 17.24.325(2)(b).

Response: Noted.

ARM 17.24.325(3)(e)(i)(C): Review contingent on DEQ's determination pursuant to

17.24.325(2)(b).

Response: Noted.

ARM 17.24.325(3)(e)(i)(D): Review contingent on DEQ's determination pursuant to 17.24.325(2)(b).

Response: Noted.

ARM 17.24.325(3)(e)(ii): Review contingent on DEQ's determination pursuant to 17.24.325(2)(b).

Response: Noted.

ARM 17.24.325(3)(e)(ii)(A): Review contingent on DEQ's determination pursuant to 17.24.325(2)(b).

Response: Noted.

ARM 17.24.325(3)(e)(ii)(B): Review contingent on DEQ's determination pursuant to 17.24.325(2)(b).

Response: Noted.

ARM 17.24.325(3)(e)(ii)(C): Review contingent on DEQ's determination pursuant to 17.24.325(2)(b).

Response: Noted.

ARM 17.24.325(3)(e)(iii): Review contingent on DEQ's determination pursuant to 17.24.325(2)(b).

Response: Noted.

ARM 17.24.325(3)(e)(iii)(A): Review contingent on DEQ's determination pursuant to 17.24.325(2)(b).

Response: Noted.

ARM 17.24.325(3)(e)(iii)(B): Review contingent on DEQ's determination pursuant to 17.24.325(2)(b).

Response: Noted.

ARM 17.24.325(3)(e)(iii)(C): Review contingent on DEQ's determination pursuant to 17.24.325(2)(b).

Response: Noted.

ARM 17.24.325(3)(e)(iv): Review contingent on DEQ's determination pursuant to 17.24.325(2)(b).

Response: Noted.

ARM 17.24.325(3)(f)(i): Review contingent on DEQ's determination pursuant to 17.24.325(2)(b).

Response: Noted.

ARM 17.24.325(3)(f)(ii): Review contingent on DEQ's determination pursuant to 17.24.325(2)(b).

Response: Noted.

ARM 17.24.325(3)(f)(ii)(A): Review contingent on DEQ's determination pursuant to 17.24.325(2)(b).

Response: Noted.

ARM 17.24.325(3)(f)(ii)(B): Review contingent on DEQ's determination pursuant to 17.24.325(2)(b).

Response: Noted.

ARM 17.24.501(3)(b): Please include at the bottom of 501 (3) (b); The method and design specifications for placing and compacting such materials must be approved by DEQ.

Response: Please review ARM 17.24.501(3)(b). The rule was updated during the first round of acceptability deficiencies.

ARM 17.24.501(4)(c): WECO made several changes to the PMT to improve slope diversity in response to the previous comment. Please consider the following additional comments on slope diversity:

In the northeast quarter of Section 28 the PMT show a long linear slope both east and west of drainage Rich 65. The premine topography in this area has a concave slope profile, with a steeper upper section and gentler lower section. Please modify the PMT in this are to more closely resemble the premine topography.

Highwall reduction in the center of Section 29 and in the southeast quarter of Section 20 eliminate some premine steep slope areas. Please consider modifying the PMT to minimize the disturbance in these highwall reduction areas and preserve premine steep slopes.

- In Section 29, the PMT adds an upper reach to drainage Rich 7 to the northwest of Rich 24, shifting the drainage divide north towards the Richard Coulee main channel. Please consider reducing the length, and increasing the slope of this reach to place the drainage divide nearer to its premine position. Increasing the elevation of the graded spoils in this area would minimize the need for the adjacent highwall reduction and more closely approximate the premine ridge feature

in this area.

• In Section 20, the design of PMT drainage Rich 52 results in over 80 feet of excavation in the highwall reduction area adjacent to the pit. Please consider replacing PMT drainage Rich 52 with two or three shorter steeper tributaries, more similar to premine drainages Rich 49, Rich 50, and Rich 52. This change would minimize highwall reduction disturbance and preserve the steep slopes in the area. The alignment of the main channel of Richard Coulee could also be shifted slightly south to reduce the need for highwall reduction in this area.

Response: [YOU ARE WELCOME! Please see the updated Exhibit B Approximate Postmine Topography with Drainage Basins.](#)

ARM 17.24.634(1): Deficiencies in drainage basin reclamation have been identified in 17.24.313(e)&(f) and 17.24.501(4).

Response: Please see the deficiencies for [ARM 17.24.313\(e\)&\(f\)](#) and [17.24.501\(4\)](#).

ARM 17.24.634(1)(a): See ARM 17.24.634(1).

Response: Please see the deficiencies for [ARM 17.24.313\(e\)&\(f\)](#) and [17.24.501\(4\)](#).

ARM 17.24.634(1)(b): See ARM 17.24.634(1).

Response: Please see the deficiencies for [ARM 17.24.313\(e\)&\(f\)](#) and [17.24.501\(4\)](#).

ARM 17.24.634(1)(c): See ARM 17.24.634(1).

Response: Please see the deficiencies for [ARM 17.24.313\(e\)&\(f\)](#) and [17.24.501\(4\)](#).

ARM 17.24.634(1)(d): See ARM 17.24.634(1).

Response: Please see the deficiencies for [ARM 17.24.313\(e\)&\(f\)](#) and [17.24.501\(4\)](#).

ARM 17.24.634(1)(e): See ARM 17.24.634(1).

Response: Please see the deficiencies for [ARM 17.24.313\(e\)&\(f\)](#) and [17.24.501\(4\)](#).

ARM 17.24.634(1)(f): See ARM 17.24.634(1).

Response: Please see the deficiencies for [ARM 17.24.313\(e\)&\(f\)](#) and [17.24.501\(4\)](#).

ARM 17.24.634(1)(g): See ARM 17.24.634(1).

Response: Please see the deficiencies for [ARM 17.24.313\(e\)&\(f\)](#) and [17.24.501\(4\)](#).

ARM 17.24.634(1)(h): See ARM 17.24.634(1).

Response: Please see the deficiencies for [ARM 17.24.313\(e\)&\(f\)](#) and [17.24.501\(4\)](#).

ARM 17.24.634(1)(h)(i): See ARM 17.24.634(1).

Response: Please see the deficiencies for ARM 17.24.313(e)&(f) and 17.24.501(4).

ARM 17.24.634(2): See ARM 17.24.634(1).

Response: Please see the deficiencies for ARM 17.24.313(e)&(f) and 17.24.501(4).

ARM 17.24.711(1): The MCA Rule has been repealed. Please correct the permit language to appropriate citation.

Response: Please review ARM 17.24.711(1). The rule was updated during the first round of acceptability deficiencies.

ARM 17.24.801(1): Appendix Q has now been included. Subsequent material is contingent on DEQ's determination pursuant to ARM 17.24.325(2)(b).

Response: Noted.

ARM 17.24.801(2): Appendix Q has now been included. Subsequent material is contingent on DEQ's determination pursuant to ARM 17.24.325(2)(b).

Response: Noted.

ARM 17.24.801(3): Appendix Q has now been included. Subsequent material is contingent on DEQ's determination pursuant to ARM 17.24.325(2)(b).

Response: Noted.

ARM 17.24.802(1)(a): Appendix Q has now been included. Subsequent material is contingent on DEQ's determination pursuant to ARM 17.24.325(2)(b).

Response: Noted.

ARM 17.24.802(1)(a)(i): Appendix Q has now been included. Subsequent material is contingent on DEQ's determination pursuant to ARM 17.24.325(2)(b).

Response: Noted.

ARM 17.24.802(1)(a)(ii): Appendix Q has now been included. Subsequent material is contingent on DEQ's determination pursuant to ARM 17.24.325(2)(b).

Response: Noted.

ARM 17.24.802(1)(b): Appendix Q has now been included. Subsequent material is contingent on DEQ's determination pursuant to ARM 17.24.325(2)(b).

Response: Noted.

ARM 17.24.802(2): Appendix Q has now been included. Subsequent material is contingent on DEQ's determination pursuant to ARM 17.24.325(2)(b).

Response: Noted.

ARM 17.24.802(3): Appendix Q has now been included. Subsequent material is contingent on DEQ's determination pursuant to ARM 17.24.325(2)(b).

Response: Noted.

ARM 17.24.802(3)(a): Appendix Q has now been included. Subsequent material is contingent on DEQ's determination pursuant to ARM 17.24.325(2)(b).

Response: Noted.

ARM 17.24.802(3)(b): Appendix Q has now been included. Subsequent material is contingent on DEQ's determination pursuant to ARM 17.24.325(2)(b).

Response: Noted.

ARM 17.24.804(1): Appendix Q has now been included. Subsequent material is contingent on DEQ's determination pursuant to ARM 17.24.325(2)(b).

Response: Noted.

ARM 17.24.804(1)(a): Appendix Q has now been included. Subsequent material is contingent on DEQ's determination pursuant to ARM 17.24.325(2)(b).

Response: Noted.

ARM 17.24.804(1)(b): Appendix Q has now been included. Subsequent material is contingent on DEQ's determination pursuant to ARM 17.24.325(2)(b).

Response: Noted.

ARM 17.24.804(1)(c): Appendix Q has now been included. Subsequent material is contingent on DEQ's determination pursuant to ARM 17.24.325(2)(b).

Response: Noted.

ARM 17.24.804(1)(d): Appendix Q has now been included. Subsequent material is contingent on DEQ's determination pursuant to ARM 17.24.325(2)(b).

Response: Noted.

ARM 17.24.804(1)(e): Appendix Q has now been included. Subsequent material is contingent on DEQ's determination pursuant to ARM 17.24.325(2)(b).

Response: Noted.

ARM 17.24.804(1)(f): Appendix Q has now been included. Subsequent material is contingent on DEQ's determination pursuant to ARM 17.24.325(2)(b).

Response: Noted.

ARM 17.24.804(2): Appendix Q has now been included. Subsequent material is contingent on DEQ's determination pursuant to ARM 17.24.325(2)(b).

Response: Noted.

ARM 17.24.804(3): Appendix Q has now been included. Subsequent material is contingent on DEQ's determination pursuant to ARM 17.24.325(2)(b).

Response: Noted.

ARM 17.24.804(4): Appendix Q has now been included. Subsequent material is contingent on DEQ's determination pursuant to ARM 17.24.325(2)(b).

Response: Noted.

ARM 17.24.805(1): Appendix Q has now been included. Subsequent material is contingent on DEQ's determination pursuant to ARM 17.24.325(2)(b).

Response: Noted.

ARM 17.24.806(1): Appendix Q has now been included. Subsequent material is contingent on DEQ's determination pursuant to ARM 17.24.325(2)(b).

Response: Noted.

ARM 17.24.806(2): Appendix Q has now been included. Subsequent material is contingent on DEQ's determination pursuant to ARM 17.24.325(2)(b).

Response: Noted.

ARM 17.24.806(3): Appendix Q has now been included. Subsequent material is contingent on DEQ's determination pursuant to ARM 17.24.325(2)(b).

Response: Noted.

ARM 17.24.806(4): Appendix Q has now been included. Subsequent material is contingent on DEQ's determination pursuant to ARM 17.24.325(2)(b).

Response: Noted.

ARM 17.24.806(5): Appendix Q has now been included. Subsequent material is contingent on DEQ's determination pursuant to ARM 17.24.325(2)(b).

Response: Noted.

If you have any questions please feel free to contact me at (406) 748-5124.

Sincerely,

Sincerely,

A handwritten signature in blue ink that reads "Dicki Peterson". The signature is written in a cursive, flowing style.

Dicki Peterson
Permit Coordinator
Western Energy Company
Rosebud Mine – Area B
Phone:(406) 748-5124
Fax: (406) 748-5202
Email: dpeterson@westmoreland.com

Gilbert, Sharona

From: Peterson, Dicki L. <dpeterson@westmoreland.com>
Sent: Monday, July 30, 2018 3:10 PM
To: DEQ AEMD Coal
Subject: C1984003B AM5 Acceptability Deficiency Response #2
Attachments: C1984003B AM5 Acceptability Deficiency Response #2 2018-07.pdf

Good Afternoon –

The deficiency response was submitted today.

Please let me know if you have any questions,

Dicki Peterson

Permit Coordinator

WESTERN ENERGY COMPANY - *Rosebud Mine*

A Subsidiary of WESTMORELAND COAL COMPANY

PO Box 99

Colstrip, MT 59323

dpeterson@westmoreland.com

Phone: (406)748-5124

