

John F. North  
Rebecca A. Convery  
Montana Dept. of Environmental Quality  
1520 East 6<sup>th</sup> Ave.  
Helena, Montana 59601-0901  
(406) 444-2018  
(406) 444-6347  
[jnorth@mt.gov](mailto:jnorth@mt.gov)  
[rconvery@mt.gov](mailto:rconvery@mt.gov)

*Attorneys for Respondent  
Montana Dept. of Env. Quality*

Filed with the  
MONTANA BOARD OF  
ENVIRONMENTAL REVIEW  
This 9 day of November, 2016  
at 1:13 o'clock P.m.  
By: Hillary Howe

**BEFORE THE BOARD OF ENVIRONMENTAL  
REVIEW OF THE STATE OF MONTANA**

**IN THE MATTER OF:  
APPEAL AMENDMENT AM4,  
WESTERN ENERGY COMPANY,  
ROSEBUD STRIP MINE AREA B  
PERMIT NO. C198400B**

**CASE NO. BER 2016-03 SM**

**Respondent's Supplemental  
Statement of Disputed Facts**

Pursuant to the Board's request during the meeting held on September 30, 2016, and the Hearing Examiner's subsequent emails dated October 4 and October 6, 2016, Respondent, the Montana Department of Environmental Quality (Department), respectfully submits this *Supplemental Statement of Disputed Facts*. The Department previously filed a *Statement of Disputed Facts* as Appendix A to *Respondent's Brief in Opposition to Petitioners' Motion For Summary Judgment (Brief in Opposition)* which

provided pinpoint citations to the specific pleadings and exhibits relied on. Accordingly, the Department incorporates its previous *Statement of Disputed Facts (Appendix A)* herein by reference and supplements that statement with this *Supplemental Statement of Disputed Facts*.

It should be noted that Petitioners failed to file a statement of undisputed facts in support of *Petitioners' Brief in Support of Motion for Summary Judgment* or in support of *Petitioners' Reply in Support of Motion for Summary Judgment*, in spite of the fact that the Department pointed this short-coming out in their *Brief in Opposition*. Petitioners' failure to file a statement of undisputed facts with their original briefs has prejudiced the Department by requiring them to file their *Brief in Opposition* and original *Statement of Disputed Facts* without actually knowing which undisputed and material facts Petitioners were relying on in support of their *Motion for Summary Judgment*.

Accordingly, the Department hereby reserves any objections it may have to Petitioners' failure to file their statement of undisputed facts within the time allowed for filing their opening and reply briefs. The Department further reserves any objections it may have to Petitioners being requested by the Board and Hearing Examiner to file a separate *Statement of Undisputed Facts*, and the Department being requested to file a response in the form of

this *Supplemental Statement of Disputed Facts* after this matter was fully submitted on briefs to the Board.

Without waving its objections, the Department replies to Petitioners' *Statement of Undisputed Facts* as follows<sup>1</sup>:

## **I. Introduction**

The Department relies on the following additional facts as material to its defense in this matter:

1. The Montana Strip and Underground Mine Reclamation Act (MSUMRA) explicitly authorizes strip and underground coal mining operations within the state in accordance with its provisions and requirements. DEQ is responsible for ensuring that surface and underground coal mines in Montana operate in accordance with the requirements of MSUMRA, and that reclamation of all lands disturbed by mining are properly reclaimed in accordance with the law. No person may engage in strip or underground mining operations in Montana without first obtaining a permit from DEQ. Sections 82-4-202; 82-4-221, MCA; DEQ Ex. B, ¶ 5.

2. Western Energy's (WECO's) application for the AM4 Amendment of the Area B Permit for the Rosebud Mine (AM4) was submitted to the Department on June 15, 2009, and was determined by the Department to

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<sup>1</sup> Petitioners' undisputed facts are set forth in black ink, while the Department's additional and disputed facts are set forth in blue ink to make it easier for the Board and Hearing Examiner to distinguish between the two.

be administratively complete on August 7, 2009. Pet'rs' Ex. 1, pp. 2-5; DEQ Ex. B, ¶¶ 10-11.

3. Over the course of the next six years, the Department sent eight deficiency notices to WECO requesting additional technical information and data on the application. Pet'rs' Ex. 1, pp. 2-5; DEQ Ex. B, ¶ 12.

4. On July 8, 2015, the Department notified WECO that the AM4 application was acceptable and met all of the legal requirements for the Department to make a decision whether to grant or deny the permit application. Pet'rs' Ex. 1, pp. 2-5; DEQ Ex. B, ¶ 12.]

5. On December 4, 2015, the Montana Department of Environmental Quality (Department) approved the AM4 Amendment of the Area B Permit for the Rosebud Mine. Pet'rs' Ex. 1 at 7. [Undisputed]

6. The AM4 Amendment of the Area B Permit increased the Area B permit area by 49 acres, Area B surface disturbance by 146 acres, mineable coal reserves by 12 million tons, and removal of the coal aquifer by 306 acres. Pet'rs' Ex. 1 at 1. [Undisputed]

7. With the AM4 Amendment, the "total proposed permit area" for Area B operation is "6,231 acres." Pet'rs' Ex. 1 at 2. [Undisputed. The Department relies on the following additional facts as material to its defense in this matter:

8. In accordance with the provisions of the law, reclamation operations at the Rosebud Mine and Big Sky Mine have taken place in accordance with the reclamation plans approved by the Department. Reclamation has been ongoing at the mine for decades. Pet'rs' Ex. 2, p. 9-18. See also CHIA Figure 1-1 (Colstrip Area Mines), which incorporated herein by reference and attached as DEQ Ex. S.

9. The proposed operation of AM4 will cut into small tributaries of East Fork Armells Creek (EFAC). "These tributaries have already been partially mined through, and many of the lower reaches of the tributary drainages have already been reclaimed." To date 1,145 acres of the 4,300 acres disturbed in Area B of the Rosebud Mine have been fully reclaimed (backfilled, graded, and re-seeded). Photographs of reclaimed portions of the Rosebud Mine and Big Sky Mine are attached hereto and incorporated herein by reference as DEQ Ex. F. A map depicting the mine cuts (CHIA Figure 3-1) is attached hereto and incorporated herein as DEQ Ex. Q. Pet'rs' Ex. 2, p. 9-18.

10. In approving the application, the Department determined that "this amendment will not result in material damage to the hydrologic balance outside the permit area." Pet'rs' Ex. 1 at 6. The determination was based on the Department's cumulative hydrologic impact assessment. Pet'rs' Ex. 1 at 6

(citing Pet'rs' Ex. 2). [Undisputed. The Department relies on the following additional facts as material to its defense in this matter:

11. In accordance with § 82-4-227(3), MCA, and ARM 17.24.405(6), the Department's cumulative hydrologic impact assessment (CHIA) was based upon the information contained in the permit application, and any other relevant information compiled by the Department, which is referenced in the CHIA. Section 82-4-227(3), MCA; ARM 17.24.405(6); Pet'rs' Ex. 2, pp. 11-1 through 11-4.

12. Impacts from sources other than coal mining, such as agriculture, the Colstrip power plant, and the town of Colstrip, are not considered in the CHIA. Section 82-4-227(3), MCA; Pet'rs' Ex. 2, p. 5-1.

13. The criteria used by the Department to determine whether the proposed operation of AM4 will result in material damage outside the permit area is set forth clearly within the CHIA. Pet'rs' Ex. 2, pp. 2-2 through 2-7.

14. In making its material damage assessment, the Department considered applicable numeric and narrative water quality standards, and criteria established to protect existing beneficial uses of water. Narrative standards are established to protect beneficial uses from adverse effects, supplementing existing numeric standards. Pet'rs' Ex. 2, p. 2-2.

15. Baseline water quantity and quality data was compared by the

Department against changes or anticipated changes in quantity and quality associated with all previous and existing operations at the Rosebud Mine and Big Sky Mine to determine if uses have been impacted or water quality standards have been exceeded outside the permit area. Pet'rs' Ex. 2, p. 2-2.

16. Ephemeral streams<sup>2</sup>, which flow only in direct response to precipitation in the immediate watershed or in response to the melting of a cover of snow and ice, and which has a channel bottom that is always above the local water table, are not subject to the specific water quality standards found in *Department Circular DEQ-7, Montana Numeric Water Quality Standards (DEQ-7)*, which is attached hereto and incorporated herein by reference as DEQ Ex. G. Pet'rs' Ex. 2, p. 2-3; ARM 17.30.637(4).

17. Ephemeral streams are not subject to the specific water quality standards found in *Department Circular DEQ-12A, Montana Numeric Nutrient Standards (DEQ-12A)*, which is attached hereto and incorporated herein by reference as DEQ Ex. H. DEQ-12A was adopted by the Board in August, 2014.

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<sup>2</sup> Petitioners request that the Board take judicial notice pursuant to Rule 201, M.R.Evid. of a recent opinion issued by Judge Kathy Seeley of the First Judicial District Court, Lewis and Clark County. In that opinion, the Court indicated that surface waters that are classified as C-3 waters under Montana's water use classification system may not be treated as ephemeral streams under ARM 17.30.637(4) for purposes of determining the applicable water quality standards, without complying with the procedures set forth in ARM 17.30.615(2) for reclassifying a specific water body in Montana. *Mont. Env'tl. Info. Ctr. v. Mont. Dept. of Env'tl. Quality*, Cause No. CDV-2-12-1075, (March 4, 2016). However, the judgment has not yet been entered in the Judge Seeley case, and the decision has been appealed. As indicated in Pet'rs' Br. at page 56, all surface waters located in the CIA for AM4 are classified as C-3 waters under Montana's surface water classification system. However, DEQ is not relying on ARM 17.30.637(4) in this case. That rule provides that the provisions of ARM 17.30.629 do not apply to ephemeral streams. DEQ is relying on ARM 17.30.629 and Department Circular DEQ12-A, which provide that the numeric nutrient limits apply only to intermittent and perennial streams.

These standards only apply to “**wadeable**” streams, which are defined as perennial or intermittent streams in which most of the wetted channel is safely wadeable by a person during baseflow conditions. Pet’rs’ Ex. 2, p. 2-3; DEQ Ex. H, p. 2.]

18. On January 4, 2016, Petitioners filed a written request for administrative review of the Department’s approval of the AM4 Amendment of the Area B Permit. [Undisputed]

## II. Hydrologic Setting

19. In 2006, the Department’s Water Protection Bureau determined the upper and lower reaches of East Fork Armells Creek are impaired and not meeting applicable water quality standards for supporting aquatic life. Pet’rs’ Ex. 6 at 10-11; Pet’rs’ Ex. 7 at 17-19; DEQ Ex. E, ¶¶ 17, 24. [Undisputed. The Department relies on the following additional facts as material to its defense in this matter:

20. The 2006 *Water Quality Attainment Record* developed by the Department’s Water Quality Bureau for upper East Fork Armells Creek (EFAC), which is the segment most impacted by coal mining, identified the stream as “**ephemeral.**” Pet’rs’ Ex. 6, pp. 12-13 (emphasis added).]

21. The Water Protection Bureau’s determination was made pursuant to the Department’s established protocols for assessing

compliance with water quality standards<sup>3</sup>. Pet'rs' Ex. 6; Pet'rs' Ex. 7; DEQ Ex. E, ¶¶ 7, 15, 17, 23. [Without waving its objections, the Department responds as follows: Disputed on the following grounds:

22. At the time the Water Quality Bureau completed the 2006 impairment determination for EFAC, the established protocols for assessing compliance with water quality standards were contained in the *Standard Operating Procedure Water Quality Assessment Process and Methods Appendix A to 303(d) (2000-2004)*, attached hereto and incorporated herein by reference as DEQ Ex. I.

23. In making impairment determinations, Montana law, and the procedures contained in the Department's 2000-2004 *Water Quality Assessment Process*, required the Water Quality Bureau to use sufficient credible data (SCD), which means "chemical, physical, or biological monitoring data, alone or in combination with narrative information, that supports a finding as to whether a water body is achieving compliance with applicable water quality standards." DEQ Ex. I, p. 7, 12; Section 75-5-103(35), MCA.

24. Therefore, pursuant to the 2000-2004 *Water Quality*

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<sup>3</sup> Petitioners did not raise this factual allegation in the factual statement contained in *Petitioners' Brief in Support of Motion for Summary Judgment* (See Pet'rs' Br. pp. 28-30). Accordingly, the Department did not have the opportunity to respond to this factual allegation in *Respondent's Brief in Opposition to Petitioners' Motion for Summary Judgment* or to refute the allegation with evidence to the contrary. The Department has attached additional exhibits necessary to refute this allegation.

*Assessment Process*, the Department was required to consider data from the following three categories of information in making an impairment determination for aquatic life support: 1) physical/habitat, 2) biology, and 3) chemistry/toxicity. Additionally, Water Quality Bureau Staff were required to rate the reliability and sufficiency of the data by scoring the data based on the following factors: 1) technical soundness, 2) spatial/temporal coverage, 3) quality, and 4) currency. DEQ Ex. I, p. 12, Tables 1-3; DEQ Ex. E, ¶ 28.

25. However, pursuant to the 2000-2004 *Water Quality Assessment Process*, it was acceptable practice for the Department's Water Quality Bureau staff to rely solely on physical/habitat data with a minimum SCD score of 3<sup>4</sup> to assess the health of an "ephemeral" stream, even though it was also recommended that chemistry/toxicity or biological data be collected when it was practical and appropriate for evaluating aquatic life use support of an "ephemeral" stream. DEQ Ex. I, p. 13; DEQ Ex. E, ¶ 24.

26. The 2006 Attainment Record for upper EFAC identified the stream as "**ephemeral**." Therefore, the Department only considered physical habitat data in making its impairment determination with respect

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<sup>4</sup> To achieve an SCD score of 3, physical/habitat data had to meet the requirements set forth in Table 3. Visual observation of habitat characteristics has an SCD score of 1 not 3. Therefore it does not appear that the physical/habitat data relied on by the Department met the minimum criteria for a finding of impairment of an ephemeral stream based on consideration of physical habitat alone.

to aquatic life support. The Water Quality Bureau identified coal mining as an “unconfirmed source” of streamside alteration in vegetative cover, which was listed as a “cause” of impairment of aquatic life in upper EFAC. Pet’rs’ Ex. 6, p. 12 (emphasis added); DEQ Ex. E, ¶¶ 23-24.

27. However, the assessment was based solely on a personal conversation that Water Quality Bureau staff had with a mine employee, who indicated that the mine had cut through the stream channel in upper EFAC. This information could not be verified through site visits or aerial photographs. DEQ Ex. E, ¶ 25.

28. As indicated in DEQ’s discovery responses, the mine did not cut through the stream channel in upper EFAC. Therefore, the data on which Water Quality Bureau staff relied in making this determination was incorrect. Pet’rs’ Ex. 6, p. 12; Pet’rs’ Ex. 16, p. 13.

29. The Water Quality Bureau did not conduct an aquatic life survey on EFAC in 2005-2006 because the stream was “ephemeral”. Therefore, no water samples or aquatic life samples could be collected at that time. Only habitat could be analyzed as a result. Accordingly, the Water Quality Bureau was not able to follow all of the established protocols for assessing compliance with water quality standards in making its “impairment” determination with respect to upper EFAC. Pet’rs’ Ex. 16,

p. 13; DEQ Ex. E, ¶ 27; DEQ Ex. I, p. 13, Table 3.

30. Additionally, the methodology used by DEQ in 2006 to make Water Quality Attainment determinations is outdated and has since been replaced by a new methodology which requires higher data quality and quantity. The new methodology, *Water Quality Assessment Method*, dated November 28, 2011, is attached hereto and incorporated herein by reference as DEQ Ex. J.

31. The Water Quality Bureau recently updated the 2006 Attainment Record for upper EFAC in response to public comments received on the *Montana Draft 2016 Water Quality Integrated Report*, and has **removed coal mining as a potential source of impairment for upper EFAC**. A copy of the updated 2006 *Attainment Record* for upper EFAC (2016 Reporting Cycle) is attached hereto and incorporated herein by reference as DEQ Ex. K. A copy of the *Montana 2016 Water Quality Integrated Report*, which includes the Department's response to public comments, is attached hereto and incorporated herein by reference as DEQ Ex. L. DEQ Ex. K, p. 13; DEQ Ex. L, p. 63.

32. The updated Attainment Record for upper EFAC (2016 Reporting Cycle) indicates that the **stream is ephemeral**, except the lower reach, where water begins to gather and flow at or near the Hwy 39 bridge,

approximately ½ mile above the town of Colstrip. DEQ Ex. K, p. 4  
(emphasis added).]

33. The Water Protection Bureau identified coal mining as a potential source of the pollution causing the creek to fail to meet water quality standards. Pet'rs' Ex. 6 at 12; Pet'rs' Ex. 7 at 19; DEQ Ex. E, ¶¶ 18, 25. [Disputed on the following grounds:

34. The Department has never made a determination that the upper segment of EFAC (MT42K002\_170) is impaired due to "pollution" from coal mining. The 2006 Attainment Record indicated that this segment of the stream was impaired for the beneficial use of aquatic life support; that the cause of the impairment was an alteration in stream-side or littoral vegetative cover; and that coal mining was the unconfirmed or potential source of the alteration in vegetative cover. Pet'rs' Ex. 6, p. 12.

35. The Water Quality Bureau recently updated the 2006 Attainment Record for upper EFAC for the 2016 Reporting Cycle, and has **removed coal mining as a potential source of impairment for upper EFAC.** See ¶ 31, *supra*.

36. With respect to lower EFAC (MT42K002\_110), the 2006 Attainment Record indicated that this segment of the stream was impaired for the beneficial use of aquatic life support; that the cause of the

impairment was Specific Conductance (SC), Total Dissolved Solids (TDS), Nitrate/Nitrite, and Total Nitrogen; that agriculture was the unconfirmed or potential source of the Nitrate/Nitrite and Total Nitrogen, and coal mining, along with transfer of water from an outside watershed, was an unconfirmed or potential source of the SC and TDS that was causing the impairment. Pet'rs' Ex. 7, p. 19.

37. The 2006 Attainment Record did not identify coal mining as a source of Nitrate/Nitrite or Total Nitrogen in lower EFAC. Pet'rs' Ex. 7, p. 19.

38. The 2006 Attainment Record for lower EFAC does not identify chlorides as a cause of impairment of this segment of the stream. **The only pollutants that were identified in relation to coal mining were SC and TDS.** Pet'rs' Ex. 7, p. 20; DEQ Ex. E, ¶¶ 19-22 (emphasis added).

39. Pursuant to the assessment methodology used by the Water Quality Bureau in developing the 2006 Attainment Record, once it was determined from the available water quality data that a stream was impaired due to particular pollutants, all potential sources of the pollutants located in the watershed were identified. DEQ Ex. E, ¶ 8.

40. However, the sources of the pollutants were not "confirmed". In other words, the term "unconfirmed source" as used in the 2006

Attainment Records, means “potential source”. It does not mean that unconfirmed source is an “actual source” of the identified pollutant. DEQ Ex. E, ¶ 9.

41. The Water Quality Bureau uses the information contained in the Attainment Records to identify streams that require a Total Maximum Daily Load (TMDL) to be developed. TMDL’s are developed by DEQ for streams that are identified as “impaired” for a particular designated use and a particular pollutant. DEQ Ex. E, ¶ 12.

42. When a TMDL is developed for a particular stream, the Department identifies the actual pollutants that are causing the impairment and the actual sources of the pollutants. If multiple sources of a particular pollutant are identified, the Department also identifies the relative contribution of each source for a particular pollutant. A TMDL has not yet been developed for the lower segment of EFAC. Therefore, the Department has not yet confirmed the pollutants and sources that are causing impairment of lower EFAC. DEQ Ex. E, ¶¶ 12-14.

43. The Department has not yet developed a TMDL for lower EFAC. Therefore, the Department’s Water Quality Bureau has not confirmed whether coal mining is the actual source of SC or TDS that may be causing the impairment of lower EFAC. DEQ Ex. E, ¶¶ 10-11, 12-14,

18; Pet'rs' Ex. 5, pp. 15-16.

44. In response to public comments received on its written findings for the AM4 CHIA, the Department indicated that there are many sources of the nitrogen-rich effluent that enters lower EFAC, including runoff from the town of Colstrip, the water treatment plant, golf courses, agriculture and grazing. Pet'rs' Ex. 1, p. 9.

45. The Department also indicated that in developing the AM4 CHIA, it had evaluated the relative contribution of the mine to nitrogen in lower EFAC by "examining water quality analyses from surface water and alluvial groundwater", and found that exceedances of water quality samples for nitrate-nitrite nitrogen were uncommon; therefore, the mine was not a likely source of the nitrogen that was causing impairment of lower EFAC. Pet'rs' Ex. 1, p. 9; Pet'rs' Ex. 2, pp. 9-26, 9-27, 9-78, 9-79, Table 9-7, Table 9-8. Table 9-7 is attached hereto and incorporated herein as DEQ Ex. M.

46. Based on its analysis of all of the available water quality data from the mine, the Department also concluded that the proposed operation of AM4 would not result in a violation of applicable water quality standards for nitrogen outside the permit boundary because the additional mine cuts would occur over 6,000 feet from EFAC, and this distance would

be sufficient to prevent high concentrations of nitrate from blasting from entering the stream. Pet'rs' Ex. 2, p. 9-26.]

47. In official biennial reports to the U.S. Environmental Protection Agency since 2006, the Department reaffirmed its determination that the two segments of East Fork Armells Creek are not meeting water quality standards. Pet'rs Ex. 6 at 8-9; Pet'rs' Ex. 7 at 15-16. [Disputed on the following grounds:

48. The Department does not dispute that it reaffirmed its impairment determination with respect to EFAC in its official biennial reports to the U.S. EPA through 2014. However, the assessments upon which the biennial reports were based were conducted in 2006, and no substantive updates have been conducted since these initial assessments even though they are republished every two years in the Department's biennial *Water Quality Integrated Report*. Accordingly, the assessment data for EFAC was eight years old at the time that the Department submitted its 2014 report to the U.S. Environmental Protection Agency. Pet'rs' Ex. 1, p. 8; DEQ Ex. E, ¶ 16.

49. In response to public comments received on the *Montana Draft 2016 Water Quality Integrated Report* concerning the Attainment Record for upper EFAC (MT42K002\_170), Water Quality Bureau staff re-

evaluated the 2006 Water Quality Attainment Record impairment determination for upper EFAC, which was based upon unsubstantiated information that the mine had cut through the stream channel, and removed coal mining as a potential source of impairment for upper EFAC. See ¶ 31, *supra*.]

**18. The Department Failed Lawfully to Assess Compliance with Water Quality Standards for Aquatic Life.**

50. In addition to the Water Protection Bureau's determination that East Fork Armells Creek was not meeting water quality standards for aquatic life, Department Coal Program staff believed material damage was occurring in intermittent reaches of the creek due to increased concentrations of sulfate, chloride, and salinity. DEQ Ex. C, ¶¶ 45, 53; Pet'rs' Ex. 5 at 27; Pet'rs' Ex. 9 at 3. [Disputed based on the following grounds:

51. In its Seventh Round Acceptability Deficiency letter dated June 3, 2014, the Department requested that the mine provide additional information, including an aquatic life survey, to address concerns raised by staff regarding the potential for material damage to EFAC from sulfate, chloride, or salinity from the mine. DEQ Ex. C, ¶ 45; WECO Ex. 7, ¶ 5.

52. Department hydrologists had observed an increase in electrical

conductivity (EC), sulfates and chlorides in this segment of EFAC, but were not able to confirm the source. Mining operations in Area A were identified as a potential source of chlorides due to the use of magnesium chloride for salting access roads located within and adjacent to the mine plan area. However, the State of Montana and Rosebud County also used magnesium chloride on state and county roads located within the mine plan area. DEQ Ex. C, ¶ 53.

53. The Department also wanted the mine to collect additional data that could be used to get cursory qualitative measurements of aquatic life use in EFAC. However, the data collected by the mine could not be used to conduct a quantitative analysis, because the methods used to sample and classify the aquatic life data available to the Department from the 1970s were different than those used today. Therefore, there could be no direct numeric comparison between the data collected in the 1970s and that collected by the mine in 2014. DEQ Ex. C, ¶ 54.

54. In October 2014, the mine hired a consultant to conduct an aquatic life survey with the objective of evaluating aquatic life support in upper EFAC. The results of this survey show that the aquatic environments in upper EFAC support a diverse assemblage of aquatic insects, and consist of taxa commonly found in eastern Montana prairie streams. DEQ Ex. C, ¶

56; Pet'rs' Ex. 10, p. 12.

55. The Department concluded that the recent aquatic survey provides qualitative evidence that streams impacted by mining can still support a diverse macroinvertebrate assemblage. DEQ Ex. C, ¶ 57.

56. Additionally, one of the mine's other consultants, William M. Schafer, PhD, evaluated whether using calcium lignin sulfonate as an alternative to magnesium chloride for dust suppression on roads at the mine would cause an increase in levels of sulfonate in EFAC. Dr. Schafer "concluded, based on the solubility of calcium lignin sulfonate and its likelihood to degrade, that it would not have a measurable effect on [EFAC]." After reviewing the additional data from the mine, the Department determined that no material damage was anticipated to EFAC as a result of increased levels of sulfates, salinity or chlorides from mining. WECO Ex. 7, ¶ 5; DEQ Ex. C, ¶ 46.

57. However, the mine is required as a condition of its permit to conduct additional aquatic life surveys to monitor aquatic life support in upper EFAC for the life of mine. Pet'rs' Ex. 1, pp. 8-9.]

58. Concentrations of sulfate and chloride in the creek exceeded toxicity thresholds for aquatic life. DEQ Ex. C, ¶ 47; Pet'rs' Ex. 2 at 2-4, 9-8, 9-68, fig. 9-93. [Disputed on the following grounds:

59. The Department does not have numeric water quality standards for chloride or sulfates. However, the Department applies guideline toxicity thresholds to assess the suitability of pre- and post-mine water quality samples to support beneficial uses such as livestock watering and aquatic life support. These limits are not enforceable water quality standards. Pet'rs' Ex. 2, p. 2-4, Tables 2-2 and 2-3. Table 2-2 is attached hereto and incorporated herein by reference as DEQ Ex. N.

60. In analyzing the suitability of surface water quality samples for aquatic life support, the Department applied the guideline sulfate toxicity threshold of 2,000 mg/L in most cases to account for the very high hardness of stream water in EFAC. It is common for water quality in the area to naturally exceed these water quality guidelines. Pet'rs' Ex. 2, p. 2-4; DEQ Ex. N; DEQ Ex. C, ¶ 47; Pet'rs' Ex. 2, p. 9-8.

61. However, macroinvertebrate communities in Eastern Montana are adapted to high sulfate water. Therefore, based on review of the available data, the Department concluded that the proposed operation of the mine would not cause any adverse impacts to aquatic life in EFAC as a result of increased levels of sulfates. DEQ Ex. C, ¶ 47; Pet'rs' Ex. 2, p. 9-8.

62. In analyzing the suitability of surface water quality samples for aquatic life support, the Department applied a chronic aquatic life limit

of 230 mg/L for chloride. The Department has observed high chloride concentrations in recent water quality samples taken between Area A and Area B of the mine near the town of Colstrip. The Department has attributed these high chloride concentrations to a combination of pond seepage from the Colstrip power plant and chlorides from facility operations at the mine in Area A. DEQ Ex. C, ¶ 48-49; Pet'rs' Ex. 2, p. 9-8.

63. Nevertheless, the Department determined that the proposed operation of AM4 would not contribute any additional chloride to EFAC because lignim sulfonate would be used on the roads for dust suppression instead of magnesium chloride. Therefore, the proposed operation of AM4 is designed to prevent material damage to lower EFAC from the addition of chlorides. Pet'rs' Ex. 2, p. 9-8; WECO Ex. 7, ¶ 5.]

64. In approving the AM4 Amendment to the Area B Permit, the Department disregarded the Water Protection Bureau's determinations that both reaches of East Fork Armells Creek fail to meet water quality standards for aquatic life. Pet'rs' Ex. 1 at 8-9 ("The recent aquatic survey provides empirical evidence that Aquatic Life support is not adversely impacted by mining activity."); *accord* Pet'rs' Ex. 2 at 9-8. The Department also disregarded the concerns of Coal Program staff about material damage due to increased sulfate, chloride, and salinity. Pet'rs' Ex.

2 at 9-8. [Disputed on the following grounds:

65. In 2016, the Department determined that it had incorrectly concluded in 2006 that the upper segment of EFAC (MT42K002\_170) was impaired for aquatic life support due to alterations in streamside vegetative cover due to coal mining. The Department has **removed coal mining as a source of the impairment of upper EFAC**. See ¶¶ 31, 35, *supra*.

66. Any concerns that the Department had regarding the likelihood that the proposed operation of AM4 would result in material damage to EFAC due to increased sulfate, chloride and salinity were adequately addressed by the applicant prior to the Department issuing its Written Findings in this matter. See ¶¶ 51-57, *supra*.]

67. The Department disregarded its prior determinations and concerns on the basis of an aquatic life survey conducted by consultants for Western Energy Company (WECO) in 2014. Pet'rs' Ex. 1 at 8-9; Pet'rs' Ex. 2 at 9-8. [Disputed on the following grounds:

68. In preparing the AM4 CHIA, DEQ reviewed all of the available aquatic life data for upper EFAC, including aquatic life surveys conducted in the 1970s and a 1995 wetland assessment conducted on two reaches of upper EFAC that had been previously sampled in the 1970s. Pet'rs' Ex. 2, p. 9-7 through 9-8.

69. However, these surveys were older and although they indicated that there was sufficient water at the two sampling sites to support a number of aquatic species, they could not be used to assess the quality of habitat or water in the stream reach. DEQ Ex. C, ¶ 51.

70. Likewise, during the public comment period, the Department indicated that the 2014 *Attainment Record* for upper EFAC was not reliable because it was based upon data from 2006, and the conclusion that aquatic life was impaired in 2006 was based upon evidence of habitat impairment that was incorrect. Additionally, the Water Quality Bureau did not conduct its own aquatic life survey in 2005-2006 because the upper segment of EFAC was ephemeral; therefore, additional data, including an aquatic life survey, needed to be conducted for this segment of EFAC. Pet'rs' Ex. 1, p. 8.

71. Accordingly, the Department required the mine to conduct an updated aquatic life survey prior to issuing its Written Findings. The 2014 aquatic life survey conducted by Penny Hunter concluded that the “low quality of habitat and benthic communities” do not provide a “strong indicator of water quality impacts due to mining activity.” The aquatic communities in EFAC are more likely affected by the lack of flow

(ephemeral nature<sup>5</sup>) and natural levels of organic matter that exist in EFAC, than they are by mining. “Although EFAC supports aquatic life, aquatic life criteria are not met.” Ongoing aquatic life monitoring will likely demonstrate natural variability in aquatic life communities and is “unlikely to demonstrate impacts from mining.” Pet’rs’ Ex. 10, p. 12.

72. Similarly, the Department’s own Water Quality Bureau staff has concluded that in Eastern Montana, “stream habitat and water quality is highly variable, which results in a highly variable biological community due to the harsh conditions of the natural environment.” “Accordingly, just because an aquatic life survey indicates that a stream segment contains less than desirable macroinvertebrate communities that does not mean that the cause of this condition is man-made and or that the stream is impaired as a result.” DEQ Ex. E, ¶¶ 29-30.

73. Based upon all of the available data, including the results of the 2014 Aquatic Life survey performed by the mine’s consultant (Penny Hunter), the Department determined that the proposed operation of AM4 will not result in material damage to the beneficial use of aquatic life support in upper EFAC. See ¶¶ 51-57, *supra*.]

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<sup>5</sup> The 2014 Attainment Record for this segment of EFAC indicates that the stream is “ephemeral”; that in spite of the fact that mining activity surrounds the stream for much of its reach, areas that have been reclaimed are in good condition; and in 1996 the stream was “[l]isted as partially supporting aquatic life, swimmable, and warm water fishery. The causes were nutrients and suspended solids. The sources were agriculture and range land.” Pet’rs’ Ex. 6, pp. 5-8.

74. “At the request of DEQ Coal Program Staff, [the Department’s aquatic life specialist] David Feldman advised Penny Hunter [WECO’s consultant who conducted the aquatic life survey] how to collect samples, **but was instructed not to advise her how the samples could be used to determine aquatic life health.**” DEQ Ex. E, ¶ 33 (emphasis added).

[Disputed on the following grounds:

75. The Department does not dispute that Coal Program Staff requested that David Feldman advise Penny Hunter how to collect samples, but it was the Water Quality Bureau Staff, and not Coal Program Staff that instructed David Feldman not to advise her how the samples could be used to determine aquatic life health. The Water Quality Bureau’s reasoning for this are explained below. DEQ Ex. E, ¶¶ 33; See ¶¶ 77-78, *infra.*]

76. Department Coal Program staff instructed WECO’s consultant not to follow the Department’s protocols for assessing compliance with water quality standards. Pet’rs’ Ex. 20 at 1; Pet’rs’ Ex. 35 at 2. [Disputed on the following grounds:

77. Prior to conducting the survey, Penny Hunter consulted with Dave Feldman, former Macroinvertebrate Specialist with the Water Quality Bureau, who provided her with a copy of DEQ’s sampling methodology (WQPBWQM-009 (2012)) for how to collect macroinvertebrate samples in

different habitats in Montana. David Feldman advised Penny Hunter how to collect samples but did not advise her on how the samples could be used to determine aquatic life health. DEQ Ex. E, ¶¶ 32-33.

78. Due to the high variability of the natural system, the DEQ Water Quality Bureau does not believe that the health of aquatic life in eastern Montana streams can be determined by the composition of a macroinvertebrate sample alone. It is for this reason that they did not instruct Penny Hunter on how to determine health of aquatic life in EFAC based on the results of these samples. DEQ Ex. E, ¶ 34.

79. Additionally, since the 2014 aquatic life survey conducted by Penny Hunter was used by DEQ Coal Program staff to make a material damage determination with respect to the impact of the proposed operations of AM4 on the beneficial use of aquatic life support, and was not used by the DEQ Water Quality Bureau staff in making an impairment determination for aquatic life in EFAC, she was not required to follow DEQ standard operating procedures (“SOPs”) for making stream segment impairment determinations. It was staff from the Department’s Water Quality Bureau, and not from the Coal Program, that advised Ms. Hunter on what protocols she should and should not follow. DEQ Ex. E, ¶¶ 31-36.]

80. Instead, by direction of Coal Program management, the

Department instructed WECO's consultant to follow only the Department's protocol for sampling aquatic life, and not the protocol for assessing compliance with water quality standards. Pet'rs' Ex. 20 at 1. [Disputed on the following grounds:

81. See ¶¶ 77-78, *supra*.]

82. The aquatic life survey conducted by WECO's consultant did not comply with the Department's protocols for assessing compliance with water quality standards. Pet'rs' Ex. 20 at 1; Pet'rs' Ex. 35 at 2; DEQ Ex. E, ¶¶ 33, 36. [Disputed on the following grounds:

83. See ¶¶ 77-78, *supra*.]

84. After completing the survey, WECO's consultant made a presentation to the Department, in which she concluded, "Although EFAC [East Fork Armells Creek] supports aquatic life, aquatic life criteria are not met." Pet'rs' Ex. 10 at 12. [Undisputed]

85. Penny Hunter concluded, in part, that even though EFAC supports aquatic life, aquatic life criteria are not met; however, she attributed EFAC's failure to meet aquatic life criteria to the ephemeral nature of the stream, not to impacts from coal mining. See ¶ 70, *supra*.]

86. The Department admits, "[T]o determine whether aquatic life criteria [i.e., water quality standards] are met, DEQ **should conduct an**

**evaluation using the most recent data as well as the most recent methodologies for evaluating this data.”** Pet’rs’ Ex. 16 at 16 (emphasis added). [Undisputed. The Department relies on the following additional facts as material to its defense in this matter:

87. The Department believes that the mine should continue to monitor EFAC and should conduct additional aquatic life surveys using the most recent data and methodologies to determine the impact of mining on the health of aquatic life in EFAC. To this end, the Department has required the mine to continue to conduct aquatic life surveys to monitor the health of aquatic life in EFAC through the life of mine. See ¶ 57, *supra*.]

**19. The Department Employed a Legally Erroneous Definition of Anticipated Mining, Which Unlawfully Limited Its Analysis.**

88. When the Department approved the AM4 Amendment to the Area B Permit, WECO’s application for operations in Area F of the Rosebud Mine was pending before the Department. Pet’rs’ Ex. 5 at 4.

[Undisputed]

89. Portions of the proposed Area F mining operations are located within the cumulative hydrologic impact area the Department established for the AM4 Amendment to the Area B Permit. Pet’rs Ex. 5 at 4. [Undisputed.

The Department relies on the following additional facts as material to its

defense in this matter:

90. Petitioners admit that they indicated in response to an interrogatory that a portion of the proposed Area F lies within the cumulative impact area referred to in Fig 5-1 of the CHIA; however, the Department also clearly admitted that Area F was not included in the CIA boundary or considered in the CHIA because there will be **no hydrologic impacts from the proposed operation of AM4 that interact with impacts from the proposed operation in Area F**. See ¶¶ 91-105, *infra*.

91. Figure 5-1 (Fig. 5-1) of the CHIA depicts the boundaries of the surface and groundwater cumulative impact area (CIA). The CIA depicted in Fig. 5-1 includes all of Area A and B of the Big Sky Mine and all of Area A, Area B, Area C, Area D, and Area E of the Rosebud Mine. **Area F of the Rosebud Mine is not included in Fig. 5-1**, nor is it included anywhere in the description of the CIA, or the discussion of groundwater and surface water impacts contained within the CHIA. Pet'rs' Ex. 2, p. 5-1, 13-7 (Fig. 5-1).

Figure 5-1 is attached hereto and incorporated herein as DEQ Ex. O. A demonstrative map showing the proposed boundary of Area F superimposed on Fig. 5-1 is attached hereto and incorporated herein as DEQ Ex. P.

92. By contrast, impacts from the Rosebud Mine Area A, B, C, D, and E, as well as impacts from the Big Sky Mine Area A and B are discussed

at length in the CHIA. See e.g. Pet'rs' Ex. 2, pp. 8-1 through 8-2.

93. Petitioners have indicated that they do not take issue with any of the maps contained in the CHIA, including the CIA map depicted in Fig. 5-1. DEQ Ex. A, pp. 24-25, 63.

94. The CIA map contained in **Fig. 5-1 clearly does not include the permit boundaries of Area F**. However, Petitioners argue that because the Department admitted in an interrogatory that a portion of Area F was included within the CIA boundary, the Department was required to consider the impacts from anticipated mining in Area F within the CHIA for AM4. DEQ Ex. A, pp. 43-44 (emphasis added); DEQ Ex. P.

95. Petitioners failed to raise any concerns about the Department's decision to exclude Area F from consideration in the CHIA during the public comment period on the Department's Written Findings in this matter. Accordingly, the Department did not have an opportunity to respond to these concerns prior to the filing of Petitioners' Notice of Appeal. Pet'rs' Ex. 1, pp. 8-14.

96. In general, the CIA for groundwater includes all drainages, or hydrologic units, impacted by previous or existing mining at the Rosebud Mine and the Big Sky Mine, including all drainages impacted by previous or existing mining in Area C of the Rosebud Mine, which is adjacent to the

eastern boundary of anticipated mining operations in Area F. DEQ Ex. D, ¶¶ 15-16; Pet'rs' Ex. 2, p. 5-1; DEQ Ex. O.

97. The Department's groundwater hydrologist established the boundary that overlaps into Area F to account for drawdown or predicted drawdown from existing mining in Area C-West. Drawdown has been observed that is likely associated with Area C-West beyond Area C into what would have been the eastern portion of Area F. DEQ Ex. D, ¶ 16; Pet'rs' Ex. 2, p. 5-1.

98. Hence, the eastern portion of Area F was included in the groundwater CIA to account for impacts on Area F from Area C, not to account for impacts from Area B or AM4. DEQ Ex. D, ¶ 16; Pet'rs' Ex. 2, p. 5-1.

99. Due to the lack of hydrologic connection between Area B and Area F, there will be no groundwater impacts from Area B or AM4 on Area F. That is why Area F was not included in the CHIA for AM4. DEQ Ex. D, ¶ 16; WECO Ex. 6, ¶ 49.

100. In general, the CIA for surface water includes drainages, or hydrologic units, impacted by previous or existing mining at the Rosebud Mine and the Big Sky Mine. Pet'rs' Ex. 2, p. 5-1; DEQ Ex. C, ¶¶ 17-18.

101. The Department's surface water hydrologist extended the CIA

boundary for each drainage to its confluence with the next drainage. The CIA boundaries are established down gradient from potentially affected streams and springs, and include all surface water monitoring stations to allow assessment of impacts to stream water quality and quantity. Pet'rs' Ex. 2, p. 5-1; DEQ Ex. C, ¶¶ 17-18.

102. For the EFAC drainage, the Department included all of the creeks that may be impacted by mining as a whole. DEQ Ex. C, ¶¶ 17-18.

103. For the West Fork Armells Creek (WFAC) drainage, the Department extended the surface water CIA boundary to the tributary junction with Donley Creek. However, there are no surface water impacts to WFAC from Area B or AM4. DEQ Ex. C, ¶¶ 17-18; WECO Ex. 6, ¶ 49.

104. The Department included Area C in the boundary because impacts from Area B interact with impacts from Area C on EFAC. Impacts from Area B and AM4 will not interact with impacts from Area C on WFAC. DEQ Ex. C, ¶ 18.

105. Rosebud Creek was included to the confluence with Spring Creek to include impacts from Area D and E of the Rosebud Mine, and impacts from Area A and B of the Big Sky Mine. There is also a small sliver of the Rosebud Mine Area B that crosses into the Lee Coulee drainage that impacts Rosebud Creek. Pet'rs' Ex. 2, p. 5-1; DEQ Ex. C, ¶¶ 17-18.]

106. While the AM4 Amendment application was pending, WECO and the Department identified pending or expected applications for anticipated mining in multiple locations in Area A and Area B<sup>6</sup>. Pet'rs' Ex. 26; Pet'rs' Ex. 27 at 1. [Without waving its objections, the Department responds as follows. Disputed on the following grounds:

107. The potential future mining referred to as "Area B Ext Potential Future Mining" on Petitioners Exhibit 26 was included as an amendment to the Area B permit on January 31, 1995 (Area B, AM1). The written findings for this decision included an update to the Area B CHIA. Therefore, the approved mining within this area was included in the hydrologic impact assessment contained in both the PHC and CHIA for AM4<sup>7</sup>. DEQ Ex. B, ¶ 21; DEQ Ex. B-1; Pet'rs' Ex. 15.

108. Area A (MR62) and (MR66), were both applications for minor revisions, which by definition, must not result in changes that affect the hydrologic balance<sup>8</sup>. Therefore, impacts from these proposed operations were

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<sup>6</sup> The Department objects to inclusion of this factual assertion to the extent that it calls for a legal conclusion. Whether pending or expected applications for mining meet the legal definition of "anticipated mining" for the purposes of being included in the cumulative hydrologic impact area as defined in ARM 17.24.301(32), is a question of law, not fact.

<sup>7</sup> The Department requests that the Board take judicial notice pursuant to Rule 201, M.R.Evid., of the fact that Area B-Ext was included in the CHIA.

<sup>8</sup> Minor revision "means any change to the mine and reclamation plan not meeting the criteria for amendment or major revision." See ARM 17.24.301(72). Major revision " means any change in the mining or reclamation plan that ... results in a change that may affect the reclaimability of the area or the hydrologic balance on or off of the permitted area. See ARM 17.24.301(66)(d). Only applications for new underground mining permits or major revisions to an existing permit require preparation of a CHIA. See § 82-4-227(1). The Department requests that the Board take judicial notice pursuant to Rule 201, M.R.Evid., of the fact that Area A minor revisions were not

not considered in the CHIA. DEQ Ex. B, ¶ 20; Section 82-4-227(1), MCA (requiring the Department to complete a cumulative hydrologic impact assessment before approving a permit application or major revision to a permit).

109. An application for a minor revision (MR76) to the Area B permit was submitted to the Department on January 25, 2016. Since the written findings for the AM4 permit application, which includes the CHIA, were published on December 4, 2015, the MR76 application was not pending before the Department, and was not included in the CHIA for AM4<sup>9</sup>. DEQ Ex. B, ¶ 22.]

110. In its cumulative hydrologic impact assessment for the AM4 Amendment to the Area B Permit, the Department defined “anticipated mining” as follows: “‘Anticipated mining’ includes the entire projected life through bond release of all **permitted operations** . . . .” Pet’rs’ Ex. 2 at 5-1 (emphasis added). [It is undisputed that on page 5-1 of the AM4 CHIA, the Department paraphrased the definition of cumulative hydrologic impact area (CIA) contained in ARM 17.24.301(32), and which also includes the

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included in the CHIA because they will not result in changes that affect the hydrologic balance. These facts are within the generally recognized scientific facts within the Department’s specialized knowledge, and therefore, the Board may also take notice of them pursuant to § 2-4-612(6), MCA.

<sup>9</sup> The Department requests that the Board take judicial notice pursuant to Rule 201, M.R.Evid., of the fact that Area B minor revision 76 (MR76) was not included in the CHIA for AM4 because the MR76 application was not pending before the Department at the time the written findings for the AM4 CHIA were issued.

definition of “anticipated mining” and stated that “anticipated mining” includes the entire projected life through bond release of all permitted operations ...]

111. Under Montana law, anticipated mining is defined to include “all operations **with pending applications**,” not “all permitted operations,” which is narrower. ARM 17.24.301(32) (emphasis added). [Disputed on the following grounds:

112. Pursuant to Montana law, the cumulative hydrologic impact area means “**the area**, including, but not limited to, the permit and mine plan area within which **impacts** to the hydrologic balance resulting from the **proposed operation may interact with** the **impacts of all previous, existing and anticipated mining** on surface and ground water systems. ‘**Anticipated mining**’ includes, at a minimum, the entire projected lives through bond release of **all operations with pending applications** and all operations required to meet diligent development requirements for leased federal coal for which there is actual mine-development information available.” ARM 17.24.301(32) (emphasis added).

113. Montana’s definition of cumulative hydrologic impact area is based upon the federal definition of cumulative impact area contained within the federal regulations adopted pursuant to the Surface Mining Control and

Reclamation Act (SMCRA) of 1977. Under SMCRA, “**cumulative impact area**’ means **the area**, including the permit area, within which **impacts** resulting from the **proposed operation may interact with** the **impacts of all anticipated mining** on surface – and ground-water systems. ‘**Anticipated mining**’ shall include, at a minimum, the entire projected lives through bond releases of: (a) **The proposed operation**, (b) **all existing operations**, (c) **any operation for which a permit application has been submitted** to the regulatory authority, and (d) all operations required to meet diligent development requirements for leased Federal coal for which there is actual mine development information available.” 30 C.F.R. § 701.5 (emphasis added).

114. In adopting this definition of “cumulative impact area”, which includes the definition of “anticipated mining”, the Office of Surface Mining Reclamation and Enforcement (OSM) stated that “**the final definition for ‘cumulative impact area’ consists of two parts**: The **first** sets out the **extent of the area which the regulatory authority will evaluate** when preparing the required cumulative hydrologic impact assessment (CHIA). This area will **include those areas** where there would be an **interaction between the hydrologic impacts from the proposed operation and the impacts of all other anticipated mining**. The **second** part of the definition clarifies the

meaning of the term ‘**anticipated mining**’ and identifies the **minimum extent of mining, both existing and proposed, which must be included in the CHIA evaluation.**” 48 FR 43956, p. 3 (emphasis added), attached hereto and incorporated herein by reference as DEQ Ex. R.

115. OSM chose the phrase “**may interact with**” to describe the relationship between the impacts on hydrology which the proposed operation may have with the impacts of all anticipated mining. 48 FR 43956, p. 3 (emphasis added).

116. OSM recognizes that under the definition of “**anticipated mining**” adopted, a mine operator “could submit a permit application to conduct a future mining operation which was not included in an earlier CHIA. However, **any such future operation or operations could not be permitted until after the completion of a new CHIA which would have to consider the newly proposed operation and any other ‘anticipated’ mines.**” 48 FR 43956, p. 3 (emphasis added).

117. OSM’s Draft Guidelines for Preparation of a Cumulative Hydrologic Impact Assessment (CHIA) provides that operations or groups of operations that are “**spatially and hydrologically distant**” from the proposed operation are not included in the cumulative impact area (CIA) for the proposed operation. Once the CIA is established, **only anticipated mining**

**operations that lie within the CIA boundary are analyzed in the CHIA** for the proposed operation. Pet'rs' Ex. 36, pp. IV-3 to IV-10 (emphasis added).

118. Both state and federal law and the corresponding federal guidelines provide that **anticipated mining whose impacts will not interact with impacts from the proposed operation are not included in the CHIA for the proposed operation.** ARM 17.24.301(32); 30 C.F.R. 701.5; 48 FR 43956, p. 3.]

119. On the basis of its definition of "anticipated mining" the Department's cumulative hydrologic impact assessment excluded multiple operations with pending applications, including Area F. Pet'rs' Ex. 17 at 1; Pet'rs' Ex. 19; Pet'rs' Ex. 24; Pet'rs' Ex. 27 at 1. [Disputed on the following grounds:

120. WECO submitted an application to the Department for a new surface mine permit for Area F (Permit ID Number C2011003F) on November 2, 2011. On August 1, 2012, DEQ determined the application was complete and began its review of the application for acceptability. The permit application had been through three deficiency reviews by DEQ and still was not determined to be acceptable at the time the AM4 CHIA was developed. DEQ Ex. B, ¶ 23; See ¶¶ 2-4, *supra*.

121. The proposed mining in Area F is not included in the PHC or the

CHIA for AM4 because there is **no hydrologic connection between Area F and Area B or AM4**. Therefore, there will be **no interaction between the hydrologic impacts from the proposed operation of AM4 and the hydrologic impacts from Area F**.<sup>10</sup> Accordingly, the Department was not required to include Area F in the CHIA for AM4. Pet'rs' Ex. 16, pp. 3-8, 47-54; DEQ Ex. B, ¶ 17, 24; DEQ Ex. C, ¶ 19; DEQ Ex. D, ¶ 20; Pet'rs' Ex. 2, p. 13-21 (Fig. 8-5), which is incorporated herein by reference and attached hereto as DEQ Ex. T (Potentiometric surface of the Rosebud coal and spoil).

122. “The lack of hydrologic connection between surface water in Area B or AM4 and Area F results from the **surface water divide** located between EFAC and WFAC that occurs in Area C. Accordingly, surface water from AM4 does not interact with surface water from Area F.<sup>11</sup>” DEQ Ex. C, ¶ 20; WECO Ex. 6, ¶ 49.

123. “The lack of hydrologic connection between groundwater in Area B or AM4 and Area F is due to the existence of a **groundwater mound** between the west end of Rosebud Mine Area B and south part of Area C. This

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<sup>10</sup> The Department requests that the Board take judicial notice pursuant to Rule 201, M.R.Evid., of the fact that there is no hydrologic connection between ground or surface water in Area B or AM4 and Area F; therefore, there can be no interaction between potential hydrologic impacts from Area B or AM4 and Area F. These facts are within the generally recognized scientific facts within DEQ's specialized knowledge, and therefore, the Board may also take notice of them pursuant to § 2-4-612(6), MCA.

<sup>11</sup> The Department requests that the Board take judicial notice pursuant to Rule 201, M.R.Evid., of the fact that there is a surface water divide located in Area C that divides EFAC and WFAC. Accordingly, surface water from AM4 will not interact with surface water from Area F. These facts are within the generally recognized scientific facts within DEQ's specialized knowledge, and therefore, the Board may also take notice of them pursuant to § 2-4-612(6), MCA.

groundwater mound just west of Area B forms a groundwater divide' which separates groundwater in Area B from groundwater in Area F. No groundwater from Area F is predicted to flow to or through Area B. Accordingly, Area B is not downgradient from Area F, and no groundwater will flow between these two areas.<sup>12</sup> DEQ Ex. D, ¶ 21; DEQ Ex. T; WECO Ex. 6, ¶ 48.

124. Accordingly, impacts from Area F will occur primarily in the WFAC drainage, while impacts from AM4 will occur only in the EFAC drainage. No impacts from Area F will occur in the EFAC drainage. Impacts from all of Area B are limited to the EFAC, with the exception of impacts from a very small portion of Area B-Ext that crosses the surface water divide into Lee Coulee, which drains into the Rosebud Creek drainage. DEQ Ex. B, ¶ 25; DEQ Ex. C, ¶ 18; DEQ Ex. D, ¶¶ 16-19; WECO Ex. 6, ¶¶ 48-49.

125. Petitioners have wrongfully asserted that there is a hydrologic connection between surface and groundwater in Area F and Area B, and therefore, impacts from Area F should have been included in the CHIA. DEQ Ex. A, pp. 35, 41-42, 65-67.

126. Petitioners have admitted that they are not aware of any evidence

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<sup>12</sup> The Department requests that the Board take judicial notice pursuant to Rule 201, M.R.Evid., of the fact that there is a groundwater divide located between Area B and Area C that prohibits the flow of groundwater between AM4 and Area F. Accordingly, Area F is not downgradient of AM4 and no groundwater will flow between these two areas. These facts are within the generally recognized scientific facts within DEQ's specialized knowledge, and therefore, the Board may also take notice of them pursuant to § 2-4-612(6), MCA.

contained inside or outside the record in this matter that would suggest the groundwater or surface water from Area F would flow to EFAC or that groundwater of surface water from Area B would make its way to WFAC. DEQ Ex. A, p. 67.

127. Petitioners have not offered any expert testimony to dispute the Department's conclusion that there is no hydrologic connection between Area B or AM4 and Area C or Area F. DEQ Ex. A, pp. 85-92.

128. There are multiple citations in the AM4 CHIA which indicate that the Department determined that the proposed operation of AM4 would not have any impacts to Area C of the Rosebud Mine. Therefore, it was unnecessary to include Area F in the AM4 CHIA. Pet'rs' Ex. 5, pp. 7-8; Pet'rs' Ex. 16, p. 3; Pet'rs' Ex. 2, pp. 9-36, 9-37, 9-42, and 9-47.

129. Because the proposed operations in AM4 and the proposed operations in Area F affect different hydrologic units or drainages, the Department determined that it is more appropriate to address the cumulative impacts of the proposed operations in Area F in a separate CHIA for Area F, if and when the permit application is determined by DEQ to be acceptable. DEQ Ex. B, ¶ 26.]

130. On May 3, 2013, the Department's Coal Program Supervisor, Chris Yde, wrote WECO, stating that the company's probable hydrologic

consequences report should include “all **permitted** mining” and that “proposed cuts associated with **currently unapproved** [applications, i.e., operations with pending applications] **should not be included.**” Pet’rs’ Ex. 17 at 1 (emphasis added). [Undisputed. The Department relies on the following additional facts as material to its defense in this matter:

131. The Department had multiple communications with WECO concerning the scope of the PHC, including the Department’s interpretation of which areas of the Rosebud Mine needed to be included in the PHC for AM4. DEQ Ex. B, ¶ 18.

132. The Department advised WECO that it was not necessary to include the proposed operations in Area F or the additional minor revisions in Area A in the PHC for AM4. Area F was excluded because there is no hydrologic connection between Area F and AM4. The minor revisions in Area A were excluded because by definition, minor revisions will not have any hydrologic impact on the area. DEQ Ex. B, ¶¶ 20-24; See ¶¶ 90-105, *supra*.]

133. On May 16, 2013, WECO’s hydrology consultant wrote the Coal Program, stating that one option would be to evaluate “the significance of all **proposed** permits, including the permit under consideration.” Pet’rs’ Ex. 27 at 1 (emphasis added). The other option would only evaluate the “significance of [the] proposed permit” and “[n]o other pending or proposed permits that have

not been approved would be a component of this modeling effort.” Pet’rs’ Ex. 27 at 1. [Undisputed]

134. On May 16, 2013, representatives of WECO met with representatives of the Coal Program. Pet’rs’ Ex. 24. Supervisor Yde’s notes from the meeting incorrectly define “anticipated mining” as operations that are “approved—but not mined.” Pet’rs’ Ex. 24. He wrote that “proposed mining” does not include “mining that isn’t approved or part of the current application.” Pet’rs’ Ex. 24. “[P]roposed Area F and additional mining in Area A,” Yde wrote, “[are] not included.” Pet’rs’ Ex. 24. [Disputed on the following grounds:

135. The Department does not dispute that on May 16, 2013, Chris Yde took less than a page of notes which included these statements. However, the Department disputes that based on these hand written notes, Chris Yde “incorrectly defined ‘anticipated mining’”. See ¶¶ 120-129, *supra*.]

136. WECO personnel subsequently wrote their hydrology consultant that based on “the Department’s newly defined potential mining” anticipated mining in “Area B-Extension” and potentially “Area F” “would need to be taken off” of the maps in the probable hydrologic consequences report. Pet’rs’ Ex. 19. [Disputed based on the following grounds:

137. The Department does not dispute that WECO directed its

consultant to remove certain areas of potential mining from the AM4 PHC analysis. However, the Department disputes that any of the potential mining that was removed from the AM4 PHC analysis met the definition of “anticipated mining” included in ARM 17.24.301(32). Neither Exhibit referenced by Petitioners includes the words “anticipated mining” anywhere in the document. See Pet’rs’ Ex. 19 and 26.]

138. WECO’s hydrology consultant replied that based on the new definition of anticipated mining, it would omit maps showing Area F. Pet’rs’ Ex. 19; Pet’rs’ Ex. 26. [Disputed on the following grounds:

139. See ¶ 137, *supra*.]

140. Neither the Department’s cumulative hydrologic impact assessment nor any documentation in the possession of the Department at the time of its decision approving the AM4 Amendment provided any factual basis for excluding Area F or other mining operations with pending applications from the Department’s cumulative hydrologic impact assessment. Pet’rs’ Ex. 5 at 5. [Disputed on the following grounds:

141. The Department was in possession of the permit application for Area F since November 2, 2011. The Department began its acceptability review of the Area F application in August 2012. At the time the AM4 CHIA was completed, the Area F permit application had been through three

deficiency reviews and still had not met the Department's acceptability requirements. Nevertheless, the Department had sufficient information in its possession to determine whether the impacts from Area F would interact with impacts from the propose operation in AM4. Because the impacts of the proposed operations in Area F would not interact with impacts from the proposed operations in AM4, there was no reason to discuss or consider the impacts from Area F in the AM4 CHIA. See ¶¶ 120-129, *supra*.

142. The Department included an analysis in the AM4 CHIA, which explained the lack of hydrologic connection between Area B or AM4 and Area C. Based upon this analysis, it was clear to the Department that Area F did not meet the definition of "anticipated mining", and did not need to be included in the AM4 CHIA. The Department's position is supported by the applicable state and federal statutes and administrative rules and regulations in place at the time the Department reached its decision. The Department's decision to exclude Area F from the CHIA is also supported by OSM's guidelines, which have been available as a reference tool to the Department since 1985. See ¶¶ 112-118, *supra*.

143. With respect to other mining operations with pending applications in Area B and A, the Department is not required to include minor revisions in its CHIA analysis, nor is the Department required to include areas for which a

permit application has not yet been submitted. See ¶¶ 107-109, *supra*.]

144. No documentation before the Department at the time it approved the AM4 Amendment and no *post hoc* documentation provided by the Department in this appeal assesses potential cumulative impacts from Area F and Area B to Armells Creek below the confluence of the East and West Forks of the creek<sup>13</sup>. Pet’rs’ Ex. 5 at 5; *cf.* DEQ Ex. C, ¶¶ 19-20 (ignoring downstream hydrologic connection). [Undisputed. The Department relies on the following additional facts as material to its defense in this matter:

145. As discussed in the AM4 CHIA, “[t]he surface water CIA includes all areas that may see a **measurable change in water quantity or water quality due to mining** activities at the Rosebud Mine and Big Sky Mine.” Additionally, the surface water CIA boundary was established by the Department’s surface water hydrologist, Emily Hinz, PhD., “to allow assessment of impacts to stream water quality and quantity.” Pet’rs’ Ex. 2, p. 5-1; DEQ Ex. O.

146. The confluence of WFAC and EFAC is located far outside the CIA boundaries for the AM4 CHIA. The confluence of WFAC and EFAC is

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<sup>13</sup> The Department objects to the inclusion of this factual allegation to the extent that Petitioners mischaracterize the statements made by the Department’s surface water hydrologist, Emily Hinz, PhD, and suggests that the Department ignored a downstream hydrologic connection between WFAC and EFAC. The Department further objects to this factual allegation to the extent that it is not relevant. The Department is not required to consider impacts to resources located outside the CIA, and the confluence of EFAC and WFAC is located 17 miles downstream of Colstrip and far outside the CIA boundary.

located approximately 17 miles downstream of Colstrip. Pet'rs' Ex. 2, p. 5-1; DEQ Ex. O; WECO Ex. 7, ¶¶ 14-16.

147. The confluence of WFAC and EFAC was not included in the CIA because there is no data to support a conclusion that there will be a **measurable change** in water quantity or water quality in EFAC 17 miles downstream of Colstrip, or that impacts from proposed mining in Area F will interact with impacts from proposed mining in AM4 17 miles downstream from Colstrip. Pet'rs' Ex. 2, p. 5-1; See ¶¶ 99-103, *supra.*; See also Figure B-3 of the PHC Appendix B, incorporated herein by reference and attached hereto as DEQ Ex. X.

148. When submitting its permit application to the Department, WECO was only required to analyze impacts to those areas located within the permit boundary and to those areas adjacent to the permit boundary “where a resource or resources are or could reasonably be expected to be adversely affected by proposed mining operations.” The Department is not required to consider impacts to resources that are located outside the CIA boundary. See § 82-4-222(1)(m), ARM 17.24.314(3), and § 82-4-203(2)(limiting the scope of the Probable Hydrologic Consequences (PHC) analysis submitted to the Department by the permit applicant to the permit boundary and “adjacent area” which includes “the area outside the permit area where a resource or

resources are or could reasonably be expected to be adversely affected by proposed mining operations”); Pet’rs’ Ex. 36, p. 1 (“The PHC determination addresses hydrologic conditions on the permit and adjacent areas; the CHIA considers impacts over the entire cumulative impact area (CIA).”)

149. Petitioners have admitted that they did not dispute the fact the surface water CIA contained in Fig. 5-1 of the AM4 CHIA excluded the confluence of WFAC and EFAC, which is located far outside the existing surface water CIA boundary. DEQ Ex. A, p. 69.

150. Petitioners have not offered any expert testimony to support their assertion that there is a hydrologic connection between surface and groundwater in Area F and Area B, or that that impacts from the proposed operation in AM4 may interact with impacts from the proposed operation of Area F at the confluence of WFAC and EFAC 14 miles downstream from Colstrip. DEQ Ex. A, pp. 31-34, 38-41, 65-67, 85-92.]

**20. The Department Failed Entirely to Assess Specific Conductance in Rosebud Creek Tributaries Despite Knowing that WECO Could Not Comply with Applicable Standards.**

151. Operations from the Rosebud Mine impact tributaries of Rosebud Creek, including Lee Coulee. Pet’rs’ Ex. 2 at 9-11 & fig. 5-1; Pet’rs’ Ex. 5 at 9. [Disputed on the following grounds:

152. The exhibits cited by Petitioners in support of this allegation

do not support a conclusion that operations at the Rosebud Mine impact tributaries of Rosebud Creek, including Lee Coulee. On page 9 of Petitioners' Ex. 5, the Department admitted that a portion of Rosebud Creek lies within the CIA boundary contained within the AM4 CHIA, and that various tributaries of Rosebud Creek, including Lee Coulee are also included within the CIA. However, the Department denied that it had failed to address "whether the cumulative hydrologic impacts of mining and reclamation activities within the cumulative hydrologic impact area would cause violation of EC standards in tributaries of Rosebud Creek", including Lee Coulee. This does not constitute an admission that operations from the Rosebud Mine impact tributaries of Rosebud Creek, including Lee Coulee. Pet'rs' Ex. 5, p. 9.

153. With respect to Petitioners' Ex. 2, p. 9-11, this section of the CHIA addresses impacts to Lee Coulee from the Big Sky Mine, which has since been fully reclaimed. It does not address impacts to Lee Coulee from the Rosebud Mine. At the end of this discussion, the Department concluded that "[t]he **proposed expansion of mining in Rosebud Area B in AM4 will not affect the water quality in the Lee Coulee drainage. Spoil water from Area B AM4 cuts will not contribute to surface flow.**" This statement does not constitute an admission that operations of the Rosebud

Mine impact tributaries of Rosebud Creek, including Lee Coulee. Pet'rs' Ex. 2, p. 9-12(emphasis added)

154. The Department surface water hydrologist, Emily Hinz, PhD., included Rosebud Creek to the confluence with Spring Creek in the CIA for AM4 to consider impacts from Area D and E of the Rosebud Mine, and impacts from Area A and B of the Big Sky Mine. There is also a small sliver of the Rosebud Mine Area B that crosses into the Lee Coulee drainage that impacts Rosebud Creek. However, there will be no impacts from AM4 to Lee Coulee or Rosebud Creek. See ¶¶ 105, *supra*; WECO Ex. 6, ¶¶ 15-18.

155. There is a surface water divide between Area B and the Big Sky Mine that directs surface water drainage from Area B/AM4 away from Lee Coulee and Rosebud Creek towards EFAC. The surface water divide prohibits surface water from AM4 from reaching tributaries of Rosebud Creek. Therefore, there will be no impacts from operations in AM4 to tributaries of Rosebud Creek. DEQ Ex. C, ¶ 21; WECO Ex. 6, ¶¶ 15-18.

156. Additionally, even though a small portion of the existing Area B permit crosses the surface water divide into the Lee Coulee drainage, the Department required the mine to construct sediment ponds at the edges of permit area to prevent offsite discharges to Lee Coulee from Area B. DEQ

Ex. C, ¶ 22; WECO Ex. 6, ¶¶ 15-18.

157. The quality of discharged water captured by these sediment ponds “is equal to or better than what naturally occurs in the streams in the area and in the groundwater. Thus, a discharge from the sediment ponds [in the highly unlikely event one were to occur] will not diminish water quality either in [the] groundwater or surface water” of Rosebud Creek and its tributaries. WECO Ex. 7, ¶¶ 17-18

158. No additional discharge points were added to the mine’s MPDES permit on Lee Coulee. There will be no new discharge points related to AM4 on Lee Coulee because the proposed operations in AM4 do not cross the surface water divide, and surface water from AM4 will not reach Lee Coulee or Rosebud Creek. DEQ Ex. C, ¶ 22.

159. Finally, mining was active in the Rosebud Mine Area D until 2013, but is no longer active. Area D of the Rosebud Mine has been reclaimed. Therefore, there are no current mining operations in Area D that impact tributaries of Rosebud Creek. Pet’rs’ Ex. 2, p. 9-83.]

160. The Rosebud Mine is permitted to discharge pollutants in water from seven locations (outfalls) in Area B into Lee Coulee. Pet’rs’ Ex. 37 at 174. [Disputed on the following grounds:

161. Discharges made pursuant to an MPDES discharge permit

issued by the Department for outfalls on Rosebud Creek are exempted from the definition of “pollution” contained in § 75-5-103(30)(b)(i), MCA.

Therefore, Pet’rs’ assertion that the mine discharges “pollution” pursuant to its discharge permit to tributaries of Rosebud Creek is incorrect both factually and as a matter of law. See § 75-5-103(30)(b)(i), MCA.

162. As indicated in the CHIA, discharges that are controlled and regulated under an MPDES permit, and adherence to the MPDES permit ensures that material damage will not happen outside of the mine permit area. Pet’rs’ Ex. 2, p. 9-21.]

163. Water quality standards for specific conductance apply to all tributaries of Rosebud Creek, including ephemeral tributaries. ARM 17.30.670(4). [Undisputed.]

164. Water quality standards for specific conductance in Rosebud Creek and its tributaries protect irrigated agriculture in southeastern Montana. 16 Mont. Admin. Reg. 2269, 2274 (Aug. 28, 2002). [Undisputed that the numeric standards for Electrical Conductivity (EC) and Sodium Adsorption Ratio (SAR) set forth in ARM 17.30.670 were adopted “to ensure that the designated and existing uses of these waters for agricultural purposes will be **protected during the development of coal bed methane (CBM)** currently being proposed in Montana.” 16 Mont. Admin. Reg. 2273

(Aug. 28, 2002)(emphasis added).]

165. Numeric water quality standards, including specific conductance standards, are criteria for determining if a proposed mining operation will cause material damage to the hydrologic balance. Pet'rs' Ex. 2 at 2-3 to -4. [Undisputed that material damage criteria for surface waters located outside the permit area include the numeric water quality standards, and the standards for EC set forth in ARM 17.30.670. ]

166. WECO told the Department that "EC [referring to specific conductance] limits [from ARM 17.30.670(4)] would not be attainable" and "it would not be likely that WECO could comply with the proposed" water quality standards limiting electrical conductivity. Pet'rs' Ex. 37 at 12. [Undisputed].

167. The Department's cumulative hydrologic impact assessment failed entirely to assess whether the cumulative hydrologic impacts of the proposed Area B operations would cause violations of specific conductance standards in Lee Coulee or other tributaries of Rosebud Creek. *See generally* Pet'rs' Ex. 2. [Disputed on the following grounds:

168. DEQ concluded in the CHIA that the numeric water quality standard for EC in tributaries to Rosebud Creek will not be violated as a result of the proposed operations in AM4 because impacts from AM4 will

not have any interaction with surface water in these tributaries. The reason for this is the surface water divide that is located between the Big Sky Mine and Area B of the Rosebud mine. Pet'rs' Ex. 2, p. 9-6, 9-13, 9-14, 9-16, & 9-17, and Fig 5-1; DEQ Ex. C, ¶ 23.

169. The surface water divide will prohibit surface water from AM4 from flowing south towards Miller Coulee, which flows into Rosebud Creek<sup>14</sup>. Rather, surface water from AM4 will flow north towards EFAC. Additionally, the quality of the water in Rosebud Creek naturally exceeds the EC limit of 500  $\mu\text{S}/\text{cm}$  for Rosebud Creek tributaries provided for in ARM 17.30.670. Monitoring stations on Rosebud Creek indicate that EC in Rosebud Creek averages between 1,000-2,000  $\mu\text{S}/\text{cm}$ . EC values for discharge waters for the mine do not significantly vary from this level. Therefore, there is no evidence to support a conclusion that surface water runoff from AM4 will cause a violation of EC standards in tributaries to Rosebud Creek. DEQ Ex. C, ¶ 24; WECO Ex. 6, ¶¶ 15-16; WECO Ex. 7, ¶¶ 17.

170. Accordingly, there will be no new discharge outfalls added to the mine's MPDES permit on Lee Coulee as a result of the proposed

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<sup>14</sup> DEQ requests that the Board take judicial notice pursuant to Rule 201, M.R.Evid., of the fact that a surface water divide is located between the Big Sky Mine and Area B of the Rosebud mine that prohibits surface water from AM4 from flowing south towards Miller Coulee, and directs surface water flow north towards EFAC. These facts are within the generally recognized scientific facts within DEQ's specialized knowledge, and therefore, the Board may also take notice of them pursuant to § 2-4-612(6), MCA.

operations in AM4 because surface water from AM4 will drain to EFAC through existing MPDES outfalls, not Rosebud Creek. DEQ Ex. C, ¶ 24.]

**21. The Department Failed to Make a Material Damage Determination for East Fork Armells Creek in Section 15, Which Was Dewatered Following Strip-Mining.**

171. The Department failed to make a material damage determination with respect to the segment of East Fork Armells Creek in Section 15 of the Rosebud Mine, directly adjacent to Area B. DEQ Resp. Br. at 30-31; DEQ SDF at 12-13; Pet’rs’ Ex. 2 at 9-10 (“Without knowing the true nature of the stream flow and the interaction between groundwater and surface water, **a determination of material damage cannot be made.**” (emphasis added)). [Disputed on the following grounds:

172. The Department “may not approve an application for a strip- or underground-coal-mining permit or major revision unless the assessment of the probable cumulative impact of all anticipated mining in the area on the hydrologic balance has been made by the department and the **proposed operation** of the mining operation has been **designed to prevent material damage** to the hydrologic balance **outside the permit area**. Section 82-4-227(3)(a), MCA (emphasis added); ARM 17.24.314(5).

173. The CHIA process requires the Department to perform an **analysis of the cumulative hydrologic impacts within the designated**

CIA before it can make a material damage assessment to resources located outside the permit area. Once the cumulative hydrologic impact analysis is complete, the Department must determine whether the cumulative hydrologic impact assessment of the CIA indicates “that the **additional impacts of the proposed operation of AM4 may cause material damage to the hydrologic balance outside the permit area**”. Section 82-4-227(3)(a), MCA; ARM 17.24.314(5); Pet’rs’ Ex. 36, pp. IV-27 through IV-31 (emphasis added).

174. “**Cumulative hydrologic impacts**” means, the expected total qualitative and quantitative, direct and indirect effects of mining and reclamation operations on the hydrologic balance.” ARM 17.24.301(31) (emphasis added).

175. “**Material damage**’ means, 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** in a manner or to an extent that land uses or **beneficial uses of water are adversely affected, water quality standards are violated, or water rights are impacted**. Violation of a water quality standard, whether or not an existing water use is affected, is material damage.” Section 82-4-203(31), MCA (emphasis added).

176. In analyzing the cumulative hydrologic impacts of mining on the quantity of water in Section 15 of EFAC, which is located inside the CIA, the Department concluded as follows:

In summary, it is unknown whether there was premine baseflow in EFAC in Section 15, nor is the quantity of water known. Statements as to the nature of this section premine are anecdotal. **Since the nature of this section was not well documented in the 1970's, past material damage to this section cannot be determined.** While macroinvertebrates were documented using the water in Section 15 in the 1970's, it is unknown if water was present every year, only in wet years when runoff accumulated behind the instream dam, or only after years where the alluvium was saturated to the point of baseflow. **Without knowing the true nature of the stream flow and the interaction between groundwater and surface water, a determination of material damage cannot be made.**

In other words, in performing its cumulative hydrologic impact assessment, the Department indicated that it could not determine with any certainty whether Section 15 of EFAC had sufficient historic flow to be considered intermittent, or whether this section of stream was dewatered as a result of **previous mining operations** in a manner and to an extent that resulted in material damage from these **past operations**. Pet'rs' Ex. 2, p. 9-10; See also Figure 6-3 of the CHIA, which is incorporated herein by reference and attached hereto as DEQ Ex. V.

177. However, several paragraphs later, the Department stated that regardless of the nature of the reach in Section 15, "the **proposed**

**permitting action will have no effect on the reach.** Therefore, [the Department] finds that the **proposed action is designed to prevent material damage**” to Section 15. Pet’rs’ Ex. 2, p. 9-10.

178. Even if there is a reduction in flow to Section 15 as a result of historic mining, mining operations in AM4 will not affect the quantity of water in Section 15 because any impacts to EFAC surface water flow will occur much further downstream. DEQ Ex. C, ¶ 35.

179. The Department’s material damage assessment is supported by the Declaration of WECO’s expert, Michael Nicklin, P.E., who concluded that “[t]he projected AM4 mine passes are located over two miles downgradient from Section 15”, and as demonstrated in Figure E-5 of Attachment E to the PHC demonstrates, “any drawdown in water due to AM4 is highly localized”, and will not affect Section 15 of EFAC. WECO Ex. 6, ¶¶ 21-27.

180. In making its material damage determination for the AM4 CHIA, the Department was only required to consider whether the proposed operation of AM4 is designed to prevent material damage outside the permit area; the Department was not required to consider whether all previous or existing mining operations at the Rosebud Mine or Big Sky Mine that are located within the CIA have or will result in material damage

outside the permit area. Section 82-4-227(3)(a), MCA (emphasis added); ARM 17.24.314(5) and 17.24.405(6)(c).

181. The material damage assessments for already permitted areas of the Rosebud and Big Sky mines were documented by the Department in the CHIA's previously developed for those mine permit applications. See e.g. Pet'rs' Ex. 13.

182. DEQ's approach to making the material damage determination is consistent with OSM's Draft Guidelines, which provide that "[t]he regulatory authority's final task in the CHIA process is to determine **whether the hydrologic assessment of the CIA indicates that the addition of the impacts of the proposed operation to those of the other anticipated mining may cause material damage to the hydrologic balance outside the permit area** and to write a statement of these findings with all supporting evidence and rationale. The determination is the main objective of the whole CHIA process. The supporting evidence and rationale validate the determination." Pet'rs' Ex. 36, p. II-6.

183. Thus for purposes of the AM4 CHIA, dewatering of a stream as a result of previous mining is considered in the cumulative impact assessment; however, dewatering of a stream due to previous or existing mining is not considered to be material damage unless the hydrologic

assessment of the CIA **“indicates that the addition of the impacts of the proposed operation [AM4] to those of the other anticipated mining [including previous and existing mining] may cause material damage to the hydrologic balance outside the permit area.”** Pet’rs’ Ex. 36, p. II-6.

184. Further, dewatering of a stream as a result of the proposed operation does not constitute material damage unless it results in the **degradation or reduction of the quality or quantity of water outside the permit area** in a manner and to an extent that 1) **land uses or beneficial uses of water are adversely affected**, 2) **water quality standards are violated**, or 3) **water rights are impacted**. Section 82-4-203(31), MCA.]

185. Assessments by the Department and WECO described this reach of stream as intermittent to perennial before WECO strip-mined the land next to it. Pet’rs’ Ex. 2 at 9-9. [Undisputed. The Department relies on the following additional facts as material to its defense in this matter:

186. For purposes of the AM4 CHIA analysis, the Department determined the nature of flow in creeks located within the CIA at locations monitored by the Rosebud Mine and Big Sky Mine that had sufficient surface water monitoring to determine the nature of the flow. Pet’rs’ Ex. 2, p. 8-2; DEQ Ex. C, ¶ 25.

187. “With the exception of some intermittent stream reaches and

stock water ponds, the surface water that is monitored by the mines in and near the Rosebud and Big Sky mines are ephemeral, flowing only in response to precipitation events or snowmelt, or for short reaches below the issue point of springs or seeps.” Pet’rs’ Ex. 2, p. 8-2; DEQ Ex. C, ¶ 25.

188. However, “[l]ong term monitoring at Rosebud and Big Sky indicates some stream segments that have had periods of flow that would be classified as intermittent<sup>15</sup>, including two segments on upper EFAC.” Nevertheless, “[w]ith only one continually monitored site upstream of mining, natural flow conditions along the entire reach of EFAC cannot be established by the existing record of empirical measurements.” In other words, there are simply too few data monitoring points to accurately determine historic stream flow on EFAC, including flow in Section 15, which is located between Area C and Area B of the Rosebud Mine. DEQ Ex. C, ¶ 29.

189. Similarly, after reviewing the available data on the historic flow in Section 15, WECO’s expert, Michael Nicklin, concluded that it is unclear whether the conditions described for Section 15 in past technical documents are indicative of natural intermittent flow conditions. WECO Ex. 6, ¶ 23.]

190. Water levels in the stream’s alluvium declined steeply following

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<sup>15</sup> Pursuant to ARM 17.24.301(61) “[i]ntermittent stream means a stream or reach of a stream that is below the local water table for at least some part of the water year, and obtains its flow from both surface runoff and groundwater discharge.”

strip- mining adjacent to the creek and eventually went dry. Pet'rs' Ex. 2 at 9-9 to -10. [Disputed on the following grounds:

191. The CHIA indicates that in the 1980s and 1990s mining operations adjacent to EFAC in Areas A, B, and C were conducted close to the alluvium, but have since progressed away from the creek. Pet'rs' Ex. 2, p. 9-7.

192. Alluvial water levels in EFAC near the Section 15 reach started to steadily decline starting in the mid 1980's and continued to decline through the 1990's (AM4 CHIA Figure 9-92). **Monitoring of alluvial water levels indicate that this area experienced both natural (starting in the mid to late 1980's) and mine-related (steep declines in 1993 and 1995) drawdown.** However, groundwater levels in other areas of the mine have recovered to their pre-mine levels in EFAC alluvium, and intermittent flow conditions have returned to those portions of EFAC. Pet'rs' Ex. 2, p. 9-9, 9-10; WECO Ex. 6, ¶ 25, Exhibit A.

193. Nevertheless, the Department lacked sufficient historical data to determine whether former and existing operations of the Rosebud mine have caused a degradation of water quantity in Section 15 of EFAC to the extent that the beneficial use of aquatic life support has been adversely affected, or a water right has been impacted; however, there are no surface

water rights listed with the Montana Department of Natural Resources (“DNRC”) for EFAC through Section 15. Pet’rs’ Ex. 2, p. 9-10; DEQ Ex. C, ¶ 32.

194. There is conflicting evidence in the record from recent years as to whether Section 15 of EFAC is ephemeral or intermittent. For example, the 2006 Water Quality Attainment Record identifies this segment of stream as “ephemeral.” However, flow has recently been observed by employees of the mine and the Department in Section 15. See ¶ 20, *supra*; WECO Ex. 6, ¶¶ 23-24, Exhibit A.

195. Even if there is a reduction in flow to Section 15 as a result of historic mining, mining operations in AM4 will not affect the quantity of water in this Section because any impacts to EFAC surface water flow will occur much further downstream. See ¶¶ 178-179, *supra*.

196. Additionally, it appears that the effects of dewatering in some segments of EFAC alluvium have been counteracted by recharge from pit water discharges made directly into outfalls of EFAC, and from seepage from sediment ponds. This conclusion is supported by monitoring data from “a new and more reliable continuous flow monitor” that was installed in late 2011 upstream of the state highway crossing of EFAC at SW-55, which recorded the presence of water for almost all of 2012, which was a

relatively dry year. DEQ Ex. C, ¶ 33; Pet'rs' Ex. 2, Fig. 9-2.

197. This new data indicates that while some segments have seen a decrease in surface flow, other sections have seen an increase in flow, which has caused some segments that were previously ephemeral to be intermittent or perennial. DEQ Ex. C, ¶ 34.]

**22. The Department Failed Entirely to Assess Numeric Aquatic Life Standards for Nitrogen Despite Its Own Prior Determination that East Fork Armells Creek Is Not Meeting Water Quality Standards for Aquatic Life Due to Nitrogen Pollution.**

198. The Department's Water Protection Bureau identified nitrogen pollution as a potential cause of the lower reach of East Fork Armells Creek's failure to meet water quality standards for aquatic life, albeit with low confidence<sup>16</sup>. Pet'rs' Ex. 7 at 19; DEQ SDF at 19. [Undisputed. The Department relies on the following additional facts as material to its defense in this matter:

199. In 2006, the Department's Water Quality Bureau assessed the lower segment of EFAC (MT42K002\_110) and determined that it is **impaired for aquatic life support due to Nitrogen from agriculture, not coal mining**. Coal mining has never been identified as a source of Nitrogen

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<sup>16</sup> The Department objects to this factual allegation on the grounds that it is not relevant or material to resolution of this case. Whether Nitrogen is a cause of impairment of EFAC is only relevant or material to the extent that coal mining has been identified as the source of the Nitrogen that is causing the impairment. The record clearly indicates that the potential source of Nitrogen that is causing the impairment of lower EFAC is agriculture, not coal mining. See ¶¶ 35-37 *supra*.

in either the lower or upper segments of EFAC. See ¶¶ 35-37, *supra* (emphasis added); Pet'rs' Ex. 7, pp. 17, 19; Pet'rs' Ex. 6, p. 12; DEQ Ex. K, p. 63.

200. In response to public comments received on the *Montana Draft 2016 Water Quality Integrated Report* concerning the 2006 Water Quality Attainment Record for lower EFAC, Water Quality Bureau staff confirmed that coal mining is not identified as a source of Nitrate/Nitrite or Total Nitrogen in this segment of EFAC. DEQ Ex. K, p. 13; DEQ Ex. L, p. 63.

201. Coal mining has never been identified as a source Nitrogen that is causing the impairment of EFAC for aquatic life support. Pet'rs' Ex. 6, p. 12; Pet'rs' Ex. 7, p. 17, 19; DEQ Ex. K, p. 13; DEQ Ex. L, p. 63.]

202. The Department admits operations of the Rosebud Mine contribute nitrogen pollution to the lower reach of East Fork Armells Creek, albeit in a "relatively minimal" amount<sup>17</sup>. DEQ Ex. C, ¶ 36. [Disputed on the following grounds:

203. In response to public comment on this issue, DEQ indicated that "[t]he lower portion of EFAC receives nitrogen-rich effluent from

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<sup>17</sup> The Department renews its objection found in note 14. There is no evidence in the record to support a conclusion that lower EFAC is impaired due to Nitrogen from coal mining, or that an applicable water quality standard for Nitrogen has been violated in lower EFAC as a result of coal mining.

numerous sources including: runoff from the town of Colstrip, the water treatment plant, infiltration and runoff from the golf course (with fertilized and irrigated greens), agriculture, and grazing....” These sources, along with leaking ponds from the Colstrip power plant, also contribute to SC and TDS in the downstream section of EFAC.” Pet’rs’ Ex. 1, p. 9; DEQ Ex. C, ¶ 37; WECO Ex. 6, ¶ 28; WECO Ex. 7, ¶¶ 12-13.

204. As indicated in Table 9-7 (surface water exceedances) of the CHIA, out of 46 samples taken for surface water, there were **zero exceedances of the human health standard for nitrogen in upper EFAC**. All of the surface water exceedances (12 out of 64 samples) occurred downstream of Colstrip, where **potential sources other than mining have been identified**. DEQ Ex. C, ¶ 39; DEQ Ex. M.

205. The surface and alluvial water quality data analyzed by DEQ for the Rosebud mine, which is summarized in **Table 9-7 (surface water exceedances) of the CHIA, revealed that exceedances for nitrate-nitrite nitrogen is uncommon, which indicated to DEQ that the relative contribution of nitrogen to EFAC from the Rosebud mine is minimal**. This is not an admission that the mine actually contributes nitrogen pollution to lower EFAC. Rather, it is an admission that the mine is one of many potential sources of nitrogen in EFAC, and that based on the available water

quality data, any contribution from the mine is “minimal.” Pet’rs’ Ex. 1, p. 9; DEQ Ex. M; DEQ Ex. C, ¶ 36, 38; WECO Ex. 6, ¶ 28; WECO Ex. 7, ¶ 12-13.

206. Figure 9-17 of the CHIA provides a visual summary of Nitrate and Nitrite as Nitrogen concentration in surface water based on water quality samples taken by the mine since 1985 through 2013. “In Figure 9-17, samples above the human health limit of 10 mg/L are shown as dark red.” For locations with multiple water quality samples, the median of the samples is plotted. Pet’rs’ Ex. 2, p. 9-26; Figure 9-17 of the CHIA is incorporated herein by reference and attached hereto as DEQ Ex. U.

207. As described in the CHIA, samples that exceed the human health limit of 10 mg/L “**may be** in surface water samples due to **residual chemicals from blasting materials, from agricultural activities, or from city runoff and municipal sources.**” Thus, while the CHIA acknowledges **that mining is a potential source** of nitrogen in the water samples that exceeded the human health standard, **agricultural activities, city runoff and municipal sources were also identified as potential sources** of the pollutant. Pet’rs’ Ex. 2, p. 9-26(emphasis added); DEQ Ex. C, ¶ 38 (emphasis added); WECO Ex. 7, ¶¶ 12-13.

208. Additionally, “[m]any of the highest values have been detected

downstream of active mining and in areas actively used by livestock.” The most recent samples from 2000-2013 that had the highest nitrate concentrations in the vicinity of mining occurred in the **Spring Creek drainage** downstream from Rosebud Mine Area D. Pet’rs’ Ex. 2, p. 9-26 (emphasis added); DEQ Ex. U.

209. From the 1980s-1990s, there were high nitrate concentrations in **upper EFAC** between Rosebud Mine Area A and B (upstream of Colstrip), which are coincident with the time that mining was active adjacent to the drainage. However, the drainage bottom has also been utilized historically by cattle. The majority of these samples were below the human health limit of 10 mg/L. Pet’rs’ Ex. 2, p. 9-26; DEQ Ex. U.

210. Since 1990, there has not been a single water quality sample on either upper or lower EFAC that violates the human health standard of 10 mg/L. Thus, the available water quality data indicated that nitrogen from the mine is not an issue to be concerned about. DEQ Ex. U.

211. “[H]igh nitrogen may be in surface water samples due to residual chemicals from blasting.” DEQ Ex. C, ¶ 37 (quoting Pet’rs’ Ex. 2 at 9-26). [Disputed on the following grounds: See ¶ 205, *supra*.]

212. “[M]any of the highest values [of nitrogen] have been detected downstream of active mining.” DEQ Ex. C, ¶ 37 (quoting Pet’rs’ Ex. 2 at 9-

26). [Disputed on the following grounds:

213. The CHIA actually states that “[m]any of the highest values have been detected downstream of active mining and in areas actively used by livestock.” DEQ Ex. C, ¶ 37 (quoting Pet’rs; Ex. 2 at 9-26).]

214. Numeric aquatic life standards for nitrogen apply to stream reaches in the cumulative hydrologic impact area, including East Fork Armells Creek. Pet’rs’ Ex. 5 at 16; Pet’rs’ Ex. 16 at 12; DEQ Ex. C, ¶¶ 41-42. [Disputed on the following grounds:

215. Numeric nutrient water quality standards found in Department Circular DEQ-12A only apply to “wadeable” (**intermittent or perennial**) streams located inside the CIA; they do not apply to ephemeral streams. Therefore, they do not apply to those segments of EFAC located inside the CIA that are “ephemeral”. See ¶ 17, *supra*.]

216. Applicable numeric water quality standards for nitrogen are material damage criteria that must be assessed to determine if cumulative hydrologic impacts will cause material damage. Pet’rs’ Ex. 2 at 2-3.

[Disputed on the following grounds:

217. It is undisputed that material damage criteria for surface waters located outside the permit area include the numeric nutrient water quality standards found in Department Circular DEQ-12A. However, these

standards only apply to **wadeable streams** located inside the CIA; they **do not apply to ephemeral streams**. Therefore, the Department was only required to apply the numeric water quality standards for nitrogen to wadeable streams located inside the CIA. See ¶ 17, *supra*; DEQ Ex. V.

218. Additionally, the Department is only required to conduct a material damage analysis, which includes application of applicable water quality standards, to evaluate resources outside the permit area if the **cumulative hydrologic impact assessment** of the CIA indicates “that the **additional impacts of the proposed operation of AM4 may cause material damage to the hydrologic balance outside the permit area**”. See ¶ 173, *supra*.

219. Further, the Department is only required to conduct a material damage analysis, which includes application of applicable water quality standards, to evaluate resources outside the permit area, **if coal mining is the cause of the degradation or reduction of the quality or quantity of water outside of the permit area** that could adversely affect **beneficial uses of water**, violate a **water quality standard**, or impact a water right. See ¶¶ 173-175, *supra*.]

220. The Department admits its cumulative hydrologic impact assessment failed entirely to assess whether the cumulative hydrologic

impacts of mining and reclamation operations will cause violations of the applicable aquatic life standards for nitrogen. DEQ Br. at 25 (“DEQ concedes that it did not apply the more stringent numeric water quality standards for nitrogen that protect aquatic life contained in Department Circular DEQ 12-A (‘DEQ 12-A’) to its analysis of EFAC.”). [Disputed on the following grounds:

221. The Department conceded in its brief that it “did not apply the more stringent numeric water quality standards for nitrogen that protect aquatic life contained in Department Circular DEQ 12-A (‘DEQ 12-A’) to its analysis of EFAC.” However, the Department went on to say that “the numeric water quality standards for nitrogen contained in **DEQ 12-A only apply to wadeable C-3 streams**, which by definition are perennial or intermittent. They do not apply to those portions of EFAC or any other stream that are ephemeral. DEQ Br., p. 25; See ¶ 17, 217, *supra*.

222. Therefore, the nitrogen standard for the protection of aquatic life contained in DEQ 12-A would only be applicable to those reaches of EFAC that are wadeable, which means by definition that they are perennial or intermittent. Pet’rs’ Ex. 5, p. 16; DEQ Ex. C, p. 13; See ¶¶ 17, 217, *supra*.

223. The evidence is undisputed that the **majority of upper EFAC**

is **ephemeral**. Therefore, the Department was not required to apply the numeric nutrient standards for nitrogen in its analysis to these segments of the stream. DEQ Ex. C, ¶ 27.

224. There is conflicting evidence in the record as to whether Section 15 of upper EFAC is ephemeral or intermittent, therefore, it is not clear whether the Department was required to apply the numeric nutrient standards for nitrogen in its analysis to these segments of the stream. See ¶¶ 20, 25-26, 29, 32, 85, 195, 198, *supra*.

225. Nevertheless, the record is clear that out of 46 water quality samples summarized in Table 9-7 for upper EFAC, there were zero exceedances of the human health standard for nitrogen. DEQ Ex. C, ¶ 39; See ¶ 204, *supra*.

226. Further, as indicated on Figure 9-17, since 1996, water quality samples for this segment of stream have typically not exceeded the newly adopted numeric nutrient standard for nitrogen of 1.3 mg/L. DEQ Ex. U.

227. Additionally, the Department determined that the proposed operation of AM4 would not impact Section 15 of EFAC, so there would have been no reason to analyze this segment of stream in accordance with the more stringent standards contained within DEQ-12A. There was no evidence to support a conclusion that the additional impacts of the proposed

operation of AM4 would result in a violation of the water quality standards contained in DEQ-12A. See ¶ 219, *supra*.

228. “Even if [the Department] had applied the more stringent numeric nutrient standards contained in DEQ 12-A, the results of [the Department’s] analysis would not have been any different. The total nitrogen samples taken at SW-55, which is the surface water monitoring station located on that portion of upper EFAC which has recently demonstrated intermittent flow, have not exceeded the DEQ-12A standard of 1.3 mg/L for nitrogen.” DEQ Ex. C, ¶ 44.

229. With respect to those reaches of lower EFAC that have intermittent to perennial flow, the available data indicated that coal mining was not the source of the nitrogen that was causing the impairment of this segment of stream. Therefore, there was no reason for the Department to do further analysis to apply the more stringent standards contained within DEQ-12A. DEQ Ex. C, ¶ 43; See ¶ 219, *supra*.]

230. Instead of assessing the more stringent nitrogen standard for aquatic life (1.3 mg/L), *see* DEQ Ex. C, ¶ 44, the Department’s cumulative hydrologic impact assessment only considered whether the cumulative hydrologic impacts of mining and reclamation operations would cause violations of the much less stringent nitrogen standard for human health (10

mg/L). Pet'rs' Ex. 2 at 9-26, -78 to -80. [Undisputed. However, even if the Department had applied the more stringent standard, the outcome of the results of the Department's analysis would not have been any different. See ¶¶ 228-229, *supra*.]

**23. The Department Unlawfully Reversed the Burden of Proof in Its Material Damage Determination for Rosebud Creek.**

231. Rosebud Creek is within the cumulative hydrologic impact area. Pet'rs' Ex. 2, fig. 5-1. [Undisputed that Rosebud Creek was included from above its confluence with Lee Coulee to the confluence with Spring Creek to include impacts from Area D and E of the Rosebud Mine, and impacts from Area A and B of the Big Sky Mine. There is also a small sliver of the Rosebud Mine Area B that crosses into the Lee Coulee drainage that impacts Rosebud Creek. See ¶ 105, *supra*.]

232. Area B mining operations occur within the Rosebud Creek drainage basin. Ex. 2 at 9-11 & fig. 5-1; Ex. 5 at 9. [Undisputed that a small sliver of the Rosebud Area B mine crosses into the Lee Coulee drainage that impacts Rosebud Creek. However, there will be no impacts from AM4 to Lee Coulee or Rosebud Creek. See ¶¶ 103, 104, 155, *supra*.]

233. WECO is authorized to discharge pollutants from outfalls in the Area B permit area located in Lee Coulee, which is tributary to Rosebud

Creek<sup>18</sup>. Pet'rs' Ex. 37 at 174. [Disputed on the following grounds:

234. Discharges made pursuant to an MPDES discharge permit issued by the Department for outfalls on Rosebud Creek are exempted from the definition of "pollution", therefore, Petitioners' assertion that the mine discharges "pollution" pursuant to its discharge permit to tributaries of Rosebud Creek is incorrect both factually and as a matter of law. See § 75-5-103(30)(b)(i), MCA; See ¶ 161, *supra*.

235. Additionally, there will be no new discharge points related to AM4 on Lee Coulee because the proposed operations in AM4 do not cross the surface water divide, and surface water from AM4 will not reach Lee Coulee or Rosebud Creek. See ¶ 158, *supra*.]

236. The Department determined that Rosebud Creek "gains salt" as it passes the confluence with Lee Coulee. Pet'rs' Ex. 2 at 9-15<sup>19</sup>. [Undisputed. The Department relies on the following additional facts as material to its defense in this matter:

237. As described in the CHIA on page 9-15, the Department analyzed data from two stations on Rosebud Creek, one upstream and one downstream of Lee Coulee to "determine if hydrologic impacts to Lee

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<sup>18</sup> The Department objects to this factual allegation on the grounds that it is not relevant or material to resolution of this case. The record is clear that the proposed operation of AM4 will not have any impact on Rosebud Creek or its tributaries. Therefore, there will be no interaction between the impacts from the proposed operation of AM4 and the impacts from previous or existing mining on Lee Coulee or Rosebud Creek.

<sup>19</sup> The Department renews the objection made in note 16 above.

Coulee could be detected in Rosebud Creek.” “In general, the variation in TDS between the two stations is usually less than 100 mg/L, and the station downstream of Lee Coulee recorded higher TDS than the station upstream of the creek.” Pet’rs’ Ex. 2, p. 9-15.

238. However, even though the salt load reveals that Rosebud Creek gains salt between these two monitoring stations, the “concentration of TDS measured at the downstream station has not increased over time, and similarly no trend can be seen in the difference in concentration between the upstream and downstream stations.” Pet’rs’ Ex. 2, p. 9-15.

239. Additionally, even though a small portion of the existing Area B permit crosses the surface water divide into the Lee Coulee drainage, the Department required the mine to construct sediment ponds at the edges of permit area to prevent offsite discharges to Lee Coulee from Area B. The quality of discharged water captured by these sediment ponds “is equal to or better than what naturally occurs in the streams in the area and in the groundwater. Thus, in the unlikely event a discharge occurs, it will not diminish the water quality of Rosebud Creek and its tributaries. See ¶¶ 156-157, *supra*.]

240. Water quality in Rosebud Creek below Lee Coulee violates numeric water quality standards for specific conductance, which is a

measure of salinity<sup>20</sup>. Pet’rs’ Ex. 2 at 9-15 & fig. 9-5. [Undisputed. The Department relies on the following additional facts as material to its defense in this matter:

241. See ¶ 244, *infra*.

242. In a prior cumulative hydrologic impact assessment for the Big Sky Mine, which is located in part in Lee Coulee, the Department predicted that mining would cause increased salinity in Rosebud Creek outside the mine permit area<sup>21</sup>. Pet’rs’ Ex. 13 at 9. [Undisputed. The Department relies on the following additional facts as material to its defense in this matter:

243. The 1988 CHIA for the Big Sky Mine predicted that the “impact to the Rosebud Creek alluvial aquifer outside the permit area is predicted to be an 11 percent rise in TDS.” Pet’rs’ Ex. 13, p. 9.

244. In its cumulative hydrologic impact assessment for the AM4 Amendment to the Area B permit, the Department found that: “The proposed operation is designed to prevent material damage to Rosebud Creek because as of 2013, there has not been a change in water quality in Rosebud Creek that can be directly attributable [sic] to mining in Lee Coulee, Miller Coulee, Cow Creek, Pony Creek, Hay Creek, or Spring

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<sup>20</sup> The Department renews the objection made in note 16.

<sup>21</sup> The Department renews the objection made in note 16.

Creek.<sup>22</sup> Pet'rs' Ex. 2 at 9-15. [Undisputed. The Department relies on the following additional facts as material to its defense in this matter:

**245.** DEQ concluded in the CHIA that the numeric water quality standard for EC in tributaries to Rosebud Creek will not be violated as a result of the proposed operations in AM4 because impacts from AM4 will not have any interaction with surface water in these tributaries. The surface water divide between the Big Sky Mine and Area B of the Rosebud mine will prohibit surface water from AM4 from flowing south towards Lee Coulee<sup>23</sup>. Rather, surface water from AM4 will flow north towards EFAC. Therefore, there is no evidence to support a conclusion that surface water runoff from AM4 will cause a violation of EC standards in tributaries to Rosebud Creek. DEQ Ex. C, p. 6.]

**24.The Department Failed to Assess Impacts to Class I Groundwater.**

**246.** The Department admits water quality sampling from the unmined Rosebud coal aquifer between the Rosebud and Big Sky Mine has identified water within the range of Class I groundwater. DEQ Br. at 35.

[Disputed on the following grounds:

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<sup>22</sup> The Department renews the objection made in note 16.

<sup>23</sup> DEQ requests that the Board take judicial notice pursuant to Rule 201, M.R.Evid., of the fact that a surface water divide is located between the Big Sky Mine and Area B of the Rosebud mine that prohibits surface water from AM4 from flowing south towards Lee Coulee, and directs surface water flow north towards EFAC. These facts are within the generally recognized scientific facts within DEQ's specialized knowledge, and therefore, the Board may also take notice of them pursuant to § 2-4-612(6), MCA.

247. Petitioners' assertion is a **gross mischaracterization of the statement made by the Department** in its Brief on page 35.

248. The Department stated as follows:

Finally, contrary to Petitioners' assertion, there is **insufficient evidence to support the conclusion that Class I groundwater exists in the Rosebud coal aquifer between Area B of the Rosebud Mine and the Big Sky Mine**. While DEQ admits that the CHIA included reference to an EC measurement of 880  $\mu\text{S}/\text{cm}$  taken in 1996 in a Rosebud coal well ("ARCM67") north of the Big Sky Mine Area A, which falls within the range of Class I groundwater, a **single measurement from a single well in 1996 does not demonstrate that there is Class I groundwater in the area between Rosebud Area B and the Big Sky Mine that will be degraded to Class II or III groundwater by migrating spoils water**.

Additionally, it is important to note, that the **sample well (ARCM67), from which the single sample was taken that Petitioners claim is indicative of Class I groundwater, is not located in the area where Area B spoils water moves toward the Big Sky Mine**. Groundwater flow from spoils water near this well moves north away from the Big Sky Mine.

In reality, "Rosebud coal water quality in the area between the two mines (outside the permit areas of both mines) is variable and is currently unaffected by spoil. DEQ does not expect that a numeric water quality standard will be violated by the spoils water or that any beneficial uses of groundwater in this area will be adversely affected by the proposed operations in AM4. Therefore, DEQ does not expect material damage to result outside the permit area from migrating spoils water from AM4."

DEQ Br., p. 35 (emphasis added); See also Figure 7-3 of the CHIA, which is incorporated herein by reference and attached hereto as DEQ Ex. W.

249. The Department and WECO acknowledge that after mining water

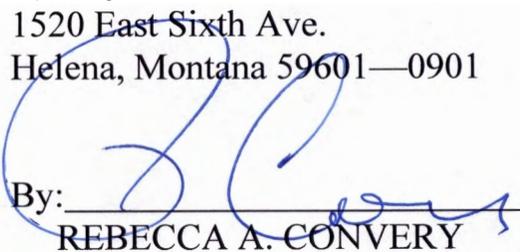
quality in the coal spoils aquifer will degrade to Class III groundwater and migrate

towards the portion of the unmined coal aquifer between the two mines. Pet'rs' Ex. 2 at 9-59; Pet'rs' Ex. 8 at 14. [Disputed as stated in ¶¶ 247-248, supra.]

250. The Department's cumulative hydrologic impact assessment failed entirely to assess impacts of the migrating spoils water on high quality Class I water. Pet'rs' Ex. 2 at 9-59. [Disputed as stated in ¶¶ 247-248, supra.]

DATED this 9th day of November, 2016.

Montana Department of Environmental  
Quality  
1520 East Sixth Ave.  
Helena, Montana 59601—0901

By:   
REBECCA A. CONVERY  
Attorney for Respondent

### CERTIFICATE OF SERVICE

The undersigned certifies that on November 9, 2016, she caused the original or a copy of the foregoing Supplemental Statement of Disputed Facts to be delivered or transmitted to the person named below as follows:

*By electronic mail:*

Shiloh Hernandez  
Western Environmental Law Center  
103 Reeder's Alley  
Helena, MT 59601

(406) 204-4861  
[hernandez@westernlaw.org](mailto:hernandez@westernlaw.org)

Derf Johnson  
Montana Environmental Information Center  
107 W. Lawrence St., #N-6  
Helena, MT 59624  
(406) 443-2520  
[djohnson@meic.org](mailto:djohnson@meic.org)

Walton D. Morris, Jr. *pro hac vice*  
Morris Law Office, P.C.  
1901 Pheasant Lane  
Charlottesville, VA 22901  
(434) 293-6616  
[wmorris@fastmail.net](mailto:wmorris@fastmail.net)

W. Anderson Forsythe  
Moulton Bellingham PC  
Suite 1900, Crowne Plaza  
PO Box 2559  
Billings, MT 59103  
[Andy.Forsythe@moultonbellingham.com](mailto:Andy.Forsythe@moultonbellingham.com)

John C. Martin  
Daniel H. Leff  
Tyler A. O'Connor  
Crowell & Moring, LLP  
1001 Pennsylvania Ave., N.W.  
Washington, D.C. 20004-2595  
[JMartin@crowell.com](mailto:JMartin@crowell.com)  
[DLeff@crowell.com](mailto:DLeff@crowell.com)  
[TOConnor@crowell.com](mailto:TOConnor@crowell.com)

By: Denise Hartman