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INCOMING
0150005
TASK 2597

From: Dale Harber <dharber@fs.fed.us>
To: <joehefrich@utah.gov>
Date: 8/29/2006 8:53:25 AM
Subject: Bear Canyon Mine Comments August 2006.doc

Joe:

Here are our comments on the last Bear Canyon submittal. Please call Karl if you have any questions. I will be on vacation the remainder of the week.

Dale

(See attached file: Bear Canyon Mine Comments August 2006.doc)

CC: Karl M Boyer <kboyer@fs.fed.us>

Forest Service Comments
Bear Canyon Mine Permit Revision
August 25, 2006

1. Much of the plan has not been updated to cover the proposed longwall mining. The discussions of past room-and-pillar mining should remain, as that is how the area was mined in the past. This mine plan should cover the entire mine, so all mining is discussed.

2. Page 5-10, Section R645-301-523, Mining Method.

Only room-and-pillar mining is discussed. Describe the longwall mining that is proposed for this mine plan modification.

3. Page 5-19, Protection of Natural Surface Structures & Streams.

Use the angle-of-draw to determine the distance needed to protect streams and escarpments, not a fixed distance.

4. Page 5C-4.

The discussion is only for subsidence due to room-and-pillar mining. Add a discussion of the predicted subsidence due to longwall mining.

5. Page 5C-14, last paragraph.

Use the angle-of-draw to define the outcrop protection, not a fixed distance.

6. Section 5, Engineering, Pg. 5-18, 1st Paragraph.

The first sentence contradicts the next to last sentence in the paragraph. A minimum 200 foot protection zone barrier may not be adequate in all circumstances. Appendix 5-C, page 5C-16, 3rd paragraph uses an angle of draw of 22 ½ degrees to determine an adequate protection zone barrier; however, in the next paragraph protection zone barriers of 300 feet and 370 feet are given for the Tank and Blind Canyon Seams, respectively. Any references in the text to a static barrier limit (instead of using the angle of draw to determine it) should be removed. If a certain protection zone barrier is given for a particular location for a specific coal seam, then explain how that was determined by using depth and the angle of draw. The criteria to use are depth and angle of draw when determining an adequate protection zone barrier at each location.

7. Subsidence Control and Monitoring Plan, Appendix 5-C, Pg 5C-3.

Attachments 2 and 3 are missing.

8. Subsidence Control and Monitoring Plan, Appendix 5-C, Pg. 5C-4.

The paragraph infers that no subsidence will occur as a result of longwall mining. The paragraph should make it explicit that only room and pillar mining has been done up to now. The first sentence implies that the past experience with room and pillar mining can be extrapolated to the results anticipated with longwall mining. Discuss the effects anticipated with longwall mining. The paragraph also needs to point out that two seams overlap each other over a large area.

9. Subsidence Control and Monitoring Plan, Appendix 5-C.

Figure 5C-2 is missing.

10. Subsidence Control and Monitoring Plan, Appendix 5-C, Pg. 5C-14, last paragraph.

The paragraph should be rewritten to reflect that depth of overburden and an angle of draw will be used to determine the barrier protection zone at each location. The previous page, 5C-13, 3rd paragraph, discusses this. These inconsistencies should be corrected throughout the documents.

11. Hydrology, R645-301-728, Probable Hydrologic Consequences Determination, Pg. 7-44, 3rd paragraph, 4th sentence.

The sentence needs clarification.

- a. Which coal seam is being referred to?
- b. At some point the minimum overburden thickness(es) will be zero because the coal seam(s) outcrop along the creek.
- c. A comparison of Plates 5-1C, 6-2 and 7-4 indicates that the subsidence resulting from the present Tank Seam mine plan configuration will extend to an area under the Left Fork of Fish Creek drainage with little more than 400 feet of overburden.
- d. The "Area Of Concern To Be Monitored While Undermining" is in this area. Apparently, this "Area Of Concern" is the primary source of water contributing to the perennial section of the Left Fork of Fish Creek. This area will need to be analyzed more thoroughly before the present mine plan configuration can be approved.

12. Hydrology, R645-301-728, Probable Hydrologic Consequences Determination, Pg. 7-44, 3rd paragraph, 6th sentence.

A mitigation plan needs to be in place before an impact occurs.

13. Hydrology, R645-301-731.100, Hydrologic Balance Protection, Page 7-46, 2nd paragraph, last sentence.

Correct the sentence to reflect the most up-to-date subsidence predictions. Also discuss the use of depth and angle of draw to determine the limits of the protection zone barriers.

14. Hydrology, R645-301-731.100, Hydrologic Balance Protection, Page 7-46, 3rd paragraph, last sentence.

Correct the paragraph to reflect what is currently being proposed, i.e., in U-024316 mining will take place in the Hiawatha Seam, not the Tank Seam and subsidence will be approximately 5 feet in that area. Update the discussion of the barrier protection zone for Bear Creek to reflect the use of depth and angle of draw in its boundary determination.

15. Hydrology, R645-301-731.100.210, Groundwater Monitoring Plan, Pg. 7-49, last paragraph, 2nd sentence.

If baseline data were collected for SBC-17, then so state.

16. Hydrology, R645-301-731.100.210, Groundwater Monitoring Plan, Pg. 7-49, last paragraph, last sentence.

Specify in what area sampling will begin 3 years prior to mining. List the locations and monitoring point designations where monitoring will occur.

17. Hydrology, Table 7-14, Water Monitoring Matrix, Pg. 7-53.

The table needs to be updated to reflect recent discussions and field trip findings regarding additional sampling locations:

- a) 2 additional surface water monitoring points in the McCadden Hollow drainage.
- b) 1 new spring or seep location to be determined in T.16 S., R.7 E., Section 10.
- c) 2 springs in T.16 S. R.8 E., Section 19 (SBC 16-A and SBC 16-B).
- d) The "Area Of Concern" in T.16 S. R.8 E., Section 19.

18. Hydrology, Section 731.220, Surface Water Monitoring, Pg. 7-57.

Update this section to reflect the current permit revision and all new monitoring points.

19. Subsidence Map, Plate 5-3A.

The Castlegate Sandstone needs to be mapped throughout the permit revision area.

20. Archaeology Map.

An archaeology map needs to be submitted for review as part of the permit revision package.

21. Geologic Map, Plate 6-1.

Use colored shading for the geologic formations.

22. Plate 7-4 and Plate 7-12.

Both of these plates are titled Water Monitoring and dated the same. Both are not needed. Put all correct information on one and delete the other. Update the plate to reflect the recently approved monitoring locations.

23 Plate 3-1 has symbols in the legend for riparian habitats, but none are shown on the map. Joe Helfrich said there would be additional field work done to delineate these habitats, and they would then be mapped. Add the new data to the map before the next review.

24. Page 3-23, 2nd paragraph. "Bear Creek and Fish Creek are low-quality aquatic environments of little value to the aquatic resources of the area".

Is this based on some systematic survey and it rated out as low, or is just someone's opinion? Does Bear Creek have water quality issues? I doubt Fish Creek does. I would argue that Fish Creek is pretty important to the aquatic resources that use the area (insects, amphibians etc). On page 3-27 under the amphibian section it says that the area provides substantial value habitat for the three species that might be present. Present references and documentation that support the statement that "Bear Creek and Fish Creek are low quality aquatic environments of little importance...".

That paragraph goes on to say that a biological community mostly likely occurs on both creeks on an intermittent basis. I understand that we are treating these as perennial drainages (not intermittent) and this is stated in the first paragraph on this page. I would recommend dropping the 2nd paragraph or really cleaning it up.

25. Pg 3-25, Birds.

The comment was made last time that peregrine falcons were not federally listed species anymore, and that they would be addressed as FS sensitive species. The references to them as endangered, were changed to sensitive, but the statements are not true now, as written. There is also a statement about impacts from a haul road and utility corridor. As far as I know, we are not looking at haul roads or utility corridors. Re-write this whole paragraph:

"There are no federally listed bird species potentially present in the project area.

However, there are several Forest Service and Utah sensitive species that may be present: northern goshawk, flammulated owl, three-toed woodpecker and peregrine falcon, as well as the golden eagle, which is a USFS Management Indicator Species. Bird species potentially affected include species nesting on the escarpment and species associated with riparian habitats or dependent of prey or forage associated with riparian habitats. Surveys for cliff nesting raptors were started in 1987 and were most recently conducted in 2006. Golden eagles, prairie falcons, red-tailed hawks, unidentified falcon species and ravens have been found nesting on cliffs in the area. Factors that favor the stability of the Castlegate escarpment are outlined in Maleki 2001, pg 13. Owl surveys were done in the springs of 2004. Surveys in 2004 found great horned owls in the Wild Horse Ridge area.”

26. Pg 3-27 Amphibians.

App. 3I says that it is probable that 6 species of amphibians inhabit the project area. App. I also says that only one species has been determined to be of high interest to the State of Utah (tiger salamander). Pg 3-27 amphibian section says that “the area provides substantial value habitat for the three species listed”.

Describe the three species and their habitat?

27. Pg 3-28 includes a new list of threatened and endangered species. Change the heading to Utah Sensitive Species. Add a sentence to the beginning “The Utah Sensitive Species list includes federally-listed threatened and endangered species, as well as species with existing conservation agreements, and species identified as species of concern. Add to the next sentence “The list of **federally listed** threatened and...”

The paragraph under the list, states that a map with blocks that lists threatened and endangered species was also downloaded. This is a little confusing, because if you actually look at the species status for some of the species listed in Figure 3-1, they are not federally-listed species. Call these species “Utah Sensitive Species”. Utah Sensitive Species include federally listed species, but also includes quite a few other species. So, in this paragraph replace threatened and endangered species, with Utah Sensitive Species.

The last 2 paragraphs on this page are confusing. It starts with a meeting in 2006. The first paragraph mentions Townsends big-eared bats and ends by saying that the flammulated owl may be added to the threatened and endangered list (replace with Utah sensitive species list). The next paragraph says that to address these concerns bat and owl surveys were done. It implies that surveys were done in 2006 to address concerns identified at a meeting with DWR in 2006. But, Appendix 3M discusses surveys done in 2004. If there were additional bat and owl surveys done in 2006, they need to be added to App 3M. I’m assuming that there were no additional surveys done in 2006, and that it’s just the wording of these 2 paragraphs that is confusing. Please clarify.

- 28 Page 3-29, Figure 3-1. Change the heading to Utah Sensitive Species in Relation to the Permit Area.
29. Pg 3-30, 3rd paragraph. Changing endangered to sensitive did not fix the problem. There are several species of raptors that might be found in the project area (see 3-25 above).
30. Old page 3-31, 2nd paragraph. Add that "Canyon sweet-vetch was also noted in the Fish Creek drainage during field surveys in June 2006."
31. Pg 3-32, paragraph on Link Trail Columbine, need to add that this was found in Left Fork of Fish Creek during field surveys in June 2006.
32. Pg 3-32. Habitats and Areas of High Value. It says that "Due to the depth of overburden no impact to these areas is expected" (referring to riparian areas). Cite references to support this statement for the new permit revision areas. Discuss the effects to Fish Creek.
33. Old page 3-39, 3rd paragraph. This paragraph makes a reference to App 3-C and predicted effects from subsidence. However, I could find no discussion about effects from subsidence, it is merely a report on existing vegetation. Please clarify.
34. Pg 3-43, Birds. Replace first sentence with "There are no federally listed bird species potentially present in the project area. However, there are several Forest Service and Utah sensitive species that may be present: northern goshawk, flammulated owl, three-toed woodpecker and peregrine falcon, as well as the golden eagle, which is a USFS Management Indicator Species."

Next two paragraphs - first says that "potential impact on bird species would be limited to the proposed new construction area". This is not applicable. Potential effects are from escarpment failure and loss of riparian habitats due to subsidence from mining.

Bottom of this page, aquatic wildlife, again talks about high quality streams, with no mention of Fish Creek.
35. Page 3-68, at the end of the first paragraph, it says that raptor nests will be safeguarded from subsidence by maintaining a minimum of a **100** ft barrier to the outcrop. Page 5-17 says mining will be stopped within **200** ft of the outcrop. Page 5-18 says 200 ft, 5C-14 says 200 ft. These inconsistencies need to be corrected throughout the documents, wherever they occur. Use depth and angle of draw to determine an adequate protection zone barrier in each area.
36. Old page 3-69, monitoring, 1st paragraph, refers to water in Bear Creek, but there is no mention of Fish Creek or other water monitoring sites. Update this and reference

Plate 7-4.

37. Appendix 3-I, Fish and Wildlife Resources Information.

The whole appendix needs to be updated to address the new permit revision areas and changes in listed species. Make sure it incorporates all comments made by Forest Service resource specialists on topics covered under other documents as part of this submittal.