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Date: 11/2/2004 3:56:57 PM
Subject: South Crandall Lease MRP

Steve:

The attached document contains our responses to the last copy you sent me.
Thanks for your work on this project.

Karl

(See attached file: South Crandall Lease Comments.doc)

CC: <pamgrubaughlittig@utah.gov>, <waynehedgerg@utah.gov>, Dale Harber <dharber@fs.fed.us>, Aaron Howe <ahowe@fs.fed.us>

DRAFT – DOGM REPLY TO FOREST SERVICE COMMENTS

Project: South Crandall Lease.
Review of GENWAL's September 1, 2004 responses to February 19, 2004 FS comments.
Date of FS review: Sept. 21, 2004.
Date of DOGM review: October 22, 2004, and revised October 28, 2004
Date of FS review: November 2, 2004.

1. **Chapter 3.**
The Biology chapter must include the following maps (accompanied with a discussion) for the South Crandall tract:

a) Deer Habitat Map (showing summer and winter range).
b) Elk Habitat Map (showing summer and winter range).
c) A vegetation monitoring plan must be discussed for the South Crandall tract.

GENWAL:
"Information regarding deer and elk habitat can be found in Chapter 3. GENWAL has a commitment for vegetation monitoring.

FS:
a & b) The Wildlife Map (Plate 3-1) dated March 23, 2004 lacks sufficient detail. So much information is missing that the 2004 map is in disagreement with the March 1994 revision.

. c) The Vegetation Map (Plate 3-2), dated April 15, 2004, does not accurately reflect the vegetation types in the South Crandall Lease Area.

DOGM:
a &b) The applicant's response to the Forest's Service comment #1 stated "Information regarding deer and Elk habitat could be found in chapter three." The Forest Service staff agreed but indicated that the March 1994 revision in the MRP contained a similar wildlife map with much greater habitat detail than the plate 3-1 provided in the application.

c) The vegetation map, (plate 3-2 dated 1997), was initially prepared by the Forest Service. Mr. Harber and Mr. Boyer indicated that the map was incorrect and that a more recent map accurately reflecting the vegetative types in the proposed lease area was available through the Forest Service.

TA Finding:

The applicant needs to include a copy of the wildlife map provided in the 1994 revision of the MRP or provide a reference to that particular map in the application. The applicant also needs to replace the outdated 1997 Forest Service vegetation map with a current vegetation map if available through the Forest Service.

FS:

DRAFT – DOGM REPLY TO FOREST SERVICE COMMENTS

Concur.

2. **Chapter 3**, Section 3.22.21, Page 3-8.
Provide a complete list of Threatened and Endangered Species (containing both plants and animals) on page 3-8 rather than referring the reader to Appendix 3-3.

GENWAL:
"A T&E list is included in Chapter 3".

FS:
It doesn't make sense to provide a partial T&E list at the beginning of Section 3.22.21 and then refer the reader to a more complete list in the appendix. Replace the partial list in Section 3.22.21 with the complete, and updated, list.

DOGM:
The partial list in Section 3.22.21 remains due to pagination problems created by updating the MRP. It is our understanding that the FS can live with this.

FS:
Concur.

3. **Chapter 3,** page 3-8.
The letter from UDWR referenced as being in Appendix 3-17 is not there. It should be presented in the MRP Revision.

GENWAL:
"The letter from DWR (App 3-17) has been deleted from Chapter 3".

FS:
A letter from UDWR, dated September 2, 1993, is in Chapter 3 of the April 1997 Crandall Canyon Mine MRP. The letter pertains to the original lease. It does not cover the South Crandall Lease Area. The letter from the USF&WS, found in the same document and section, is dated August 26, 1993 and pertains only to Lease UTU-68082, which is well north of the South Crandall Lease.

DOGM:
The letter from DWR and App. 3-17 have been removed and reference to the letter and appendices has been deleted. It is DOGMs understanding that the FS concurs that existing UDWR and USF&WS letters referenced in Chapter 3 should remain. DOGM has obtained a Section 7 Concurrence letter from USF&WS which will not be included in the MRP, but will be included as part of the decision document for the mining plan approval.

FS:
Concur.

DRAFT – DOGM REPLY TO FOREST SERVICE COMMENTS

4. <u>Chapter 3</u>, page 3-9.
The Peregrine Falcon should be added to the Sensitive Species list.

GENWAL:
"The Peregrin[e] Falcon has been added to the sensitive species list".

FS:
The Peregrine Falcon has been added to the list in the June 2004 MRP Revision document.

DOGM:
The Peregrine Falcon has been added to the list in the June 2004 MRP Revision document.

FS:
Concur.

5. <u>Chapter 3</u>, page 3-9, 2d paragraph.
The trout in Crandall Canyon are hybrids, not pure Colorado Cutthroats.

GENWAL:
"The Cutthroat trout in Crandall Canyon have been identified as hybrid".

FS:
The change to the document has been made.

DOGM:
The change to the document has been made.

FS:
Concur.

6. <u>Chapter 5</u>.
Include the following:

a) Structural contour maps for both coal seams.
b) Interburden map depicting the rock thickness between the two coal seams.
c) Geologic cross-sections (2) through the South Crandall tract; one oriented east-west and one oriented north-south. Geologic formations depicted should include the North Horn down to the Mancos shale.

GENWAL:
"The maps in Chapter 5 show structure and interburden. A geologic cross-section is also included in Chapter 5".

DRAFT – DOGM REPLY TO FOREST SERVICE COMMENTS

FS:

a) Structural contour maps have not been provided in the document for the South Crandall Lease Area. A structural contour map shows the elevation contours on the top horizon of a specific geologic unit. In this case we are interested in the elevation contours for the Blind Canyon and Hiawatha coal seams.

b) Interburden contours are not provided in the document. Only drill hole data are shown.

c) The two requested geologic cross sections for the South Crandall Lease Area have not been provided. The cross-section referred to by GENWAL is found in a hydrologic interpretation presented in Appendix 6-7 of the June 2004 MRP document. This cross-section does not go through the South Crandall Lease and does not provide the information requested.

DOGM:

a) Maps 5-2 (H) and 5-2 (BC) show the outcrops and strike and dip of the coal seams for the South Crandall Canyon Extension, which is the information required by the Coal Mining Rules. Because of the small area of the South Crandall Canyon Extension and limited data available to the Permittee, a structure contour map would provide little, if any, additional information.

b) Coal-seam interburden thickness in and adjacent to the South Crandall Canyon tract is indicated on Maps 5-2 (H) and 5-2 (BC); it varies from 74 to 114 feet, which will result in only minor structural incongruities between the two seams. Thicknesses determined from the outcrop surveys could be questionable because of possible collapse due to burned coal. With the Permittee having only limited data inside and adjacent to the South Crandall Canyon block, an interburden isopach contour map would be highly interpretive and no more informative than the data already shown on 5-2 (H) and 5-2 (BC). An interburden isopach map is not necessary to meet the requirements of the R645Rules.

c) Appendix 6-7 contains a northeast to southwest geologic cross-section that parallels the strike of the Mill Fork graben and goes from Rilda Canyon and Mill Fork through the Huntington #4 Mine and Little Bear Spring to Huntington Canyon. The Permittee doesn't have access to sufficient data to make detailed cross-sections.

The USFS feels the geologic information on the maps and cross sections they requested is valuable for their resource management responsibilities. The BLM has access to confidential borehole information that is unavailable to the Permittee or Division, and has agreed, verbally, to provide information to the USFS that would allow the USFS to make the maps they feel are needed.

FS:

Concur.

DRAFT – DOGM REPLY TO FOREST SERVICE COMMENTS

7. Chapter 5.
   There should be a Section 5.23 presented in the Revision that explains the mining methods to be used in the South Crandall tract. It should detail the different mining methods to be used in different areas of the tract; especially with regard to Little Bear Canyon.

   GENWAL:
   "This comment is addressed in the pending R2P2 approval recommendation by the BLM".

   FS:
   The FS is still in consultation on this matter.

   DOGM:
   The Division is required to analyze the mine plan to ensure maximum use and conservation of coal. On mines with federal leases, such as Crandall Canyon, the BLM also does the same analyses in their resource recovery protection plan (R2P2). The Division allows the permittee to include the R2P2 and BLM findings in the permit application of amendments so that the information and studies do not have to be duplicated. In addition, the BLM's findings are often used by the Division when they do their analysis.

   The Division reviewed the mine plan and found that there was not enough data to complete the analysis. The missing items include:

   TA Finding:

   1) The Permittee needs to include a description of the type of mining that will occur in the South Crandall tract. Specifically the Division needs to know what panels will be mined with longwall equipment and what panels will be mined with continuous miners. In those panels where continuous miners are used the Permittee must indicate if first mining only or full extraction mining will occur.

   2) The Permittee needs to include any lease stipulations that could limit the amount of recoverable coal. Such lease restrictions include, but are not limited to, areas that cannot be mined, areas where first mining only can occur, areas where only single seam mining can occur (and if so what seam will be mined), areas that cannot be mined because of overburden limitations, and areas that cannot be subsided due to overburden limitations.

   FS:
   Concur.

DRAFT – DOGM REPLY TO FOREST SERVICE COMMENTS

8. **Subsidence Control Plan**, Section 5.25.10, Page 5-21.
The mine plan revision must clearly demonstrate that areas of Little Bear Canyon with overburden less than 600 feet will not be subsided. The last sentence on page 5-21 should be supported by clearly delineating on Plates 5-2 H and 5-2 BC, the 600 foot overburden contour in Little Bear Canyon for each coal seam. Available data indicate
that the interburden between the two coal seams is less than 100 feet. Therefore, the 600 foot contours depicted on the overburden maps should not be far apart. Show the 600 foot contours in heavy line thickness so they can be clearly seen.

GENWAL:
"This comment is addressed in the pending R2P2 approval recommendation by the BLM".

FS:
The FS is still in consultation on this matter.

DOGM:
The 600-foot overburden contour line for both seams is shown on maps included in Appendix 7-63. However, DOGM understands that the FS is concerned that the final mining plan as presented in the R2P2 will not be reflected in the MRP. DOGM has requested that the MRP be updated to be consistent with the R2P2.

TA Finding:

The Permittee must update the MRP to include any additional information that is required of the R2P2, which may include map and text changes.

FS:
Concur.

9. **Anticipated Effects of Planned Subsidence**, Section 5.25.15, Page 5-26.
Each one of the three items following paragraph 3 (items a, b and c) in this section requires correction.
a) Plates 5-2 H and 5-2 BC don't agree with the narrative. Both plates show longwall mining in areas with less than 600 feet of overburden. The plates should be corrected to plainly show that no longwall mining will occur in areas with less than 600 feet of overburden in Little Bear Canyon.

The wording of *Item a* also requires correction. Stipulation #9 of the Decision Notice clearly states "Mining must be conducted in a manner necessary to prevent subsidence in the Little Bear **Canyon**….." , emphasis added; the DN does not refer to Little Bear **stream channel** when discussing areas outside the subsidence zone.

b) The wording of *Item b* is incorrect. It should state that no mining, whatsoever, will occur within 1000 feet of the southeast corner of the lease until the water

replacement agreement between Genwal and Castle Valley Special Services District has been implemented.

c) Plates 5-2 H and 5-2 BC don't agree with *Item c*, i.e., both plates show longwall mining within 1000 feet of the southern boundary of the lease. No mining, whatsoever, should occur within the buffer zone until the water replacement agreement is implemented.

Additionally, no longwall mining can occur in areas with less than 600 feet of overburden in Little Bear Canyon. Observance of the 600 foot overburden restriction would remove about ½ of the southernmost panel in the Blind Canyon seam and about 2/3 of the southernmost panel in the Hiawatha seam. As Plate 5-2 BC is now drawn there is approximately 200 feet of overburden along the southern edge of the southernmost panel. A similar situation exists in Plate 5-2 H. This is clearly unacceptable.

Also, the clause within parentheses in *Item c*, i.e., "to protect possible water-bearing fracture system" directly contradicts the statement at the top of page 5-26b stating that the recharge fault system for Little Bear Spring is not located within the subsidence zone of the proposed South Crandall mine nor even within the South Crandall lease area. The statement at the top of page 5-26b should be deleted. The recharge mechanisms for Little Bear Spring are still not well understood. A definitive statement such as the one made on page 5-26b is not supported by the present state of knowledge regarding Little Bear Spring.

GENWAL:
"This comment is addressed in the pending R2P2 approval recommendation by the BLM".

FS:
a) The FS is still in consultation on this matter.
b) The Water Replacement Agreement is in the June 2004 MRP document.
c.1) The Water Replacement Agreement is in the June 2004 MRP document.
c.2) The FS is still in consultation on this matter.
c.3) The contradiction has not been corrected.

DOGM:
b, c1, & c3) The USFS has concerns with some of the Permittee's conclusion or assertions in the MRP, or at least the language used to express the Permittee's conclusions. Several of these concerns are no longer an issue because the Water Replacement Agreement between the Permittee and CVSSD is now in effect and the water treatment plant is under construction.

Still, the clause "(to protect possible water-bearing fracture system.)" in section 5.25.15 directly contradicts the statement at the end of section 5.25.16 that "It should be noted that neither the Little Bear spring, nor its recharge fault system, is located within the subsidence zone of the proposed South Crandall mine, nor

are they even located within the South Crandall lease area." The recharge mechanisms for Little Bear Spring are still not fully understood, and a definitive statement such as the second one (section 5.25.16) is not unequivocally supported by the present knowledge regarding Little Bear Spring. The USFS reasonably concludes, based on studies by HAL, Sunshine Engineering, and others, that some of the flow to Little Bear Spring might come from the north and west, particularly along a fault system to the north-northwest. Even though Mayo's volumetric study indicates the flow lost in Mill Fork can account for most of the flow in Little Bear Spring, there is no basis to completely refute the USFS conclusion. For clarity the statement "It should be noted that neither the Little Bear spring, nor its recharge fault system, is located within the subsidence zone of the proposed South Crandall mine, nor are they even located within the South Crandall lease area." at the end of section 525.25.16 should be deleted: removal will have no adverse effect on the MRP.

a & c2) A monitoring program will be developed by the permittee to be approved by DOGM with concurrence from the FS in the event that multiple seam mining will occur beyond spring LB-7 in Little Bear Canyon. If single seam mining is to occur in this area, then the Permittee will need to include additional springs into their quarterly monitoring program

TA Finding:

1) For clarity, the statement at the end of section 525.25.16 "It should be noted that neither the Little Bear spring, nor its recharge fault system, is located within the subsidence zone of the proposed South Crandall mine, nor are they even located within the South Crandall lease area." should be deleted.

2) The Permittee needs to develop and have in place a monitoring program at least two years prior to conducting multiple seam mining beyond spring site LB-7 in Little Bear Canyon. The monitoring program should be approved by the Division in concurrence with the Forest Service prior to implementation. At a minimum, the monitoring program should consist of the following:

- additional monitoring of spring sites LB-7, LB-7A, LB-7B, LB-7C, LB-5A, and LB-12,
- a map identifying and showing the general location of vegetation in the area that could potentially be affected by mining in Little Bear Canyon, and
- a detailed map of riparian and wetland vegetation associated with spring sites LB-7, LB-7A, LB-7B, LB-7C, LB-5A, and LB-12.

3) The Permittee will need to include spring sites LB-7, LB-7A, LB-7B, and LB-7C into their quarterly monitoring plan in the event that single seam mining is to be conducted beyond spring site LB-7 in Little Bear Canyon. The springs will be monitored for flow and field parameters.

FS:

DRAFT – DOGM REPLY TO FOREST SERVICE COMMENTS

Concur.

DRAFT – DOGM REPLY TO FOREST SERVICE COMMENTS

10. Subsidence Control Plan, Chapter 5, Section 5.25.
The means of protecting the powerline that crosses part of the South Crandall Lease (Sections 5 and 8, T.16 S. R.7 E.) must be discussed and the powerline route must be depicted on the maps presented in Chapter 5. The ground beneath the powerline cannot be subsided.

GENWAL:
"Protection of the powerline is discussed in Chapter 5".

FS:
The explanation given on page 5-26b of the June 2004 MRP is not adequate.

DOGM:
The Permittee did not include information about the main power line for the site and the potential effects of subsidence. Without that information, the Division cannot determine the effects that subsidence will have on surface facilities. The Division needs the following specific information:

- The Permittee must show the location of the main power line on all subsidence maps including but not limited to Plate 5-2 (BC) and Plate 5-2 (H).
- The Permittee must describe the anticipated effects that subsidence will have on the main power lines. The Division acknowledges that power line belongs to the Permittee and that they would be financially responsible for any damage. The Division does have general health and safety concerns about downed or damaged power lines. In particular, the possibility of a fire hazard should be addressed.

TA Finding:

The Permittee must show the location of the main power lines on each subsidence map including but not limited to Plate 5-2 (BC) and Plate 5-2 (H).

The Permittee must state the anticipated effects of subsidence on the main power line. The Division is concerned about the health and safety issues, such as a fire hazard, that could arise from downed or damaged power lines.

FS:
Concur.

11. Subsidence Monitoring, Page 5-26a and Alternative Water Source Information, Page
7-29.
A copy of the Water Replacement Agreement arranged between Castle Valley Special Services District and Genwal is not provided in Appendix 7-51 as stated in the mine plan revision. The Agreement needs to be presented in the Lease Revision. It needs to demonstrate that Genwal will meet the requirements of Special Coal Lease Stipulation #17. As stated in Stipulation #17, the provisions of the Agreement must be implemented prior to mining in two areas of the tract (as identified in Stipulation

#17) or an additional mining plan must be submitted to the Authorized Officer that identifies measures to be taken by the Lessee that will ensure that Little Bear Spring would not be impacted by mining.

GENWAL:
"A copy of the Water Replacement Agreement is included in Chapter 7".

FS:
The agreement has been included in the June 2004 MRP.

DOGM:
The agreement has been included in the June 2004 MRP.

FS:
Concur.

12. Chapter 7, General.
The critical questions associated with the South Crandall Tract are whether mining will affect the quantity and quality of water from Little Bear Spring and whether there is an effective mechanism to ensure a continuing supply of culinary water in spite of this uncertainty.

Chapter 7 and Appendix 7-15, Probable Hydrologic Consequences Determination, do not adequately present a summary of the hydrologic investigations done to date.

It is not clear that Special Coal Lease Stipulations #9 or #17 have been fully incorporated into the proposed Lease Revision.
In a 26 November 2003 phone conversation with Mr. Darrel Leamaster, the manager of the Castle Valley Special Services District, he expressed his understanding and expectation that the water treatment plant will be built prior to mining in the areas of concern. To that end, Mr. Leamaster stated that Genwal and Energy West are cooperating on the agreement and have concurrently hired an engineer to begin designing the treatment plant. Darrel expects construction to begin in June 2004 and to be completed in September or October.

GENWAL:
"A copy of the Water Replacement Agreement is included in Chapter 7".

FS:
Katherine Foster's comment.

DOGM:
This has been addressed with the inclusion of the signed water treatment plant agreement into the MRP.

FS:

Concur.

13. <u>Mine Plan Area Aquifers</u>, Section 7.24.1, Pages 7-5 to 7-6.
Past hydrologic studies have not conclusively determined that Little Bear Spring is recharged primarily from water losses in Mill Fork Canyon. The pre-1998 studies concurred on only a few points, one of which was that the source area for Little Bear Spring was to the north and west. More recent studies have indicated that there is a component of flow reaching Little Bear Spring from both the north and the south. The dye tracer study performed in summer 2001 only demonstrated that there is a component of flow from Mill Fork Canyon to Little Bear Spring; a volume of flow cannot be quantified from the study. The Lease Revision should reflect these findings.

GENWAL:
"The text in Chapter 5 addresses the issue of a northerly component of flow to Little Bear Spring".

FS:
This comment stands. GENWAL has not addressed this. The short statement on page 7-6 of the June 2004 MRP is not adequate.

DOGM:
The Division agrees with the Permittees assessment that the studies indicate that Little Bear Spring is recharged primarily through surface water and alluvial groundwater losses in Mill Fork Canyon.

However, the Forest Service has commented that the hydrologic studies have not **conclusively** determined that Little Bear Spring is recharged primarily from water losses in Mill Fork Canyon and that there is also a component of flow reaching the spring from the north and west. The Forest Service bases their comment on earlier studies of the spring (pre-1998) suggesting a north and west source area that was not eliminated as a possibility in later studies. The Division and the Forest Service agree that the Permittee has inadequately addressed the Forest Service comment by stating in Section 7.24.1, Groundwater Information, <u>Mine Plan Area Aquifers</u>, "Despite the conclusions of these studies the Forest Service still believes there may be a northerly component of flow recharging Little Bear Spring". The Division requests the permittee rephrase this statement to more adequately address the Forest Service comment and acknowledge a difference of interpretation of the studies. Language indicating that the studies have **conclusively** determined that Little Bear Spring is recharged primarily from water losses in Mill Fork Canyon should be removed. In addition, the possibility of intercepting part of the fracture system that is believed to be the primary means of conveyance of groundwater to Little Bear Spring should be addressed in Section 7.24.1, Groundwater Information, <u>Effects of Mining Operation on Groundwater</u>.

TA Finding:

DRAFT – DOGM REPLY TO FOREST SERVICE COMMENTS

The Permittee needs to rephrase the statement in Section 7.24.1, Groundwater Information, Mine Plan Area Aquifers, "Despite the conclusions of these studies the Forest Service still believes there may be a northerly component of flow recharging Little Bear Spring". This section should more adequately address Forest Service comments and acknowledge a difference of interpretation of hydrologic studies of Little Bear Spring. Language indicating that the studies have conclusively determined that Little Bear Spring is recharged primarily from water losses in Mill Fork Canyon should be removed.

FS:
Concur.

14. Mine Plan Area Aquifers, Section 7.24.1, bottom paragraph on Page 7-6 to top of
Page 7-7.
Encountering perched (or otherwise isolated) zones of the Star Point sandstone while mining through the coal of the Blackhawk Formation may have little potential for affecting springs in the area that rely on perched water, but it should be kept in mind that the only major spring in the tract is Little Bear Spring. This spring is fault related; it is not related to perched water conditions. If mining contacted a fault supplying water to Little Bear Spring, it could have a direct adverse impact to the water quality and quantity at the spring. A discussion addressing this possibility needs to be included in the Lease Revision.

GENWAL:
"The potential for affecting the Little Bear Spring is discussed in Chapter 5".

FS:
This comment has not been addressed. The way that the narrative is presented in the MRP Revision is very misleading.

DOGM:
See DOGM comments from the TA above (#13).

TA Finding:

The Permittee needs to address the possibility of intercepting part of the fracture system that is believed to be the primary means of conveyance of groundwater to Little Bear Spring in Section 7.24.1, Groundwater Information, Effects of Mining Operation on Groundwater.

FS:
Concur.

15. Effects of Mining Operation on Groundwater, Section 7.24.1, page 7-13, first

paragraph of the sub-section.
Mine dewatering is probably not the primary mechanism affecting groundwater systems and it is certainly not the only one. This section and the previous one have a seemingly thorough and repetitive description of the existing condition of the regional aquifer and the more localized ones supporting springs and seeps. However, it does not address any consequences associated with subsidence fracturing of the source areas of these springs and seeps. In fact, no information is provided about the probable source areas of these springs and seeps.

GENWAL:
"The effects of [the] mining operation on groundwater is discussed in Chapter 5".

FS:
Katherine Foster's comment.

DOGM:
DOGM believes that the aquifers, their relation to the seeps and springs, and impacts of mining are adequately addressed with the exception of changes requested above (#s 9, 13 & 14).

FS:
DOGM's requested changes and the ongoing discussions with BLM regarding panel locations should address these concerns.

16. <u>Mitigation and Control Plan</u>, Section 7.24.1, Page 7-14 and <u>Alternative Water Source Information</u>, Section 7.27, Page 7-29.
When discussing mining related impacts to Little Bear Spring Pages 7-14 and 7-29 of the Lease Revision state, respectively, "Should it be necessary to develop alternate water supplies due to unexpected diminution or interruption of flows as a direct result of mining activities…" and "Mitigation for potential disruption to Little Bear Spring will be accomplished through the construction of a water treatment plant … if mining activity in the South Crandall lease tract affects the quality or quantity of the spring". These two statements are not compatible with the intent of Special Coal Lease Stipulation #17 which is to ensure an uninterrupted supply of culinary water prior to mining in the two identified areas irrespective of whether mining can be conclusively shown to have affected the spring. Therefore, language should be incorporated in the Lease Revision that is consistent with Stipulation #17 and the understanding of Castle Valley Special Services District.

GENWAL:
"A copy of the Water Replacement Agreement is included in Chapter 7".

FS:
The comment has not been addressed. Even though the Water Replacement Agreement has been signed, it does not obviate the need to make the narrative

in the MRP consistent with the language in the Decision Notice.

DOGM:
We agree that the language in the MRP should be consistent with the Special Coal Lease Stipulations. The text in Section 7.24.1 and Section 7.27 should be changed.

TA Finding:

In order to clarify that the intent of Special Coal Lease Stipulation #17 is met, the text in the MRP should reflect that an uninterrupted supply of culinary water will be assured irrespective of whether mining can be conclusively shown to have affected Little Bear Spring. Specifically, text in Section 7.24.1, Mitigation and Control Plan, stating "Should it be necessary to develop alternate water supplies due to unexpected diminution or interruption of flows as a direct result of mining activities…" should also reference the additional protection placed on Little Bear Spring. Text in Section 7.27, Alternative Water Source Information, stating "Mitigation for potential disruption to Little Bear Spring will be accomplished … if mining activity in the South Crandall lease tract affect the quality or quantity of the spring" should be changed to be consistent with the language of Stipulation #17.

FS:
Concur.

17. Regional Surface Water Hydrology, Section 7.24.2, Page 7-16, first paragraph of the sub-section.
The statement that "There are no perennial drainages in the proposed South Crandall Lease area" is consistent with the 1997 EA but inconsistent with the 2003 Decision Notice. Page 4 of the Decision Notice points out that there are areas of Little Bear Creek with riparian vegetation and that these areas are supported by segments of perennial sub-alluvial flow. Thus, Little Bear Creek must be identified as a perennially functioning stream.

GENWAL:
"The perennially functioning status of Little Bear drainage is included in Chapter 7".

FS:
GENWAL has included a statement that the FS believes Little Bear Creek to be "perennially functioning". In my opinion Little Bear Creek is perennial, but the 1997 EA stated that it was not perennial and the 2003 Decision Notice called it "perennially functioning"; so the result is that the FS will probably have to accept their response.

DOGM
The text has been modified.

FS:
Concur.

DRAFT – DOGM REPLY TO FOREST SERVICE COMMENTS

18. <u>Mine Plan Area Surface Hydrology</u>, Section 7.24.2, Page 7-17, 2d paragraph of the sub-section.
Comment #17, pertaining to the perennially functioning status of Little Bear Canyon, also applies to this section.

GENWAL:
"The perennially functioning status of Little Bear drainage is included in Chapter 7".

FS:
GENWAL has included a statement that the FS believes Little Bear Creek to be "perennially functioning". In my opinion Little Bear Creek is perennial, but the 1997 EA stated that it was not perennial and the 2003 Decision Notice called it "perennially functioning"; so the result is that the FS will probably have to accept their response.

DOGM
The text has been modified.

FS:
Concur.

19. <u>Hydrologic Balance Protection</u>, <u>Surface and Groundwater Protection Plan</u>, Section 7.31.1, Pages 7-26a to 7-27a.
The measures described in detail for mining near the Joe's Valley Fault (pertaining to pilot borings and geologic mapping based upon the data gained from the borings) should also be required for the two buffer zones around Little Bear Spring described in Special Coal Lease Stipulation #17. A sub-surface drilling and geologic mapping program (similar to the one conducted previously to prevent damage to the hydrologic system associated with Joes Valley Fault) was discussed in the Recommendations Section of the <u>Hydrogeologic Interpretation</u> prepared by the Forest Service (South Crandall Tract project file).

GENWAL:
"This comment is addressed in the pending R2P2 approval recommendation by the BLM".

FS:
This comment should be addressed in the South Crandall MRP Revision.

DOGM
It is our understanding that the buffer zones around Little Bear Spring are not necessary with the implementation of the water replacement agreement.

FS:
Concur.

DRAFT – DOGM REPLY TO FOREST SERVICE COMMENTS

20. <u>Probable Hydrologic Consequences Determination</u>, Pages 3, 4,and 5, Appendix 7-15.
Comments #13, #14, #15, and #17 also apply to the hydrologic interpretation in this section.

GENWAL:
"Refer to comments #13, #14, #15, and #17."
FS:
Comments #13, #14, and #15 were never answered by GENWAL. With regard to #17 the FS will probably have to accept the way they have addressed it in the MRP.

DOGM
Comments #13 & 14 have been addressed in the PHC section of the TA. We need verification that #15 has been addressed. The text has been modified for #17.

TA Finding:

1) The Permittee needs to rephrase the statement in Section 7.24.1, Groundwater Information, <u>Mine Plan Area Aquifers</u>, "Despite the conclusions of these studies the Forest Service still believes there may be a northerly component of flow recharging Little Bear Spring". This section and the Probable Hydrologic Consequences Determination (Appendix 7-15) should more adequately address Forest Service comments and acknowledge a difference of interpretation of hydrologic studies of Little Bear Spring. Language indicating that the studies have conclusively determined that Little Bear Spring is recharged primarily from water losses in Mill Fork Canyon should be removed.

2) The Permittee needs to address the possibility of intercepting part of the fracture system that is believed to be the primary means of conveyance of groundwater to Little Bear Spring in Section 7.24.1, Groundwater Information, <u>Effects of Mining Operation on Groundwater</u>, and in the Probable Hydrologic Consequences Determination (Appendix 7-15).

FS:
Concur.

21. Appendix 7-15, <u>Probable Hydrologic Consequences Determination</u>, <u>Interception</u>, Page 2.
The 600 foot overburden observance and the perennially functioning status of Little Bear Creek needs to be addressed.

GENWAL:
"This comment is addressed in the pending R2P2 approval recommendation by the BLM".

DRAFT – DOGM REPLY TO FOREST SERVICE COMMENTS

FS:
The FS is still in consultation on this matter.

DOGM
The FS concerns regarding Stipulation #9 are being addressed by requesting the mine to implement a monitoring program in Little Bear Canyon prior to mining beyond spring site LB-7. In addition, the Permittee is required to update the MRP to be consistent with the approved R2P2.

TA Finding:

1) The Permittee needs to develop and have in place a monitoring program at least two years prior to conducting multiple seam mining beyond spring site LB-7 in Little Bear Canyon. The monitoring program should be approved by the Division in concurrence with the Forest Service prior to implementation. At a minimum, the monitoring program should consist of the following:

- additional monitoring of spring sites LB-7, LB-7A, LB-7B, LB-7C, LB-5A, and LB-12,
- a map identifying and showing the general location of vegetation in the area that could potentially be affected by mining in Little Bear Canyon, and
- a detailed map of riparian and wetland vegetation associated with spring sites LB-7, LB-7A, LB-7B, LB-7C, LB-5A, and LB-12.

2) The Permittee will need to include spring sites LB-7, LB-7A, LB-7B, LB-7C, LB-5A, and LB-12 into their quarterly monitoring plan in the event that single seam mining is to be conducted beyond spring site LB-7 in Little Bear Canyon. The springs will be monitored for flow and field parameters.

3) The Permittee must update the MRP to include any additional information that is required of the R2P2, which may include map and text changes.

FS:
Concur.