



COLORADO

**Division of Reclamation,
Mining and Safety**

Department of Natural Resources

1313 Sherman Street, Room 215
Denver, CO 80203

May 15, 2017

Mr. Tom Bird
GCC Energy, LLC
6473 County Road 120
Hesperus, CO 81326

Re: King Coal Mine, PAR for RN-07

Dear Mr. Bird:

This letter is the first part of the preliminary adequacy review (PAR) for the King Coal Mine permit renewal (RN-07). An additional part will be sent at a later date with comments related to the King Coal Mine permit's sections, appendices, and maps related to groundwater hydrology.

Note that some of these comments are suggestions for more accurate or clearer text. GCC should make these changes to aid future readers understand the permit, but they are not necessary for compliance. If it is uncertain which items fall into this category, please do not hesitate to contact me.

King I Issues

Adequacy Item #1

KI Section 2.03.4

Please resubmit the list of officers with the latest information. This will insure that the information held by the Division matches that held by GCC.

Adequacy Item #2

King I Section 2.04.7

Add the relatively new pond on the Huntington Irrigation Ditch and make sure all significant surface water bodies are mentioned in this section. Also, discuss in this section the potential impacts of subsidence on this water body.



Adequacy Item #3**King I Section 2.04.10**

Please confirm that the threatened and endangered plant species is current.

Adequacy Item #4**King I Section 2.05.3**

Page 2, Paragraph 1 (and other relevant locations): Replace “total disturbed acreage” with “area approved for disturbance” or “actual disturbed acreage” depending on context.

Adequacy Item #5**King I Section 2.05.3**

Page 2, Paragraph 4 and other locations: Clarify “back-filled gully.”

Adequacy Item #6**King I Section 2.05.3**

Page 2, Paragraph 6: Clarify the location of the “storage area.” Update the existing refuse pile volume and date, and the dates for anticipated refuse production. If appropriate, update the anticipated production rate.

Adequacy Item #7**King I Section 2.05.3**

Page 2: The Mine Waste Rock Disposal section should discuss the fact that most waste material originates from the area within the OSM permit. This discussion should be written in the context of Rule 4.10.1 (and any other pertinent rules); MR-41, including sampling results if available; and other relevant documents.

Adequacy Item #8**King I Section 2.05.3**

Page 2, last paragraph: Remove the TR-20 reference. Change the text to something general like “will be addressed in a revision to the permit.”

Adequacy Item #9**King I Section 2.05.3**

Page 3, paragraph 6: Be sure Map King I-007 is consistent with the text. If appropriate, remove the reference to the map from the text.



Adequacy Item #10**King I Section 2.05.3**

Page 4, paragraph 2: “Permit Area” should be replaced with “Disturbed Area Boundary”.

Adequacy Item #11**King I Section 2.05.3**

Page 4, paragraph 3: Please clarify the use of the words “topsoil” and “plant growth medium”.

Adequacy Item #12**King I Section 2.05.3**

Page 4, paragraph 4: In the context of a topsoil borrow area, please remove the reference to Map King I-007 or update the map to show this feature.

Adequacy Item #13**King I Section 2.05.4**

The 37,000 gallon water tank has been moved to King II. Please revise text on pages 1 and 2.

Adequacy Item #14**King I Section 2.05.4**

Surface Facilities Remaining section: Temporary storage containers and the status of septic tanks should be mentioned in the text. Likewise, any features that are shown on Map King I-007 should be discussed in the text, or, if appropriate, removed from the map. Please update the text to state that the Bathhouse is actually on GCC Energy property. Remove reference to structures that are not within the Permit Area (for example, the “old scale and storage building adjacent to Burnwell #2,” which is actually on Jack Wiltse’s property and not within the permit area).

Adequacy Item #15**King I Section 2.05.4**

Page 3, paragraph 2: Please update this paragraph to reflect current conditions, for example GCC Energy no longer leases water from Mr. Wiltse. Please confirm that the water well off the permit area is actually shown on the map (I cannot see it on current version of map).

Adequacy Item #16**King I Section 2.05.4**

Page 4, Grading and Backfilling: Please update TR-20 references. Please elaborate on the reconstruction of the drainage channels. Will they closely mimic the pre-mining configuration?



Will they be armored or grass-lined? Will temporary erosion protection be used (e.g., erosion mats)?

Adequacy Item #17

King I Section 2.05.4

Waste Pile Reclamation section: Please update the reference to section 2.05.3; the name of the section (Waste Pile Design) does not match the name in 2.05.3 (Mine Waste Rock Disposal), and it does not include a detailed description. (The details are in the appendix.)

Adequacy Item #18

King I Section 2.05.4

Waste Pile Reclamation section: Perhaps a clarification is needed in the text. The second paragraph of this section states that reconfiguration of the waste pile matches the TR-08 design. However, per Map King I-007 the topography of the existing face of the Refuse Pile (the portion near the haul road, which is covered in vegetation) is several dozen feet lower than the topography of this area in Map King I-014.

Adequacy Item #19

King I Section 2.05.4

Page 8: Replace CDMG with CDRMS.

Adequacy Item #20

King I Section 2.05.6:

Add to the discussion on subsidence monitoring plan related to surface water bodies and pipelines.

Adequacy Item #21

Map King I-007 shows a waste and plant growth medium storage area between the bath house and ponds. Update this label as appropriate. Perhaps the word “former” should be added to the label. Please explain the label “West Waste Bank (Proposed)” given that TR-20 has not been approved. Also, it would be helpful if this map (and others) indicated the source of the topography lines (e.g., aerial survey in 2015). Update the map to show the topsoil borrow area.

Adequacy Item #22

Please explain the reason for the term “Preliminary” on Map King I-015.



King II Issues

Adequacy Item #23

KII Section 2.03.4

Please resubmit the list of officers with the latest information. This will insure that the information held by the Division matches that held by GCC.

Adequacy Item #24

KII Section 2.03.4

Why is Ute Mountain Tribe listed as a surface owner within the Permit Area? Looks to be a mistake. Maybe it should only be in the list of owners of land contiguous to the permit area.

Adequacy Item #25

KII Section 2.03.4

2.03.4(7) Title says surface only, but coal leases appear to be in list. Please explain or revise.

Adequacy Item #26

KII Section 2.03.4

Huntington Ranches and BLM should be in the list of contiguous owners, not just the list of owners in the permit area.

Adequacy Item #27

KII Section 2.03.4

2.03.4(9) Should Dunn/Ute/Stephens area in Section 31 (T35N, R11W) be included in this description?

Adequacy Item #28

KII Section 2.03.6

Based on TR-24 correspondence, it appears that the value 640 acres should be 694.2 acres.

Adequacy Item #29

KII Section 2.03.8

Please check to see if table needs to be updated. It appears that an acre needs to be added to the approved disturbance (from TR-26).



Adequacy Item #30**KII Section 2.03.9**

In the address, change Mined Land Reclamation Division to “Coal Regulatory Program.”

Adequacy Item #31**KII Section 2.03.10**

Regarding the addresses, the “Colorado Department of Health” is now the “Colorado Department of Public Health and Environment,” and the Water Quality Control Division address is 4300 Cherry Creek Drive South, WQCD-B2, Denver, CO 80246. GCC should also update any other outdated addresses.

Adequacy Item #32**KII Section 2.04.4**

The first two paragraphs of this section state “No cultural or historic resources eligible for listing ... were identified in the survey.” Should this statement be added to the third paragraph as well?

Adequacy Item #33**KII Section 2.04.7**

The discussion on surface drainage channels should be expanded to note that the original channels were filled to make way for the facilities. Language such as “have not flowed during the past year” and “appear not to have run in recent times” is somewhat confusing (when was that written?), and the text should be revised.

Adequacy Item #34**King II Section 2.04.10**

Please confirm that the threatened and endangered plant species is current.

Adequacy Item #35**KII Section 2.04.11**

A section was added for TR-22. This should be done for TR-26 as well.

Adequacy Item #36**KII Section 2.05.2**

Page 1: Dates should be changed. Production numbers should be changed, as appropriate. What is projection of production?



Adequacy Item #37**KII Section 2.05.3**

Page 1 (and other relevant pages): Text should be changed where it is antiquated (e.g., “King II will be an underground coal mine”, “An access road ... is planned”).

Adequacy Item #38**KII Section 2.05.3**

Page 2 – Per Tom Bird, water is no longer trucked to the site, and the seam dips from 3% to 6%. Please revise the text.

Adequacy Item #39**KII Section 2.05.3**

Page 3 – Is “OPERATION PLAN - PERMIT AREA” an extraneous heading? Should this title be at the beginning of Section 2.05.3? The heading “ANTICIPATED PRODUCTION” is repeated.

Adequacy Item #40**KII Section 2.05.3**

Page 5 – There appears to be an error: “settleable” spelled “settable”.

Adequacy Item #41**KII Section 2.05.3**

Page 5 - Where is data for discharge from roads? Text says it is sampled. If not, change text and explain. If so, please explain how data is used and if it will be provided to DRMS and/or CDPHE.

Adequacy Item #42**KII Section 2.05.3**

Page 6 – Please elaborate on the following statement: “Water is not normally impounded except immediately following storm events or snowmelt.” Is this because of evaporation and infiltration? Is there a backup plan to remove water, if necessary, to insure that pond capacity is sufficient?

Adequacy Item #43**KII Section 2.05.3**

Page 6 – The current text references Map King II-007 and other maps. Please reference Maps King II-007A thru 007C, as appropriate.



Adequacy Item #44**KII Section 2.05.3**

Page 6a – The last sentence of the third paragraph is confusing. Perhaps the semi-colon should be a colon, a comma should be placed before “due to”, and an “and” should be added before “an overall lack”. In the fourth paragraph, perhaps “exploration” should be “exploration and monitoring”.

Adequacy Item #45**KII Section 2.05.3**

Rule 2.05.3 requires a discussion of both coal mine waste and non-coal processing waste. Page 7a should include a discussion of coal mine waste and how it is transported to the Refuse Pile, or, at the very least, contain a reference to another part of the PAP where this is discussed in detail. The discussion on page 8, including the Coal Fines section, does not appear to be a complete discussion of coal mine waste.

Adequacy Item #46**KII Section 2.05.3**

Page 9 – The date in the footer needs to be updated.

Adequacy Item #47**KII Section 2.05.4**

Please re-submit entire section to insure that DRMS has the latest version.

Adequacy Item #48**KII Section 2.05.4**

Please insure that repeated text (page 6, for example) is removed.

Adequacy Item #49**KII Section 2.05.4**

Page 4 – It appears that the footer date is incorrect in GCC’s copy of this page (per email correspondence). Please confirm if date should be November 2009 or March 2010.



Adequacy Item #50**KII Section 2.05.4**

Page 9 - Please add more detail regarding the reconstruction of streams. Will they closely mimic the pre-mining configuration? Will they be armored or grass-lined? Will temporary erosion protection be used (e.g., erosion mats)?

Adequacy Item #51**KII Section 2.05.4**

Although not out of compliance, the discussion of the reclamation success standards for total vegetative cover and total herbaceous production found on pages 15 and 16, is written in vague language. It has been the Division's experience that clear concise definitions of the reclamation success standards in the PAP reduces misinterpretation and disagreement at bond release. The Division suggests rewording similar to the language for cover and production on page 23 of the Division's RN-06 findings document.

Adequacy Item #52**KII Section 2.05.4**

Please include the size of the King II reference area for revegetation in the PAP text. (This information was also requested in the last midterm review.)

Adequacy Item #53**KII Section 2.05.6**

Page 5 – In the second paragraph the text appears to state that there is a connection between the fact that mining is above the aquifer and the low probability of subsidence. Please explain this connection, or re-write the paragraph and discuss the basis for thinking that subsidence, and hydrologic impacts of subsidence, are unlikely.

Adequacy Item #54**KII Section 2.05.6**

Page 5 – DRMS believes that the statement that no surface drainages from the project area connect to Hay Gulch (third paragraph) is not correct. It appears that runoff from the haul road drains to Hay Gulch (at least indirectly), and this should be discussed in this section, in terms of surface water controls that are used, how SAEs are managed, and the potential impact (or lack thereof) on the water quality and quantity of Hay Gulch. Also, there is the potential for runoff from the entire site to drain to Hay Gulch if a storm (or series of storms) were to exceed the capacity of the King II sediment pond. At the very least, this section should have a short



discussion and a reference to other sections of the PAP where surface water management is discussed in detail.

Adequacy Item #55

KII Section 2.05.6

Page 6 (and other relevant pages): Text should be changed where it is antiquated (e.g., “TR-26 proposes” – this was approved and some or all of the wells have been completed or will be soon).

Adequacy Item #56

KII Section 2.05.6

Pages 9 and 10 – It appears that the parameter “Flow” is missing from the tables (a possible discrepancy with page 7). Please explain or revise.

Adequacy Item #57

KII Section 2.05.6

Page 11 – There appears to be three discrepancies between the list of surface water parameters and the Discharge Monitoring Report (DMR) for the first quarter of 2017:

- The list has “Total iron,” but the DMR has “Total recoverable iron.” These are somewhat different.
- Conductivity is listed in the PAP text but is not in the DMR.
- Oil and grease is on the DMR, but this parameter is not in the list.

Please explain these apparent discrepancies or revise the PAP text accordingly.

Adequacy Item #58

KII Section 2.05.6

Page 11 – The structures list appears to include structures at King I and King II. Given that, it would be appropriate to add the Huntington pond as well as the pipeline. Also, power lines and any other private or public infrastructure should be listed here.

Adequacy Item #59

KII Section 2.05.6

Page 12 – The first paragraph contains a statement that there is no irrigated pasture land within the King permit area. Is there no irrigation of the portion of Hay Gulch that is within the permit area?



Adequacy Item #60**KII Section 2.06.8**

The text states that mine site runoff that is intercepted by the Hay Gulch irrigation ditch does not reach Hay Gulch. Is that correct? Does the water in the ditch get applied to the Hay Gulch pasture land?

Adequacy Item #61

The King II Ditch Capacity table in Appendix 11 has some values that do not match the as-built details (Map King II-007B). For example, the depth of the lower portion of CWD-1A is 2.1 feet in the table but 3.0 feet in the details on the map. Please explain or revise.

Adequacy Item #62

King II Appendix 12(1) is listed in the table of contents as a Reclamation Bond Estimate (presumably the same as a reclamation cost estimate) prepared by GCC. However, in the DRMS version of the PAP (both electronic and paper), Appendix 12 does not contain an RCE by GCC. Please help DRMS resolve this discrepancy. Also, should Appendix 12 contain letters from landowners with requests that structures not be demolished? If so, GCC needs to update the table of contents and other portions of the PAP, as appropriate.

Adequacy Item #63

On Map King II-001, the hatching implies that the area in the northwest corner (in Section 26 of T35N, R12W) is part of both the DRMS permit and part of the OSM permit. Please explain or revise.

Adequacy Item #64

On Map King II-002, it is unclear where the line between Wiltse property and GCC property is located. Please clarify since it is not clear on this map if some of the Wiltse property is within the permit area or if he is only an adjacent property owner.

Adequacy Item #65

Map King II-005, Mine Plan Map, should be updated to reflect current conditions. For example, projected panel development should not include year 2016.

Adequacy Item #66

The Map King II-010 series - Please verify that the pre-mining stream had a very small channel (depth of approximately a foot) at the low end of the site, below the sediment pond, but it was



much deeper (approximately six feet) further up the valley. The cross-sections imply this, and also indicate that the post-mining topography will mimic this.

If you have comments or questions, please contact me at Rob.Zuber@state.co.us or 303.866.3567 (x8113).

Sincerely,



Robert D. Zuber, P.E.
Environmental Protection Specialist II

