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State of Utah
DEPARTMENT OF NATURAL RESOURCES

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Division of Oil, Gas and Mining

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October 29, 2012

David Hibbs, Resident Agent
Genwal Resources, Inc.
P.O. Box 910
East Carbon, UT 84520-0910

Subject: Revised Probable Hydrologic Consequences Update, Genwal Resources, Inc., Crandall Canyon Mine, C/015/0032, Task ID #4194

Dear Mr. Hibbs:

The Division has reviewed the revised Probable Hydrologic Consequences (PHC) determination for the Crandall Canyon Mine. The Division has determined that there are deficiencies that must be addressed before a determination can be made that the requirements of the R645 Coal Mining Rules have been met, and an approval can be granted. Those deficiencies are listed as an attachment to this letter.

Each deficiency identifies its author so you and your staff can directly communicate with that individual should any questions arise. The plans as submitted are denied. Please resubmit the entire application by November 26, 2012.

Sincerely,

Daron R. Haddock
Coal Program Manager

DRH/SKC/ss
cc: Price Field Office
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Deficiency List

Task No. #4194

Revised Probable Hydrologic Consequences

The members of the review team include the following individuals:

Steve Christensen(SC)
Ken Hoffman (KH)

R645-301-724, -724.500, -728.335, -731.210 and -731.211: The Permittee must revise the Groundwater Monitoring Plan section of the approved mining and reclamation plan (Chapter 7, Section 7.31.21) to reflect the isotopic sampling to be conducted on the pre-treatment mine-water discharge . Table 7-4a, *Mine-Water Discharge Analysis List,* of the approved mining and reclamation plan provides a list of the mine-water discharge analytical parameters (See page 7-32 of Chapter 7). The isotopic analyses to be conducted on the mine-water discharge (as outlined on page 37 of the amendment) must be added to this table.

The Permitee must also delete the asterisk language below the table on page 37 of the amendment that discusses the collection of the isotopic data until the "*next permit renewal*". The next permit renewal is slated for May 13th, 2013. Such a time frame would allow for the collection of only two additional isotopic samples. The Division finds this to be an inadequate sampling frequency/duration. Additionally, the Permittee should insure that sampling of the pre-treatment mine-water discharge for dissolved manganese continues as outlined in Table 7-4a. It appears that this parameter was omitted from the table on pages 36 and 37 of the amendment. (SC)

R645-301-728.310: With the removal of Table 1, Section 728.310 no longer fully documents findings on whether adverse impacts may occur to the hydrologic balance. Section 728.100 discusses the effects well but Section 728.310 is to document the findings. The Permittee shall update Section 728.310 to cover the findings on the possible hydrologic impacts including their: potential effect, probability of occurrence, mitigation, and effect after mitigation. Findings discussions shall include at minimum the following topics: (KH)

- Acid-toxic Materials: Findings for adverse impacts of toxic-forming materials must be discussed as observed and mitigated through treatment and monitoring. The elevated (greater than 1 mg/L) iron concentrations in the untreated mine water discharge demonstrate a potential toxic effect and must be included in the findings.
- Groundwater Availability, Findings for adverse impacts of interception of inactive zone groundwater by mine workings must be discussed as observed.
- Surface Water Quality, Findings for adverse impacts for "spilled or residual treatment chemicals" as a potential impact to surface water quality must be discussed and mitigated by SPCC Plan.

- Surface Water Quality: Discuss adverse impacts to surface water quality as observed and mitigated by treatment of mine water discharge to reduce iron concentrations and post treatment water quality monitoring.
- Surface Water Quality: Impacts of effluent toxicity as observed and mitigated through proper treatment plant operation and whole effluent toxicity (WET) testing/monitoring.
- Surface Water Quantity: Findings for adverse impacts to the macroinvertebrate communities and habitat as a result of the mine-water discharge.