

#4138
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TECHNICAL MEMORANDUM

Utah Coal Regulatory Program

August 2, 2012

TO: Internal File

THRU: Steve Christensen, Permit Supervisor/Team Lead *SC*

FROM: Ken Hoffman, Environmental Scientist/Hydrology *KH*

RE: Construction of Burma Evaporation Basin, Genwal Resources, Inc., Crandall Canyon Mine, C/015/0032, Task #4138

SUMMARY:

This Significant Revision to the Mining and Reclamation plan was received on January 12, 2012 and this updated version June 22, 2012. The amendment details 7.32 acres of additional disturbed area (Chap. 1, p. 1-9) in T 17 S, R 8 E Section 5 within Lot 6 (see Plate 1-1). The additional disturbance will be on SITLA land under a 30 year lease (Special Use Lease Agreement 1708, Appendix 1-16). The evaporation basin will be approximately 200 ft long x 100 ft. wide x 6 ft. deep, to be constructed as described in Appendix 7-66. Using the Permittee's estimates, of 1.5 inch accumulation per year, the life of this facility is twenty four years, at which time the dried waste will be at the design maximum of 36 inches, leaving 24 inches of freeboard (Chap. 5). The waste will be covered with 48 inches of soil.

Appendix 7-66 of the application contains a brief description of hydrology as well as Attachment 7 on sedimentation and drainage control. The application covers source sampling, existing drainage topography, nearby surface water bodies, disturbed area runoff control, precipitation control, and sediment control measures. However the application includes numerous deficiencies. The application is not recommended for approval until the following issues are resolved:

R645-121.200: The Burma Pond facility is outside the scope of Division Order DO-10A. The facility is being proposed as a method of handling water treatment plant industrial waste by-product so references to Division Order DO-10A should be removed. Additionally, in Chapter 5 the Permittee states:

"At present, there is some uncertainty as to the future treatment requirements for the Crandall Mine discharge water, in terms of longevity of treatment and the degree of treatment. The entire subject of long-term treatment requirements is presently being discussed and

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negotiated as part of the legal resolution of Division Order DO-10A. Since the operational future of the Burma evaporation facility is tied totally to the operation requirements of the Crandall water treatment, it is assumed that one of the following future scenarios will ultimately unfold:

Six items (1-6) are listed below this statement. The statement must be revised to clarify the plans for operation of the facility and not include speculation as to possible scenarios (i.e. “would be left in place”, “could be enlarged”, “there is a possibility”). (KH)

R645-121.200: Attachment #2 was removed from Appendix 65 in January 2012. Please reference the correct attachment or include the information with the application. (KH)

R645-301-747.200: In Chapter 5 the Permittee states, *“It should be noted that the iron sludge material has been tested in the lab for RCRA metals and has been found to be non-toxic, non-hazardous and non-acid forming. (See Attachment 10)”*. The statement is insufficient and the samples included in Attachment 10 need to be described as what sample preparation method was conducted for analysis. (KH)

R645-301-528.332: As described in the application, the Permittee intends to permanently landfill noncoal mine waste. After consulting with the Department of Environmental Quality-Division of Solid and Hazardous Waste (DEQ), it was determined that the Permittee must obtain a permit from DEQ for operation of a solid waste facility prior to final approval of the amendment. To expedite this process, the Permittee may apply for this permit in conjunction with the assistance of DOGM for a solid waste facility under permit by rule provisions. (KH)

R645-301-743.130: The Permittee must include the spillway detail to Drawing 5. (KH)

R645-301-743.130: The Permittee shall add the cleanout marker detail (including the elevation of the cleanout line) to Drawings 4 and 5. (KH)

R645-301-746.340: The Permittee shall provide the elevation of the top of the cleanout marker (which is proposed to be placed 4.44 in below the spillway elevation). Due to the fact that sludge will be added to the basin at any location and given the large size of the basin, DOGM requests 4 markers be placed, one in each corner. Markers are requested to be not less than 20 ft but not more than 40 ft from the sides. (KH)

TECHNICAL ANALYSIS:

ENVIRONMENTAL RESOURCE INFORMATION

Regulatory Reference: Pub. L 95-87 Sections 507(b), 508(a), and 516(b); 30 CFR 783., et. al.

GENERAL

Regulatory Reference: 30 CFR 779.11, 779.12, 783.12; R645-301-411, -301-521, -301-721.

CLIMATOLOGICAL RESOURCE INFORMATION

Regulatory Reference: 30 CFR 779.18, 783.18; R645-301-724.

Analysis:

The previous technical analysis (Task ID #3997) identified a deficiency of lacking climatological resource information. The revised amendment includes climatological factors such as: average monthly temperature, average monthly precipitation, average monthly evaporation, and average monthly wind direction and velocity.

Finding:

The requirement for inclusion of climatological resource information is fully met.

HYDROLOGIC RESOURCE INFORMATION

Regulatory Reference: 30 CFR Sec. 701.5, 784.14; R645-100-200, -301-724.

Baseline Information

Analysis:

The previous technical analysis (Task ID #3997) identified a deficiency relating to baseline hydrologic and geologic for cumulative impact area. The Permittee conducted a search of the area for available data and no active groundwater wells, springs or other expressions within the search area. Given the engineered liner of the evaporation pond eliminating infiltration and the total containment design eliminating surface discharge no further investigation for baseline data is required.

Finding:

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The amendment meets the requirements for baseline information.

Probable Hydrologic Consequences (PHC)

Analysis:

The previous technical analysis (Task ID #3997) identified a deficiency relating to the lack of a PHC for the proposed project area. The Permittee included a PHC as Attachment 14 in the revised amendment. The PHC addresses: contamination by sludge materials, increased sediment yield from disturbed areas, increased sediment yield from disturbed areas, increased total dissolved solids concentrations, impacts to groundwater or surface water availability, hydrocarbon contamination from trucks or from the use of hydrocarbons in the permit area, contamination of surface and groundwater from road salting, and contamination of surface water from sludge spillage due to hauling operations.

Finding:

The PHC in the revised amendment meets these requirements.

MAPS, PLANS, AND CROSS SECTIONS OF RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.24, 783.25; R645-301-323, -301-411, -301-521, -301-622, -301-722, -301-731.

Well Maps

Analysis:

The previous technical analysis (Task ID #3997) identified a deficiency relating to the lack of water well maps. The Permittee has added Figure 7-1 of water rights and conducted a search of available data and found no active groundwater wells, springs or other expressions within the search area.

Findings:

The requirement for inclusion of well maps has been met.

Monitoring and Sampling Location Maps

Analysis:

The previous technical analysis (Task ID #3997) identified a deficiency relating to the lack of monitoring and sampling location maps. The Permittee conducted a search of available data and found no active groundwater wells, springs or other expressions within the search area.

Findings:

The requirement for inclusion of well maps has been met.

Surface Water Resource Maps

Analysis:

The previous technical analysis (Task ID #3997) identified a deficiency relating to the lack of surface water resource maps. The Permittee has added Figure 7-1 of water rights and conducted a search of available data and found no active groundwater wells, springs or other expressions within the search area.

Findings:

The requirement for surface water maps has been met.

OPERATION PLAN

SPOIL AND WASTE MATERIALS

Regulatory Reference: 30 CFR Sec. 701.5, 784.19, 784.25, 817.71, 817.72, 817.73, 817.74, 817.81, 817.83, 817.84, 817.87, 817.89; R645-100-200, -301-210, -301-211, -301-212, -301-412, -301-512, -301-513, -301-514, -301-521, -301-526, -301-528, -301-535, -301-536, -301-542, -301-553, -301-745, -301-746, -301-747.

Analysis:

The previous technical analysis (Task ID #3997) identified a deficiency relative to use of an engineered liner. The Permittee has added use of the same engineered liner used in their current treatment system to the revised amendment. However, the amendment references Attachment #2 of Appendix 65 which no longer exists.

Finding:

R645-121.200: Attachment #2 was removed from Appendix 65 in January 2012. Please reference the correct attachment or include the information with the application.

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Disposal Of Noncoal Mine Wastes

Analysis:

The waste proposed to be ultimately buried at the Burma Pond site is determined to be noncoal mine waste and must thus meet the standards and permitting for the State of Utah Department of Environmental Quality- Division of Solid and Hazardous Waste (DEQ).

Finding:

R645-121.200: The Burma Pond facility is not involved in Division Order DO-10A. The facility is being proposed as a method of handling water treatment plant industrial waste by product so references to Division Order DO-10A should be removed. Further in Chapter 5 the Permittee states:

“At present, there is some uncertainty as to the future treatment requirements for the Crandall Mine discharge water, in terms of longevity of treatment and the degree of treatment. The entire subject of long-term treatment requirements is presently being discussed and negotiated as part of the legal resolution of Division Order DO-10A. Since the operational future of the Burma evaporation facility is tied totally to the operation requirements of the Crandall water treatment, it is assumed that one of the following future scenarios will ultimately unfold:”

Below this statement are listed items 1-5, this statement shall be revised to statements of plans for operation of the facility not speculation of possibilities. The application shall state plans should items for example: “if the facility receives no sludge for three the facility will be reclaimed.” or “if the facility fills with liquid and/or solids to the top of the clean out marker dried material will be hauled to ECDC or other approved disposal site.

R645-301-528.332: As described in the application, the Permittee intends to permanently landfill noncoal mine waste thus the Permittee must obtain a permit from the Utah Department of Environmental Quality (DEQ) for operation of a solid waste facility prior to application approval. To expedite this process the Permittee may also apply for this permit in conjunction with the assistance of DOGM for a solid waste facility permit by rule. (KH)

HYDROLOGIC INFORMATION

Regulatory Reference: 30 CFR Sec. 773.17, 774.13, 784.14, 784.16, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-300-140, -300-141, -300-142, -300-143, -300-144, -300-145, -300-146, -300-147, -300-147, -300-148, -301-512, -301-514, -301-521, -301-531, -301-532, -301-533, -301-536, -301-542, -301-720, -301-731, -301-732, -301-733, -301-742, -301-743, -301-750, -301-761, -301-764.

Groundwater Monitoring

Analysis:

The previous technical analysis (Task ID #3997) identified a deficiency relative to an evaluation for the need of a groundwater monitoring program. No groundwater monitoring program is included in the revised amendment. However; due to proposed implementation of an engineered liner, groundwater will be fully protected and no monitoring program will be required.

Finding:

The requirement for evaluation of a groundwater monitoring program has been met.

Surface Water Monitoring

Analysis:

The previous technical analysis (Task ID #3997) identified a deficiency relative to an evaluation for the need of a surface water monitoring program. No surface water monitoring plan is proposed in the application. However, the amendment fully documents that the evaporation pond can achieve full containment. Further the amendment documents that a sediment cleanout marker and a 100 year 24 hour storm event marker will be installed 4.44 inches below the spillway elevation. These markers will be used to field evaluate that full containment is being maintained. Since full containment will be maintained at all times a Utah Pollutant Discharge Elimination System (UPDES) permit will not be required.

The previous technical analysis (Task ID #3997) identified a deficiency relative to an evaluation for the need to determine that surface water would not be impacted by way of infiltration. The use of an engineered liner in the pond rules out the possibility of infiltration.

Finding:

The amendment meets the requirements for surface water monitoring.

State-Appropriated Water Rights

Analysis:

The previous technical analysis (Task ID #3997) identified a deficiency relative to conducting search of and documenting State-appropriated water rights ownership. The Permittee included as Attachment 13 a water rights summary.

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Finding:

The amendment meets the requirements for state-appropriated water rights.

Acid- and Toxic-Forming Materials and Underground Development Waste

Analysis:

The previous technical analysis (Task ID #3997) identified a deficiency relative to possibility of toxic forming materials. The Permittee has conducted testing presumed to be properly conducted and included in Attachment 10. However, the laboratory reports in Attachment 10 are insufficiently descriptive to identify where samples were collected from or the sampling preparation method.

Finding:

R645-301-747.200: In Chapter 5 the Permittee states “It should be noted that the iron sludge material has been tested in the lab for RCRA metals and has been found to be non-toxic, non-hazardous and non-acid forming. (See Attachment 10)”. This statement is insufficient and the samples included in Attachment 10 need to be described as what sample preparation method was conducted for analysis.

Impoundments

Analysis:

The previous technical analysis (Task ID #3997) identified deficiencies relative to design of an emergency spillway, addition of field observation level markers, and language concerning the 100-year 24-hour storm event. The Permittee added language to the application about an emergency spillway, sediment cleanout markers and containment of the maximum storm event. However, these items need to be fully populated in the design drawings.

Finding:

R645-301-743.130: The Permittee shall add the spillway detail to Drawing 5. (KH)

R645-301-743.130: The Permittee shall add the cleanout marker including the elevation of the cleanout line detail to Drawing 4 and 5. (KH)

R645-301-746.340: The Permittee shall provide the elevation of the top of the cleanout marker which is proposed to be placed 4.44 in below the spillway elevation. Due to the fact that

sludge will be added to the basin at any location and large size of the basin DOGM requests 4 markers be placed, one in each corner be place. Markers are requested to be not less than 20 ft but not more than 40 ft from the sides

RECLAMATION PLAN

GENERAL REQUIREMENTS

Regulatory Reference: PL 95-87 Sec. 515 and 516; 30 CFR Sec. 784.13, 784.14, 784.15, 784.16, 784.17, 784.18, 784.19, 784.20, 784.21, 784.22, 784.23, 784.24, 784.25, 784.26; R645-301-231, -301-233, -301-322, -301-323, -301-331, -301-333, -301-341, -301-342, -301-411, -301-412, -301-422, -301-512, -301-513, -301-521, -301-522, -301-525, -301-526, -301-527, -301-528, -301-529, -301-531, -301-533, -301-534, -301-536, -301-537, -301-542, -301-623, -301-624, -301-625, -301-626, -301-631, -301-632, -301-731, -301-723, -301-724, -301-725, -301-726, -301-728, -301-729, -301-731, -301-732, -301-733, -301-746, -301-764, -301-830.

Analysis:

The previous technical analysis (Task ID #3997) identified deficiencies relative to vegetation during reclamation and restoration of natural drainage. A seed mixture for revegetation is included in Attachment 8 and language was added to the reclamation section concerning the contour of regarding.

Finding:

The amendment meets the general requirements for reclamation.

HYDROLOGIC INFORMATION

Regulatory Reference: 30 CFR Sec. 784.14, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-301-512, -301-513, -301-514, -301-515, -301-532, -301-533, -301-542, -301-723, -301-724, -301-725, -301-726, -301-728, -301-729, -301-731, -301-733, -301-742, -301-743, -301-750, -301-751, -301-760, -301-761.

Hydrologic Reclamation Plan

Analysis:

The previous technical analysis (Task ID #3997) identified deficiencies relative to underground ponding and impacts to the hydraulic balance. As described previously in the noncoal mine waste section of this memo, the Permittee must obtain a permit from the Utah DEQ for operation of a solid waste faculty prior to application approval. The Permittee must fulfill all requirements of DEQ for closure.

Finding:

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The previously identified deficiency in the noncoal mine waste section must be addressed.

RECOMMENDATIONS:

The application is not recommended for approval until the issues identified in this memo are resolved.

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