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TECHNICAL MEMORANDUM

Utah Coal Regulatory Program

August 10, 2010

TO: Internal File

THRU: Ingrid Campbell, Biologist and Team Lead *ICC*

FROM: James Owen, Reclamation Engineer *JO*

RE: Catchment Structures C & E, West Ridge Resources, West Ridge Mine, C/007/0041, Task #3599

SUMMARY:

On August 2, 2010, the Division of Oils Gas & Mining received an application for an amendment to the West Ridge Mine MRP to include catchment structures C and E in the C canyon drainage below the mine site.

The submittal is in response to Violation #10063 and addresses items III and IV of the NOV. Items I and II of the NOV are being addressed by the underground mine managers and will be submitted separately.

In the spring of 2009, the company constructed small catchment structures in the C Canyon drainage below the mine site. The purpose of these structures was to contain coal-fines, which had accumulated in the drainage channel as a result of non-compliance discharge water from the mine, and to assist in the subsequent clean-up project. The company proposes to reconstruct catchments C and E exactly as was done in 2009.

This memorandum will address the adequacy of the application as it relates to the engineering (R645-301-500) and bonding (R645-301- 800) requirements of the Utah Coal Mining Rules.

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TECHNICAL ANALYSIS:

OPERATION PLAN

ROAD SYSTEMS AND OTHER TRANSPORTATION FACILITIES

Regulatory Reference: 30 CFR Sec. 784.24, 817.150, 817.151; R645-301-521, -301-527, -301-534, -301-732.

Analysis:

Access will be gained for catchment construction via roads that exist due to prior authorization and construction efforts. Access for all work on the catchment structures was provided under the appropriate permits, rights-of-way, and other authorizations granted from BLM, SITLA, and the Utah Division of Water Rights. Material that is removed from the catchment structures during clean up will be hauled to the West Ridge Mine via the same roads used for access. No new road systems will require development for the reconstruction of catchment structures C and E

Findings:

Contents and information provided are sufficient enough to meet the minimum requirements of this section of the Utah Coal Mining Rules.

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.

Analysis:

Each of the catchment structures is estimated to be less than 10,000 square feet and consists of a small stilling basin excavated out of the natural drainage channel, a small low-lying impoundment dam to contain the basin, and a series of siltation filtering devices installed within the dam. Each catchment is designed to employ elements of both settling and filtration. The applicant states that a bypass culvert will be constructed around each unit to all the stream flow to be diverted around the structure during cleaning or maintenance.

As an additional measure to facilitate the clean up effort, the applicant will utilize a flocculent chemical additive during active portion of clean up. This involves metering flocculent into the stream flow at a rate determined by bench testing.

Findings:

Contents and information provided are sufficient enough to meet the minimum requirements of this section of the Utah Coal Mining Rules.

SUPPORT FACILITIES AND UTILITY INSTALLATIONS

Regulatory Reference: 30 CFR Sec. 784.30, 817.180, 817.181; R645-301-526.

Analysis:

A description on the structures to be installed is provided within the application. The applicant states that the catchment structures will be initially constructed and utilization will begin in August and September 2010. The structures will be constructed in a way to minimize disturbance and damage to surface resources.

As per **R645-301-526.220**, the application must include plans and drawings for each support facility to be constructed, used, or maintained within the permit area. Included should be a map, appropriate cross section, design drawings, and specifications sufficient to demonstrate how each facility will comply with applicable performance standards. The submittal did not include adequate designs, drawings, cross sections, specifications, etc for catchment structures C and E.

Findings:

Contents and information provided are not sufficient enough to meet the minimum requirements of this section of the Utah Coal Mining Rules. Application is found deficient. If the applicant has as-built drawings, cross-sections, etc. of the catchment structures as they were initially installed, their inclusion within the application would be sufficient enough to warrant approval for this section.

MAPS, PLANS, AND CROSS SECTIONS OF MINING OPERATIONS

Regulatory Reference: 30 CFR Sec. 784.23; R645-301-512, -301-521, -301-542, -301-632, -301-731, -302-323.

Analysis:

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Included with the submittal was a permit (Map 1-0) and location map (Map 1-1). The map includes details in terms of catchment structure location, topsoil area, pump station location, mine lease area, and surface facility area. The map has been certified and signed by a licensed professional engineer.

Findings:

Contents and information provided are sufficient enough to meet the minimum requirements of this section of the Utah Coal Mining Rules.

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:

In reclaiming catchments C & E, undisturbed segments of the channel above and below the catchment sites, as well as previous reclamation of the catchments structures will be used as a basis of comparison in restoring the areas to an acceptable reclaimed condition.

The applicant states that the steel filter boxes will be carefully removed and placed in safe storage off site for possible future use. Interim reclamation of the channel area will be conducted. The settling basin will be cleaned of all coal fines during interim reclamation. The catchment structures will be permitted but will not be actively maintain. During this period the settling basins will be allowed to fill naturally. This process will allow the structures to be replaced if needs be and will prevent the structure material from damage due to flash flooding. Based on underground mining conditions and situations, the applicant tentatively indicates that final reclamation can be performed after May of 2012.

Final reclamation of the sites will be conducted after the Division determines they are no longer required. Reclamation process will follow the reclamation process previously approved for catchment structure A and can be found on pages 6-8 of the submittal. Reclamation is expected to follow the process and progress that was demonstrated when the catchment structures were reclaimed in 2009. Detailed before and after photos were included in the

submittal for catchments C & E. The photos document the degree and adequacy of the proposed reclamation plan.

Findings:

Contents and information provided are sufficient enough to meet the minimum requirements of this section of the Utah Coal Mining Rules.

APPROXIMATE ORIGINAL CONTOUR RESTORATION

Regulatory Reference: 30 CFR Sec. 784.15, 785.16, 817.102, 817.107, 817.133; R645-301-234, -301-412, -301-413, -301-512, -301-531, -301-533, -301-553, -301-536, -301-542, -301-731, -301-732, -301-733, -301-764.

Analysis:

On pg. 5 of the submittal, the applicant states that the low-lying outlet dams will be excavated out to the original stream bottom elevation and configuration. The catchment areas will be re-contoured and boulders and large rocks will be arranged within the channel and along the channel flanks in an attempt to mimic the pre-existing channel morphology as much as possible, and to blend in with the visual appearance of the natural channel above and below the reclamation site. The boulders will also help increase erosion control.

Findings:

Contents and information provided are sufficient enough to meet the minimum requirements of this section of the Utah Coal Mining Rules.

BACKFILLING AND GRADING

Regulatory Reference: 30 CFR Sec. 785.15, 817.102, 817.107; R645-301-234, -301-537, -301-552, -301-553, -302-230, -302-231, -302-232, -302-233.

Analysis:

The stilling basin will be backfilled with the material from the adjacent equipment storage area, and from the excess fill storage areas. This is the material that was originally dug out of the channel to construct the stilling basin. After the channel has been restored, and the channel flanks have been reclaimed, the by-pass pipes will be removed. Once the channel water-flow has been returned to the newly reclaimed channel, and the by-pass pipe has been removed, the final grading and re-contouring will be done.

Findings:

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Contents and information provided are sufficient enough to meet the minimum requirements of this section of the Utah Coal Mining Rules.

BONDING AND INSURANCE REQUIREMENTS

Regulatory Reference: 30 CFR Sec. 800; R645-301-800, et seq.

Analysis:

General

West Ridge Resources, Inc. has two bonds posted to ensure the reclamation of the mine and its associated disturbed area (\$2,117,000 and \$67,000 = \$2,184,000, as of December 2009). The second bond amount is associated with the gob vent holes outside the mine's disturbed area. Both bonds posted are surety bonds.

Determination of Bond Amount

Bond calculation estimates per structure were provided as per the following:

• Demolition steel filter boxes:	\$3,388
• Demolition bypass pipe:	\$442
• Earthwork:	\$16,608
• Re-vegetation:	\$4,506
• <u>Indirect costs:</u>	<u>\$6,685</u>
TOTAL	\$31,629

The bondings costs submitted by the applicant are based on previously approved bond estimates as well as actual reclamation costs of the structures. The applicant estimated the total bonding costs per catchment structure to be \$31,629 per structure. This estimate includes demolition, earthwork, re-vegetation, and indirect costs. Therefore, the additional bonding cost to reclaim catchments C and E would be \$63,258.

Presently, West Ridge mine has a reclamation cost of \$1,760,000 and surety bonds posted in the amount of \$2,184,000. There is currently \$424,000 of excess bonding currently in place. The existing bonding will be adequate enough to include catchment structures C & E. With

\$63,258 dedicated to catchment structure reclamation, the excess bonding in place will be \$360,742.

The amount of bonding is adequate for approval of this permit. As per **R45-301-800**, the applicant shall edit the "Bonding" paragraph on pg. 13 to state the correct amount of available excess bond. The application states that \$218,000 is available. According to the difference between the reclamation cost (\$1,760,000) and the amount of posted bond (\$2,184,000) the available excess bond is \$424,000. The amount of excess bond available after the catchment structures are in place will be \$360,742.

Terms and Conditions for Liability Insurance

The Division evaluates the mine's general liability insurance coverage during each quarterly complete inspection. Coverage was renewed for West Ridge Resources, Inc. on June 1, 2010 for a period of one year.

Findings:

Applicant must address the minor grammatical or miscalculated deficiency concerning the amount of available excess bond. Otherwise, contents and information provided are sufficient enough to meet the minimum requirements of this section of the Utah Coal Mining Rules.

RECOMMENDATIONS:

The application is not recommended for approval at this time. Applicant must address the minor grammatical, or miscalculation deficiency concerning the amount of available excess bond. Also, if the applicant has as-built drawings, cross-sections, etc of catchment structures C & E, as they were initially installed, their inclusion within the application would warrant approval. Contents and information provided will be considered sufficient enough to meet the minimum requirements of the Utah Coal Mining Rules when the following deficiencies are addresses:

- **R645-301-526.220:** The application must include plans and drawings for each support facility to be constructed, used, or maintained within the permit area. Included should be a map, appropriate cross section, design drawings, and specifications sufficient to demonstrate how each facility will comply with applicable performance standards. The submittal did not include adequate designs, drawings, cross sections, specifications, etc for catchment structures C and E.
- The amount of bonding is adequate for approval of this permit. As per **R45-301-800**, the applicant shall edit the "Bonding" paragraph on pg. 13 to state the correct amount of available excess bond. The application states that \$218,000 is

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available. According to the difference between the reclamation cost (\$1,760,000) and the amount of posted bond (\$2,184,000) the available excess bond is \$424,000. The amount of excess bond available after the catchment structures are in place will be \$360,742.

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