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DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

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TO: Internal File

FROM: JCH Joseph C. Helfrich, Sr. Reclamation Specialist, Biologist, Team Lead

RE: Adit #1 Reclamation Plan, Castle Gate Holding Co. Castle Gate Mine C/007/004-AM01B

**SUMMARY:**

On May 1, 2001, the Division received an amendment to revise the Castle Gate Reclamation Plan (MRP) for the #1 Adit facility. The submittal changes in Appendix 3-2 include incorporation of best management practices such as extreme roughening and the placement of filter fabric on the channel bottom. The site to be re-graded and contoured is 1.5 acres. There is an ephemeral stream channel in the middle of the site. There has been no topsoil salvaged from the pre-SMCRA site. Soil will be tested for suitability for use as topsoil substitute. There is also a producing spring in one of the old portals. This proposal also addresses the diversion of the spring water into the Price River. This Technical Memo is a review of the proposed revisions to the current reclamation plan.

**TECHNICAL ANALYSIS:**

**ENVIRONMENTAL RESOURCE INFORMATION**

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

**HISTORIC AND ARCHEOLOGICAL RESOURCE INFORMATION**

Regulatory Reference: 30 CFR 783.12; R645-301-411.

**Analysis:**

Neither the application nor chapter 5, (Historic and Cultural Resources), of the operation and reclamation plan addresses the required Historic and Cultural Resource information for the adit. However, on page 3.5-10 of the application it does state the following: "the stone retaining walls and concrete brows over the portal entrances will be left for historical reference."

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**Findings:**

The information provided is not adequate to meet this section of the regulations. Prior to approval the applicant must provide the following in accordance with:

**R645-301-411.140-.144:** The application must address the resource information required by this section of the regulations and ensure that the proposed structures to remain are compatible with the post mining land use. Although the staff may concur with the applicants proposal, (Page six of Division Order response dated 1/13/93), the applicant needs to provide concurrence from the appropriate agency that has jurisdiction over the classification of historical structures and a demonstration to ensure that the remaining structures are compatible with the post mining land use.

**VEGETATION RESOURCE INFORMATION**

Regulatory Reference: 30 CFR 783.19; R645-301-320.

**Analysis:**

The vegetation resource information is provided for in Chapter nine sections 9.1-9.3 of the current operation and reclamation plan. The seed mixes to be used in reclamation of the #1 Adit facility are also provided for in chapter 9 sections 9.4-1(2). There are three seed mixes listed in chapter 9. The application suggests species list #1 as the seed mix to use for the reclamation of the #1 Adit. However chapter 9 prescribes seed mixes for pre and post SMCRA areas as well as areas within 20' of the edge of reclamation channels. In reading the application it appears as though only seed mix # 1 will be used in the reclamation of the #1 Adit.

On page 3.5-9 of the application it states that "The reclamation plan shows 1.5 acres of the 3 acres of pre SMCRA receiving reshaping, diversion construction, resoiling, and revegetation activities." Chapter 3, page 9-2 of the reclamation plan refers to the previously mined areas as being shown on maps 3.2-1, 3.3-1, and 3.5-1. Maps 3.2-1 and 3.3-1 are not included in chapter three of the MRP.

**Findings:**

The information provided is not adequate to meet this section of the regulations. Prior to approval the applicant must provide the following in accordance with:

**R645-301-320,** The application needs to include the other seed mixes identified in the reclamation plan.

**FISH AND WILDLIFE RESOURCE INFORMATION**

Regulatory Reference: 30 CFR 784.21; R645-301-322.

**Analysis:**

The fish and wildlife information is provided for in chapter ten of the current operation and reclamation plan. However the information does not include a raptor survey of the #1 Adit area. The most recent raptor survey was conducted in 1981 for the power lines associated with the development of the Crandall Canyon facility. The application does not include or provide reference to site-specific resource information necessary to ensure compliance with the Endangered Species Act of 1973. Current information regarding the status of endangered or threatened species of plants or animals or their critical habitat is available through the U. S. Fish and Wildlife Service

**Findings:**

The information provided for in chapter ten is not adequate to meet this section of the regulations. Prior to approval the applicant must provide the following in accordance with:

**R645-301-322, 330,** The application should delineate that portion of the baseline wildlife information that applies to the #1 Adit area. The application needs to include a current raptor survey for the #1 Adit area. The application needs to include resource information sufficient to provide for a protection and enhancement plan that ensures compliance with the Endangered Species Act of 1973.

**LAND-USE RESOURCE INFORMATION**

Regulatory Reference: 30 CFR 783.22; R645-301-411.

**Analysis:**

A description of the pre-mining and post- mining land use for the #1 Adit is not provided for in the application. Chapter 4 of the operation and reclamation plan, (Land Use), does not provide a description either but does refer the reader to several sections of Chapter 3. Section 3.5-2 provides a description of the facilities for the #1 Adit. Prior to the implementation of SMCRA the area was developed and used for mining. Section 3.5-4 of the application lists the post mining land use as wildlife habitat but does not include a description of the habitat.

Plate 4-1 identifies the surface ownership for the Castle Gate facilities including the #1 adit. The surface ownership of the property where the #1 Adit is located is Plateau Mining Corporation.

**Findings:**

The information provided is not adequate to meet this section of the regulations. Prior to

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approval the applicant must provide the following in accordance with:

**R645-301-411.100-.130, .250**, the application needs to provide a description of the wildlife habitat.

**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.

**Analysis:**

**Archeological Site Maps**

No Archeological site maps are provided for in chapter 5 of the operation and reclamation plan or the application.

**Cultural Resource Maps**

No Cultural Resource maps are provided for in chapter 5 of the operation and reclamation plan or the application.

**Affected Area Boundary Maps**

Plate 3.5-1 identifies the areas disturbed by mining practices.

**Existing Structures and Facilities Maps**

Plate 3.5-1 identifies the existing structures and surface facilities. However, the entire disturbance is identified as pre-1977.

**Existing Surface Configuration Maps**

Plate 3.5-2 identifies the existing surface configuration for the #1 Adit.

**Vegetation Reference area Maps**

No Vegetation Reference Area maps are provided for in the current operation and reclamation plan or the application. Exhibit 9-1, (Area Revegetation Map), identifies the #1 Adit area by dotted marks that are not included in the legend. Apparently, this is also a "D2, Disturbed by mining post 1977 area. The legend includes areas that were disturbed by mining pre 1977. However, these areas are not included in the #1 Adit location as indicated on plates 3.5-1, 3.5-3 and referenced in numerous places in the MRP. The area adjacent to the #1 Adit disturbed area is identified as "Mixed Brush". Exhibit 9-3 is also identified as an Area Revegetation Map. The current operation and reclamation plan contains several vegetation maps and an AML reference area map. However none of the maps identify the #1 Adit or a reference area for the #1 Adit.

Chapter 3, page 9-2 of the reclamation plan refers to the previously mined areas as being shown on maps 3.2-1, 3.3-1, and 3.5-1. Maps 3.2-1 and 3.3-1 are not included in chapter three of the MRP currently on file.

### **Findings:**

The information provided is not adequate to meet this section of the regulations. Prior to approval the applicant must provide the following in accordance with:

**R645-301-323, -301-411, -301-521, -301-622, -301-722, -301-731,** The application needs to include maps 3.2-1, 3.3-1, an Archeological site map, a Historical Resource map, and a map identifying the reference area for the # 1 Adit. Maps 9-1 and 9-3 should be properly labeled as vegetation maps identifying what each represents. They should also indicate which portions of the disturbed area are allegedly pre-1977 mining disturbance. As well Exhibit 3.5-1 should be updated to reflect post-1977 mining disturbances.

## **OPERATION PLAN**

### **FISH AND WILDLIFE INFORMATION**

Regulatory Reference: 30 CFR Sec. 784.21, 817.97; R645-301-322, -301-333, -301-342, -301-358.

### **Analysis:**

#### **Protection and Enhancement Plan**

The fish and wildlife information is provided for in chapter 10 of the MRP. Section 10.2-6 states that "Restoration of disturbed areas will ultimately be achieved by natural succession of the reclaimed and stabilized mine sites. Plans for such reclamation activities are included in chapter ix." Chapter 9 section 9.4-2(1) states, "Wildlife enhancement will be created by the development of micro-topographic features such as swales and rises during regrading; and by the species specified above." The text in chapter 10 needs to include information that explains what is meant by "natural succession of the reclaimed and stabilized mine sites." The current MRP does not define what natural succession is and what it includes. The current MRP does not define "micro-topographic features". Two examples are provided however no information regarding size, location, and what species of wildlife these features apply to. The portion of the text that indicates that wildlife enhancement will be created by the species listed above needs to be clarified and defined. A discussion that includes the species of vegetation and the relationship to benefiting wildlife should be provided. Exhibit 3.5-3 or an individual exhibit should be provided that includes the wildlife topographic features. As noted in the Fish and Wildlife Resource Information section, the application needs to include resource information sufficient to provide for a protection and enhancement plan that ensures compliance with the Endangered

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Species Act of 1973.

**Endangered and Threatened Species**

The application does not include or provide reference to listed or proposed threatened species of plants or animals or their critical habitats listed by the secretary under the endangered species act. Current information regarding the status of endangered or threatened species of plants or animals or their critical habitat is available through the U. S. Fish and Wildlife Service.

**Bald and Golden Eagles**

Neither the application nor the MRP includes information on Bald and Golden eagles that is current or specific to the #1 Adit area. Reclamation is scheduled after July 15, 2001, which would not pose a direct threat to fledglings or adult birds that may be actively utilizing nests in the area. In addition there is a fair amount of activity adjacent to the #1 Adit site that includes automobile and railroad traffic, as well as activity from the Willow Creek wash plant and UP&L power plant. It would therefore seem unlikely that reclamation activities would have a negative on nesting birds in the area. However the applicant needs to provide supportive information on the status of raptors in order to support such a finding.

**Wetlands and Habitats of Unusually High Value for Fish and Wildlife**

There is an underground spring located in one of the portals that is currently flowing at approximately 2 gallons per minuet. The applicant has proposed to transport the spring flow to the Price River by way of a culvert located at the lower end of the disturbed area. The current application does not address how the spring water is to be transported from the portal to the culvert. The distance from the portal to the culvert location is approximately 100'. In a previous conversation with Johnny Pappas he indicated that he might reclaim that area as riparian habitat. That being the case a discussion should be provided to address the requirements of this section of the regulations. If that is not the case a discussion should be provided to address how the flow will be transported down gradient from the portal to the culvert.

**Findings:**

The information provided is not adequate to meet this section of the regulations. Prior to approval the applicant must provide the following in accordance with:

**R645-301-322, -301-333, -301-342, -301-358, Protection and Enhancement Plan** The text in chapter 10 needs to include information that explains what is meant by "natural succession of the reclaimed and stabilized mine sites." The current MRP does not define what natural succession is and what it includes. The current MRP does not define "micro-topographic features". The portion of the text that indicates that wildlife enhancement will be created by the species listed above needs to be clarified and defined. A discussion that includes the species of vegetation and the relationship to benefiting wildlife should be provided. Exhibit 3.5-3 or an individual exhibit should be provided that includes the wildlife

topographic features. As noted in the Fish and Wildlife Resource Information section, the application needs to include resource information sufficient to provide for a protection and enhancement plan that ensures compliance with the Endangered Species act of 1973.

**Endangered and Threatened Species** The application needs to include or provide reference to listed or proposed threatened species of plants or animals or their critical habitats listed by the secretary under the endangered species act of 1973.

**Bald and Golden Eagles** The applicant needs to provide supportive information on the current status of raptors in order to make a finding.

**Wetlands and Habitats of Unusually High Value for Fish and Wildlife** a discussion needs to be provided which addresses the manner in which the water will be transported from the spring down gradient to the culvert. The discussion should also include the development of aquatic and terrestrial habitat.

## VEGETATION

Regulatory Reference: R645-301-330, -301-331, -301-332.

### Analysis:

The requirements for this section of the regulations have been addressed in either the Vegetation Resource Information section or the Revegetation section of the Reclamation Plan.

### Findings:

Additional information that may be required is identified in the corresponding sections of this technical analysis.

## RECLAMATION PLAN

### POSTMINING LAND USES

Regulatory Reference: 30 CFR Sec. 784.15, 784.200, 785.16, 817.133; R645-301-412, -301-413, -301-414, -302-270, -302-271, -302-272, -302-273, -302-274, -302-275.

### Analysis:

A description of the post- mining land use for the #1 Adit is not provided for in the application. Chapter 4 of the operation and reclamation plan, (Land Use), does not provide a

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description either but does refer the reader to several sections of Chapter 3. Section 3.5-4 of the application lists the post mining land use as wildlife habitat but does not include a description of the habitat.

**Findings:**

The information provided is not adequate to meet this section of the regulations. Prior to approval the applicant must provide the following in accordance with:

**R645-301-412, -301-413, -301-414, -302-270, -302-271, -302-272, -302-273, -302-274, -302-275,** The application needs to provide a description of the wildlife habitat and the information required by these sections of the regulations.

**PROTECTION OF FISH, WILDLIFE, AND RELATED ENVIRONMENTAL VALUES**

Regulatory Reference: 30 CFR Sec. 817.97; R645-301-333, -301-342, -301-358.

**Analysis:**

The analysis of the information required in this section has been addressed under the Fish and Wildlife information section of the Operation Plan.

**Findings:**

Additional information that may be required is identified in the corresponding section of this technical analysis.

**CONTEMPORANEOUS RECLAMATION**

Regulatory Reference: 30 CFR Sec. 785.18, 817.100; R645-301-352, -301-553, -302-280, -302-281, -302-282, -302-283, -302-284.

**Analysis:**

According to the applicant the major portions of the Castle Gate surface facilities and disturbed areas were reclaimed in 1994. The substations at Hardscrabble and Sowbelly canyons and the disturbed area associated with the #1 Adit did not undergo reclamation at that time. Apparently they were to be included with the reclamation of the Crandall Canyon facilities. In 1998, a timetable for reclamation of the #1 Adit was provided to the Division.

**Findings:**

The information provided is adequate to meet this section of the regulations.



## REVEGETATION

Regulatory Reference: 30 CFR Sec. 785.18, 817.111, 817.113, 817.114, 817.116; R645-301-244, -301-353, -301-354, -301-355, -301-356, -302-280, -302-281, -302-282, -302-283, -302-284.

### Analysis:

#### General requirements

As noted in the analysis of the vegetation resource information the application needs to include the other seed mixes identified in the reclamation plan.

#### Timing

Revegetation timing is described in section 9.5-4 of chapter 9 of the MRP. Spring, (March 15 to May 15), and Fall, (October 15 until freezing conditions), are the two time frames identified for planting. However a detailed schedule and timetable for the steps and phases of reclamation is not provided.

#### Mulching and other soil stabilizing practices

The application suggests the addition of 1 to 1.5 tons of certified noxious weed free straw mulch to be spread over the seeded growth media. The straw mulch will then be sprayed with a tackifier and mulch mixture at about 500 pounds per acre.

#### Standards for success

The standards for revegetation success are described in sections 9.5-6,(1),(2) of the MRP. The current operation and reclamation plan contains several vegetation maps and an AML reference area map. However none of the maps identify the #1 Adit or a reference area for the Adit. A representative reference area should be established in order to accurately describe the standards for revegetation success.

### Findings:

The information provided is not adequate to meet this section of the regulations. Prior to approval the applicant must provide the following in accordance with:

**R645-301-244, -301-353, -301-354, -301-355, -301-356, -302-280, -302-281, -302-282, -302-283, -302-284,** The application needs to include references to the other seed mixes identified in the reclamation plan. The application needs to include a detailed schedule and timetable for the steps and phases of reclamation. The application needs to include a reference area for the #1 Adit. The reference area for the adit should be established in accordance with the vegetation guidelines

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established by the Division.

## **MAPS, PLANS, AND CROSS SECTIONS OF RECLAMATION OPERATIONS**

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

### **Analysis:**

#### **Reclamation monitoring and sampling location maps**

Neither the current MRP nor the application contains reclamation monitoring and/or sampling location maps.

#### **Reclamation treatments maps**

Neither the current MRP nor the application contains reclamation treatments maps.

### **Findings:**

The information provided is not adequate to meet this section of the regulations. Prior to approval the applicant must provide the following in accordance with:

**R645-301-323, -301-512, -301-521, -301-542, -301-632, -301-731**, The reclamation plan for the #1 Adit needs to include reclamation treatments, monitoring and sampling location maps.

### **RECOMMENDATIONS:**

The application is not recommended for approval at this time.