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State of Utah  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

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August 9, 2001

TO: [REDACTED]  
THRU: Peter H. Hess, Senior Reclamation Specialist, Project Team Lead *Sm for PHH*  
FROM: *JCH* Joseph C. Helfrich, Senior Reclamation Specialist, Biologist  
RE: Reclamation Plan Revision, Plateau Mining Corporation, Willow Creek Mine,  
[REDACTED] AM01B

**SUMMARY:**

On February 12, 2001, the Division received an amendment to revise the Willow Creek Reclamation Plan (MRP). 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.

**VEGETATION RESOURCE INFORMATION**

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

**Analysis:**

Vegetation resource information is not provided for in this application as it pertains mainly to reclamation of the Willow Creek Mine site. The table of contents in volume 1 refers the reader to volume 5, volume 5 refers the reader to volume 9, and volume 9 refers the reviewer back to volume 5. These references need to be corrected. Some information in the application and MRP is referred to as "exhibits". This term is used interchangeably to include volumes, chapters, sections, and maps. The vegetation resource information is provided for in volume 5 exhibit 6. The data was collected in 1981, 1994, and 1995.

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**Findings:**

Information in the application is not adequate to meet this section of the regulations. Prior to final approval, the applicant must supply the following in accordance with:

**R645-301-320**, The references in volumes 5, and 9 needs to be corrected. A clear and concise nomenclature that differentiates the different types of "exhibits" needs to be incorporated into the MRP.

**FISH AND WILDLIFE RESOURCE INFORMATION**

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

**Analysis:**

The Fish and Wildlife Resource information is provided for in volume 1, and volume 5, exhibit 6 of the operation and reclamation plan.

Wildlife maps include, what appears to be, a 1994 raptor survey in exhibit 6. There is no legend that depicts the location, the mine, the status, or the type of nest. There is also a Regional Wildlife map that includes a 1999 raptor survey and a Biological Survey map. These maps are located in volume 2. In addition, there is a 2000 raptor survey provided for in the 2000 annual report. All maps pertaining to wildlife in the MRP should be located in the same section of the MRP.

**Findings:**

Information in the application is adequate to meet the requirements of this section of the regulations.

**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:**

**Vegetation reference area maps**

Exhibit 9-1 provides for the vegetation types and reference areas for this reclamation project. Exhibit 9-2 is a vegetation map for the Castle Gate mine and should be placed in that MRP or supportive documentation should be provided as to why it is included in the Willow Creek MRP. There is also an additional area revegetation map that is identified by an illegible Exhibit number. This map should be discarded. Figure 3.2-1 includes a list of vegetative types

for the approved Barn Canyon facility. Volume 2 contains two additional vegetation maps. All maps pertaining to vegetation should be located in the same section of the MRP.

### **Wildlife Maps**

Wildlife maps include what appears to be a 1994 raptor survey in exhibit 6. There is no legend that depicts the location, mine, status, or type of nest. There is also a Regional Wildlife map that includes a 1999 raptor survey and a Biological Survey map. These maps are located in Volume 2. In addition, there is a 2000 raptor survey provided for in the 2000 annual report. All maps pertaining to wildlife in the MRP should be located in the same section of the MRP.

### **Findings:**

Information in the application is not adequate to meet this section of the regulations. Prior to final approval, the applicant must supply the following in accordance with:

**R645-301-323, -301-411, -301-521, -301-622, -301-722, -301-731**, Exhibit 9-2 is a vegetation map for the Castle Gate mine and should be placed accordingly in that MRP or supportive documentation should be provided as to why it is included in the Willow Creek MRP. There is also an additional area revegetation map that is identified by an illegible Exhibit number. This map should be discarded. Figure 3.2-1 includes a list of vegetative types for the approved Barn Canyon facility. Volume 2 contains two additional vegetation maps. All maps pertaining to vegetation and wildlife should be located in the same corresponding sections of the MRP.

## **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 Protection and Enhancement plan for the Willow Creek mine includes protection measures to be employed during active mining operations. There are enhancement plans in Volume 1, sections 4.3 and 5.3 that basically describe enhancement measures for the reclamation phase of mining. The mine is currently inactive as a result of previous mine fires and may initiate reclamation in the near future.

#### **Endangered and Threatened Species**

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Sections 3.2.3, 4.3.4.1 and 5.3.3.3 of the MRP describe the provisions for protection and reporting of any threatened, endangered, or sensitive species. The information according to the MRP "is based on available baseline and other resource information." The plan also states that "In the event that TES occurrences are identified in the future or if new designations result in classification of existing species occurrences, appropriate provisions for protection and minimization of impacts to TES species will be developed and implemented". In consultation with Dianna Whittington From the U. S. Fish and Wildlife Service, she indicated that since the TES species lists are updated every six months an up-to-date evaluation using current TES information should be provided.

### **Bald and Golden Eagles**

The Bald Eagle is not known for nesting in the area but may be seen during the winter months. According to the permittee's contacts with UDWR, the permit area provides minimal potential for wintering Bald Eagle roosts. The 2000 raptor survey indicates that the Golden Eagle nests surveyed were inactive. PMC has included in their MRP a Mitigation plan that could be implemented during the reclamation of the Willow Creek mine in the event the reclamation activities continue during nesting periods and birds are known to be using existing or new nests in the area.

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

Critical Elk winter range is common to the majority of the Willow Creek Mine area. There are also two perennial streams adjacent to the mine facilities. The current MRP includes a protection plan for the areas associated with the elk winter range and the two perennial streams. The information is located in section 4.3.3 of the MRP.

### **Findings:**

Information in the application is not adequate to meet this section of the regulations. Prior to final approval the applicant must supply the following in accordance with:

**R645-301-322, -301-333, -301-342, -301-358**, an up-to-date evaluation using current TES information should be provided.

## **VEGETATION**

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

### **Analysis:**

The vegetation information is provided for in volume 1 section 3.2 and volume 5 exhibit 6. The data was collected in 1981, 1994, and 1995. The various vegetative communities are identified along with appropriate reference areas. They include Grass- Sage, Mixed Brush,

Conifer, Pinion-Juniper, Riparian Bottom, and Disturbed. Vegetative mapping is also provided.

**Findings:**

Information in the application is adequate to meet this section of the regulations.

**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:**

**Monitoring and sample location maps**

The maps provided for in the MRP identify the various components of vegetation and wildlife. In some instances, they are located in various sections of the MRP as noted in the Environmental Resource section of this review.

**Findings:**

Information in the application is not adequate to meet this section of the regulations. Prior to final approval the applicant must supply the following in accordance with:

**R645-301-512, -301-521, -301-542, -301-632, -301-731, -302-323**, Maps identifying wildlife and vegetation information should be located in the same sections of the MRP.

**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:**

The post-mining land use is Wildlife Habitat as referred to in section 5.3 of the MRP. The text in this section indicates that, "*PMC will reclaim the surface disturbance areas to a post mining land use of wildlife habitat*". A description of the wildlife the proposed habitat is designed for should be provided so as to accurately characterize the habitat restoration for the site.

**Findings:**

Information in the application is not adequate to meet this section of the regulations.

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Prior to final approval the applicant must supply the following in accordance with:

**R645-301-412, -301-413, -301-414, -302-270, -302-271, -302-272, -302-273, -302-274, -302-275,** This section of the application needs to include a description of the wildlife the proposed habitat is designed for to accurately characterize the habitat restoration for the site.

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

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

### **Analysis:**

The Protection and Enhancement plan for the Willow Creek mine includes protection measures to be employed during active mining operations. There are enhancement plans in Volume 1, sections 4.3 and 5.3 that basically describe enhancement measures for the reclamation phase of mining. The mine is currently inactive as a result of previous mine fires and may initiate reclamation in the near future.

### **Findings:**

Information in the application is adequate to meet this section of the regulations.

## **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:**

This proposal does not affect any contemporaneous reclamation activities for the Willow Creek Mine.

### **General**

According to section 5.3 of the approved MRP reclamation is scheduled during the first favorable planting season, (Fall), following the cessation of mining activities.

### **Findings:**

Information in the approved MRP 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:

Section 5.3 of the approved MRP addresses both general vegetative reestablishment and specific habitat enhancement measures for the reclamation at the Willow Creek mine. Revegetation practices will include seedbed preparation, seeding, woody species transplanting, mulching, and surface stabilization.

### General requirements

The general requirements that apply to revegetation and this proposal are found in section 5.3 of the MRP. There are no proposed changes to this section of the MRP in this proposal.

### Timing

Page 5.5-3 indicates, "Soil replacement and reseeding will be scheduled to minimize the period of time during which soil materials will be exposed without a protective vegetative cover." This commitment is not satisfactory. R645-301-341.100 requires a "detailed schedule and timetable for the completion of each major step in the revegetation plan." The MRP commitment to "minimize" does not infer a timeframe. During the time the soil is prepared, there is an increased risk of erosion since the soil is in a loosened condition. Further, weeds are better able to get started and spread with the ideal soil conditions. In addition, the soil crusts over and germination of the desirable seeds becomes more difficult. This section of the MRP needs to include the commitment to seed immediately after soil replacement, as noted in section 5.3.2.1 page 5.3-2.

### Mulching and other soil stabilizing practices

The applicant has proposed to incorporate weed-free mulch at a rate of 2 tons per acre. The mulch will be incorporated after the placement of growth media and prior to seeding. Additionally, roughening techniques will be employed to a depth of 12 to 18 inches to reduce compaction and enhance water infiltration. After seeding, an additional 1.5 tons of weed-free straw will be broadcast by mechanical or hand blowers.

### Standards for success

The proposal suggests one minor change to the vegetation sampling. The sampling will

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occur during years four and eight instead of three and seven.

**Findings:**

Information in the application is not adequate to meet this section of the regulations. Prior to final approval, the applicant must supply 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, section 5.5.2.4 on page 5.5-3 of the application needs to include a commitment to seed immediately after soil replacement so as to coincide with section 5.3.2.1 of the MRP.

**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**

The proposal does not include or provide reference to reclamation monitoring and sampling location maps for surface water and vegetation monitoring.

**Reclamation treatments maps**

The post mining reclamation treatment and watershed map is provided for in map #21F.

**Findings:**

Information in the application is not adequate to meet this section of the regulations. Prior to final approval, the applicant must supply the following in accordance with:

R645-301-323, -301-512, -301-521, -301-542, -301-632, -301-731, the applicant needs to include or provide reference to reclamation monitoring and sampling location maps.