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DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

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July 12, 2000

TO: Internal Files

THRU: Bob Davidson, Reclamation Specialist III, Soils Specialist, Team Lead *RAD*  
Wayne Western, Reclamation Specialist III, Reclamation Engineer *W4W*

FROM: Peter Hess, Reclamation Specialist III *Smf*

RE: Wild Horse Ridge Blasting Plan, Wild Horse Ridge Addition, Co-Op Mining Company,  
Bear Canyon Mine, ACT/015/025-SR98(1)-3

**SUMMARY:**

The permittee submitted a blast design with the initial application, which contained six deficiencies. This document analyzes the permittee's revised blast design which was prepared in response to those deficiencies on April 15, 2000.

**TECHNICAL ANALYSIS:**

**OPERATION PLAN**

**USE OF EXPLOSIVES**

Regulatory Reference: 30 CFR Sec. 817.61, 817.62, 817.64, 817.66, 817.67, 817.68; R645-301-524.

**Analysis:**

A blast design is submitted as Appendix 3-M which describes a blasting plan for the construction of the conveyor access roads associated with the Wild Horse Ridge addition which will comprise the Bear Canyon #3 and #4 Mines. The anticipated blasting plan has been prepared and signed by Mr. Kevin Petersen, who is known to have a current surface blasting certificate through the State of Utah.

The plan clearly indicates that there are no active or abandoned underground coal mines, dwellings or public buildings within the radial distances described within R645-301-524.211 and -524.212. The response clearly states that there are no active or abandoned underground coal mines within 500 feet of the proposed Wild Horse Ridge blasting area. No other buildings exist within 1,000 feet of the proposed Wild Horse Ridge blasting areas. Although a hunting cabin exists approximately 750 feet from the nearest proposed blasting area, the building cannot be classified as a dwelling, or other public building, (school, church, etc.). Although the permittee's response does contain an anticipated blast design, it was not necessary to submit same. R645-301-524.210 through -524.212 have been adequately addressed. The anticipated blast design which has been submitted appears to be able to successfully meet the fragmentation requirements being sought without incurring significant damage to the surrounding environment.

The permittee's response provides the following information to address deficiencies aired in the initial response:

- 1) A drawing that shows the burden, spacing and depth of boreholes for the bench type blasting to be used for bedrock removal (establishment of road grade) has been provided. A verbal description of the method to be used for boulder breakage has also been provided.
- 2) Page 3M-3 of the revised blasting plan clearly states that satchel type directional charges will not be used in order to minimize air blast and fly-rock. A description of the explosive to be used (Irecoal D 378), is not a satchel type directional charge.
- 3) Borehole sizes have been revised from 1¼ inch diameter to 1½ inch diameter. Although the dynamite cartridges will now fit in the boreholes, 1 3/8 inch diameter boreholes would probably provide better breakage and improve on the tampability of the explosive in the boreholes.
- 4) The revised blast design has more than doubled the weight of explosive which will be used per borehole. They will be using 1.3 pounds per hole, with a maximum of ten holes per round, hence a maximum of 13 pounds of explosive will be used per round. This improves the powder factor significantly in the anticipated blast design. The ability to adjust fragmentation within the round is within the jurisdiction of the certified blaster performing the work, and it is not necessary to obtain DOGM approval for minor changes in powder factor.

#### **Findings:**

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

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TECHNICAL MEMO

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**RECOMMENDATIONS:**

The permittee's response and submittal of an anticipated blast design adequately addresses the requirements and intents of the R645 coal rules relative to surface blasting incidental to underground mining in the State of Utah. It is recommended that this plan be approved as submitted.

sd/sm

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