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State of Utah

Department of Natural Resources

ROBERT L. MORGAN
Executive Director

Division of Oil, Gas & Mining

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Division Director

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Governor

GAYLE F. McKEACHNIE
Lieutenant Governor

OK

September 3, 2004

Wendell Owen, Mine Manager
Co-Op Mining Company
P.O. Box 1245
Huntington, Utah 84528

Re: Revised Technical Analysis, Underground Abandonment of Mining Equipment, Co-Op Mining Company, Bear Canyon Mine, C/015/0025, Task ID #1934, Outgoing File

Dear Mr. Owen:

A correction has been made to the Division's Technical Analysis (TA) on Page 7, under analysis item #2 (b & c). The number of batteries contained in the abandoned coal hauler was mistakenly listed as two and should have listed only one battery.

This correction effectively reduces the calculated volume of sulfuric acid and lead left on the coal hauler by 50 percent. The revised volumes are 2,752 pounds of sulfuric acid and 8,768 pounds of lead, respectively. The EPA threshold reporting requirement for sulfuric acid (>500 lbs, under EPCRA, Section 312 Tier II) was exceeded. Appropriate EPA notification was filed by the permittee, by letter dated April 14, 2004.

Enclosed is a revised copy of the June 22, 2004, TA with the appropriate corrections as described above. If you have any questions, please feel free to call me at (801) 538-5286.

Sincerely,

D. Wayne Hedberg
Permit Supervisor

dwh\an
Enclosure – revised TA
cc: Ranvir Singh, OSM
Jim Kohler, BLM
Alice Carlton, USFS
Darrel Leamaster, CVWUSSD
Jack Stoyanoff, NEWUSSD
Dave Hartvigsen, HCIC
Mark Page, Water Rights w/o
Dave Ariotti, DEQ w/o
Derris Jones, DWR w/o
Price Field Office
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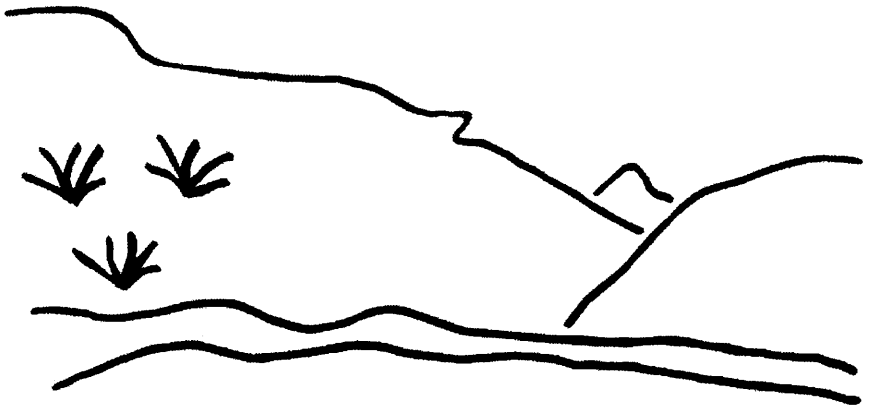
State of Utah



Utah Oil Gas and Mining

Coal Regulatory Program

Bear Canyon Mine
Abandoned Equipment
C/015/0025, Task ID #1934
REVISED
Technical Analysis
September 3, 2004

TABLE OF CONTENTS

TABLE OF CONTENTS

TECHNICAL ANALYSIS

The Division ensures compliance with the Surface Mining Control and Reclamation Act of 1977 (SMCRA). When mines submit a Permit Application Package or an amendment to their Mining and Reclamation Plan, the Division reviews the proposal for conformance to the R645-Coal Mining Rules. This Technical Analysis is such a review. Regardless of these analyses, the permittee must comply with the minimum regulatory requirements as established by SMCRA.

Readers of this document must be aware that the regulatory requirements are included by reference. A complete and current copy of these regulations and a copy of the Technical Analysis and Findings Review Guide can be found at http://ogm.utah.gov/coal

This Technical Analysis (TA) is written as part of the permit review process. It documents the Findings that the Division has made to date regarding the application for a permit and is the basis for permitting decisions with regard to the application. The TA is broken down into logical section headings, which comprise the necessary components of an application. Each section is analyzed and specific findings are then provided which indicate whether or not the application is in compliance with the requirements.

Often the first technical review of an application finds that the application contains some deficiencies. The deficiencies are discussed in the body of the TA and are identified by a regulatory reference, which describes the minimum requirements. In this Technical Analysis we have summarized the deficiencies at the beginning of the document to aid in responding to them. Once all of the deficiencies have been adequately addressed, the TA will be considered final for the permitting action.

It may be that not every topic or regulatory requirement is discussed in this version of the TA. Generally only those sections are analyzed that pertain to a particular permitting action. TA's may have been completed previously and the revised information has not altered the original findings. Those sections that are not discussed in this document are generally considered to be in compliance.

TECHNICAL ANALYSIS

INTRODUCTION

The permittee experienced an unanticipated roof fall in the 1st North section of the Bear Canyon #1 Mine (Hiawatha seam) on January 14, 2003 at approximately 6:45 AM. The coal production from the area was being generated via retreat mining (pillar extraction). The roof fall (130 feet in length X 20 feet in width X 20 feet above the coal seam) buried a coal hauler (battery powered), an electrical distribution box, and a shop trailer. After the investigation of the roof fall by the permittee and MSHA, and a determination that ground conditions in the area were too hazardous to continue mining, all remaining equipment was removed from the section and the area was sealed with MSHA approved mine seals.

The permittee notified the Division concerning the incident on January 15, 2003 during the initiation of the regular monthly inspection. At that time, the assigned reclamation specialist informed the permittee that it was necessary to submit a permit amendment to document the location of the abandoned machinery such that the Division can make a finding relative to the potential for the degradation of the ground and/ or surface water regimes within the permit area.

The permittee submitted information relative to the roof fall / buried, abandoned equipment on May 29, 2003, and again on November 10.

The Division responded with a Technical Analysis on December 12, 2003, (Task ID #1696), which contained two deficiencies. The permittee responded to those deficiencies on May 3, 2004. This technical memo will address the adequacy of that response.

INTRODUCTION

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:

Disposal Of Noncoal Mine Wastes

The permittee experienced an unanticipated roof fall in the 1st North section of the Bear Canyon #1 Mine (Hiawatha seam) on January 14, 2003 at approximately 6:45 AM. The coal production from the area was being generated via development mining. Pillar extraction had yet to be initiated. The roof fall (130 feet in length X 20 feet in width X 20 feet above the coal seam) buried a coal hauler (battery powered), an electrical distribution box, and a shop trailer. After the investigation of the roof fall by the permittee and MSHA, all remaining equipment was removed from the section and the area was sealed with MSHA approved mine seals.

The permittee notified the Division concerning the incident on January 15, 2003 during the initiation of the regular monthly inspection. At that time, the assigned reclamation specialist informed the permittee that it was necessary to submit a permit amendment to document the location of the abandoned machinery such that the Division can make a finding relative to the potential for the degradation of the ground and/ or surface water regimes within the permit area.

The permittee submitted information relative to the roof fall / buried, abandoned equipment on May 29, 2003.

The submittal contains PLATE 7-10B, which is a map of the #1 Mine workings in the Hiawatha seam. PLATE 7-10B locates the area in the 1st North section where the battery powered coal hauler, the electrical distribution box, and the shop car are buried. PLATE 7-10B was P.E. certified by Mr. Charles Reynolds, the permittee's Manager of Engineering Services, on April 24, 2003.

The buried coal hauler contains the following liquids, which could potentially impact ground water emanating in the area; hydraulic oil (55gallons), gear oil (15 gallons), battery electrolyte (28 gallons) and lead in the DC power cells of that machine. The permittee noted these volumes of lubricants and battery electrolyte in the response received by the Division on

November 10, 2003, (Task ID#1696). No volumes of lubricant were indicated as existing on the shop car. The electrical distribution box will contain quantities of copper, aluminum and other assorted metals, but does not contain any liquids (dielectric substances in capacitors) as indicated by Mr. Charles Reynolds.

Relative to the ground water regime in the 1st North area, PLATE 7-10B depicts a floor seep in the northwest corner of the section generating four gallons of water per minute (SBC-11). A roof dripper located 700 feet west of the buried machinery is noted as generating less than one-tenth of a gallon per minute. A vertical borehole connects the Hiawatha seam with the overlying Blind Canyon seam. A second vertical drill hole reports forty gallons per minute to SBC9. Water is shown to collect in at least two areas of the 1st North section.

The permittee has included text relative to the abandoned equipment portion of the submittal that is included as Appendix 7-P. Page 2 of Appendix 7-P (page 7P-2) indicates that the floor elevation where the equipment is buried is higher than the surrounding area. This is also depicted on page 7P-3, Figure 7P-1. As shown, based on coal seam floor elevations, water accumulating in the Hiawatha seam will drain through Entry 26, preventing the elevation of same in the inby areas (where the equipment has been abandoned) from ever reaching the lubricants, battery electrolyte, or lead containers. "P" traps have been installed in the #1 and #5 seals, (numbered from left to right as if looking toward the northern boundary of the permit area) which will allow ground water to flow from the sealed area toward Entry 26. Thus, the equipment should never intercept the phreatic surface.

PLATE 7-10B depicts two mine water discharge lines emanating from the Hiawatha portal area; a two-inch culinary line and a four-inch mine water discharge line. The route that these lines take once they reach the surface is not known.

The permittee has submitted material safety data sheets for the lubricants (gear oil and hydraulic fluid), the battery electrolyte, and the lead contained in the DC power cells.

No lubricant volumes were reported as existing on the shop car.

No dielectric compounds were reported as being within the electrical distribution box that was abandoned, due to being covered by the roof cave.

Although it appears that ground water will never intercept the chemicals associated with the battery powered coal hauler, the following was noted:

1) The MSDS sheets for the gear oil and hydraulic oil compounds both state the following: "As with any industrial chemical, exposure to the environment should be prevented and minimized wherever possible", and "The degree of biodegradability and persistence of this product has not been determined". Also,

"releases of the product into or leading to surface waters must be reported to the National Response Center at 1-800-424-8802".

2) **The MSDS sheet for the electrolyte filled/lead coal hauler battery(ies) states on Page 3 of that document that both the electrolyte and the lead in the storage cells have an NFPA hazard rating of 3.** Additional information contained in this MSDS sheet states the following: "this product (lead acid battery wet, filled with acid) contains chemicals known to the State of California to cause cancer, birth defects and other reproductive harm". Also noted is the following: "EPCRA Section 312 Tier II reporting required for batteries **if sulfuric acid is present in quantities of 500 lbs. or more and/or lead is present in quantities of 10,000 lbs. or more."**

Information gathered from the coal hauler equipment manufacturer revealed the following:

a) Each battery has 64 cells. Each cell contains forty-three pounds of electrolyte (H2SO4). Each cell contains one hundred and thirty-seven pounds of lead.
b) Per battery, the weight of sulfuric acid contained is 64 cells X 43 #'s H2SO4 /cell = 2752 pounds of H2SO4. Only one battery powers this machine.
c) The amount of lead which was buried with the mining machine equates to 137#/cell X 64 cells = 8768 pounds of lead (Pb).
d)

As stated in the Division's December 12, 2003 Technical Analysis, (Task ID #1696), it was necessary for the permittee to report this accident to the Environmental Protection Agency in Denver, Colorado to meet the requirements of EPCRA Section 312 Tier II. The permittee was also required to submit a copy of this notification to the Division. In order to inform other government entities of the accident, other agencies were also notified:

1) State of Utah, Division of Solid and Hazardous Waste.
2) State of Utah, Department of Environmental Quality, Division of Water Quality.
3) Southeastern Utah District Health Department / Mr. Dave Ariotti.
4) City of Huntington, Utah.
5) Castle Valley Special Service District.
6) USFS / Manti-LaSal National Forest, Price, Utah.

These notification letters must indicate the location of the buried machinery, the types of lubricants and their volumes, the amount of battery electrolyte, and the amount of lead that was buried with the coal hauler.

The permittee must submit copies of the notification letter to the aforementioned agencies to the Division with the next deficiency response. The permittee needs to note in the letter that the ground conditions in the mine were such that the U.S. Department of Labor / Mine Safety and Health Administration would not allow additional coal recovery, or extraction of the buried machinery in that area of the #1 Mine.

The submittal received on May 3, 2004 contains a copy of the letter that the permittee sent to the U.S. Environmental Protection Agency as well as the other entities listed. The receipt of that letter by each agency was confirmed by Division personnel on May 27 and 28, 2004. The requirements of **R645-301-747.300** were addressed by notifying the agencies previously listed. This meets the minimum regulatory requirement of the coal rules.

Findings:

The submitted information is adequate and meets the minimum regulatory requirements.

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:

Water-Quality Standards And Effluent Limitations

The potential of contamination in water discharging from the mine is a special concern at the Bear Canyon Mine because Co-Op Mining Company utilizes the water from the mine for both culinary and mining purposes. Monitoring of the mine discharge will continue for the life of the mine. Potential contaminants from the abandoned equipment are identified in the MRP, and MSDS's are in Appendix 7-P. Water not consumed in culinary and mine operations is discharged to the stream in Bear Canyon under a UPDES permit.

The water-monitoring plan in the MRP calls for quarterly water-quality monitoring at SBC-9A. This should be sufficient to detect a prolonged or significant increase in sulfate concentration caused by acid leaking from the batteries. Water samples collected at site SBC-9A are analyzed for oil and grease, and the UPDES permit requires a determination of oil and grease

for water discharged to Bear Creek. However, under the water-monitoring plan, analysis is done for lead only once every five years, in the year prior to permit renewal.

Because the mine discharge provides the culinary water supply for the mine, it is also subject to periodic sampling to meet the requirements of the Clean Drinking Water Act. Water analyses required for the Bear Canyon Water System by the Division of Drinking Water are:

Bacteriological	- quarterly
Lead and Copper	- 5 samples every 3 years (samples must be first draw)
Asbestos	- 1 sample every 9 years
Inorganics and Metals	- 1 sample every 3 years
Nitrate	- 1 sample every year
Nitrite	- 1 sample every year
VOC	- 1 sample every 6 years
Radionuclides	- 1 sample every 4 years

There is special concern on the part of Division of Oil, Gas and Mining; the Division of Drinking Water; and the Permittee that contaminants from the abandoned equipment be detected, should they enter the mine's water system. Co-Op has provided to the Division the results of the latest culinary system water-quality analyses, and results of all analyses are readily available from the Division of Drinking Water.

Findings:

Hydrologic operation information on water-quality standards and effluent limitations is sufficient to meet the requirements of the Coal Mining Rules.