T E C H N I C A L M E M O R A N D U M

Utah Coal Regulatory Program

September 1, 2005

TO: Internal File

THRU: D. Wayne Hedberg, Permit Supervisor

THRU: Steve Fluke, Team Lead

FROM: Wayne H. Western, Environmental Scientist III

RE: Addition of State Leases ML-4771 and ML-49287, West Ridge Mine, C/007/0041 Task ID #2318

SUMMARY:

On March 29, 2005, the Division received Task #2187 for the addition of 1,682.34 acres for the West Ridge Mine. On July 26, 2005, the Permittee resubmitted the application to add State lease ML-4771 and ML-49287 to the permit area. The Permittee wants to add State lease ML-4771 and ML-49287 to the permit area. No additional surface disturbance will take place. This memo covers engineering and bonding issues.

On August 25, 2005, the Permittee responded to deficiencies from Task 2187 with Task 2318.

TECHNICAL ANALYSIS:

GENERAL CONTENTS

PERMIT AREA

Regulatory Requirements: 30 CFR 783.12; R645-301-521.

Analysis:

The Permittee met the requirements of the R645 – Rules for describing the permit area. The Permittee is required to describe and identify the lands subject to surface coal mining operations over the estimated life of those operations and the size, sequence, and timing of the subareas for which it is anticipated that individual permits for mining will be sought. Table 1-4 gives the legal description of the permit area. The West Ridge Mine contains 6,114.89 acres. The permit area is shown on Map 1-0, Permit Area. With the addition of State lease ML 4771 and ML 49287 the permitted area was increased by 1,682.34 acres.

Findings

The information provided in the proposed amendment is considered adequate to meet the requirements of this section.

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:

Affected Area Boundary Maps

The Permittee met the requirements of the R645 – Rules for affected area boundary maps. Those requirements are that the Permittee will show the affected areas, which are the areas estimated to be the total life of the underground mining activities, with a description of size, sequence, and timing of the mining of subareas for which it is anticipated that additional permits will be sought. Map 5-4B, Mining Projections, shows the areas where the current permit area and life of mine projects.

Existing Structures and Facilities Maps

The Permittee met the requirements for supplying existing structure and facilities maps. The R645 – rules require that the Permittee show the existing structures and facilities map with the location and dimensions of existing areas of spoil, waste, coal development waste, and noncoal waste disposal, dams, embankments, other impoundments, and water treatment and air pollution control facilities that existed prior to permit issuance. In Section 521.120 of the MRP the Permittee states that the only pre-permit impoundment within the permit boundary is part of the Grassy Trail Reservoir, which is shown on several maps including Map 5-4B, Mining Projections.

Existing Surface Configuration Maps

The Permittee met the mimimum requirements for showing the existing surface configuration. Those rules require that the Permittee show sufficient slope measurements to adequately represent the existing land surface configuration of the area affected by surface operations and facilities, measured and recorded according to the following: each measurement shall consist of an angle of inclination along the prevailing slope extending 100 linear feet above and below or beyond the coal outcrop or the area to be disturbed or, where this is impractical, at locations specified by the Division; where the area has been previously mined, the measurements shall extend at least 100 feet beyond the limits of mining disturbances, or any other distance determined by the Division to be representative of the premining configuration of the land; and, slope measurements shall take into account natural variations in slope, to provide accurate representation of the range of natural slopes and reflect geomorphic differences of the area to be disturbed. Plate 5-1 shows premining disturbed area surface configuration.

Mine Workings Maps

The Permittee met the requirements for providing mine working maps. The R645- Rules require that location and extent of known workings of active, inactive, or abandoned underground mines, including mine openings to the surface within the proposed permit and adjacent areas, be shown. Location and extent of existing or previously surface-mined areas within the proposed permit area are shown.

Map 5-7 shows the old and abandoned underground working. The West Ridge Mine area is located northwest of U.S. Steel Corporation's old Sunnyside No. 1 underground mine workings. Kaiser Coal Company extended a set of test entries from the Sunnyside No. 1 mine through the area of the West Ridge Mine to a portal in B Canyon. Map 5-7 also shows these underground test entries and the location of the portal, which still exists but has been sealed.

Permit Area Boundary Maps

The Permittee met the requirements for supplying the Division with permit area boundary maps. Those requirements are that the maps show the boundaries of land within the proposed permit area upon which the Permittee has the legal right to enter and begin underground mining activities. Map 1-0, Permit Map, shows the permit area and all other requirements.

Surface and Subsurface Manmade Features Maps

The Permittee met the minimum requirements for providing surface and subsurface manmade features maps. The requirements of the R645 – Rules are that those maps will show the surface and subsurface manmade features including all buildings in and within 1,000 feet of the proposed permit area, with identification of the current use of the buildings. The location of surface and subsurface manmade features within, passing through, or passing over the proposed permit area must be shown, including, but not limited to, major electric transmission lines, pipelines, and agricultural drainage tile fields. Each public road located in or within 100 feet of the proposed permit area must be shown.

Roads that lie in or within 100 feet of the permit area are shown on Map 4-1. A private cabin is also shown on Map 4-1.

Surface and Subsurface Ownership Maps

The Permittee met the requirements for providing surface and subsurface ownership maps. The R645 – Rules require that maps be provided that show all boundaries of lands and names of present owners of record of those lands, both surface and subsurface, included in or contiguous to the permit area. Map 5-2 shows the surface ownership and Map 5-3 shows the subsurface ownership.

Findings:

The information provided in the proposed amendment is considered adequate to meet the requirements of this section.

OPERATION PLAN

EXISTING STRUCTURES:

Regulatory Reference: 30 CFR 784.12; R645-301-526.

Analysis:

The Permittee met the minimum requirements for reporting on the use of existing structures. The R645 – Rules requires that the Permittee describe all existing structures. An existing structure is a structure or facility used in connection with or to facilitate coal mining and reclamation operations for which construction began prior to January 21, 1981. In Section 526.110 of the MRP, the Permittee states that there are no existing structures in the permit area with the exception of monitoring wells.

Findings:

The information provided in the proposed amendment is considered adequate to meet the requirements of this section.

COAL RECOVERY

Regulatory Reference: 30 CFR 817.59; R645-301-522.

Analysis:

The Permittee met the requirements for maximizing economic coal recovery. The R645 – Rules require that the Permittee describe the underground mining activities that will be conducted so as to maximize the utilization and conservation of the coal, while utilizing the best technology currently available to maintain environmental integrity, so that re-affecting the land in the future through surface coal mining operations is minimized.

The Division uses several sources for determining if the Permittee met the requirements including the Bureau of Land Management (BLM) and the Utah School and Institutional Trust Lands Administration (SITLA). Appendixes 5-3 and 5-3A contain the Resource Recovery Protection Plan (R2P2). The R2P2 contains the BLM findings the Permittee will maximize coal recovery.

Findings:

The information provided in the proposed amendment is considered adequate to meet the requirements of this section.

SUBSIDENCE CONTROL PLAN

Regulatory Reference: 30 CFR 784.20, 817.121, 817.122; R645-301-521, -301-525, -301-724.

Analysis:

Renewable Resources Survey

The Permittee met the minimum requirements for this section of the R645 – Rules, Those rules require that the Permittee include a survey, which shall show whether structures or renewable resource lands exist within the proposed permit area and adjacent area and whether subsidence, if it occurred, could cause material damage or diminution of reasonably foreseeable use of such structures or renewable resource lands. If the survey shows that no such structures or renewable resource lands exist, or no such material damage or diminution could be caused in the event of mine subsidence, and if the Division agrees with such conclusion, no further information need be provided in the application under this section. The Permittee conducted the survey and determined that there were renewable resources with the subsidence zone.

The Permittee included in the subsidence section of the MRP, information on the quantity and quality of State-appropriated water.

Subsidence Control Plan

In the event the survey shows that such structures or renewable resource lands exist, and that subsidence could cause material damage or diminution of value or foreseeable use of the land, or if the Division determines that such damage or diminution could occur, the application shall include a subsidence control plan which shall contain the following information:

- The Permittee met the requires to describe the method of coal removal, such as longwall mining, room-and-pillar removal, hydraulic mining, or other extraction methods, including the size, sequence, and timing for the development of underground workings. In section R645-301-525.100 subsection Description of Mining Methods, the Permittee describes the coal mining techniques that will be used at the West Ridge Mine. The Permittee shows the mine plan on Map 5-4A and Map 5-4B.

- The Permittee met the requirements for supplying a map of underground workings which describes the location and extent of areas in which planned-subsidence mining methods will be used and includes all areas where measures will be taken to prevent or minimize subsidence and subsidence related damage and, where appropriate, to correct subsidence-related material damage. Map 5-7, Subsidence Map, shows the areas where subsidence is expected to occur.

- The Permittee met the requirements for describing the physical conditions, such as depth of cover, seam thickness, and lithology, which affect the likelihood or extent of

subsidence and subsidence-related damage. In Section 525.100, subsection Description of Physical Conditions, and in the Geology section of the MRP, the Permittee describes the factors that control subsidence.

- The Permittee met the requirements for describing monitoring to determine the commencement and degree of subsidence so that, when appropriate, other measures can be taken to prevent, reduce, or correct material damage. In Section 525.100, subsection Subsidence Monitoring, and in subsection Subsidence Control, the Permittee states that they will use aerial photography to measure subsidence. The monitoring commitments are:

    - The Permittee will monitor the panels until vertical movement is less than six inches per year.
    - The Permittee will make visual surface observations at least quarterly to determine the effects of subsidence. A record of those inspections will be kept at the mine.
    - The Permittee will contract a study to determine if longwall mining could potentially cause damage the Grassy Trail Reservoir.

- The Permittee met the requirements for providing a detailed description of the subsidence control measures that will be taken to prevent or minimize subsidence and subsidence-related damage, including, but not limited to: backstowing or backfilling of voids; leaving support pillars of coal; leaving areas in which no coal is removed, including a description of the overlying area to be protected by leaving the coal in place; and, taking measures on the surface to prevent material damage or lessening of the value or reasonably foreseeable use of the surface. In Section 525.100 of the MRP, the Permittee states that longwall mining will be used when feasible and that the only permanently planned pillars are to support main entries.

- The Permittee met the requirements for describing the anticipated effects of planned subsidence. The Permittee described the subsidence effects in section R645-301-525.100, subsection Mine Subsidence Effects and Control Measures, of the MRP.

- The Permittee met the requirements for describing the measures to be taken to mitigate or remedy any subsidence-related material damage to, or diminution in value or reasonably foreseeable use of the land, or structures or facilities to the extent required under State law. The Permittee included a description in Section 525.480 of the MRP of methods that could be used to migitate the loss of State appropriated water. Those methods include:

    - Seal cracks with bentonite clay. The material would be transported to the area by pack animals and the work would be done by hand.

- If heavy equipment or significant amounts of bentotite clay are needed then an access road would be constructed.
- If sealing cracks is ineffective the Permittee would install pipes as needed.

- The Division has not required the Permittee to give other information that is necessary to demonstrate that the operation will be conducted in accordance with the performance standards for subsidence control. If additional information is needed, the Division will require that the information be included in the MRP.

Performance Standards For Subsidence Control

The Permittee met the requirement for the subsidence control performance standards. The Permittee is required to either adopt measures consistent with known technology which prevent subsidence from causing material damage to the extent technologically and economically feasible, maximize mine stability, and maintain the value and reasonably foreseeable use of surface lands; or, adopt mining technology which provides for planned subsidence in a predictable and controlled manner. The Permittee will use longwall methods where feasible. In areas where structures exist that need protection the Permittee will not mine, and therefore not subside the area.

The Division conducts monthly inspection to ensure that the Permittee complies with all provisions of the approved subsidence control plan.

The Division will require the Permittee to correct any material damage resulting from subsidence caused to surface lands, to the extent technologically and economically feasible, by restoring the land to a condition capable of maintaining the value and reasonably foreseeable uses which it was capable of supporting before subsidence, and, to the extent required under applicable provisions of State law, either correct material damage resulting from subsidence caused to any structures or facilities by repairing the damage or compensate the owner of such structures or facilities in the full amount of the diminution in value resulting from the subsidence. Repair of damage includes rehabilitation, restoration, or replacement of damaged structures or facilities. Compensation may be accomplished by the purchase prior to mining of a non-cancelable premium-prepaid insurance policy.

The Division will not allow underground mining activities be conducted beneath or adjacent to: public buildings and facilities; churches, schools, and hospitals; or, impoundments with a storage capacity of 20 acre-feet or more or bodies of water with a volume of 20 acre-feet or more, unless the subsidence control plan demonstrates that subsidence will not cause material damage to, or reduce the reasonably foreseeable use of, such features or facilities. If the Division determines that it is necessary in order to minimize the potential for material damage to the features or facilities described above or to any aquifer or body of water that serves as a

significant water source for any public water supply system, it may limit the percentage of coal extracted under or adjacent thereto.

If subsidence causes material damage to any of the features or facilities, the Division may suspend mining under or adjacent to such features or facilities until the subsidence control plan is modified to ensure prevention of further material damage to such features or facilities.

The Division shall suspend underground mining activities under urbanized areas, cities, towns, and communities, and adjacent to industrial or commercial buildings, major impoundments, or perennial streams, if imminent danger is found to inhabitants of the urbanized areas, cities, towns, or communities. However, such structures are not present in the permit area. The Division will take steps to prevent subsidence damage to the Grassy Trail Reservoir.

Within a schedule approved by the Division, the Permittee will submit a detailed plan of the underground workings. The detailed plan shall include maps and descriptions, as appropriate, of significant features of the underground mine, including the size, configuration, and approximate location of pillars and entries, extraction ratios, measures taken to prevent or minimize subsidence and related damage, areas of full extraction, and other information required by the Division. Upon request of the operator, information submitted with the detailed plan may be held as confidential. The Permittee is required to supply mine working maps annually as part of the annual report.

Notification

At least 6 months prior to mining, or within that period if approved by the Division, the Permittee will mail a notification to all owners and occupants of surface property and structures above the underground workings. The notification shall include, at a minimum, identification of specific areas in which mining will take place, dates that specific areas will be undermined, and the location or locations where the operator's subsidence control plan may be examined. The Division will check subsidence notification during the monthly inspections.

Findings:

The information provided in the proposed amendment is considered adequate to meet the requirements of 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:

Affected Area Maps

The Permittee met the requirements to supply the Division with affected area maps. The requirements for affected area maps are that they show the boundaries of all areas proposed to be affected over the estimated total life of all mining activities and reclamation activities, with a description of size, sequence, and timing of phased reclamation activities and treatments. All maps and cross sections used for mining design and mining operations shall clearly show the affected and permit area boundaries in reference to the reclamation work being accomplished. Map 5-4B shows the permit area and areas for which additional permits will be sought.

Mining Facilities Maps

No additional surface facilities will be sought.

Mine Workings Maps

The Permittee met the requirements for providing mine working maps. The requirements for those maps are that they show the location and extent of known workings of proposed, active, inactive, or abandoned underground mines, including mine openings to the surface within the proposed permit and adjacent areas. Location and extent of existing or previously surface-mined areas within the proposed permit area must be shown. Map 5-4A, Mining Projections and Map 5-4B, Mining Projections (Extended Reserves) show those features.

Monitoring and Sampling Location Maps

Certification Requirements

The Permittee met the requirements of the R645 – Rules for map certification. The Permittee had all cross sections, maps, and plans required to show the design, location, elevation, or horizontal or vertical extent of the land surface or of a structure or facility used to conduct mining and reclamation operations prepared by, or under the direction of, and certified by a qualified, registered, professional engineer, or a professional geologist. In addition, in any State that authorizes land surveyors to prepare and certify such cross sections, maps, and plans, a qualified, registered, professional land surveyor can be used, with assistance from experts in related fields such as landscape architecture.

Findings:

The information provided in the proposed amendment is considered adequate to meet the requirements of this section.

RECLAMATION PLAN

BONDING AND INSURANCE REQUIREMENTS

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

Analysis:

Determination of Bond Amount

The Permittee does not propose to change and surface facilities or expand the disturbed area. Therefore, the current bond is adequate to insure complete reclamation.

Terms and Conditions for Liability Insurance

Findings:

The information provided in the proposed amendment is considered adequate to meet the requirements of this section.

RECOMMENDATIONS:

The Division should deny the proposed amendment until all of the above mentioned facilities have been adequately addressed.