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

Utah Coal Regulatory Program

April 19, 2005

TO: Internal File

THRU: Pamela Grubaugh-Littig, Permit Supervisor

THRU: Jim Smith, Team Lead

FROM: Wayne H. Western, Environmental Scientist III, Engineering and Bonding

RE: Permit Boundary Expansion, Hidden Splendor Resources, Inc., Horizon Mine, C/007/0020, Task ID # 2215

SUMMARY:

On May 21, 2004, Hidden Splendor Resources submitted amendment 1933, Permit Boundary Expansion to the Division. The Permittee wanted to increase the permitted acreage from 711 acres to 1,577 acres. The addition acreage was from federal leases. In addition, the Permittee wanted to make some minor changes to the surface facilities.

On January 14, 2005, the Permittee submitted a response to the deficiencies in task 1933. The task was assigned number 2115. The Division contacted the BLM and was told that they approved the permit expansion.

TECHNICAL ANALYSIS:

ENVIRONMENTAL RESOURCE INFORMATION

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

PERMIT AREA

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

Analysis:

The permit boundaries are shown on Plate 1-1, Permit Boundary including the expansion areas. In 2005, the Permittee expanded the permit boundary from 711 acres to 1,577 acres.

The Permittee update the MRP so that the acreage for the disturbed area boundary is consistent. The disturbed area contains 9.15 acres. In some sections the Permittee rounded the disturbed acreage to 9.2 acres.

The Permittee must have all maps certified by a registered professional engineer who is licensed in the State of Utah.

Findings:

The information in this section of the proposed amendment is not adequate to meet the requirements of this section of the regulations. Before approval, the Permittee must provide the following in accordance with:

R645-301-521, The Permittee must have all required maps and cross sections listed under section R645-301-512 certified by a qualified professional engineer who is licensed in the State of Utah. Mark Wayment who is licensed in the State of Indiana certified the maps and cross section in the submittal. The Division cannot accept an out of state certification. Note: An engineer licensed in another state may be able to get a Utah license by application. See the Utah Division of Occupational and Professional Licensing for details.

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 affected area boundary not only contains the permit boundary but additional subareas where additional permit would be sought. The Permittee did not indicate that they planned to seek additional acreage. On Plate 3-3, the Permittee shows that most of the surrounding area is faulted making a simple expansion unlikely. Therefore, the Division considers the affected area boundary map to be the same as the permit area boundary map. See Plate 1-1, Permit Boundary.

Existing Structures and Facilities Maps

The term existing structures and facilities is defined as:

"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."

The Permittee does not propose to use any existing structures or facilities in connection with the permit boundary expansion.

Existing Surface Configuration Maps

The existing surface configuration for the permit area is shown on several maps including Plate 1-1. The topographic lines on Plate 1-1 appear to be from a USGS topographic map with contour intervals of 80 feet. Since the permit expansion did not include any additional surface disturbance, the topography on Plate 1-1 is considered adequate to show the existing surface configuration.

The Permittee did not change the disturbed area boundaries. Therefore, the existing disturbed area maps are adequate.

Mine Workings Maps

The mine workings for the Castlegate A Seam and the Hiawatha Seam are shown on Plate 3-9 and Plate 3-10 respectively. Several mines existed near the Horizon Mine.

The Permittee contacted several sources including the BLM, UGS and OSM for information on old mines in the area. The Permittee believes that all workings in the area have been identified.

Permit Area Boundary Maps

The Permittee shows the permit boundaries on Plate 1-1. The Division found Plate 1-1 to be deficient and addressed those deficiencies in the Permit Area Section of the TA.

Findings:

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

OPERATION PLAN

MINING OPERATIONS AND FACILITIES

Regulatory Reference: 30 CFR 784.2, 784.11; R645-301-231, -301-526, -301-528.

Analysis:

The information reviewed in this section is general information about the mining operations and facilities. Specific details of the mining and reclamation plan were discussed in other section of the TA. The general items discussed in this section were:

- A narrative description of the type and method of coal mining procedures and proposed engineering techniques. The Permittee did not propose any changes to the mining methods. They will continue to use room-and-pillar methods with the same type of equipment as already approved.

- Annual and total production of coal, by tonnage, and the major equipment to be used for all aspects of those operations. The Permittee did not propose to change the amount of production. They project production between 700,000 tons per year to 1,500,000 tons per year. They anticipate production to occur between 2004 and 2015.

- A narrative explaining the construction, modification and use of new surface facilities. The Permittee made only minor modifications to surface facilities in amendment 1933, 2115 and 2215. Those issues were addressed in other sections of the TA.

Findings:

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

EXISTING STRUCTURES:

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

Analysis:

Existing structure means 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. There are no existing structures involved with the permit boundary expansion.

Findings:

The information in the PAP is adequate to meet the minimum requirements of this section of the regulations.

RELOCATION OR USE OF PUBLIC ROADS

Regulatory Reference: 30 CFR 784.18; R645-301-521, -301-526.

Analysis:

The Permittee did not propose to relocate any public road in connection with the permit boundary expansion. Neither did the Permittee change how they use public roads.

Findings:

The information in the PAP is adequate to meet the minimum requirements of this section of the regulations.

COAL RECOVERY

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

Analysis:

The Division made a finding that the Permittee would maximize the economic coal recovery at the Horizon Mine. The finding is based in part on the resource recovery and protection plan (R2P2) developed by the BLM. An updated copy of the R2P2 is included in the MRP.

Findings:

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

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 renewable resources identified in the MRP are:

- Water resources include Beaver Creek (perennial stream), various springs, and groundwater.
- Vegetation resources include grazing and wildlife habitat and timber.

Because the permit boundary contained renewable resources the Permittee submitted a subsidence control plan.

In Section 3.4.8, Subsidence Control and Monitoring Plan, the Permittee states that there are no structures within the subsidence zone.

Subsidence Control Plan

The subsidence control plan must contain the following:

- *A description of the method of coal removal, including the size, sequence, and timing for the development of underground workings.* The Permittee commits to conduct all mining operations using room-and-pillar methods. When possible the Permittee will extract

pillars as part of retreat mining. The size, sequence and timing for the Horizon Mine were shown on Plate 3-3.

- *A map of underground workings which describes the location and extent of areas in which planned-subsidence mining methods will be used and which included all areas where measures would be taken to prevent or minimize subsidence and subsidence related damage and where appropriate, to correct subsidence-related material damage.* The Permittee shows the subsidence area on Plate 3-3. The Permittee shows the subsidence zone based on two different angels of draw. The first angle was 35-degree and the second was 22.5 degree. Dunrud considered it the maximum angle of draw in the U.S. The 22.5-degree angle of draw is based on subsidence studies from local mines.

  The only subsidence protection addressed in the amendment was for Beaver Creek. The Permittee stated they will protect Beaver Creek by orienting the panels perpendicular to the stream and use full extraction mining. This layout is similar to that of Burnout Canyon at the Skyline Mine. Results from the Burnout Creek study suggest that subsidence will not have a significant impact on Beaver Creek.

  The Permittee shows in Section 3.4.8.4 the equations that they used to calculate that the maximum subsidence amount would be 2.3 feet. Also see Figure 3-5.

  The Permittee will not take specific actions to prevent subsidence damage to roads. The roads in the area are dirt. Should subsidence damage the roads the Permittee commits to repair the roads.

- *A description of the physical conditions, such as depth of cover, seam thickness, and lithology, which affect the likelihood or extent of subsidence and subsidence-related damage.* The Division addressed those requirements in the geology sections of the TA.

- *A description of monitoring, if any, needed to determine the commencement and degree of subsidence so that, when appropriate, other measures can be taken to prevent, reduce, or correct material damage.* The Permittee describes the monitoring program in Section 3.4.8.5 of the MRP. The plan called for placing survey monuments inside and outside the subsidence zone. The Permittee committed to take readings at each station once a year until two years after cessation of mining operations.

  The survey monuments and monitoring points are shown on Plate 3-3. The Permittee committed to: 1) install enough station so that at least one station will be subsided every year, 2) establish a draw line on panels 2nd Right 1st North, 3rd Right 1st North or 4th Right 1st North (the information from the subsided draw line will be used to establish a local angle of draw) and 3) conduct a land survey over each panel no sooner than six months

after the panel was mined out but no more that 1 year especially in critical areas such as areas of maximum tension and compression.

The Permittee must also include monitoring points for Beaver Creek and the seeps and springs in the area. Those monitoring points are needed to determine if subsidence caused damage to water rights.

- *A description of monitoring, if any, needed to determine the commencement and degree of subsidence so that, when appropriate, other measures can be taken to prevent, reduce, or correct material damage.* The Permittee doesnot propose any additional monitoring methods.

- *Except for those areas where planned subsidence is projected to be used, 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*. The Permittee shows the areas where subsidence would occur on Plate 3-3.

- *A description of the anticipated effects of planned subsidence, if any.* The Permittee states in Section 3.2 that they do not anticipate any damage to Beaver Creek because of subsidence.

- *A description of 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.* In Section 3.4.8.2 of the MRP, the Permittee addressed two types of subsidence mitigation. For surface cracks and depressions, they committed to filling in fractures. For damage to larger areas the Permittee committed to grade and planting the areas and intensify monitoring.

  In Section 3.4.8.2, Renewable Resources, the Permittee states that water replacement was addressed in Section 7.1.6. In that section the Permittee committed to replace State appropriated water rights as follows:

  Specific methods to promptly replace a water supply impacted by mining operations would include (but not limited to): repair or replacing a pond damaged by mining operations, hauling water by truck to replace water impacted by mining operations, drilling a new water well or transfer of water rights to the damaged party.

The Permittee talks about groundwater loses that could occur if water entered the mine. The remediation methods include sealing underground cracks, lining the streambed and additional monitoring. The Permittee also commits to replace water after mining is completed.

- *Other information specified by the Division as necessary to demonstrate that the operation will be conducted in accordance with the performance standards for subsidence control.* The Permittee commits to remediation for subsidence damage any the roads.

Performance Standards For Subsidence Control

The Permittee must maintain the subsidence performance standards

Notification

In the amendment, the Permittee removed the commitment to notify property owners six months prior to undermining their property. R645-301- 525.700 requires the permittee to notify at least six months prior to mining the water conservancy district, if any, in which the mine is located and to all owners and occupants of surface property and structures above the underground workings. The notification will 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 Permittee does not have to have that commitment in the MRP. However, they are required to observe that regulation.

Findings:

The information in this section of the proposed amendment is not adequate to meet the requirements of this section of the Regulations. Before approval, the Permittee must provide the following in accordance with:

R645-301-525.290, The Permittee must give the Division the following information: a stream profile for Beaver Creek that shows the presubsidence and anticipated subsidence profiles.

R645-301-525.490, The Permittee must place subsidence monitoring station along Beaver Creek and the seeps and springs in the area. The information will be used to determine if subsidence caused any damage to water rights.

ROAD SYSTEMS AND OTHER TRANSPORTATION FACILITIES

Regulatory Reference: 30 CFR Sec. 784.24, 817.150, 817.151; R645-301-521, -301-527, -301-534, -301-732.

Analysis:

Road Classification System

The Permittee will not construct any new roads as part of the permit boundary expansion.

Other Transportation Facilities

The Permittee removed one drop point from the conveyor system and added a crushing and screening unit to the conveyor system.

Findings:

The information in the PAP is adequate to meet the minimum requirements of this section of the regulations.

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:

The Permittee will not change the approved methods for disposal of noncoal mine waste or coalmine waste. No new refuse piles or impoundments will be constructed as part of the permit boundary expansion. The Permittee will not generate any excess spoil.

Findings:

The information in the PAP is adequate to meet the minimum requirements of this section of the regulations.

SUPPORT FACILITIES AND UTILITY INSTALLATIONS

Regulatory Reference: 30 CFR Sec. 784.30, 817.180, 817.181; R645-301-526.

Analysis:

In addition to the permit boundary expansion, the Permittee made minor modifications to the conveyor system, installed a crushing and screening plant, and substation. In addition the Permittee removed the proposed office and bathhouse, and shop from the MRP.

The conveyor system was modified by decreasing the drop points from three to two.

Findings:

The information in the PAP is adequate to meet the minimum requirements of this section of the regulations.

USE OF EXPLOSIVES

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

Analysis:

The Permittee will not conduct any surface blasting as part of the permit boundary expansion or modification of the surface facilities.

Findings:

The information in the PAP is adequate to meet the minimum requirements of 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:

Affected Area Maps

As mentioned in the environmental section of the TA, the Permittee did not indicate they were seeking any additional leases outside the permit area. Therefore, the permit area is the same as the affected area. Plate 1-1, Permit Boundary, showed the affected and permitted boundaries.

Mining Facilities Maps

Plate 3-1 shows the surface facilities.

Mine Workings Maps

The Permittee showed the old mine workings on Plate 3-9 Castlegate Seam A and Plate 3-10 Hiawatha seam.

Certification Requirements

The Permittee meet the minimum certification requirements.

Findings:

The information in the PAP was not adequate to meet the minimum regulatory requirements for this section of the regulations.

R645-301-521.160, The Permittee must show the location of the modified conveyor system and the crushing and screening plant on the surface facilities map.

RECLAMATION PLAN

APPROXIMATE ORIGINAL CONTOUR RESTORATION

Regulatory Reference: 30 CFR Sec. 784.15, 785.16, 817.102, 817.107, 817.133; R645-301-234, -301-412, -301-413, -301-512, -301-531, -301-533, -301-553, -301-536, -301-542, -301-731, -301-732, -301-733, -301-764.

Analysis:

The changes to the surface facilities do not affect the backfilling and grading plan, which contains the requirements for achieving the approximate original contour requirements. No surface disturbance will occur on the addition to the permit area.

Findings:

The information in the PAP was adequate to meet the minimum regulatory requirements for this section of the regulations.

BACKFILLING AND GRADING

Regulatory Reference: 30 CFR Sec. 785.15, 817.102, 817.107; R645-301-234, -301-537, -301-552, -301-553, -302-230, -302-231, -302-232, -302-233.

Analysis:

No additional surfaces areas will be disturbed are part of the permit addition. The minor changes to the surface facilities will not change the backfilling and grading plan.

Findings:

The information in the PAP was adequate to meet the minimum regulatory requirements for this section of the regulations.

MINE OPENINGS

Regulatory Reference: 30 CFR Sec. 817.13, 817.14, 817.15; R645-301-513, -301-529, -301-551, -301-631, -301-748, -301-765, -301-748.

Analysis:

There are no new mine opens associated with the amendment.

Findings:

The information in the PAP was adequate to meet the minimum regulatory requirements for this section of the regulations.

ROAD SYSTEMS AND OTHER TRANSPORTATION FACILITIES

Regulatory Reference: 30 CFR Sec. 701.5, 784.24, 817.150, 817.151; R645-100-200, -301-513, -301-521, -301-527, -301-534, -301-537, -301-732.

Analysis:

The permit area addition and the minor changes to the surface facilities did not involve changes to the road system. Although minor changes to the conveyor system were proposed, the reclamation plan remains the same; all surface facilities will be removed during reclamation.

Findings:

The information in the PAP was adequate to meet the minimum regulatory requirements for this section of the regulations.

BONDING AND INSURANCE REQUIREMENTS

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

Analysis:

Determination of Bond Amount

The amendment involves minor changes to the surface facilities. To keep the bond current the Permittee must submit updated reclamation cost estimates.

At a minimum the Permittee must update the physical facilities list in Section 3.2.3, Surface Buildings and Structures, Plate 3-1 and the bond calculations so that the names of the buildings and structures are correct and consistent.

Findings:

The information in this section of the proposed amendment is not adequate to meet the requirements of this section of the Regulations. Before approval, the Permittee must provide the following in accordance with:

R645-301-830.140, The Permittee must update the physical facilities list in Section 3.2.3, Surface Buildings and Structures, Plate 3-1 and the bond calculations so that the names of the buildings and structures are correct and consistent. Example of inconsistencies include but not limited to: Section 3.2.3 Fueling Station/Map 3-1 Fuel Tank, Section 3.2.3 Storage Building/Map 3-1 Storage, Section 3.2.3 two substations/Map 3-1 shows only one. Waste water tank and water tank are shown on Map3-1 but not listed in Section 3.2.3.

RECOMMENDATIONS:

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