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

Utah Coal Regulatory Program

February 25, 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, Horizon Mine, C/007/0020, Task ID # 2115

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 Permittee proposed to expand the permit boundary from 711 acres to 1,577 acres. The permit boundaries were shown on Plate 1-1, Permit Boundary.

Plate 1-1 showed the permit boundaries and the expansion areas. The Permittee did not show on Plate 1-1 the date when the permit boundary changed. Instead, the Permittee only identified the area as "Proposed Expansion Boundary." The Permittee must identify the permit area expansion as "2005 Permit Boundary" or a similar method.

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:

R645-301-521.190, On Plate 1-1, Permit Boundary, and in other relevant sections of the MRP, the Permittee must show that the permit area expansion occurred in 2005.

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 showed that most of the surrounding area was faulted making a simple expansion unlikely. Therefore, the Division considered 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 did 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 was shown on several maps including Plate 1-1. The topographic lines on Plate 1-1 appeared 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 was considered adequate to show the existing surface configuration.

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

Mine Workings Maps

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

The Permittee loaned the Division 20 mine maps from the area. The Division scanned the maps and sent copy of the scanned files to the Utah Geological Survey, where they will be archived.

The Division needs to know all the sources that the Permittee used to determine the location of old mine works. Other sources include Utah Geological Survey, OSM and the BLM.

Permit Area Boundary Maps

The Permittee showed 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 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, R645-301-122 and R645-301-131, The Permittee must state the references and sources that were used to determine the location of the old mine workings. In addition the Permittee must show that they contacted all mine map repositories such as those at the Utah Geological Survey, BLM and OSM.

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 projected production between 700,000 tons per year to 1,500,000 tons per year. They anticipated production to occur between 2004 and 2015.

- A narrative explaining the construction, modification and use of new surface facilities. Only minor proposed modifications to surface facilities were associated with Amendment 1933 and 2115. Those issues were addressed in other sections of the TA.

In the January 14, 2005 submittal, the Permittee corrected grammatical errors that were part of the May 21, 2004 submittal.

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 must make a finding that the Permittee will maximize coal recovery. Because the federal government owns some of the coal reserves, the BLM developed a resource recovery and protection plan (R2P2.) before they approved the mine plan. The Division used the R2P2, in the coal recovery analyzes. The Permittee did not include the R2P2.

The Permittee must either include a copy of the R2P2 or a summary of the BLM's findings on coal recovery or supply the Division with the same data that was given to the BLM.

In Section 3.3.1.5 the Permittee must complete the following sentence:

It is estimated that mining will provide a recovery rate of percent.

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:

R645-301-522, The Permittee must give the Division additional information on maximizing economic coal recovery. The Permittee can either provide the Division with a copy of the updated R2P2, a summary of R2P2 or approval letter from the BLM or the same information given to the BLM. The Division can provide the Permittee with an approval letter from the BLM upon request. The Division needs information the in 2005 the BLM approved the R2P2. The copy

of the R2P2 submitted in electronic format appears to be from 1999 and not updated for the permit area expansion.

R645-301-122, The Permittee must state in Section 3.3.1.5 of the submittal the percent of coal that they expect to recover.

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 stated:

A search of the site files at the Division of State History turned up no recorded sites in, or near, the project area.

The Permittee must show that they conducted a survey or all lands upon which subsidence could occur and determined if there are any structures. The Division of State History may not have a record of all structures that exist in the area.

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 committed 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 showed the subsidence area on Plate 3-3. The Permittee showed the subsidence zone based on two different angels of draw. The first angle was 35-degree and the second was 22.5 degree. The Permittee used that angle because 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 would protect Beaver Creek by orienting the panels perpendicular to the stream and use full extraction mining. The Permittee needs to demonstrate that the panel layout will protect the stream. One way of doing so would be to have a stream profile that showed the profile before and what the anticipated subsidence would be.

  The Permittee must show the how they determined in Section 3.4.8.4 that the maximum subsidence would be 2.3 feet. Note: Figure 3-5 is not included in the amendment (page was 3-30 was left blank).

  The Permittee must also address how they will protect the roads within the permit boundary that will be affected by subsidence.

- 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 outside the subsidence zone and placing monitoring points within the subsidence zone. The Permittee committed to take readings at each station once a year until two years after cessation.

  The survey monuments and monitoring points were shown on Plate 3-3. The plan called for placing monitoring station in the subsidence zone. 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 did not 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 did show the areas where subsidence would occur on Plate 3-3.

- A description of the anticipated effects of planned subsidence, if any. The Permittee stated in Section 3.2 that they do not anticipate any damage to Beaver Creek because of subsidence. The Permittee must move or duplicate the specific subsidence information in Section 3.2, Surface Facilities Construction Plans. The Division must the subsidence information in the subsidence sections of the MRP.

- 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.

The Permittee did not specifically address water lose due to subsidence. In Section 3.4.8.2, Renewable Resources, the Permittee stated that water replacement was addressed in Section 7.1.6. In that section the Permittee made a few general commitments and refers to Section 7.3 and Section 3.4.8.2 for more information. Section 7.3 does not contain any specific information on water replacement. The Permittee cannot use circular references.

The Permittee must list specific methods that they could use to address water lose. General commitment such as to the extent technologically and economically feasible are insufficient.

They did talk about groundwater loses that could occur if water entered the mine. The proposed remediation methods included sealing underground cracks, lining the streambed and additional monitoring. The Permittee also commits to replace water after mining is completed. The Permittee needs to address specific methods to replace the loss of State appropriated water. The Permittee needs to remove the comment from the MRP about waiting until after mining ceases before they replace lost water.

- 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 must state if the roads in the subsidence area are public or private. They must also address remediation for subsidence damage to 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: 1) calculations used to determine in Section 3.4.8.4 that subsidence would be 2.3 feet (Figure 3-5 is not included in the amendment) 2, a stream profile for Beaver

Creek that shows the presubsidence and anticipated subsidence profiles and 3) the protection and mitigation plans for the roads within the subsidence zone.

R645-301-525.480, The Permittee must address the specific methods that they would use to replace the loss of State appropriated water. The Permittee must list specific methods that could be used to replace lost water.

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.

R645-301-121.200, The Permittee cannot use circular references. In Section 3.4.8.2, Renewable Resources, the Permittee stated that water replacement was addressed in Section 7.1.6. In that section the Permittee made a few general commitments and refers to Section 7.3 and Section 3.4.8.2 for more information. Section 7.3 does not contain any specific information on water replacement. The Permittee must move or duplicate the subsidence information in Section 3.2 to a subsidence section of the MRP.

R645-301-122, The Permittee must include specific reference for the claims relating to subsidence such as 1) water levels in the Blue Blaze Mine, 2) Pillaring by Swisher Coal Company under Beaver Creek did not result in water loss, 3) that the Castlegate Sandstone is unlikely to allow fractures to reach the surface and 4) the shales in the area will be self healing.

R645-301-525.110, The Permittee must show that they conducted a survey of all areas where planned subsidence will occur and determined if there are any existing structures. The information in the Division of State History records may not be adequate. The Division recommends that the Permittee conduct an on the ground search as well as contact on surface owners

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

The Permittee made minor modifications to the surface facilities. The conveyor system was modified, the crushing and screening plant was installed and some proposed buildings were removed from the MRP. The Permittee must update the maps and plates that show 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. As part of the Division bonding process, they will review the bond calculations. Once the Division approves the bond calculations the Permittee will submit the bond calculations are part of the amendment.

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 submit updated reclamation cost estimates that include the modifications to the surface facilities.

RECOMMENDATIONS:

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