

TECHNICAL MEMORANDUM

Utah Coal Regulatory Program

August 31, 2004

CK

TO: Internal File

THRU: Jim Smith, Team Lead DS

FROM: Wayne H. Western, ^{NHLW} Environmental Scientist III, Engineering and Bonding

RE: Permit Boundary Expansion, Hidden Spender Resources, Horizon Mine, Permit C/007/0020, Task ID # 1933

SUMMARY:

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

TECHNICAL MEMO

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:

On May 21, 2004, the Division received amendment 1933, Permit Boundary Expansion. HSR 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. HSR did not show on Plate 1-1 the dates when the permit boundary changed or identified what areas were added. HSR must show the permit area and when the changes occurred. The Division considered that information important because it provided a record of the permit area. In addition, HSR must show the line type used to represent the permit boundaries on the map legend.

In the MRP, HSR stated, "The disturbed area contained 8.23 acres, however the reclamation bond was based on 9.15 acres." In the May 21, 2004 submittal, HSR removed information about the disturbed area acreage from the PAP. The Division needs to know the disturbed area acreage for several reasons including bond calculation. HSR must state the disturbed area acreage in the PAP.

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, HSR must provide the following in accordance with:

R645-301-521.190, On Plate 1-1, Permit Boundary, and in other relevant section of the MRP, HSR must show the following: 1) when each area was incorporated into the permit and 2) the line type for the permit boundary must be shown in the map legend.

R645-301-521, HSR must state in the text of the MRP the total acreage within the disturbed area boundaries.

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. HSR did not indicate that they planned to seek additional acreage. 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.

HSR 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.

HSR did not change the disturbed area boundaries. Therefore, the existing 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

TECHNICAL MEMO

Division must be given the resources HSR used to determine where the old mine workings were located.

Permit Area Boundary Maps

HSR showed the permit boundaries on Plate 1-1. The Division found Plate 1-1 to be deficient and address 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, HSR must provide the following in accordance with:

R645-301-122 and R645-301-131, HSR must state the references and sources that were used to determine the location of the old mine workings.

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. HSR 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. HSR 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.

TECHNICAL MEMO

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

In Chapter 3, some of HSR's text modifications were not clear and concise. For example:

- In the first paragraph of Section 3.2.3.7 the wording indicates that one portal will be used for ingress and egress, and for the beltway and for ventilation.
- The first paragraph of Section 3.3 reads "... The feeder breaker will reduce the coal to an appropriate size, after which the coal will be fed onto a conveyor to be carried to the coal from the storage pile onto coal trucks."
- The last sentence in Section 3.3.1 reads "Horizon projects mining on the lands during the term of this Mine Permit Application."

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, HSR must provide the following in accordance with:

R645-301-121.200, HSR must correct grammatical problems in the text of the proposed amendment such as incomplete sentences and problems as outlined above.

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.

TECHNICAL MEMO

RELOCATION OR USE OF PUBLIC ROADS

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

Analysis:

HSR did not propose to relocate any public road in connection with the permit boundary expansion. Neither did HSR 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 HSR will maximize coal recovery. When the coal reserves are owned by the federal government, the BLM would develop a resource recovery and protection plan (R2P2.) before they approved the mine plan. The Division would use the R2P2, in the coal recovery analyzes. HSR did not include the R2P2.

HSR 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.

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, HSR must provide the following in accordance with:

R645-301-522, HSR must give the Division additional information on maximizing economic coal recovery. HSR can either provide the Division with a copy of the R2P2, a summary of R2P2 and approval letter from the BLM or the same information given to the BLM.

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 HSR submitted a subsidence control plan.

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. HSR committed to conduct all mining operations using room-and-pillar methods. When possible HSR will extract pillars during 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. HSR did not show the subsidence area on any maps. HSR did mention in Section 3.4.8.5 that subsidence was anticipated outside the permit boundary. They used 35-degree angle of draw but did not state why that number was used.

The only subsidence protection addressed in the amendment was for Beaver Creek. HSR stated they would protect Beaver Creek by orienting the panels perpendicular to the stream and use full extraction mining. The Division was not sure why placing the panels perpendicular to the stream would minimize damage. Subsidence would cause crests and troughs that would change the stream gradient, and high points and low points would be established in the stream channel. HSR must give the Division more information on the protection plan for Beaver Creek.

TECHNICAL MEMO

HSR 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. HSR 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. HSR 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 six monitoring station in the subsidence zone. The Division found the number and location of the monitoring stations unsatisfactory. At a minimum HSR must 1) establish a monitoring program that will establish the angle of draw for the area, 2) subside a monitoring station every year that retreat mining occurs 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. The land survey must include critical areas such as areas of maximum tension and compression.

- 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. HSR 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. HSR did not show the areas where subsidence would occur on Plate 3-3. HSR did not show on the maps or state in the text any subsidence protected areas.
- A description of the anticipated effects of planned subsidence, if any. HSR stated in Section 3.2 that they do not anticipate any damage to Beaver Creek because of subsidence. The main surface subsidence features would be cracks that would self heal.

TECHNICAL MEMO

- 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, HSR addressed two types of subsidence mitigation. For surface cracks and depressions, they committed to filling in fractures. For damage to larger areas HSR committed to grade and planting the areas and intensify monitoring.

HSR did not specifically address water loss due to subsidence. They did talk about groundwater losses that could occur if water entered the mine. The proposed remediation methods included sealing underground cracks, lining the streambed and additional monitoring. HSR also commits to replace water after mining is completed. HSR needs to address specific methods to replace the loss of State appropriated water. HSR 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. HSR 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

HSR must maintain the subsidence performance standards

Notification

In the amendment, HSR 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. HSR 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, HSR must provide the following in accordance with:

TECHNICAL MEMO

R645-301-525.290, HSR must give the Division the following information: 1) The references used to determine a 35 degree angle of draw, 2) A map with the subsidence area boundaries, 3) The reasons why orienting the panels perpendicular to Beaver Creek would minimize subsidence damage, and 4) The protection and mitigation plans for the roads within the subsidence zone.

R645-301-525.440, At a minimum HSR must 1) establish a monitoring program that will establish the angle of draw for the area, 2) subside a monitoring station every year that retreat mining occurs and 3) conduct a land survey over each panel no sooner than six months after the panel was mined out but no more that one year. The land survey must include critical areas such as areas of maximum tension and compression.

R645-301-525.490, HSR must address the specific methods that they would use to replace the loss of State appropriated water. In addition, HSR must remove the comment from the MRP about waiting until after mining ceases before they replace lost water.

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

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

Other Transportation Facilities

HSR 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

TECHNICAL MEMO

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:

HSR 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. HSR 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, HSR made minor modifications to the conveyor system, installed a crushing and screening plant, and substation. In addition HSR 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:

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

TECHNICAL MEMO

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, HSR 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

HSR 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. HSR must update the maps and plates that show the surface facilities.

Mine Workings Maps

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

Certification Requirements

HSR met the minimum certification requirements.

Findings:

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

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.

TECHNICAL MEMO

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 HSR 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 HSR 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, HSR must provide the following in accordance with:

R645-301-830.140, HSR 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.