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# TECHNICAL MEMORANDUM

Utah Coal Regulatory Program

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March 7, 2011

TO: Internal File

THRU: Kevin Lundmark, Lead *KWL*

FROM: Ingrid Campbell, Environmental Scientist II *UC*

RE: Protection and Enhancement Plan and Raptor Survey, Hidden Splendor Resources, Horizon Mine, Permit # C/007/0020 and Task ID #3741

## SUMMARY:

On June 1, 2010, the Division sent a letter to Hidden Splendor Resources (HSR) explaining that a protection and enhancement plan must be developed prior to undermining Beaver Creek and that raptor surveys are required in areas that could be affected by undermining. This information was stated in the Horizon Mine M&RP on page 10-40 and 41. HSR submitted an amendment in response to this letter on July 7, 2010. The application was denied and returned to HSR with deficiencies. On November 1, 2010, HSR submitted a response to deficiencies. The Division and HSR met in January 2011 to discuss the Division's request for a protection plan and agreed upon increased subsidence monitoring. Details are listed in the discussion below.

Prior to final approval, HSR must submit the clean copies for the updates to Chapter 10 to the Division.

**TECHNICAL MEMO**

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**TECHNICAL ANALYSIS:**

**OPERATION PLAN**

**FISH AND WILDLIFE INFORMATION**

Regulatory Reference: 30 CFR Sec. 784.21, 817.97; R645-301-322, -301-333, -301-342, -301-358.

**Analysis:**

**Protection and Enhancement Plan**

The Horizon Mine M&RP states that Hidden Splendor Resources (HSR) is committed to developing a protection and enhancement plan prior to secondary mining under Beaver Creek. The Division sent a letter to the permittee in June 2010 that stated, "An application to modify the MRP must demonstrate that a protection and enhancement plan for Beaver Creek is not necessary because there will be no adverse impacts to fish and wildlife and related environmental values during coal mining and reclamation operations." The Division requested that HSR clearly show where mining has occurred under Beaver Creek and explain what, if any, effects it has had on stream flow. An updated map 3-3 was submitted and incorporated into the Horizon M&RP.

On July 7, 2010 HSR submitted an amendment to this commitment. HSR believes that the only possible disturbance to the creek would be from water loss. No additional surface impacts will occur. The Horizon Mine M&RP contains commitments to replace water loss due to subsidence damage. HSR also states that they have designed the mine plan so that more than 900 feet of overburden will remain under beaver creek after second mining. The application was denied and returned with deficiencies to HSR.

On November 1, 2010, HSR submitted a response to deficiencies. HSR stated that the protection and enhancement plan was that adequate overburden exists to prevent damage to the stream from retreat mining. However, water loss due to subsidence has occurred in Utah, and HSR must still have a protection plan in case water loss or other damage occurs to the stream. According to the DWR, Beaver creek is ranked as having substantial value as a salmonid fishery. DWR originally stated in an analysis of the mine project, that no monitoring of the stream would be necessary because no impacts were to occur. However, this analysis was conducted in 1981, prior to any plans for retreat mining under Beaver Creek. (Horizon MRP, Vol. 3, Chapter 10, page 10-8)

On January 12, 2011, the Division met with HSR and Leroy Mead of DWR to discuss undermining Beaver Creek. It was agreed that HSR would submit an updated and more comprehensive subsidence monitoring plan. If subsidence does occur, which is not likely, HSR

would then be responsible for water replacement and mitigation for the aquatic community. The Division sent HSR a letter on January 20, 2011 detailing all items that HSR needed to include in the revised subsidence monitoring plan. These details included the following:

1. Hidden Splendor will include a commitment in the MRP to establish a minimum of two new monitoring sites located between SS-7 and SS-8 for measuring discharge in Beaver Creek prior to one month before any additional retreat mining under Beaver Creek. The new monitoring sites will be identified by Hidden Splendor Resources with Division concurrence and will be selected based on access, location relative to retreat mining panels and channel characteristics.
2. Hidden Splendor will include a commitment in the MRP to increase monitoring frequency for discharge in Beaver Creek to a weekly basis one month prior to retreat mining beneath Beaver Creek (weather conditions permitting). The weekly monitoring will continue until one month after retreat mining has been completed. Monitoring will then be reduced to monthly for an additional six months, after which water monitoring will resume at the operational monitoring schedule (quarterly). The increased monitoring frequency will include stream monitoring sites SS-7, SS-8 and SS-12 and the new monitoring sites located between SS-7 and SS-8. Hidden Splendor will provide the Division weekly monitoring reports via email during the increased monitoring period. Discharge measurements will be submitted to the Division's water database quarterly.
3. Hidden Splendor Resources will revise the MRP to include a commitment to expand the subsidence monitoring network by establishing new or additional monitoring stations above the panels that will be mined beneath Beaver Creek and above panels where pillaring has occurred or is projected to occur.
4. Hidden Splendor Resources will revise the MRP to include a commitment to supply all of the information related to subsidence monitoring to the Division on a yearly basis during the annual reporting period. This information shall include but is not limited to:
  - Updated yearly raw subsidence data (Easting, Northing, Elevations) of each subsidence monitoring monument/station (whether it is considered active or inactive by HSR);
  - Baseline subsidence data for each subsidence monitoring monument/station; and
  - Photographs and coordinates (Easting, Northing) of any cracks, fractures, slumps, or other subsidence related abnormalities that are encountered during subsidence surveys.
5. Within section 3.4.8.5, on page 3-29 of the MRP in the paragraph that begins "Multiple readings...", Hidden Splendor Resources will modify this paragraph to include a commitment to conduct subsidence monitoring annually throughout the process of mining operations and for two years after cessation of mining operations.

**TECHNICAL MEMO**

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6. Within section 3.4.8.5, on page 3-29 of the MRP in the paragraph that begins “A land (pedestrian) survey...” Hidden Splendor Resources may choose to modify this paragraph to eliminate the time frame for monitoring as the Division will expect the monitoring to be conducted annually. This will allow Hidden Splendor Resources to conduct subsidence during optimal time frames/seasons and will allow subsidence monitoring and reporting to be systematic.
7. Hidden Splendor Resources will review and act on its commitments stated within the Subsidence Control and Monitoring Plan, including the paragraph that begins with “To establish an actual...” This commitment is located within section 3.4.8.5, on page 3-29 of the MRP.
8. Hidden Splendor Resources will provide a general description of a mitigation plan for circumstances where subsidence effects have occurred. If effects are identified, Hidden Splendor Resources will develop a complete mitigation plan in consultation with the Division of Oil, Gas and Mining and Division of Wildlife Resources.
9. Hidden Splendor Resources will correct the appropriate maps (e.g., the mine map submitted with Annual Reports) to correctly depict that monitoring well HZ-95-3 has been mined through.
10. As a matter of housekeeping, Hidden Splendor Resources should include the revisions previously submitted for Section 10.5.1.2 describing raptor surveys (Task ID #s 3587 and 3666). The revisions to Section 10.5.1.2 have not yet been incorporated into the MRP due to deficiencies associated with other material included with the submittals.

The Division concluded that a more comprehensive subsidence monitoring program which includes the 10 items above, would suffice to protect Beaver Creek and its associated habitat because subsidence would be the only possible direct impact. HSR failed to include the information pertaining to item 10 above.

**Findings:**

The information provided is considered adequate to meet the minimum regulatory requirements for this section. However, HSR must submit the clean copies for the updates to Chapter 10 to the Division prior to final approval.

**RECOMMENDATIONS:**

The amendment application is recommended for approval.