

# TECHNICAL MEMORANDUM

Utah Coal Regulatory Program

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August 3, 2010

TO: Internal File

THRU: Kevin Lundmark, Hydrologist and Team Lead *KWL*

FROM: James Owen, Reclamation Engineer *JO*

RE: Beaver Creek Protection and Enhancement Plan, Hidden Splendor Resources, Horizon Mine, C/007/020, Task # 3587

## SUMMARY:

On July 7, 2010, the Utah Division of Oil Gas & Mining received an application for approval of the Beaver Creek Protection and Enhancement Plan. Hidden Splendor Resources submitted the application for the Horizon Mine in response to a letter sent by the explaining that the mine must either develop a Protection and Enhancement Plan for the Beaver Creek area as described in the mine's approved MRP or submit an application to modify the MRP.

The application will be recommended for approval when Horizon mine submits to the Division a map with information as detailed in this technical analysis.

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**TECHNICAL ANALYSIS:**

**OPERATION PLAN**

**SUBSIDENCE CONTROL PLAN**

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

**Analysis:**

On pg. 10-41 of the application, the applicant states that with the Protection and Enhancement Plan, Hidden Splendor Resources commits to no create any surface disturbance in the Beaver Creek area. Additionally, in order to provide further protection, the mine has designed their layout to only undermine surface resources where no less than 900 feet of overburden exists.

The mine states that based on the *SME Mining Reference Handbook* and “past history”, 900 feet of overburden is sufficient to prevent impacts to surface resources. No maps were submitted with the application.

**Findings:**

Based on subsidence data provided in the Horizon Mine annual reports, negligible amounts of subsidence have occurred in areas where mining has been conducted under Beaver Creek. The changes in elevation were calculated for subsidence monitoring stations ‘SUB1’ thru ‘SUB 7’ from 2005 to 2008. The average decrease in elevation was approximately 0.84 ft, with elevation decrease values ranging from .4 to 1.2 feet. The areas where pillar recovery occurred beneath Beaver Creek did not display distinctly varying results from other areas, including areas that were not mined, areas where only advance mining had taken place, mine portal areas, and other areas of pillar recovery.

Since the decrease in elevation was observed to be reasonably standard above the various areas, and since surveying error must be taken into account, it can be assumed that areas where mining (retreat or advance) occurs beneath Beaver Creek will not experience significant subsidence.

Due to the fact that the application did not include a supplemental map, an email was sent to the mine’s engineer on August 3, 2010, requesting that a map with pertinent information be sent to the Division. The request for information is based on **R645-301-525.240, R645-301-**

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**525.420**, as well as the requirements that are detailed in the letter sent from the Division to Horizon dated 6-1-2010. The email stated the following (verbatim):

*“In order to more clearly determine & evaluate the adequacy of the Beaver Creek Protection & Enhancement Plan submitted by Hidden Splendor Resources, the Division requests that the following be provided to the Division in a timely manner:*

- 1. An up-to-date mine map that clearly defines/indicates/includes, but is not limited to:**
  - a. Underground workings (the size, configuration, and approximate location of mine pillars and entries)*
  - b. Past Mining Activities & Timing (include location and year that advance & retreat mining took place)*
  - c. Future Mining Activities & Timing (5 year projection minimum, include location and year that advance & retreat mining is expected to take place)*
  - d. Locations and timing where past advance & retreat mining have taken place beneath Beaver Creek*
  - e. Locations and timing where future advance & retreat mining is expected to take place beneath Beaver Creek*
  - f. Overburden thickness contours, including a 900-foot contour delineating areas where less than 900 feet of overburden exists*
  - g. Subsidence monitoring stations*
  - h. Surface elevation contours*
  - i. Perennial streams, including Beaver Creek*
  - j. Water monitoring locations*

*Providing the information above in a detailed and adequate form will allow the Division to determine what further requirements, if any, shall be needed to warrant approval of the Beaver Creek Protection & Enhancement Plan.”*

**RECOMMENDATIONS:**

This application will be recommended for approval when Horizon mine submits to the Division a map with information as detailed in the technical analysis above.