

0012



File Act/007/009

#3

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DIVISION OF
OIL GAS & MINING

February 4, 1983

Mr. James Smith
Utah Division of Oil, Gas and Mining
4241 State Office Building
Salt Lake City, Utah 84114

RE: Act/007/009

Dear Mr. Smith:

We have prepared additional information for inclusion in our mine and reclamation plan application (MRP) related to the hydrologic concerns raised in Office of Surface Mining's (OSM) December 9, 1982 letter. We feel that this submission should definitively complete the hydrologic characterization of the Sage Point/Dugout Canyon project. The questions are listed below followed by our response. We have retained the numbering sequence from the OSM review letter.

Question 1: (page 3, OSM letter dated December 9, 1982)

The ground water portion of the MRP text is confusing and contains what appear to be contradictions. For example, Figure IV-B.2 (page 74) shows re-charge occurring at the overburden/coal outcrop, however, flow direction arrows suggest the outcrop is an area of discharge. The text/maps should be reviewed and the description of the ground water system clarified.

Response:

Much of the confusion expressed in these comments are a result of a typographical error on Figure IV-B.2. Written on the overburden/coal outcrop is the phrase "recharge area". The phrase should correctly read "discharge area". The figure has been revised accordingly.

Question 2a: (page 3, OSM letter dated December 9, 1982)

The MRP text states on pages II-75 and 78 that insufficient data precludes determining the rate or direction of water movement in the bedrock formation. These statements are not consistent with maps included in the permit application which show additional existing wells/drill holes in the permit and

surrounding areas. The applicant should utilize and include all available data in the application. If sufficient data does exist, the applicant should submit a potentiometric map of the permit and adjacent areas; and based on Sunedco's understanding of the ground water system, a prediction of the probable hydrologic consequences (on and off site) resulting from mining.

Response:

As stated on page II-79 of the application, the regional direction of ground-water movement is to the north. The potentiometric map prepared by Wahler Associates (refer to page II-118a) substantiates this conclusion. Near outcrop areas along the Book Cliffs, the flow direction is reversed (Figure IV-B.2). Flow toward the outcrop, results in the emergence of several springs and seeps.

Question 2b: (page 3, OSM letter dated December 9, 1982)

Sunedco should submit all available information on the wells identified on the hydrology plates including method of well completion, stratigraphy, water levels, etc.

Response:

Two new tables (Tables IV-B.5a and -B.5b) were prepared to describe the monitoring wells. These tables should be included directly behind Table IV-B.5 in the application.

Question 3: (page 3, OSM letter dated December 9, 1982)

The "Groundwater Use" section (MRP, Page II-75) states "no development of the groundwater in either the perched aquifer or the regional aquifer exists". An inventory of wells, the owner's name, and water use in the surrounding affected area, should be provided, or a statement included indicating that no such wells exist within the affected area.

Response:

Page II-75 was revised to state "in the affected area, there has been no development of ground water in either the perched aquifers or the regional aquifer. Three wells were drilled in the north adjacent area but these were for monitoring purposes only (Table IV-B.1)". The revised page is submitted to replace page II-75 within the application.

Question 4: (page 3, OSM letter dated December 9, 1982)

The use of a three foot core to determine the porosity and permeability is questionable given the complexity of the

overburden stratigraphy. The use of pump/slug tests is suggested to accurately define the hydrologic characteristics of the overburden/coal. Use of this data will yield a more accurate prediction of the probably hydrologic consequences resulting from mining.

Response:

Since the submittal of the original application, slug injection tests were done on three wells in the mine area to determine the hydraulic properties of the strata in question. The results of these aquifer tests are presented in a report prepared by Wahler Associates (refer to page II-118a). The Wahler report is to be inserted at the end of Section IV-B Hydrology in the application.

Question 5a: (page 4, OSM letter dated December 9, 1982)

The 10 springs identified on MRP Page II-72 should be monitored on a monthly basis if possible rather than 3 times a year (when flowing). This is necessary because of the potential effects of subsidence on the spring system (the concept that fractures will heal themselves is speculative and has not been demonstrated). Any additional springs originating in the "regional aquifer", and located down gradient from the permit area should be added to the list of monitored springs.

Response:

Sunedco contends that it is not necessary to monitor the 10 springs more than three times a year. The majority of springs are frozen and inaccessible during the winter months. Also, because of the overburden depth, Sunedco does not feel that the impact potential warrants such a stringent monitoring requirement.

Because of the dip of the strata, the "regional aquifer" is situated deeper and deeper beneath the surface in the downgradient direction. Since the "regional aquifer" is located deep beneath the surface, no springs will occur downgradient of the permit area.

Question 5b: (page 4, OSM letter dated December 9, 1982)

Sunedco should commit to replacing any water source impacted by mining operations.

Response:

Sunedco will replace the water supply of any owner of a vested water right which is injured as a result of the mining activ-

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ities in a manner consistent with applicable State law. Page II-75 has been revised to reflect this statement in the application.

All of the enclosures were written to replace entire pages in the M&RP. Pages in the existing plan should be removed and discarded.

If you have additional questions after reviewing the submitted attachments, please call me.

Very truly yours,

A handwritten signature in black ink, appearing to read "Charles W. Durrett". The signature is written in a cursive style with a large, sweeping flourish at the end.

Charles W. Durrett
Environmental Coordinator

CWD/rp
Enclosures