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State of Utah

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

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November 25, 1992

Mr. J. T. Paluso, Chief Engineer
Soldier Creek Coal Company
P. O. Box I
Price, Utah 84501

Dear Mr. Paluso:

Re: Remaining Deficiencies in Response to Division Order #92A (Permit Renewal),
Soldier Creek Coal Company, Soldier Canyon Mine, ACT/007/018, Folder #3,
Carbon County, Utah

The Division has completed a review of your submittal intended to satisfy the deficiencies noted in your permit renewal (Division Order #92A). At this point a large portion of the deficiencies have been satisfied. However there still remain a few deficiencies that have not been adequately addressed. Please review the enclosed document that outlines the remaining deficiencies. A response to these deficiencies must be submitted to the Division no later than January 25, 1992.

Thank you for your cooperation during the permitting process and your diligence in complying with the regulatory requirements. Please call if you have any questions.

Sincerely,

A handwritten signature in black ink that reads "Daron R. Haddock".

Daron R. Haddock
Permit Supervisor

Enclosure

cc: P. Baker
P. Burton
S. Falvey
J. Smith
W. Western
L. Braxton w/o enclosure

DEFITWO.SC3

**ROUND TWO REVIEW OF TECHNICAL DEFICIENCY
RESPONSE AND REMAINING DEFICIENCIES
SOLDIER CREEK COAL COMPANY
ACT/007/018
NOVEMBER 25, 1992**

R645-301-222

Soil Survey

Original Deficiency #4:

An Order 1 soil survey map of the surface disturbed mine facilities area must be prepared before construction of Fan #3. This map will consolidate the information provided in Appendix 10 (Vol. 5) and Chapter 2, and Fan #3 exploration. Locations of all previous sample pits and auger holes, and dates of sampling will be provided on the map. The map must show all soil types from available information. Areas disturbed prior to August 1977 will be delineated.

Analysis and Remaining Deficiency:

During a meeting on 3/5/92, D. Spillman and T. Paluso of SC3 presented their intention to comply with this deficiency when construction on Fan Site #3 occurs, possibly in 1993. The Division accepted this delay in compliance. Item #4 of R645-301-222, Soil Survey, remains deficient. The Applicant must complete this survey information prior to gaining approval of construction on Fan Site #3.

R645-301-341

Reclamation Plan

Original Deficiency #8:

The reference area for the proposed refuse disposal site must be changed so that comparison will be made to a more desirable community than pinyon-juniper. The sage-grass-juniper reference area is recommended. If this area is used, diversity indexes should use life form composition as the basis for determining revegetation success rather than species composition. The seed mix must include desirable salt-tolerant species, such as fourwing saltbush and black sage. Soldier Creek must commit to establishing and monitoring a test plot on the refuse disposal pile.

Response and Analysis:

The pinyon juniper reference area has been deleted, so the reference area for the refuse disposal site would be the sage-grass-juniper reference area.

The seed mix has not been changed, and a commitment to establish and monitor a test plot on the refuse pile was not found. The reasons for these requirements are contained in the original review. These changes are required for permitting the refuse disposal site but not for any current operations.

Remaining Deficiency:

1. Before the refuse disposal site is permitted, the seed mix for this area must be revised to include desirable salt-tolerant species, such as fourwing saltbush and black sage. Soldier Creek must commit to establish and monitor a test plot on the refuse disposal site.

**R645-301-412
R645-301-413**

**Reclamation Plan
Performance Standards**

Original Deficiency #2:

The application must include a copy of comments concerning the proposed postmining land uses by the legal or equitable owners of record of the surface of the proposed permit area and Utah and local government agencies which would have to initiate, implement, approve, or authorize the proposed use of the land following reclamation.

Response and Analysis:

The Technical Deficiency Review Outline states that letters were mailed out on 7/21/92. No response letters were found within the plan.

It is the Division's experience with other Operators that responses to requests for comments on the postmining land use may be difficult to obtain without some follow-up. If responses are not received, a second letter should be sent out followed by a telephone call if necessary. A memorandum containing a synopsis of verbal comments could be inserted into the plan if landowners and government agencies do not respond with written comments. A deadline should be established by which time Soldier Creek will solicit verbal comments if they have not received written comments.

Remaining Deficiency:

1. The application must include a copy of comments concerning the proposed postmining land uses by the legal or equitable owners of record of the surface of the proposed permit area and Utah and local government agencies which would have to initiate, implement, approve, or authorize the proposed use of the land following reclamation.

R645-301-521

General Engineering

Applicant's Response:

The Division requested that the Operator correct the contour information and

elevations on Map 760a to provide an accurate depiction of the final reclamation contours. In the event that correction of the contour information on the drawing reflects changes in the mass balance calculations, all respective portions of the reclamation plan and the cost estimate for reclamation shall be made.

The Applicant stated that Map 760a was corrected and submitted on January 29, 1992 and sent to the Division as part of the deficiency report on February 3, 1992.

Analysis:

Map 760a was not found in the deficiency report nor did the Applicant state if any corrections were made.

Remaining Deficiency:

1. The Applicant MUST submit a revised copy of Map 760a. The revision will include elevation corrections and accurate contour line for the existing and reclaimed site. The Applicant must also state if the corrections resulted in changes in the mass balance calculations. If such changes did occur the Applicant will make the appropriate changes in the reclamation plans and bond estimates.

R645-301-525

Subsidence

Proposal:

The Division requested that the Applicant

1. Revise the mining sequence in this area to accommodate the buffer zone indicated for Soldier Creek, County Road 53 and Questar's pipeline, or submit a detailed analysis and present engineering evidence that these changes will not adversely impact those renewable resource areas.
2. The incorporation into the permit area, all areas impacted by subsidence or areas which potentially could be impacted by subsidence in accordance with the mine design and the angle of draw.
3. Give further detail the subsidence buffer zone which has been projected to the north in Soldier Canyon. Changes to this buffer zone which are different than the design angle of draw projection must be explained and detailed adequately to allow the proposed buffer zone location.

The Applicant states that the subsidence boundaries were projected to the surface using a draw angle of 22.5 degrees. The Applicant stated that a 22.5 degree angle of draw

is generally considered a conservative estimate by the Division. The Applicant also states that some subsidence areas have been projected using a 35 degree angle of draw. The 35 degree angle of draw is used in areas of full extraction.

The Applicant stated that even using a 35 degree angle of draw that subsidence would occur outside the subsidence buffer zone in the northern most area. The potential for material damage in that area is negligible.

Analysis:

The Applicant had been informed prior to the most recent submittal that the Division would accept a 22.5 degree angle of draw only if a detailed analysis and engineering evidence was submitted. The Applicant failed to provide that information.

The Applicant has submitted two different maps each labeled Figure 5.25-1 Subsidence Buffer Zone Detail. One map has a scale of 1" to 500' and shows the areas of longwall mining and buffer zones to protect surface facilities. The other map has a scale of 1" to 2000' and the five year mine plan, subsidence buffer zone and maximum potential subsidence boundary. The two maps need to have different names and numbers.

Subsidence must be confined to permitted areas unless the Applicant can demonstrate to the Division's satisfaction that there is not potential for material damage, environmental harm or danger to human health in the subsided areas. The Division has not received any evidence that subsidence outside the permitted area would have no potential for material damage, environmental harm, or danger to human health.

Remaining Deficiencies:

1. The Applicant must either use a 35 degree angle of draw or submit a detailed analysis and engineering evidence justifying the use of a smaller angle for projecting subsidence.
2. The Applicant must assign a different name and number to one of the maps labeled Figure 5.25-1. The text must also be modified to show the change.
3. The Applicant must limit all subsidence to permitted areas unless they can demonstrate to the Division's satisfaction that there is no potential for material damage, environmental harm, or danger to human health as a result of subsidence outside the permit area.

R645-301-525

Subsidence

Original Deficiency #1:

The Operator shall revise the mining sequence in this area to accommodate the buffer zone indicated for Soldier Creek, County Road 53 and Questar's pipeline, or submit a detailed analysis and present engineering evidence that these changes will not adversely impact those renewable resource areas.

Proposal:

Exhibit 5.25-1 has been modified to accommodate the buffer zone.

Analysis:

Exhibits 5.25-5 and 5.25-6 have not been modified to accommodate the revised buffer zone along the Soldier Creek corridor as shown on Exhibit 5.25-1. All three Exhibits also show full subsidence mining beneath the Questar pipeline. In Section 5.25.13 is a commitment that full extraction mining will not be done beneath the pipeline until an agreement between Questar and Soldier Creek Coal Company, concerning the relocation of the pipeline or measures to protect the pipeline from the effects of subsidence, has been executed and incorporated into the MRP.

Remaining Deficiency:

1. Information on mining sequence and the no subsidence buffer zone along Soldier Creek is not clear and concise because it is not shown consistently on all pertinent maps.

Original Deficiency #2:

The Operator must incorporate into the permit area, all areas impacted by subsidence or areas which potentially could be impacted by subsidence in accordance with the mine design and the angle of draw.

Proposal:

A significant permit revision requesting the addition of a subsidence buffer zone was submitted to DOGM on March 9, 1992. Deficiencies, as detailed in DOGM's June 1, 1992 letter, are addressed within the current submittal (Pages 5-17 through 5-17d and 1-12). Angle of draw used to determine the buffer zone is 22°, but the buffer zone should also accommodate a 35° angle of draw except in the northernmost part of the permit area. In this area the overburden is thick enough that subsidence is not expected to have any effect at the surface.

Analysis:

Soldier Creek Coal Company has added a buffer zone to the west, north, and east of the permit area, to serve as a subsidence buffer zone. The surface owners of most of the lands within the subsidence buffer zone are not the owners of the coal to be mined, and in such a case, the MRP needs to contain a copy of the written consent of the surface owner for Soldier Creek Coal Company to perform coal mining and reclamation operations, including subsidence of the surface. Soldier Creek Coal Company has contacted the owners of the surface that will be affected by the incorporation of the subsidence buffer zone into the permit area, but their responses are not in the MRP.

Soldier Creek Coal Company has indicated in statements not included in the MRP that additional coal leases are available north of the permit area and Soldier Creek Coal Company is anticipating obtaining these leases before any mining would occur that could possibly cause subsidence beyond the buffer zone in that area.

Remaining Deficiencies:

1. The MRP does not contain written consent from the surface owners for Soldier Creek Coal Company to perform coal mining and reclamation operations in the subsidence buffer zone.
2. The MRP does not include the commitment, or even mention the possibility, to obtain additional leases to the north before commencing mining that could cause subsidence outside the northern permit boundary.

R645-301-526

Mine Facilities

Applicant's Proposal:

The Applicant was requested to certify and submit copies of Figures 5.26-1 and 5.26-2. Those figures were not part of the deficiency package.

Analysis:

The Applicant failed to submit certified copies of figures 5.26-1 and 5.26-2 as stated in the initial deficient report.

Remaining Deficiency:

1. The Applicant will submit certified copies of figure 5.26-1 and 5.26.2 to the Division.

R645-301-534 Roads

Applicant's Proposal:

The Applicant failed to provide a certification statement for incorporation into the MPR which state that the primary roads as described in this plan will meet the requirements of R645-301-534.200 and R645-301-742.420.

Analysis:

The Applicant failed to respond to the Division's request for a certification statement for incorporation into the MRP which state that the primary roads as described in this plan will meet the requirements of R645-301-534.200 and R645-301-742.420

Remaining Deficiency:

1. The Applicant will provide a certification statement for incorporation into the MPR which state that the primary roads as described in this plan will meet the requirements of R645-301-534.200 and R645-301-742.420.

R645-301-722 Cross Sections and Maps

Original Deficiency #4:

The Operator will submit Plate 1, which is referenced in the Supplemental Report in the MRP.

Proposal:

The Operator includes Plate 1 in the submittal.

Analysis:

The Operator indicates Plate 1 was revised on 9/8/92. Because this report is part of a previously submitted and accepted document. Information as to what was changed and why it was changed should be inserted in the text where the supplemental report is referenced.

Remaining Deficiency:

1. Provide text in the MRP where Appendix 7-I's SHB supplemental report is referenced. Include summary of what information was changed on Plate 1 and why or, the original plate may be submitted.

Original Deficiency #6:

The depth of the wells drilled in the area must be indicated on a map, and should be included on Exhibit 2.5-1.

Proposal:

The depth of surface wells are shown on Exhibit 7.21-1.

Analysis:

The Operator has included the depth of surface wells on map 7.21-1. Wells SC-8 and SC-1, that were previously on exhibit 7.21-1, were removed. SC-8 can be located on Plate 1 of Appendix 7-I. SC-1 could not be located. Reference should be included in text for both maps where wells are referenced.

Remaining Deficiency:

1. Elevation and depth of well SC-1 must be included on applicable map(s). Text referencing maps of well locations should include all applicable maps.

R645-301-722 and 731

Cross Sections and Maps

Original Deficiency #1:

The Operator must include location of water right use and intake points.

Proposal:

Exhibit 7.21-2 was revised to show the water right locations.

Analysis:

The MRP should include location of water rights use and intake points along Soldier Creek between Johnson Reservoir and the Price River. If the water rights search has found there are no water rights along that stretch of Soldier Creek then that information should be stated in the text of the MRP.

Remaining Deficiency:

1. Text and Exhibit 7.21-1 still do not indicate whether or not there are water rights on Soldier Creek between Johnson Reservoir and the Price River.

Original Deficiency #2:

The Operator must show current pertinent information on maps to prevent confusion. Specifically Figure 21 required information to be updated.

Proposal:

Exhibit 7.21-1 was updated to show current information.

Analysis:

Considering the statement on page 7-24a on the imprudence of presenting a potentiometric surface map, why was a potentiometric surface mapped on Exhibit 7.21-1? The presence of both the statement that the map is imprudent and the map is confusing. Potentiometric data should not be removed from the MRP or ignored, but rather if data used to map the potentiometric surface on the updated Exhibit 7.21-1 are considered more valid or reliable than older data, the statement on page 7-24a needs to be revised for clarity.

The potentiometric surface mapped on Exhibit 7.21-1 also needs to be evaluated in comparison to other potentiometric information discussed on pp. 7-28 through 7-33.

Remaining Deficiency:

1. The permit application is not clear and concise as to the value and purpose of the potentiometric surface mapped on Exhibit 7.21-1.

Original Deficiency #3:

The Operator will identify all baseline wells, as well as monitored wells including SC-11G through SC-13 Exhibit 7.21-1.

Proposal:

Baseline and monitoring wells are shown on Exhibits 7.21-1, 7.21-3, and 7.21-4.

Analysis:

Drill holes SC-1 and SC-8 have been removed from Exhibit 7.21-1 and Table 7.24-7 with no explanation. Information from these drill holes may be considered no longer useful or valid, but this hydrologic information has been used in the past in describing the hydrologic resources of the area. The existence of these drill holes and the data from them should be acknowledged in the MRP, and if they are no longer to be used an explanation given as to why they are no longer to be used.

Remaining Deficiency:

1. Elevations and locations of monitoring stations used to gather baseline data on water quality and quantity have been removed from maps, cross sections and tables without explanation or qualification.

Original Deficiency #7:

Topographic contours will be defined for the complete area on all maps where contours are pertinent to the presented information. Specifically Drawing E-030 and Exhibit 5.25-1.

Proposal:

The topographic contours were changed on Drawing E-030. Exhibit 5.25-1 was not changed due to lack of topographic coverage of this area at the proper scale.

Analysis:

Topographic maps of the western portion of the permit area are easily attainable; Exhibit 7.25-1 shows the topography of the permit and adjacent areas, the same area covered by Exhibit 5.25-1 but at a different scale. If a map cannot be purchased at the needed scale, techniques to enlarge or reduce available maps to the needed scale are readily accessible.

Deficiency:

1. Topographic contours are lacking on the western part of Exhibit 5.25-1.

R645-301-724

Baseline Information

Original Deficiency #1:

Update water rights information to include newly filed rights. Indicate if these rights are approved or in review status, and provide their location as required in R645-301-731.700.

Proposal:

Table 7.24-4 page 7-8 was modified page 7-8a was added.

Analysis:

The name of the Table has been changed from 7-24-4 to 7.24-2. The Operator has dropped Water rights nos. 54, 498, 517, 744, 745, 746, 520, 526, 527, 528, 549, 550,

3234, 1855-1857, 2143, 2381, 2381, 2386-2389, 2480, 2686, 3713, 3734, 2577-2579, 2581-2583, 2598, 2585-2587, 3740.

The following water rights were added 518, 515, 522, 530, 531, 532, 203, 518, 926, 2085, 2086, 2087, 2088, 2089, 2093, 2094, 2098, 1360, 1361, 1362, 1363, 1367, 1368, 4543, 3206, 1607.

The water rights removed from the list were said to be out of the range of impact in a discussion with Mark Page, Division of Water Rights on November 9, 1992. **However, the Operator has not included water rights that exist to the area north of the mine site.** The baseline information requires data to be acquired for the adjacent area as well as the permit area. Should the Applicant propose new lease areas additional rights must be identified.

Remaining Deficiency:

1. Update water rights information to include newly filed rights. Indicate if these rights are approved or in review status, and provide their location as required in R645-301-731.700.

R645-301-724

Baseline Information

Original Deficiency #2:

Characterize the seasonal quantity of use as well as the seasonal quantity of discharge and flow rates.

Proposal:

Mr. Mark Page, Regional Engineer for the Division of Water Rights, was contacted and asked to provide additional information on seasonal use and availability of water rights in and around the LOM area. Mr. Page indicated that the seasonal use for water rights is characterized by their assigned purpose (i.e. irrigation stockwatering, etc.). The quantity of use can be further described by the annual consumptive diversion rate assigned to specific water rights. This information has been incorporated into Table 7.24-4.

Analysis:

The information Soldier Creek Coal Company obtained from Mr. Mark Page, outlined in the reply to this deficiency on page 5 of the Technical Deficiency Review Outline, has been incorporated into Table 7.24-1. It should also be incorporated into the text of the MRP, including the identification of Mr. Page as the source of the information. The raw data and information are given in the MRP, but no analysis or characterization has been made.

Remaining Deficiency:

1. Text of the MRP does not contain a characterization or analysis, based on all current pertinent information, of the seasonal quantity of use, as well as the seasonal availability (quantity of discharge and flow rates).

R645-301-728

Probable Hydrologic Consequences (PHC) Determination

Original Deficiency #1:

Include operational and baseline data analysis showing the current information supports the determination that the impacts identified are not expected to be significant as required by 728.200 of this section. Provide data analysis for support of all other pertinent PHC for ground water and surface water seasonal water quality and quantity.

Proposal:

Figures 7.26-1 through 7.28-26 have been included to graphically detail water quantity and quality, over time, for all monitored points (past and present). This information is supportive of existing PHC with the exception of interception of groundwater. The actual interception of groundwater by the mine has exceeded past estimates. A discussion concerning this increase has been included beginning on page 7-81.

Analysis:

The MRP contains a commitment to repair damage that results from mining operations. The Utah Division of Water Rights considers any loss of flow to be a significant impact. The MRP states (p.7-94) that one objective of the monitoring plan is to identify potential impacts during and after mining. Spring #7 is in an area overlying future longwall extraction, and there has been no monitoring of this spring even though it is situated so as to almost certainly be impacted if subsidence effects extend to the surface. Spring #7 should be monitored to establish a baseline before longwall mining is done beneath it, and monitoring should continue during mining and through final bond release.

There are other springs that are not monitored but do not appear to be in locations that may be directly impacted by planned mining activities. If the mine development plans change in the future, monitoring of these springs may need to be reevaluated.

Remaining Deficiency:

1. The spring identified as #7 on Exhibit 7.21-1 is in an area of possible subsidence from longwall mining, yet it is not being monitored.

R645-301-728

Probable Hydrologic Consequences (PHC) Determination

Original Deficiency #2:

The in-mine consumptive use needs to be updated to project current and proposed conditions. Actual volumes of water discharged from within the mine to Soldier Creek must be quantified and included in analysis of ground water losses due to mining the area.

Proposal:

Figure 7.28-1 through 7.28-26 have been included to graphically detail water quantity and quality of ground water intercepted by the mine over recent years. Pages 7-81, 7-81b and 7-83 have also been included and or revised to describe the interception of groundwater.

Analysis:

The Applicant has referenced baseline hydrologic, geologic and other information collected for the permit. The Applicant has presented some operational data to support portions of the PHC analysis presented. For example, Figure 7.28-1 through 7.28-26 support the fact that springs from the North Horn formations are not presently being impacted by mining. However, the Operator does not provide a discussion of assumptions and analysis the figures may present.

The estimated value of 88 ac-ft of ground water use per year for the mine is included on page 7-33. Then the Applicant states that there will not be a significant effect of mining on stored ground water. The Applicant has not considered mine water discharge removed from storage in this statement.

The Operator states that the monitoring shows a fairly steady rate of water level decrease in wells 5-1 and 6-1 and an increase in well 32-1. The Operator states that the rising head in well 32-1 and the lack of significant inflow in the mine near well 6-1 indicate the a lack of mine related influence in these drill holes page 7-90. However, the correlation to location of the well to the fracture and the correlation with well completion within the structure and ground water gradient etc. has not been addressed. For example the Fracture was located in the Rock Canyon seam on the 10th and 11th east mains, and the Sunnyside Seam in the East 1st North main. Well 5-1 is competed in the Sunny side and Rock Canyon Seams and is located North and East of the fracture zone. Well 6-1 is completed to the west of the fracture zone and monitors between the Rock Canyon and Sunnyside Seam. Well 32-1 is competed above the Sunnyside Seam and is to the North of the fracture zone. The mains in the Sunnyside seam Main North and Main North 1st East have now been grouted successful preventing excessive inflow of water page 7-81b. How has the grouting effected water flow?

Remaining Deficiency:

1. The in-mine consumptive use needs to be updated to project current and proposed conditions. Actual volumes of water discharged from within the mine to Soldier Creek must be quantified and included in analysis of ground water losses due to mining the area.

Original Deficiency #3:

Figures used to arrive at all estimates should be clearly presented in the appendix or text of the MRP.

Proposal:

Figures 7.28 -1 through 7.28-26, Appendix 6-B and Appendix L have been added to the MRP to supplement the PHC information.

Analysis:

Appendix 6-B includes monitoring well geologic logs. Appendix L includes hydrologic data prepared for the Sagepoint/Dougout Canyon application and includes aquifer properties and ground water data evaluation including a falling head test.

Water consumption and losses in the mine are estimated based on the coal moisture, mine moisture and air evaporation. The Operator estimates the quantity of recharge over the LOM area using 10.35 mi² (page 7-24) and later calculates the LOM area as 7.66 mi² (page 7-34). The information under the section Ground Water Discharge (page 7-34) needs to be updated and reassessed.

Remaining Deficiency:

1. Figures (Numerical Values) used to arrive at all estimates should be clearly presented in the appendix or text of the MRP.

Original Deficiency #4:

Include Probable Hydrological Consequence based on flooding including the potential of sediment contributions to streamflow.

Proposal:

Section Flooding or Streamflow alteration was added to page 7-87 and 7-87a.

Analysis:

The Operator states there is little chance that the present stream channel alteration will contribute to sediment loading during an event larger than the design event. However a culvert upstream of the operation did get plugged in 1992 water was diverted around the bypass culvert and sediment was contributed from the operations area.

The Operator incorrectly indicates that the area captures and treats all run off when the area is treated for up to a specific storm design. The impacts for a storm of larger design is not determined by the Applicant. Information including the potential natural impacts of the PMP v.s. the potential for the sediment loading with out disturbance for the PMP would give a description of actual potential impacts.

The Applicant should assess the impacts of the NPDES limits. The allowable percentage above background (baseline) water quality. The Applicant should asses the total potential percentage of sediments coming off the ASCA's and the expected filtering capacity of the alternate sediment controls backed up with data from monitoring if available.

Remaining Deficiency:

1. Include Probable Hydrological Consequence based on flooding including the potential of sediment contributions to streamflow.

Original Deficiency #5:

Explain the significant draw down in the Castle Gate Sandstone well 10-2 (page 7-27) and the Probable Hydrologic Consequences on the Price River formation.

Proposal:

Figure 7.28-10 has been provided to detail the water levels monitored at well 10-2.

Analysis:

The Operators figure indicates a falling head test was applied to the wells for the period of question. A discussion of the PHC on the Price river formation was not found. The Operator indicates Waddell as noting the regional aquifer exists above the minable coal seams (page 7-28). The Operator indicates the Blackhawk coal is separated from the Flagstaff limestone and impacts are likely to be minimal (page7-81). What are the expected impacts on the Price River/Castle gate formations.

Remaining Deficiency:

1. Provide the Probable Hydrologic Consequences on the Price River and Castle Gate formation.

R645-301-730 Operation Plan

Original Deficiency #1:

The Operator will include a copy of their NPDES permit for review by the Division before operations sending industrial wastes to the pond can commence.

Proposal:

The representative of Soldier Creek Coal Company talked with Mr. Michael Herkimer of Division of Water Quality (DWQ) concerning discharge from the proposed preparation plant and was told Soldier Creek Coal Company would be allowed to discharge into the sediment pond during emergencies and that DWQ would need to be notified of the discharges.

Analysis:

NPDES permit discharge limitations are described in Table 5.26-2, but the actual permit should be available for inspection as part of the MRP.

The information contained in Soldier Creek Coal Company's reply to this deficiency, on page 6 of the Technical Deficiency Review Outline, should be incorporated into the MRP.

Remaining Deficiencies:

1. A copy of the NPDES permit is not in the MRP where it can be reviewed by the Division and potentially effected parties, before operations sending industrial wastes to the pond commence.
2. The information in the reply to the original deficiency, found on page 6 of the Technical Deficiency Review Outline, should be incorporated into the MRP.

R645-301-731.200 Ground Water Monitoring

Original Deficiency #1:

The Operator must correct "significant" measurable flow to measurable flows, including wet areas in mine that accumulate flow.

Proposal:

References to "significant" flow have been revised to a defined flow of 40 g.p.m. This is in accordance with the March 5, 1992 meetings with DOGM. Sharon Falvey during this meeting suggested that a range of 30-50 g.p.m. would be acceptable. Pages 7-89, 7-90a, and 7-95 and 7-96 have been revised to be consistent with this change.

Analysis:

The intent of the deficiency was to define significant within the mine. This concern was based on memos from Dave Darby past DOGM employee. The March 6, 1992 memo to Mr. Rick Olsen of SC3 provides a follow up to the March 5, 1992 meeting. In the memo I indicate the reduction in in-mine monitoring was suggested by the Operator because of the decrease in coal production. I also indicated that if the Operator wished to change the monitoring he should state why. The Operator has not justified the change. The Operator has provided some information in figures to show the pattern of measured flows and one water quality parameter over time but has failed to establish a relationship (in discussion) between patterns of flow data and the relation to the PHC. To support an increase in the definition of "significant flow" for in-mine monitoring this relationship must be established. Because the proposed increased flow parameter is linked to the rate of production a change in production should be included as a trigger mechanism to return to previous flow criteria.

Remaining Deficiency:

1. The Operator must define "significant" measurable flow and provide justification for the definition.

Original Deficiency #4

The Operator will reassess proposed well monitoring sites to assure compliance of monitoring potentially impacted aquifers identified by the PHC and meeting other applicable R645 ground water regulations.

Proposal:

Monitoring well information has been updated on page 7-90. Also a piezometric map has been included on exhibit 7.21-1 geologic logs have been added as Appendix 6-B and well monitoring data has been summarized in Figures 7.28-9 through 7.28-12.

Analysis:

The aquifer below the lowest seam to be mined does not have a series of wells. The Castle Gate Sandstone, has one well discuss why this plan adequately monitors all potentially impacted aquifers.

Remaining Deficiency:

1. The Operator will re-asses proposed well monitoring sites to assure compliance of monitoring potentially impacted aquifers identified by the PHC and meeting other applicable R645 ground water regulations.

R645-301-731.220 Surface Water Monitoring

Original Deficiency #1:

Include analysis for surface water quality according to use in an extend annual parameter list or, demonstrate that the potential for those contaminates do not exist from mining activities.

Proposal:

Page 7-20 has been revised to include a discussion on compliance with the Utah Division of Health numerical standards.

Analysis:

SC3 in conjunction with the Banning Load out facilities samples coal for many of the contaminates identified by the Division of Health numerical standards. However, the Operator has not adequately addressed how the sampling identifies the potential for water impacts. The samples used are from mixed coal sources and are not what is likely to be found in the roof and floor of the mine and in isolated areas. If the Operator proposes to use this method for demonstration then the sampling should include roof and floor samples and should describe the method for analyzation. The method of analyzing should be shown to be acceptable to demonstrate potential water quality impacts. The Applicant should also provide the sampling in the annual report. As a general rule the Division accepts a 5 year extended parameter list (baseline parameters as listed in the guideline) to be completed prior to the 5 year renewal which, over time, describes the occurrence of constituents.

The Operator also indicates a few parameters have exceeded standards in the baseline sampling data. These parameters should be identified with a discussion provided relating the parameters to monitoring needs for the PHC.

Remaining Deficiency:

1. Include analysis for surface water quality according to use in an extend annual parameter list or, demonstrate that the potential for those contaminates do not exist from mining activities. Note: A commitment for the extended baseline parameter list sampled prior to the five year renewal **may** be acceptable.

Original Deficiency #2:

Include Monitoring sites G-1 and G-2 in the surface water monitoring program.

Proposal:

The presently approved surface water monitoring points include G-1, G-2 and G-5.

As authorized by the February 4, 1987, Five Year Permit Approval sites G-1 and G-2 were included to replace site G-4. Site G-3 has never been monitored in conjunction with the Soldier Creek Canyon Mine. Pages 7-93 and 7-97 have been revised to clarify the surface water monitoring points.

Analysis:

As discussed in the March 5 meeting a error was made to the referenced sites. Sites of concern where G-3 and G-4.

The Operator proposes sites G-1 and G-2 in the head water area accommodate the expanded boundaries. I agree it its necessary to measure the sites located in these areas due to the prevailing direction of ground water movement and thus potential baseline flow contributions. In order to determine the full potential impacts it is necessary to maintain sites above and below the region of the fracture zone where the mine is receiving inflows. The Operator has already mined under the stream in the location of surface sites G-3 and G-4. Impacts such as loss of baseline flow from the junction of the two tributaries can continue to be monitored whereas, the monitored sites at the headwaters cannot. The lower tributary could show potential impacts in decreased base flow but would not be able to detect which tributary is impacted, and would include mine water discharge influences.

Significant inflows are occurring in the mine along the fracture. The fracture appears to lie under the Soldier Creek and Pine Creek streams. The Operator indicates there is no evidence the fracture extends significantly beyond the Blackhawk formation page 7-81b. However, the fracture may have crated a zone of more porous materials above the Blackhawk creating a significant recharge zone. The Operator indicates on page 7-87a the monitoring will be used to monitor impacts during and after mining.

The Operator proposes that the surface water monitoring locations G-1, G-2 and G-5 will be used. These points in the presented Figures 7.28-24 through 7.28-26 are seldom sampled on the same days. How will these stations be used to support the determination that surface flow from the stream is not contributing to fracture flow?

Remaining Deficiency:

1. Since the Operator does not propose to monitor the sites G-3 and G-4. Provide a monitoring plan, or sufficient information that will demonstrate that surface flow is not intercepted by the fracture and is separate from in-mine water flows.

R645-301-731.300

Acid- and Toxic Forming Materials

Original Deficiency #1:

Provide methods to be used to identify and provide for safe, temporary storage.

Identify where temporary storage will be placed, and how protection of hydrologic resources will be achieved.

Proposal:

The Operator does not plan on having or putting acid- or toxic-forming material in the sediment pond. Therefore, temporary storage of this material will not be necessary.

Analysis:

Page 7-94 of the MRP refers to section 5.33 and 7.42 as containing the design details of the water protection plan: these sections contain details on impoundments and sediment control measures such as ASCA's, ponds, diversions, and road drainages. On page 5-46 of the MRP Soldier Creek Coal Company commits to analyze the underground development waste and excess spoil temporarily stockpiled at the minesite, for more than 3 months, for acid-and toxic-forming materials. Results of the analyses will be submitted to DOGM annually. Exhibit 5.25-1a shows the location of the temporary waste storage at the mine site. It is stated that runoff control and sampling will minimize impact to the environment, and no mitigation plan is given. Once the waste rock disposal site is approved, the material will be moved from temporary storage to the waste rock disposal site.

On page 5-49 is a commitment to submit a mitigation plan to DOGM if acid- and toxic-forming materials are identified at the waste rock disposal site, and that after approval of the mitigation plan, all acid- and toxic-forming waste will be buried within 30 days of its exposure at the minesite. This assumes that burial will be a suitable treatment for all cases and constitutes a mitigation plan itself, here as part of the MRP.

Remaining Deficiencies:

1. Information on identification and permanent disposal of acid- and toxic-forming waste is in the MRP, but it is scattered and not concise.
2. Plans for protecting hydrologic resources from acid and toxic drainage from the temporary storage site are not clear and concise (see following section).

Original Deficiency #2:

The Operator must provide a design, such as a clay liner, for the pond that ensures leachate and drainage does not degrade surface or underground water (as required in R645-301-528.300). The Operator must include a sampling and pond waste removal plan that will assure proper disposal and handling of the pond waste materials.

Proposal:

The statement that drainage from acid- and toxic-forming materials would report to the sediment pond has been removed from the MRP.

Analysis:

Exhibits 5.25-1a and 7.32-1 show drainage from the temporary waste storage area and potentially acid- and toxic-forming materials stored there will report to the sediment pond. No provision for runoff or sediment control is shown.

On pages 5-49 and 5-56 sediment from the pond is referred to as spoil, but sediment from the sediment pond should be considered as underground development waste and sampled and handled in the same manner as other material of the same classification. Soldier Creek Coal Company commits to sampling the sediment from the pond on page 7-116. If unacceptable levels are found the sediment will be given special handling, but this handling is not specified.

Remaining Deficiency:

1. The MRP does not include a plan indicating measures to be taken to avoid acid or toxic drainage from materials temporarily stored at the mine site into surface water and ground water, and how materials will be temporarily stored in a manner that will protect surface water and ground water.

R645-301-765

Permanent Casing and Sealing of Wells

Original Deficiency #3:

Provide information on method of closure for each well previously monitored but no longer used, and the borings mentioned in the Supplemental Hydrologic Study (page 17).

Proposal:

The borings mentioned in Supplemental Hydrologic Study page 17 (SC-2, SC-8 and SC-10) are shallow in-mine drill holes which did not intercept any established aquifers. Since these holes may be totally consumed by future mining activities, closure was not deemed necessary.

Analysis:

The explanation in Soldier Creek Coal Company's reply to the deficiency should be included in the MRP to explain closure of these holes.

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Technical Deficiencies
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Remaining Deficiency:

1. The MRP does not contain information on the method of closure for each well previously monitored but no longer used and for the borings mentioned on page 17 in the Supplemental Hydrologic Study.

SC3TECH.DEF