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State of Utah

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

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October 11, 1991

Mr. William R. Skaggs
Blue Blaze Coal Company
P. O. Box 784
Price, Utah 84501

Dear Mr. Skaggs:

Re: Second Technical Deficiency Document, Blue Blaze Coal Company, Blue Blaze Mine, PRO/007/020, Folder #2, Carbon County, Utah

The Division has reviewed updated information submitted through October 3, 1991 and found technical deficiencies still exist in the Blue Blaze Permit Application Package. It is imperative to note that pursuant to R614-301-121.100 and R614-301-132, **the permit application must contain current information and technical analyses must be planned by or under the direction of a professional qualified in the subject to be analyzed.** This point is being emphasized because the important comments in the technical deficiency relate to the dated information submitted, as well as the necessity that the technical information in the permit application must be prepared by a professional qualified in the subject to be analyzed.

The Blue Blaze Mine permit application is based on all of the regulations in the Coal Regulatory Program. The Division must make technical findings, pursuant to R614-300-133, based on site specific information for the Blue Blaze Coal Mine.

The finding pursuant to R614-300-133.100, states that all of the information in the permit must be complete and accurate and the applicant has complied with all of the requirements of the State Program.

According to R614-300-133.400, the Division must make an assessment of the probable cumulative impacts of all anticipated coal mining and reclamation operations on the hydrologic balance in the cumulative impact area and determine that the proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area. This finding must be based on site specific information and conclusively determined before a permit is issued. The enclosed

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technical deficiencies have determined that the PHC data, as presented, is not current, nor technically adequate for the Division to make this finding.

Another common theme in the deficiencies is a recurring problem. In previous reviews, corrections have been made to solve a problem. However, the correction was only partially made. All other incorrect information related to the subject was not deleted, which therefore, makes the application inaccurate.

If you have any questions, please call me.

Sincerely,



Pamela Grubaugh-Littig
Permit Supervisor

PGL/jbe
Enclosure
cc: Dianne Nielson
Lowell Braxton
A Team
AT007020D

TECHNICAL DEFICIENCIES
BLUE BLAZE COAL COMPANY
Carbon County, Utah
PRO/007/020
October 1991

R614-301-100 GENERAL CONTENTS (SMW)

117.200 Proof of publication A copy of the newspaper advertisement for a permit must be made a part of the application not later than four (4) weeks after publication.

R614-301-200 SOILS (HS)

222.100 Soil Survey The map unit delineation for the Brycan loam in the vicinity of pit #7 is incorrect. The steep slopes (approximately 2h:1v) east of the ephemeral channel, north of cross-section H¹-H¹ is covered with coal waste. Therefore, this area should be eliminated from consideration as a source of suitable topsoil/subsoil and must not be salvaged. All boundary changes must be revised on both Plates 8-1 and 8-2. Volume topsoil calculations must also be revised on page 8-10.

The Soils Map (Plate 8-1) does not coincide with the Topsoil Isopach and Handling Map (Plate 8-2). Isopach boundaries should coincide, approximately, with soil map unit boundaries. However, further refinement of isopach boundaries to delineate phase and inclusion variation and salvage depths is required (refer to R614-301-232).

231.300 Operational Plan There are discrepancies and duplication in the physiochemical soil laboratory results submitted in Appendix 5. Particular depth intervals from pits #1-7 have been analyzed twice with varying results. Please explain these anomalies.

232. Topsoil and Subsoil removal As required in this section, topsoil must be removed as a separate layer from the area to be disturbed, and segregated. Therefore, all topsoil (A or E horizon) must be removed and stockpiled separately. Material which underlies the A or E horizon, B and/or C horizons which meet suitability requirement for substitute topsoil (i.e., see Division Guidelines for Topsoil and Overburden, Table 2), must also be stockpiled separately.

The soils present on site have highly variable horizon depths. Taxonomic classifications grant large ranges for topsoil thickness (i.e., Senchert, mollic epipedon 18-35 inches thick) and includes dissimilar soils within map units (Shupert-Winettie Complex may include 15% Haverdad loam and 5% Glenberg family). Estimating salvageable topsoil and subsoil volumes at this soil survey intensity (Order 2 - Personal communication with Leland Sasser, Soil Conservation Service) is less than

adequate and would require further profile descriptions and analysis within individual map units. Volume estimates of salvageable soil are preliminary at this time. Therefore, the operator must commit to either dissecting soil map units into more definable verifiable depth categories or have a professional soil scientist, approved by the Division, on site during the entire soil salvage operation to insure proper separation and stockpiling of topsoil (A or E horizons) and subsoil (B and/or C horizons)

The entire area of undisturbed native soils within the proposed disturbance has not been designated for soil salvage or excluded from the requirements of R614-301-232.100 (i.e., area southeast of Pits #4, #5, & #6 and the Fan Portal).

Please correct the following discrepancies on Plate 8-1: the area shaded in yellow represents pre-law disturbance, however, area 2, 3, and 7 on Plate 8-2 show removal of topsoil and subsoil from shaded area; soil pits 2, 3 and 7 were described as pedons Rabbitex, Winetti, Brycan, respectively.

The map legend on Plate 8-2, "Area to be topsoiled and revegetated," would lead you to believe that no reclamation will occur. The map designation for "Areas to topsoil and revegetate" (i.e., solid 45° angle line) has been omitted from the actual map. Please make necessary revisions.

Please revise the topsoil mass balance calculation on page 8-10 to eliminate the quantity of topsoil from area #1 (i.e., 1302.8 yds³) from topsoil volume summation.

234. Topsoil Storage All proposed cross-sections and plan view maps show flat-topped topsoil stockpiles. In order to prevent ponding on the stockpiles, the proposed designs must be changed to provide positive drainage off the top surface of the stockpiles.

The applicant must commit to fertilizing and mulching the topsoil stockpiles so as to insure interim revegetation success.

242. Redistribution The applicant states on page 8-21 "A removal of all coal waste greater than 50% fines and oil or grease or contaminated material. . ." Material contaminated with oil and grease is considered toxic material and must be disposed of away from drainage courses and covered with 4 feet of suitable material. The 50% coal fine factor is nebulous (50% by weight ? 50% by volume) and must be substantiated as suitable backfill material and adequate topsoil material for final reclamation. The applicant must revise these statements and/or substantiate the conclusion that 50% coal in backfilled areas will not negatively effect reclaimability, water quality and slope stability.

242.200 The applicant must commit to deep ripping the spoil surface prior to topsoil redistribution.

243. Soil Nutrient and Amendments The applicant must fully describe the soil nutrient and amendment plan. This must include frequency of sample collection and laboratory methodologies employed.

R614-301-300 BIOLOGY (SMW)

The following technical deficiencies were not addressed in the Technical Deficiency Response dated June 1991 and must be adequately addressed prior to permit approval.

321.100 Vegetation Information Plate 9-2 is contradictory to Plate 3-1. Proposed disturbances and plant communities are unclear and must be clarified.

331. Operation Plan Page 3-42 commits to interim revegetation and refers to section 9-7. Section 9-7 on page 9-4 refers to the vegetation maps. Clarification and an explanation is needed.

On page 3-52, the permittee commits to using the interim seed mixture, if available. The permittee must also commit to notifying and obtaining Division approval prior to any substitutions in the seed mixture.

333. The permittee plans to culvert the small tributary to the North Fork of Gordon Creek under the access road and then divert the water into an open ditch around the sediment pond and into Gordon Creek. The permittee states on page 10-57 that a buffer zone will be placed along this stream. It is the Division's experience that any open channel this close to a mining operation will be contaminated with airborne coal fines and that this is a site for violations. The Division suggests that the stream be enclosed throughout the operational area or the applicant must detail the buffer zone protection standards. Please correct the plan as needed.

341.230 Revegetation Hydromulch is not a suitable mulch for slopes in final reclamation. The permittee must now commit to using erosion control matting on all slopes. If during interim revegetation the permittee can demonstrate hydromulch will control erosion and provide for plant establishment, the Division will, at that time, consider the request for the use of hydromulch.

341.250 Qualitative methods of revegetation monitoring must be performed annually. Quantitative vegetation sampling methods must be done in years 2, 5, 7, 9 and 10. A commitment is required in the plan.

356. Revegetation: Standards for Success. This entire section is unclear, confusing and contradictory. In certain sections of the permit, reference areas will be used and they are shown on the maps. However, no reference area data is given. In other sections of the permit, the permittee states success will be judged on existing ground cover under R614-301-356.250 of previously mined areas.

Plate 9-2 indicates almost all of the area had been previously mined, page 3-29 states only 5.2 acres of previous disturbance, and Plate 3-1 shows approximately two acres of proposed disturbance which was not previously disturbed. These contradiction must be corrected.

Any area which will be disturbed in mining which was not previously disturbed, greater than one acre in size, must have a corresponding reference area, range site, or premined data to use as a success standard. Reference area standards must be stated for cover, production and shrub density. Areas which were previously mined may use the success standard as stated in R614-301-356.250. In either case, the success standard must be clearly stated and delineated for each area. The data must be collected, summarized and submitted in the permit application.

The applicant must review chapters 3 and 9 for consistency. Success standards and premine vegetation information must be stated clearly and be consistent throughout the text. The text must also be consistent with the maps. Please correct so that the entire permit application is accurate.

R614-301-500 ENGINEERING (JK & HS)

513.300 Underground Development Waste The applicant states on page 3-7 that "All development and non-coal waste rock will be disposed of in underground 'gob' areas which consist of entries and cross-cuts no longer needed for the operation of the maine with the approval of the Division and MSHA." However, in accordance with this section, the operator must submit a plan to be approved by MSHA and the Division which includes, but is not limited to, the following: a description of the operation and maintenance of the disposal facility; a description of

the source and quality of waste to be stowed; areas to be backfilled; percent of the mine void to be filled; method of constructing underground retaining walls; and meet the requirements of R614-301-746.400 et. seq., R614-301-536.700 et. seq., and R614-301-536.200 et. seq. Please submit plans for disposing underground development waste underground.

525.300 Public Notice of Proposed Mining The applicant must include, in the PAP, copies of the letters sent to surface property owners notifying them that mining will take place beneath their properties.

536. Coal Mine Waste All underground development waste and coal mine waste temporarily stored on the surface must be analyzed to determine the acid-and/or toxic-forming potential of the material. Waste samples must be taken immediately upon placement above ground. Please revise text to include sampling procedures, laboratory analysis, and methodologies employed.

The material located in the vicinity of test pit #8 is considered toxic-forming in accordance with the Division Guidelines for the Management of Topsoil and Overburden, Table 2. Therefore, the applicant must remove the statement on page 3-12 which indicates the non-toxic nature of this material.

On page 3-28, the applicant refers to hauling mine process materials (waste) to the Carbon County Land Fill. This statement is in direct violation of R614-301-528.310 and must be entirely removed from the permit application.

542.800 Narratives, Maps and Plans The reclamation cost estimate found on pages 3-60 through 3-63 is still not verifiable and, therefore, is still not adequate. As states in the June, 1991 Technical Deficiencies, the cost estimate must include detail as to how the applicant arrived at the time estimates stated therein. For example, in item 3: soil placement (Backfilling and Grading, page 3-60), it is not enough to just say that backfilling and grading of the Upper Pad will take seven weeks. The text must include some detail showing how the estimate of seven weeks was arrived at. Also, the cut-and-fill volume estimates found on pages 3-47a (which was submitted in response to the June, 1991 Technical Deficiencies), which should form the basis of the reclamation cost estimate, contain erroneous data and are incorrectly done as well. If these data are taken from Plates 3-2, 3-2a, and 3-2b, as is stated at the top of page 3-47A, then these data are not reclamation volume data at all, but operational volume data. Thus, they have nothing to do with reclamation and are entirely out of place.

553.100 Backfilling and Grading As stated in the June, 1991 Technical Deficiencies, the applicant must provide mass balance calculations to show that there is adequate volume of material to: 1) achieve the anticipated operational surface

configuration, and 2) achieve the anticipated post-mining surface configuration. It is very important to remember that volume adequacy must be demonstrated, by separate mass balance calculations, for both the operation and the reclamation of this mine. In addition, the mass balance calculations must be based either on the cross sections shown on Plates 3-2, 3-2a, 3-2b, 3-7a, and 3-7b, or else on other cross sections provided by the applicant, and the applicant must state which cross sections are used. This writer emphasizes this because there appears to be some confusion in the applicant's mind regarding the mass balance calculations. Plate 3-2 contains different information from Plates 3-2a and 3-2b. And Plates 3-2, 3-2a, and 3-2b are different from Plates 3-7a and 3-7b.

R614-301-700 HYDROLOGY (TM)

742.100 Baseline Information: Ground Water The applicant has presented drill hole information from Century Geophysical Corporation stating that, "A Gamma Ray Probe was used by Century Geophysical Corporation in the LMC drill holes to check for fluid in impervious layers" (page 7-6, PAP). The Division cannot accept this information as a valid explanation for the occurrence of formation water, per the requirements of the rules, "Ground-water quantity descriptions will include, at a minimum, approximate rates of discharge or usage and depth to the water in the coal seam, and each water-bearing stratum above and potentially impacted stratum below the coal seam." The applicant must be made aware that Gamma Logs cannot be used to ascertain the depth to water in the coal seam, and each water-bearing stratum above and potentially impacted stratum below the coal seam. For example, hole LMC 1 water level was determined to be found at 232 feet when in reality all the Gamma log was saying was that the water level in the hole following drilling was 232 feet below the surface. Without the driller's log documenting water occurrence and core data this does not indicate that water occurred at this elevation, but shows that the combination of drill fluids and water rose to this level in the hole.

The applicant must provide, ground-water quantity descriptions that include, at a minimum, approximate rates of discharge or usage and depth to the water in the coal seam, and each water-bearing stratum above and potentially impacted stratum below the coal seam. A verified driller's log documenting water occurrence within each stratum is required.

724.200 Baseline Information: Surface Water The applicant has analyzed baseline water quality from springs designated station (1, 2, 4) and surface water sites (3, 5, 6, 7, 8) as shown in Table 7-1. Two sites, 7 and 8, have had data collected only in 1991. Water rights have been listed, Appendix 1, and shown on Plate Appendix 1.

Before any mining can occur in this impact area, two years of flow and quality data will have had to have been collected at these sites and the data summarized. A commitment to this effect is found on page 7-64a, PAP. The following water rights are listed but not shown (777, 778, 1401, 1402, 1413, 1467, 1468, 1469, 1470, 1471, 1472, 1948, 1949, 1950, 1954, 1955, 1956, 2664, 3506, 3612, 3613, 3619, 3672, 4095, 4096) and the following rights are shown but not listed (329, 3614, 3685, 3689) on Plate Appendix 1. These rights must be identified on Plate, Appendix 1, or listed in the text.

724.500 Supplemental Information The applicant has chosen to use data collected in September 1976 from four logged drill holes to describe groundwater conditions on the Blue Blaze permit area. This information is referenced on pages 7-6 and shown on Figure 1. This information is considered the supplemental information necessary to evaluate the probable hydrologic consequences of mining on groundwater but is inadequate.

Such supplemental information may be based upon drilling, aquifer tests, hydrogeologic analysis of the water-bearing strata, flood flows, or analysis of other water quality or quantity characteristics. The applicant must submit site-specific data so that an assessment of the Probable Cumulative Impacts of all anticipated coal mining and reclamation operations on the hydrologic balance in the cumulative impact area can be made. A determination that the proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area must also be made using site-specific groundwater information.

The applicant must provide a survey that shows whether aquifers or areas for the recharge of aquifers exist within the permit and adjacent area and whether subsidence, if it occurred, could cause material damage or diminution of reasonably foreseeable use of aquifers or areas for the recharge of aquifers. Renewable resource survey information must be incorporated into the subsidence control plan as required by R614-301-525.

728. Probable Hydrologic Consequences (PHC) Determination The applicant has not provided accurate groundwater information from drill holes LMC 1-4 explained in the deficiency of R-614-301-724.100. Until this information is submitted, the PHC cannot be considered complete and accurate and, therefore, cannot be reviewed.

731.600 Stream Buffer Zones The applicant has described on page 7-31 of the PAP that the North Fork of Gordon Creek is ephemeral but demonstrated by his own data found on pages 7-14 through 7-14b of the PAP that the North Fork of Gordon Creek is considered intermittent. This conclusion is based on the following definition found on page 6 of the rules, "a stream, or reach of stream, that is below the

local water table for at least some part of the year and obtains its flow from both surface runoff and groundwater discharge." It is also noted on page 10-57, section 10.6 Stream Buffer Determination that "the Blue Blaze No. 1 and No. 2 Mines will be located along an intermittent, stream...", in contradiction to the remainder of the text.

Based on the following definition of "intermittent stream" found on page 6 of the rules, "a stream, or reach of stream, that is below the local water table for at least some part of the year and obtains its flow from both surface runoff and groundwater discharge," the references to the North Fork of Gordon Creek as a Ephemeral drainage in the PAP is inaccurate and must be changed. A finding that "Coal mining and reclamation operations will not cause or contribute to the violation of applicable Utah or federal water quality standards and will not adversely affect the water quantity and quality or other environmental resources of the stream" must be made by the Division.

731.700 Cross Sections and Maps The applicant only describes using water pumped from North Fork of Gordon Creek through a 2 inch line to the mine on page 7-36.

The applicant must provide "a map showing the locations of water supply intakes for current users of surface water flowing into, out of and within a hydrologic area defined by the Division (i.e., permit area), and those surface waters which will receive discharges from affected areas in the proposed permit area."

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