Maps Needing to be updated

Plate #		Date updated to in copy 1
3-1		7/22/91
3-2		7/22/91
3-6		7/22/91
3-7		7/22/91
3-8		7/22/91
4-2		9/16/91
6-1		?
7-3	Missing	?
7-4	Missing	7/22/91
7-5	Missing	7/22/91
7-6	Missing	7/22/91

Section 8

SOIL RESOURCES

~~Section 8~~

~~SOIL RESOURCES~~

8.1 Scope

A soil inventory of the Blue Blaze Mines area was conducted to provide soil resource information to meet the requirements of the Utah Division of Oil, Gas and Mining (DOGM) and the Office of Surface Mining (OSM). ~~A soil inventory of the Blue Blaze No. 1 and 2 Mines was conducted to provide soil resource information to meet the requirements of the Utah Division of Oil, Gas and Mining and the Office of Surface Mining.~~ The soil survey was performed by Richard A. Foster, Soil Scientist, (USDA Soil Conservation Service) in February 13, 1990 (Section 8.3.1). ~~1990. (See in this section).~~ This is in addition to the soil survey which was performed by George Cook, (Range Conservationist), Earl Jensen, (Soil Scientist) and Gary Moreau, (District Conservationist) of the SCS in May 1980 (Appendix 5).

~~(District Conservationist) in May 1980. (See Appendices 5)~~

8.2 Methodology

Soil mapping of the Blue Blaze Mines area (Plate 8-1) is a refinement of USDA Soil Conservation Service manuscript mapping. The soils mapping was done by Patrick D. Collins (Botanist/Reclamation Specialist) using the information supplied by George Cook of the SCS as to the locations, types and depths of soils.

George Cook (SCS) and Richard A. Foster used the pit method to estimate depths and quality of the soil. Detailed pedon are described to depths of 60 inches.

~~Soil mapping of the Blue Blaze No. 1 and 2 mine (Plate 8-1) is a refinement of USDA Soil Conservation Service manuscript mapping. The Soils Mapping was done by Patrick D. Collins (Botanist/Reclamation Specialist) using the information supplied by the Soil Conservation Service as to the locations, types of soil and to what depths they exist. This was done with the report of George Cook, (Range Conservationist).~~

~~George Cook (Range Conservationist), and Richard A. Foster used the same method of pit digging to estimate to what depths the soil extends and the quality of the soil. Detailed pedon descriptions are described to depths of 60 inches or more,~~ or until bedrock, whichever was shallowest. These pits were dug below the No. 1 Mine area, up the canyon where new disturbance will occur, and at previously disturbed areas.

The soils to be saved for reclamation were tested at a approved laboratory using the DOGM guidelines. ~~These pits were made extending from below the No. 1 Mine area up the canyon where all disturbance will occur also locating all of the disturbed land areas which were previously disturbed.~~

~~The soils which are going to be saved for future reclamation were tested at a approved laboratory under the Divisions guidelines.~~ The parameters tested were pH, electrical conductivity, saturation percent, particle size, soluble Ca, Mg & Na, Total N, Nitrate-N, Organic carbon, available water capacity, rock fragments above 2mm size, ~~Organic carbon, Available water capacity, Rock fragments above 2mm size,~~ and soil color. Where a high pH was indicated, tests were preformed for Selenium and Boron.

Present and potential uses of the soils of the site have been evaluated based on Soil Conservation Service Soil Survey Interpretation information. ~~these tests were preformed for Selenium and Boron.~~

~~Present and potential uses of the soils of the site have been evaluated based on SCS Soil Survey Interpretation information.~~ The soils have no potential as cropland or pasture land. The soils have also been evaluated for the potential production as rangeland and their capability groups are given.

The soils have been correlated by the SCS. Classifications are based on morphology as described in the field, and to a lesser degree on the analytical data. Where analytical data do not support the field description the soils are classified according to the field description.

8.3 Soil Resource Information for the Mine Plan Area

8.3.1 Soils Identification

The soils at the Blue Blaze Mines were initially identified on site. ~~The soils at the Blue Blaze No. 1 and 2 Mines were initially examined by on sight identification.~~ This allowed the consultant to determine slopes, land forms, and vegetation patterns (See Section 8.2). The soil descriptions were compared with recorded characteristics of the soils in adjacent areas and in the official SCS series descriptions. ~~The soil descriptions were compared with recorded characteristics of the soils in adjacent areas and in the official Soil Conservation Service (SCS) series descriptions.~~ Map units are comprised of soil series and inclusions found within an area to make them site specific. The differences in symbols between the SCS report located in Appendix 5 and the new SCS guidelines dated June 1988 used on Plate 8-1, are as follows: ~~The comparison of the previous symbols of the Soil Conservation Service report located in Appendix 4 used in this PAP to the new Soil Conservation Service dated June 1988 located on the Soils Map 8-1, and changes are as follows:~~

FIA	=	Shupert-Winetti Complex
GIG	=	Curecanti
HIG	=	Senchert
JIB	=	Brycan Loam
DM	=	Mine Dumps (Previous Disturbed Area)

Shupert-Winetti Complex

The Shupert - Winetti complex consists of very deep, well drained, moderately permeable soils on narrow valley and canyon floors. These soils formed in alluvium derived from sandstone and shale. Slope is 1 to 8 percent. Elevation ranges from 4,600 to 7,200 feet but commonly is 5,200 to 6,400 feet. Average annual precipitation is 12 to 16 inches, and average annual air temperature is 43 to 45 degrees F.

These soils are fine-loamy, mixed (calcareous), frigid Typic Ustifluvents.

Brycan

The Brycan Series consists of very deep, well drained, moderately slowly permeable soils on alluvium derived from shale and sandstone. Slope is 3 to 8 percent. Elevation is 7,700 to 8,600 feet. Average

annual precipitation is 16 to 20 inches, and average annual air temperature is 38 to 45 degrees F.

These soils are fine-loamy, mixed Cumulic Haploborolls.

Curecanti

The Curecanti family consists of very deep, well drained, moderately permeable soils on mountain slopes. These soils formed in colluvium derived dominantly from sandstone and shale. Slope is 3 to 8 percent. Elevation is 6,800 to 9,000 feet. Average annual precipitation range from 16 to 20 inches, and average annual air temperature ranges from 38 to 45 degrees F.

These soils are loamy-skeletal, mixed Typic Argiborolls.

Senchert

The Senchert family consists of moderately deep, well drained, moderately permeable soils on mountain slopes, plateaus, and ridges. These soils formed in residuum and alluvium derived dominantly from sandstone and shale. Slope is 1 to 50 percent. Elevation is 8,000 to 10,100 feet. Average annual precipitation is 20 to 30 inches. An average annual air temperature is 36 to 38 degrees F. These soils are fine loamy, mixed Argic Pachic Cryoborolls.

A description of the soil sampled in Pits 1 through 7 follow.

Pit #1 - Shupert-Winetti Complex

Fine-loamy, mixed (calcareous), frigid Typic Ustifluvents. Colors are for dry soil unless otherwise noted.

A -- 0 to 6 inches (0 to 15.2 cm); light brownish gray (10YR 6/2) silty clay loam, dark grayish brown (10YR 4/2) moist; moderate thin platey structure paring to moderate fine subangular blocky; hard, firm, sticky and plastic; common fine, many very fine roots; many fine and very fine random tubular pores; moderately calcareous, lime is disseminated; strongly alkaline (pH 8.5); clear smooth boundary.

C1 -- 6 to 12 inches (15.2 to 30.5 cm); light brownish gray (10YR 6/2) silty clay loam, dark grayish brown (10YR 4/2) moist; moderate coarse subangular blocky structure; hard, firm; sticky and plastic; few dine, common very fine roots; common fine, many very fine random tubular pore; moderately calcareous, lime is disseminate; strongly alkaline (pH 8.5); clear smooth boundary.

C2 -- 12 to 26 inches (30.5 to 66 cm); light brownish gray (10YR 6/2) silty clay loam, dark grayish brown (10YR 4/2) moist; weak coarse and medium subangular blocky structure; hard, firm sticky and plastic; few dine and very fine roots; common fine, many very fine random tubular pore; moderately calcareous, lime is disseminate; strongly alkaline (pH 8.5); clear smooth boundary.

C3 -- 26 to 40 inches (66 to 101.6 cm); pale brown (10YR 6/3) sandy clay loam, dark grayish brown (10YR 4/2) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few very fine roots; few fine, common very fine random tubular pores; moderately calcareous, lime is disseminate; strongly alkaline (pH 8.5); clear smooth boundary.

C4 -- 40 to 57 inches (101.6 to 144.8 cm); pale brown (10YR 6/3)

loam, very dark grayish brown (10YR 3/2) moist; may fine distinct (10YR 5/8) mottles; massive; slightly hard, friable, slightly sticky and slightly plastic; few very fine roots; few fine and very fine random tubular pores; moderately calcareous lime is disseminated; strongly alkaline (pH 8.5); clear smooth boundary.

2C -- 57 to 65 inches (144.8 to 165.1 cm); very pale brown (10YR 7/4) loamy fine sand, brown (10YR 5/3) moist; common fine distinct (10YR 5/8) mottles; massive; soft, very friable, nonsticky and non plastic; few very fine random tubular pores; moderately calcareous, lime is disseminate; strongly alkaline (pH 8.5).

The C2 horizon has thin strata of material like the C# horizon. The C# horizon has thin strata of material like the C4 horizon.

Pit #2 - Shupert-Winetti Complex

Loamy-skeletal, mixed (calcareous), frigid Typic Ustifluvents. Colors are for dry soil unless otherwise noted. Moist colors are darker in the upper three horizons due to the presence of coal. This is a disturbed site.

C1 -- 0 to 6 inches (0 to 15.2 cm); pale brown (10YR 6/3) sandy lam, very dark gray (10YR 3/1) moist; moderate thin platey structure parting to weak fine and very fine subangular blocky; slightly hard, friable, slightly sticky and slightly plastic; few coarse and medium, many fine and very fine roots; few medium and fine, many very fine random tubular pore; moderately calcareous, lime is disseminate; moderately alkaline (pH) 8.4); clear smooth boundary.

C2 -- 6 to 19 inches (15.2 to 48.3 cm); pale brown (10YR 6/3) loam, very dark grayish brown (10YR 3/2) moist; weak medium and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few medium and fine, many very fine roots; few medium and fine, many very fine random tubular pores; moderately calcareous, lime is disseminated; strongly alkaline (pH 8.5); clear wavy boundary.

C3 -- 19 to 34 inches (48.3 to 86.4 cm); light yellowish brown (10YR 6/4) extremely gravelly andy clay loam, dark grayish brown (10YR 4/2) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few medium, fine, and very fine roots; few fine, common very fine random tubular pores; 10 percent cobble, 50 percent gravel; moderately calcareous, lime is disseminated; strongly alkaline (pH 8.3); gradual wavy boundary.

C4 -- 34 to 47 inches (86.4 to 119.4 cm); pale brown (10YR 6/3) extremely gravelly loam, dark grayish brown (10YR 4/2) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few very fine roots; many fine and very interstitial pores; 20 percent cobble, 50 percent gravel; moderately calcareous, lime is disseminate; moderately alkaline (pH 8.3); gradual wavy boundary.

C5 -- 47 to 60 inches (119.4 to 152.4 cm); light yellowish brown (10YR 6/4) extremely cobbly sandy clay loam, dark grayish brown (10YR 4/2) moist; massive; hard, firm, slightly sticky and slightly plastic; many fine and very fine interstitial pore; 10 percent stone, 55 percent cobble, 10 percent gravel; moderately calcareous, lime is disseminated; moderately alkaline (pH 8.4).

Pit #3 - Rabbitex

fine-loamy, mixed Typic Calciboroll. Colors are for dry soil unless otherwise noted.

A -- 0 to 5 inches (0 to 12.7 cm); brown (10YR 5/3) gravelly loam, dark grayish brown (10YR 4/2) moist; weak medium subangular blocky structure parting to moderate fine and very fine subangular blocky; slightly hard, friable, slightly sticky and slightly plastic; few coarse, common medium, many fine and very fine roots; common medium and fine, many very fine random tubular pores; 25 percent gravel; moderately calcareous, lime is disseminated; moderately alkaline (pH 8.4); clear wavy boundary.

Bk1 -- 5 to 20 inches (12.7 to 50.8); brown (10YR 5/3) gravelly loam, dark grayish brown (10YR 4/2) moist; moderate medium and fine subangular blocky structure; slightly hard,friable, slightly sticky and slightly plastic; few coarse, medium, common fine, many very fine roots; common fine, many very fine random tubular pores; 20 percent gravel; moderately calcareous, lime is disseminated and in thin coatings on rock fragments; moderately alkaline (pH 8.4); gradual wavy boundary.

Bk2 -- 20 to 45 inches (50.8 to 114.3 cm); brown (10YR 5/3) gravelly loam, dark grayish brown (10YR 4/2) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few coarse, medium, common fine and very fine roots; few fine, many very fine random tubular pore; 5 percent cobble, 20 percent gravel; moderately calcareous, lime is disseminated and in thin coatings on rock fragments; strongly alkaline (pH 8.5); clear wavy boundary.

Bk3 -- 45 to 51 inches (114.3 to 129.5 cm); yellowish brown (10YR 5/4) very gravelly loam, dark brown (10YR 4.3) moist; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few coarse, medium and fine, common very fine roots; few fine, common very fine random tubular pores; 5 percent cobble, 40 percent thin coatings on rock fragments; strongly alkaline (pH 8.5); clear wavy boundary.

Bk4 -- 51 to 70 inches (129.5 to 177.8 cm); brown (10YR 5/3) gravelly loam, dark grayish brown (10YR 4/2) moist; moderately medium and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few coarse, medium, fine, and very fine roots; few fine and very fine random tubular pore; 25 percent gravel; moderately calcareous, lime is disseminated and in few fine veins and thin coatings on rock fragments; strongly alkaline (pH 8.5).

This soil is an inclusion in the Curecanti mapping unit and is found predominantly at the base of steeper slopes.

Pit #4 - Shupert-Winetti Complex

Loamy-skeletal, mixed (calcareous), frigid Typic Ustifluvent. Colors are for dry soil unless otherwise noted. Moist colors are darker due to the presence of coal.

A -- 0 to 10 inches (0 to 25.4 cm); pale brown (10YR 6/3) loam, dark grayish brown (10YR 4/2) moist; moderate medium and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common medium and fine, many very fine roots;

common medium, many fine and very fine random tubular pores; moderately calcareous, lime is disseminated; strongly alkaline (pH 8.5); clear smooth boundary.

C1 -- 10 to 17 inches (25.4 to 43.2 cm); pale brown (10YR 6/3) loam, dark grayish brown (10YR 4/2) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few medium, common fine and very fine roots; few medium, common fine and very fine random tubular pore; 10 percent gravel; moderately calcareous, lime is disseminated; strongly alkaline (pH 8.5); gradual wavy boundary.

C2 -- 17 to 35 inches (43.2 to 88.9 cm); pale brown (10YR 6/3) very cobbly loam, dark grayish brown (10YR 4/2) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few fine and very fine roots; few fine, common very fine random tubular pores; 10 per cent stone, 15 percent cobble, 15 percent gravel; moderately calcareous, lime is disseminated; strongly alkaline (pH 8.5); gradual wavy boundary.

C3 -- 35 to 60 inches (88.9 to 152.4 cm); light yellowish brown (10YR 6/4) extremely cobbly sandy clay loam, dark grayish brown (10YR 4/2) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few fine and very fine roots; few fine and very fine random tubular pores; 10 percent stone, 20 percent cobble, 30 percent gravel; moderately calcareous, lime is disseminated; strongly alkaline (pH 8.5)

Pit #5 - Brycan

Fine-loamy, mixed Cumulic Haploborolls. Colors are for dry soil unless otherwise noted. Less than 5 percent stone and cobbles on the surface.

A1 -- 0 to 8 inches (0 to 20.3 cm); dark brown (10YR 4/3) loam, very dark brown (10YR 2/2) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few medium, common fine, many very fine roots; few medium, common fine, many very fine random tubular pores; 5 percent gravel; noncalcareous; moderately alkaline (pH 8.2); clear smooth boundary.

A2 -- 8 to 18 inches (20.3 to 45.7 cm); dark brown (10YR 4/3) gravelly loam, very dark brown (10YR 2/2) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few medium and fine, common very fine roots; common medium and fine, many very fine random tubular pores; 20 percent gravel; noncalcareous; moderately alkaline (pH 8,2); gradual wavy boundary.

A3 -- 18 to 43 inches (45.7 to 109.2 cm); dark brown (10YR 4/3) loam, very dark brown (10YR 2/2) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and lightly plastic; few fine and very fine roots; few fine, common very fine random tubular pores; 5 percent gravel; noncalcareous; moderately alkaline (pH 8.2); clear wavy boundary.

C -- 43 to 60 inches (109.2 to 152.4 cm); pale brown (10YR 6/3) very cobbly lam, brown (10YR 4/3) moist; massive slightly hard, friable, slightly sticky and slightly plastic; few fine and very fine roots few fine and very fine random tubular pores; 20 percent cobble, 30 percent gravel; slightly calcareous, lime is disseminated; moderately alkaline (pH 8.2).

Pit #6 -Shupert-Winetti Complex

Fine-loamy, mixed (calcareous), frigid Typic Ustifluvent. Colors are for dry soil unless otherwise noted.

A -- 0 to 5 inches (0 to 12.7 cm); pale brown (10YR 6/3) sandy clay loam, dark grayish brown (10YR 4/2) moist; moderate medium and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common coarse, medium, fine and very fine roots; common medium, many fine and very fine random tubular pores; moderately calcareous, lime is disseminated; moderately alkaline (pH 8.2); clear wavy boundary.

C1 -- 5 to 14 inches (12.7 to 35.6 cm); pale brown (10YR 6/3) sandy loam, dark grayish brown (10YR 4/2) moist; massive; slightly hard friable, slightly sticky and slightly plastic; few coarse, medium, and fine, common very fine roots few medium, common fine, many very fine random tubular pores; 5 percent gravel; moderately calcareous, lime is disseminated; moderately alkaline (pH 8.2); clear wavy boundary.

C2 -- 14 to 18 inches (35.6 to 45.7 cm); pale brown (10YR 6/3) silt loam, dark grayish brown (10YR 4/2) moist; massive; slightly hard friable slightly sticky and slightly plastic; few medium and fine, common very fine roots; few medium and fine, many very fine random tubular pores; 5 percent gravel; slightly calcareous, lime is disseminated; strongly alkaline (pH 8.6): clear wavy boundary.

C3 -- 18 to 28 inches (45.7 to 71.1 cm); pale brown (10YR 6/3) very gravelly loam, dark grayish brown (10YR 4/2) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few fine, common very fine roots; few fine, common very fine random tubular pore; 40 percent gravel; moderately calcareous, lime is disseminated; strongly alkaline (pH 8.5); gradual wavy boundary.

C4 -- 28 to 48 inches (71.1 to 121.9 cm); pale brown (10YR 6/3) sandy clay loam, dark grayish brown (10YR 4/2) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few fine and very fine roots; few fine, common very fine random tubular pores; 10 percent gravel with thin lenses of 50 percent gravel; moderately calcareous, lime is disseminated; strongly alkaline (pH 8.5); gradual wavy boundary.

C5 -- 48 to 60 inches (121.9 to 152.4 cm); pale brown (10YR 6/3) loam, dark grayish brown (10YR 4/2) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few fine and very fine roots; few fine, common very fine random tubular pores; 5 percent gravel; slightly calcareous, lime is disseminated; moderately alkaline (pH 8.4).

Pit #7 - Brycan

Fine-loamy, mixed Cumulic Haploborolls. Colors are for dry soil unless otherwise noted.

A1 -- 0 to 10 inches (0 to 25.4 cm); brown (10YR 5/3) loam, very dark brown (10YR 2/2) moist moderate medium and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few coarse and medium, common fine and very fine roots; few medium, common fine, many very fine random tubular pores; 5 percent gravel; slightly calcareous, lime is disseminated; moderately alkaline (pH 8.2); clear wavy boundary.

A2 -- 10 to 17 inches (25.4 to 43.2 cm); brown (10YR 5/3) loam, very dark grayish brown (10YR 3/2) moist; moderate medium and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few coarse, medium, and fine, common very fine roots; few fine, common very fine random tubular pores; 5 percent gravel; noncalcareous; moderately alkaline (pH 8.2); clear wavy boundary.

A3 -- 17 to 34 inches (43.2 to 86.4 cm); pale brown (10YR 5/3) loam, very dark grayish brown (10YR 3/2) moist; weak medium sub angular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few coarse, medium, and fine, common very fine roots; few fine, common very fine random tubular pores; 5 percent gravel; noncalcareous; moderately alkaline (pH 8.2); clear wavy boundary.

C1 -- 34 to 52 inches (86.4 to 132.1 cm); pale brown (10YR 6/3) clay loam, very dark grayish brown (10YR 3/2) moist; massive; hard, firm, sticky and plastic; few fine and very fine roots; few fine, common very fine random tubular pores; noncalcareous; moderately alkaline (pH 8.2); abrupt wavy boundary.

C2 -- 52 to 60 inches (132.1 to 152.4 cm); light yellowish brown (10YR 6/4) clay loam, dark grayish brown (10YR 4/2) moist; massive; slightly hard, friable, sticky and plastic; few very fine roots; few fine and very fine random tubular pores; slightly calcareous, lime is disseminated; moderately alkaline (pH 8.2).

8.3.2 Soil Series Descriptions

Disturbed Land

The disturbed mine area consists of generally deep,
~~Disturbed Land Material~~

~~The disturbed land material consists of generally deep,~~ nearly level to nearly vertical, moderately well-drained materials. The fill materials are derived from sandstone, ~~These materials are fill derived from sandstone,~~ shale, and coal from previous mining operations. The fill material comprise most of the proposed mine area. The native vegetation has been previously disturbed in the mine area.

The annual precipitation is 16 to 20 inches. The available water capacity is moderate to low and permeability is moderate. The mean annual air temperature ranges from 38 degrees to 45 degrees F. ~~The annual precipitation is 16 to 20 inches. The mean annual air temperature ranges from 38 degrees F. to 45 degrees F.~~ and the frost free period is 60 to 120 days.

Soils are identified by four categories (FIA, GIG, HIG, JIB) and are identified on plates and in the text as such. Depths and types of soil were identified by SCS. The topsoil to be saved for reclamation is also identified by category (See Plate 8-2 and Section 8.2). ~~The native vegetation has been disturbed in the mine area.~~

~~The availale water capacity is moderate to low and permeability is moderate. These soils were used for previous mining activities. A description of disturbed land fill material, comprises most of the area for the proposed mine.~~

~~Soils are identified by four different catagories and are mapped as such. Depths and types of soil were identified by SCS also the area which they cover allows the amount of topsoil that can be saved for reclamation. (See Plate 8-2 and Section 8.2 for Methodology.~~

A complete survey of the soil area was completed on November 3, 1990 and the new results were entered on Plate 8-2.

With the use of a planimeter the following amounts of soil for storage were calculated:

~~1990. The new results were entered on Plate 8-2 and with the use of a planimeter the following amounts of soil were calculated.~~

Soil Type	Number Pit	Depth to be Stored	Area Sq.	Volume
THE FOLLOWING TEXT WAS MOVED				
Soil Type	Pit Number	Depth to be Stored	Area Sq.	Volume
THE PRECEDING TEXT WAS MOVED				
Ft.	Cubic Yard			
Shupert-Winetti	2	42"	10,	Cubic Yard
Winetti	2	42"	10,450	1,354.6
Rabbitex	3	78"	16,	Rabbitex
3	78"	16,575	3,990.3	
Shupert-Winetti	4	18"	22,	Winetti
4	18"	22,375	1,243.1	
Brycan	5	60"	27,	Brycan
5	60"	27,175	5,032.4	
Shupert-Winetti	6	18"	8,	Shupert
6	18"	8,925	495.8	
Brycan	7	60"	28,	Brycan
7	60"	28,050	5,194.4	

Tests on #1 Pit on page 8-19 show this soil is unsuitable and cannot be saved for final reclamation.

Total cubic yard recoverable ----------17,310.6

Laboratory tests on Pit #1 (Table 8-1) show the soil to be unsuitable for final reclamation.

Approximately 16, Cubic yards required to reclaim the permit area disturbance.
at 10.3 acres coverage at 12" deep ---------- 16,617.3 cubic yards will be required to reclaim the permit area disturbance of 10.3 acres with soil coverage of 12". The extra 693.3 cubic yards of soils will be used to reclaim additional areas or to increase the depth in the reclaimed areas.

Soil will be put in three separate stockpiles so that the soil can be spread over a larger area to allow better control over soil nutrients (Plate 8-2 and Table 8-2). These stockpiles will be surveyed to verify if the amounts of soils contained are sufficient for reclamation.

Topsoil located southeast of Pits #4, 3

This will leave extra cubic yards of soils that can be used in additional areas or extend the depth in the areas to be reclaimed.---------- 693.3

Soil will be put in three different stockpiles so that the soil can be spread over a larger area to allow better control over soil nutrients. See Plate 8-2 and Table 8-1. These stockpiles will be surveyed to verify the amounts of soils are sufficient for recamation.

~~Table 8-1~~

~~Depth calculations for 3 soil stockpiles~~

~~THE FOLLOWING TEXT WAS MOVED~~

~~#5, & #6 and the Fan Portal is located on a steep rocky hillside. The topsoil for this area (less than one acre) will be collected and stockpiled prior to disturbance. Topsoil which meets the DOGM suitability criteria will be salvaged from this and all areas within the permit area.~~

~~If additional soil is required for final reclamation, the soil will be imported from outside the Blue Blaze Mines area. All topsoil to be used for reclamation will be tested according to the DOGM soil guidelines.~~

~~All contaminated material will be removed from the area where the soil is to be stockpiled, prior to storage.~~

~~& #6 and the Fan Portal, this area is less than one acre in area and is located on rocky hillside which is on very steep slopes. This area will be the last area in which disturbance will occure leaving the possability of retrieving top soil in the event there is not enough saveable soil from the other soil collection areas. The soil will be tested according to the Divisions soil guidelines if it is nesseccary to save this soil.~~

~~The soil will be transported to an area shown on Plate 8-1. The soil will then be contured at a rate of not more than 2:1 then contured out to prevent erosion. Mulch will be applied at the rate of 4,000 pounds per acre that will consist of straw or hay mulch. The soils will be tested and fertilized with incorporation of an organic material to insure the interim revegetation will succeed. After this is accomplished the soil will be hydroseeded using the seed mix listed in Table 3-1 for temporary reclamation. Signs will be placed in this area indicating "Top Soil Storage" also the area will be fenced to prevent livestock from entering the area. A berm will be placed around the stockpile to prevent erosion of the stockpile from entering the water courses in the area without being treated first.~~

~~THE PRECEDING TEXT WAS MOVED~~

~~THE FOLLOWING TEXT WAS MOVED~~

Mapping Legend

The following is a list of the soil symbols and mapping units which appear in the legend on the soils maps and elsewhere in this PAP.

Soil Symbol	Soil Mapping Unit Name
FIA	Shupert-Winetti Complex - 0 to 2% slopes
GIG	Curecanti - Very bouldery loam,

~~The following is the soil legend showing the soil symbol and soil mapping unit name. These symbols are used on the soils map.~~

~~Soil Symbol Soil Mapping Unit Name~~

~~FIA - Shupert-Winetti Complex 0 to 2% slopes~~
~~GIG - Curecanti Very bouldery~~
~~loam,~~ 55-65% slopes

HIG	Senchert - Silt loam, 50-70% slopes
JIB	Brycan - 4-6% slopes

Also included on Plate 8-2 is an isopach as to the depths of soils which can be saved.

The additional surface soil sampling points on Plate 8-1 are from a survey done by George Cook, Earl Jensen and Gary Moreau for the C & W Coal Producers (Appendix 5).

Table 8-1

Soil Chemical and Physical Properties - Pit #1

Sample depth (cm)	pH	Ec mmhos/cm	Sat%	Particle Size%	Ca meq/l	Mg meq/l	Na meq/l	SAR	Rock Frag. %	N%	Nitrate mg/kg	Organic carbon	Selenium mg/kg	Boron mg/kg	Available Water Capacity
0-15	7.9	0.6	82.4	%Sand 0 %Silt 56 %Clay 44	3.42	2.45	0.89	0.52	34.0%	0.35	13.2	3.58%	<0.1	1.24	33.5 @ 1/3 16.0 @ 15
15-30	8.0	0.5	79.6	%Sand 2 %Silt 56 %Clay 42	2.94	2.56	0.81	0.48	46.1%	0.31	15.2	3.23%	<0.1	0.86	32.0 @ 1/3 15.9 @ 15
30-45	8.0	0.7	29.6	%Sand 27 %Silt 40 %Clay 33	3.60	2.50	1.54	0.88	40.0%	0.27	0.4	1.44%			32.3 @ 1/3 16.2 @ 15
45-75	7.8	1.2	26.2	%Sand 51 %Silt 33 %Clay 16	4.93	3.33	0.46	0.23	70.5%	0.25	0.3	2.65%			29.2 @ 1/3 14.5 @ 15
75-105	7.8	1.1	28.8	%Sand 54 %Silt 33 %Clay 13	5.99	3.90	2.72	1.22	61.3%	0.19	0.36	2.80%			27.5 @ 1/3 12.7 @ 15

Table 8-2

Depth Calculations for Soil Stockpiles (3)

HIC - Senchert ——— Silt loam, 50-70% slopes
JIB - Bryean Loam ——— 4-6% slopes
DM - Mine Dumps ——— Previous Disturbed Areas

The numbered soil classifications, that are located on the map are in correspondence with the number on the following soil descriptions. Also included on the mapping is an isopach as to what depths soils can be saved.

Additional points which were sampled on the surface soils and correspond to numbers on the soils map are for C & W Coal which will not be in the disturbed area are located in (Appendices 5).

8.3.3 Present and Potential Uses Crops and Pasturelands

None of the soils mapped at the site have potential for crops or pastureland.

THE PRECEDING TEXT WAS MOVED

Feet	Area A	Area B	Area C	Total
cu.yds.	cu. ———	eu.yds. ———	eu.yds.	cu.yds.
0	0	0	0	0
1	1466.7	916.2	900.0	3282.7
2	2854.2	1784.0	1754.4	6392.6
3	4183.8	2604.5	2564.3	9332.6
4	5379.8	3378.9	3331.0	12089.0 ——— 12089.7
5	5637.1	4108.4	4055.6	14701.6 ——— 14701.1
6	7620.0	4794.2	4739.3	17153.3 ——— 17153.5
7	8629.8	5437.5	5383.3	19450.3 ——— 19450.6
8	9567.6	6039.5	5988.8	21505.8 ——— 21505.9

Total Amount of Savable Soil----------17,310.6

8.3.3 Present and Potential Uses - Crops and Pasture Lands

~~Soil Stockpiles will be surveyed after they are in place to verify the amounts of soil are sufficient for reclamation.~~

~~All contaminated material will be removed from the area where the soil is to be stockpiled prior to storage.~~

The U.S. Department of Agriculture has the authority to identify farmlands of national, state, or local importance. These farmlands are referred to as prime farmlands, farmlands of statewide importance, and unique farmlands. The SCS has determined that there are no prime farmlands of statewide importance, ~~or unique in the permit area (See Figure 8-1). None of the soils mapped at the site have potential for the growth of crops or pasture land.~~ ~~or unique farmlands in the permit area. (See Figure 8-1)~~

Rangelands

The soils of the site area have been used as rangeland in the past. Data on predicted forage production for rangeland soils for various sites are available from the SCS (Section 9-9). The principle limitations are erosion and shallowness, according to the SCS the soils cannot support cultivated crops. The soils incapability have very severe limitations thus restricting the use of the land largely to grazing, ~~Data on predicted forage production for rangeland soils during favorable, normal, and unfavorable years for various sites are available from the SCS findings are located in section 9-9. The principle limitations are erosion and shallowness. Capability units show, in a general way, the ability of soils can't support cultivated crops according to the SCS. Soils incapability have very severe limitations that restrict their use largely to grazing,~~ woodland or wildlife.

8.4 Prime Farmland Investigation and Determination

On August 14, ~~August 14,~~ 1990, Blue Blaze Coal requested the SCS (Price, Utah office) review the soils within the Blue Blaze Mines area to determine if any soils qualified as prime farmland. After the SCS's field reconnaissance to confirm soil types, the field information was checked against the State listing on prime farmland soils. The State Soil Scientist determined there are no soils classified as prime farmlands in the Blue Blaze Mines area (See Figure 8-1).

8.5 Physical and Chemical Properties of Soils and Results of Analysis

~~Blue Blaze Coal requested that SCS personnel in Price, Utah review all the soils present within the Blue Blaze No. 1 and 2 Mine property to determine if any qualified as prime farmland. At that time, the SCS made a field reconnaissance to confirm soil types. The field information was then checked against the State listing on prime farmland soils. At this time the State Soil Scientist determined there are no prime farmlands on Blue Blaze's No. 1 or No. 2 Mine areas. (See Figure 8-1)~~

~~8.5 Soils, Physical and Chemical Properties of Soils and Results of Analysis~~

Method of Evaluation

The criteria for evaluating soil as a plant growth media are given in Table 8-3.
~~The criteria for evaluating soil as a plant growth media area are given in Table 8-2.~~ The criteria include sodium absorption ration (SAR), electrical conductivity or salinity (EC), toxic materials, soil reaction (pH), available water hold capacity (AWMC), erosion factor (K), wind erosion group, texture and percent coarse fragments.

Criteria are given for good, fair or poor sources of reconstruction material (Table 8-3). ~~fair or poor sources of reconstruction material (Table 8-2).~~ A good rating means vegetation is relatively easy to establish and maintain, the surface is stable and resists erosion, and the reconstructed soil has good potential productivity. Material rated fair can be vegetated and stabilized by modifying one or more properties. Top dressing with better material or application of soil amendments may be necessary for satisfactory performance. Material rated poor has such severe problems that revegetation and stabilization is very difficult and costly. Top dressing with better material may be necessary to establish and maintain vegetation (USDA, 1978).

Table 8-3

Soil Reconstruction Material for Disturbed Areas

Property	Limits			Restrictive Feature
	Good	Fair	Poor	
Sodium Adsorption Ratio (SAR)	5	5 - 12	12	Excess Sodium
Salinity (mmhos/cm)	8	8 - 16	16	Excess Salt
Toxic Materials	Low	Medium	High	Toxicity
Soil Reaction (pH)[a]	5.6 - 7.8	4.5 - 5.5	4.5	Too Acid
Soil Reaction (pH)	7.9	7.9 - 8.4	.05	Excess Lime
Available Water Capacity (IN/IN)[2]	.10	.05 - .10	.05	Drought
Erosion Factor (K)	.37	.37	---	Erodes Easily
Wind Erod. Group	3	3	1, 2	Soil Blowing
USDA Texture	---	SCL, CL, SICL	C[b], SIC[b], SC	Too Clayey
USDA Texture	---	LCOS, LS, LFS, LVFS	COS, S, FS, VFS	Too Sandy
Coarse Frag. (WTPCT) 3-10 in. (7.6-25.4 cm) 10 in. (25.4 cm)	 15 3	 15 - 35 3 - 10	 35 10	 Large Stones Large Stones

[a] Layer with high potential acidity should be rated poor.

[b] If in kaolinitic family, rate one class better if experience confirms.

From National Soil Handbook, NSH - Part II [403.6(2)], 1978

Soil Chemistry and Physical Properties

Chemical and physical data for project area soils were collected to evaluate the soils as reconstruction material for disturbed areas. Soil chemical and physical data from analysis by Commercial Testing & Engineering Company are reported in Appendix 5. The parameters tested were under the DOGM guidelines;
~~Chemical and physical data for project area soils were collected to evaluate the soils as reconstruction material for disturbed lands. Soil chemical and physical data from analysis by Agricultural Consultants are reported in Table 8-2. The parameters tested were under the Divisions guidelines;~~ pH, electrical conductivity, saturation percentage, particle size, soluble Ca, Mg & Na, sodium absorption ratio, Total N, Nitrate-N, Organic carbon, ~~total N, nitrate-N, organic carbon,~~ available water capacity, rock fragments, and soil color. If the pH ran high the samples were tested for Selenium and Boron. ~~If the pH ran high the samples were tested for selenium and boron.~~

Suitability as a Source Material for Reclamation of Disturbed Lands

Appendix 5 contains a chemical evaluation of the soils in the undisturbed area and the area to be redisturbed. The soils are rated as good, fair or poor sources for reconstruction material.
~~Table 8-3 contains a chemical evaluation of the soils in the undisturbed area and the area to be redisturbed. This evaluation shows if the soils are rated good, fair or poor sources of reconstruction material.~~ The overall rating given for each horizon is the rating for the most limiting criteria, and no horizon can be rated better than an overlying horizon.

Vegetation is difficult to establish on soils with high SAR which indicates potential instability of water transmission problems (USDA, 1978). All of the soils of the site were rated good for SAR.

Electrical conductivity is a measure of soil salinity. Excessive salts restrict plant growth, create problems in establishing vegetation and therefore also influence erosion and the stability of the surface (USDA, 1978). All of the soils of the site were rated good for EC.

Excessively high or low pH causes problems in establishing vegetation and as a result influences erosion and stability of the surface (USDA, 1978). The substratum of the soils are rated good for pH.

The available water holding capacity (AWHC) also is important in establishing vegetation. Soils with low available water capacity may require irrigation for establishment of vegetation (USDA, 1978). AWHC was estimated based on field texture and percent coarse fragments (U.S. Forest Service, 1974). The soils are rated good for AWHC.

The stability of the soil depends upon its erodibility by water and wind and its strength. Water erodibility is indicated by the K factor; wind erodibility is rated according to the wind erodibility group. K values for soils of the project area are from the best data available in the SCS

Soil Survey Interpretation Records (USDA, 1978). Soils of the site are rated good for erodibility. Wind erodibility is based on SCS Soil Survey Interpretation Records for the surface horizons.

Wind erodibility data is available for only the surface soils of the site (USDA, ~~Wind erodibility data area available for only the surface soils of the site (USDA,~~ 1978). The surface layers of the Pathead and Curecanti soils are rated good for wind erodibility.

USDA texture also influences available water capacity and erodibility by wind or water. Texture influences soil structure, consistence, water intake rate, runoff, fertility, workability, and trafficability. Potential slippage hazard is related to soil texture, and although other factors also contribute, the ratings of soil texture represent one important factor (USDA, 1978). Soil texture for soils of the site are rated fair to poor, but are generally not considered the limiting factors. The fill textures for soils of the site were described in the field and the evaluations are based on the field determinations.

Coarse fragments influence the ease of excavation, stockpiling and respreading, and suitability for the final use of the land. A certain amount of coarse fragments can be tolerated depending upon the size and intended use of the reclaimed area. If the size of rock fragments exceeds 10 inches (25 cm) the problems are more severe. Coarse fragments are evaluated based on pedon descriptions. ~~Coarse fragments are evaluated based on pedon descriptions for soils of project areas.~~ Coarse fragments are the limiting factor for most of the project area soils.

Depths of Suitable Topsoil Available for Reclamation

The depths of suitable topsoil are located in Section 8.3.2. This section shows the soil types, the depths of soils, as well as the recommended depth of stripping. Volumes of soil available for storage are also indicated.

Much of the site is mapped as disturbed land. The fill material has variable properties, but the main restrictive features are coarse fragments and slope. The chemistry of the fine earth fraction is fair. The fill material is the only readily available reconstruction material in the mapped area. Included in the map unit DM (Mine Dumps) are areas of excessive large stones, rock outcrops, coal and rock dumps from previous mining. These coal wastes will be removed and disposed of properly. ~~Due to the already disturbed area a limited amount of topsoil can be salvaged for storage.~~

All disturbance was conducted prior to enactment of regulations requiring salvaging of topsoil. Due to the already disturbed area a limited amount of the original topsoil can be salvages for storage. The only future surface disturbance is noted on Plate 3-1.

~~The only surface disturbance that will take place is that which is on the permitting map.(See Plate 3-1)~~

Soils will be removed to the proper depth by use of an island method and replaced by the use of wooden stakes with depth marks on them to assure equal distribution.

8.6 Use of Selected Overburden Materials or Substitutes

It is anticipated that there will be enough topsoil stockpiled to re-distribute over the 10.3 acres of disturbed area (See Section 8.3.2). Coal waste, oil, grease, or contaminated material will be removed from the site and disposed of properly before topsoil is replaced.

The locations outlined for soil removal on Plate 8-2 are the areas within the project area with sufficient useable soil for collection. The additional areas located on the map were previously disturbed by other mining operations.

8.7 Soil Plan for Removal, Storage, and Protection

It is proposed to remove the topsoil using the island method to insure the proper depth of the soil being removed.

~~No substitute soils will be needed if enough top soil can be salvaged and stored for final reclamation.(See Section 8.3.2) It is estimated that there will be more than enough topsoil to re-distribute over the 10.3 acres of disturbed land at the rate of 12" deep. These soils will be of a suitable material for a seedbed. See Table 8-4~~

~~The locations of soil removal shown on Plate 8-2 are the only areas within the project area where a sufficient amount of useable soil can be collected. The additional areas located on the map were previously disturbed by eariler mines in this same location.~~

~~Coal waste, oil or grease, or contaminated material will be removed from the site and disposed of properly before replacing the saved top soil. This will help add to production of a vegetative cover equal or exceeding that of the original area.~~

~~8.7 Removal, Storage, and Protection of Soil Plan~~

~~It is proposed to remove the soil using the island method to insure the proper depth of the soil being removed.~~ At the time of soil removal a professional soil scientist (that will be approved by the Division) will be on site to insure proper separation and stockpiling of topsoil (A or E horizons) and subsoil (B and/or C horizons) also to delineate phase and inclusion variation and salvage depths.

The soil will be transported to the top soil storage area shown on Plate 8-1. The soil will then be contoured at a rate of not more than 2:1, then contour cut to prevent erosion. Mulch consisting of straw or hay will be applied at the rate of 4,000 pounds per acre. The soils will be tested and fertilized with an organic material to insure the interim revegetation will succeed (See Table 8-4 for quality standard). The topsoil stockpiles will be hydroseeded using the seed mix listed in Table 3-2 for temporary

reclamation. Signs will be placed in this area indicating "Topsoil Storage". The area will be fenced to prevent livestock from entering the area. A berm will be placed around the stockpiles to prevent soil erosion from entering the water courses in the mine area.

~~Though there might be soils located southeast of Pits #4,~~

8.8 Plans for Redistribution of Soils

Deep scarification of overburden and compacted areas (of no less than 6" depth), will be accomplished to ensure good overburden and redistributed topsoil contact to prevent slippage. The regraded material will be topographically conformed to the relative environmental conditions, which will be approximate to the premining topography with the highwalls being eliminated.

Soil will be redistributed using the wooden stake method, where a stake is marked to the depth of fill (estimated at 12"), then the soils will be added to accomplish that depth. The soil will then be harrowed to break up the cloddy surface and scarify to a depth of 6 inches (See Section 3.5.5.1). The regraded soils surface roughness will be maximized by pitting and gouging.

~~Deep scarification of overburden and compacted areas (of no less than 12" depth) will be accomplished to ensure good overburden and redistributed topsoil contact to prevent slippage. The regraded material will be topographically conformed to the relative environmental conditions which will be approximate to the premining topography with the highwalls being eliminated. Soil will be redistributed using the wooden stake method, where a stake is marked to the depth of fill then the soils material added to that depth. The depth is estimated at 12" for the complete area. The soil will then be harrowed to break up the cloddy surface and scarify to a depth of 12 inches.~~ Contour furrowing will take place on slopes that exceed 6 percent. The soil will then be sampled as stated in Section 8. ~~The soil will then be sampled as stated in 8.~~9 to determine needed fertilization levels. The area will then be fertilized as required and mulched at a rate of 4000 lbs. ~~The area will then be fertilized if required and mulched at a rate of 4000 lbs.~~ per acre. Hydroseeding will then commence using the final reclamation seed mix listed in Table 3-3. Erosion control matting will be used where the slope grades (2 1/2:1 or steeper) are to steep to retain the seed.

Table 8-4

Seedbed Material Quality Standards for Reclamation

Property	Limits			Restrictive Feature
	Good	Fair	Poor	
Sodium Adsorption Ratio (SAR)[a]	6	6 - 10	10 - 15	Excess Sodium
Salinity (EC) mmhos/cm[a]	0 - 4	4 - 8	8 - 16	Excess Salt
Saturation Percentage[a]	25	80	80	
Soil Reaction (pH)[a]	6.0 - 8.4	8.4 - 8.8	8.8 - 9.0	Excess Lime
USDA Texture[a]		SL, SIL, VFSL, FSL, LFS	CL, S	Too Clayey
Zinc and Boron[b]				
Coarse Frag. (WTPCT) 3-10 in. (7.6-25.4 cm) 10 in. (25.4 cm)	 0 - 15 0 - 3	 15 - 25 3 - 7	 25 - 35 7 - 10	 Large Stones Large Stones

[a] Wyoming Department of Environmental Quality- Guideline No. 1

[b] Will vary according to soil type or various environmental factors.

8.9 Nutrients and Soil Amendments

Tests will be taken of soils to be used for final reclamation in order to evaluate the need for soil amendments and nutrients. Soil testing will be performed by a qualified laboratory which uses accepted analytical procedures (DOGM soil guidelines). The soils chosen for sampling will be based on previous analysis, ~~Hydroseeding will then commence using the seed mix listed in Table 3-3, plus mulch and erosion control matting where the grades are to steep to retain the seed.~~

~~8.9 Nutrients and Soil Ammendments~~

~~Soil tests will be taken of materials to be used for final reclamation in order to evaluate the need for soil amendments and nutrients. Soil testing will be performed by a qualified laboratory which uses accepted analytical procedures. Sampeling will be based on previous analysis,~~ affected soil series type, postmining land use, ~~and postmining land use,~~ and the postmining vegetation ecosystem. Twenty sub-samples per acre will be taken at 12 inch depths then combined, 5 samples will be taken from the combined sub-samples and send to a qualified laboratory for testing. The tests to be performed will be pH, electrical conductivity, sodium absorption ratio, ~~Soil to be sampled by taking 20 sub-samples per acre at 12 inch depths then combining the samples then analyse 5 samples for the parameters in the Divisions soil guidelines. The selected tests in the guidelines are electric conductivity,~~ texture, ~~ph., available phosphorus,~~

~~THE FOLLOWING TEXT WAS MOVED~~

nitrogen, organic content, phosphorus, ~~organic content, available water capacity and rock fragments in order to determine needed fertilization levels. Commercial fertilizers will be added to replenish soil nutrients to enhance successful revegetation, based on soil test efforts.~~

~~THE PRECEDING TEXT WAS MOVED~~

potassium, available water capacity, and percent rock fragments, in order to determine needed fertilization levels. Commercial organic fertilizers will be added to replenish soil nutrients and to enhance successful revegetation. ~~sodium absorption ratio,~~ The soil nutrient and amendments plan will also follow the Divisions Guidelines for management of topsoil and overburden for underground and surface coal mines.

8.10 Effects of Mining Operations on Soils, Nutrients and Amendments

The disturbed land fill which has been impacted by mining operations has some inherit problems. ~~8.10 Effects of Mining Operations on Soils, Nutrients and Soil Ammendments to be Used~~

~~The disturbed land fill which has been impacted by mining operations has some inherit problems that will be addressed prior to reclamation.~~ These include large stones, and compacted zones. The large stones will be removed by standard earth moving equipment and/or commercial rock-picker implements. Compacted zones will be eliminated by deep chiseling, prior

to final reclamation. See Section 8.9 for nutrients and soil amendments.

8.11 Mitigation and Control Plans

~~Fertiliser application will be based on soil test analysis as discussed in Section 8.9.~~

~~8.11 Mitigation and Control Plans~~

No additional surface disturbance involving soils will be required for the surface facilities. Therefore, the stripping and stockpiling of soils will be the soils saved from the previously disturbed areas.

8.12 References

~~stripping and stockpiling soils will be only to the extent of what soils can be saved from around the disturbed area.~~

~~8.12 Bibliography~~

Black, C.A. 1965. Methods of Soil Analysis. American Society Agronomy No. 9 parts 1 and 2. Madison ~~Madison.~~ Wisconsin. 1572 pgs.

USDA, Soil Conservation Service. Soil Survey Staff 1975. Soil Taxonomy - a basic system of soil classification for marking and interpreting soil surveys, USDA Agricultural Handbook No. 436.

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P A P UPDATE REGISTER

MINE NAME	FILE NUMBER
BLUE BLAZE	PRO/007/020

DATE REC.	PAGE #s	PLATE #s	APPROVAL DATE	INSERT BY	CONTENT/REMARKS
9/16/91	—	—	—	Jess Kelley	Entire volume updated to match Roger Skaggs' master copy; material provided by Skaggs.
9/17/91		3-3		Jess Kelley	Permit Area boundary corrected on this copy.
9/30/91	3-7, 3-12 3-14, 3-15 7-55, 7-56	Table of content pg 4		JE	UPDATE
10/3/91	7-5, 5a, 5b 7-6 7-6a to 6d&F	ToFC pg 8 List of Plates 7-2	xvii	JE	update
~~10/30/91~~	~~4, 7-55, 56 3-7, 3-12 3-14, 3-15~~				
12/06/91	2-7a, 7b; 29 3-42, 46, 47a, 47b, 49 to 52, 57 to 66 7-31, 36, 56 57, 8-10, 11, 21 23, 23a; 9-3, 4; 10-57 4-2, 15 to 17 7-10b, 11b 12b 13b 14b 15b 15c 15d	3-7, 3-11, 3-12	3-23, 3-25, 3-27 to 30	JE	& water analysis added behind Appendix 1
12/06/91		3-2A; 2B 3-3; 3-7A, 7B; 8-1, 2, 3; 9-1, 2		JE	Maps
12/23/91	3-25; 7-38a 7-46a, 46b	7-1 Appendix 1			Appendix 1 Filed Water Rights
1-6-92	6-1 7-38a 7-46a & 47				Geology Sediment Ponds
1-13-92	7-5, 7-58 7-65 to 65 2-2 7-66 & 66a				Baseline Hydro Data
1/93	Appendix 1, 6, 6a, 6b			JB	updated / sampling water monitoring

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P A P UPDATE REGISTER

MINE NAME	FILE NUMBER

DATE REC.	PAGE #s	PLATE #s	APPROVAL DATE	INSERT BY	CONTENT/REMARKS

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P A P UPDATE REGISTER

MINE NAME	FILE NUMBER
Blue Blaze	PAO/007/020

DATE REC.	PAGE #s	PLATE #s	APPROVAL DATE	INSERT BY	CONTENT/REMARKS
9/27	3-7, 3-12 3-14, 3-15 7-55, 7-56	Table of Contents Pg 10		JE	
10/3	7-5, 7-5a 7-56, 7-6 7-64 to 7-64e	TOC pg. 8 plates xvii 7-2		JE	
1-2-92					all text updated some maps not current
1-6-92	6-1 7-38a 7-46a 7-47				Geology Sediment Ponds
1-13-92	7-5 7-66+66a 7-68 7-65 to 65 E-2				Baseline Hydro Data

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P A P -- UPDATE REGISTER

MINE NAME	FILE NUMBER
BLUE BLAZE	PRO/007/020

DATE REC.	PAGE #s	PLATE #s	APPROVAL DATE	INSERT BY	CONTENT/REMARKS
11-25-90	REPLACED: vii, viii, xi, xii, xiii, xiv, xv, xvi, xvii, xviii, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16	REPLACED: 3-1, 3-3, 3-4, 6-1, 7-1, 7-5, 7-6, 8-1, 8-2, 9-1		Jess Kelley	Completeness Response
	2-1, 2-2, 2-3, 2-7, 2-8, 3-2, 3-3, 3-4, 3-5, 3-8, 3-10, 3-12,				
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	7-42, 7-43, 7-44, 7-45, 7-46, 7-56, 7-57, 8-2, 8-10,				
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	10-20, 10-25, 10-55, 10-56, 10-57, 10-58, Appendix I, pp 1-7				
	Appendix 5, Soil Analyses 1 thru 7				
	ADDED: pp. 7-16,				
	3-6a, 3-6b, 3-12a, 3-25a, 3-26a, 3-59a, 4-14a, 5-13a, 7-46a,				
	7-46b, 7-46c, 7-46d, 7-46e, 7-52a, 8-20a				

William R. Skaggs

P.O. Box 784
Price, Utah 84501
Telephone (801) 472-3786

June 9, 1990

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City Utah 84180-1203

Enclosed in the table of contents listed under (List of Applicable Permanent Program Regulations) pages 1 through 6 you will find that the Initial Completeness Review (ICR) dated May 17, 1989 which follows this letter has been complied with using permit application Cross-References. The deficiencies identified have been addressed. Also the recommendations of Richard V. Smith on May 16, 1989 have been followed to expedite future reviews.

In order that mining may occur in this year, we would appreciate that this mining permit be reviewed as soon as possible.

Sincerely,

William R. Skaggs

William R. Skaggs
Vice President
Blue Blaze Coal Co.

bs

Norman H. Bangerter
Governor
Dee C. Hansen
Executive Director
Dianne R. Nielson, Ph.D.
Division Director

State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203
801-538-5340

May 16, 1989

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

Dear Mr. Skaggs:

Re: Initial Completeness Review, Blue Blaze Coal Company, Blue Blaze Mine, PRO/007/020, Folder #2, Carbon County, Utah

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Acting Permit Supervisor

djh
Enclosure
cc: L. Braxton, DOGM
AT8/66-67

INITIAL COMPLETENESS REVIEW
BLUE BLAZE COAL COMPANY
PRO/007/020

Carbon County
May 17, 1989

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The vegetation information narrative should include a table, identifying the acreage of each of the following by vegetation type: (1) permit area; (2) area of prior disturbance; and (3) area of new disturbance and/or redisturbance. This information must agree with areas shown on vegetation and reclamation maps.

The PAP (Chapter 2, page 89) states that surface disturbance will comprise 5.5 acres. However, the planimetered area of disturbance on Enclosure 24 is 7.4 acres. Please rectify this discrepancy.

Vegetation Map 2 (Enclosure 6C) must identify all areas of prior disturbance by cross-hatching or some other means. Areas of new disturbance and redisturbance must be identified, as well as their respective vegetation types.

(b) The vegetation types within the permit area and adjacent area (1/2 mile perimeter) must be identified on a map.

UMC 783.20 Fish and Wildlife Resources Information-(BAS)

(c) The applicant must conduct an up-to-date raptor survey of the permit area and adjacent areas (1/2 mile perimeter) under the supervision of the Division of Wildlife Resources (DWR).

If nests are found, which may be jeopardized, special purpose permits may need to be obtained from the U.S. Fish and Wildlife Service.

UMC 783.21 Soil Resources Information-(HS)

The applicant must provide an Order III Soil Survey for the entire permit area. This must include a map of proper scale delineating different soils; a soil (pedon) description for each soil identified; and present and potential productivity of each soil identified.

The disturbed area soil survey is incomplete. An Order I Soil Survey is required for the disturbed area. It is unclear as to the method and intensity of the soil survey conducted by Patrick D. Collins for the proposed disturbance. Please identify the level of intensity of the above soil survey and describe the method employed to correlate soils of the mine site with published or unpublished National Cooperative Soil Surveys.

Additionally, the applicant must identify (percentage, pedon description) soil phases and inclusions within particular soil types. Limiting factors within soil types may be the result of phase and inclusion variation. Each and every inclusion and phase within a soil type proposed to be removed must be reported separately and have physical and chemical analyses performed (the Division Guidelines for Management of Topsoil and Overburden for Underground and Surface Coal Mining, Table 1).

The soil resources information is incomplete with regard to the soil available for plant growth material for final reclamation. There is a discrepancy between the extent of new disturbance depicted on Enclosure 6 and the area identified in Enclosure 19 for topsoil removal and storage. Two omissions noted are the Topsoil Storage Area disturbance and disturbance associated with the proposed plan for burial of development waste along the old haulage road. If soils are unsuitable for reclamation, then the applicant must identify and substantiate that particular areas of soil are unsuitable.

The applicant must correlate the two sets of lab data (PAP Soil Resources Information 817.21 - 817.25, Volume I, Chapter II) by additional soil sampling. Physical and chemical analyses must be performed for all soil removed. Sample sites must be located within the area proposed for topsoil salvage and shown on Enclosure 6. Samples must be identified and collected by depth as follows: 0-15 cm, 15-30 cm, 30-45 cm, and every 30 cm thereafter. Soil sampling must occur to the depth of planned excavation. Laboratory analyses are required and methodologies recommended are those outlined in the Division's Guidelines for Management of Topsoil and Overburden for Underground and Surface Coal Mining, Table 1 and Table 6, respectively.

UMC 783.22 Land Use Information-(BAS)

(b) Please provide additional detail of prior mining activity to comply with UMC 783.22(b)(1) through (5).

(c) Please provide a statement of land use and zoning from Carbon County.

UMC 783.24 Maps: General Requirements-(PGL/DW/HS)

MAP REQUIREMENTS

All maps required by this regulation must show the permit area. All maps must have a scale legend, north arrow and orientation (township and range). Maps must have a scale no smaller than 1" = 2000'.

(c) A map must be submitted that indicates the boundaries of all areas to be affected over the estimated life of the underground coal mining activities, with a description of size, sequence, and timing of the mining of subareas for which it is anticipated that additional permits will be sought.

(d) Old buildings are located on Enclosure 13. The permit area must be identified on that map and the current use of the buildings must be identified.

(g) No location of water supply intakes (if present) for current uses was supplied. Please add this information in the form of a map. This should include those surface waters which will receive discharges from affected areas in the proposed permit area.

UMC 783.25 Cross Sections, Maps and Plans-(PGL/DW)

Map certification requires a clear and readable stamp, signature, and date of certification.

(a) A certified map must be submitted showing elevations and locations of test borings and core samplings.

(b) Information must be given on the elevation and locations of all monitoring stations for water quality and quantity. This includes both groundwater (springs, in mine drips, and drill holes) and surface water monitoring locations. Add this information in the form of a map.

(c) The applicant must submit a geologic map that shows the distribution of lithostratigraphic units at the surface. The geologic map must also include standard strike and dip information.

(e) A map must be submitted with the location and extent of all known workings of active, inactive, or abandoned underground mines, including mine openings to the surface within the proposed permit area and adjacent areas.

(f) The applicant must submit a piezometric surface map (see comment under UMC 783.15).

(i) The applicant must provide maps identifying all existing areas of spoil, waste, coal development waste, noncoal development waste, area of predisturbance, and areas to be retopsoiled and revegetated. The Soils Map (Enclosure 6) identifies the valley bottom adjacent to the old mine ruins (foundations) as mine dumps. This is only partially true. Identify areas where undisturbed soils remain.

UMC 784.11 Operation Plan: General Requirements-(PGL)

(a) A narrative description of the type and method of coal mining procedures and proposed engineering techniques, anticipated annual and total production of coal, by tonnage, and the major equipment to be used for all aspects of the operations must be submitted for inclusion in the PAP.

UMC 784.12 Operation Plan: Existing Structures-(PGL)

(a) There are existing structures on site. A description of the structures that will be used in connection with the coal mining operation must be included in the PAP.

UMC 784.13 Reclamation Plan: General Requirements-(BAS/HS)

(a) Please remove the list of seed suppliers and collectors from Chapter 8 and the DWR Plant Materials Guide from Chapters 8 and 9.

A plan for interim reclamation must be included in the PAP. A seed mix and discussion of reclamation techniques must be provided. The statement in Chapter 3, page 92, that "full" reclamation will be employed for interim reclamation is confusing and inadequate.

(b)(1) The PAP must include a reclamation timetable like that in Appendix A of the Division's "Revegetation Guidelines for Utah Coal Regulatory Program."

(b)(4) The applicant must provide designs, cross sections, dimensions and maximum slope for the proposed topsoil storage area. Enclosure 19 indicates the storage of 8,800 yards ^{3} within the topsoil storage area. The PAP text indicates (Soil Resources Information, UMC 817.21 - 817.25, Volume I, Chapter II) the removal and storage of 10,327.6 yds ^{3}. Please clarify this discrepancy.

The applicant must provide an isopach map delineating depth of topsoil removal and redistribution, and the aerial extent of each depth category.

The applicant must provide an adequate timetable for completion of each major step in the reclamation plan, and any contemporaneous reclamation planned (include topsoil stockpile reclamation and development waste disposal site reclamation).

The applicant must provide a topsoil mass balance sheet to include: volume of topsoil removed from each area of disturbance and the volume of topsoil redistributed for each area of disturbance.

The following information must be included in the PAP to meet the requirements of UMC 817.21 - 817.25.

1. Methods and equipment employed to ensure proper implementation of a soil removal plan:

   (a) vegetation removal, and
   (b) method utilized to exact depth of soil removal.

2. Methods and equipment employed to ensure proper implementation of a soil storage plan:

   (a) erosion protection (berm, mulch, contour-furrowing, seed mixture, etc.).
   (b) compaction mitigation, and
   (c) fertilizer/amendments to ensure revegetation success.

3. Methods and equipment employed to ensure proper implementation of a soil redistribution plan:

   (a) compaction mitigation,
   (b) soil scarification (i.e., depth, machinery),
   (c) method used to ensure proper topsoil redistribution depth,
   (d) fertilizer assessment sampling plan,
   (e) management to prevent erosion between topsoil redistribution and reseeding,
   (f) time between regrading and retopsoiling, and
   (g) seedbed preparation.

Additional information may be required subsequent to initial review of above requested information.

(b)(5)(i) The PAP must commit to seeding and planting according to the provisions of UMC 817.113.

The PAP must state that neither planting schedule nor seed mix will be altered without prior written approval from the Division. The reclamation plan may not vacillate as suggested in Chapter 3, page 6.

(b)(5)(ii) Please replace the present seed mixes with two mixes -- one for xeric and the other for mesic sites. Seed mixes must consist of commercially available native species, adapted to the site and having forage and cover value for wildlife. The applicant should refer to Section C on "species selection" in the Division's Revegetation Guidelines (see attachment). The seed mix table must specify pounds per acre and pure live seed/ft^2. A provision should be made for supplemental planting of trees and shrubs along water courses.

(b)(5)(iii) Two seeding methods are proposed in Chapter 3, pages 7 and 8. Please clarify when one method will be used over the other. There appears to be a contradiction.

When seeds are hand broadcast, the PAP must commit to raking seeds into the soil.

(b)(5)(iv) Mulch must be applied over all areas to be reclaimed, unless field trials demonstrate better results without. The PAP must identify mulch type, rate of application, and methods for spreading and anchoring.

(b)(5)(v) The applicant must provide a plan for weed control on mine operation areas, topsoil stockpiles and reclaimed areas.

(b)(5)(vi) The PAP must describe the methods, schedule and standards used to determine revegetation success, per UMC 817.116.

The monitoring schedule for final reclamation should be similar to that in the Division's Revegetation Guidelines, Table 1.

(b)(7) The applicant must provide a map clearly defining areas of contemporaneous reclamation, waste removal and disposal.

The applicant must provide adequate physical and chemical analyses (constituent outlined in the Division's Guidelines for Management of Topsoil and Overburden for Underground and Surface Coal Mining, Table 6) of coal waste to be buried and cover material used to backfill disposal sites (i.e., down-cast material, excess cut material from road construction). Additionally, the applicant must provide volume estimates of material to be disposed of, storage capacity of disposal site and volume of cover material.

The applicant must provide a description of measures employed to insure that all acid-forming and toxic-forming materials are identified and disposed of in accordance with UMC 817.48 and UMC 817.103.

UMC 784.14 Reclamation Plan: Protection of Hydrologic Balance-(DW)

(a)(1) The applicant has provided a description for the implementation of siltation structures. However, the applicant must also provide plans, locations, details, and calculations. The location of each structure must be identified on Enclosure 13.

(a)(2) Information on the rights of present users of both surface and groundwater must be included in the PAP. Please add this information in the form of a map which includes the location of all wells and points of diversion.

(a)(3) A detailed description for measures to protect both surface and ground waters must be included in the PAP. This involves monitoring of all appropriate springs within the permit and adjacent areas to ensure the protection of quantity and quality. An alternative source must be identified where protection of quality cannot be ensured.

(a)(4) The applicant must demonstrate that all mine openings will be designed such that water quality is protected. This means all openings will be designed to prevent gravity discharge of mine water.

(b)(3) The applicant must follow the operational and post mining portion of the Division's Water Monitoring Guidelines for designing a water quality monitoring system. Contact the Division if any consultation is needed.

(c) A determination of the probable hydrologic consequences must be included in the PAP. This includes areas adjacent to and within the permit boundaries.

(d) A detailed description, including drawings, must be included in the PAP for all permanent entry seals and downslope barriers designed to ensure stability under anticipated hydraulic heads after mine closure.

UMC 784.15 Reclamation Plan: Post Mining Land Use-(BAS)

The applicant must provide a detailed description of the proposed postmining land use. The PAP must include a discussion of the capability of the reclaimed land to support the land uses and the relationship of the proposed postmining land use to existing pre-mining land use. Additionally, the applicant must provide a detailed description as to how the proposed postmining land use will be achieved.

UMC 784.16 Reclamation Plan: Ponds, Impoundments, Banks, Dams and Embankments-(DW)

The applicant has not submitted sufficient information regarding sediment control structures to determine the PAP complete. Please provide all required design information described under this regulation.

UMC 784.17 Protection of Public Parks and Historic Places-(PGL)

The applicant must provide an explanation as to why this section is not applicable.

UMC 784.18 Relocation or Use of Public Roads-(PGL)

The applicant must provide agreements with appropriate landowners that insures the interests of the public and landowners that are affected by the use of the public road will be protected.

UMC 784.19 Underground Development Waste-(PGL)

The PAP states that the 548 cubic yards of development waste rock will be used as backfill in the old haulage grade, and Figure 6 (Chapter II) and Enclosure 20 are referred to as "burial sites." These figures must be consistent. A description of how the approximate yardage was quantified must be included in the PAP. A description of how the requirements of UMC 817.71 will be met must be included in the PAP.

UMC 784.20 Subsidence Control Plan-(RVS)

The applicant must provide a survey of renewable resource lands (see definition under UMC 700.5) and a discussion of whether subsidence could cause material damage or diminuition of reasonably foreseeable use of such renewable resource lands.

The applicant must provide a detailed description of measures to be taken to prevent and/or mitigate the effects of material damage or foreseeable use of renewable resource lands.

UMC 784.21 Fish and Wildlife Plan-(BAS)

(a)(1) Itemize all DWR mitigation recommendations which will be followed, and incorporate these with commitments made in Chapters 2 and 3, on pages 89 and 90. The aforementioned commitments lack sufficient detail. Please provide.

(b)(3) The applicant must provide discussions of depth of overlaying strata, angle of draw, and monitoring plans, as these relate to undermining of Gordon Creek and Beaver Creek.

William R. Skaggs

P.O. Box 784
Price, Utah 84501
Telephone (801) 472-3786

June 9, 1990

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City Utah 84180-1203

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In order that mining may occur in this year, we would appreciate that this mining permit be reviewed as soon as possible.

Sincerely,

William R. Skaggs
Vice President
Blue Blaze Coal Co.

bs

Norman H. Bangerter
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State of Utah
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Boundaries of reference areas must be shown on a vegetation map.

The scale of Vegetation Map 1 (Enclosure 6B) is too small. Information is inadequately presented. Please consult "Vegetation Information Guidelines."

The vegetation information narrative should include a table, identifying the acreage of each of the following by vegetation type: (1) permit area; (2) area of prior disturbance; and (3) area of new disturbance and/or redisturbance. This information must agree with areas shown on vegetation and reclamation maps.

The PAP (Chapter 2, page 89) states that surface disturbance will comprise 5.5 acres. However, the planimetered area of disturbance on Enclosure 24 is 7.4 acres. Please rectify this discrepancy.

Vegetation Map 2 (Enclosure 6C) must identify all areas of prior disturbance by cross-hatching or some other means. Areas of new disturbance and redisturbance must be identified, as well as their respective vegetation types.

(b) The vegetation types within the permit area and adjacent area (1/2 mile perimeter) must be identified on a map.

UMC 783.20 Fish and Wildlife Resources Information-(BAS)

(c) The applicant must conduct an up-to-date raptor survey of the permit area and adjacent areas (1/2 mile perimeter) under the supervision of the Division of Wildlife Resources (DWR).

If nests are found, which may be jeopardized, special purpose permits may need to be obtained from the U.S. Fish and Wildlife Service.

UMC 783.21 Soil Resources Information-(HS)

The applicant must provide an Order III Soil Survey for the entire permit area. This must include a map of proper scale delineating different soils; a soil (pedon) description for each soil identified; and present and potential productivity of each soil identified.

The disturbed area soil survey is incomplete. An Order I Soil Survey is required for the disturbed area. It is unclear as to the method and intensity of the soil survey conducted by Patrick D. Collins for the proposed disturbance. Please identify the level of intensity of the above soil survey and describe the method employed to correlate soils of the mine site with published or unpublished National Cooperative Soil Surveys.

Additionally, the applicant must identify (percentage, pedon description) soil phases and inclusions within particular soil types. Limiting factors within soil types may be the result of phase and inclusion variation. Each and every inclusion and phase within a soil type proposed to be removed must be reported separately and have physical and chemical analyses performed (the Division Guidelines for Management of Topsoil and Overburden for Underground and Surface Coal Mining, Table 1).

The soil resources information is incomplete with regard to the soil available for plant growth material for final reclamation. There is a discrepancy between the extent of new disturbance depicted on Enclosure 6 and the area identified in Enclosure 19 for topsoil removal and storage. Two omissions noted are the Topsoil Storage Area disturbance and disturbance associated with the proposed plan for burial of development waste along the old haulage road. If soils are unsuitable for reclamation, then the applicant must identify and substantiate that particular areas of soil are unsuitable.

The applicant must correlate the two sets of lab data (PAP Soil Resources Information 817.21 - 817.25, Volume I, Chapter II) by additional soil sampling. Physical and chemical analyses must be performed for all soil removed. Sample sites must be located within the area proposed for topsoil salvage and shown on Enclosure 6. Samples must be identified and collected by depth as follows: 0-15 cm, 15-30 cm, 30-45 cm, and every 30 cm thereafter. Soil sampling must occur to the depth of planned excavation. Laboratory analyses are required and methodologies recommended are those outlined in the Division's Guidelines for Management of Topsoil and Overburden for Underground and Surface Coal Mining, Table 1 and Table 6, respectively.

UMC 783.22 Land Use Information-(BAS)

(b) Please provide additional detail of prior mining activity to comply with UMC 783.22(b)(1) through (5).

(c) Please provide a statement of land use and zoning from Carbon County.

UMC 783.24 Maps: General Requirements-(PGL/DW/HS)

MAP REQUIREMENTS

All maps required by this regulation must show the permit area. All maps must have a scale legend, north arrow and orientation (township and range). Maps must have a scale no smaller than 1" = 2000'.

(c) A map must be submitted that indicates the boundaries of all areas to be affected over the estimated life of the underground coal mining activities, with a description of size, sequence, and timing of the mining of subareas for which it is anticipated that additional permits will be sought.

(d) Old buildings are located on Enclosure 13. The permit area must be identified on that map and the current use of the buildings must be identified.

(g) No location of water supply intakes (if present) for current uses was supplied. Please add this information in the form of a map. This should include those surface waters which will receive discharges from affected areas in the proposed permit area.

UMC 783.25 Cross Sections, Maps and Plans-(PGL/DW)

Map certification requires a clear and readable stamp, signature, and date of certification.

(a) A certified map must be submitted showing elevations and locations of test borings and core samplings.

(b) Information must be given on the elevation and locations of all monitoring stations for water quality and quantity. This includes both groundwater (springs, in mine drips, and drill holes) and surface water monitoring locations. Add this information in the form of a map.

(c) The applicant must submit a geologic map that shows the distribution of lithostratigraphic units at the surface. The geologic map must also include standard strike and dip information.

(e) A map must be submitted with the location and extent of all known workings of active, inactive, or abandoned underground mines, including mine openings to the surface within the proposed permit area and adjacent areas.

(f) The applicant must submit a piezometric surface map (see comment under UMC 783.15).

(i) The applicant must provide maps identifying all existing areas of spoil, waste, coal development waste, noncoal development waste, area of predisturbance, and areas to be retopsoiled and revegetated. The Soils Map (Enclosure 6) identifies the valley bottom adjacent to the old mine ruins (foundations) as mine dumps. This is only partially true. Identify areas where undisturbed soils remain.

UMC 784.11 Operation Plan: General Requirements-(PGL)

(a) A narrative description of the type and method of coal mining procedures and proposed engineering techniques, anticipated annual and total production of coal, by tonnage, and the major equipment to be used for all aspects of the operations must be submitted for inclusion in the PAP.

UMC 784.12 Operation Plan: Existing Structures-(PGL)

(a) There are existing structures on site. A description of the structures that will be used in connection with the coal mining operation must be included in the PAP.

UMC 784.13 Reclamation Plan: General Requirements-(BAS/HS)

(a) Please remove the list of seed suppliers and collectors from Chapter 8 and the DWR Plant Materials Guide from Chapters 8 and 9.

A plan for interim reclamation must be included in the PAP. A seed mix and discussion of reclamation techniques must be provided. The statement in Chapter 3, page 92, that "full" reclamation will be employed for interim reclamation is confusing and inadequate.

(b)(1) The PAP must include a reclamation timetable like that in Appendix A of the Division's "Revegetation Guidelines for Utah Coal Regulatory Program."

(b)(4) The applicant must provide designs, cross sections, dimensions and maximum slope for the proposed topsoil storage area. Enclosure 19 indicates the storage of 8,800 yards ^{3} within the topsoil storage area. The PAP text indicates (Soil Resources Information, UMC 817.21 - 817.25, Volume I, Chapter II) the removal and storage of 10,327.6 yds ^{3}. Please clarify this discrepancy.

The applicant must provide an isopach map delineating depth of topsoil removal and redistribution, and the aerial extent of each depth category.

The applicant must provide an adequate timetable for completion of each major step in the reclamation plan, and any contemporaneous reclamation planned (include topsoil stockpile reclamation and development waste disposal site reclamation).

The applicant must provide a topsoil mass balance sheet to include: volume of topsoil removed from each area of disturbance and the volume of topsoil redistributed for each area of disturbance.

The following information must be included in the PAP to meet the requirements of UMC 817.21 - 817.25.

1. Methods and equipment employed to ensure proper implementation of a soil removal plan:

   (a) vegetation removal, and
   (b) method utilized to exact depth of soil removal.

2. Methods and equipment employed to ensure proper implementation of a soil storage plan:

   (a) erosion protection (berm, mulch, contour-furrowing, seed mixture, etc.).
   (b) compaction mitigation, and
   (c) fertilizer/amendments to ensure revegetation success.

3. Methods and equipment employed to ensure proper implementation of a soil redistribution plan:

   (a) compaction mitigation,
   (b) soil scarification (i.e., depth, machinery),
   (c) method used to ensure proper topsoil redistribution depth,
   (d) fertilizer assessment sampling plan,
   (e) management to prevent erosion between topsoil redistribution and reseeding,
   (f) time between regrading and retopsoiling, and
   (g) seedbed preparation.

Additional information may be required subsequent to initial review of above requested information.

(b)(5)(i) The PAP must commit to seeding and planting according to the provisions of UMC 817.113.

The PAP must state that neither planting schedule nor seed mix will be altered without prior written approval from the Division. The reclamation plan may not vacillate as suggested in Chapter 3, page 6.

(b)(5)(ii) Please replace the present seed mixes with two mixes -- one for xeric and the other for mesic sites. Seed mixes must consist of commercially available native species, adapted to the site and having forage and cover value for wildlife. The applicant should refer to Section C on "species selection" in the Division's Revegetation Guidelines (see attachment). The seed mix table must specify pounds per acre and pure live seed/ft^2. A provision should be made for supplemental planting of trees and shrubs along water courses.

(b)(5)(iii) Two seeding methods are proposed in Chapter 3, pages 7 and 8. Please clarify when one method will be used over the other. There appears to be a contradiction.

When seeds are hand broadcast, the PAP must commit to raking seeds into the soil.

(b)(5)(iv) Mulch must be applied over all areas to be reclaimed, unless field trials demonstrate better results without. The PAP must identify mulch type, rate of application, and methods for spreading and anchoring.

(b)(5)(v) The applicant must provide a plan for weed control on mine operation areas, topsoil stockpiles and reclaimed areas.

(b)(5)(vi) The PAP must describe the methods, schedule and standards used to determine revegetation success, per UMC 817.116.

The monitoring schedule for final reclamation should be similar to that in the Division's Revegetation Guidelines, Table 1.

(b)(7) The applicant must provide a map clearly defining areas of contemporaneous reclamation, waste removal and disposal.

The applicant must provide adequate physical and chemical analyses (constituent outlined in the Division's Guidelines for Management of Topsoil and Overburden for Underground and Surface Coal Mining, Table 6) of coal waste to be buried and cover material used to backfill disposal sites (i.e., down-cast material, excess cut material from road construction). Additionally, the applicant must provide volume estimates of material to be disposed of, storage capacity of disposal site and volume of cover material.

The applicant must provide a description of measures employed to insure that all acid-forming and toxic-forming materials are identified and disposed of in accordance with UMC 817.48 and UMC 817.103.

UMC 784.14 Reclamation Plan: Protection of Hydrologic Balance-(DW)

(a)(1) The applicant has provided a description for the implementation of siltation structures. However, the applicant must also provide plans, locations, details, and calculations. The location of each structure must be identified on Enclosure 13.

(a)(2) Information on the rights of present users of both surface and groundwater must be included in the PAP. Please add this information in the form of a map which includes the location of all wells and points of diversion.

(a)(3) A detailed description for measures to protect both surface and ground waters must be included in the PAP. This involves monitoring of all appropriate springs within the permit and adjacent areas to ensure the protection of quantity and quality. An alternative source must be identified where protection of quality cannot be ensured.

(a)(4) The applicant must demonstrate that all mine openings will be designed such that water quality is protected. This means all openings will be designed to prevent gravity discharge of mine water.

(b)(3) The applicant must follow the operational and post mining portion of the Division's Water Monitoring Guidelines for designing a water quality monitoring system. Contact the Division if any consultation is needed.

(c) A determination of the probable hydrologic consequences must be included in the PAP. This includes areas adjacent to and within the permit boundaries.

(d) A detailed description, including drawings, must be included in the PAP for all permanent entry seals and downslope barriers designed to ensure stability under anticipated hydraulic heads after mine closure.

UMC 784.15 Reclamation Plan: Post Mining Land Use-(BAS)

The applicant must provide a detailed description of the proposed postmining land use. The PAP must include a discussion of the capability of the reclaimed land to support the land uses and the relationship of the proposed postmining land use to existing pre-mining land use. Additionally, the applicant must provide a detailed description as to how the proposed postmining land use will be achieved.

UMC 784.16 Reclamation Plan: Ponds, Impoundments, Banks, Dams and Embankments-(DW)

The applicant has not submitted sufficient information regarding sediment control structures to determine the PAP complete. Please provide all required design information described under this regulation.

UMC 784.17 Protection of Public Parks and Historic Places-(PGL)

The applicant must provide an explanation as to why this section is not applicable.

UMC 784.18 Relocation or Use of Public Roads-(PGL)

The applicant must provide agreements with appropriate landowners that insures the interests of the public and landowners that are affected by the use of the public road will be protected.

UMC 784.19 Underground Development Waste-(PGL)

The PAP states that the 548 cubic yards of development waste rock will be used as backfill in the old haulage grade, and Figure 6 (Chapter II) and Enclosure 20 are referred to as "burial sites." These figures must be consistent. A description of how the approximate yardage was quantified must be included in the PAP. A description of how the requirements of UMC 817.71 will be met must be included in the PAP.

UMC 784.20 Subsidence Control Plan-(RVS)

The applicant must provide a survey of renewable resource lands (see definition under UMC 700.5) and a discussion of whether subsidence could cause material damage or diminuition of reasonably foreseeable use of such renewable resource lands.

The applicant must provide a detailed description of measures to be taken to prevent and/or mitigate the effects of material damage or foreseeable use of renewable resource lands.

UMC 784.21 Fish and Wildlife Plan-(BAS)

(a)(1) Itemize all DWR mitigation recommendations which will be followed, and incorporate these with commitments made in Chapters 2 and 3, on pages 89 and 90. The aforementioned commitments lack sufficient detail. Please provide.

(b)(3) The applicant must provide discussions of depth of overlaying strata, angle of draw, and monitoring plans, as these relate to undermining of Gordon Creek and Beaver Creek.

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

R614-301-100 GENERAL CONTENTS (SMW)

115.300 Please make a statement as to the road which runs through the proposed site on to Beaver Creek. Is this a public road or does it provide access to public property? Pg. 2-3

121. Please change all reference to the coal mining regulations to the current R614 Coal Mining Rules. Removed UMC Regulations

R614-301-200 SOILS (HS)

In the third paragraph on page 8-10, the applicant refers to Plate 8-1. Did the author mean to indicate Plate 8-2, Topsoil Isopach and Handling Map? Pg. 8-10

In the last paragraph on page 8-12, the author states that the present and potential productivity statement, normally included within the range site and condition class, are unavailable. However, in Appendix 6, these productivity statements are provided. Please make necessary text changes and alter the PAP when and if the new range site and condition classes are determined (refer to Susan White's comments R614-301-321.200) Pg. 8-12

On page 3-47, the applicant states that "3 feet of noncombustible material will cover coal outcrops." This should state that '4 feet of noncombustible . . .' Pg. 3-47

The information photocopied from the Soil Survey of Carbon Area is publically available and should therefore be removed from Appendix 5. Removed

On page 3-29, the applicant states that "Disturbed areas will be vegetated where practical . . . ," all area disturbed during mining and reclamation activities must be reclaimed. Please make necessary revisions. Pg. 3-29

The mass balance calculations on page 8-10 are incorrect (refer to R614-301-231). The volume estimate for soils excavated from soil stripping area #7 (Plate 8-2) should be 8578.7 yds^3 not 6,384.3 yds^3. This will alter the total volume of excavated topsoil. Pg. 8-10

223. The soils map for the Blue Blaze mine site does not meet the standards of the National Cooperative Soil Survey as incorporated by reference R614-302-314.100. Pg. 8-3 to 8-9a
Plate 8-1

The soil map unit (Shubert gravelly loam) which encompasses soil pits #1, #2, #4, and #5 (Plate 8-1) is an unacceptable taxon at the Order I soil survey intensity. Soil site #1, #2, and #4 are classified as pedons within the Entisol soil order (Suborder-Fluvent). Soil pit #5 is classified as a pedon within the Mollisol soil order (Suborder-Boroll). Map units must consist dominantly of one component or of two or more components which are identified in the name of the map unit. A taxonomic unit description describes the ranges in soil properties exhibited in the polypedons for the maps in a survey area that are referenced by the taxonomic unit (SCS, 430-V Issue 6, Soil Survey Manual). A soil series denotes a group of soils that have horizons similar in arrangement and in differentiating characteristics. This is clearly not the case for the soil map unit (Plate 8-1) which encompasses pits #1, #2, #4, and #5 (Profile Description: page 8-3 through 8-7).

Furthermore, areas of taxonomic classes (i.e., series) rarely, if ever, coincide precisely with mappable areas. Therefore, if is highly unlikely that map units described for the mine area coincide directly with the designated series.

Additionally, on page 8-1, the applicant states the following "Soil names and classifications given in this report are tentative. The soils in this report are names for similar soils that are presently being mapped by the SCS in the area. The soils have been correlated by the SCS." The first and third sentences and claims are implicit contradictions. Pg. 8-1 & 8-2

It is assumed by this reviewer that the following relationships exist:

1) The soil profile descriptions located on pages 8-3 through 8-9 numerically correspond to the "Pits #" delineated on Plate 8-1. Plate 8-1 Pg. 8-3 to 8-9a

2) The soil profile descriptions correlate, according to the submitted information, as follows: Pg. 8-3 to 8-9

Soil Number	Soil Name	Family or Higher Taxonomic class
#1	Shupert Series	Fine-Loamy, Mixed (Calcareous) Frigid Ustic Torrifluvents
#2	Shupert Series	Loamy-Skeletal, Mixed (Calcareous) Frigid Ustic Torrifluvents
#3	Curcanti Series	Fine-Loamy, Mixed (Calcareous) Frigid Ustic Torriorthents

#4	Shupert Series	Loamy-Skeletal, Mixed (Calcareous) Frigid Ustic Torriorthents
#5	Shupert Series	Fine-Loamy, Mixed Pachic Haploborolls
#6	Senchert Series	Fine-Loamy, Mixed (Calcareous) Frigid Ustic Torriorthents
#7	Brycan Series	Fine-Loamy, Mixed Pachic Haploborolls

Therefore, the following relationship described in the Soil Survey of Carbon Area, Utah (page 294) is in direct conflict with the information provided in the PAP.

Soil Name	Family or Higher Taxonomic Class
Shupert Series	Fine-Loamy, Mixed (Calcareous) Frigid Typic Ustiflurvents
Curecanti Family	Loamy-Skeletal, Mixed Typic Argiborolls
Senchert Series	Fine-Loamy, Mixed Argic Pachic Cryoborallis
Brycan	Fine-Loamy, Mixed Ceumulic Haploborolls

Based on the technical review described above, the Division finds that the majority of the soil survey baseline information is erroneous and contradictory. Therefore, other portions of the PAP regarding soil salvage depths areal extent of various soils and topsoil mass balance calculation must be revised and is contingent upon the submission of accurate information. The Division recommends a complete overhaul of this section in order to comply with this and other sections of the state regulatory program. Revised Section

231. The topsoil mass balance calculation (page 8-10) and subsequent qualifying statements (i.e., 7.4 acres of disturbance) indicate to the reader that the applicant is unaware of his/her obligation to reclaim all surface acreage which is disturbed during mining and reclamation activities. Regardless of pre-disturbed conditions, all surface area disturbed during mining and reclamation activities must be bonded and reclaimed (R614-301-553.500 previously mined areas). Pg. 8-10

According to Plate 8-2, there will be approximately 10.3 acres of disturbance. According to Plates 3-1, 3-8, pages 8-21, 3-7, and mass balance calculations on page 8-10, only 7.4 acres of disturbance will occur. The following areas have been omitted from the disturbed area: topsoil stockpiles; the unhatched area northeast of the old concrete garage; the area around the Castle Gate A Seam Fan Portal which will be cleared of

Pg. 3-7
8-10
8-21
Plates 3-1, 3-8, 8-2

vegetation (and topsoil); etc. Other incidental areas have also been omitted from the disturbed area. Again, the applicant must be informed that revisions (editorial and technical) must be revised throughout the entire PAP document.

232. The #1 soil isopach area (Plate 8-2), as characterized (pages 3-19 and 8-3), cannot be considered suitable topsoil for final reclamation. When compared with the Division Guidelines for the Management of Topsoil and Overburden, Table 2, the following constituents are rated as unacceptable or poor: Texture; saturation percentage; percent coarse rock fragments. The material in question is the result of sediment deposition behind a coal waste impounding structure. It is, therefore, derived from eroded (sheet and rill erosion) material which has been transported by precipitation and concentrated overland flow. The applicant must revise narratives, maps, and mass balance calculations to reflect this finding. Pg. 8-10
Plate 8-2

234. The applicant must commit to conducting land surveys of the topsoil stockpiles once they are completed. If insufficient volumes exist to redistribute topsoil over the entire disturbed area, then the applicant must commit to fulfilling the requirements of R614-301-233, Topsoil Substitutes and Supplements. Pg. 8-11

Additionally, the applicant must commit to removing all contaminated material from the site of the topsoil stockpiles prior to topsoil storage. Pg. 8-11

The applicant must also describe the methods for controlling wind and water erosion on the topsoil stockpiles. This would include, but not be limited to the following: Interim seed mixture and fertilization; mulching or surface stabilization; construction of containment berms or silt fences; etc. Pg. 8-23

242. On pages 8-23 and 3-29, the applicant describes the redistribution of soil. The description must include: a commitment to scarify and the specific depth of scarification; a commitment to maximize surface roughness; and a commitment to mulch all reclaimed areas (this should include the rate of mulch application per acre). Pg. 3-29, 3-51
3-57, 8-23

243. The applicant must more fully describe the soil testing procedures prior to seeding. Procedures should include sampling frequency, sample depths and laboratory methods employed. Pg. 3-50, 8-23

On page 3-51, the applicant lists soil parameters to be tested for fertilize requirements. This list should include Electrical Conductivity and Sodium Absorption Ratio. Pg. 3-50

R614-301-300 BIOLOGY (SMW)

321.200 A statement of productivity and range condition of the reference area from the U.S. Soil Conservation Service must be included in the permit. The information on page 9-9 does not correlate with the reference areas as designated on Plate 9-1.
Revised Letter Pg. 9-9

331. 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. Please clarify. Pg. 3-42

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

The permittee has committed to interim revegetation. However, a commitment must be made also to the establishment of the vegetation. If first seeding does not establish, then a second and third attempt must be made. Pg. 3-53

333. Page 3-58 of the permit states that Blue Blaze Coal Company will leave islands of natural vegetation in new disturbed sites as part of minimizing impacts to wildlife. Please detail and locate on a map the areas proposed to be avoided in construction. Pg. 3-58

341.100 Figure 3-11 identifies the chronology of reclamation steps. Seed ordering must occur three to six months prior to seeding in order to secure all species of the approved seed mixture. The chronology must also indicate transplant or containerized stock ordering at least a year prior to planned planting. Pg. 3-59b, 3-60

341.210 Page 3-56 identifies containerized stock to be planted during final reclamation. The permittee must detail (either description or a map) where these plants will be planted. For example, the Aspen should be planted within the canyon bottom or on moist sites and not on the exposed south facing slopes. Pg. 3-56

341.220 Page 3-53 states that steep slopes will be hydroseeded, hand broadcast or other appropriate methods. Please detail "other appropriate methods". Pg. 3-53

The permittee must commit to raking all broadcast seed (final or interim reclamation) to ensure proper seed/soil contact. Pg. 3-53

The plan must detail methods of containerized stock planting. Consideration must be given to watering the stock at the time of planting and other times during year one, if drought conditions exist. Pg. 3-53

341.230 2000 pounds of straw or hay mulch is not adequate for erosion control. The permittee must commit to applying a minimum of 4000 pounds mulch per acre. Pg. 3-57

Hydromulch is not a suitable mulch for slopes in final reclamation. The permittee must commit to using erosion control matting (not jute) 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 The permittee must fully describe the methods (sampling) to be used to determine the success of revegetation. Qualitative methods must be performed annually. Quantitative sampling methods must be done in years 2, 5, 7, 9 and 10. Letter from Patrick Collins

342.100 Page 3-58 states that woody plant density will be determined successful when 242 plants per acre are established. As stated before by the Division, this is not an adequate success standard for the post mining land use of wildlife. Pg. 3-58

The plan must identify other enhancement measures. Replacing the vegetation is bringing the site back to the original state. The regulations require enhancement, such as rock piles, for small mammals, snags, etc. Pg. 3-59

353.250 Please provide a statement that all seed purchased will comply with all applicable state and federal seed laws. Pg. 3-51

356.120 Please include a statement repeating the success standard requirements of this regulation to which the appropriate areas apply. Pg. 3-58 3-59

356.232 Please commit to the 80-20 rule of this section. Pg. 3-59

356.250 The applicant should be aware that some of the proposed disturbed area qualifies as a premined area. On these areas, the success standard is considerably less demanding. Prior to redisturbance of vegetative cover, measurements must be made. The permit must state the correct success standards and predisturbance data. Pg. 3-58

358.100 Please commit to promptly notify the Division of any state or federally listed endangered or threatened species within the permit area of which the operator becomes aware. Pg. 3-32
10-45

358.400 The permittee must detail the revegetation and enhancement of the tributary to Gordon Creek during final reclamation. Designate which containerized stock will be planted. The permittee must also commit to planting 1000 Salix cuttings per acre along the creek banks. Pg. 3-56
3-59

R614-301-400 LAND USE AND AIR QUALITY (SMW)

411.130 The permittee states that the premining land use has limited livestock grazing. During Division inspection of the site on two occasions, at least 1000 sheep were observed grazing in the proposed mine area. Please explain this apparent discrepancy. Pg. 4-19

411.142 The letter from State History (page 5-13a) must be updated. Additionally, the letter states "a known site(s) exist in the project area." All sites within or adjacent to the permit area must be clearly shown on a map. Pg. 5-13a

R614-301-500 ENGINEERING (JK)

513.300 Page 3-7 states that "[a]ll 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 mine." The applicant must include here a commitment to submit, for Division and MSHA approval, a detailed plan for this disposal operation, and this before disposing of any such material underground. Pg. 3-7

521. Map 3-1 (Surface Facilities) is cluttered and unclear. Check all contour lines to make sure that they continue and that they do not cross themselves or intersect other contour lines, as they do in places. Include the area by the Castle Gate Fan, which is to be cleared of vegetation, in the disturbed area. Designate all highwalls as highwalls and distinguish between pre-existing highwalls and highwalls which will be created for the operation. Plate 3-1

Map 3-6 (Premining Topography) must include the topsoil storage area to the west of the main road in the area of proposed disturbance. Existing highwalls must also be shown. Plate 3-6

542 Map 3-7 (Post-Mining Topography) must shown all retained/reduced highwalls and label them as such. Plate 3-7

Map 3-8 (Reclamation Map) is cluttered and unclear as Map 3-1 is. Check all contour lines to make sure that they continue and that they do not cross themselves or intersect other contour lines, as they do in places. Include the area by the Castle Gate Fan, which is to be cleared of vegetation, in the disturbed area. Include the pond and the topsoil storage area to the west of the main road in the disturbed area. Show all retained/reduced highwalls and label them as such. Plate 3-8

542.300 Maps 3-2A and 3-2B (Premining/Design Profiles) and 3-7A and 3-7B (Post-Mining Topographic Profiles) are not consistent. Several of the cross-sections shown on these plates are inconsistent with one another; i.e., the surfaces shown on 3-2 are different from the corresponding surfaces shown on 3-7. Also, for clarity, do not show premining, operational, and post-mining surfaces on the same profile. Show premining and operational surfaces on Maps 3-2A and 3-2B. Show operational and post-mining surfaces on Maps 3-7A and 3-7B, even if the two surfaces are identical or if the post-mining surface is identical to the premining surface. And where operational and post-mining surfaces or premining and post-mining surfaces are identical, note that fact beside the particular profile. Plate 3-2, 3-2a, 3-2b, 3-7a,3-7b

542.800 The reclamation cost estimate found on pages 3-60 through 3-63 is still not verifiable and, therefore, is still not adequate. The cost estimate must include some detail as to how the applicant arrived at the time estimates stated therein. For example, in item (b) Soil Placement (Backfilling and Grading), it is not enough to just say that backfilling and grading of the Upper Portal Pad will take 10 days. The text must include some detail showing how the estimate of 10 days was arrived at. The volume estimates required under R614-301-553.100 can be divided by machine productivity per day to obtain these time estimates. Page 3-61
3-62
3-63

A planimeter check of the total disturbed area, as represented on Plate 3-1, yields a disturbed area of about 10.5 acres rather than the 7.4 acres used in the MRP. The figure of 10.5 acres must be used for the total disturbed area. All references to and calculations which use the figure of 7.4 acres, including topsoil distribution, backfilling and grading, and the reclamation cost estimate, must be changed to reflect the 10.5 acre figure. Page 3-7
8-10
8-21

553.100 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. The mass Pg. 3-47a

balance calculations must use either the cross sections already in the MRP or else new cross-sections derived by the applicant for this purpose. The calculations should be done using either the attached form or an equivalent form.

553.600 The applicant must clearly specify which highwall(s) will be created for his operation and which are already in existence from previous operations. The highwall(s) created for the applicant's operation cannot merely be reduced, but must be completely backfilled since the post-mining land use of grazing and wildlife habitat is identical to the premining land use (see R614-302-271.100). The highwalls which are already in existence from previous operations must be completely backfilled unless the applicant can demonstrate, to the Division's satisfaction, that there is not a sufficient volume of material available to do so (see R614-301-553.620 and R614-301-553.520). It must be emphasized that complete backfilling of the highwalls will affect the volume estimates required under R614-301-553.100, as well as the reclamation cost estimates. These must be changed to reflect this. Pg. 3-49

R614-301-700 HYDROLOGY (TM)

722.500 The applicant is required to provide sufficient slope measurements or contour maps to adequately represent the existing land surface configuration of proposed disturbed areas.

The following plates will need the following items corrected to come into compliance with this regulation. As a general comment, all plates must provide accurate contours depicting premining, operational, and post-mining topography.

Plate 3-7 Post-Mining Topography

1) The contours are inaccurate and confusing and must be corrected.

2) The watershed areas found on Plate 7-4 must be shown on Plate 3-7 at least partially, matching contours from Plate 7-4. The watershed areas are to verify the undisturbed and the disturbed reclaimed areas draining to each diversion. Plate 7-4

Plate 7-4 Drainage Areas A-F are not clearly depicted, as drainage area A overlaps another drainage boundary. These drainage areas need to be clearly depicted on Plates 3-7 and 7-5. Plate 3-7, 7-5

Plate 7-5 Contours are confusing and the drainage areas and contours from Plate 7-4 need to match, in order that drainage areas from Plate 7-4 can be specifically identified. In addition, all alternative sediment control areas need to be identified on this map, as well as, described in the text, including treatment of watershed area treated, percentage of total disturbed drainage area, and maintenance and monitoring plan.

Plates 7-4, 7-5
Pg. 7-45

731.300 (HS) The applicant must commit to covering all acid- and/or toxic-forming materials within at least four feet of nonacid- and/or nontoxic-forming materials.

Pg. 3-47

The applicant continues to describe various procedures for disposing of coal waste, underground development waste, contaminated material, etc. Plate 8-4 depicts a "Debris Burial Site," page 3-28 refers to removing the material from the permit area and hauling it to the Carbon County Landfill, page 3-50 refers to compacting contaminated material into diversions. Additionally, the applicant states that the coal waste embankment in the vicinity of test pit #8 will be shipped off with run-of-mine coal (page 3-12). However, surface facilities maps, reclamation maps, and even the post mining topography maps show the embankment in place. The applicant must be consistent as to the disposal procedures for the aforementioned waste materials. The applicant must also be made aware that if underground development waste in "gobbed" underground that specific plans for disposal must be formulated by the applicant and approved by MSHA and the Division (R614-301-513.300).

Removed Plate 8-4
Pg. 3-28,3-49

The material within the coal mine waste embankment (material in the vicinity of test pit #8) is toxic-forming. The concentration of hot water soluble Boron is unacceptable (i.e. ≥5mg/Kg) when compared with the Division Guidelines for the Management of Topsoil and Overburden, Table 2. Therefore, the applicant must comply with R614-301-731.300 and material handling and disposal provisions of R614 rules for the material in question.

Pg. 3-28

740. The applicant has provided inaccurate peak flow data, no justification for curve numbers based on soil type, cover, and land use taken from established Soil Conversation Service curve number table. The computer program used by the applicant gives inaccurate peak flows values as evidenced by the data presented in Table 7-5. Confirmation of the data given in Table 7-5 cannot be carried out until the plates are confirmed regarding watershed areas. All areas referenced in Table 7-5 must be easily identified on the appropriate plate or plates prior to PAP approval. Contours and watershed areas are the core of any watershed analysis.

Pg. 7-37 to 7-38e
Plate 7-4, 7-5

The applicant will provide a riprap gradation and installation methodology for filter cloth.

No rip rap required

Plate 7-6 Sediment Pond Detail Map does not show a decant at a level two feet above the 60% cleanout level or 18 inches above the maximum sediment level. This is necessary to comply with State Health's regulatory requirements regarding decant elevations and Division regulatory requirements under rule R614-301-742.223.32. The storage capacity for the 10-year, 24-hour storm event exists between the decant and the top of the principal spillway. The emergency spillway is required to safely pass the 25-year, 6-hour storm in combination with the principal spillway. The operator may eliminate the three dewatering holes on the principle spillway and provide an inverted dewatering nipple at the proper decant elevation.

Plate 7-6Pg. 7-46
7-46a

742. The applicant has failed to provide adequate documentation regarding any disturbed areas which do not drain to the sediment pond and are treated with alternative sediment controls. The following information will be provided if these areas exist. The amount of watershed area draining to the control, type of control (silt fence, straw bale, etc.), amount of runoff treated, and maintenance and monitoring plan. If no areas will be treated by alternative controls, then the applicant must state this and provide documentation in the plan.

Pg. 7-46a
7-46b

742.120 The applicant is responsible for providing sediment control techniques to control erosion and control sediment during reclamation from all reclaimed areas of the permit area. Treatment of all reclaimed areas will be required until bond release. No reclaimed channels will be allowed without the treatment of reclaimed area drainage for sediment control. If alternative controls are used, then a Best Technology Currently Available (BTCA) argument will be presented as part of the reclamation plan. Information from test plots demonstrating sediment yield from disturbed areas, water quality parameters including acidity, total suspended, and dissolved solids and an erosion control methodology assessment will be provided by the applicant during the operational phase of the operation. This information will then become part of the PHC determination and the BTCA plan.

Pg. 7-46a
7-46b

763.100 Siltation structures cannot be removed until two years after the last augmented seeding and will be maintained until removal is authorized by the Division and the Disturbed area has been stabilized and revegetated. The applicant will revise statements in the PAP which are not in compliance with this rule (pages 3-46).

Pg. 3-46

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BLUE BLAZE COAL CO.

Technical Deficiencies
of
October 1991

Submitted

December 6, 1991

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. Pg. 2-7 2-7a 2-7b

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 H^1-H^1 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. Plate 8-1 8-2 Pg. 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). Plate 8-1 8-2 Pg. 8-23

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.

The incorrect analysis have been previously deleted. The correct analysis are those dated October 19, 1990.

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. Pg. 8-23

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) Pg. 8-23

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). Pg. 8-23

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. Plate 8-1

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. Plate 8-2

Please revise the topsoil mass balance calculation on page 8-10 to eliminate the quantity of topsoil from area #1 (i.e., 1302.8 yds^3) from topsoil volume summation. Pg. 8-10

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. Plate 8-3

The applicant must commit to fertilizing and mulching the topsoil stockpiles so as to insure interim revegetation success. Pg. 8-23

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. Pg. 8-21

242.200 The applicant must commit to deep ripping the spoil surface prior to topsoil redistribution. Pg. 8-23

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. Pg. 8-23a

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. Plate 9-2

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. Pg. 3-42

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. Pg. 3-52

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. Pg. 10-57

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. Pg. 3-57

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. Pg. 3-52

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. Pg. 3-58

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. Pg. 3-29

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. Pg. 3-58

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 Pg. 3-7 3-12

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. Pg. 4-14a

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. Pg. 3-7 3-12

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. Pg. 3-12

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. Pg. 3-28

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. Pg. 3-47a 3-47b 3-60 3-61 3-62 3-63 3-64 3-65 Plate 3-2 3-2 3-7 3-7

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 Plate 3-2 3-2 3-7 3-7 Pg. 3-47a 3-47b

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. Pg.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." Pump Hous
Plate 3-1

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THIRD COMPLETENESS REVIEW
BLUE BLAZE COAL COMPANY
Carbon County, Utah
PRO/007/020
January 1991

RECEIVED
MAR 0 7 1991
DIVISION OF
OIL GAS & MINING

R614-301-100 General Contents (SMW)

114.100 The application will contain a description of the documents upon which the permittee bases their legal right to enter. The description will identify the documents by type, date of execution, lands to which pertain, and the legal rights claimed by the applicant. (See Page 4-2)

114.200 Pages 4-6, 4-8 and 4-13 identify where the private mineral estate has been severed from the private surface estate. For these areas, please submit a copy of the written consent of the surface owner, a copy of the conveyance that grants the right to extract coal by certain methods or demonstrate by applicable Utah law, the permittee has the legal authority to extract coal by those operations. (See Page 4-2 & Table 4-1)

142. Please label all maps so as to distinguish those operations which occurred prior to August 3, 1977. (See Plates 3-1 & 8-1)
(See Plates 3-3 & 3-4)

R614-301-231 General Requirements (HS)

The permittee has failed to consistently represent the proposed disturbed area. As depicted on plate 3-1, the proposed location of the topsoil stockpiles have been omitted from the disturbance. Additionally, the unhatched area northeast of the old concrete garage has also been omitted from the proposed disturbance. (See Plate 3-1)

As depicted on various maps (i.e., Plates 3-1, 8-1, 8-2, etc.), minor areas around the perimeter of the proposed disturbance are included or excluded from the disturbance depending upon the plate reviewed. The permittee must make necessary changes so that all maps or plates are accurate and consistent. (See Revised Plates)

R614-301-300 Biology (SMW)

322.220 Only one copy of Plate 10-1D identifies the golden eagle nest 189.01. All copies of Plate 10-1D available to all agencies must have this nest identified. Additionally, the Division of Wildlife Resources (DWR) has requested that all raptor nest locations be identified on a map which is suitable for overlay on the mining sequence map.
(See Plate 10-d, 3-3 & 3-4)

R614-301-400 Land Use and Air Quality (SMW)

412.200 The permit must contain a copy of a letter with comments from the land owner concerning the proposed postmining land use. (See page 3-57 & 3-59a)

R614-301-500 Engineering (JK & DD)

511. All references to the previous UMC regulations must be eliminated from the PAP. Such references are found on pages 2-3, 2-4, and 3-42. (Removed UMC references)

521. The applicant needs to make sure that the text and the maps correspond with each other and that they are internally consistent. This cannot be emphasized too strongly. A couple of specific problems found in the PAP should illustrate the need for the applicant to devote some attention to this.

First, the supply trailers, substation, bath houses, and the 5000-gallon fuel tank are all mentioned in section 3.2.3 of the text but are not shown on the Surface Facilities Map, Plate 3-1. All Surface facilities must be shown on the Surface Facilities Map. (See Plate 3-1)

Second, the shop is not even mentioned in the text but is shown on Plate 3-1 and Plate 3-2A (Cross Section C-C'). And then, Plate 3-1 locates the shop near the mine office on the west side of the canyon while Plate 3-2A has it near the Castlegate 'A' portals on the east side of the canyon (!). Again, consistency between the maps and the text is very important. (See page 3-4 & Plates 3-1, 3-2A

521.131 A map must be included in the PAP which shows all boundaries of lands and names of present owners of those lands, both surface and subsurface, included in or contiguous to the permit area. (See Plate 4-1)

525.140 The subsidence monitoring monument layout described on Page 3-41 is not shown on Plate 3-5 (Subsidence Monitoring Plan). Also, the proposed underground workings in the Hiawatha seam must be shown on Plate 3-5. (Overlay Plate 3-5 on Plates 3-3 & 3-4)

The applicant will be required to establish subsidence monitoring stations adjacent to Beaver Creek and in the vicinity of NW1/4 of SE1/4 of SW1/4 of Section 8, T13S, R8E. (See Plate 3-5)

525.210 The applicant will be required to submit isopach maps depicting the overburden above each coal seam on and adjacent to the mine plan area. Isopleths should be established on 100 ft. intervals. (See Plates 6-6 & 6-7)

R614-301-728 Probable Hydrologic Consequences (PHC) Determination (TM)

Undermining of Beaver Creek has been addressed from the standpoint of monitoring upstream of the permit area using Beaver Creek Coal monitoring stations. To provide an adequate assessment for the PHC statement, the operator is required to address all the requirements of R614-301-728. The operator has not provided appropriate baseline data for Beaver Creek, upstream and downstream of the property, to adequately define the hydrologic resources affected by mining. (See page 7-58)

R614-301-731.800 Water Rights and Replacement (TM)

The operator has not provided the necessary documentation to the Division of Water Rights as referenced in the Division of Water Right's letter to Pamela Grubaugh-Littig on January 25, 1991. (See pages 3-24, 3-25, 3-26 & 3-26

R614-301-731.300 Acid- and Toxic-Forming Materials (HS)

The permittee has not provided adequate physicochemical analyses (as specified in the Division's Second Completeness Review R614-301-521.140 & R614-301-731.300) of coal waste or excess spoil. The acid based potential (Diversion Guidelines for Management of Topsoil and Overburden, Table 6) of the coal waste (i.e., located in the vicinity of test pit #8) and the roof and floor material must be determined immediately. (See page 8-20a & Appendix 5)

Additionally, the permittee refers to the material located around test pit #8 as noncoal waste. The material in this area is excess spoil and/or coal mine waste. Please make necessary revisions. (See page 3-12)

On page 3-12, the permittee describes the disposal of the material in the vicinity of test pit #8. The permittee describes blending this material with run-of-mine coal. As inferred on Plate 3-1 "Note:" the permittee indicates the use of subsoil to dispose of "coal waste from old operations." The permittee must be consistent as to the disposal procedures for coal mine waste, underground development waste, etc. If the material in question is disposed of on site, then specific plans which fulfill the requirements of R614-301-553.200 Spoil and Waste & R614-301-233 Topsoil Substitutes and Supplements, must be submitted and approved. (Removed Statement Plate 3-1)

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State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF WILDLIFE RESOURCES

Norman H. Bangerter
Governor
Dee C. Hansen
Executive Director
Timothy H. Provan
Division Director

1596 West North Temple
Salt Lake City, Utah 84116-3195
801-533-9333

1-28 cc/P. Grubaugh-Littl

January 10, 1990

Dr. Dianne R. Nielson, Director
Utah Division of Oil, Gas and Mining
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, UT 84180-1203

Attn: Pamela Grubaugh-Littig

Dear Dianne:

I am responding to the second completeness review for the Blue Blaze Mine. After reviewing the updated materials we determined not all of our concerns (August 16, 1990) were addressed. Specifically, we requested the company to adjust plate 10-6, which was included in the new materials as 10-b, by showing the high-priority elk summer range as critical elk summer range. This was not accomplished. The map designations should be C-E-SU instead of H-E-SU. The text (10-20) should also be changed to reflect this adjustment in classification. (See Plate 10-b & page 10-20)

Thank you for the opportunity to review and provide comment. If we can be of any further assistance in this matter, please contact Ken Phippen of our Southeastern office (637-3310).

Sincerely,

Timothy H. Provan
Director

PRO/007/020
Copy to PAM #2

STATE OF UTAH
DEPARTMENT OF HEALTH
DIVISION OF ENVIRONMENTAL HEALTH

BAQE-690-90

Norman H. Bangerter
Governor
Suzanne Dandoy, M.D., M.P.H.
Executive Director
Kenneth L. Alkema
Director

Bureau of Air Quality
288 North 1460 West
P.O. Box 16690
Salt Lake City, Utah 84116-0690
(801) 538-6108

RECEIVED
NOV 05 1990
DIVISION OF
OIL, GAS & MINING

October 31, 1990

CERTIFIED MAIL

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

Dear Mr. Skaggs:

(See Attached letter dated 2/8/91 from Bureau of Air Quality)

Re: Permit Application Package, Blue Blaze Coal Company, Blue Blaze Mine, PRO/007/020

We recently received a copy of a letter addressed to Ms. Pamela Grubaugh-Littig, Division of Oil, Gas, and Mining, from our Southeast District Engineer, Mr. David R. Ariotti. In this letter he states that the applicant should contact the Bureau of Air Quality (BAQ) concerning the approval order dated March 3, 1981, which was included in the permit application package. To date, we have not heard from you. However, we offer the following comments:

1. Through our initial investigation, we have determined you are the owner/operator of the Blue Blaze Mine and wish to commence operation.

2. The approval order dated March 3, 1981, was issued by the BAQ to a previous owner/operator. As far as we know, the mine was never operated and there has not been a program of continuous construction since that time. Section 3.1.5, Utah Air Conservation Regulations (UACR), states that if a continuous program of construction, installation, modification, relocation or establishment is not proceeding, (18 months after issuance of an approval order), the Executive Secretary may revoke the approval order. Blue Blaze Coal Company needs to furnish the BAQ the details on this situation so an approval order decision can be made.

3. If a new approval order needs to be issued, it must be done in accordance with Section 3.1, UACR. A new notice of intent (NOI) would need to be submitted to the BAQ and an approval order be issued prior to initiation of construction or modification. A source is required to apply Best Available Control Technology (BACT) to all emission points (BACT would be determined on 1990, not 1981, technology).

After we review your details and/or a new NOI, we will decide whether we can amend the 1981 approval order or need to issue a new order. In any event, current BACT will be required. Please be advised that it may take as long as six months for the BAQ to issue an approval order after the notice of intent has been received. A complete and accurate notice of intent will save you considerable time. If you have any questions, please contact Donald Robinson, Engineering Manager, at (801) 538-6108.

Sincerely,

Montis R. Keller

for F. Burnell Cordner, Executive Secretary
Utah Air Conservation Committee

FBC:DER,HGN:jiw

cc: Southeast Utah District Health Department
David R. Ariotti, Regional Engineer
DOGM, Pamela Grubaugh-Littig

State of Utah
DEPARTMENT OF HEALTH
DIVISION OF ENVIRONMENTAL HEALTH

Norman H. Bangerter
Governor
Suzanne Dandoy, M.D., M.P.H.
Executive Director
Kenneth L. Alkema
Director

6 East Main
P.O. Box 800
Price, Utah 84501

Copy PAM, TOM, Susan

January 14, 1991

Ms. Pamela Grubaugh-Littig
Division of Oil, Gas & Mining
365 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

Dear Ms. Grubaugh-Littig:

Re: Permit Application Package, Blue Blaze Co
Blaze Mine, PRO/007/020, Folder #2, Carbon C

I have reviewed responses to the completeness revie Blue Blaze Mine which were received on December 17, 1990. January 2, 1991 I met with Mr. and Mrs. Skaggs to discuss a rovals and permits required by the Division of Environmental Health. The applicant has requested to work directly with the local health department and myself in approval of drinking water and sewerage facilities. Failure to obtain necessary approvals will be considered a violation of the PAP and reported to DOGM. Based upon my review and discussion of the project, I offer the following comments:

1. Reference to the drinking water system for the mine should clearly indicate all water will be hauled. Review and approval of facilities for storage and distribution of drinking water is required prior to placing the facilities in service. (See page 3-3j & 3-4)

2. Reference to the sewage disposal system should indicate that it is a holding tank system. Review and approval of the sewerage system is required prior to placing the facilities in service. (See page 3-3m & 3-4)

3. The plans for the sediment pond include sufficient information to complete my review. I will proceed when DOGM has determined the hydrology for design of the sediment pond is acceptable.

If you have any questions, or I can be of further assistance, you may reach me at 637-3671.

Sincerely,

David R. Ariotti, P.E.
Southeast District Engineer
Division of Environmental Health

cc: Claron Bjork, Southeastern Utah District Health Dept.
Kiran Bhayani, Bureau of Water Pollution Control
Mike Georgeson, Bureau of Drinking Water/Sanitation

STATE OF UTAH
NATURAL RESOURCES
Water Rights

JAN 28 1991

Copy PAM, TOM

Norman H. Bangerter, Governor
Dee C. Hansen, Executive Director
Robert L. Morgan, State Engineer

Southeastern Area • 453 S. Carbon Avenue • P.O. Box 718 • Price, UT 84501-0718 • 801-637-1303

January 25, 1991

Division of Oil, Gas & Mining
Attn: Pam Grubaugh-Littig
355 West North Temple
3 Triad Center, Suite 320
Salt Lake City, Utah 84180

Re: Blue Blaze Mine Permit Review

Dear Pam:

On June 8, 1991, I corresponded with you concerning the above referenced mine permit. At that time, I indicated that several matters needed to be taken care of through this Division. Since that time, I have in my office a permit request for the sedimentation pond, and also an application for the stream channel alteration permit, which has been numbered 91-91-02SA. These matters are presently being reviewed for approval. As I previously mentioned, the water rights will still need to be addressed and approved through this Division. (See pages 3-24, 3-25, 3-26 & 3-26a)

If you have any questions about the sedimentation pond or stream alteration permit that are presently being reviewed, please feel free to contact me.

Sincerely,

Mark

Mark P. Page
Area Engineer

cc: Roger Skaggs
P.O. Box 784
Price, Utah 84501

MPP/mjk

DEPARTMENT OF HEALTH
DIVISION OF ENVIRONMENTAL HEALTH

Norman H. Bangerter
Governor
Suzanne Dandoy, M.D., M.P.H.
Executive Director
Kenneth L. Alkema
Director

Bureau of Air Quality
1950 West North Temple
P.O. Box 16690
Salt Lake City, Utah 84116-0690
(801) 536-4000
(801) 536-4099 FAX

BAQE-074-91

February 8, 1991

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

Re: Payment of Fee - Modified Approval Order - Underground Coal Mine, Gordon Creek Canyon
Carbon County CDS B

Dear Mr. Skaggs:

This letter is to inform you that the above referenced project has been reviewed. Your approval order can be issued. However, we must first receive the approval order fee of $700.00.

I have enclosed a copy of the invoice. Please return it with your payment. Please note that Section 3.1.1, Utah Air Conservation Regulations, requires an approval order be issued by the Executive Secretary, Utah Air Conservation Committee, prior to initiation of construction or modification.

Thank you for your cooperation in this matter.

Sincerely,

Joyce I. Wiswell
Office Technician
Technical Evaluation Section

Enclosure

William R. Skaggs

P.O. Box 784
Price, Utah 84501
Telephone (801) 472-3786

June 9, 1990

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City Utah 84180-1203

Enclosed in the table of contents listed under (List of Applicable Permanent Program Regulations) pages 1 through 6 you will find that the Initial Completeness Review (ICR) dated May 17, 1989 which follows this letter has been complied with using permit application Cross-References. The deficiencies identified have been addressed. Also the recommendations of Richard V. Smith on May 16, 1989 have been followed to expedite future reviews.

In order that mining may occur in this year, we would appreciate that this mining permit be reviewed as soon as possible.

Sincerely,

William R. Skaggs

William R. Skaggs
Vice President
Blue Blaze Coal Co.

bs

Norman H. Bangerter
Governor
Dee C. Hansen
Executive Director
Dianne R. Nielson, Ph.D.
Division Director

State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203
801-538-5340

May 16, 1989

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

Dear Mr. Skaggs:

Re: Initial Completeness Review, Blue Blaze Coal Company, Blue Blaze Mine, PRO/007/020, Folder #2, Carbon County, Utah

Enclosed please find an Initial Completeness Review (ICR) for the Blue Blaze Mine Permit Application Package (PAP). The deficiencies identified in this ICR must be addressed before the PAP can be determined complete and the public comment period can begin.

Please be aware that the proposed mining operation encompasses federal lands and accordingly, twelve additional copies of the PAP must be submitted for distribution to other agencies.

In order to expedite future reviews, it is recommended that the organization of the PAP be improved as follows:

1. Eliminate the introductory PAP volume, except for the Table of Contents;

2. Remove listings of UMC regulations from the PAP;

3. Consolidate all text for each regulation;

4. Eliminate redundancy;

5. Structure chapters by technical subject matter (e.g., Hydrology, Wildlife);

6. Sequentially paginate all text throughout the PAP;

7. Incorporate all supplemental reports as appendices; and

8. Label each map with the appropriate enclosure numbers.

In closing, it is recommended that you contact me to arrange for a meeting with the technical staff to discuss the ICR and recommended changes to improve the PAP product.

Sincerely,

Richard V. Smith

Richard V. Smith
Acting Permit Supervisor

djh
Enclosure
cc: L. Braxton, DOGM
AT8/66-67

INITIAL COMPLETENESS REVIEW
BLUE BLAZE COAL COMPANY
PRO/007/020

Carbon County
May 17, 1989

UMC 771.23 Permit Applications: General Requirements for Format and Contents-(PGL)

The table of contents is incomplete. Please add appropriate pages for inclusion in the PAP.

(b) The applicant must identify the appropriate references (technical, etc.) used for the basis of information presented in the PAP.

(c) All technical data presented in the PAP must be identified by the (1) name of person collecting and analyzing data; (2) dates of collection and analyses; and (3) descriptions of methodology used to collect and analyze the data. Please submit this information.

(d) The applicant must state the name, address and position of officials of each private or academic research organization or governmental agency consulted by the applicant in preparation of the PAP for information on land uses, soils, geology, vegetation, fish and wildlife, water quantity and quality, air quality, and archeological, cultural and historical features. These persons or organizations should be listed in the PAP.

(e)(1) A "permit area" map must be submitted at a scale of at least 1:6000 (1" = 500'). All other maps in the plan can be at a scale no smaller than 1" = 2000'.

(e)(2) All maps and plans submitted with the PAP must distinguish among each of the phases during which underground coal mining activities were, or will be, conducted at any place within the mine plan area. At a minimum, distinctions must be clearly shown among those portions of the mine plan area in which underground coal mining activities occurred--prior to August 3, 1977 and after August 3, 1977.

UMC 771.27 Verification of Application-(PGL)

The PAP must include a "verification of application" that verifies, under oath (signed by a notary public), that the information contained in the application is true and correct.

UMC 782.13 Identification of Interests-(PGL)

(e) The PAP must include a list in the narrative of the PAP of all the names and addresses of the owners of record of all surface and subsurface areas contiguous to any part of the proposed permit area.

(f) The name of the proposed mine (not only permittee's name) must be included in the PAP.

UMC 782.15 Right of Entry and Operation Information-(PGL)

The PAP must include a complete description of all the documents upon which the applicant bases the legal right to enter. (The abstract of title dated February 22, 1980 is only a partial description.)

UMC 782.17 Permit Term Information-(PGL)

The PAP must include the number of acres affected for each term of the permit.

UMC 782.18 Personal Injury and Property Damage: Insurance Information-(PGL)

The PAP must include a certificate issued by an insurance company authorized to do business in the state of Utah, certifying that the applicant has a public liability insurance policy in force for the coal mining and reclamation operations for which the permit is sought. The Certificate of Liability Insurance form for the Division must be completed (see attachment).

UMC 782.19 Identification of Other Licenses and Permits-(PGL)

The PAP states that the permits listed on page 21 of Chapter I have been or will be, requested on a timely basis as required. The list must identify the application numbers for applications that have been sent, and a tentative schedule when the other permits will be sought.

The current names and addresses of the issuing agencies must be included in the PAP (NOTE: the addresses for the Bureau of Air Quality, Bureau of Water Pollution Control, and Division of Water Rights were incorrect in the PAP). The list of permits must include the Spill Prevention Control and Counter Measure Plan required by the EPA. (NOTE: If any underground storage tanks are located on site, they must be reported to Environmental Health and a copy of the notification must be included in the PAP.)

UMC 782.21 Newspaper Advertisement and Proof of Publication-(PGL)

The PAP states that "a copy of the newspaper advertisement will be entered as part of the permit after completion." As a point of clarification, the applicant must advertise after the application has been declared "complete". The applicant must advertise for four consecutive weeks, after which there is a 30-day public comment period.

UMC 783.12 General Environmental Resource Information-(PGL)

The PAP must describe and identify the size, sequence and timing of the subareas of land subject to underground coal mining operations for which it is anticipated individual permits will be requested over the total life of the proposed coal mining operations.

UMC 783.14 Geology Description-(RVS)

The applicant must provide adequate chemical analyses of roof and floor rock according to the Division's Guidelines for Management of Topsoil and Overburden for Underground and Surface Coal Mining (see attachment, Table 6).

UMC 783.15 Ground-Water Information-(RVS/DW)

The applicant has not provided an adequate characterization, based on site-specific data, of ground-water resources within and adjacent to the permit area.

The applicant must conduct a site-specific seep and spring survey during the summer of 1989, to reverify the existence and identify any changes in the occurrence of springs. The survey must be conducted according to the Division's Water Monitoring Guidelines and acquire, at a minimum, one season of flow and water quality data from each source (see attachment).

The applicant must submit a piezometric surface map from borehole data. Moreover, if accessible, water level and quality data must be submitted from LMC-1, LMC-2 and LMC-4.

The applicant must also submit an adequate suite of mine inflow data as described in the Division's Water Monitoring Guidelines.

Data derived from the above-identified studies must be synthesized to provide a site-specific ground-water resource characterization that includes discussions of aquifer recharge, discharge and storage.

UMC 783.16 Surface Water Information-(DW)

The applicant has not provided an adequate characterization, based on site-specific data, of surface water resources for areas within and adjacent to the permit area.

The applicant must conduct a surface water monitoring study according to the Division's Water Monitoring Guidelines, and acquire a minimum of one year of flow and water quality data. All surface water monitoring stations must be identified on a map.

The data gathered must be used to provide a site-specific surface water resource characterization.

UMC 783.17 Alternative Water Supply Information-(DW)

The applicant must provide a description, based on site-specific data, of the extent to which the proposed operations may result in contamination. Information must be supplied on an alternative source or sources of water that could be developed to replace the existing sources should contamination, diminuition, or interruptions result.

UMC 783.18 Climatological Information-(DW)

The applicant must provide site-specific climatological information.

UMC 783.19 Vegetation Information-(BAS)

(a) A reference area must be established for the mesic vegetative community which will be disturbed. Reference area location must be approved by the Division. Sampling must be conducted, following the Division's Vegetation Information Guidelines (see attachment).

Reference areas for Salina wildrye and mesic communities must be permanently staked under Division supervision, using metal fence posts.

Boundaries of reference areas must be shown on a vegetation map.

The scale of Vegetation Map 1 (Enclosure 6B) is too small. Information is inadequately presented. Please consult "Vegetation Information Guidelines."

The vegetation information narrative should include a table, identifying the acreage of each of the following by vegetation type: (1) permit area; (2) area of prior disturbance; and (3) area of new disturbance and/or redisturbance. This information must agree with areas shown on vegetation and reclamation maps.

The PAP (Chapter 2, page 89) states that surface disturbance will comprise 5.5 acres. However, the planimetered area of disturbance on Enclosure 24 is 7.4 acres. Please rectify this discrepancy.

Vegetation Map 2 (Enclosure 6C) must identify all areas of prior disturbance by cross-hatching or some other means. Areas of new disturbance and redisturbance must be identified, as well as their respective vegetation types.

(b) The vegetation types within the permit area and adjacent area (1/2 mile perimeter) must be identified on a map.

UMC 783.20 Fish and Wildlife Resources Information-(BAS)

(c) The applicant must conduct an up-to-date raptor survey of the permit area and adjacent areas (1/2 mile perimeter) under the supervision of the Division of Wildlife Resources (DWR).

If nests are found, which may be jeopardized, special purpose permits may need to be obtained from the U.S. Fish and Wildlife Service.

UMC 783.21 Soil Resources Information-(HS)

The applicant must provide an Order III Soil Survey for the entire permit area. This must include a map of proper scale delineating different soils; a soil (pedon) description for each soil identified; and present and potential productivity of each soil identified.

The disturbed area soil survey is incomplete. An Order I Soil Survey is required for the disturbed area. It is unclear as to the method and intensity of the soil survey conducted by Patrick D. Collins for the proposed disturbance. Please identify the level of intensity of the above soil survey and describe the method employed to correlate soils of the mine site with published or unpublished National Cooperative Soil Surveys.

Additionally, the applicant must identify (percentage, pedon description) soil phases and inclusions within particular soil types. Limiting factors within soil types may be the result of phase and inclusion variation. Each and every inclusion and phase within a soil type proposed to be removed must be reported separately and have physical and chemical analyses performed (the Division Guidelines for Management of Topsoil and Overburden for Underground and Surface Coal Mining, Table 1).

The soil resources information is incomplete with regard to the soil available for plant growth material for final reclamation. There is a discrepancy between the extent of new disturbance depicted on Enclosure 6 and the area identified in Enclosure 19 for topsoil removal and storage. Two omissions noted are the Topsoil Storage Area disturbance and disturbance associated with the proposed plan for burial of development waste along the old haulage road. If soils are unsuitable for reclamation, then the applicant must identify and substantiate that particular areas of soil are unsuitable.

The applicant must correlate the two sets of lab data (PAP Soil Resources Information 817.21 - 817.25, Volume I, Chapter II) by additional soil sampling. Physical and chemical analyses must be performed for all soil removed. Sample sites must be located within the area proposed for topsoil salvage and shown on Enclosure 6. Samples must be identified and collected by depth as follows: 0-15 cm, 15-30 cm, 30-45 cm, and every 30 cm thereafter. Soil sampling must occur to the depth of planned excavation. Laboratory analyses are required and methodologies recommended are those outlined in the Division's Guidelines for Management of Topsoil and Overburden for Underground and Surface Coal Mining, Table 1 and Table 6, respectively.

UMC 783.22 Land Use Information-(BAS)

(b) Please provide additional detail of prior mining activity to comply with UMC 783.22(b)(1) through (5).

(c) Please provide a statement of land use and zoning from Carbon County.

UMC 783.24 Maps: General Requirements-(PGL/DW/HS)

MAP REQUIREMENTS

All maps required by this regulation must show the permit area. All maps must have a scale legend, north arrow and orientation (township and range). Maps must have a scale no smaller than 1" = 2000'.

(c) A map must be submitted that indicates the boundaries of all areas to be affected over the estimated life of the underground coal mining activities, with a description of size, sequence, and timing of the mining of subareas for which it is anticipated that additional permits will be sought.

(d) Old buildings are located on Enclosure 13. The permit area must be identified on that map and the current use of the buildings must be identified.

(g) No location of water supply intakes (if present) for current uses was supplied. Please add this information in the form of a map. This should include those surface waters which will receive discharges from affected areas in the proposed permit area.

UMC 783.25 Cross Sections, Maps and Plans-(PGL/DW)

Map certification requires a clear and readable stamp, signature, and date of certification.

(a) A certified map must be submitted showing elevations and locations of test borings and core samplings.

(b) Information must be given on the elevation and locations of all monitoring stations for water quality and quantity. This includes both groundwater (springs, in mine drips, and drill holes) and surface water monitoring locations. Add this information in the form of a map.

(c) The applicant must submit a geologic map that shows the distribution of lithostratigraphic units at the surface. The geologic map must also include standard strike and dip information.

(e) A map must be submitted with the location and extent of all known workings of active, inactive, or abandoned underground mines, including mine openings to the surface within the proposed permit area and adjacent areas.

(f) The applicant must submit a piezometric surface map (see comment under UMC 783.15).

(i) The applicant must provide maps identifying all existing areas of spoil, waste, coal development waste, noncoal development waste, area of predisturbance, and areas to be retopsoiled and revegetated. The Soils Map (Enclosure 6) identifies the valley bottom adjacent to the old mine ruins (foundations) as mine dumps. This is only partially true. Identify areas where undisturbed soils remain.

UMC 784.11 Operation Plan: General Requirements-(PGL)

(a) A narrative description of the type and method of coal mining procedures and proposed engineering techniques, anticipated annual and total production of coal, by tonnage, and the major equipment to be used for all aspects of the operations must be submitted for inclusion in the PAP.

UMC 784.12 Operation Plan: Existing Structures-(PGL)

(a) There are existing structures on site. A description of the structures that will be used in connection with the coal mining operation must be included in the PAP.

UMC 784.13 Reclamation Plan: General Requirements-(BAS/HS)

(a) Please remove the list of seed suppliers and collectors from Chapter 8 and the DWR Plant Materials Guide from Chapters 8 and 9.

A plan for interim reclamation must be included in the PAP. A seed mix and discussion of reclamation techniques must be provided. The statement in Chapter 3, page 92, that "full" reclamation will be employed for interim reclamation is confusing and inadequate.

(b)(1) The PAP must include a reclamation timetable like that in Appendix A of the Division's "Revegetation Guidelines for Utah Coal Regulatory Program."

(b)(4) The applicant must provide designs, cross sections, dimensions and maximum slope for the proposed topsoil storage area. Enclosure 19 indicates the storage of 8,800 yards ^{3} within the topsoil storage area. The PAP text indicates (Soil Resources Information, UMC 817.21 - 817.25, Volume I, Chapter II) the removal and storage of 10,327.6 yds ^{3}. Please clarify this discrepancy.

The applicant must provide an isopach map delineating depth of topsoil removal and redistribution, and the aerial extent of each depth category.

The applicant must provide an adequate timetable for completion of each major step in the reclamation plan, and any contemporaneous reclamation planned (include topsoil stockpile reclamation and development waste disposal site reclamation).

The applicant must provide a topsoil mass balance sheet to include: volume of topsoil removed from each area of disturbance and the volume of topsoil redistributed for each area of disturbance.

The following information must be included in the PAP to meet the requirements of UMC 817.21 - 817.25.

1. Methods and equipment employed to ensure proper implementation of a soil removal plan:

   (a) vegetation removal, and
   (b) method utilized to exact depth of soil removal.

2. Methods and equipment employed to ensure proper implementation of a soil storage plan:

   (a) erosion protection (berm, mulch, contour-furrowing, seed mixture, etc.).
   (b) compaction mitigation, and
   (c) fertilizer/amendments to ensure revegetation success.

3. Methods and equipment employed to ensure proper implementation of a soil redistribution plan:

   (a) compaction mitigation,
   (b) soil scarification (i.e., depth, machinery),
   (c) method used to ensure proper topsoil redistribution depth,
   (d) fertilizer assessment sampling plan,
   (e) management to prevent erosion between topsoil redistribution and reseeding,
   (f) time between regrading and retopsoiling, and
   (g) seedbed preparation.

Additional information may be required subsequent to initial review of above requested information.

(b)(5)(i) The PAP must commit to seeding and planting according to the provisions of UMC 817.113.

The PAP must state that neither planting schedule nor seed mix will be altered without prior written approval from the Division. The reclamation plan may not vacillate as suggested in Chapter 3, page 6.

(b)(5)(ii) Please replace the present seed mixes with two mixes -- one for xeric and the other for mesic sites. Seed mixes must consist of commercially available native species, adapted to the site and having forage and cover value for wildlife. The applicant should refer to Section C on "species selection" in the Division's Revegetation Guidelines (see attachment). The seed mix table must specify pounds per acre and pure live seed/ft^2. A provision should be made for supplemental planting of trees and shrubs along water courses.

(b)(5)(iii) Two seeding methods are proposed in Chapter 3, pages 7 and 8. Please clarify when one method will be used over the other. There appears to be a contradiction.

When seeds are hand broadcast, the PAP must commit to raking seeds into the soil.

(b)(5)(iv) Mulch must be applied over all areas to be reclaimed, unless field trials demonstrate better results without. The PAP must identify mulch type, rate of application, and methods for spreading and anchoring.

(b)(5)(v) The applicant must provide a plan for weed control on mine operation areas, topsoil stockpiles and reclaimed areas.

(b)(5)(vi) The PAP must describe the methods, schedule and standards used to determine revegetation success, per UMC 817.116.

The monitoring schedule for final reclamation should be similar to that in the Division's Revegetation Guidelines, Table 1.

(b)(7) The applicant must provide a map clearly defining areas of contemporaneous reclamation, waste removal and disposal.

The applicant must provide adequate physical and chemical analyses (constituent outlined in the Division's Guidelines for Management of Topsoil and Overburden for Underground and Surface Coal Mining, Table 6) of coal waste to be buried and cover material used to backfill disposal sites (i.e., down-cast material, excess cut material from road construction). Additionally, the applicant must provide volume estimates of material to be disposed of, storage capacity of disposal site and volume of cover material.

The applicant must provide a description of measures employed to insure that all acid-forming and toxic-forming materials are identified and disposed of in accordance with UMC 817.48 and UMC 817.103.

UMC 784.14 Reclamation Plan: Protection of Hydrologic Balance-(DW)

(a)(1) The applicant has provided a description for the implementation of siltation structures. However, the applicant must also provide plans, locations, details, and calculations. The location of each structure must be identified on Enclosure 13.

(a)(2) Information on the rights of present users of both surface and groundwater must be included in the PAP. Please add this information in the form of a map which includes the location of all wells and points of diversion.

(a)(3) A detailed description for measures to protect both surface and ground waters must be included in the PAP. This involves monitoring of all appropriate springs within the permit and adjacent areas to ensure the protection of quantity and quality. An alternative source must be identified where protection of quality cannot be ensured.

(a)(4) The applicant must demonstrate that all mine openings will be designed such that water quality is protected. This means all openings will be designed to prevent gravity discharge of mine water.

(b)(3) The applicant must follow the operational and post mining portion of the Division's Water Monitoring Guidelines for designing a water quality monitoring system. Contact the Division if any consultation is needed.

(c) A determination of the probable hydrologic consequences must be included in the PAP. This includes areas adjacent to and within the permit boundaries.

(d) A detailed description, including drawings, must be included in the PAP for all permanent entry seals and downslope barriers designed to ensure stability under anticipated hydraulic heads after mine closure.

UMC 784.15 Reclamation Plan: Post Mining Land Use-(BAS)

The applicant must provide a detailed description of the proposed postmining land use. The PAP must include a discussion of the capability of the reclaimed land to support the land uses and the relationship of the proposed postmining land use to existing pre-mining land use. Additionally, the applicant must provide a detailed description as to how the proposed postmining land use will be achieved.

UMC 784.16 Reclamation Plan: Ponds, Impoundments, Banks, Dams and Embankments-(DW)

The applicant has not submitted sufficient information regarding sediment control structures to determine the PAP complete. Please provide all required design information described under this regulation.

UMC 784.17 Protection of Public Parks and Historic Places-(PGL)

The applicant must provide an explanation as to why this section is not applicable.

UMC 784.18 Relocation or Use of Public Roads-(PGL)

The applicant must provide agreements with appropriate landowners that insures the interests of the public and landowners that are affected by the use of the public road will be protected.

UMC 784.19 Underground Development Waste-(PGL)

The PAP states that the 548 cubic yards of development waste rock will be used as backfill in the old haulage grade, and Figure 6 (Chapter II) and Enclosure 20 are referred to as "burial sites." These figures must be consistent. A description of how the approximate yardage was quantified must be included in the PAP. A description of how the requirements of UMC 817.71 will be met must be included in the PAP.

UMC 784.20 Subsidence Control Plan-(RVS)

The applicant must provide a survey of renewable resource lands (see definition under UMC 700.5) and a discussion of whether subsidence could cause material damage or diminuition of reasonably foreseeable use of such renewable resource lands.

The applicant must provide a detailed description of measures to be taken to prevent and/or mitigate the effects of material damage or foreseeable use of renewable resource lands.

UMC 784.21 Fish and Wildlife Plan-(BAS)

(a)(1) Itemize all DWR mitigation recommendations which will be followed, and incorporate these with commitments made in Chapters 2 and 3, on pages 89 and 90. The aforementioned commitments lack sufficient detail. Please provide.

(b)(3) The applicant must provide discussions of depth of overlaying strata, angle of draw, and monitoring plans, as these relate to undermining of Gordon Creek and Beaver Creek.

INITIAL COMPLETENESS REVIEW
BLUE BLAZE COAL COMPANY
PRO/007/020

Carbon County, Utah
August 8, 1990

R614-301-100 Permit Application Requirements-(PGL)

112.320. The applicant must submit information under which Mr. George Fehr, the principal shareholder, has previously had interest in a coal mining and reclamation operation in the United States within the 5 years preceding the date of application. pg. 2-1 2-2 2-3

112.700. The MSHA number for the facilities (proposed applications) must be included in the Permit Application Package (PAP). pg. 2-3

117.200. A sample of the newspaper advertisement that would be published must be included in the PAP (see R614-300-121). pg. 2-7

122. All relevant portions of published materials presented in the PAP must contain explicit citations of the referenced materials. Please address accordingly. see:appendix, reports,& bibliography's

130. All technical data must be accompanied by the names of persons or organizations that collected that data and descriptions of the methodology used to collect and analyze the data. see:regulation methodology, & scope in each chapter.

141. All maps must be presented in a clear and concise and consolidated format. The information presented must be clear and not confusing. see:list of Plates.

A "permit area" map must be submitted. see:Plate 4-2

142. All maps and plans submitted must distinguish among each phase during which coal mining and reclamation operations were or will be conducted at any place within the life of the operations. see:Section 3 List of Plates in table of contents.

R614-301-200 Soils-(HS)

221. The applicant must conduct a survey of the entire proposed permit area to indicate whether prime farmland exists as given under R614-302-313. The original prime farmland determination (June 13, 1980 letter from T. B. Hutchings, State Soil Scientist) included Section 17, T13S., R8E., SLBM. The proposed permit area encompasses portions of Sections 7, 8, 18 and 20, T13S., R8E., SLBM. Therefore, the applicant must request a prime farmland investigation be conducted by the State Soil Conservationist to determine the occurrence and extent of prime farmland within the proposed permit area. pg. 8-13 8-14

223. The Carbon Area Soil Survey is now published and publicly available. The survey encompasses the entire proposed permit area. Therefore, soil descriptions located in the Permit Application Package must be correlated to the National Cooperative Soil Survey for the Carbon Area. pg. 8-2

Correlation of the disturbed area soils will enable the applicant to derive present and potential productivity estimates for the existing soils (R614-301-222.400).

On page 8-12 of the PAP the applicant reports that the soils of the area "can support cultivated crops", then states that "soils have severe limitations which restrict their use largely to grazing woodlands or wildlife." Please rectify the above discrepancy and cite the literature which was employed to derive these statements. pg. 8-12

231. The soil resources information with regard to suitable soil available for final reclamation is incomplete, contradicting, and must be revised. The following is a listing of the inadequacies and contradictions. pg. 8-19 8-20 8-20a

1. Table 8-3, Soil Chemical and Physical Properties, is inadequate for the following reasons:

(a) Pit #3, Sample Increment: 45-75 cm. The percent sand, silt and clay fractions add up to 118.8 percent.

(b) Pit #4 and Pit #5, Sample Increment: 15-30 cm are exactly the same for the reported parameters and the sand, silt and clay fractions add up to 127.4 percent.

(c) Pit #4, Sample Increment: 15-30 cm is not accompanied by a laboratory (Commercial Testing and Engineering Company) data sheet.

2. Plate 8-1 must depict the topsoil stockpiles, the alluvial disposition area behind the waste rock embankment, and the entire Area #7 (Plate 8-2) within the disturbed area. see: Plate8- Plate8-

3. Areas #1-7, depicted on Plate 8-2, indicated topsoil stripping depths and areal extent. The applicant must first collect and analyze soil samples to the planned excavation depths (i.e., sampling depths: 30 cm increments, laboratory analyses: the Division's Guidelines for Management of Topsoil and Overburden, Table 1, and include hot water extractable Selenium and Boron). Additionally, estimates of topsoil salvage area are incorrect. The Division estimates that approximately 90,345 ft^2 of surface area will be disturbed (Plate 8-2) during soil salvage operations. The applicant estimates that 167,815 ft^2 of surface area will be disturbed. Please describe how this area estimate was attained and pg. 8-10 8-19 8-20 8-20a

revise topsoil mass balance calculations in accordance with new finding.

4. According to the "Explanation", Plate 8-2, the areas not stippled or shaded will be "topsoiled and revegetated." Accordingly, the entire area depicted by Plate 8-2 would have to be topsoiled and revegetated. Please revise. see:Plate8-2

5. Areas 1-7 (Plate 8-2) depict areas where soil will be separately removed and stockpiled. The applicant must substantiate the lack of soil removal in areas where disturbance is planned (Plate 8-1) but have not been included on Plate 8-2 for soil removal. pg. 8-21

R614-301-300 Biology-(SMW)

321.100. Page 9-3 of the PAP lists 6 vegetative communities, page 9-33 lists 14 vegetative communities of which many communities from both lists are not shown on the vegetation map. The applicant must list, provide acreage and describe the vegetative communities within the permit area in the PAP. The community description must correlate to those shown on the map. see: Section 9

321.200. A statement of productivity and range condition of the reference area from the U.S. Soil Conservation Service must be included in the PAP. pg. 9-9

323.100. The reference area identified on Vegetation Map 1 is shown at a different location on Vegetation Map 2. The reference area must be represented accurately on the map as located in the field. A land surveyor should correctly locate the reference area on the map. see:Plate 9-

323.400. Please complete Vegetation Maps 1 and 2. An area delineated by heavy lines on Vegetation Map 2 is not named. Vegetation Map 1 is not complete the vegetative communities for the entire permit area must be outlined and named, arrows are not acceptable. see:Plate 9- Plate 9-

331. Provide a time schedule for interim revegetation. pg. 3-42

332. The applicant must address the anticipated impacts of subsidence on the golden eagles nest which is located in section 7. This discussion must include an analysis of the angle of draw of subsidence and a detailed monitoring program. pg. 3-37 3-41 10-56

341.100. Please provide a detailed time table for completion of each major step in the revegetation plan (i.e. seed and transplant ordering, topsoil placement, seeding, etc.). pg. 3-59a 3-60

10-1D

341.210. A final reclamation seed mixture and shrub plantings must be submitted for the mesic and White Fir/Scrub Oak vegetative types. pg. 3-54 3-55 3-56

342.100. The wildlife enhancement plan for final reclamation is not adequate. The applicant must provide reference areas as described in R614-301-356.100 and provide woody plant densities success standards for wildlife enhancement. Two Hundred and Forty woody plants per acre is not adequate as wildlife enhancement. pg. 3-55 3-56 Plate 9-1

356.100. The applicant must select and provide a quantitative description of reference areas for the mesic and the White Fir/Scrub Oak vegetative communities before a permit will be issued. Reference area location must be approved by the Division. pg. 9-1 9-4

356.110. Please provide a description of the vegetative sampling methods to be used for postmining vegetative bond release. Describe where transects will be located and which areas will be compared to the appropriate reference area. pg.9-4 Plate 9-1

Please provide a detailed schedule of quantitative sampling for interim and final revegetation as described in the Division's vegetation guidelines.

358.400. The applicant must address avoidance and restoration during coal mining and reclamation operations to the intermittent stream which runs through the proposed facilities. pg. 3-27 10-57

R614-301.400. Land Use-(SMW)

411.142. The applicant must show coordination with the State Historic Preservation Officer with regards to cultural and historic resources information. A letter included in the PAP will suffice as coordination. pg. 5-13a

R614-301-500 Engineering-(JK)

512.200. The registered land surveyor cannot certify haul roads (Plate 3-2, 3-2A and 3-2B) and sedimentation ponds. Plans and engineering designs must be certified by a qualified professional engineer. Please certify accordingly. see: Plate3- 3-2a, 3-2b, 7-6

513.300. The applicant must submit for approval to the Division a plan for disposing of underground development waste, etc., in underground workings. pg. 3-12

521.121. The applicant must show the location of all buildings on the surface facilities map. The sewage system, the culinary water system, the trash bins, and the shop are all absent from the surface facilities map. see:Plate 3-

521.125. The sedimentation pond is absent from the surface facilities map. see: Plate 3-

521.133. (Public Road, page 3-6) The letter from Carbon County Commission dated February 6, 1989 regarding the use of the Carbon County Road is not decisive. Beaver Creek Coal Company currently maintains the county road with a formal agreement. However, Gordon Creek #2, #7 and #8 Mines will be closed at the end of this year. This closing, combined with the reclaimed Gordon Creek #3 and #6 Mines may alter the maintenance responsibilities of this road and therefore, transfer major responsibility for maintenance to the Blue Blaze Coal Company. An updated letter from the Carbon County Commission must be included in the PAP. pg. 3-6a

521.142 The applicant must provide adequate physiochemical analyses (constituents outlined in the Division's Guidelines for Management of Topsoil and Overburden, Table 6) of coal waste or excess spoil to be disposed of. Additionally, disposal techniques must be described and location of said disposal depicted on an appropriate plate. The applicant must also provide volume estimates of the material to be disposed of and the volume and source of cover material required. (HS) pg. 8-20a 3-12

521.160. The applicant must provide map(s) identifying all existing areas of spoil, non-coal waste, coal development waste, areas of predisturbance and areas to be retopsoiled and revegetated. (HS) see: Plate 8-

521.163. The applicant must provide a map which shows specifically the areas for which a performance bond or equivalent guarantee will be posted. see:Plate 8-

523. The applicant has provided a description of the proposed mining operation, but is rather vague. Particularly vague is the description of the portals and the coal seams to be mined; the applicant is unclear as to whether there will be 7 or 8 portals, which seams they will access, where they will be located, and which mine (#1 or #2) will be accessed by which portal. The applicant must clarify these issues in Chapter 3 of the PAP and on Plate 3-1. pg. 3-2 3-10 Plate 3-

524. The applicant has stated that the use of explosives is unlikely, but a possibility nevertheless. Therefore, the applicant must draft a blasting plan in accordance with the requirements of this section. required for sruface blasting only

525.270. The applicant must commit to provide the Division with a detailed plan of the underground workings, within a set schedule, as required by this section. pg. 3-10

560. The applicant must include in the PAP a statement to the effect that all mining and reclamation operations will be conducted in accordance with the approved permit and the requirements of R614-301-510 through R614-301-553. pg. 3-8

R614-301-600 Geology-(DD)

The applicant must submit a geologic map that depicts clear geologic features: faults, folds, fracture patterns, outcrops, stratigraphy, overburden thickness, hydrologic features (wells, springs, streams and ponds), and potential subsidence areas. Plate 6-1 portrays most of these features, but does not give a clear picture because too many features are superimposed on one map. see: Plate 3-
Plate 3-
Plate 3-
Plate 4-
Plate 6-
Plate 6-
Plate 7-

The applicant must submit four separate maps of the same scale which depict mining related features. Individual maps must depict geology and geologic features: hydrologic features such as springs, wells, streams, ground water intercept areas, lakes or ponds and monitoring sites; areas to be mined, five-year mine sequence, methods to be used, buffer zones and cross section points; potential subsidence areas, overburden and interburden isopachs, acid and toxic materials sampling sites, structures and subsidence monitoring stations.

R614-301-700 Hydrology-(TM)

722.100. Page 7-6 discusses the mine area aquifer and states "available data is not sufficient to allow conclusion to be drawn concerning seasonal variation in head." and "an adequate piezometric surface map cannot be generated with present available data." Section 722.100 requires the location and extent of subsurface water and will include, but not limited to, area and vertical distribution of aquifers, and portrayal of seasonal differences of head in different aquifers, on cross sections and contour maps. The lack of presently available data does not satisfy the requirements of the Coal Mining Rules. The required information to satisfy Section 722.100 must be included in the PAP. pg. 7-6

722.500. The design slope for surface water diversions are given on pages 7-39 through 7-42. The drainage diversion map (Plate 7-5) has contour intervals of 10 feet and is not adequate to confirm diversion slope and water velocities. The PAP must include a diversion map with 2-foot contours or the PAP must commit to a surveyed as-built of the diversion to confirm diversion design. pg. 7-39

723. Water monitoring sample point 6 is a surface water sample point. Page 7-15 lists the sampling point as a spring and provides the ground water sampling parameters. This error must be corrected in the PAP. pg. 7-15

Water analyses are listed on pages 7-10 through 7-15 but lacks the name and address of the testing lab. This information must be included in the PAP. pg. 7-9

724.100. The mine plan aquifer discussion on pages 7-6 and 7-7 can be characterized as using documentation from adjacent mines, Eccles Canyon, Winter Quarters Canyon, and laboratory tests. The PAP must include ground water quantity descriptions for the permit area and will at a minimum include approximate rates of discharge or usage and depth to water in the coal seam and each water bearing stratum above and potentially impacted stratum below the coal seam. pg. 7-6

727. Page 3-25 states 404.5 acre-feet of water is being purchased to replace any potential water loss as a result of the Blue Blaze operation and references Figure 3-5. Figure 3-5 is not adequate to determine ownership or potential ownership of water rights. The PAP must include detailed documentation and narrative to accurately determine the time frame and probability for acquisition of the 404.5 acre-feet of water rights. pg. 3-24 thru 3-26a

Page 3-25 states that the State Engineer of Water Rights in Price, Utah estimates maximum cumulative impact of the Blue Blaze operation to be 225.8 acre-feet of water rights. The PAP must have supportive documentation from the State Engineer, including calculations and methodology for estimating maximum cumulative impact.

Appendix 1 lists ownership of water rights in the Gordon Creek area. Water right quantities are provided only for water rights which could possibly impact the Gordon Creek No. 2 Mine. The PAP must identify the location and quantity of water rights within and adjacent to the Blue Blaze permit area. Appencix I

The PAP must identify the availability and suitability of alternative water sources for existing premining uses and approved postmining land uses. pg. 7-28

731. Page 7-28 states mine inflows of 3 gpm or greater and with sustained yield for 3 months will be included in the ground water monitoring network. The PAP must commit to including into the monitoring network any mine inflows of 5 gpm or greater with sustained yield for 30 days. pg. 7-28

731.222.2 Page 7-56 states the sedimentation pond will be monitored per the requirements of the NPDES permit. The NPDES permit must be included in the PAP. pg. 2-8 3-25 7-56

731.300. Provide a description of measures employed to insure that all acid-forming and toxic-forming materials are identified and disposed of to prevent water quality degradation and maintain revegetation potential. (HS) pg. 3-8

731.600. Page 10-57 discusses the stream buffer zone determination and identifies the North Fork of Gordon Creek as an intermittent stream. This statement is supported by the water monitoring data which has recorded flow in the North Fork of Gordon Creek for 9 months of the year. The Coal Mining Rules states no land within 100 feet of an intermittent stream will be disturbed by coal mining or reclamation operation. The Division may authorize such activities closer than 100 feet if it can be found that:

*state and federal water quality standards can be met.

*water quantity and quality or other environmental resources of the stream will not be affected; or

*the area not to be disturbed will be designated as a buffer zone.

The stream buffer zone determination in Chapter 10 does not provide the required information to satisfy Section 731.600 of the Coal Mining Rules. If the operator intends to conduct coal mining activity within 100 feet of the stream, the PAP must include information to support an exception to the set-back distances. pg. 3-24 thr 3-27 pg. 7-44 7-56 & 7-57 10-57

731.730. Page 7-58 states Blue Blaze will include Beaver Creek's water monitoring points into the monitoring network after Beaver Creek has completed its monitoring network. Monitoring point 2-4-W is not identified on a map. The PAP must include a map which identified all the Blue Blaze monitoring points. see:Appendix Filed Water Rights

731.760. The PAP must include cross section diagrams for: Plate 7-5 Plate 7-6

*each disturbed and undisturbed diversion pg. 7-46d

*the berm surrounding the top soil storage area Plate 7-6

*representative points along the mine road to determine how surface drainage may be altered Plate 7-5

733.100. Plate 7-5 7-6 shows a cross section of a silt fence with no description of where it is located. The location and site specific details must be included in the PAP for each sediment control device. Plate 7-5 Plate 7-6 pg. 7-46b

742.100. Plate 7-5 shows the sedimentation pond in the existing streambed of the North Fork of Gordon Creek. Failure in any one of several diversions could result in flow returning to the stream channel and jeopardizing the integrity of the sedimentation pond. Supportive material must be included in the PAP to justify the location of the sedimentation pond in a stream channel. pg. 7-46 thru 7-46c

742.110. The diversion plan utilizes riprap, filter blankets, and liners in several locations. The description of the selected material is not adequate. For each location utilizing erosion control materials, a complete description of plans, specifications and methodology to support the design must be included in the PAP. pg. 7-37 thru 7-55

The reclamation plan in Chapter 3 states the mine site will be backfilled and regraded to restore natural drainage to the restored and riprapped channel. Straw dikes will be established and anchored to control erosion on newly graded and seeded areas. Detailed plans, specifications, methodology, maps and cross sections must be included in the PAP to determine the reclamation plan will function as intended and not contribute additional sediment to streamflow. pg. 3-49 3-50 3-44 3-48

742.120. The PAP must include a monitoring program to reflect the success of the reclamation techniques to stabilize the area, reduce erosion, and control sediment. pg. 3-50 3-57 3-59

The disturbed areas identified on Plate 9-2 were correlated to the drainage diversion map, Plate 7-5. As a result, a large disturbed area was identified upslope from Culvert U-3. All diversions receiving disturbance drainage must be treated. The PAP must provide plans and specifications to demonstrate the sediment control measures for the disturbed area are capable of retaining the sediment within the disturbed area. Plate 7-5 must include the boundaries of the disturbed areas. pg. 7-46 (4) see:Plate 7-5

742.220. Plates 7-5 and 7-6 show diversion D-1 entering the sedimentation pond at different locations. This discrepancy must be corrected in the PAP. see:Plate 7-5 Plate 7-6

Plate 7-6 does not show any details, plans or specifications of how Diversion D-3 will function as part of the sedimentation pond. These details, plans and specifications must be included in the PAP. pg. 7-43 7-46 (6)

742.312. The diversion ditches and culverts can be characterized as having high flow velocities and having sharp changes in direction of flow (see Plate 7-5 and pages 7-39 through 7-42). Supportive plans, specifications and methodology must be included in the PAP to determine the following areas will be stable and function as intended. see:Plate 7-5 pg. 7-37 thru 7-55

* Sharp bend in Diversion D-1 located immediately above Culvert V-1. see:Plate 7-5

* Junction point of Diversions D-1 and D-2.

* Sharp bend in Diversion V-7 at north end of topsoil storage area.

* Junction point of Diversions V-4 and V-8.

* Junction point of Diversions V-3, V-4 and V-5.

* Junction at entering and exiting point of Culvert V-9.

* Exit point of Diversion V-5.

The PAP does not discuss design criteria and specifications for the following: pg. 7-37 thru 7-42 Plate 7-4

* The unnamed diversion which drains to Culvert V-9;

* The unnamed diversion which drains to Culvert V-1; and

* Diversion U-7 from Highway 139 to Gordon Creek.

The PAP must include plans, specifications, and methodology for above-mentioned diversions.

Page 7-39 states riprap is sized to provide channels with sufficient protection. With the diversions being characterized as having high flow velocities, supportive documentation must be included in the PAP to justify exclusion of riprap or channel lining for each diversion. pg. 7-39 thru 7-43

Page 7-39 referenced a riprap size of 1.25 to 1.5 feet will be used. Riprap sizing must be designed to have a gradation such that voids are filled between large riprap, flows will be reduced, erosion will be prevented, and no open pockets will form. Specifications and methodology must be included in the PAP for each location where riprap is utilized.

<u>742.322.</u> Plans, specifications, and methodology must be included in the PAP to determine the design capacity of Culvert U-4 and Diversion U-5 is at least equal to the capacity of the unmodified stream channel immediately upstream and downstream from the diversion. pg. 7-41 7-44

742.423. The mine road will affect the direction of flow of surface water drainage. Plans, specifications, and representative cross sections must be included in the PAP to assure adequate drainage control. see:Plate 7-5

djh
AT

cc: LPBRAXTON

State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF WILDLIFE RESOURCES

Norman H. Bangerter
Governor
Dee C. Hansen
Executive Director
Timothy H. Provan
Division Director

1596 West North Temple
Salt Lake City, Utah 84116-3195
801-533-9333

August 16, 1990

Dr. Dianne R. Nielson, Director
Utah Division of Oil, Gas and Mining
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180

Dear Dianne:

In response to the Blue Blaze Coal Company's Mine Plan, the Division has the following comments.

Revegetation plans for disturbed areas should incorporate a diverse seed mixture that includes at least six species each of grasses, forbs, and shrubs. The seed mix prescribed on 3-55 (Table 3-3) is lacking in forb species. At least three more species should be added: Northern sweetvetch (Hedysarum boreale), Longleaf phlox (Phlox longifolia), Porter licoriceroot (Ligusticum porteri), Trailing daisy (Erigeron flagellaris), and Pacific aster (Aster chilensis) could be included. In addition, containerized stock should be planted at a rate of 2,500 plants/acre instead of the proposed 1,200 plants/acre (Page 3-56, Table 3-3). pg. 3-55 3-56

Runoff from disturbed areas at the mine site will be collected in a sedimentation pond located just below the disturbed areas. Page 7-56 states that collected sediment will be cleaned from the pond as necessary. However, in accordance with UMC 187.45, sediment should be removed from the pond when the volume of sediment accumulates to 60 percent of the design storage volume. pg. 7-46c

The value of the mine area to wildlife should include critical elk summer range. The mine plan currently ranks elk summer range as high-priority valued (10-20). Plate 10-6 should also be adjusted to show critical elk summer range in the area now mapped as high-priority elk summer range. pg. 10-20 plate 10b

Seeps or springs providing flow during periods when wildlife are present represent a critical valued resource to all of the local area's wildlife. The mine plan (10-55) stipulates that there is no plan to replace water lost due to disturbance of springs or seeps because of the abundance of alternative water sources in the vicinity. pg. 10-55

Most wildlife have small and limited home ranges. As a result, when one of these critical valued aquatic resources is lost, the animal does not have the physical capability of "packing his bag" and moving to another area of acceptable habitat. Those few species that have such a physical capability usually find the home ranges in adjoining areas already filled to capacity. It is for that reason that the Division holds firm to the philosophy that each and every seep and spring is a critical resource for wildlife.

In the event that coal mining results in disturbance that impacts the flows at seeps and springs, mitigation is anticipated. An impact would be deemed substantial if the daily flow from a seep or spring was reduced by 50 percent or more. Mitigation that would be expected is simply the replacement of the water. Unquestionably, there would be many techniques that could achieve this goal: guzzlers are considered to be the most effective technique. They should be fenced with a 3-rail/pole fence having a maximum height of 42 inches. Clearance between the ground and the bottom pole, as well as space between the top two poles, should be at least 14 inches. This will allow passage of wildlife while disallowing domestic livestock.

Although bald eagles are not known to nest in the project area, there are two currently used nesting sites in Utah along the Colorado River. Page 10-25 (paragraph 3) must be corrected as it gives only historical reference to bald eagles nesting in Utah. pg. 10-25

Thank you for the opportunity to review and provide comment.

Sincerely,

Ralph A. Mills

Timothy H. Provan
Director

State of Utah
DEPARTMENT OF HEALTH
DIVISION OF ENVIRONMENTAL HEALTH

man H. Bangerter
Governor
uzanne Dandoy, M.D., M.P.H.
Executuve Director
Kenneth L. Alkema
Director

6 East Main
P.O. Box 800
Price, Utah 84501

August 14, 1990

Ms. Pamela Grubaugh-Littig
Division of Oil, Gas & Mining
365 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

Dear Ms. Grubaugh-Littig:

Re: Permit Application Package, Blue Blaze Coal Company, Blue Blaze Mine, PRO/007/020, Folder #2, Carbon County, Utah

I have reviewed the referenced PAP and offer the following comments:

1. The applicant should contact the Bureau of Air Quality concerning the Approval Order dated March 3, 1981 included in the PAP. This permit is probably no longer effective.
(Permit is still in effect and will be replaced with a updated permit when it is recie

2. Information provided for disposal of wastewater is not sufficient for review. The applicant should contact the Southeastern Utah District Health Department for further information.
(Additional information included in PAP on page 3-3 review by David Ariotti)

3. Information provided for the culinary water system is not sufficient for review. The applicant should contact the Southeast District Engineer, Division of Environmental Health or Bureau of Drinking Water/Sanitation.
(Information in PAP page 3-3 reviewed with David Ariotti)

4. The applicant will be required to obtain a Utah Pollutant Discharge Elimination System (UPDES) permit prior to commencing operations. The applicant should contact the Bureau of Water Pollution Control.
(UPDES permit No. UT-0023761 is still in effect)

5. The sediment pond lacks sufficient detail for review. The applicant should contact the Southeast District Engineer, Division of Environmental Health or Bureau of Water Pollution Control.
(See revised Sedementation Pond calculations page 7-46 and Plate 7-6)

If you have any questions, or I can be of further assistance, you may reach me at 637-3671.

Sincerely,

David R. Ariotti, P.E.
Southeast District Engineer
Division of Environmental Health

cc: Claron Bjork, Southeastern Utah District Health Dept.
Montie Keller, Bureau of Air Quality
Kiran Bhayani, Bureau of Water Pollution Control
Mike Georgeson, Bureau of Drinking Water/Sanitation

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

R614-301-100 General Contents (SMW)

121. Please change all reference to the coal mining regulations to the current R614 Coal Mining Rules. Removed UMC Regulations

R614-301-300 Biology (SMW)

321.200 A statement of productivity and range condition of the reference area from the U.S. Soil Conservation Service must be included in the permit. The information on page 9-9 does not correlate with the reference areas as designated on Plate 9-1. Pg. 9-9

331. 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. Please clarify. Pg. 3-42

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

The permittee has committed to interim revegetation. However, a commitment must be made also to the establishment of the vegetation. If first seeding does not establish, then a second and third attempt must be made. Pg. 3-53

333. Page 3-58 of the permit states that Blue Blaze Coal Company will leave islands of natural vegetation in new disturbed sites as part of minimizing impacts to wildlife. Please detail and locate on a map the areas proposed to be avoided in construction. Pg. 3-58

341.100 Figure 3-11 identifies the chronology of reclamation steps. Seed ordering must occur three to six months prior to seeding in order to secure all species of the approved seed mixture. The chronology must also indicate transplant or containerized stock ordering at least a year prior to planned planting. Pg. 3-59b, 3-60

341.210 Page 3-56 identifies containerized stock to be planted during final reclamation. The permittee must detail (either description or a map) where these plants will be planted. For example, the Aspen should be planted within the canyon bottom or on moist sites and not on the exposed south facing slopes. Pg. 3-56

341.220 Page 3-53 states that steep slopes will be hydroseeded, hand broadcast or other appropriate methods. Please detail "other appropriate methods". Pg. 3-53

The permittee must commit to raking all broadcast seed (final or interim reclamation) to ensure proper seed/soil contact. Pg. 3-53

The plan must detail methods of containerized stock planting. Consideration must be given to watering the stock at the time of planting and other times during year one, if drought conditions exist. Pg. 3-53

341.230 2000 pounds of straw or hay mulch is not adequate for erosion control. The permittee must commit to applying a minimum of 4000 pounds mulch per acre. Pg. 3-57

Hydromulch is not a suitable mulch for slopes in final reclamation. The permittee must commit to using erosion control matting (not jute) 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 The permittee must fully describe the methods (sampling) to be used to determine the success of revegetation. Qualitative methods must be performed annually. Quantitative sampling methods must be done in years 2, 5, 7, 9 and 10.

Letter from Patrick Collins

342.100 Page 3-58 states that woody plant density will be determined successful when 242 plants per acre are established. As stated before by the Division, this is not an adequate success standard for the post mining land use of wildlife. Pg. 3-58

The plan must identify other enhancement measures. Replacing the vegetation is bringing the site back to the original state. The regulations require enhancement, such as rock piles, for small mammals, snags, etc. Pg. 3-59

353.250 Please provide a statement that all seed purchased will comply with all applicable state and federal seed laws. Pg. 3-51

356.120 Please include a statement repeating the success standard requirements of this regulation. Pg. 3-58
3-59

356.232 Please commit to the 80-20 rule of this section. Pg. 3-59

358.400 The permittee must detail the revegetation and enhancement of Gordon Creek during final reclamation. Designate which containerized stock will be planted. The permittee must also commit to planting 1000 Salix cuttings per acre along the creek banks. Pg. 3-56
3-59

R614-301-400 Land Use and Air Quality (SMW)

411.130 The permittee states that the premining land use has limited livestock grazing. During Division inspection of the site on two occasions, at least 1000 sheep were observed grazing in the proposed mine area. Please explain this apparent discrepancy. Pg. 4-19

R614-301-500 Engineering (JK)

521.120 Page 3-2 states that there will be, in the Castlegate 'A' seam, four (4) portals: 1 haulage, 1 intake, and 2 return. Map 3-1 shows 1 haulage, 2 intake, and 1 return portal in the Castlegate 'A' seam--obviously the correct configuration. The text needs to be corrected. Pg. 3-2
3-10

The approximate locations of the supply trailers must be shown on Plate 3-1. Plate 3-1

The substation is mentioned on page 3-2 but is not shown on Plate 3-1. Plate 3-1

On page 3-3 under item (i), the upper portal access road is described as going ". . . from the main portal to the No. 1 mine portals." This should say ". . . from the main pad to the No. 1 mine portals." Pg. 3-3

The 5000-gallon fuel tank is mentioned on page 3-4 but is not shown on Plate 3-1. Plate 3-1

As in deficiency 521.120 above, page 3-10 places 1 intake, 1 haulage, and 2 return portals in the Castlegate 'A' seam, while Plate 3-1 shows 2 intake, 1 haulage, and 1 return. Pg. 3-10

Plate 3-7 (Post Mining Topography) shows permanent culverts. Under the prevailing post mining land use, which is wildlife habitat, culverts cannot be retained after reclamation unless they are part of a road system. Plate 3-7

R614-301-800 Bonding and Insurance (JK)

830.100 There are a number of problems with the reclamation cost estimate found on pages 3-60 through 3-63. Pg. 3-60 to 3-63

The cost of a loader and operator should be 1050.00 instead of 1150.00 (page 3-60).

The cost of a road grader and operator should be 1049.00 instead of 1040.00 (page 3-60).

Under item (d), the cost of a cat/ripper and cat/disk (1025.00/day) should be listed in Section 3.5.8.1 "Equipment Requirements". Also, is the cat/disk and operator to be used for 2 days or 4 days? The present figure (4100.00) is for 4 days.

Item (e)-Where does this cost come from?

Under item (f), the cost of a hydromulcher, operator and driver should be listed in Section 3.5.8.1. Also, the present figure of 3290.00 is figured for 9.4 acres rather than 7.4 acres.

Under item (h), where does the volume of 1000yd^3 come from? Also, the figure of 5,115.00 should be 5,125.00 and the total should be 12,125.00 instead of 12,115.00.

Under item (i), the figure should be 1,315.00/week. The total is correct.

Under item (j), where does the cost of 1,184.00/year come from?

The reclamation cost estimate fails to take into account removal of the large diversion culverts.

jbe
A:\BLUEBLAZ.TD

STATE OF UTAH

PERMANENT REGULATORY PROGRAM

UNDERGROUND MINING PERMIT APPLICATION

and

MINING AND RECLAMATION PLAN

for the

BLUE BLAZE NO. 1 and NO. 2 MINES

CARBON COUNTY, UTAH

Submitted by

BLUE BLAZE COAL COMPANY

Price, Utah

March 27, 1989

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R614-301-112 - Identification of Interes[illegible]
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R614-301-130 - Section 1.4, 5.2, 6.1, 7.1.1, 7.2.1, 8.2, 9.2, 10.1, 10.2
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Section 1

INTRODUCTION

1.1 Scope of Operation

The Wasatch Plateau area of Carbon County, Utah, contains seams of high quality bituminous coal with a long history of coal mining activities. The Blue Blaze Coal Company is a wholly-owned corporation which currently has the land in the proposed operation area.

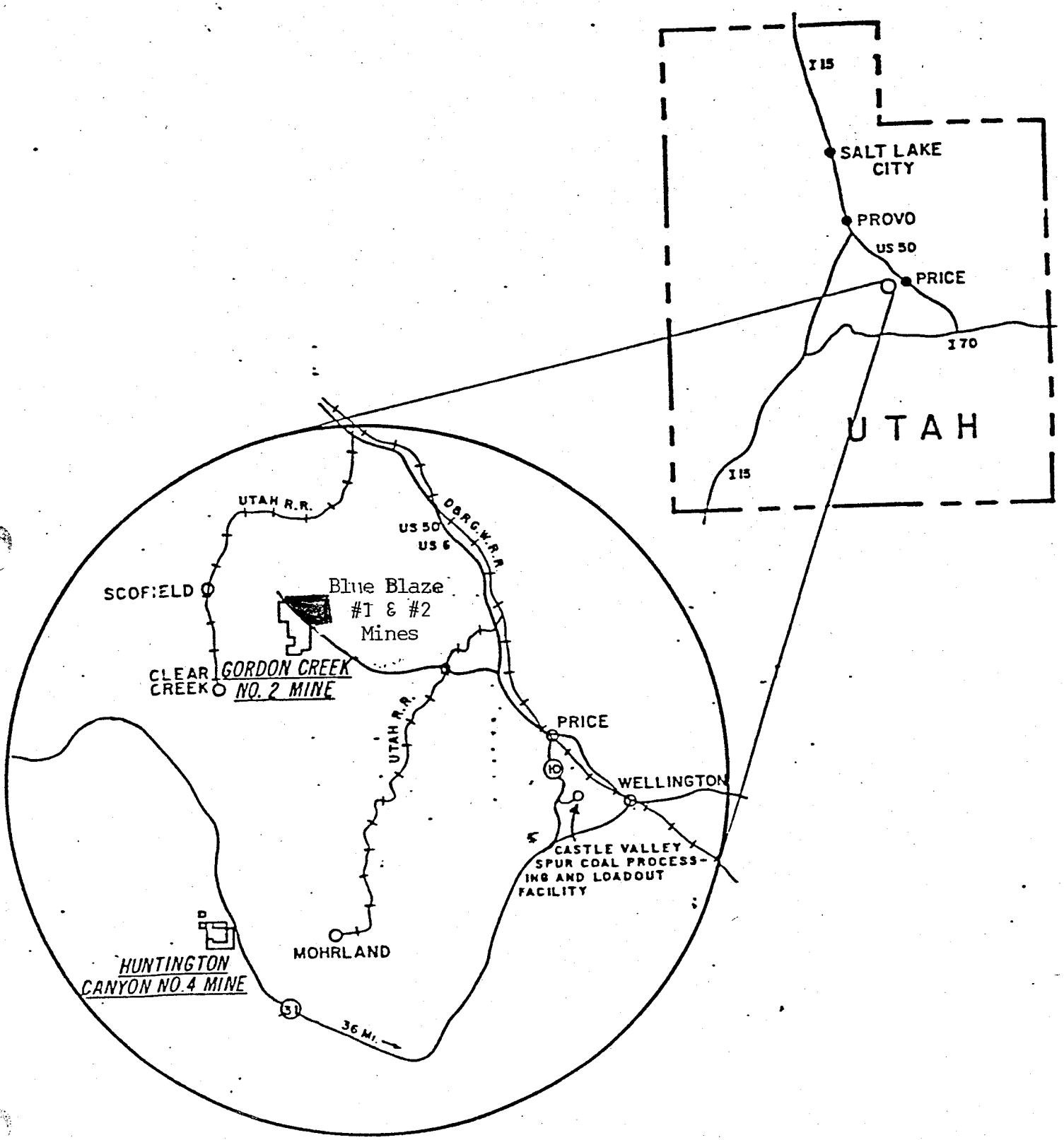
The Blue Blaze No. 1 and No. 2 Mines are located in Consumers Canyon approximately 14 Miles from Price. (See Figure 1-1). The surface loadout will be the same for both mines and will share the same surface facalities. Diversions, sedimentation ponds and culverts will be installed in compliance with Utah Interm Regulatory Program performance standards. The coal will be mined using room-and-pillar method with continuous miners and transported by shuttle cars, conveyors and then haul trucks to the preparation plant.

This plan will address post-mining operations and final reclamation of these mine sites.

Figure I-1

Blue Blaze Coal Co.

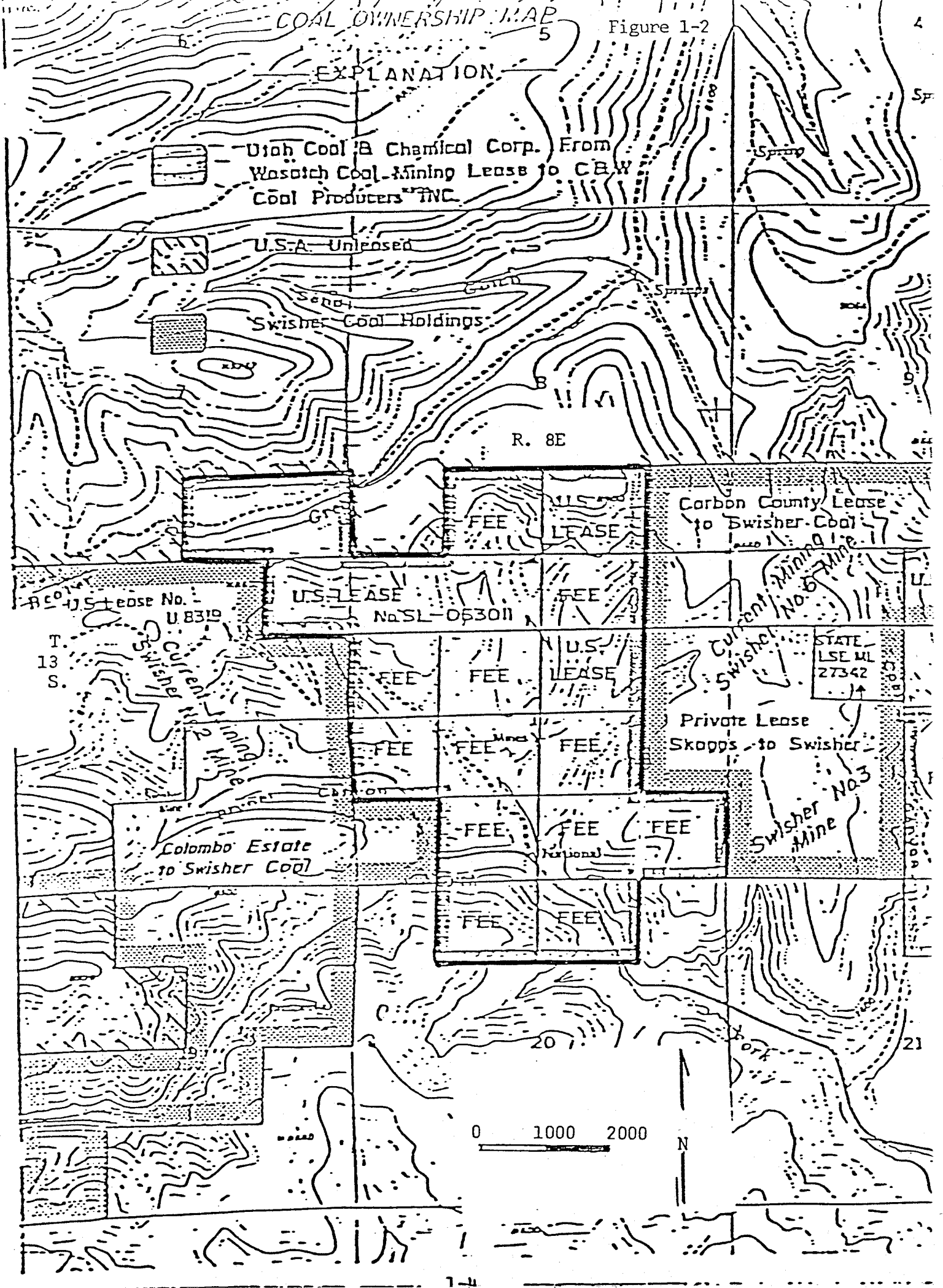
AREA OF OPERATIONS



1.2 Environmental Impacts

The permit area (See Figure 1-2 is located on the eastern edge of the Wasatch Plateau and is characterized by steep, narrow canyons containing conspicuous sandstone cliffs. Intermittent and perennial streams occupy the drainages. The complex geological and geomorphological conditions have produced a variety of site specific soils that support the Sagebrush grasslands, and Oak-scrub vegetation communities. The habitat in turn support a variety of wildlife.

A distinction of an underground mine is its minimal effect on these ecosystems. The relatively small scale of surface disturbance, when operated with proper drainage and sedimentation controls, causes negligible impact to the prevailing hydrologic balance of the area. Subsidence, a potential problem with any underground mining, will be monitored as mining progressed. Fractures which may develop as subsidence occurs could very well serve to increase groundwater infiltration and storage and possibly change local groundwater migration and discharge locations. The temporary loss of wildlife habitat due to construction of operation of surface facilities is negligible in light of the abundant nearby habitat in which displaced wildlife can reside. Upon cessation of mining, portal sealing and reestablishment of final topography and drainage will proceed. Revegetation of disturbed areas will replace native habitat and land uses that existed prior to mining and post-reclamation monitoring management will assure that permanency of the reclaimed area upon bond release.


COAL OWNERSHIP MAP
Figure 1-2
EXPLANATION
Utah Coal & Chemical Corp. From Wasatch Coal Mining Lease to CB&W Coal Producers INC.
U.S.A. Unleased
Swisher Coal Holdings
R. 8E
FEE
U.S. LEASE
Carbon County Lease to Swisher Coal
U.S. Lease No. U 8319
U.S. LEASE No. SL-065011
Current Swisher No. 6 Mine
T. 13 S.
Current Swisher No. 5 Mine
STATE LSE ML 27342
Private Lease Skoogs to Swisher
Swisher No. 3 Mine
Colombo Estate to Swisher Coal
0 1000 2000
N

1.3 Document Organization

The mining permit application has been prepared according to General Guidelines for Permit Application Organizational Format and Contents issued by the Division of Oil, Gas and Mining. The application readily lends itself to distribution for review by separate disciplines by containing discrete sections discussing environmental resource topics, post-mining operations, environmental protection and reclamation, and legal and administrative matters. Plates, figures and tables are included within each applicable section rather than as attachments in order to facilitate the review. A detailed table of contents and accompanying cross-reference to all applicable regulations of Chapter 1, State of Utah Underground Coal Mining and Reclamation Permanent Program Regulations, provides reviewers with a check list assuring that all requirements of the regulatory program have been met.

771.27 Verification of Application

I, the applicant, hereby verify that the information contained in the application is true and correct to the best of my information and belief, and is in accordance with all applicable local, state, and federal laws, rules, and regulations.

William Roger Skaggs
name

Blue Blaze Coal
firm

P.O. Box 784 Price, Utah 84501
address

William Roger Skaggs 6/11/89
signature/ date

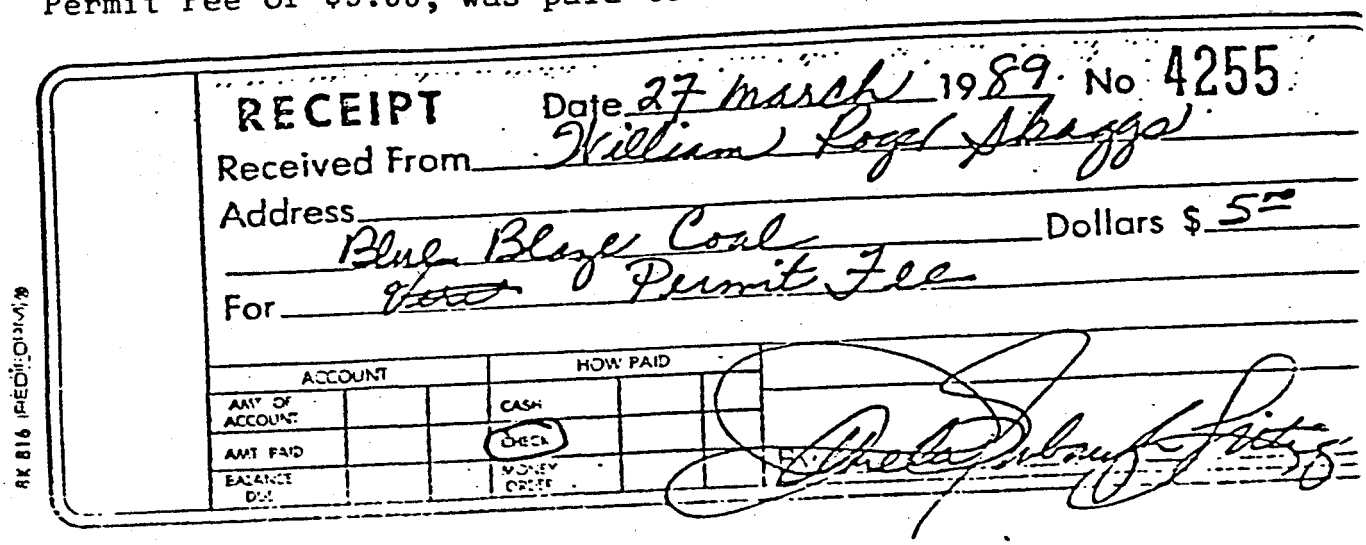
Witness My Hand And The Official Seal of my office.

My Commission Expires:

1-2-91

Virginia E. Tucker
Notary Public

1.5 Permit Fee of $5.00, was paid to the Division.



RECEIPT Date 27 march 1989 No 4255

Received From William Loyd Skaggs

Address

Dollars $ 5=

Blue Blaze Coal

For ~~Bond~~ Permit Fee

ACCOUNT			HOW PAID		
AMT OF ACCOUNT			CASH		
AMT PAID			CHECK		
BALANCE DUE			MONEY ORDER		

RK 816 (REDI-FORM)/8

1.6 References

The Beaver Creek Coal Company name has changed recently to Mountain Coal Company. Due to the extent of references made in this permit not only in text, but on plates, tables, public documents, consultant documents, etc. it will continue to be referenced as Beaver Creek Coal Company.

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SECTION 2

LEGAL, FINANCIAL, COMPLIANCE AND RELATED INFORMATION

2.1 Scope

The information contained in this section is intended to fulfill the requirements of R645-301-110 and to ensure that all relevant information on the ownership and control of the mining activities, the ownership and control of properties which will or could be affected by the activities, the compliance status and history of the applicant, and other necessary information is supplied to the regulatory agency(s).

2.2 Identification of Interests

2.2.1 Permit Application and Mine Operator

The permit applicant and mine operator is Blue Blaze Coal Company, P.O. Box 784, Price, Utah 84501, Ph. 801-472-3786

2.2.2 Applicant's Resident Agent

The resident agent who will accept service of process is:

William Roger Skaggs
Box 784
Price, Utah 84501 Ph. 801-472-3786

2.2.3 Applicant's Business Entity

Blue Blaze Coal Company is a Corporation registered in the State of Utah.

2.2.4 Names and Addresses of Corporate Officers and Directors

NAMES AND ADDRESSES OF OFFICERS AND DIRECTORS OF
BLUE BLAZE COAL COMPANY

OFFICER	TITLE	ADDRESS
William Roger Skaggs	President	Blue Blaze Coal Company P.O. Box 784 Price, Utah 84501 Ph. 801-472-3786
Barbara A. Skaggs	Vice President	Blue Blaze Coal Company P.O. Box 784 Price, Utah 84501 Ph. 801-472-3786

Margaret A. Skaggs	Secretary Treasurer	Blue Blaze Coal Company P.O. Box 784 Price, Utah 84501 Ph. 801-472-3786

2.2.5 Principal Shareholder, Owned or Controlled

All shares of Blue Blaze Coal Company stock are owned by:

	% Ownership	Social Security No.
William Roger Skaggs	(50%)	528 60 7485
Margaret A. Skaggs	(50%)	529 60 8593

2.2.6 Prior Business Identification, Options/Bids on Contiguous Lands

Blue Blaze Coal is being opened as the applicant William Roger Skaggs first coal mining operation.

The applicant has no interest, options or pending bids of interest on contiguous lands.

2.2.7 Permit Status

As of this time there are no other United States coal mining permits, approved or pending.

2.2.8 Mine Safety and Health Administration Identification Number

The MSHA numbers were issued May 14, 1992, by the Department of Labor to Blue Blaze Coal Company.

MSHA identification numbers follow:

Blue Blaze No. 1 Mine MSHA Number 42-02074

Blue Blaze No. 2 Mine MSHA Number 42-02075

2.2.9 Abandoned Mine Land Reclamation Fee

The abandoned mine land reclamation fee will be paid by William Roger and Margaret A. Skaggs.

2.3 Compliance Information

2.3.1 Permit Suspensions or Revocations

No permits are presently issued to the applicant.

2.3.2 Bond or Security Forfeitures

The applicant has no bond or security forfeitures.

2.3.3 Environmental Protection Violation Notices

Does not pertain at this time (See Section 2.2.6).

2.4 Right of Entry and Operation Information

Blue Blaze Coal Company bases its right to undertake underground mining activities on a number of documents pertaining to surface and coal leases and ownership in the permit area. All required leases, easements, special-use permits and entry rights are summarized on Tables 4-1 and 4-2.

2.5 Relationship to Area Designated Unsuitable for Mining

The permit area is not located within an area designated as unsuitable for mining under R645-103-400, nor has any petitions been filed with the Utah Division of Oil, Gas and Mining under R645-103-420 that could affect the proposed permit area (See Figure 2-1). No surface operations or facilities are located within 300 feet of an occupied dwelling or within 100 feet of a cemetery. A public road right-of-way passes through the permit area and provides access to public property. Coal haulage activities will occur within 100 feet of the public road right-of-way where the permit area road joins a public county road (See Figures 3-1, 3-1a and 3-1b).

2.6 Permit Term

The Blue Blaze No. 1 Mine and Blue Blaze No. 2 Mine are each proposed for a 5 year term under the Permanent Regulatory Program for 5 years. Chapter 3.3, Operational Plan, discusses the extent of underground mining activities to be conducted over the 5 year permit term.

2.7 Personal Injury and Property Damage Insurance

The public liability insurance requirements outlined in R645-301-890 will be acquired when permitting is complete and will be maintained in full force during the life of the permit. Verification then will be provided.

United States Department of the Interior

IN REPLY REFER TO
1600
(U-060)

BUREAU OF LAND MANAGEMENT
Moab District
P. O. Box 970
Moab, Utah 84532

SEP 2 6 1979

Mr. Joe Harvey
Blazon Co.
P. O. Box 327
Ferron, Utah 84523

Dear Mr. Harvey:

In July 1979 we completed a supplement to the Wattis Planning Unit Management Framework Plan. The application of the coal unsuitability criteria was included in this land use plan and was applied to all public lands with federal coal within the KRCRA, except producing leases. Your lease for the C & W #1 mine located in R.8E., T.13S., Sections 7, 17 and 18 was included in the unsuitability analysis.

In applying the 24 draft unsuitability criteria to your lease, the area was found suitable for mining.

Enclosed is a copy of the Wattis Planning Unit Supplement which will give you more detailed information on the areas found suitable for further consideration to lease.

Sincerely yours,

S. Gene Day

District Manager

Enclosure:
Wattis Planning Unit Supplement

AMERICAN REVOLUTION BICENTENNIAL 1776-1976

2.8 Performance Bond

Blue Blaze Coal Company will provide a bond in an amount determined by the Division as provided in R645-301-830. The applicant is in the process of acquiring the performance bond, upon receipt of the bond, proof of bond will be filed with the Division.

2.9 Other Licenses and Permits

Licenses and permits needed to conduct a coal mining operation are listed below.

LICENSES & PERMITS
BLUE BLAZE NO. 1 and NO. 2 MINES

Permit	Issuing Authority (Address)
Division of Oil, Gas, & Mining	355 West North Temple 3 Triad Center, Suite 350 Salt Lake City, Utah 84180-1203
Construction & Air Quality	Bureau of Air Quality 288 N 1640 W P.O. Box 16690 Salt Lake City, Utah 84116-0690
Construction, Sedimentation Ponds and Drainage System	Bureau of Water Pollution Control 288 N. 1460 W. P.O. Box 16690 Salt Lake City, Utah 84116-0690
Division of Water Rights	Division of Water Rights 453 S. Carbon Avenue Price, Utah 84501
Construction Sewer Facilities	Southeastern Utah Health District Silvagni Building 6 East Main Street Price, Utah 84501
Carbon County Planning & Zoning	Carbon County Courthouse Price, Utah 84501
NPDES Permit No. UT-0023761	Environmental Protection Agency Region VIII Water Management Division Compliance Branch (8WM-C) Denver Place, Suite 500

999 18th Street
Denver, Colorado 80202-2405

MSHA (See Section 2.2.8)

U.S. Department of Labor
Mine Safety and Health Administration
P.O. Box 25367
Denver, Colorado 80225

2.10 Location of Public Office for Filing Application

A copy of this permit application will be filed with the Carbon County Recorder.

Ann O'Brien
Carbon County Recorder
Carbon County Courthouse
Price, Utah 84501

2.11 Newspaper Advertisement and Proof of Publication

Pursuant to R645.117.200, a newspaper advertisement of the application will be placed in the local newspaper for four (4) consecutive weeks after filing of the application.

Notice of Permit Application

Blue Blaze Coal Co. Inc., P.O. Box 784, Price, Utah 84501 has filed with the Division of Oil, Gas and Mining a complete Permit Application Package (PAP) for conducting underground mining in the Gordon Creek Area (Consumers). The Division of Oil, Gas and Mining has determined the PAP to be complete. The Gordon Creek Area (Consumers) is located approximately 14 miles from Price, Utah. The permit area includes lands in the following:

T.13S, R.8E., SLM, Utah, Sec. 8, SE1/4 SW1/4, Sec. 17, NW1/4 NE1/4, W1/2 SE1/4, SE1/4 SE1/4, S1/2 NW1/4, N1/2 SW1/4, SE1/4 SW1/4. Containing 400 acres.

The permit area includes Federal Coal Lease SL 063011 and described as follows:

T.13S, R.8E., SLM, Utah, Sec. 7, S1/2 SE1/4, Sec. 8, SW1/4 SE1/4, Sec. 17, N1/2 NW1/4, SW1/4 NE1/4, Sec. 18 NE1/4 NE1/4. Containing 280 acres.

A copy of the PAP is available for public inspection at the College of Eastern Utah, Price, Utah, and at the Division of Oil, Gas and Mining office located at 355 West North Temple, 3 Triad Center, Suite 350, Salt Lake City, Utah. Written comments or requests for informal conferences on the application may be submitted to: The State of Utah Department of Natural Resources, Division of Oil, Gas and Mining, 355 West North Temple,

3 Triad Center, Suite 350, Salt Lake City, Utah 84180-1203.

Blue Blaze Coal would appreciate copies of any comments be submitted to the Division of Oil, Gas and Mining.

Published in the Sun Advocate April 25, May 2, 9 and 16, 1991.

2.12 Contiguous Ownership

See Section 4 and Appendix 2.

R614-103-234.200

AFFIDAVIT OF PUBLICATION

STATE OF UTAH)
ss.
County of Carbon,)

I, Dan Stockburger, on oath, say that I am the Publisher of the Sun Advocate, a twice-weekly newspaper of general circulation, published at Price, State and County aforesaid, and that a certain notice, a true copy of which is hereto attached, was published in the full issue of such newspaper for Two (2) consecutive issues, and that the first publication was on the

24th day of September, 1991

and that the last publication of such notice was in the issue of such newspaper dated the

1st day of October, 1991

Dan Stockburger

Subscribed and sworn to before me this

1st day of October, 1991

Linda Thayn
Notary Public

My Commission expires January 10, 1995

Residing at Price, Utah

Publication fee, $ 22.80

NOTARY PUBLIC
LINDA THAYN
911 North 10th East
Price, Utah 84501
My Commission Expires
January 10, 1995
State of Utah

NOTICE OF PUBLIC MEETING

Blue Blaze Coal Company announces that a public meeting, in accordance with Utah Coal Mining Regulation R614-103-134.200 is scheduled for 3:00 pm, October 9, 1991, at the Carbon County Court House. This meeting is to address public issues relating to the road usage for the mining operations.

This project will require the upgrade of the County Road 290 (070060) for 1200 ft. It is located within 100 ft. of the proposed surface facilities.

Anyone interested in attending this meeting should contact the Division of Oil, Gas and Mining at 3 Triad Center, Suite 350 Salt Lake City, Utah before 3:00 pm, October 7, 1991. If no meeting requests are received before this time the meeting will be cancelled.

Published in the Sun Advocate September 24 and October 1, 1991.

11/2/91