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Company BLUE BLAZE COAL COMPANY

Date Sent: MAY 29, 1992

Explanation:

BLUE BLAZE MINE PERMIT

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\_\_\_\_\_

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UTAH DIVISION OF OIL, GAS AND MINING  
STATE DECISION DOCUMENT AND  
TECHNICAL ANALYSIS

Blue Blaze Coal Company  
Blue Blaze Mine  
Permit

Carbon County, Utah  
ACT/007/020 #2  
May 29, 1992

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- \* Location Map
- \* Permitting Chronology
- \* Mine Plan Information
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- \* State Permit
- \* Technical Analysis
- \* Cumulative Hydrologic Impact Assessment (CHIA)
- \* Affidavit of Publication
- \* Letters of Concurrence

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**ADMINISTRATIVE OVERVIEW  
BLUE BLAZE COAL COMPANY  
Carbon County, Utah  
ACT/007/020  
May 29, 1992**

Background

Coal mining activity occurred between 1921 and 1952 in the proposed Blue Blue Coal Mine area. Several mines extracted coal from two coal seams, the Castlegate "A" and the Hiawatha seams. The Blue Blaze No. 1 and No. 2 Mines will be located in Consumers Canyon approximately 13 miles northwest of Price.

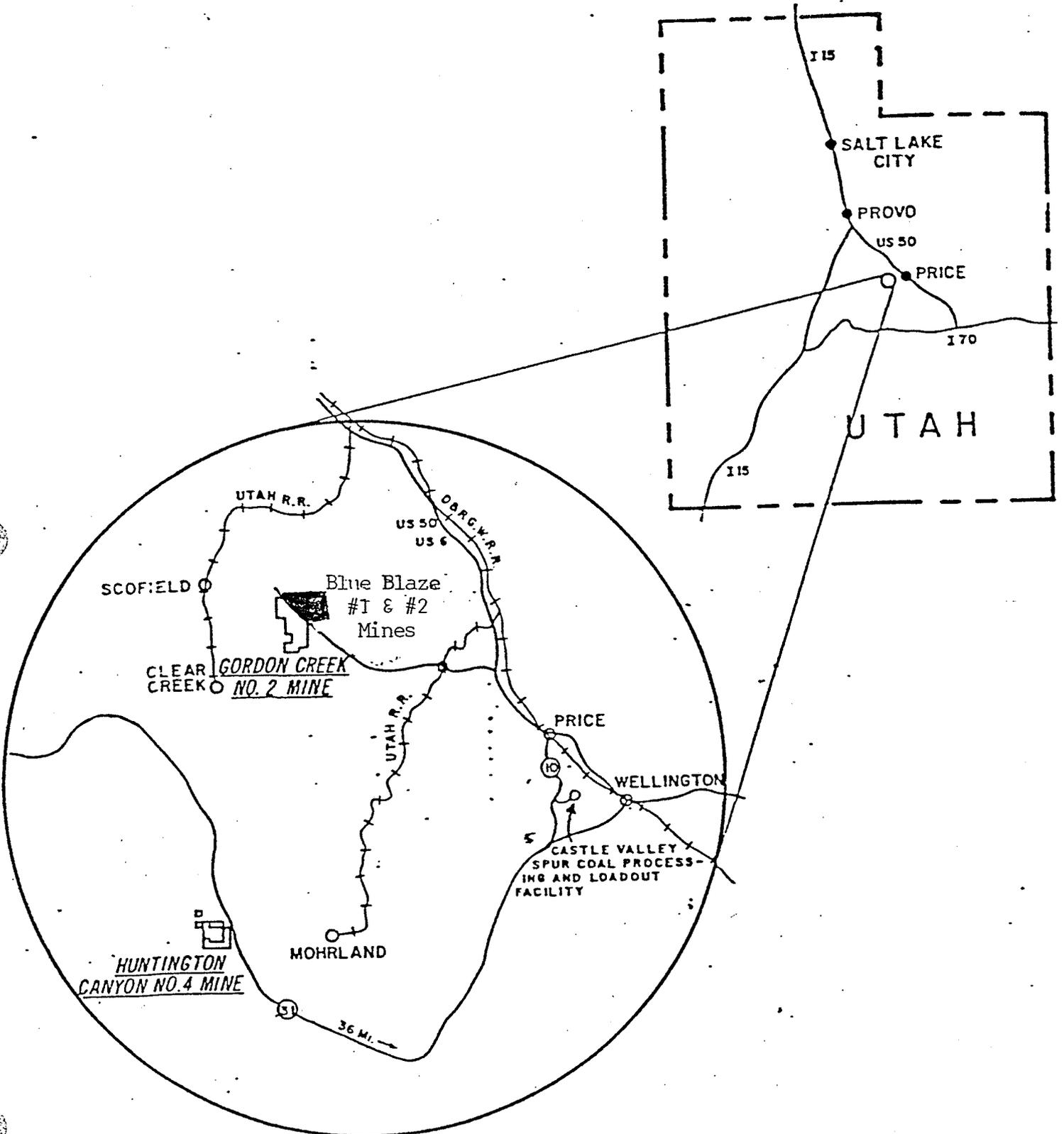
C and W Mining Company submitted a permit application for these mines in 1982, but a bond was never posted, and therefore, a permit never issued. The Blue Blaze Coal Company submitted a permit application for the Blue Blaze Coal Mine in March 1989. The permitting process proceeded for three years, see Permitting Chronology. The diligence on the federal coal lease SL-063011 became an issue in 1991, when Blue Blaze Coal Company realized that the "due diligence" date was June 1, 1992. The due diligence in this case represented about 20,000 tons of coal, which had to be mined before that date. Blue Blaze Coal Company submitted a "Logical Mining Unit" (LMU) application with the Bureau of Land Management on April 15, 1992, after the Division had sent a letter recommending applying for an LMU on September 24, 1991. The "LMU" meant that all coal mined, whether federal or non-federal coal, could be used towards the diligence obligation.

Recommendation for Approval

On May 13, 1992, Mr. Oliver Gushee, legal counsel for Blue Blaze Coal Company, told the Director and Associate Director of the Division that the federal coal leases would be lost if the Blue Blaze Coal Company did not receive a permit prior to June 6, 1992. On May 13, 1992, Division management placed the permitting of the Blue Blaze Coal Mine on the highest priority. On May 19, 1992, Mr. Gushee notified the Division that the federal coal lease would be lost unless a permit was issued prior to June 1, 1992. The permit application package was reviewed, TA prepared and a permit with ten stipulations was ready to issue on May 29, 1992. However, the bond was not posted that date.

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# AREA OF OPERATIONS



## MINING PLAN INFORMATION

Mine Blue Blaze No. 1 & No. 2 County: Carbon  
 Permit ID ACT/007/020 (X) New ( ) Revision ID \_\_\_\_\_  
 Permittee Blue Blaze Coal Company  
 Address P.O. Box 784, Price, Utah 84501 Phone: (801) 472-3786  
 Official & Title William R. Skaggs - President

### Proposed Operations

Federal Lease(s)\* SL 063011

( ) Surface (X) U/G Mining Method(s) Room & Pillar W/Continuous Miner

Coal Seam(s) to be Mined:

<u>Seam Name</u>	<u>Coal Thickness(es)</u>	<u>Seam Depth</u>
<u>Hiawatha**</u>	<u>6 to 11 feet</u>	<u>200 to 1500 feet (~ 700 feet ave.)</u>
<u>Castlegate A***</u>	<u>4 to 14 feet</u>	<u>200 to 1400 feet (~ 550 feet ave.)</u>

<u>Surface Ownership</u> (Acres)	<u>Existing</u> <u>Permitted Area</u>	<u>Proposed Add'l</u> <u>Permitted Area</u>	<u>Total Mine</u> <u>Permitted Area</u>
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Federal	<u>0</u>	<u>280</u>	<u>280</u>
Non-Federal	<u>0</u>	<u>400</u>	<u>400</u>

#### **Coal Ownership**

Federal Lease(s)	<u>0</u>	<u>280</u> *	<u>280</u>
Unleased Federal	<u>0</u>	<u>40</u>	<u>40</u>
Non-Federal	<u>0</u>	<u>400</u>	<u>400</u>

#### **TOTAL Acres**

Disturbed Acres	<u>0</u>	<u>10.3</u>	<u>10.3</u>
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#### **Minable Coal (Tons)**

Federal	<u>0</u>	<u>4,338,600</u>	<u>4,338,600</u>
Non-Federal	<u>0</u>	<u>2,311,400</u>	<u>2,311,400</u>

<b>TOTAL Tons</b>	<u>0</u>	<u>6,650,000</u>	<u>6,650,000</u>
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<b>Years Remaining</b>	<u>0</u>	<u>6 to 10</u>	<u>6 to 10</u>
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**Ave Annual Prod** 440,000 to 720,000 tons **Year Mining Ends** ~ 1997 2000

\* Attach Legal Description of Leased Federal Coal within Proposed Permit Area

\*\* Hiawatha Seam will not be mined until there is adequate baseline groundwater monitoring data.

\*\*\* Initial permit stipulates that mining is limited to non-federal coal only. Federal coal may be mined upon receipt of the Secretary of the Interior Mining Plan Approval.

**UPPER GORDON CREEK  
CARBON COUNTY, UTAH  
CUMULATIVE HYDROLOGIC IMPACT ASSESSMENT**

Prepared By

**The Utah Division of Oil, Gas and Mining**

**May 1992**

Gordon Creek #3 and #6 Mines . . . . .	ACT/007/017
Gordon Creek #2, #7 and #8 Mines . . . . .	ACT/007/016
Blue Blaze Coal Mine . . . . .	ACT/007/020

May 1992

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## **I. INTRODUCTION**

The purpose of this report is to provide a Cumulative Hydrologic Impact Assessment (CHIA) for Upper Gordon Creek, located in Carbon County, Utah. This assessment encompasses the probable cumulative impacts of all anticipated coal mining in the general area on the hydrologic balance and whether the operations proposed under the application have been designed to prevent material damage to the hydrologic balance outside the proposed mine permit area. This report complies with legislation passed under Utah Code Annotated 40-10-1 et seq. and the attendant State Program rules under R645-301-729.

The Upper Gordon Creek Cumulative Impact Area (CIA) occurs within the Wasatch Plateau Coal Field, approximately 10 miles northwest of Price, Utah (Figure 1). The eastern margin of the Wasatch Plateau forms a rugged escarpment that overlooks Castle Valley and the San Rafael Swell to the east. Elevations along the eastern escarpment of the Wasatch Plateau range from approximately 6,500 to 9,000 feet.

Precipitation varies from 40 inches at higher elevations to less than 10 inches at lower elevations. The area encompassed by the Wasatch Plateau may be classified as semiarid to subhumid.

### **GEOLOGY**

The Blue Blaze No. 1 and No. 2 Mines are located in the northern portion of the Wasatch Plateau (Figure 1). The Wasatch Plateau is the northwestern outlier of the eroded San Rafael Swell. The plateau dips westward producing a great monoclinial fold that is interrupted by faults in the borderlands of the Great Basin. Superimposed over the region are numerous structural features including anticlines, synclines, faults and igneous intrusions.

The Wasatch Plateau is comprised primarily of Cretaceous to Tertiary age sedimentary rocks. These rocks are principally siliciclastic of both continental and marine origin. Coal seams of economic significance occur in the Cretaceous sediment.

The Upper Cretaceous Rocks of the Wasatch Plateau were deposited along the western margin of the Western Interior Basin. The dynamic depositional sequence of the Mesaverde Group is the result of deltaic sedimentation. During the Upper Cretaceous, the area now occupied by the Wasatch Plateau was a trough, gradually subsiding, attracting drainage and receiving terrigenous clastics from the tectonically active Sevier highlands. Wave-dominated delta complexes prograded easterly into this epicontinental sea. The Sevier orogenic belt was tectonically active during the entire Cretaceous Period. Near the end of the Cretaceous Period, rocks that were deposited in the marginal marine environments were deformed as the result of the Laramide Orogeny.

Crustal stresses associated with the latter phases of the Laramide Orogeny are believed to be responsible for the northwest-southeast trending faults in the area. North-south faults in the Wasatch Plateau are result of the more recent Basin and Range faulting. These fault systems are the primary structural control over the movement of ground water in the region.

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Outcrops of the Wasatch Plateau Coal Field reflect an overall regressive sequence from marine (Mancos Shale) through littoral (Star Point Sandstone) and lagoonal (Blackhawk Formation) to fluvial (Castlegate Sandstone, Price River Formation and North Horn Formation) and lacustrine (Flagstaff Limestone) depositional environments. Oscillating depositional environments within the overall regressive trend are represented by lithologies within the Blackhawk Formation. The major coal-bearing unit within the Wasatch Plateau Coal Field is the Blackhawk Formation. A more in depth discussion of Wasatch Plateau stratigraphy can be found in Section 6 of the PAP.

## VEGETATION

Vegetation of the Wasatch Plateau area is classified within the Colorado Plateau Floristic Division (Cronquist et al., 1972). The area occupies parts of both the Utah Plateaus and the Canyonlands Floristic Sections. Vegetation communities of the area include mountain brush, Douglas fir-white fir-blue spruce and Engelmann spruce-subalpine fir.

Dominant shrubs of the mountain brush communities will vary depending on elevation and aspect. The drier south and west-facing slopes may support dense strands of Gambel oak (Quercus gambellii). Other dominants of this community may include serviceberry (Amelanchier utahensis), mountain mahogany (Cercocarpus montanus or C. ledifolius), bitterbrush (Purshia tridentata) and snowberry (Symphoricarpus oreophilus).

The range of the Douglas fir-white fir-blue spruce community is about 8,000 to 10,000 feet. Douglas fir (Pseudotsuga mensiesii) is usually the dominant tree with white fir (Abies concolor and blue spruce (Picea pungens) usually limited to the most mesic sites, often along streams. With dense canopies, understory vegetation may be sparse. Common shrubs include serviceberry (Amelanchier spp.), Oregon grape (Berberis repens), chokecherry (Prunus virginiana), Rocky Mountain maple (Acer glabrum), mountain lover (Pachistima myrsinites) and snowberry. Bluebunch wheatgrass (Agropyron spicatum), salina wildrye (Elymus Salina), mountain brome (Bromus carinatus), and Kentucky bluegrass (Poa pratensis) are common grasses. Aspen stands (Populus tremuloides) can be found throughout the zone, particularly in mesic sites and as successional communities.

Picea engelmannii and Abies lasiocarpa dominate the spruce-fir zone at the highest elevations of the hydrologic impact area. While receiving about the same precipitation as the Douglas fir communities, lower evapo-transpiration with cooler temperatures can permit a more lush vegetation in the spruce-fir zone. Limber pine (Pinus flexilis) often occupies steep or rocky, drier sites of this zone.

Small riparian communities are found at all elevations within the impact assessment area. With greater water availability and cooler temperatures, the riparian zone often includes more mesic species, e.g, those from a higher vegetation zone. Shrub species from the mountain shrub type may be found at most elevations.

Additional riparian zone shrubs include red osier dogwood (Cornus stolonifera), river birch (Betula occidentalis) various willows (Salix spp.) and miscellaneous sedges (Carex spp.). Small wet areas around springs and seeps will often support a dense growth of grasses, sedges and willows.

## HYDROLOGY

The Gordon Creek #2, #7, and #8 Mines, Blue Blaze Mine and Gordon Creek #3 and #6 Mines are located in both the North Fork of Gordon Creek and Beaver Creek drainages. Gordon Creek and Beaver Creek flow into the Price River. There are three other principal surface water courses that are tributary to Gordon Creek associated with mining in the area. These include two ephemeral streams: Bryner Canyon and Coal Canyon, and an intermittent stream: Consumer Canyon.

Approximately 50 to 70 percent of the streamflow occurs during the snowmelt runoff period. Summer precipitation does not usually produce high runoff except in localized areas during thunderstorms. Average annual precipitation ranges from 10 inches in the valleys to over 35 inches on the ridges. Water in the headwaters of Gordon Creek is a calcium-bicarbonate type of generally good quality with maximum concentrations of total dissolved solids (TDS) usually less than 500 milligrams per liter (mg/L). Downstream, out of the CIA the water changes to a magnesium-sodium-calcium-sulfate type with TDS concentrations upward of 1,100 mg/L. This decrease in quality is a result of runoff from exposed Mancos Shale which is widespread in the lower areas of the Price River drainage. The Mancos Shale is easily weathered and typically contains large quantities of soluble minerals such as gypsum, mirabilite, and thenardite. These mineral readily dissolve into calcium, magnesium, sodium, and sulfates. Irrigation return flows contribute large amounts of dissolved solids due to: increased concentrations of salts from evaporation; and salts leaching from soils. The Price River averages 239,000 tons of salt and 71.800 acre-feet of water per year, contributing only 0.66 percent of the flow of the Colorado River at Lee's Ferry while salt contribution to the Price River from irrigation is estimated to range from 15,000 to 170,000 tons per year.

## II. CUMULATIVE IMPACT AREA (CIA)

The CIA and Mining Map (Figure 2) delineates the CIA for current and projected mining in the Upper Gordon Creek area. The CIA encompasses approximately 15 square miles and includes portions of Beaver Creek and the North Fork Gordon Creek. All of Bryner Canyon and Coal Canyon are also included in the CIA. The CIA boundaries are designated by drainages and drainage divides.

### **III. SCOPE OF MINING**

Mining began in the North Fork of Gordon Creek in the early 1920's. Past mines include the Blue Blaze, Consumers, National, Swisher, and Sweet's mines.

Three mines operated in the North Fork of the Gordon Creek area between the 1920's and 1950's. In 1924, the Consumers Mutual Coal Company was organized and opened an underground coal mine (thought to be Blue Blaze Mine) in the Consumer's Canyon. Mining continued at the Blue Blaze Mine into the 1940's.

The National Coal Company developed a mine just east of Consumers circa 1928. The Utah Railway built a rail spur to the Consumers and National Mines, and a company town was built near the mines and population approached 500. The National Mine closed in the 1950's.

In 1925, the Sweet's Mine opened in a canyon west and south of the Consumer Mine. A small community of about 200 people lived near the mine. In order to reach the Sweet's Mine, the Utah Railway built a massive trestle over the community of Sweet's to reach the mine which was located high above the canyon floor. The Sweet's Mine closed temporarily in 1937, but reopened during World War II. The Sweet's Mine was closed permanently by 1950.

All of the mining for these three mines was in the Hiawatha and Castlegate coal seams. Mining was by the room and pillar method of underground mining. Each of the mines produced 1,000 to 2,000 tons per day.

Swisher Mining Company opened the Swisher No. 1 Mine in the 1960's in the south side of Bryner Canyon. For the most part, mining was in the Hiawatha coal seam. However, some mining occurred in the Castlegate coal seam

#### **GORDON CREEK #2, #7, AND #8 MINES (MOUNTAIN COAL CO.)**

Swisher Coal Company opened and developed the three existing mines in the North Fork of Gordon Creek. Swisher Coal Company was purchased by General Exploration in 1974 and was subsequently sold to Beaver Creek Coal Company in January 1980, now Mountain Coal Company.

The Gordon Creek #2, #7, and #8 Mines permit area encompasses approximately 2,300 acres. There are two federal leases that are designated by the Bureau of Land Management as "Logical Mining Units" (LMU's): U-8319 and U-53159.

Room and pillar mining occurs in the Castlegate "A" and Hiawatha coal seams. Mining ceased in 1991 and the site is scheduled for complete reclamation in 1992.

## GORDON CREEK #3 & #6 MINES (MOUNTAIN COAL CO.)

Room and pillar mining commenced during December 1978 and terminated in November 1980 in the #6 Mine. Room and pillar mining commenced during February 1976 and retreat mining was initiated in January 1982 and continued until May 1982 in the #3 Mine. All portals were permanently sealed during September 1983.

## BLUE BLAZE COAL MINE (BLUE BLAZE COAL COMPANY)

Coal mining activity occurred between 1921 and 1952 in the proposed Blue Blaze Coal Mine area. Several mines extracted coal from two coal seams, the Castlegate "A" and the Hiawatha seams. Room and pillar mining is proposed for the Blue Blaze Coal Mine in the Castlegate "A" seam (No. 2 Mine) and the Hiawatha seam (No. 1 Mine). This CHIA only addresses mining in the Castlegate "A" seam. Construction of this proposed mine is scheduled for the summer 1992.

## **IV. STUDY AREA**

### GEOLOGY

The Upper Gordon Creek CIA is characterized by narrow canyons and steep topography. Stratigraphic units outcropping within the area include, from oldest to youngest, Star Point Sandstone, Blackhawk Formation, Castlegate Sandstone and Quaternary Alluvium. Lithologic descriptions and unit thicknesses are given in Figure 3. Rocks in the study area strike northwest and dip up to seven degrees to the northeast.

The area of the Blue Blaze No. 1 and No. 2 Mines is heavily faulted. Two major fault zones affect the lease block: the North Gordon and Fish Creek fault zones. The North Gordon fault zone, located east of the lease, trends north-south and measures three miles wide and five miles in length. The Fish Creek fault zone borders the northeast boundary of the Gordon Creek #2, #7, and #8 Mines and trends N 60°W. This fault zone enters the lease from the northwest and averages two miles wide.

The Blue Blaze No. 1 and No. 2 Mine areas contain essentially two major fault trends. They are the N60 degree west trending faults associated with the Fish Creek fault zone, and the N-S trending faults associated with the North Gordon fault zone. Sympathetic faulting also occurs within the mine area. Displacements of the faults in the mine area are variable ranging from a few feet to as much as 200 feet.

The faulting in the mine area appears to have influenced the development of stream courses. For example, the North Fork of Gordon Creek drainage appears to have formed subsequent or contemporaneously with the movement along the Gordon Creek Fault Zone (PAP, Section 6).

System	Series	Stratigraphic Units	Thickness (Feet)	Lithology and Water-Bearing Characteristics
Quaternary	Holocene Pleistocene	Quaternary Alluvium	0 - 100	Alluvial: Clay, silt, sand, gravel and boulders; yields water to springs that may cease to flow in the summer.
Cretaceous	Upper Cretaceous	Price River Formation	200 - 250	Gray-to-brown, fine to coarse, and conglomeratic fluvial sandstone with thin beds of gray shale; yields water to springs locally.
		Castlegate Sandstone	150 - 200	Tan-to-brown fluvial sandstone and conglomerate; forms cliffs in most exposures; yields water to springs locally.
		Blackhawk Formation	900 ±	Tan-to-gray discontinuous sandstone and gray carbonaceous shales with coal beds; all of marginal marine and paludal origin; locally scour-and-fill sandstone within less permeable sediments; yields water to springs and coal mines, mainly where fractured or jointed.
		Star Point Sandstone	440	Light-gray, white, massive, and thin bedded sandstone, grading downward from a massive cliff-forming unit at the top to thin interbedded sandstone and shale at the base; all of marginal marine and marine origin; yields water to springs and mines where fractured and jointed.

Figure 3. Stratigraphy of the Upper Gordon Creek Area  
(Modified from Danielson, et. al., 1981)

Faulting may also effect the locations of springs and seeps in the mine area. The faulting and fracturing of the bedrock in the mine area may provide open conduits for surface water to enter into the subsurface or allow groundwater movement between aquifers. A series of springs at the head of the North Fork of Gordon Creek in the northwest corner of section 18 T13S R8E may be related to the faults bisecting the area (PAP, Section 6).

Another major structural feature which influences the lease is the Beaver Creek Syncline. The synclinal axis trends NE-SSW and actually crosses the southern portion of the lease. The strata dip toward this axis at approximately 3.5 degrees (PAP, Section 6).

## HYDROLOGIC RESOURCES

### GROUND WATER

The ground-water regime within the CIA is dependent upon climatic and geologic parameters that establish systems of recharge, movement and discharge.

Snowmelt at higher elevations provides most of the ground-water recharge, particularly where permeable lithologies are exposed at the surface. Vertical migration of ground-water occurs through permeable rock units and/or along zones of faulting and fracturing. Ground water migration occurs both vertically and horizontally. This migration is controlled by topography, impermeable strata, and geologic structures. In this region faults are important flow conduits. Many shales, mudstones and other fine grained media serve as aquitards.

The Star Point Sandstone and lower portion of the Blackhawk formation, Castlegate Sandstone, Price River Formation and Quaternary alluvium are potential aquifers in the CIA. In the Wasatch Plateau, aquifers are predominantly sandstone. Sandstone deposits occur as channel, overbank, lenticular and tabular deposits. Shale, siltstone and cemented sandstones act as aquitards. Localized aquitards include relatively thin, impermeable lithologies occurring within the stratigraphic sections above the Star Point Sandstone.

Data from seven boreholes located within and adjacent to the Gordon Creek #2, #7, and #8 Mines permit area indicate the Star Point - Blackhawk aquifer occurs within the CIA. Ground-water associated with the Price River Formation may be characterized as occurring within a "perched" aquifer and represents a relatively insignificant hydrologic resource.

Four drill holes found within the Blue Blaze Permit Area were dry when they were drilled as documented in the PAP in Appendix 6. These hole locations are shown on Figure 4. All holes were drilled with air and no water was observed during the drilling of these holes or after each break in drilling. These holes were drilled in the mid-1970's to early 1980's. Drill logs for these holes can be found in Appendix 3 of the PAP. The holes (LMC-1 and LMC-3) were then re-examined in December 1991 and again in February 1992. LMC-1 and LMC-3 were found to be dry on all three occasions. Hole LMC-4 was found to be dry in February 1992. (PAP, pages 7-6 through 7-9.)

Faults and fractures act as effective conduits for ground-water movement. The two springs in the CIA, which have significant discharges (10 gpm or greater) are located in the northwest portion of the CIA and are associated with the Gordon Creek Fault zones.

Four springs having measurable flow occur within the CIA. Total spring discharges exceeds 100 gpm. All springs discharge from the Blackhawk Formation.

Springs and wells within the Blue Blaze Permit area are shown on Figure 4. Sampling sites 1, 2, and 4 have average flows over the period of record (1989 - 1991) of 10.36, 1.25, and 1.0 gallons per minute (G.P.M.) respectively. These springs discharge from sandstone beds of the Blackhawk Formation. The Blackhawk Formation in this area is approximately 900 feet thick. Sampling Site 2 (elevation 8,005 feet) is the only spring to be potentially undermined (right on the border of the No. 2 Mine) during the mining of the Castlegate "A" seam at the Blue Blaze Mine.

Mine inflow was insignificant at the Gordon Creek #2, #7, and #8 Mines and the operator pumped surface water into the workings to conduct underground operations. Mine water is not discharged within the CIA.

### **SURFACE WATER**

The CIA has been divided into two major drainage basins, waters draining to the North Fork of Gordon Creek and waters draining to Beaver Creek. Although no surface disturbance is contained within the Beaver Creek drainage, the drainage area has been and will be undermined by all three past, present, and future mines in the CIA as shown in Figure 5. Both Beaver Creek and the North Fork of Gordon Creek drain to the Price River.

### **BEAVER CREEK**

Approximately 3,244 acres of the Beaver Creek watershed is contained within the CIA. The average gradient of Beaver Creek is four percent in the reach associated with the three mines. The Gordon Creek #2, #7, and #8 Mines mined 284 acres under the Beaver Creek Drainage Area, the Consumer's Mine mined 113 acres, and the Gordon Creek #3 and #6 Mines mined three acres. The mined out portion of these three mines represent approximately one mile of stream channel undermined below Beaver Creek. Mining associated with the Blue Blaze Mine will potentially multiple seam mine under an additional one-eighth of a mile of Beaver Creek and an additional nine acres of the Beaver Creek watershed. The hydrologic impacts associated with this mining will be discussed in the cumulative impacts section of this document.

### **NORTH FORK OF GORDON CREEK**

For the following areas consult Figure 5: Surface Water Drainage Area Map

### Area 1

The North Fork of Gordon Creek, more commonly referred to as Sweet's Canyon, encompasses 3,392 acres of watershed within the CIA with an average gradient of 8.4 percent. Portions of Area One have been historically mined. Mining associated with the Gordon Creek #2, #7 and #8 Mine undermined approximately 28.7 acres of this area. The North Fork of Gordon Creek is perennial and supplied water to the Mountain Coal Company operations via a diversion and impoundment.

### Area 2

The Bryner Canyon watershed has been almost totally undermined. Of the 609 acres found in Area Two, 488 acres have been undermined. The average gradient of the watershed is 11 percent. It is ephemeral in nature and has a Right and a Left Fork. The Right Fork does not contain any surface facilities. The Gordon Creek #7 and #8 Mines are found in the Left Fork and the Gordon Creek #2 Mine facilities are found just below the confluence of the Right and Left Forks.

### Area 3

Consumer Canyon encompasses 534 acres and has a gradient of 16 percent. Historically, 148 acres have been mined in this area. Castlegate "A" seam mining will involve an additional 142 acres associated with the Blue Blaze Mine. There is a great deal of historic surface disturbance in this canyon from past mining activities.

### Area 4

Area Four encompasses 1,178 acres of unnamed ephemeral tributary drainage to the North Fork of Gordon Creek. Historic mining has occurred within 66 acres of Area Four. No future mining is projected for Area Four.

### Area 5

Coal Canyon drainage area is 1,329 acres in size and has an average gradient of 10 percent. The Gordon Creek #3 and #6 Mines have been reclaimed. Coal Canyon is intermittent.

## **V. POTENTIAL IMPACTS**

### **GROUND WATER**

Dewatering and subsidence related to mining have the greatest potential for impacting ground-water resources in the CIA. The impact of changes in vegetation or ground-water recharge should be minimal since mining disturbance is and will be less than 1,600 acres of the 10,300 acre CIA.

## DEWATERING

No water is being discharged from mines within the CIA. Future mining within the CIA is anticipated to be limited and projected ground-water withdrawal quantities are expected to be similar to those occurring at the present.

The total discharge for springs within the CIA is less than 150 gpm. Discharge may also occur directly to perennial streams where channels intersect ground-water within the Blackhawk Formation and Star Point Sandstone. The North Fork Gordon Creek and Bryner Canyon both are perennial and potentially intersect ground-water from the regional aquifer.

Surface water monitoring data suggest base flow recharge to Bryner Canyon is not detectable. Accordingly, it is assumed that base flow recharge to the North Fork Gordon Creek is not significant.

Approximately 9,500 acres within the CIA overlie the coal resource and represent a potential recharge area (Figure 6). Average annual precipitation is approximately 30 inches over the potential recharge area and hence, the total annual precipitation over the outcropping recharge area is 23,750 acre-feet. Total annual spring discharge (1,614 acre-feet) and mine ventilation discharge (255 acre-feet) are approximately eight percent of the total annual precipitation within the CIA. Dewatering due to mine ventilation accounts for one percent of the total annual precipitation value and is herein determined to be insignificant.

## SUBSIDENCE

Subsidence impacts are largely related to extension and expansion of the existing fracture system and upward propagation of new fractures. Given that vertical and lateral migration of water is partially controlled by fracture conduits, readjustment or realignment in the conduit system will inevitably produce changes in the pathways of ground-water flow. Subsurface flow diversion caused by subsidence may deplete water from localized aquifers which could potentially cause the loss of flow to existing springs and/or create new springs. Potential changes include: increased flow rates along fractures that have been "opened," flow along new fractures, depletion of storage, depletion of perched aquifers, and the formation of new perched aquifers and springs. Increased flow rates along fractures could reduce ground-water residence time and potentially improve water quality by minimizing the time that this water is in contact with salt producing strata.

Mining has occurred beneath and adjacent to two springs. No impacts have been detected. In addition, mining has occurred beneath a portion of Beaver Creek. Pillars were sized to maintain channel integrity and water monitoring has not identified impacts. Local buffer zones are planned beneath Beaver Creek and Gordon Creek for the Blue Blaze Mine during mining of the No. 1 Mine (Hiawatha seam).

## SURFACE WATER

The cumulative impacts associated with mining within the CIA will be summarized individually by discussing impacts associated with Gordon Creek #2, #7, and #8 Mines, Blue Blaze Mine, and the reclaimed Gordon Creek #3 and #6 Mines. In addition, impacts associated with historic mining will be partially included in this assessment. Creeks or drainage area which are referenced by name or (#) are found on Figure 5, Surface Water Drainage Map.

### GORDON CREEK #2, #7, AND #8 MINES

All surface facilities are found within Bryner Canyon (Area Two). Surface facilities are found only below the confluence of the Right and Left Fork of Bryner Canyon and in the Left Fork of Bryner Canyon. All of the drainage, mostly shallow ground-water flow, is routed through two sedimentation ponds and discharged below the #2 Mine surface facilities. The Right Fork of Bryner Canyon seldom flows below the mine due to infiltration into old mine workings associated with the Swisher Mine, precursor to the Gordon Creek Mines. Upon reclamation of the Gordon Creek facilities area in 1992, this phenomenon will hopefully be corrected by backfilling and bentonite lining of the channel.

Water quality in the headwaters of Gordon Creek is good, with TDS less than 500 mg/L. The North Fork of Gordon Creek had a mean TDS for 1988 of 464 mg/L based on 12 monthly field samples. Discharge from the sediment pond at the #2 Mine facilities was sampled twice in 1988, during March and May, but no flow was observed in Bryner Canyon below the mine due to channel infiltration of any sediment pond discharges. The Left Fork of Bryner Canyon above the mines flowed only one time during 1988 in the month of May in response to snowmelt and had a TDS reading of 380 mg/L.

All surface disturbance is treated by the two sediment ponds associated with the Gordon Creek #2, #7, and #8 Mines. Any discharges associated with the #2 Mine sedimentation ponds are absorbed by the channel of Bryner Canyon and negate impacts to the North Fork of Bryner Canyon downstream.

The undermining of Beaver Creek by the Gordon Creek #2 Mine has had no visible physical surface effect on the stream channel or flow of Beaver Creek to date. Both methods of leaving pillars of coal and pulling pillars have not affected the flow in Beaver Creek due to substantial sandstone lenses between the mine and the creek. Mining activities were approximately 500 feet below the creek bed. Mountain Coal Company has been monitoring flow in Beaver Creek since 1980. In 1988 the flow ratio between the upper and lower Beaver Creek stations varied from 68 percent to 91 percent with an average ratio of 80 percent from the Upper Beaver Creek Station to the Lower Beaver Creek Station. The mean flow for 1988 at the Upper Station was 176 gpm versus 221 gpm at the Lower Station. Flow differences and water quality differences can be attributed to an increase in drainage area between the Upper and Lower Stations.

No visible impacts have been observed due to mining within the Beaver Creek drainage. Subsidence effects have not been noted in the stream channel and water quality or quantity impacts have not been noted.

### **GORDON CREEK #3 AND #6 MINES**

Gordon Creek #3 and #6 Mines were reclaimed in 1986. Sediment controls for treating the reclaimed area consist of a two cell sedimentation pond. Inflow was noted and a sample was taken in March of 1988. The TDS was 355 mg/L. No discharge from the pond was observed. Only one sample was taken from Coal Canyon above the reclaimed area in April 1988 and a flow of 1.6 gpm was noted with a TDS reading of 757 mg/L. The Right Fork of Coal Canyon drains into the reclaimed area and is undisturbed and ephemeral in nature.

Vegetative ground cover is approximately that of the corresponding reference area six years after revegetation with shrub densities averaging 1200 per acre.

### **BLUE BLAZE MINE**

The Blue Blaze Mine is found in Consumer's Canyon (North Fork of the Right Fork of Gordon Creek), or Area Three which is downstream and east of Bryner Canyon. Consumer's Canyon flows during all or most of the year due to a developed spring (sample Site #1) on the Right Fork of Gordon Creek and is, therefore considered an intermittent stream. The Blue Blaze Mine will involve surface disturbance in Area Three on Figure 5. All controls for sediment contributions from disturbed areas will be properly sized to handle storm runoff and meet applicable state and federal effluent limits. The Blue Blaze project involved collection of baseline water quality and quantity during 1989 and 1990 to define the existing hydrologic environment. A summary of this baseline information is found in Appendix 6 of the PAP.

The Blue Blaze Mine will begin operations with the No. 2 Mine which proposes only to mine the Castlegate "A" seam. The operation may be expanded to the No. 1 Mine, which would mine the Hiawatha seam after adequate baseline data has been collected to verify the presence of the aquifers above, within, and below the Hiawatha seam.

The entire drainage above the mine's disturbed area will be conveyed through the site via a culvert. The risk of contamination from the mine facility is therefore reduced.

Mitigation of any potential impacts to existing water rights is noted on page 3-32 of the PAP.

## **VI. SUMMARY**

Previous mines in the area intercepted approximately 21 gpm of water which was lost to the atmosphere due to the mine ventilation systems. Currently there are no actively producing mines in this CIA. The operator has proposed to haul in water for in mine uses. Use of mine water is not anticipated to increase.

Given the past history of mining in the area along with the type of ground water occurrence, diversion of spring flow and reduction in flow within Beaver Creek is considered to be at low risk.

New mining operations will have significantly less effect on surface water than past historic mining in the CIA due to the implementation of sediment controls, reclamation practices, and coal buffer zones beneath perennial streams.

There has been no interception of surface flows other than ground-water inflow into the Sweets Mine from waters impounded behind the Gordon Creek #3 Mine yard from the North Fork of Bryner Canyon. Discharge occurs only rarely through the outlet culvert. It is probable that the impounded water is seeping into the Sweet's Mine area via tension fractures resulting from mine subsidence. This impact to surface water in Bryner Canyon is to be alleviated following reclamation of the Gordon Creek #2 Mine.

The designs proposed for all anticipated mining operations within the CIA (the Blue Blaze Mine) are herein determined to be consistent with preventing material damage to the hydrologic balance outside the proposed mine plan areas and minimizing material damage to the hydrologic balance within the permit area.

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## REFERENCES

Mountain Coal Company, Gordon Creek #2, #7, and #8 Mines, Permit Application Package, 1989.

Mountain Coal Company, Gordon Creek #3 and #6 Mines, Permit Application Package, 1986.

Blue Blaze Coal Company, Blue Blaze Mine, Permit Application Package, 1992.

Danielson, T.W., Re Millard, M.D., and Fuller, R.H., 1981.

Hydrology of the Coal Resources Areas in the Upper Drainages of Huntington and Cottonwood Creeks, Central Utah: U. S. Geological Survey, Water-Resources Investigations Report 81-539.

Engineering-Science, Cumulative Hydrologic Impact Assessment with Respect to the Gordon Creek #2 Mine, 1984.

**TECHNICAL ANALYSIS  
BLUE BLAZE COAL COMPANY  
Carbon County, Utah  
ACT/007/020  
May 29, 1992**

**R645-301-100 GENERAL CONTENTS (SW)**

**R645-301-112 Identification of Interests**

Blue Blaze Coal Company is a Corporation registered in the State of Utah. The applicant and operators are the same, Blue Blaze Coal Company. Addresses for the Company and Resident Agent, William R. Skaggs, are found on page 2-1. Names and addresses of the company's officers and directors are found on pages 2-1 and 2-2. Principal shareholders are William Skaggs (50%) and Margaret Skaggs (50%) (page 2-2). William and Margaret Skaggs will be responsible for paying the abandoned mine land reclamation fee. There are no other current or pending coal mining and reclamation permits by any person identified as the company's officers and directors. The names and address of each owner of the surface and mineral property to be mined and of each owner contiguous to the permit area (pages 4-3 through 4-14) are listed in the permit application. MSHA identification numbers were issued May 14, 1992 and are listed on page 2-2. The applicant does not own any lands or interests in land contiguous to the permit area (page 4-1).

**R645-301-113 Violation Information**

Since this is the first and only permit application held by the applicant and officers and directors of the company, no mining permits have been suspended or revoked nor has a performance bond been forfeited (page 2-3).

**R645-301-114 Right-of-Entry Information**

The documents upon which the applicant bases their legal right to enter and conduct coal mining and reclamation operations is found on pages 4-2 through 4-14. The applicant claims that the Federal Mining Lease Act of 1920 gives them the legal right to enter and mine underground coal (page 4-2).

**R645-301-115 Status of Unsuitability Claims**

The applicant has consulted with federal land agencies (page 2-3) and the Division, no lands within or adjacent to the permit area is designated or under study as unsuitable for coal mining and reclamation operations. No facilities or operations will be conducted within 300 feet of an occupied dwelling. Coal mining and reclamation operations will be conducted within 100 feet of a public road. The applicant has met the requirements of R645-103-230 through R645-303-238 to allow public comment (publication on page 2-8).

R645-301-116 through 150 Permit Term, Insurance and Maps

The permit application is for a five-year permit term (page 2-3). A certificate of liability insurance will be acquired when permitting is completed (page 2-3). A copy of the newspaper advertisement of the application for a permit is on page 2-7.

R645-301-120 Permit Application Format and Contents

All maps and plans are of an appropriate scale and all applicable maps and plans distinguish between operations which occurred prior to August 3, 1977 (Plate 3-1).

COMPLIANCE

The applicant is in compliance with all sections of R645-301-100.

R645-301-200 SOILS (HS)

R645-301-210 Introduction

The applicant has proposed the construction and operation of an underground coal mine and loadout facility (page 1-1). Surface disturbance associated with mining will encompass lands disturbed by previous mining activities (i.e., prior to the enactment of Public Law 95-87) and undisturbed lands. There are three designations for previous disturbance: altered, moderately disturbed and severely disturbed. Criteria for the designations are described on pages 9-2 through 9-3.

Surface disturbance will be approximately 10.3 acres (pages 3-10 and 8-10).

The applicant's plan for topsoil and subsoil removal, storage, redistribution and fertilization are located in the Permit Application Package (PAP) as follows:

Removal	Page 3-36, 8-9, 8-10, 8-18, 8-20; Plate 8-2
Storage	Page 3-36, 3-46, 8-18; Plate 8-1
Redistribution	Page 3-36, 3-49, 3-52, 3-54, 8-10, 8-18, 8-20
Fertilization	Page 8-18, 8-20

The applicant is in compliance with this section.

R645-301-221 Prime Farmland Investigation

A pre-application investigation was conducted to determine if prime farmland existed within the permit area. Ferris P. Allgood, State Soil Scientist for the USDA/Soil Conservation Service (SCS) determined that no prime or important farmland exist within the permit area (i.e., section 7, 8, 17, 18, and 20, T.13S, R.8E, SLM). The negative determination was based on the following factors: steep slopes, stony or bouldery surface horizons and previous mining activities.

The applicant is in compliance with this section.

R645-301-220 Environmental Description

The soils within the proposed disturbance (page 8-2 through 8-9, Plate 8-1, Appendix 5) are primarily colluvium, alluvium, and residuum derived from sandstone and shale. The soils tend to be silty clay loam to loam within the Shupert-Winetti Complex and gravelly loam to loam within the Brycan, Rabbitex, Senchert and Curecanti Series.

The average annual precipitation ranges from 12 to 30 inches and the average annual air temperature ranges from 36 to 45 degrees °F.

The topography in the area is gently sloping to steep, ranging from 1 to 50 percent slope. The aspect is generally south to southwest.

The soil capability classification ranges from III-e3 irrigated to VII-e nonirrigated.

Under native vegetation, the water erosion hazard associated with these soils is slight to moderate. The erosion hazard for disturbed soils is primarily moderate. The soils are generally deep, well drained and moderately permeable. The pH of the surface horizon ranges from 7.2 to 8.0. The electrical conductivity ranges from 0.4 to 1.2 mmhos/cm at 25°C. The depths of reported A horizon range from 0 to 43 inches. The majority of the disturbed area is within the Brycan Series (A horizon = 34 to 43 inches) and the Shupert-Winetti Complex (A horizon = 0 to 10 inches).

The Blue Blaze Mine soil resource was surveyed at the Order II scale (personal communication with Leland Sasser USDA/SCS). Correlation of site map units with currently recognized soil series or complexes are as follows:

- 1) Brycan Loam - fine - loamy, mixed Cumulic Haploborolls
- 2) Curecanti Family - loamy - skeletal, mixed Typic Argiborolls
- 3) Rabbitex Site Loam 15 to 50 percent slope - fine - loamy, mixed Typic Calciborolls
- 4) Senchert Loam - fine - loamy, mixed Argic Pachic Cryoborolls
- 5) Shupert-Winetti Complex - loamy - skeletal, mixed (calcareous), frigid Typic Ustifluent.

Soil profile depths generally range from 60 to 70 inches.

The major limiting factors for the soils within the planned disturbance are high clay content ( >40% clay) and high percent coarse rock fragments ( >35% coarse rock fragments). Hence, large boulders will be removed, prior to placement in stockpiles, employing standard earth moving equipment and/or a commercial rock picker (page 8-20). The soil within isopach #1 (Plate 8-2) will not be salvaged for stockpiling.

The applicant is in compliance with this section.

#### R645-301-230 Operation Plan

The disturbance associated with the Blue Blaze mine will be approximately 10.3 acres (page 3-10 and 8-10). Topsoil and subsoil will be separately removed and stockpiled from approximately 3.0 acres (plate 8-2). The remaining 7.3 acres will not have topsoil removed because of the poor soil rating and/or contamination present from previous mining activities.

Two soils within the disturbance did not have site specific soil profile descriptions. These soils (Curecanti Family and Senchert Series) must have the A or E horizon removed prior to disturbance. Depth of topsoil (A or E horizon) will be considered that described for the particular soil series as found on pages 110 and 129 of the USDA/SCS Soil Survey of Carbon Area, Utah.

Approximately 17,553 cubic yards of topsoil and subsoil will be salvaged (page 8-10). Estimates of salvageable soil quantities (volume) may vary because of the amount and type of coarse rock fragments and the highly variable ranges allowed within soil taxonomic classifications. As a means of insuring proper

excavation and separation of adequate quantities of topsoil (A or E horizon) and subsoil (B and/or C horizon) the applicant has committed to having a professional soil scientist on site during topsoil and subsoil removal operations (page 8-18). Topsoil and subsoil excavation will be exacted by employing the "islands" method (page 8-18) of removal.

Prior to topsoil removal, vegetation which would interfere with topsoil removal will be removed prior to excavation (page 8-10).

Coal waste, contaminated soil material, concrete foundations, burnt coal, etc., encountered during topsoil and subsoil removal will be segregated, temporarily stored, and eventually gobbed underground and/or blended with run-of-mine coal (page 3-1, 3-20, 3-52).

Three separate subsoil and topsoil stockpiles will be created and surveyed to verify the amount of topsoil and subsoil salvaged. In the event that stored soil volume is insufficient for final reclamation, soil will be imported from outside the permit area (page 8-10).

Topsoil and subsoil stockpiles will not exceed a height of eight feet. Side slopes will not exceed 2h:1v. The stockpiles will be protected from wind and water erosion through construction of a containment berm around the stockpiles, the construction of contour furrows on the surface, the prompt establishment of a vegetative cover, and the application of straw mulch at a rate of two tons/acre.

Prior to seeding, the stockpiled soil will be sampled and analyzed for fertilizer and amendment requirements. Fertilizers and amendments will be applied in accordance with the soil laboratory results (page 8-18).

The stockpile area will be fenced to prevent livestock from entering the area.

The applicant will be in compliance when the following stipulations are met.

**Stipulation R645-301-231.300 (HS)**

Prior to topsoil removal operations the applicant must commit to excavating the A or E horizon for the Curecanti Family and Senchert Series in accordance with the profile descriptions located in the USDA/SCS Soil Survey for the Carbon Area, Utah.

Within 30 days of the completion of the initial phase of construction, the applicant must submit as-built surveys of the completed subsoil and topsoil stockpiles. Surveys must include the following information: volume of material, maximum and minimum elevations and slopes, cross sections, and all other pertinent dimensions.

Additionally, the applicant must amend the topsoil and subsoil mass balance table in accordance with the results of the above stockpile surveys.

**Stipulation R645-301-233 (HS)**

Within 30 days of permit approval, the applicant must commit to fulfilling the requirements of R645-301-233, in the event that the mass balance indicates a topsoil/subsoil deficiency.

**R645-301-240 Reclamation Plan**

Subsequent to backfilling and grading of spoil material and prior to topsoil placement, spoil will be scarified to a depth of no less than six inches (pages 8-18 and 3-49). The topsoil redistribution depth will be a minimum of 12 inches (page 8-10). Wooden stakes will be marked and distributed throughout the site to insure proper depth of topsoil redistribution (page 8-18). Topsoil will be placed along the contour (page 3-52). The soil will then be harrowed to break up the cloddy surface and scarified to a depth of 18 inches (page 8-18). This will decrease the potential for a failure surface and facilitate root penetration by breaking up the soil/spoil interface. The graded soil surface will be roughened by pitting and gouging to maximize surface roughness (page 8-18). Discontinuous contour furrows will be constructed on nonerosive grade slopes steeper than 6% and not be more than 15 feet apart.

Fertilizer type and rate will be determined from soil analysis (page 8-20). Twenty samples per acre will be collected from the top 12 inches. Samples will be composited and thoroughly mixed. Five subsamples will be collected from the composite and analyzed in accordance with the Division Guidelines for the Management of Topsoil and Overburden.

Following seeding, the soil surface will be raked to insure a good seed/soil contact (page 3-60). All reclaimed surfaces will be prepared to maximize surface roughness. On slopes steeper than 2.5h:1v erosion control (page 8-18) matting will be installed on the soil surface (page 3-60). On slopes less than 2.5h:1v, two

tons of straw mulch will be applied to the soil surface and crimped in by employing either a crimper or a disk.

Silt fences will be placed at the bottom of the fill slopes and along the top bank of the reclamation channels to control possible erosion from the newly graded seeded areas (page 3-52).

### COMPLIANCE

The applicant is in compliance with all sections of R645-301-200 except for stipulations R645-301-231.300 and R645-301-233.

### R645-301-300 BIOLOGY (SW)

#### R645-301-320 Environmental Description

The Blue Blaze Mine permit area covers eight vegetative communities (page 9-2). The Oakbrush and Salina Wildrye communities combined make up over half the total acreage of the eight communities (Plate 9-1). The proposed new disturbance will be on areas that have been previously impacted by coal mining activities. Various degrees of mining-related impacts have occurred on the vegetation within the proposed disturbance, therefore, the communities have been designated and mapped as: 1) slightly disturbed (altered) drainage bottoms; 2) moderately disturbed areas; and 3) severely disturbed areas (pages 9-12 through 9-14). Prior to disturbance, the drainages were probably dominated by sagebrush/grass/rabbitbrush with aspen, oakbrush and fir in the deeper, more protected drainages. The slopes surrounding the drainages or valleys are dominated by salina wildrye and oakbrush communities (page 9-12). Production information from the two communities assumed to be present prior to mining are estimated by the Soil Conservation Service to be sagebrush/grass/rabbitbrush-950 lbs. per acre and oakbrush/salina wildrye-900 lbs. forage per acre (page 9-9).

Two major aquatic habitats occur within the Blue Blaze Mine permit area (page 10-12): Gordon Creek and Beaver Creek. Gordon Creek is of limited value as a fishery. Beaver Creek, however, is ranked by DWR as being of substantial value as a salmonid fishery. Probably the greatest value of both Gordon Creek and Beaver Creek aquatic habitats is the water, cover, food and breeding sites they provide to a variety of terrestrial vertebrates (pages 10-12 and 10-15).

Portions of the permit area are classified as critical elk summer range and critical or high priority elk winter range (Plate 10-B). The area is also high priority deer summer range for deer Herd No. 32 (Plate 10-1C).

In June 1989, DWR conducted a raptor inventory of the permit area. One active Golden Eagle nest with two young and three inactive Golden Eagle nests were found (page 10-23, Plate 10-D).

In 1981, the U.S. Fish and Wildlife Services (USFWS) inspected the site. The biologist concluded that although power lines were considered unsafe, hazard was slight due to positioning. A letter dated May 20, 1991 reaffirmed that this is still the USFWS position. The USFWS also agrees with the statement that no threatened or endangered plant or animal species or their critical habitat occur within the permit area.

A letter to DWR from Mr. Skaggs, dated April 30, 1992 (Appendix 7), states that no bats had been observed inhabiting the old mine workings.

#### R645-301-330 Operation Plan

The Blue Blaze Mine site is located on a previously-mined area. Prior mining ceased in about 1953 with much of the surface area left in a disturbed condition. The applicant has committed to interim revegetation of areas disturbed to develop the mine but not used for the mining operation (page 3-42). On these sites, a temporary seed mixture will be used for interim stabilization (page 3-55). The seed mixture of mostly grasses was designed primarily for quick establishment.

No significant impact of subsidence on renewable resources is anticipated due to mining (page 3-41). This statement is based on observations from the extensive history of mining within and surrounding the permit area. The golden eagles nest identified on Plate 10-1A will be protected from subsidence by not removing the barrier pillars as identified on Plates 3-3 and 3-4 (page 3-44).

The applicant will minimize adverse impacts to the fish and wildlife of the area firstly by initiating an employee awareness program to reduce wildlife harassment and road kills. The operator has committed to culvert the small perennial tributary to Gordon Creek as it runs through the operations area (Plate 7-5). This culvert should significantly reduce the likelihood of water or airborne contaminants reaching Gordon Creek.

#### R645-301-340 Reclamation Plan

A reclamation schedule has been illustrated in Figure 3-12. The operator has designated sufficient lead time in ordering seed and plant materials to insure procurement at the time of installation. The seed mixture to be used for permanent seeding is designated on page 3-57. The seed will be drill seeded on all flat or moderate slopes (page 3-60). Steeper slopes will be hand broadcast and then raked to ensure proper seed to soil contact. Four thousand pounds per acre straw mulch will be applied over the seeded areas and then crimped to anchor the straw. All slopes 2½:1 or steeper will have erosion control matting installed. The matting will provide the additional protection needed on these steeper slopes. The reclaimed areas will be closely monitored to determine if and when maintenance is necessary.

Wildlife habitat is the primary postmining land use with limited livestock grazing in the reclaimed disturbed area. Wildlife enhancement measures during reclamation include using a seed mixture which contains a diverse mixture of grass, forbs, and shrubs which are known to be palatable to wildlife. Also, container stock (page 3-58) will be planted to provide cover for the wildlife. Approximately 1000 salix cuttings (page 3-63) will be planted along the North Fork of Gordon Creek after reclamation to stabilize the drainage and start restoration of the riparian habitat.

#### R645-301-350 Performance Standards

The applicant has committed to reclaim and revegetate disturbed areas as contemporaneously as practicable (page 3-45). Final revegetation should establish a diverse, effective and permanent vegetative cover. The seed mixture is comprised of species native to the area. Yellow Sweetclover is the only introduced species in the seed mixture. Other plantings in the Gordon Creek area with Yellow Sweetclover have shown this legume to persist only a few years, acting as a nurse crop.

This is a previously-mined site and although some areas are considered severely disturbed, the applicant has committed to clean and remove the old spoil material from the site. Some areas were less severely impacted and the topsoil has remained in place with minimal surface disturbance. Adequate topsoil will be salvaged from these areas to use on the more severely impacted areas. The proposed mine site is located in a canyon bottom at approximately 7600 feet elevation with average annual precipitation between 16 and 20 inches. All of

these factors, along with the revegetation efforts, should allow the applicant to meet and exceed the performance standards.

All seeds to be planted on site will comply with all state and federal seed laws (page 3-56). Seeding will be done in the fall (page 3-60). This is important to provide an adequate amount of time for seed stratification, particularly for the forb and shrub seeded species. The shrubs will be planted in the fall or spring following seeding.

#### R645-301-356 Revegetation: Standards for Success

As previously stated, almost the entire operational area (except for 0.3 acres) has been previously disturbed by mining and not reclaimed to the requirements of the Utah Coal Mining rules. Therefore, the revegetation success standard for bond release is that the vegetative ground cover will be not less than the ground cover existing before redisturbance and adequate to control erosion. The applicant measured ground cover in July 1991 on the proposed operational area and the raw data is presented on pages 9-25 through 9-30. Total vegetative cover was 53 percent. This is the standard to be met at bond release. The period of intended responsibility will be ten years. Vegetation will be quantitatively measured in years 2, 3, 5, 9, and 10 following revegetation (page 9-4).

#### COMPLIANCE

The applicant is in compliance with all sections of R645-301-300.

#### R645-301-400 LAND USE (SW) AND AIR QUALITY (JK)

##### R645-301-411 Environmental Description

The canyon in which the Blue Blaze Mine is proposed to be built has been used for coal mining since the early 1900's and apparently abandoned in 1953. The new proposed operations will disturb approximately 10.3 acres of which only about 0.3 acres have never been previously disturbed. Other than coal mining, the area has been used for wildlife habitat, limited sheep grazing and recreation (page 4-19). Carbon County has zoned the proposed Blue Blaze Mine site area as M & G 1 (page 4-21 and Plate 4-1). M & G 1 is a mining and grazing zone.

No public park or cemetery are located within or adjacent to the permit area. The state Historic Preservation Officer comments "The one historic site has been

reviewed and a determination was made that the one site would not be affected by the project" (page 5-13a). Additionally, the officer made no regulatory requirement.

A cultural and paleontological investigation was conducted in and adjacent to the proposed permit area in 1980 (Chapter 5 and Appendix 2). The search found four historic archaeological sites and one prehistoric artifact (page 3-39).

The permit area has been extensively mined previously (Plates 3-3 and 3-4). Room and pillar methods of mining were commonly used in both the Hiawatha seam and the Castlegate 'A' seam. Prior to coal mining (late 1800's), the area was used primarily for ranching with limited timber operations.

#### R645-301-412 Reclamation Plan

The landowners letter (Plate 3-59) states the land "will be used as previously indicated, which was for grazing and for wildlife." Wildlife would be the primary post mining land use within the disturbed area while grazing is limited to the higher elevations within the permit area. Reclaimed slopes within the disturbed area exclude cattle and would limit sheep grazing. However, the slopes would be compatible to the wildlife in the area. While the seed mixture is designed for wildlife, the planting will be augmented by transplanting containerized shrubs.

#### R645-301-413 Performance Standards

The area of proposed disturbance has been previously mined and disturbed to degrees varying from slight to severe. Areas of slight disturbance have soils which have been somewhat impacted but have remained in place and support vegetation. These soils will be salvaged for use in areas which had been severely disturbed and support none to only weedy plant growth. Thus, the area should be able to support the intended postmining land use.

#### R645-301-420 Air Quality

The only air pollutant from this site will be fugitive dust from coal handling and from the use of improved haul roads. However, the effect on air quality of fugitive dust is expected to be small because of the rapid fallout of particles with distance from the source and the high moisture content of the loaded out coal (pages 3-39 and 11-11).

The in situ moisture content of the coal is approximately 4.4%. In addition, water is added to the coal for dust suppression both at the continuous miner face and at the point where coal is loaded onto the mine conveyor. The high moisture content of the coal will thus serve to minimize air pollution from coal dust (pages 3-39 and 11-11).

Road dust is the greatest potential source of air pollution from fugitive dust. The applicant commits to watering the haul road and pad areas as necessary. In addition, the applicant commits to using a chemical dust suppressant (magnesium chloride) and perhaps road surface stabilizers if dust levels exceed standards established by the Utah Division of Air Quality (page 3-39).

An Air Quality Approval Order was obtained for this site from the Utah Division of Air Quality in March of 1981 (Figure 3-6, page 3-40). The Utah Division of Air Quality oversees compliance with the Clean Air Act (42 USC Sec. 7401 et seq.) and other state and federal air quality statutes and regulations, as required by this section. The Air Quality Approval Order is still in effect (May 1992) and commits the applicant to complying with all inspection and oversight requirements of the Utah Division of Air Quality, as required by the section.

The air quality information and commitments provided by the applicant fulfill all the requirements of this section.

## **COMPLIANCE**

The applicant is in compliance with all sections of R645-301-400.

## **R645-301-500 ENGINEERING (JK)**

### **R645-301-512 Certification**

All cross sections, maps, and plans which require certification under this section and all sections appertaining to this section have been properly certified. Plates 3-1 (Surface Facilities Map), 3-2A (Premining Slope/Design Profiles), 3-2B (Premining Slope/Design Profiles), 3-3 (Hiawatha Seam), 3-4 (Castlegate 'A' Seam), 3-5 (Subsidence Monitoring Plan), 3-6 (Premining Topography), 3-7 (Postmining Topography), 3-7A (Postmining Topography Profiles), 3-7B (Postmining Topography Profiles), 3-8 (Reclamation Map), 6-1 (Geologic Structure Map), 6-2 (Geologic Cross Section N-S), 6-3 (Geologic Cross Section E-W), 6-4 (Hiawatha Seam-Isopach Map), 6-5 (Castlegate 'A' Zone Isopach Map), 6-6

(Hiawatha Seam Overburden Isopachs), 6-7 (Castlegate 'A' Seam Isopachs), 7-1 (Hydrology Map), 7-2 (Piezometric Surface Map), 7-4 (Site Runoff Map), 7-5 (Drainage Diversions Map), and Appendix 1 (Field Water Rights) were certified June 3, 1990 by Joe E. Shoemaker, a registered land surveyor.

Plates 3-2 (Access and Haulage Road Design) and 3-2B (Surface Profiles) were certified August 18, 1981 by Sidney W. Smith, a registered professional engineer.

Plates 7-6 (Sedimentation Pond) was certified October 30, 1990 by John S. Huefner, a registered professional engineer.

The remaining plates require no certification.

#### R645-301-513 Compliance with MSHA Regulations and MSHA Approvals

Coal will not be processed at this site. There will be no impoundments which meet the criteria of MSHA 30 CFR 77.216(a), no permanent refuse piles, no discharges into an underground mine, and no surface mining operations.

Underground development waste will be disposed of in gob areas underground. This material will be tested, prior to disposal for acid- or toxic-forming potential. It will be tested at a rate of one sample for every 5000 yd<sup>3</sup> of material (pages 3-11 and 3-52).

Since the mining operation will be intersecting old workings, underground conditions cannot be accurately predicted at this time. Consequently, no detailed plan or location for underground disposal of development waste is provided by the applicant. However, the applicant commits to provide such a plan, for Division and MSHA approval, as soon as underground conditions are known (page 3-11).

In the event that gob areas are not adequate to contain all of the generated underground development waste, the waste will temporarily be stockpiled on the surface for a maximum of 90 days. The temporary stockpile area will have a capacity of approximately 5000 yd<sup>3</sup> and will be located adjacent to the #1 mine portal. The area will be surrounded by a berm and will drain to the sediment pond (pages 3-11 and 3-19).

Coal mine waste fires will be extinguished only by mine personnel, all of whom will be trained in fire fighting techniques. Fire fighting will employ, in succession, first water, then fire extinguishers, then rock dust, then foam, and

lastly the sealing off of the section in which a fire is located (page 3-20). This fire fighting plan accords with this section and with R645-301-523.220.

#### R645-301-514 Inspection

There will be no excess spoil disposal facilities and no permanent refuse piles at this site.

In and around Test Pit #8 (see Plate 8-1), there is a bench which consists of approximately 9,718 cu. yds. of coal mine waste. This coal mine waste was left by a previous mining operation and is very high in coal content, as indicated by chemical analysis (see page 8-20A). The applicant will dispose of this waste by blending it with run-of-mine coal (page 3-20).

The sediment pond will be inspected at the end of construction and yearly thereafter by a professional engineer. The professional engineer will promptly, after each inspection, provide to the Division a certified report indicating that the sediment pond has been constructed and maintained as designed and in accordance with the approved plan and the R645 Rules, as required by R645-301-514.310. The annual pond inspection report will be submitted to the Division with the full Annual Report (pages 7-51 to 7-54).

In addition to the certified inspections, the pond will also be inspected quarterly by a qualified individual designated by the applicant. A copy of the report on these quarterly inspections will be compiled, recognizing any appearance of structural instability or other hazardous condition, as required by R645-301-514.330 (pages 7-51 to 7-54).

The information and commitments provided by the applicant relative to the sediment pond and the handling of refuse fulfills the requirements of this section.

#### R645-301-515 Reporting and Emergency Procedures

At any time a slide occurs which may have a potential adverse effect on public health, property or safety, or on the environment, the applicant will notify the Division as quickly as possible. The applicant also commits to comply with any remedial measures required by the Division (page 3-18). This accords with the requirements of this section (R645-301-515.100).

If any examination or inspection discloses that a potential impoundment hazard exists, the applicant will promptly inform the Division of the finding and of

the emergency procedures formulated for public protection and remedial action (page 3-21). This procedure is in accordance with the requirements of this section (R645-301-515.200).

As soon as it is known that operations are to be temporarily ceased for 30 days or more, the applicant will submit to the Division a notice of intention to cease or abandon the operation. In accordance with R645-301-529.210, each mine entry that has further projected usefulness will be protected by barricaded, fenced, and posted with signs to prevent access by unauthorized persons and wildlife. These closure devices will, from time to time, be inspected and maintained by the applicant (page 3-28). These procedures satisfy the requirements of this section (R645-301-515.300 and R645-301-529.200).

**R645-301-516 Prevention of Slides in Surface Coal Mining and Reclamation Activities**

This section is not applicable as this operation is exclusively an underground operation.

**R645-301-520 Operation Plan**

**R645-301-521.100 Cross sections and Maps**

**R645-301-521.110 Previously Mined Areas.** Plate 4-1 (Property and Land Use Map) shows the location and extent of known active and inactive underground and surface mines within and adjacent to the proposed permit area.

**R645-301-521.120 Existing Surface and Subsurface Facilities and Features.** Plates 4-1 (Property and Land Use Map) and 3-6 (Premining Topography) show the locations of all buildings in and within 1000 feet of the proposed permit area, the locations of surface and subsurface manmade features within and adjacent to the proposed permit area, and the location of the one public road (Carbon County Road 290; formerly Utah State Highway 139) that passes within 100 feet of the proposed permit area. Plates 8-1 (Soils Map) and 3-6 (Premining Topography) show the location and size of existing areas of spoil, waste, coal development waste, and noncoal waste disposal, dams, embankments, and other impoundments within the proposed permit area.

**521.130 Landowners and Right of Entry Public Interest Maps.** Plates 3-3 (Hiawatha Seam Mine Plan), 3-4 (Castlegate 'A' Seam Mine Plan), and 4-1 (Property and Land Use Map) clearly show the boundaries of all lands and names of

present owners of those lands, both surface and subsurface, included in or contiguous to the proposed permit area. Plate 4-1 (Property and Land Use Map) shows the boundaries of all lands within the proposed permit area upon which the applicant has the legal right to enter and begin coal mining and reclamation operations. Plate 3-1 (Surface Facilities Map) shows the operation as it is proposed to be conducted within 100 feet of Carbon County Road 290 (formerly Utah State Highway 139).

Page 3-3 of the plan adequately describes the measures used by the applicant to insure that the interests of the public and landowners will be protected from coal mining and reclamation operations which will be conducted within 100 feet of the right-of-way line of Carbon County Road 290 (formerly Utah State Highway 139). The applicant provided an opportunity for a public hearing by publishing for four (4) consecutive weeks in the Sun Advocate, a weekly newspaper of general circulation, beginning on April 25, 1991, a notice of intention to commence underground mining operations (page 2-7a). An identical notice was also published in April and May of 1991 in the Salt Lake Tribune and the Deseret News (page 2-7b), which are daily newspapers of general circulation. No public comment was received and no public hearing requested as a result of the publication of this notice. Consequently, in a May 5, 1992 letter, Emma R. Kuykendall, Commissioner of Carbon County, which has jurisdiction over Carbon County Road 290, stated her finding that the interests of the public and affected landowners will be protected under R645-301-234.400 and granted the applicant permission to use the road for coal haulage (page 3-6). The Division is thus satisfied that the requirements of this section have been fulfilled.

**521.140 Mine Maps and Permit Area Maps.** Plates 3-3 (Hiawatha Seam Mine Plan), 3-4 (Castlegate 'A' Seam Mine Plan), 4-1 (Property and Land Use Map), and 4-2 (Permit Area) show the boundaries of all areas proposed to be affected by mining and reclamation. These maps also show the sequence and timing of mining as well as one area (T.13S, R.8E, Salt Lake Base Line and Meridian, Section 8, SW1/4 SW1/4) for which it is anticipated that an additional lease will be sought. Plate 3-5 (Subsidence Monitoring Plan) shows all areas where planned-subsidence mining methods (room-and-pillar mining) will be used.

**521.150 Land Surface Configuration Maps.** Plates 3-6 (Premining Topography), 3-1 (Surface Facilities Map), and 3-7 (Postmining Topography Map) show the surface configuration of the disturbed and adjacent area before, during, and after mining, respectively. In addition, Plates 3-2A and 3-2B (Premining Slope/Design Profiles), and 3-7A and 3-7B (Postmining Topographic Profiles) further define the surface configuration before, during, and after mining.

**521.160 Maps and Cross Sections of the Proposed Features for the Proposed Permit Area.** Plate 3-1 (Surface Facilities Map) shows all proposed buildings and facilities, all lands to be disturbed, all coal storage and loading facilities, all topsoil storage areas, and all lands for which a performance bond will be posted. Plates 3-2A and 3-2B (Premining Slope/Design Profiles), and 3-7A and 3-7B (Postmining Topographic Profiles) further show the proposed surface configurations of the disturbed and bonded lands before, during, and after mining.

**521.170 Transportation Facilities Maps.** Plate 3-1 (Surface Facilities Map) shows the road and conveyor system to be constructed, used, and maintained within the proposed permit area. In addition, Plate 3-2 (Access and Haulage Road Design) shows design specifications and a typical cross section of the road including cut-and-fill estimates.

**521.200 Signs and Markers Specifications.** All signs and markers will be of a standard, easily readable design (pages 3-23 to 3-29). All will be made of treated wood or steel and will be mounted on steel or wooden posts. Signs will include Mine and Permit Identification Signs, Perimeter Markers, Buffer Zone Markers, Topsoil Markers, and Snow Storage Area Markers (pages 3-24 to 3-29). Mine and Permit Identification Signs will show the mine name, the name, address, and business telephone number of the permittee, the MSHA ID number, and the permit number (page 3-24).

The cross sections, maps and plans submitted by the applicant fulfill the requirements of this section.

#### R645-301-522 Coal Recovery

Room-and-pillar mining methods with continuous mining machinery will be employed in this operation. By extracting the highest ratio of coal safely extractable, the applicant expects to achieve a coal recovery rate of approximately 60%, which is the average recovery rate for room-and-pillar operations in the United States. The applicant commits to extract the maximum coal possible while working with the U.S. Bureau of Land Management on any changes in the resource recovery plan (pages 3-14 and 3-20).

#### R645-301-523 Mining Method(s)

The Blue Blaze No. 1 Mine will be located in the Hiawatha seam while the No. 2 Mine will be located in the Castlegate 'A' seam, approximately 150 feet above the Hiawatha. The No. 2 Mine will be opened first and is expected to

produce 220,000 to 360,000 tons per year. The No. 1 Mine will be opened second and is expected to have the same production as the No. 2 Mine (page 3-11).

The Hiawatha seam rests atop the Starpoint Sandstone and is estimated to contain 4.85 million recoverable tons of coal. The Castlegate 'A' seam is estimated to contain another 1.8 million recoverable tons. Of these totals, 3,578,000 tons are considered minable in the Hiawatha seam and 761,000 are considered minable in the Castlegate 'A' seam. As the planned recovery rate is 60%, the applicants expects to mine approximately 2,147,000 tons from the No. 1 Mine and approximately 457,000 tons from the No. 2 Mine, or a total of 2,604,000 tons from the entire Blue Blaze Mine. This will make for a total operational mine life of 6 to 10 years, depending on production rates and market conditions (pages 3-20, 3-21, Plates 3-3 and 3-4).

Coal will be mined by continuous mining machinery, loaded into shuttle cars and hauled to a feeder breaker. The feeder breaker will reduce the coal to an 8-inch top size. The coal will then be placed on a rope-hung conveyor which will carry it to the surface. It will then be transferred to a fixed, covered conveyor which will carry it to the crusher, which will further reduce it in size. From the crusher, the coal will be carried, again by covered, fixed conveyor, to the coal storage pile. From the coal storage pile, it will be loaded into trucks by belt or front-end loader and hauled to its final destination (pages 3-12 to 3-19).

There will be three entries in the Hiawatha seam: one intake, one beltway, and one return. The Castlegate 'A' seam will have four entries: two intakes, one beltway, and one return.

Five main entries will be driven, on 80-foot centers, to within 80 to 100 feet of the property boundaries. Three-entry sub-main entries will be driven from the main entries and standard room-and-pillar panels will be developed from the sub-main entries on 80- to 100-foot centers. Pillars will then be split into 20-foot X 60-foot fenders which will be removed by successive cuts with the continuous mining machinery. Timbers will be installed to support the roof and provide breaker control on caving roof.

150- to 300-foot barrier pillars will be left between main entries. 80- to 100-foot barrier pillars will be left at all property boundaries, as required by Utah law. 100-foot barrier pillars will be left along all coal outcrops. The barrier pillars between main entries will be extracted on final retreat (pages 3-12 to 3-19, Plates 3-3 and 3-4).

The information provided by the applicant regarding mining methods represents standard, sound engineering practice and is in accordance with the requirements of this section.

#### R645-301-524 Explosives

This section is not applicable since explosives will not be used on the surface at this operation.

#### R645-301-525 Subsidence

There are no manmade structures above the permit area. The only renewable resources in the area are rangeland, two springs, and one perennial stream (Beaver Creek). There will be a minimum of more than 800 feet of cover below Beaver Creek (page 3-44, Plate 6-7).

Based on the past experience of other operations in this area, no significant subsidence effects are expected. Swisher Coal Company mined beneath Beaver Creek in 1978 and removed pillars. No subsidence occurred due to this operation. In addition, mining operations were carried out more than 30 years ago in the Gordon Creek No. 2 Mine and in the Consumers No. 3 Mine. To date, there has been no observable subsidence from these operations (pages 3-42 and 3-44).

Mining in the Blue Blaze operation will be by room-and-pillar methods with pillar extraction. Barrier pillars will be left at seam outcrops and permit area boundaries. Development will proceed simultaneously in the main entries of both seams. Development will then proceed from south to north in the Castlegate 'A' seam and from north to south in the Hiawatha seam (years two through five). Development will be followed by pillar extraction, which is expected to last through year 5 in the Castlegate 'A' seam and through year 10 in the Hiawatha seam. As the separation between seams consists of 160 feet to 200 feet of consolidated sandstone and shale, cuminizing of the workings will not be necessary (pages 3-12 to 3-19, Plates 3-3, 3-4 and 6-2).

A network of subsidence monitoring stations will be established, subsidence data from which will be submitted to the Division with each Annual Report. Monuments will be steel rebar with aluminum caps. There will be a total of 41 stations: five base stations, 15 stations above the Hiawatha seam (two of which will be above Beaver Creek) and 21 stations above the Castlegate 'A' seam. Monuments will be set mostly in surface drainages, where overburden is shallowest and where subsidence is likely to be greatest. Subsidence will be

monitored until one year after mining has ceased, which, according to the Subsidence Engineers' Handbook, should be more than adequate (see Subsidence Engineers' Handbook, Second Edition, National Coal Board, London, 1975; page 43) (pages 3-44, 3-45, Plate 3-5).

Data compiled by the National Coal Board indicate that with geometric parameters such as those which are found at this site, subsidence could reach a maximum of about 10 feet if both seams are mined (see Subsidence Engineers' Handbook, Second Edition, National Coal Board, London, 1975; pages 9-10). Using data from room-and-pillar mines in the Western United States, however, the applicant estimates the maximum possible subsidence to be between 6 and 7 feet (see Figure 3-7, page 3-43). However, given the past experience of other operators in this area, and given the presence of massive, well-consolidated sandstone beds above and between the coal seams, there is every reason to believe that subsidence will never be this great (pages 3-42, 3-44, Plates 6-4, 6-5, 6-6, and 6-7).

No damage of consequence is likely to occur to the vegetative resources in the area. In the event of subsidence, vegetation will not be damaged but will merely be displaced along with the groundwater. In the event that subsidence causes a diminution of flow in Beaver Creek, the applicant proposes to stem the loss by either grouting the affected area or lining the streambed of Beaver Creek with impermeable clay material, or both. Such a diminution of flow, however, is very unlikely for two reasons. First, Beaver Creek Coal Company mined beneath Beaver Creek for a number of years with no effect on the creek's flow. Second, subsidence cracks are very unlikely to reach Beaver Creek because there are approximately 800 feet of massive, well-consolidated sandstone cover above the workings in this area. If cracks reached the channel of Beaver Creek and inflow occurred, the interbeds of swelling shale in the area would tend to "heal" the cracks and quickly bolt the inflow (page 3-44, Plates 6-2 and 6-7).

As a necessary part of the operation, a map of the underground workings will be kept current from the time that underground development begins. An updated copy of this map will be submitted to the Division with each Annual Report or whenever the Division requests (page 3-12).

In a 1990 letter (page 4-14a), the applicant informed all surface owners of his intention to commence coal mining operations. The letter includes identification of specific areas that will be undermined, the projected date of mining in the area, and the address and telephone number of the location at which

the applicant's subsidence control plan, as well as the rest of this mining plan, may be examined. This fulfills the requirements of this section.

The subsidence plan and appurtenant information employ sound engineering principles and fulfill the requirements of this section.

#### R645-301-526 Mine Facilities

All surface facilities are shown on Plate 3-1 (Surface Facilities Map). There are no existing structures at this site. All surface facilities will be removed during final reclamation. Following is a list and brief description of all surface facilities (see pages 3-2 to 3-8, Plate 3-1):

- a) Portals -- There will be three portals in the Hiawatha seam: one intake, one return, and one conveyor. There will be four portals in the Castlegate 'A' seam: two intakes, one return, and one conveyor.
- b) Fans -- There will be one fan for each seam. The Hiawatha fan will be located just above the main pad and will be accessed by a 600-foot primary road. The Castlegate fan will be located adjacent to and on the same pad as the other three Castlegate portals.
- c) Mine Building -- This 20-foot X 40-foot trailer will serve as mine office, lamphouse, and temporary bathhouse. A 14-foot X 60-foot permanent bathhouse will be constructed later, after approval by the Division and the Utah Department of Health. The mine building will be located on the main pad, adjacent to the Hiawatha intake portal.
- d) Conveyors -- Coal will be brought from both seams by covered, 42-inch conveyors. These conveyors will take the coal to a crusher from which it will be stacked in a 2000-ton open stockpile.
- e) Supply Trailers -- These trailers will be located on the main pad next to the conveyor. They will serve as onsite warehouses for maintenance parts and equipment.
- f) Substation -- The substation will be located on the main pad adjacent to the Hiawatha intake portal.
- g) Diversion -- One diversion will be placed on the east edge of the main pad. It will take undisturbed drainage from the canyons above the site and route it into the main undisturbed culvert, which bypasses the sediment pond and empties into the main drainage approximately 600 feet from the mouth of the main canyon.
- h) Main Road -- This will be a primary road. It will be approximately 1200 feet long and will go from Carbon County Road 290 (formerly Utah State Highway 139) at the mouth of the canyon, to the coal

- stockpile area. The road will be of incised construction except at the one point where it will cross the culvert which will divert flow from the North Fork of Gordon Creek. The road surface will be gravel and will slope away from its crest at approximately 3%. A detailed design of this road is shown on Plate 3-2 (Access and Haulage Road Design).
- i) Upper Portal Access Road -- This will be a primary road. It will be approximately 600 feet long and will be surfaced with gravel. It will go from the main pad to the Hiawatha fan portal.
  - j) Water Supply System -- This will consist of a 12,000-gallon storage tank and pipe system. It will be located on the main pad adjacent to the mine office trailer.
  - k) Bathhouses -- There will be two bathhouses, one for men and one for women. They will be trailer units and will be located on the main pad adjacent to the mine office trailer.
  - l) Sediment Pond -- The sediment pond will be located east of the main road and approximately 800 feet from the mouth of the canyon.
  - m) Sewage System -- This will initially consist of chemical toilets, the sewage from which will be taken from the site by a private contractor. Eventually, this system will be replaced by a permanent system after approval by the Division and the Utah Department of Health.
  - n) Fuel Tank -- This 5000-gallon diesel fuel tank will be located above ground at the south edge of the main pad.
  - o) Shop -- The maintenance shop will be located on the main pad between the mine office and the substation.
  - p) Temporary Coal Mine Waste Stockpile -- This pile will contain underground development waste for a maximum of 90 days until it can be disposed of underground. It will be surrounded by a berm and will be located at the west edge of the main pad near the Hiawatha intake portal (page 3-10).
  - q) Temporary Refuse Stockpile -- This pile will contain coal refuse from site cleanup until it can be blended with outgoing coal. It will be located on the main pad immediately adjacent to the coal stockpile. Until coal production actually takes place, this stockpile will be surrounded by a berm (page 3-18).

Runoff from all surface facilities areas will report to the sediment pond, thus minimizing additional contributions of suspended solids to streamflow or runoff outside the permit area. In addition, the applicant commits to operating all surface facilities in accordance with the approved permit and with the R645 regulations (page 3-12).

Information provided by the applicant regarding surface facilities is complete and adequate and fulfills the requirements of this section.

#### R645-301-527 Transportation Facilities

There will be two primary roads: the Main Access Road and the Upper Portal Access Road. There will be no ancillary roads.

The Main Access Road will be approximately 1200 feet long and will go from Carbon County Road 290 (formerly Utah State Highway 139), at the mouth of the canyon, to the coal stockpile area. The road will be of incised construction except at the one point where it will cross the culvert which will divert flow from the North Fork of Gordon Creek. The road surface will be gravel and will slope away from its crest at approximately 3%. The road will be 20 feet wide and its grade will not exceed 6% (pages 3-3, 3-10, Plates 3-1 and 3-2, Appendix 3).

The Upper Portal Access Road will be approximately 600 feet long and will go from the main pad to the Hiawatha fan portal. The road will be of cut-and-fill construction and will be surfaced with gravel. It will be 20 feet wide and its surface will slope away from its crest at approximately 3%. The grade of this road will not exceed 6% (pages 3-3, 3-10, Plates 3-1 and 3-2, Appendix 3).

Embankment designs for both roads were analyzed for stability. Using the Hoek method with a standard rotational stability model, the applicant has calculated a dry factor of safety for the road embankments of 1.9 and a factor of safety for saturated conditions of 1.4. These figures compare favorably with the minimum factor of safety of 1.3 required by R645-301-534.130 (Appendix 3).

Coal will be brought from both seams by covered, 42-inch conveyors. The conveyor from the Castlegate 'A' seam will go to a crusher on the main pad and thence to the coal stockpile. The conveyor from the Hiawatha seam will transfer its coal to the Castlegate 'A' conveyor at a point on the main pad approximately 150 feet up canyon from the crusher (pages 3-8, 3-9, Plate 3-1).

The information regarding transportation facilities accords with sound engineering principles and fulfills all the requirements of this section.

R645-301-528 Handling and Disposal of Coal, Overburden, Excess Spoil,  
and Coal Mine Waste

Coal will be mined by continuous mining machinery, loaded into shuttle cars, and hauled to a feeder breaker. The feeder breaker will reduce the coal to an 8-inch top size. The coal will then be placed on a rope-hung conveyor, which will carry it to the surface. At the surface, it will be transferred to a fixed, covered 42-inch conveyor which will carry it to a crusher, which will further reduce its size. From the crusher, the coal will be taken, again by fixed, covered 42-inch conveyor to the coal storage pile. There it will be loaded into trucks by belt or front-end loader to be hauled to its final destination. The entire coal handling system will be constructed during the first few weeks of operation and will be completely disassembled and removed during final reclamation (pages 3-2, 3-8, 3-10, Plate 3-1). All of this is standard, acceptable industry practice.

Sediment pond waste is, by definition, excess spoil and will be the only excess spoil handled at this operation. After cleaning of the sediment pond, the sediment pond waste will be removed immediately from the site by blending with the outgoing coal (page 7-54). Though not the usual practice, this procedure is a fairly common, acceptable one for disposal of sediment pond waste.

By definition, coal mine waste consists of underground development waste and coal processing waste. Since no coal processing waste will be generated by this operation, only underground development waste will have to be handled.

All underground development waste will be disposed of permanently in gob areas which consist of entries and cross cuts no longer needed for operation of the mine. The Division and MSHA will be notified and plans for such disposal will be submitted for approval at least 30 days prior to the anticipated use of these areas.

During initial mine development and perhaps at other times, gob areas may not be adequate to store all of the underground development waste generated by the operation. In these cases, the waste material will be temporarily stored on the surface, adjacent to the No. 1 Mine Portal, for a maximum of 90 days. The material will be tested for acid- and/or toxic-forming potential at a rate of one sample for every 5000 yd<sup>3</sup> of material. After completion of the tests, and as soon as gob areas become available, the material will be stowed and compacted underground (pages 3-11, 3-20). This procedure is acceptable to the Division.

Noncoal mine waste --trash-- will be temporarily stored in a metal dumpster within a fenced area on the site. The dumpster will be unloaded as necessary by a

local contractor and the trash material hauled to the Carbon County Landfill. More dumpsters will be provided if necessary (pages 3-12, 3-13).

The information and plans provided by the applicant regarding the handling of coal, overburden, excess spoil, coal mine waste, and noncoal mine waste are adequate and fulfill all the requirements of this section.

#### R645-301-529 Management of Mine Openings

Mining operations will be conducted in the Hiawatha seam and in the overlying Castlegate 'A' seam. The No. 1 Mine will be constructed in the Hiawatha seam and will require three portals: one haulage portal, one intake air portal, and one exhaust air portal. Four portals will be constructed in the Castlegate 'A' seam in the No. 2 Mine: one haulage portal, two intake air portals, and one exhaust air portal. Portal locations are shown on Plate 3-1 (pages 3-2, 3-12).

The portals will consist of steel I-beam structural supports which extend 20 to 100 feet into the ground. During final reclamation, the structures will be removed, if possible, the portals will be sealed with double concrete block stoppings, and the openings will be backfilled for a distance of at least 20 feet (pages 3-2, 3-46 to 3-48).

As soon as it is known that operations are to temporarily cease for 30 days or more, the applicant will submit to the Division a notice of intention to cease or abandon the operation. Each portal that has further projected usefulness will be protected by barricades, fenced, and posted with signs to prevent access by unauthorized persons or wildlife. These closure devices will, from time to time, be inspected and maintained by the applicant (pages 3-30, 3-31).

The information and plans provided by the applicant regarding the management of mine openings represents good engineering practice and fulfills all the requirements of this section (R645-301-529) and of R645-301-515.300.

#### R645-301-530 Operational Design Criteria and Plans

#### R645-301-532 Sediment Control

Undisturbed diversions are described in the following table (pages 7-41 to 7-47, Plate 7-5).

<u>Diversion</u>	<u>Ditch (D) or Culvert (C)</u>	<u>Culvert Diameter</u>	<u>Description of Function</u>
UC-1	C	18"	Collects flow from UD-4 and UD-5 and routes it into UC-3.
UC-2	C	18"	Collects flow from UD-3 and routes it into UC-3.
UC-3	C	18"	Collects flow from UC-1 and UC-2 and routes it into UC-5.
UC-4	C	24"	Collects flow from UD-2 and from Left Fork North Fork and routes it into UC-5.
UC-5	C	24"	Collects <u>all</u> undisturbed flow from UC-3 and UC-4, bypasses sediment pond, and discharges it into main drainage.
UC-6	C	42"	Carries flow of main drainage, which is <u>all</u> undisturbed flow, beneath haul road and into Gordon Creek drainage.
UD-1	D	--	Collects runoff from area above topsoil stockpile and routes it to the road ditch of Carbon County Road 290.
UD-2	D	--	Collects runoff from above facilities pad and routes it to UC-4.
UD-3	D	--	Collects runoff from area above north side of Right Fork North Fork and routes it to UC-2.
UD-4	D	--	Collects runoff from area above No. 2 Mine portals and routes it to UC-1.
UD-5	D	--	Collects flow from Right Fork North Fork and routes it to UC-1.

Disturbed diversions are described in the following table (pages 7-47, 7-48, Plate 7-5).

<u>Diversion</u>	<u>Ditch (D) or Culvert (C)</u>	<u>Culvert Diameter</u>	<u>Description of Function</u>
D-1	D	--	Collects runoff from entire No. 1 Mine and No. 2 Mine areas and routes it to the sediment pond.
DC-1	C	12"	Collects runoff from area below the facilities pad and routes to beneath the haul road and into the sediment pond.
DC-2	C	12"	Collects runoff from the topsoil stockpile area and routes it beneath the haul road and into the sediment pond.

In addition to the system of disturbed and undisturbed diversions, the sediment pond is also an integral part of the sediment control system. The sediment pond will be of incised/embankment construction and will be located near the bottom of the main canyon (Plates 3-1 and 7-5). It will have the capacity to completely contain the runoff from a 10-year/24-hour storm for all disturbed areas (R645-301-742.221.33), the volume of which is 1.03 acre-feet, and 1.25 acre-feet of sediment as well. The total capacity of the pond below its emergency spillway will be 2.38 acre-feet. The pond's cleanout criterion is 60% of the total sediment volume, or 0.75 acre-feet. The cleanout volume will be marked by a calibrated pole. The pond will also have a 2" decant pipe with a locking valve, and a non-erodible, open channel emergency spillway which is capable of handling the peak flow from a 25-year/6-hour storm, as required by R645-301-742.223 (pages 3-8, 7-48 to 7-54, Plates 3-1, 7-6).

Water encountered during mining will be used in underground operations. A discharge permit (UPDES No. UT-0023761) has been obtained for both the No. 1 and the No. 2 Mines. If the quantity of water encountered in mining exceeds the amount required by the underground operations, it will be discharged and monitored on the surface. If necessary, this water will be treated by the sediment pond in order to meet effluent standards (pages 3-32 and 7-17).

The sediment control designs and information submitted by the applicant represent good, prudent engineering practice. The designs and information are adequate for the conditions of this site and fulfill all of the requirements of this section.

### R645-301-533 Impoundments

There will be only one sediment pond. The sediment pond will be a non-MSHA structure. It will be of incised/embankment construction and will be located below all mining operations near the bottom of the main canyon (Plates 3-1, 7-5). It will have the capacity to completely contain the runoff from a 10-year/24-hour storm for all disturbed areas (R645-301-742.221.33), the volume of which is 1.03 acre-feet, and 1.25 acre-feet of sediment as well. The total capacity of the pond below its emergency spillway will be 2.38 acre-feet. The pond will be cleaned out when the sediment volume reaches 60% of the maximum, or 0.75 acre-feet. The cleanout volume will be marked by a calibrated pole. The pond will also have a 2" decant pipe with a locking valve, and a non-erodible open channel emergency spillway which is capable of handling the peak flow from a 25-year/6-hour storm, as required by R645-301-742.223 (pages 3-8, 7-48 to 7-54, Plates 3-1, 7-6).

The sediment pond will be inspected during and after construction by a qualified, registered, professional engineer. The pond will be inspected after each storm and cleaned as necessary. Its embankments will be vegetated, to control erosion, with a temporary seed mix as described in Section 3.5.5.2 (pages 7-48 to 7-54).

The applicant has analyzed the pond embankment designs for stability. Using a standard, circular failure model and the Hock Circular Failure Charts, the applicant has found that the pond embankments have a static safety factor of 4.81 for dry conditions and 4.44 for saturated conditions. These figures are almost three times the minimum of 1.3 required by R645-301-533.100 (Appendix 3).

The sediment pond designs are complete, adequate, and technically sound. They fulfill all of the requirements of this section.

### R645-301-534 Roads

There will be two primary roads at this site: the Main Road and the Upper Portal Access Road.

The Main Road will provide access to both the No. 1 and the No. 2 Mines and will be used for coal haulage. It will go from the Gordon Creek Road (Carbon County Road 290; formerly Utah State Highway 139) to the coal storage pile area and thence to the No. 2 Mine portal area. Its average grade will be approximately 6.5%, with its steepest pitch being 10%. It will be surfaced with one foot of

crushed gravel and will slope away from its crown at 3% to facilitate drainage (page 3-3, Plates 3-1, 3-2).

The Upper Portal Access Road will be approximately 600 feet in length. It will go from the main facilities pad to the No. 1 Mine fan portal and will be used infrequently for repair and maintenance of the fan and general access. The road will be surfaced with native material and will be bermed on its outer edge for safety and runoff control (page 3-3, Plate 3-1).

The applicant has analyzed the road embankments for stability. Using a standard circular failure model and the Hoek Circular Failure Charts, the applicant has found that the road embankments have a static safety factor of 1.92 for dry conditions and 1.37 for saturated conditions. These figures exceed the minimum figure of 1.3 required by R645-301-534.130 (Appendix 3).

The road plans and specifications provided by the applicant are complete and technically sound. They fulfill all the requirements of this section and of R645-301-512.250 and R645-301-527.

#### R645-301-535 Spoil

Sediment pond waste is, by definition, excess spoil and will be the only excess spoil handled at this operation. After cleaning of the sediment pond, the sediment pond waste will be removed immediately from the site by blending with the outgoing coal (page 7-54). Though not the usual practice, this procedure is a fairly common, acceptable one for disposal of sediment pond waste.

At test pit #8 (see page 8-20a), there is an embankment of coal material from earlier mining operations. The embankment contains approximately 9718 yd<sup>3</sup> of material which is high in coal content. This material will be stored adjacent to the coal stockpile and will, like sediment pond waste, be disposed of by blending with outgoing coal (page 3-20).

#### R645-301-536 Coal Mine Waste

By definition, coal mine waste consists of underground development waste and coal processing waste. Since no coal processing waste will be generated by this operation, only underground development waste will need to be handled.

All underground development waste will be disposed of permanently in gob areas which consist of entries and cross cuts no longer needed for operation of the

mine. The Division and MSHA will be notified and plans for such disposal will be submitted for approval at least 30 days prior to the anticipated use of these areas.

During initial mine development and perhaps at other times, gob areas may not be adequate to store all of the underground development waste generated by the operation. In these cases, the waste material will be temporarily stored on the surface, adjacent to the No. 1 Mine portal, for a maximum of 90 days. The material will be tested for acid- and/or toxic-forming potential at a rate of one sample for every 5000 yd<sup>3</sup> of material. After completion of the tests, and as soon as gob areas become available, the material will be stowed and compacted underground (pages 3-11, 3-20). This procedure is acceptable to the Division. The requirements of this section and of R645-301-528 have been met.

#### R645-301-537 Regraded Slopes

This section is not applicable as there are no alternative specifications and no plans to regrade settled and revegetated fills.

#### R645-301-540 Reclamation Plan

#### R645-301-542 Narratives, Maps and Plans

**542.100** The reclamation plan contains a detailed timetable for completion of each major step in reclamation, as required by this section. The amount of time required for each step was estimated using Means Site Work Cost Data, 11th Annual Edition, 1992. The total time required for final reclamation is 94 days, or approximately 17 weeks. The actual time required will probably be less, however, since several of the reclamation steps will be carried out concurrently (pages 3-61, 3-63 to 3-65).

**542.300** The reclamation plan includes final surface configuration maps (Plates 3-7, 3-8) and cross sections (Plates 3-7A, 3-7B) which depict the anticipated final surface topography. Cross sections on Plates 3-7A and 3-7B are spaced at approximately 200-foot intervals. Their locations are shown on Plate 3-1.

**542.400** All surface facilities and structures will be removed during final reclamation. Only the reestablished drainage channels of Right Fork North Fork and Left Fork North Fork will be retained as permanent features (page 3-46, Plate 3-8). The sediment pond will be retained until the end of backfilling and grading operations, after which it will be removed (page 3-46).

**542.500** As mentioned above, the sediment pond will remain until the end of backfilling and grading operations, after which it will also be filled and reclaimed (page 3-46).

**542.600** Both roads will be completely backfilled and eliminated and their culverts removed during final reclamation (page 3-49, Plates 3-7 and 3-8).

**542.700** The first place of final reclamation will be the permanent sealing of all portals. Portals will be sealed with a double block seal placed 20 to 50 feet from the entrance. The opening will then be backfilled. The portal structures will be removed and the exposed coal seams will be covered (pages 3-46 to 3-48). This procedure represents common, prudent engineering practice.

**542.800** The reclamation plan includes a detailed estimate of reclamation costs as described in R645-301-830.100 through R645-301-830.300. These costs have been estimated using volume estimates derived from the cross sections on Plates 3-2A, 3-2B, 3-7A and 3-7B (page 3-52), Means Site Work Cost Data, 11th Annual Edition, 1992, and the Rental Rate Blue Book for Construction Equipment, Volume 1, April 1991. The reclamation cost estimate includes all major steps in reclamation, an Inspection and Supervision percentage, and a general contingency of 10% of the total estimated cost. The total 1992 cost is then escalated at a rate of 2.5% per year (from the Means Historical Cost Index, 1992 Edition) for five years, yielding a total reclamation cost, in 1997 dollars, of \$259,000. The complete reclamation cost estimate is found on pages 3-61 through 3-72 and is summarized on page 3-68.

The reclamation cost estimate has been checked and fulfills all the requirements of this section and of R645-301-830.100 through R645-301-830.300.

The designs, maps, plans and other information submitted by the applicant pursuant to the requirements of this section are complete and adequate and fulfill all of the requirements of this section.

R645-301-550 Reclamation Design Criteria and Plans

R645-301-551 Casing and Sealing of Underground Openings

The first phase of final reclamation will be the permanent sealing of all portals, as required by the Division and consistent with MSHA, 30 CFR 75.1771. Portals will be sealed with a double block wall placed 20 to 50 feet from the

entrance. The opening will then be completely backfilled to the block seal. The steel portal structures will be removed and the exposed coal seams will be covered. Since the mine workings are down dip from the portals, no water is expected to impound against the seals (pages 3-46 to 3-48). This sealing procedure represents common, prudent engineering practice and fulfills the requirements of this section and of MSHA, 30 CFR 75.1771.

#### R645-301-552 Permanent Features

This section is not applicable as all structures, facilities, and other features will be removed during final reclamation. Only the reestablished drainage channels of Right Fork North Fork and Left Fork North Fork, which will approximately parallel the planned routes of the undisturbed culverts, will remain and these drainage channels do not constitute permanent features as set forth in this section.

#### R645-301-553 Backfilling and Grading

As this site was originally disturbed between 1928 and 1950 and no topsoil was saved, the applicant will only be able to restore the area to an approximate original contour which is compatible with the postmining land use. In general, backfilling and grading will be carried out as follows (pages 3-49 to 3-54):

- a) After sealing of the portals and removal of all structures, a backhoe (Cat 235 or larger) will be brought to the upper portal terrace.
- b) The backhoe will reach down over the fill bank, retrieve as much material as possible, and place that material on the terrace.
- c) A dozer (Cat D-7 or larger) will work with the backhoe, taking the retrieved material and compacting it from the cut bank or highwall outward.
- d) The main mine yard will be recontoured, by backhoe and dozer, to drain to the center. A drainage channel will be established to convey runoff through the reclaimed area.
- e) The procedure of a) through d) will continue down the haul road with the backhoe and dozer operating in conjunction to reclaim the area to the permit boundary.
- f) After completion of backfilling and grading, the surface will be scarified to prevent slippage of topsoil and promote plant root penetration.
- g) A front-end loader will load topsoil into haul trucks at the topsoil stockpile. The trucks will deliver the topsoil to where the dozer and

backhoe are working. The dozer will evenly distribute the topsoil to a depth of one foot over the entire regraded area.

- h) Following redistribution of topsoil, the area will be reseeded, fertilized, and mulched.

All exposed coal outcrops and toxic- and acid-forming material will be covered with at least four feet of suitable substitute soil material (page 3-52).

All highwalls will be completely reclaimed, as required by R645-301-553.120. The fill material placed against the highwalls will be compacted by repeated passes of machinery in order to stabilize the fills. All material used in backfilling will be placed on the contour to minimize erosion and instability. Repair of erosion damage will be performed by hand as necessary (page 3-60).

There will be no surface disposal of coal mine waste and no surface refuse piles. Such materials will be disposed of underground, as described under R645-301-528. All available spoil will be used in backfilling and grading.

The applicant has analyzed the postmining slope designs using a standard rotational failure model and the Hoek Circular Failure Charts. Using the soil parameters that prevail at the site, the applicant has found that a fill of slope 1.5h:1v has a static safety factor of 1.92 for dry conditions and 1.37 for saturated conditions. These figures compare favorably with the minimum figure of 1.3 required by R645-301-553.130. Since most reclaimed slopes will be less steep than the 1.5h:1v slopes of the Hoek analysis, the stability safety factor should be even higher than those calculated in the analysis (Appendix 3).

#### R645-301-560 Performance Standards

The applicant commits to conduct all coal mining and reclamation operations in accordance with the approved permit and the requirements of R645-301-510 through R645-301-553 (page 3-12).

#### COMPLIANCE

The applicant is in compliance with all sections of R645-301-500.

## R645-301-600 GENERAL CONTENTS (HK)

### R645-301-610 Introduction

**611.** Descriptions of geology within and adjacent to the permit area, as well as the proposed operations are contained within the PAP. The specifics of the environmental description (given under R645-301-620) and operation plan (given under R645-301-630) will be addressed under the respective regulations.

**612.** Plate 6-1 through 6-7 are used along with the information contained in Appendix 3A to satisfy the requirements given under R645-301-622. All plates bear the stamp of Joe E. Shoemaker (State of Utah, Registered Land Surveyor #4267) for the initial preparation. Subsequent revisions to plates 6-1, 6-6 and 6-7 are certified by Richard H. White (State of Utah, Registered Professional Engineer #7102). The information contained within Appendix 3A is also certified by Mr. White.

### R645-301-620 Environmental Description

**621.** Pages 6-1 through 6-7 discuss the geology of the permit and adjacent area that may be affected by the proposed operation. Specifically, this begins with a regional geologic framework in terms of tectonics and depositional environments. Subsequently, the discussion focuses on the permit and adjacent areas with emphasis on stratigraphy and local structures (i.e., faults and folds).

**622.** The PAP satisfies the requirements for R645-301-622 by utilizing the following:

Figure 6-2	Regional Geologic Map of the Blue Blaze No. 1 and No. 2 Mine Permit Area.
Figure 6-3	Regional Structural Contour Map.
Table 6-1	Centralized Stratigraphic Section Northern Wasatch Plateau.
Table 6-2	Drill Hole Evaluation.
Table 6-3	Cross Section Boring Locations: North-South Cross Section:

Table 6-4	Cross Section Boring/Measured Section Locations: East-West Cross Section.
Plate 6-1	Proposed No. 1 and No. 2 Mine Geologic/Structure Map.
Plate 6-2 & Plate 6-3	East-West and North-South Geologic Cross Sections.
Plate 6-4 & Plate 6-5	Hiawatha Seam and Castlegate "A" Zone-Lower Split Isopach Maps.
Plate 6-6 & Plate 6-7	Hiawatha Seam and Castlegate "A" Seam Overburden Isopach Maps.
Appendix 3-A	Drill Hole Logs.

It should be noted that there are no oil and gas wells within the proposed permit area.

**623.** Potential acid- or toxic-forming strata and the ability to reclaim required by R645-301 and R645-302 is addressed under section 6.4.6, 6.4.7, and 6.6 of the PAP. Text and data presented here are also supported by the lab sheets in Appendix 3-B. Additional discussions in relation to acid- or toxic-forming materials and reclamation potential can be found in the soils section of the PAP (Section 8).

Subsidence control information is contained under section 6.5.4 of the PAP. An in-depth discussion of the subsidence control plan can be found in section 3.5.8 of the PAP.

**624.** Information required under R645-301-621 through R645-301-623, and noted above, has been used in part to satisfy the provisions of R645-301-624. The occurrence of ground water is noted in stratigraphic discussions as well as cross sections, maps and plans. Detailed analyses of the ground-water resource can be found in section 7 of the PAP in the PHC. The thickness and engineering properties of shales and sandstones occurring in the area are quantified in section 6.4.7.2 and table 6-6 of the PAP.

**625.** Not applicable at the present time.

626. Not applicable.

627. Overburden, thickness and lithology are described in the text of section 6 of the PAP. This description is aided by table 6-1, Plate 6-6 and Plate 6-7 (see discussion under R645-301-622 for explanation of tables and plates).

#### R645-301-630 Operation Plan

631. Commitments for casing and sealing of exploration holes and bore holes can be found in section 6.4.1.1 of the PAP. Additional commitments for water monitoring wells can be found in the hydrology section of the PAP.

632. Subsidence, and the monitoring thereof, is described in detail in the operation and reclamation plan (section 3) of the PAP, specifically pages 3-41 through 3-45. Figure 3-7 and Plate 3-5 are also used to support the discussion.

#### R645-301-640 Performance Standards

641. The requirements given under R645-301-641 are addressed by the same parts of the PAP as noted above under R645-301-631.

642. The requirements given under R645-301-642 are addressed by the same parts of the PAP as noted above under R645-301-632.

### COMPLIANCE

The applicant is in compliance with all sections of R645-301-600.

### R645-301-700 HYDROLOGY (TM, HS, HK)

#### R645-301-724 Baseline Information (TM)

**724.100 Ground Water Information.** The permit area has three springs and four monitoring wells. The applicant has supplied two years of complete baseline monitoring information for the three springs as shown in Appendix 6B identifying seasonal trends. The Castlegate 'A' seam has been shown to be dry as discussed on pages 7-6 through 7-9. Drill logs for these holes are found in Appendix 3. A notarized letter from Mr. Joseph A. Harvey indicate dry drilling conditions for all of the LMC holes found in Appendix 6A. All monitoring sites are shown on Plate 7-1.

All existing water rights are listed and shown in Appendix 1. The applicant has not listed Water Right 91-94 in the Appendix or on the Plate showing water rights. In addition, until the applicant files a change application with the Division of Water Rights for use of any water right, no water right can be used until the change application is approved. Therefore, the applicant will be in compliance when Stipulation R645-301-724.100 (TM-1) is met.

**Stipulation to R645-301-724.100 (TM)**

Within 30 days of permit approval, the applicant must submit to the Division of Water Rights a Change Application for the point of diversion for any water right to be used. The applicant must also show Water Right 91-94 in Appendix 1 and indicate it on the Water Rights Map.

**724.200 Surface-Water Information.** The location of all surface-water bodies, lakes, impoundments, and water monitoring points (5 stream sampling sites) are shown on Plate 7-1. All baseline data is shown in Appendix 6, indicating seasonal trends and flow rates. The applicant is in compliance with this rule.

**724.600 Survey of Renewable Resource Lands.** The applicant has provided Figure 7-2 showing Potential Recharge Lands. A discussion regarding subsidence and its potential for impact on these aquifers or recharge of these aquifers is found on pages 7-61 and 7-62. No significant impacts are predicted on any aquifers of use during the mining of the Castlegate 'A' seam.

**R645-301-728 Probable Hydrologic Consequences (PHC) Determination**

The current PAP submittal meets the necessary requirements of the rules to define ground-water characteristics in the area of the proposed Blue Blaze Coal Mine for the Castlegate 'A' seam (i.e., No. 2 Mine).

The information regarding baseline ground-water and surface-water data collection is discussed in Chapter 7 of the PAP. Four drill holes exist within the permit area. Drill logs of Holes LMC 1, 2, 3, and LMC 4 are found in Appendix 3A. The following table was generated to demonstrate the depth to coal seams and the measured depths of each of these holes for ground-water occurrence. It is found in the geology section of the PAP on page 6-10. Information regarding the drilling of these holes is also found on pages 7-6 through 7-9 of the PAP.

TABLE 6-2  
 DRILL HOLE EVALUATION

HOLE ID	DATE DRILLED	DEPTH DRILLED	DEPTH of PLUG	MEASURED DEPTH	CASTLEGATE DEPTH*	HIAWATHA DEPTH*
LMC 1	Sept. 1976	900 ft.	600 ft.	599 ft.	793 ft.	Unknown*
LMC 2	Oct. 1976	568 ft.	50 ft.	None	518 ft.	Unknown*
LMC 3	Nov. 1976	836 ft.	665 ft.	664 ft.	630 ft.	791 ft.
LMC 4	Jan. 1980	430 ft.	220 ft.	217 ft.	105.2 ft.	215.3 ft.

\* Drilling completed before reaching the Hiawatha seam.

It becomes apparent after reviewing this table that the data presented shows that water levels have been collected from zones above, within, and immediately below the Castlegate 'A' seam. No water quality data was collected because the seam was dry. All holes drilled to their completed depths were dry as documented in a Notarized letter from Mr. Joseph A. Harvey concerning the drilling of all LMC holes. As stated in his letter, all these holes were drilled with air rotary and monitored for water occurrence and found to be dry. The monitoring data found in the above table references more recent data (page 7-7 and 7-8) from the same holes which also showed that the aquifers above, within, and below the Castlegate 'A' seam to be dry. LMC 1 provides data from aquifers 200 feet above the Castlegate 'A' seam. LMC 2 provides no data. LMC 3 provides data from above the Castlegate 'A' seam and from within the Castlegate 'A' seam. LMC 4 provides data from above, in, and below the Castlegate 'A' seam. LMC 4 provides data from above the Castlegate 'A', through the Castlegate 'A' to the Hiawatha seam but penetrates old workings in the Hiawatha instead of an in-place seam and therefore, cannot be used to accurately describe baseline conditions for the Hiawatha seam.

It is appropriate to take into account the surrounding mines and the occurrences of water documented to have occurred in those mines. Both the Gordon Creek #2 and #3 Mines encountered small sporadic occurrences of ground water in the Castlegate 'A' seam. Both mines encountered water in the Hiawatha seam, with most of the ground water being associated with the crossing of a graben in the Gordon Creek #3 mine, where the water was backed up against a graben which acted as a ground water barrier. As a consequence of this water occurrence, the operator will be required to drill three holes which penetrate the Hiawatha seam and any aquifers below the Hiawatha seam prior to any approval to mine the Hiawatha seam.

Three monitoring wells are proposed for the mining of the Hiawatha seam as described on pages 7-20 through 7-23. At the completion of one year of baseline data collection for these three holes, the applicant will be allowed to submit his data for review and data adequacy will be determined at this time.

The applicant has provided adequate baseline data for all surface and ground-water sampling sites as shown in Appendix 6 of the PAP. Three springs are found within the permit area and shown as sampling sites #1, #2, and #4 on Plate 7-1. The average flow for these springs is 10.36, 1.25, 1.0 GPM, respectively.

A mitigation plan has been proposed for any disruption of these springs based on replacement from current water rights holdings (see page 3-32).

The applicant is in compliance with requirements of this rule regarding the mining of the Castlegate 'A' seam.

**Stipulation to R645-301-728 (TM)**

Mining of the Hiawatha seam will be contingent upon the collection of adequate baseline data from holes LMC 1, 2 and the additional in-mine hole designated as drill hole BBCC-3. The LMC holes will be redrilled in another location, so as to supplement existing data as referenced on page 7-17. All drilling proposals will obtain approvals from the Division of Water Rights and any other appropriate agencies.

Baseline water quality data must be collected for a period of two years. The data can be reviewed at the end of one year, if the applicant provides an updated PHC summarizing all data collected for the PHC at the end of one year. No water quality parameters will be dropped from the Division's water monitoring list until the applicant provides a summary of the data for Division review and a discussion justifying the rationale for elimination of any parameters. If any parameters are consistently below the detection limit and/or the Drinking Water Standards, then it is appropriate that this is summarized in the applicant's PHC.

An approval to mine the Hiawatha seam will be contingent on the submittal of the revised PHC, summarizing all water data collected to date specifically addressing the aquifers above, within, and below the Hiawatha seam.

R645-301-731.200 Water Monitoring

**731.210 Ground-Water Monitoring.** The applicant has provided a list of ground-water sampling parameters in Tables 7-1 and 7-2 of the PAP. Table 7-1 addresses the baseline parameter monitoring requirements. Table 7-2 addresses the operational and post-mining parameter monitoring requirements. The frequency of sampling is found on page 7-17. All results will be submitted as outlined on page 7-24 to coincide with the sampling dates and allow the Division to review the data as quickly as possible following sampling. Future monitoring plans related to the future mining of the Hiawatha seam are found in Chapter 7, pages 7-20 through 7-23.

The operator has provided a conceptual plan for collecting ground-water data for the Hiawatha seam to provide updated information to revise the PHC. The Division has determined that redrilling of LMC 1 and 2 in the same locations is to appropriate, therefore, the Division will stipulate redrilling of these holes in another location to be determined as most beneficial in regards to collecting additional ground-water information.

Stipulation to R645-301-731.210 (TM)

Within 30 days of permit approval, the applicant must submit a plan specifically outlining new drill hole locations for LMC 1 and 2 and a commitment to complete these holes to the bottom of the base of the first saturated strata or the bottom of the Starpoint sandstone, whatever comes first.

**731.220 Surface-Water Monitoring.** The applicant has provided a list of surface-water sampling parameters in Tables 7-5 and 7-6. Table 7-5 describes the baseline parameter monitoring requirements. Table 7-6 describes the operational and the post-mining monitoring requirements. The frequency of sampling is discussed in Section 7.2.2.3. The description of all the sampling sites and their locations is found on page 7-28. The summary of baseline data is found in Appendix 6B. Future monitoring of Beaver Creek is being conducted above and below the mining disturbance to provide a means of determining any impacts associated with mining under Beaver Creek even though the applicant proposes to leave a barrier pillar. The applicant has also provided monitoring of any surface waters above and below the disturbance.

The applicant has provided a commitment to monitor the sediment pond according to the requirements of UPDES Permit UT-0023761 until bond release or until the revegetation is adequate to permit removal of the sediment pond. All

disturbed area drainage is routed to the sediment pond. The applicant is in compliance with this section.

R645-301-731.300 Acid- and Toxic-Forming Materials (HS)

The material (coal waste) in the vicinity of test pit #8 is toxic-forming. The coal waste embankment was sampled and analyzed in accordance with the Division Guidelines for the Management of Topsoil and Overburden, Table 6. The concentration of hot water soluble boron exceeded the maximum allowable concentration of 5 mg/kg. The surface coal waste sample (0-12") contained 4.80 mg/kg hot water soluble boron. The coal waste sample at depth (10' to 11') contained 5.19 mg/kg hot water soluble boron (Appendix 5).

All coal waste encountered during construction activities, including the toxic-forming coal waste mentioned above, will be segregated and temporarily stored on the coal storage pad and blended with run-of-mine coal (pages 3-1 and 3-20).

Underground development waste and waste encountered during the redevelopment of the surface of the mine will be temporarily stored on the surface for a maximum of 90 days. Temporarily stored waste material will be sampled, in accordance with Division Guidelines for Management of Topsoil and Overburden, at a frequency of one representative sample for every 5,000 yds<sup>3</sup> of material. Waste rock material will be gobbled underground as a permanent disposal mechanism. Thirty days prior to permanent disposal, the Division and MSHA will be notified and disposal plans will be submitted (section 3.3).

All exposed coal outcrops, acid- and/or toxic-forming material and underground development waste that remains in temporary storage on the surface (not to exceed a volume of 5,000 yds<sup>3</sup>) at the time of final reclamation will be placed against the highwall and covered with four feet of nonacid- and nontoxic-forming material (page 3-52).

R645-301-731.500 Discharges (TM)

731.511. The applicant has not provided information to satisfy this rule.

**Stipulation to R645-301-731.511 (TM)**

Within 30 days of permit approval, the applicant must supply the necessary information regarding discharges into the underground mine satisfying the requirements of R645-301-731.511.1 through R645-301-731.511.4 before any water is discharged into the underground mine.

**731.600 Stream Buffer Zones.** The applicant has failed to identify any stream buffer zones on any plate in the PAP, although the Right Fork North Fork of Gordon Creek is protected through culverting, specific approval must be obtained prior to any disturbance of the Right Fork North Fork of Gordon Creek or activities within 100 feet of the Right Fork North Fork of Gordon Creek. All stream buffer zones must be clearly marked on the ground and in the PAP.

**Stipulation to R645-301-731.600 (TM)**

Within 30 days of permit approval, the applicant must submit the necessary information to obtain approval to conduct any activities within 100 feet of the Right Fork North Fork of Gordon Creek. A commitment to clearly mark all stream buffer zones on the ground must be made and the stream buffer zone must be identified on the appropriate map.

**R645-301-732 Sediment Control Measures (HK)**

The Applicant presents plans on pages 7-34 through 7-58 and Appendix 6E of the PAP for sediment control. Although the specifics of these plans will be discussed under the appropriate regulation, it should be noted that the Applicant's proposal does not fully comply with R645-301-732 in terms of sediment control for the development phase of mining.

**Stipulation R645-301-732 (HK)**

Within seven (7) days of permit approval, the applicant must provide a plan to the Division for adequate sediment control measures prior to conducting any surface disturbance. This plan will include sediment control measures during the development stages of mining prior to any site disturbance. This plan must be done in order to meet the requirements for sediment control measures during the development phase of mining.

R645-301-733 Impoundments

The only impounding structure Blue Blaze Coal Company (BBCC) proposes to use is a sediment pond. As such, it will be addressed under R645-301-742.220.

R645-301-734 Discharge Structures

Because discharge structures are to be constructed and maintained in compliance with R645-301-744, they will be discussed there.

R645-301-735 Disposal of Excess Spoil

At the present time, there are no plans in Section 7 of the PAP to dispose of excess spoil.

R645-301-736 Coal Mine Waste

At the present time, there are no plans in Section 7 of the PAP to dispose of coal mine waste.

R645-301-737 Noncoal Mine Waste

Because noncoal mine waste is to be stored and disposed in compliance with R645-301-747, this aspect of noncoal mine waste will be discussed there.

R645-301-738 Temporary Casing and Sealing Wells

The temporary casing and sealing of wells will be addressed under R645-301-748.

R645-301-741 Design Criteria and Plans

Within the PAP, BBCC presents plans and designs for the control of drainage from disturbed and undisturbed areas. These are found in Section 7 and Appendix 6E. Discussion of the specific plans and designs can be found under the appropriate regulations.

R645-301-742 Sediment Control Measures

**742.100.** In order to provide the appropriate sediment control measures, BBCC developed a drainage plan with the following objectives:

- 1) To divert as much undisturbed runoff around the facilities as possible.
- 2) To route all runoff from disturbed areas through a sediment pond.
- 3) To provide adequate drainage of roads and parking areas.
- 4) To create channels, culverts and diversions which are stable.
- 5) To satisfy DOGM specifications.

To treat disturbed area runoff BBCC plans to use a sediment pond as its primary method of the best technology currently available (BTCA). With the exception of road drainage from below the sediment pond to State Highway 139, all disturbed area runoff is to be treated by the sediment pond. Runoff from the approximately 500 feet of roadway below the sediment pond to the State Highway is to be treated with silt fences.

Undisturbed area runoff is primarily diverted around and culverted through the site. Portions of drainage area D-1 and all of the drainage area designated "Adjacent Areas" contain undisturbed land. Both areas report to the sediment pond. Additional contributions of suspended solids to the Right Fork North Fork of Gordon Creek, Left Fork North Fork of Gordon Creek and North Fork of Gordon Creek originating from the BBCC mine site are to be prevented, to the extent possible, by conveying flows through the site via culverts.

In general, ditches and channels are designed to keep flow velocities low so as to minimize the potential for channel scour. Where flow velocities are considered erosive, the Applicant commits to provide channel protection measures and/or perform maintenance.

Culverts and appurtenant structures are designed so as to provide adequate flow capacities, thereby minimizing the potential for harmful backwater effects. Inlet and outlet protection is designed in accordance with prudent engineering methods.

**742.200.** The sediment pond at BBCC is to be constructed over a culverted section of the North Fork of Gordon Creek (see R645-301-731.600 for more information on stream buffer zones). As planned, the pond is to be a temporary incised/embankment pond with a total storage capacity of 2.38 acre-feet.

Initially, a percolation test was performed to assess the suitability of the site for this structure. Results of the test can be found on page 7-53 (Figure 7-13). Seismic concerns do not present a problem for construction of a sediment pond in this area.

Designs for the sediment pond provide 2.38 acre-feet of storage capacity. Of this, 1.03 acre-feet is dedicated to containing runoff from the 10 year 24 hour precipitation event. The remaining 1.25 acre feet is available for sediment, so the 60% cleanout volume is at 0.75 acre-feet (an elevation of 7573.3 feet). Actual calculations for sediment yield to the pond are based on an estimate of 0.05 acre-feet of sediment per acre disturbed. With 10.40 disturbed acres, a value of 0.52 acre feet of sediment is obtained. Given the calculations versus actual sediment storage allocated, a number of points should be made here. First, the value of 0.05 acre-feet of sediment per acre disturbed is lower than what the Division prefers. However, there is no guideline or regulation stating what value must be used. The only criteria is for the pond to "provide adequate sediment storage." By allotting 1.25 acre-feet for storage, the Applicant has done this. In fact, based on that volume, the Applicant actually uses 0.12 acre-feet of sediment per acre disturbed in sediment yield calculations. This is greater than what the Division suggests and double the calculated value. The Applicant states the design is used for "future design considerations" (page 7-50). Such future designs can not and will not be addressed here. In its present configuration the pond complies with R645-301-742.221.31. Any future changes affecting the sediment pond must be approved prior to implementation.

Treatment of runoff from the 10 year 24 hour precipitation event is to be achieved by containing that volume, thereby allowing suspended sediments to settle out. Twenty-four hours after a storm, the pond is to be drained/decanted by opening the valve on the two inch decant line in the pond. This valve is to remain locked at all other times except when decanting storm runoff. The inlet of the decant line is to be located at an elevation of 7575.3 feet, which is 24 inches above the 60% cleanout level and 3.4 feet below the elevation of the spillway. The 60% cleanout level is to be marked by means of a post in the pond (see Figure 7-12 on page 7-52).

The sediment pond's spillway channel is designed to pass the peak flow of the 25 year 6 hour precipitation event. Calculations for the spillway assume the pond is full to the elevation of the spillway prior to the onset of the event. With a depth of 1.3 feet, a width of 10 feet and side slopes of 2:1, the spillway is to have a foot of freeboard between the top of the pond embankment and the maximum flow elevation. The spillway and its outlet are to be cemented and riprapped to

provide a non-erodible open channel. Inlets to the pond are to be grouted riprap with an underlying geotextile filter fabric. The area below the outlet from the decant line is to be a splash pad constructed of 9 inch riprap and cement with a filter blanket base. As such, inlets and outlets from the pond are designed to pass the required peak flows and be constructed so as to be stable.

Pond designs, maps and calculations have been prepared under the direction of and certified by Richard H. White (State of Utah, Registered Professional Engineer #7102). The information and calculations contained in Appendix 6E are also certified by Mr. White. Calculations performed by the Division on such things including, but not limited to drainage areas, storm events, runoff volumes, peak flows, stage-discharge curves and designs of the pond and associated structures support the Applicant's proposal.

**742.300.** Diversion designs are outlined on pages 7-41 through 7-48 of the PAP. Calculations supporting these designs are found in Appendix 6E.

As the Right Fork North Fork of Gordon Creek, Left Fork North Fork of Gordon Creek and North Fork of Gordon Creek are intermittent streams, part of the diversion criteria that must be satisfied are found under R645-301-731.600 (stream buffer zones). Because temporary stream channel diversions are to be at least equal to the capacity of the unmodified stream immediately upstream and downstream from the diversion, BBCC is committing to survey the channels above and below the disturbed area prior to installation of the culverts. The survey is to be used to evaluate the channels' average annual flow capacity and compare it against the design to ensure the culverts have been sized appropriately. This commitment is found on page 7-47.

The stream channel diversion culverts are only temporary and as such, are designed for the 10 year 6 hour precipitation event. Miscellaneous flow diversions (culverts and ditches) are also sized based on this criteria. When the culverts are removed from the Right Fork North Fork of Gordon Creek, Left Fork North Fork of Gordon Creek and North Fork of the Gordon Creek, the channels are to be reclaimed by means of installing open channels. These are considered permanent diversions and so they are designed to pass the peak flow associated with the 100 year 6 hour precipitation event.

Diversion designs, maps and calculations have been prepared under the direction of and certified by Richard H. White (State of Utah, Registered Professional Engineer #7102). The information contained in Appendix 6E is also certified by Mr. White. Calculations and review of diversions and appurtenant

structures performed by the Division on such things including, but not limited to drainage areas, storm events, runoff volumes, peak flows and designs of the diversions and associated structures support the Applicant's proposal. Stability of diversions and appurtenant structures has also been reviewed and found satisfactory.

#### R645-301-743 Impoundments

Presently, the only impoundment BBCC proposes is a sediment pond. This has been addressed under R645-301-742.200.

#### R645-301-744 Discharge Structures

Discharge structures associated with ditches, culverts and sediment ponds at BBCC have been reviewed in conjunction with the respective diversion and/or impoundment and found to be designed in accordance with standard engineering practices and guidelines set forth under R645-301-744.100.

#### R645-301-745 Disposal of Excess Spoil

As noted previously, there are no present plans to dispose of excess spoil in Section 7 of the PAP, so R645-301-745 is not applicable at this time.

#### R645-301-746 Coal Mine Waste

As noted previously, there are no present plans to dispose of coal mine waste in Section 7 of the PAP, so R645-301-746 is not applicable at this time.

#### R645-301-747 Disposal of Noncoal Mine Waste

The only disposal of noncoal waste specifically contained in Section 7 is on page 7-57. This discusses disposal of soil material trapped by sediment control measures. Only methods and places of disposal approved by the Division are to be used. Disposal of other forms of coal mine waste, not specifically noted in the PAP, will also take place in a manner consistent with R645-301-747.

#### R645-301-748 Casing and Sealing of Wells

Casing and sealing of wells is addressed under the ground-water monitoring section of the PAP. Additional commitments are made in Section 6 of the PAP (Geology Section). Management of boreholes and wells will take place in

accordance with, and following approval from, the necessary regulatory authorities.

R645-301-750 through 755 Performance Standards

BBCC is not presently operating, so performance standards are not yet applicable. However, all performance standards set forth in R645-301-750 through R645-301-755 must be met during all phases of mining. The potential ability for the Applicant's proposed operations in Section 7 has been reviewed above.

R645-301-760 through 765 Reclamation

The present reclamation satisfies the requirements to remove temporary structures and restore natural drainage patterns. Reclamation of the Right Fork North Fork of Gordon Creek, Left Fork North Fork of Gordon Creek and North Fork of Gordon Creek has been addressed under R645-301-742.300. In its present form the reclamation plan calls for removal of the siltation structure (the sediment pond) prior to 2 years after the last augmented seeding, which does not satisfy the requirements of R645-301-763.100.

Stipulation R645-301-763.100 (HK)

Within 120 days of permit approval, the applicant must provide adequate designs for sediment control during all phases of reclamation. The applicant must submit a complete and technically adequate reclamation plan to the Division regarding the stabilization and revegetation of disturbed areas prior to the removal of siltation structures. This must be done in order to meet the requirements for siltation structures during reclamation.

COMPLIANCE

The applicant is in compliance with all sections of R645-301-700 except for stipulations R645-301-724.100, R645-301-728, R645-301-731.210, R645-301-731.511, R645-301-731.600, R645-301-732, and R645-301-763.100.



# State of Utah

DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

Norman H. Bangert

Governor

Dee C. Hansen

Executive Director

Dianne R. Nielson, Ph.D.

Division Director

355 West North Temple

3 Triad Center, Suite 350

Salt Lake City, Utah 84180-1203

801-538-5340

May 29, 1992

TO: Pamela Grubaugh-Littig, Permit Supervisor

FROM: Joseph C. Helfrich, Regulatory Program Coordinator 

RE: Compliance Review for Section 510(c) Findings, Blue Blaze Coal Company, Blue Blaze Mine, PRO/007/020, Folder #5, Carbon County, Utah

As of the writing of this letter, there are no NOV's or CO's which are not corrected or in the process of being corrected. Any NOV's or CO's that are outstanding are in the process of administrative or judicial review. There are no finalized Civil Penalties which are outstanding and overdue in the name of Blue Blaze Coal Company.

Finally, they do not have a demonstrated pattern of willful violations, nor have they been subject to any bond forfeitures for any operation in the state of Utah.

jbe  
A:\510(C)

APPLICATION EVALUATION REPORT

STATE: UT

APPNO:

SEQNO:

PAGE: 1

APPLICANT'S ENTITY ID: 119551

APPLICANT'S NAME : BLUE BLAZE COAL CO

SYSTEM RECOMMENDATION IS BASED ON ENTITY OFT

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*	SYSTEM RECOMMENDATION :	ISSUE
*	PREVIOUS SYSTEM RECOMMENDATION:	
*		
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F2/PROCEED F3/QUIT F4/MAIN F6/REPORT F9/V.VIOL F10/V.OFT

Blue Blaze Coal Company  
P.O Box 784  
Price, Utah 84501  
(801) 472-3786

May 29, 1992

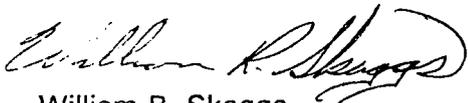
Ms. Pamela Grubaugh-Littig  
Utah Division of Oil, Gas and Mining  
355 West North Temple  
3 Triad Center  
Salt Lake City, Utah 84180-1203

Subject: R645-301-112.900

Dear Pam:

We the undersigned affirm that the information presented under R645-301-112.100 through R645-301-112.800 in the PAP for the Blue Blaze Coal Company is correct and unchanged as of it's submittal on May 29, 1992.

Sincerely yours,



William R. Skaggs  
1996 W. Kenilworth Road  
Helper, Utah 84526



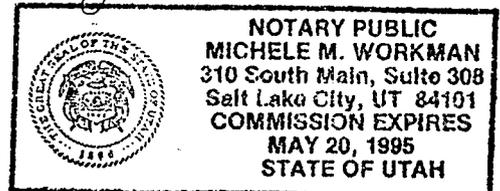
Margaret A. Skaggs  
1996 W. Kenilworth Road  
Helper, Utah 84526

APPEARED & SIGNED BEFORE ME William R. Skaggs and Margaret A. Skaggs



NOTARY PUBLIC

May 29, 1992





# State of Utah

DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

Norman H. Bangertter  
Governor

Dee C. Hansen  
Executive Director

Dianne R. Nielson, Ph.D.  
Division Director

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

April 17, 1991

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

Dear Mr. Skaggs:

Re: Determination of Completeness, Blue Blaze Coal Company, Blue Blaze Mine, PRO/007/020, Folder #3, Carbon County, Utah

The Permit Application Package (PAP) for the Blue Blaze Mine has been determined complete.

Upon receipt of this letter, Blue Blaze Coal Company must publish an advertisement in the Sun Advocate and the Newspaper Agency Corporation providing all information as required under R614-300-121.100. A Notarized Proof of Publication should be sent to the Division following the consecutive four-week advertisement period.

Sincerely,



Pamela Grubaugh-Littig  
Permit Supervisor

jbe

cc: Robert Hagen, OSM  
Lowell Braxton, DOGM

AT007020.2



# State of Utah

DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

Norman H. Bangertter

Governor

Dee C. Hansen

Executive Director

Dianne R. Nielson, Ph.D.

Division Director

355 West North Temple

3 Triad Center, Suite 350

Salt Lake City, Utah 84180-1203

801-538-5340

April 18, 1991

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Dear Mr. 2~:

Re: Determination of Completeness, Blue Blaze Coal Company, Blue Blaze Mine, PRO/007/020, Folder #3, Carbon County, Utah

The Utah Division of Oil, Gas and Mining (Division) has completed a review of the Permit Application Package (PAP) for the Blue Blaze Mine. The Division has determined the plan to be administratively complete. In compliance with Section R614-300-121.300 of the Utah Coal Mining Reclamation Act (UCA Section 40-10-1 et seq), notice is hereby given to all appropriate agencies having a jurisdiction over or an interest in the area of the operations that a complete plan is available for public review.

The permit area is located in Carbon County, Utah, approximately 14 miles from Price, Utah.

The following areas comprise the permit area:

Township 13 South, Range 8 East, SLM, Utah

Section 8: SE1/4 SW1/4;

Section 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 440 acres.

The permit area includes Federal Coal Lease SL-063011 and is described as follows:

Township 13 South, Range 8 East, SLM, Utah

Section 7: S1/2 SE1/4;

Section 8: SW1/4 SE1/4;

Section 17: N1/2 NW1/4, SW1/4 NE1/4;

Section 18: NE1/4 NE1/4;

Containing 280 acres.

Page 2  
D of C Letter  
PRO/007/020  
April 18, 1991

The Division of Oil, Gas and Mining will now prepare a Technical Analysis (TA) to determine whether the plan meets all the criteria of the Permanent Program Performance Standards according to the requirements of UCA, Section 40-10-1 et seq.

Upon completion of the TA for said plan, a decision will be made as to approval or disapproval of the permit application. No decision will be taken by the Director for a minimum period of 30 days after submission of this Notice of Availability to the appropriate agencies. This plan is available for public review at: Division of Oil, Gas and Mining, 355 West North Temple, 3 Triad Center, Suite 350, Salt Lake City, Utah 84180-1203.

Comments on the PAP may be addressed to the Director of this office:

Dr. Dianne R. Nielson, Director  
Division of Oil, Gas and Mining  
3 Triad Center, Suite 350  
Salt Lake City, Utah 84180-1203  
Attention: Mr. Lowell P. Braxton

For further information, please contact: Mr. Lowell P. Braxton, Associate Director, Mining, or Pamela Grubaugh-Littig, Permit Supervisor, at the above address.

Sincerely,



Lowell P. Braxton  
Associate Director, Mining

jbe  
cc: Pamela Grubaugh-Littig  
A:\BLUEBLAZ.LTR

Mr. Peter A. Rutledge, Chief  
Division of Federal Programs  
Western Field Operations  
Office of Surface Mining  
Brooks Towers, 1020 15th Street  
Denver, Colorado 80202

Mr. Robert Hagen, Director  
Office of Surface Mining  
Reclamation and Enforcement  
Suite 310, Silver Square  
625 Silver Avenue, S. W.  
Albuquerque, New Mexico 87102

Mr. Gary Johnson, Supervisor  
Price Coal Office  
Bureau of Land Management  
900 North 700 East  
Price, Utah 84501

Mr. Clark Johnson, Field Supervisor  
U.S. Fish and Wildlife Services  
Ecological Services  
2060 Administration Building  
1745 West 1700 South  
Salt Lake City, Utah 84104-5110

Mr. Brent Bradford, Assistant Director  
Utah Department of Health  
Division of Environmental Health  
P. O. Box 16690  
Salt Lake City, Utah 84116-0690

Mr. Max J. Evans, Director  
Utah Division of State History  
300 Rio Grande  
Salt Lake City, Utah 84101

Mr. Bill Howell  
Southeastern Utah Association  
of Local Governments  
P.O. Box 1106  
Price, Utah 84501

Mr. Timothy H. Provan, Director  
Utah Division of Wildlife Resources  
1596 West North Temple  
Salt Lake City, Utah 84116

Mr. Lee Semken, Chairman  
Carbon County Planning  
Carbon County Courthouse  
Price, Utah 84501

Mr. Robert L. Morgan, State Engineer  
Utah Division of Water Rights  
Department of Natural Resources  
1636 West North Temple  
Salt Lake City, Utah 84116