0024

State of Utah

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

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April 9, 1997

Chuck Semborski, Environmental Supervisor
PacifiCorp
P.O. Box 310
Huntington, Utah 84528

Re: North Rilda Lease, PacifiCorp, Deer Creek Mine, ACT/015/018-97-1, Folder #2, Emery County, Utah

Dear Mr. Semborski:

The Division has completed a review of your application to permit the North Rilda Lease Area. We have coordinated with other agencies and solicited their input as well. Your plan is considered to be administratively complete, however, the review has identified a number of technical deficiencies. The enclosed technical analysis (TA), documents the findings that the Division has made to date on the application. Please review the TA and make sure you understand the requirements. The deficiencies must be adequately addressed in order for us to complete the permitting action.

At this time you should publish a Notice of Complete Application for the North Rilda Lease Addition as required by R645-300-121. A copy of the publication should be sent to the Division as soon as it is available. You should also insure that a copy of the application is on file at the Emery County Courthouse during the comment period.

We look forward to working with you on completing this permitting action. Please call if you have any questions.

Sincerely,

Daron R. Haddock
Permit Supervisor

enclosure
cc: P. Grubaugh-Littig, w/o enclosure
Pete Hess, PFO, w/o enclosure
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State of Utah
Division of Oil, Gas and Mining
Utah Coal Regulatory Program

Technical Analysis and Findings
North Rilda Lease
Deer Creek Mine
ACT/015/018-97-1
April 9, 1997

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INTRODUCTION

This Technical Analysis (TA) is written as part of the permit review process. It documents the Findings that the Division has made to date regarding the application for a permit and is the basis for permitting decisions with regard to the application. The TA is broken down into logical section headings which comprise the necessary components of an application. Each section is analyzed and specific findings are then provided which indicate whether or not the application is in compliance with the requirements.

Often the first technical review of an application finds that the application contains some deficiencies. The deficiencies are discussed in the body of the TA and are identified by a regulatory reference which describes the minimum requirements. In this Technical Analysis we have summarized the deficiencies at the beginning of the document to aid in responding to them. Once all of the deficiencies have been adequately addressed, the TA will be considered final for the permitting action.

It may be that not every topic or regulatory requirement is discussed in this version of the TA. Generally only those sections are analyzed that pertain to a particular permitting action. TA's may have been completed previously and the revised information has not altered the original findings. Those sections that are not discussed in this document are generally considered to be in compliance.

SUMMARY OF DEFICIENCIES

R645-301-731.710 - Text on page 97 that states there are no water supply intakes within the permit or adjacent areas must be revised.

R645-301-322, current raptor monitoring information within the North Rilda Lease area must be included in the application or MRP.

R645-301-322, a bat survey must be conducted within areas of potential cliff subsidence and the results included in the application.

R645-301-332, an angle-of-draw projection or other suitable subsidence projection showing anticipated impacts of longwall mining induced subsidence on the Rilda Canyon riparian areas, or showing why mining induced subsidence and related impacts are not anticipated to reach those riparian areas.

R645-301-333, a commitment to conduct annual raptor monitoring in the North Rilda area. The commitment must also include a provision for either submitting the monitoring information to the Division, or providing the Division with the information immediately, upon request.

R645-300-122, the permittee must correct, to the satisfaction of USFS, the deficiencies set forth in the March 7, 1997 letter from USFS to the Division.

R645-301-631 - The North Rilda Area amendment or current MRP must be revised to clarify how the operator has and will in the future manage exploration bore-holes to prevent acid or other toxic drainage from entering ground and surface waters; to minimize disturbance to the prevailing hydrologic balance and to ensure the safety of people, livestock, fish and wildlife, and machinery in the permit and adjacent areas.

R645-301-731.212 - The North Rilda Area amendment or current MRP must be revised to clarify that the operator will promptly notify of the Division when analysis of any ground-water sample indicates noncompliance with the permit conditions, that the operator will immediately provide for any accelerated or additional monitoring necessary to determine the nature and extent of noncompliance and the results of the noncompliance, and

that plans and hydrologic information to evaluate and mitigate the noncompliance situation and information relevant to the PHC will be submitted to the Division as required.

R645-301-731.215 - The North Rilda Area amendment or current MRP must be revised to clarify how equipment, structures, and other devices used by the operator, onsite and offsite, in conjunction with monitoring quality and quantity of surface water will be properly installed, maintained, and operated and will be removed by then operator when no longer needed.

R645-301-731.215 - The North Rilda Area amendment or current MRP must be updated to incorporate the Utah Safe Drinking Water Committee's current, finalized rules for implementing the Federal Safe Drinking Water Act.

R645-301-731.214 - The North Rilda Area amendment or current MRP must be revised to clarify the extent of ground-water monitoring that will be done in the North Rilda Area during reclamation or before bond release.

R645-301-731.215 - The North Rilda Area amendment or current MRP must be revised to clarify how and when the piezometers in the North Rilda Area will be removed.

R645-301-731.225 - The North Rilda Area amendment or current MRP must be revised to clarify how and when the flumes will be removed from surface-water monitoring sites.

R645-301-731.214 - The North Rilda Area amendment or current MRP must be revised to clarify the location of ground-water monitoring stations, if any, that will be used to gather data on water quality and quantity to demonstrate reclamation success in the North Rilda Area.

ENVIRONMENTAL RESOURCE INFORMATION

Regulatory Reference: Pub. L 95-87 Sections 507(b), 508(a), and 516(b); 30 CFR Sec. 783., et. al.

PERMIT AREA

Regulatory Requirements: 30 CFR Sec. 783.12; R645-301-521.

Analysis:

The permit area, as enlarged in 1997 by the addition of the North Rilda Lease Extension, is shown on Figure R645-301-100a--Mine Permit Boundaries, on Plate HM-9--North Rilda Area Geologic and Hydrologic Information, and on Plate HM-10--Right Fork of Rilda Canyon; Geologic Cross Section A-A'. Also shown on these maps are the boundaries of the individual leases and patent fee claims which make up the lease extension.

Plates HM-9 and HM-10 were certified in January of 1997 by John Christensen, a licensed professional engineer registered in the state of Utah.

Findings:

The plan fulfills the requirements of this section.

MAPS, PLANS, AND CROSS SECTIONS OF RESOURCE INFORMATION

Regulatory Reference: 30 CFR Sec. 783.24, 783.25; R645-301-323, -301-411, -301-521, -301-622, -301-722, -301-731.

Analysis:

Permit Area Boundary Maps

The permit area, as enlarged in 1997 by the addition of the North Rilda Lease Extension, is shown on Figure R645-301-100a--Mine Permit Boundaries, on Plate HM-9--North Rilda Area Geologic and Hydrologic Information, and on Plate HM-10--Right Fork of Rilda Canyon; Geologic Cross Section A-A'. Also shown on these maps are the boundaries of the individual leases and patent fee claims which make up the lease extension.

Plates HM-9 and HM-10 were certified in January of 1997 by John Christensen, a licensed professional engineer registered in the state of Utah.

Findings:

The plan fulfills the requirements of this section.

GEOLOGIC RESOURCE INFORMATION

Regulatory Reference: 30 CFR Sec. 784.22; R645-301-623, -301-724.

Analysis:

The proposed North Rilda Area amendment makes reference to the currently approved MRP for geologic information. The current MRP includes geologic information in sufficient detail to assist in determining the probable hydrologic consequences of the North Rilda Area operation upon the quality and quantity of surface and ground water in the permit and adjacent areas, including the extent to which surface- and ground-water monitoring is necessary. Geologic information in the current MRP is sufficient to determine all potentially acid- or toxic-forming strata down to and including the stratum immediately below the coal seam to be mined. There is no surface disturbance planned in the North Rilda Area so geologic information is not needed to determine whether reclamation can be accomplished. The current MRP includes geologic information in sufficient detail to determine whether the proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area, and to prepare the subsidence control plan.

Geologic information includes a description of the geology of the current permit and adjacent areas, including the proposed North Rilda addition, from the surface down to and including the lower Blackhawk Formation and Star Point Sandstone. The Blackhawk and Star Point are the strata immediately below the lowest coal seam to be mined and act in some parts of the Wasatch Plateau as a regional aquifer. Areal and structural geology of the permit and adjacent areas are described, including how the areal and structural geology may affect the occurrence, availability, movement, quantity, and quality of potentially impacted surface and ground water. The description is based on maps and plans required as resource information for the plan, detailed site specific information, and, geologic literature and practices.

Strata above the coal seam to be mined will not be removed, so samples have been collected and analyzed from test borings or drill cores to provide logs of drill holes that show: lithologic characteristics, including physical properties and thickness of each stratum that may be impacted; the location of ground water where encountered; chemical analyses for acid- or

toxic-forming or alkalinity-producing materials in the strata immediately above and below the coal seam to be mined; chemical analyses of the coal seam for acid- or toxic-forming materials, including the total sulfur and pyritic sulfur; and the thickness and engineering properties of clays or soft rock in the stratum immediately above and below each coal seam to be mined.

The Division has not determined it necessary to require the collection, analysis, and description of additional geologic information to protect the hydrologic balance, to minimize or prevent subsidence, or to meet performance standards.

The applicant has not requested that the Division waive in whole or in part the requirements of the borehole information or analysis required of this section.

Findings:

Geologic resource information submitted in the North Rilda Area amendment to the Deer Creek Mine MRP is considered adequate to meet the requirements of this section.

HYDROLOGIC RESOURCE INFORMATION

Regulatory Reference: 30 CFR Sec. 701.5, 784.14; R645-100-200, -301-724.

Analysis:

Sampling and analysis.

Water-quality sampling and analyses of samples collected by PacifiCorp will be done according to the "Standard Methods for the Examination of Water and Wastewater" (p. 55).

Baseline information.

The Division has not required additional baseline information for the North Rilda Area.

Ground-water information.

The location of existing wells, springs, and other ground-water resources for the North Rilda Area and adjacent areas is shown on map HM-9 and information on location and water rights is on pages fourteen to forty-two in the North Rilda amendment and in Volume 9

of the Deer Creek Mine MRP. Information on seasonal quality and quantity of ground water is in the Annual Hydrologic Monitoring Reports. Water-quality descriptions include, at a minimum, total dissolved solids or specific conductance corrected to 25°C, pH, total iron, and total manganese. Ground-water quantity descriptions include, at a minimum, approximate rates of discharge or usage and depth to the water in the coal seam and water-bearing strata above and below the coal seam.

Surface-water information.

The locations of surface-water bodies, namely streams, in the North Rilda Area are shown on map HM-9. Descriptions and information on names, water rights and usage, and location are also on pages fourteen to forty-two in the North Rilda amendment and in Volume 9 of the Deer Creek Mine MRP. There are no lakes or impoundments in the North Rilda Area and no discharge into any surface-water body in the North Rilda Area and adjacent areas. Information on surface-water quality and quantity is in the Annual Hydrologic Monitoring Reports and is sufficient to demonstrate seasonal variation. Water-quality descriptions include, at a minimum, baseline information on total suspended solids, total dissolved solids or specific conductance corrected to 25°C, pH, total iron, and total manganese. There is little potential for acid drainage from the proposed mining operation in the North Rilda Area, but baseline acidity and dissolved carbonate and bicarbonate have been determined. Water-quantity descriptions include, at a minimum, baseline information on seasonal flow rates.

Baseline cumulative impact area information.

Hydrologic and geologic information for the cumulative impact area necessary to assess the probable cumulative hydrologic impacts of the proposed operation and all anticipated mining on surface- and ground-water systems has been obtained from appropriate Federal or State agencies and also from the applicant.

Modeling.

No modeling has been used in the North Rilda Area amendment.

Probable hydrologic consequences (PHC) determination.

A PHC determination that includes the North Rilda Area is included in the currently approved Deer Creek Mine MRP. The North Rilda Area amendment contains a PHC determination of the proposed operation that provides some additional information and discussion specific to the North Rilda Area, based upon the quality and quantity of surface and ground water under seasonal flow conditions for the North Rilda Area and adjacent areas,

including the currently permitted Deer Creek Mine. It utilizes baseline hydrologic, geologic, and other information collected for the North Rilda Area and the currently operating Deer Creek Mine. The PHC does not rely on data statistically representative of the site. The PHC determination includes findings that data collected by PacifiCorp over a fifteen-year period indicate subsidence has not produced any detectable impacts to surface streams and that subsidence should not cause significant impacts to the surface water system.

Flow in Deer Creek is greater than before mining began because of discharge from the mine, and during low flow the higher TDS content of the mine discharge water is likely causing some degradation of water quality in the stream.

No acid-forming or toxic-forming materials that could result in the contamination of surface or ground water supplies are present. There is to be no surface disturbance associated with mining in the North Rilda Area so there will be no impact on sediment yield, acidity, total suspended and dissolved solids or other water quality parameters of local impact, flooding, or streamflow alteration from a disturbed area.

Four springs belonging to North Emery Water Users Association (NEWUA) lie within or immediately adjacent to the North Rilda amendment area. There are also two seeps in the area. None of the seeps and springs directly overlie the proposed mining operation. Some recharge to these seeps and springs could be intercepted by cracks or fractures opened by subsidence. Based on studies of the springs and observation wells and after negotiations with NEWUA, PacifiCorp constructed a slow sand water treatment plant to mitigate potential impacts to the North Rilda springs. A copy of the agreement between PacifiCorp and NEWUA is in Volume 9 - Appendix G. The plant was placed on-line in November 1994 utilizing the Rilda Canyon springs as one of the water sources (p. 83).

Ground water intercepted by mine workings is water that has been held in storage in the rock, principally in perched, fluvial-channel sandstone systems. Data from surface monitoring and the hydrologic characteristics of the Blackhawk Formation and Starpoint Sandstone indicate that the interception of this ground water produces only a minor reduction of natural discharge from the ground water systems. Long-term monitoring of water producing zones in the Deer Creek and Wilberg-Cottonwood Mines has established that in-mine flows decrease in volume with time and are not subject to seasonal or yearly fluctuations (p. 84).

No faulting is projected within the North Rilda Area, so interception of ground water from faults and fractures is not anticipated. Geologic structure is an influence on ground water systems to the south of Rilda Canyon, but the less complex geologic structure of the North Rilda Area, as compared to the permit area to the south, is not expected to influence ground water occurrence or movement.

Supplemental information.

Results of pump tests in observation wells in Rilda Canyon and a discussion of potential impacts of mining on the NEWUA springs located there are in the North Rilda Area amendment and the current MRP.

Ground-water monitoring plan.

The North Rilda Area amendment includes a ground-water monitoring plan based upon the PHC determination and the analysis of all baseline hydrologic, geologic, and other information in the permit application. The plan provides for the monitoring of parameters that relate to the suitability of the ground water for current and approved postmining land uses and to the objectives for protection of the hydrologic balance.

Parameters to be analyzed are those listed in the Division's guidelines for water quality monitoring, which include TDS or specific conductance corrected to 25°C, pH, total iron, total manganese. Water levels are to be monitored quarterly in the five piezometers in Rilda Canyon. Information on quantity and quality parameters to be monitored, sampling frequency, and site locations is in Volume 9 - Appendix A of the current MRP.

Data from monitoring is to be submitted to the Division every 3 months. Annual reports will contain summaries of all hydrology data. The Division has not required additional monitoring as a condition of approval of this North Rilda Area amendment. Quarterly operational monitoring will be done to delineate seasonal variations and assess changes in water quality.

The applicant has not requested that monitoring of any water-bearing stratum in the proposed North Rilda Area be waived. Therefore, the Division has made no waiver of monitoring.

Surface-water monitoring plan.

The North Rilda Area amendment includes a surface-water monitoring plan based upon the PHC determination and the analysis of all baseline hydrologic, geologic, and other information in the permit application. The plan provides for the monitoring of parameters that relate to the suitability of the ground water for current and approved postmining land uses and to the objectives for protection of the hydrologic balance. There will be no discharges in the North Rilda Area and therefore effluent limitations are not a direct or specific concern of this amendment. Ground water intercepted by coal-mine operations in the North Rilda Area

should have no impact on the operator's ability to control quality or quantity of water discharged from the mine at locations outside Rilda Canyon.

Information on quantity and quality parameters to be monitored, sampling frequency, and site locations is in Volume 9 - Appendix A of the current MRP. Parameters to be analyzed are those listed in the Division's guidelines for water quality monitoring, which include TDS or specific conductance corrected to 25°C, total suspended solids, pH, total iron, total manganese, and flow.

Data from monitoring are to be be submitted to the Division every 3 months. Annual reports will contain summaries of all hydrology data. Quarterly operational monitoring will be done to delineate seasonal variations and assess changes in water quality.

Parameters to be analyzed are those listed in the Division's guidelines for water quality monitoring, which include TDS or specific conductance corrected to 25°C, pH, total iron, total manganese. Information on monitoring frequency and parameters is in Volume 9 - Appendix A of the current MRP.

The Division has not required additional monitoring as a condition of approval of this North Rilda Area amendment.

Findings:

Hydrologic resource information submitted in the North Rilda Area amendment to the Deer Creek Mine MRP is considered adequate to meet the requirements of this section.

MAPS, PLANS, AND CROSS SECTIONS OF RESOURCE INFORMATION

Regulatory Reference: 30 CFR Sec. 783.24, 783.25; R645-301-323, -301-411, -301-521, -301-622, -301-722, -301-731.

Analysis:

Coal Resource and Geologic Information Maps

Map HM-9 shows surface geology and faults in the North Rilda and adjacent areas. The outcrops of the Blind Canyon coal seam and of the Castlegate Sandstone are highlighted. HM-10 shows a cross section along the bottom of a portion of the Right Fork of Rilda Canyon

that shows the strata down to the Star Point Sandstone. Other required geologic information is in the current MRP.

Mine Workings Maps

Location and extent of know workings of active, inactive, or abandoned underground mines are shown on HM-9. The Division's AML section closed the surface openings and reclaimed the disturbed areas of three mines in the North Rilda Area in 1988, and the locations of those closed portals are also shown on HM-9.

Monitoring Sampling Location Maps

Elevations and locations of test borings and of monitoring stations used to gather data on water quality and quantity for the North Rilda Area amendment are shown on map HM-9

Subsurface Water Resource Maps

Map HM-9 indicates that the only bore holes in the North Rilda Area that encountered measurable ground water are located along the Right Fork of Rilda Canyon. Water was found in the alluvium.

Surface Water Resource Maps

Locations of spring collection boxes, pipelines, and meters belonging to the North Emery Water Users Association (NEWUA) are shown on map HM-9, which was submitted as part of the North Rilda Area amendment. That map also shows locations of streams, springs, and seeps within the proposed North Rilda amendment area and adjacent areas. Text on page 97 incorrectly states there are no water supply intakes within the permit or adjacent areas.

Well Maps

There are no gas and oil wells or water wells within the proposed North Rilda amendment area and adjacent areas.

Certification

Maps HM-9 and HM-10, which were included in the North Rilda Area amendment, are were prepared by or under the direction of, and certified by a qualified, registered, professional engineer (p. 4).

Findings:

Maps, plans, and cross sections that were submitted for the North Rilda Area amendment to the Deer Creek Mine MRP to show resource information on coal resources, geologic information, mine workings, monitoring sampling locations, subsurface water resources, surface water resources, and wells are considered adequate to meet the requirements of this section. However, text on page 97 incorrectly states that there are no water supply intakes within the permit or adjacent areas. Information in the proposed North Rilda Area amendment to the Deer Creek Mine MRP is not considered adequate to meet the requirements of this section. Prior to approval the applicant must provide for the following in accordance with:

R645-301-731.710 - Text on page 97 that states there are no water supply intakes within the permit or adjacent areas must be revised.

OPERATION PLAN

FISH AND WILDLIFE INFORMATION

Regulatory Reference: 30 CFR Sec. 784.21, 817.97; R645-301-322, -301-333, -301-342, -301-358.

Analysis:

Protection and enhancement plan.

The Utah Division of Wildlife Resources (UDWR) has reviewed the proposed amendment and made several comments on how mining and any related subsidence could directly or indirectly affect wildlife resources. Areas of concern are the riparian zones along the Right and Left Forks of Rilda Canyon and the Castlegate Sandstone escarpments. Only the Right Fork is in the North Rilda Area. The riparian areas are possibly moose habitat and the area is classified as Critical Elk Summer and Winter Range. Although there were no active raptor nests found in the area in 1996 (letter from John Kimball (UDWR) to Jim Carter (UDOGM) dated March 5, 1997), the area has significant historical use by raptors with the Castlegate escarpments providing nesting sites.

The application states that specific raptor nest information is available for the area in Volume 4, Map 2-18B. This map and packet is dated received 1990. More current (1995) nest information is found on page 2-210.6 of the MRP. Nest 296A was active and probably

fledged young in 1996. Nest 296A is found within the Rilda Lease Tract. No current information could be found on nest 296 B and C which are within the proposed North Rilda Lease area. No other information is given in the application to determine if other nests sites have been located within the proposed lease area. The operator must commit to annual raptor monitoring, particularly in the area of potential cliff subsidence. The operator must commit to either submitting the information to the Division, or providing the Division with the monitoring information immediately, upon request.

UDWR stated (personal conversation, 3/21/97) that there is a potential for Townsends and Spotted Bats to occur along the cliff escarpment in Rilda Canyon. The operator must survey the areas of potential failure to determine the presence of these mammals.

A monitoring well and a water monitoring station with a flume are located immediately downstream of the proposed entries beneath the Right Fork of Rilda Canyon. These monitoring stations should detect any significant loss of water from the surface and alluvium into the underground workings at this location.

UDWR is of the opinion that no mining should be allowed where subsidence has the potential, as indicated by angle-of-draw, to affect the riparian areas. Neither should subsidence be allowed to disturb active raptor nests if any are found. A take permit is required when ever any raptor nests are removed due to subsidence.

The North Rilda Area amendment contains no angle-of-draw projections of potential subsidence effects. No full-extraction mining is planned under the riparian areas. However, part of one longwall panel will be within 200 feet of the Right Fork riparian area. The relative thinness of overburden where planned longwall panels will be closest to the riparian area increases the possibility for subsidence induced fractures to reach the surface. But the relative thinness of overburden also reduces the likelihood that subsidence effects will extend laterally into the riparian area. Longwall mining is projected under most of the Castlegate escarpments in the North Rilda Area, and it can be assumed there will be some subsidence effects to the escarpments.

Findings:

Information in the proposed North Rilda Area amendment to the Deer Creek Mine MRP is considered inadequate to meet the requirements of the fish and wildlife protection and enhancement plan. Prior to approval the applicant must provide the following information in accordance with:

R645-301-322, current raptor monitoring information within the North Rilda Lease area must be included in the application or MRP.

R645-301-322, a bat survey must be conducted within areas of potential cliff subsidence and the results included in the application.

R645-301-332, an angle-of-draw projection or other suitable subsidence projection showing anticipated impacts of longwall mining induced subsidence on the Rilda Canyon riparian areas, or showing why mining induced subsidence and related impacts are not anticipated to reach those riparian areas.

R645-301-333, a commitment to conduct annual raptor monitoring in the North Rilda area. The commitment must also include a provision for either submitting the monitoring information to the Division, or providing the Division with the information immediately, upon request.

COAL RECOVERY

Regulatory Reference: 30 CFR Sec. 817.59; R645-301-522.

Analysis:

See *General*, page 7, *Engineering*, pages 9, 10, 12-17.

Mining began in the North Rilda Lease Extension in 1997. The North Rilda Lease Extension lies to the north of Rilda Canyon. It comprises approximately 985 acres and consists of 4 Federal leases and 4 patent fee claims.

The North Rilda Lease Extension contains approximately 23 million minable tons of coal. The coal is in 2 seams: the upper Blind Canyon Seam and the lower Hiawatha Seam. Entry development will be done using continuous mining machinery. Most production, about 75%, will be done by longwall methods. Continuous mining machinery will be used to mine many areas which cannot be incorporated into longwall panels and will thus accomplish the remaining 25% of the total production. Production is expected to be 1,150 tons per day for the continuous miner and 9,000 tons per day for the longwall, which means a production rate for the entire mine of 10,150 tons per day, 190 days per year, or approximately 1.93 million tons per year.

The coal recovery rate in the longwall panels is expected to be about 85%. Combining the production from longwall and continuous miner sections, and considering in the coal that must remain in place in the form of property boundary barriers, main entry barriers, bleeder entry barriers and surface and subsurface resource protective barriers, the permittee expects to attain an overall coal recovery rate for the entire mine of about 65%. This compares favorably with the industry average for longwall mines, which is about 60%. Thus, the plan maximizes the utilization and conservation of the coal resource, in accordance with R645-301-522.

Findings:

The plan fulfills the requirements of this section.

SUBSIDENCE CONTROL PLAN

Regulatory Reference: 30 CFR Sec. 784.20, 817.121, 817.122; R645-301-521, -301-525, -301-724.

Analysis:

Subsidence control plan.

The subsidence control plan for the North Rilda Lease Extension incorporates 5 principles: 1) subsidence monitoring, 2) the use of longwall mining methods, 3) the establishment of large longwall panels, 4) the leaving of permanent barrier pillars, and 5) the use of yielding pillars between longwall panels.

Subsidence monitoring will be done exclusively by aerial photogrammetric methods. The yearly monitoring program already in use at the Deer Creek mine, as well as other adjacent mines owned and operated by the permittee, will simply be extended to include the lease extension area. Elevations are measured to a precision of ± 1 foot and the data are so abundant that they can be and are used to draft extensive isogrametric subsidence maps of the area being mined. These maps and the data upon which they are based have been very useful to both the permittee and the Division in monitoring and predicting subsidence.

As has been discussed, wherever practicable, longwall methods will be used. By allowing for vast and relatively uniform subsidence, longwall mining minimizes not only surface damage, but also damage to aquifers and other subsurface features.

Longwall panels have been designed to be as large as possible. The larger the panel, the less the extent of peripheral surface damage relative to the total area subsided.

Where necessary, permanent protective barrier pillars of coal will be left. These barrier pillars will be located on the basis of the angle of draw, which has been determined to be 18° in this area, and the depth of cover in a particular area. Property boundary pillars will be left to prevent subsidence from extending beyond the permit area. Pillars will be left to protect the South Castlegate escarpment, which lies on the north side of Rilda Canyon and which has significant vertical exposure. Pillars will be left to protect the riparian areas in both forks of Rilda Canyon from subsidence. Only entry development, and no pillar extraction or second mining, will take place in these pillars.

Last, those pillars which are left between longwall panels for entry protection have been designed to yield, or crush out, with time. This means that unsubsided ridges between panel subsidence troughs will be eliminated or lessened. Like the large longwall panels, this will make for more extensive and uniform subsidence and thus lessen damage to both surface and subsurface features.

The U.S. Forest Service (USFS) reviewed the plan for mining the North Rilda Lease Extension. On March 7, 1997, USFS sent a letter to the Division, outlining a number of deficiencies in the plan, the correction of which would be necessary before it would allow mining to take place. Most of these deficiencies have to do with subsidence. Since they are set forth in the March 7 letter, a copy of which the permittee has, they will not be repeated in this document. However, the permittee must correct these deficiencies to the satisfaction of USFS before the Division can approve the plan and allow mining to proceed.

Findings:

The plan does not fulfill the requirements of this section.

The permittee must provide the following, prior to approval, in accordance with the requirements of:

R645-300-122, the permittee must correct, to the satisfaction of USFS, the deficiencies set forth in the March 7, 1997 letter from USFS to the Division.

MAPS, PLANS, AND CROSS SECTIONS OF MINING OPERATIONS

Regulatory Reference: 30 CFR Sec. 784.23; R645-301-512, -301-521, -301-542, -301-632, -301-731, -302-323.

Analysis:

Affected area maps.

The permit area, as enlarged in 1997 by the addition of the North Rilda Lease Extension, is shown on Figure R645-301-100a--Mine Permit Boundaries, on Plate HM-9--North Rilda Area Geologic and Hydrologic Information, and on Plate HM-10--Right Fork of Rilda Canyon; Geologic Cross Section A-A'. Also shown on these maps are the boundaries of the individual leases and patent fee claims which make up the lease extension.

Plates HM-9 and HM-10 were certified in January of 1997 by John Christensen, a licensed professional engineer registered in the state of Utah.

Findings:

The plan fulfills the requirements of this section.

GEOLOGIC OPERATION INFORMATION

Regulatory Reference: R645-301-630, -640

Analysis:

No information was found in the North Rilda Area amendment nor in the current MRP on how exploration holes and other bore holes have been managed or will be managed to prevent acid or other toxic drainage from entering ground and surface waters; to minimize disturbance to the prevailing hydrologic balance and to ensure the safety of people, livestock, fish and wildlife, and machinery in the permit and adjacent areas.

Findings:

Information in the proposed North Rilda Area amendment to the Deer Creek Mine MRP is not considered adequate to meet the requirements for geologic information in the Operation Plan. Prior to approval the applicant must provide the following information in accordance with:

R645-301-631 - The North Rilda Area amendment or current MRP must be revised to clarify how the operator has and will in the future manage exploration bore-holes to prevent acid or other toxic drainage from entering ground and surface waters; to minimize disturbance to the prevailing hydrologic

balance and to ensure the safety of people, livestock, fish and wildlife, and machinery in the permit and adjacent areas.

HYDROLOGIC INFORMATION

Regulatory Reference: 30 CFR Sec. 773.17, 774.13, 784.14, 784.16, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-300-140, -300-141, -300-142, -300-143, -300-144, -300-145, -300-146, -300-147, -300-147, -300-148, -301-512, -301-514, -301-521, -301-531, -301-532, -301-533, -301-536, -301-542, -301-720, -301-731, -301-732, -301-733, -301-742, -301-743, -301-750, -301-761, -301-764.

Analysis:

Ground-water monitoring.

There will be no surface disturbance in the North Rilda Area and therefore no earth materials and runoff to be handled in a manner to protect ground-water quality.

Ground-water monitoring is to be conducted according to the ground-water monitoring plan found in Volume 9 - Appendix A. The Division has not found additional monitoring necessary. Ground-water monitoring data will be submitted every 3 months to the Division. Monitoring reports will include analytical results from each sample taken during the reporting period. No statement was found in the North Rilda Area amendment nor in Appendix A of Volume 9 that the operator will promptly notify of the Division when analysis of any ground-water sample indicates noncompliance with the permit conditions, that the operator will immediately provide for any accelerated or additional monitoring necessary to determine the nature and extent of noncompliance and the results of the noncompliance, and that plans and hydrologic information to evaluate and mitigate the noncompliance situation and information relevant to the PHC will be submitted to the Division as required.

Ground-water monitoring shall proceed through mining and continue during reclamation until bond release.

The North Rilda Area amendment contains a discussion of the NEWUA springs and the Wellhead Protection Program established by the Federal Safe Drinking Water Act (p. 79). A draft form of the Utah Safe Drinking Water Committee's rules was used for preparing this discussion. These rules were finalized several years ago and this section of the North Rilda Area amendment should be updated to incorporate the final rules.

Neither the North Rilda Area amendment nor the current MRP contains a statement on the proper installation, maintenance, operation, and removal (when no longer needed) of equipment, structures, and other devices used by the operator, onsite and offsite, in conjunction with monitoring quality and quantity of ground water.

Surface Water Monitoring.

In order to protect the hydrologic balance, underground mining activities will be conducted according to the approved plan. There will be no surface disturbance in the North Rilda Area and therefore no earth materials, ground-water discharges, and runoff to be handled in a manner to protect surface-water quality, prevent additional contribution of suspended solids to streamflow outside the permit area, or protect surface-water quantity and flow rates.

Surface-water monitoring is to be conducted according to the surface-water monitoring plan found in Volume 9 - Appendix A. The Division has not found additional monitoring necessary. Surface-water monitoring will be submitted every 3 months to the Division. Monitoring reports will include analytical results from each sample taken during the reporting period. No statement was found in the North Rilda Area amendment nor in Appendix A of Volume 9 that the operator will promptly notify of the Division when analysis of any surface-water sample indicates noncompliance with the permit conditions, that the operator will immediately provide for any accelerated or additional monitoring necessary to determine the nature and extent of noncompliance and the results of the noncompliance, and that plans and hydrologic information to evaluate and mitigate the noncompliance situation and information relevant to the PHC will be submitted to the Division as required. Such reporting requirements of the water monitoring plan are in addition to any Utah Pollutant Discharge Elimination System (UPDES) reporting requirements.

Surface-water monitoring is scheduled to continue through mining and reclamation until bond release.

Neither the North Rilda Area amendment nor the current MRP contains a statement on the proper installation, maintenance, operation, and removal (when no longer needed) of equipment, structures, and other devices used by the operator, onsite and offsite, in conjunction with monitoring quality and quantity of surface water.

Acid- and toxic-forming materials and underground development waste.

Acid- and toxic-forming materials and underground development waste will be handled according to the Waste Rock Storage Facility operating plan described starting on page 4-6 in Volume 10.

Transfer of wells.

Each well will be cased, sealed, or other wise managed, as approved by the Division (p. 100).

Discharges into an underground mine.

No discharges into an underground mine are expected as part of the mining operation in the North Rilda Area. Discharges in other areas are handled according to UPDES information in Volume 9 - Appendix B.

Gravity discharges from underground mines.

There are no surface entries or accesses to underground workings planned for the North Rilda amendment area and there is no anticipated gravity discharge of water from the mine. All discharges from the mine are handled according to UPDES information in Volume 9 - Appendix B.

Water-quality standards and effluent limitations.

Discharges of water from areas disturbed by underground mining activities will be made in compliance with all applicable State and Federal water quality laws and regulations and with the effluent limitations for coal mining promulgated by the U.S. Environmental Protection Agency set forth in 40 CFR Part 434. UPDES information is in Volume 9 - Appendix B.

Casing and sealing of wells.

Each well will be cased, sealed, or other wise managed, as approved by the Division (p. 100).

Findings:

Information in the proposed North Rilda Area amendment to the Deer Creek Mine MRP is not considered adequate to meet the requirements for hydrologic information in the Operation Plan. Prior to approval the applicant must provide the following information in accordance with:

R645-301-731.212 - The North Rilda Area amendment or current MRP must be revised to clarify that the operator will promptly notify of the Division when analysis of any ground-water sample indicates noncompliance with the permit conditions, that the operator will immediately provide for any accelerated or additional monitoring necessary to determine the nature and extent of noncompliance and the results of the noncompliance, and that plans and hydrologic information to evaluate and mitigate the

noncompliance situation and information relevant to the PHC will be submitted to the Division as required.

R645-301-731.215 - The North Rilda Area amendment or current MRP must be revised to clarify how equipment, structures, and other devices used by the operator, onsite and offsite, in conjunction with monitoring quality and quantity of surface water will be properly installed, maintained, and operated and will be removed by then operator when no longer needed.

R645-301-731.215 - The North Rilda Area amendment or current MRP must be updated to incorporate the Utah Safe Drinking Water Committee's current, finalized rules for implementing the Federal Safe Drinking Water Act.

MAPS, PLANS, AND CROSS SECTIONS OF MINING OPERATIONS

Regulatory Reference: 30 CFR Sec. 784.23; R645-301-512, -301-521, -301-542, -301-632, -301-731, -302-323.

Analysis:

Monitoring and sample location maps.

The North Rilda Area amendment contains maps, HM-9 and HM-10, that show the elevations and locations of test borings and of monitoring stations used to gather data on water quality and quantity.

Findings:

Information in the proposed North Rilda Area amendment to the Deer Creek Mine MRP is considered adequate to meet the requirements on hydrologic monitoring and sample location maps in the Operation Plan.

RECLAMATION PLAN

GENERAL REQUIREMENTS

Regulatory Reference: PL 95-87 Sec. 515 and 516; 30 CFR Sec. 784.13, 784.14, 784.15, 784.16, 784.17, 784.18, 784.19, 784.20, 784.21, 784.22, 784.23, 784.24, 784.25, 784.26; R645-301-231, -301-233, -301-322, -301-323, -301-331, -301-333, -301-341, -301-342, -301-411, -301-412, -301-422, -301-512, -301-513, -301-521, -301-522, -301-525, -301-526, -301-527, -301-528, -301-529, -301-531, -301-533, -301-534, -301-536, -301-537, -301-542, -301-623, -301-624, -301-625, -301-626, -301-631, -301-632, -301-731, -301-723, -301-724, -301-725, -301-726, -301-728, -301-729, -301-731, -301-732, -301-733, -301-746, -301-764, -301-830.

Analysis:

Each well will be cased, sealed, or other wise managed, as approved by the Division (p. 100).

Discharges from areas disturbed by coal mining and reclamation operations will be made in compliance with all federal and Utah water quality laws and regulations and with effluent limitations for coal mining promulgated by the EPA set forth in 40CFR Part 434 (page 101).

Findings:

Information in the proposed North Rilda Area amendment to the Deer Creek Mine MRP is considered adequate to meet the requirements for general information in the Reclamation Plan.

MINE OPENINGS

Regulatory Reference: 30 CFR Sec. 817.13, 817.14, 817.15; R645-301-513, -301-529, -301-551, -301-631, -301-748.

Analysis:

There will be no mine openings in the North Rilda Area.

To prevent acid or other toxic drainage from entering ground and surface waters, to minimize disturbance to the prevailing hydrologic balance and to ensure the safety of people, livestock, fish and wildlife, and machinery in the permit area and adjacent area, the operator commits that each well will be cased, sealed, or other wise managed, as approved by the Division (p. 100).

Findings:

Information in the proposed North Rilda Area amendment to the Deer Creek Mine MRP is considered adequate to meet the requirements for mine-opening information in the Reclamation Plan.

HYDROLOGIC INFORMATION

Regulatory Reference: 30 CFR Sec. 784.14, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-301-512, -301-513, -301-514, -301-515, -301-532, -301-533, -301-542, -301-723, -301-724, -301-725, -301-726, -301-728, -301-729, -301-731, -301-733, -301-742, -301-743, -301-750, -301-751, -301-760, -301-761.

Analysis:

There will be no surface disturbance associated with coal mine operations in the North Rilda Area, which will control drainage, minimize disturbance to the hydrologic balance within the permit and adjacent areas, prevent material damage outside the permit area, prevent additional contributions of suspended solids to streamflow, and meet applicable Federal and State water quality laws and regulations. Measures to be taken to avoid acid or toxic drainage from mine wastes and mine discharge are found in the current MRP.

Water treatment facilities have been built in Huntington Canyon as mitigation for potential lose of NEWUA water from springs in Rilda Canyon. The operator commits on page 97 to replace water determined to have been lost or adversely affected as a result of the mining operations if such impact occurs prior to final bond release. The water will be replaced from alternate sources in sufficient quantities to maintain current and post-mining land uses.

There are to be no stream channel diversions or other diversions, sedimentation ponds, or impoundments within the proposed North Rilda Area so there will be no postmining rehabilitation for such facilities.

There will be no permanent sedimentation ponds, diversions, impoundments, and treatment facilities in the North Rilda Area. Water treatment facilities built in Huntington Canyon by PacifiCorp are not to treat water to meet water quality standards or effluent discharge limitations, such as those set forth in 40 CFR Part 434, but rather to provide culinary water to NEWUA to replace NEWUA-owned spring water that may potentially be lost because of mining operations in the North Rilda Area.

Operational ground-water monitoring of springs, wells and piezometers, and in-mine flows is discussed in the North Rilda Area amendment. Post-mining ground-water monitoring is not discussed.

The only temporary structures definitely identified in the North Rilda Area amendment are piezometers and flumes. The North Rilda Area amendment contains a commitment to case, seal, or otherwise manage wells, which includes the piezometers in the North Rilda Area. Timing of closure of these wells, in particular in relation to reclamation and bond release, is not discussed.

Post-mining monitoring of surface-water will continue at representative stations determined with the aid of the Division. Representative stations will be monitored during high and low flow until release of the reclamation bond, or an earlier date determined through consultation with local, state, and federal agencies (p. 68). The hydrologic monitoring plan in Volume 9 - Appendix A indicates Parshall-style flumes are installed at long-term surface-water monitoring sites. Map HM-9 shows that three of the surface-water monitoring stations in Rilda Canyon have flumes. These flumes will need to be removed before bond release. The plan is not clear as to when and how these flumes will be removed.

Findings:

Information in the proposed North Rilda Area amendment to the Deer Creek Mine MRP is not considered adequate to meet the requirements for hydrologic information in the Reclamation Plan. Prior to approval the applicant must provide the following information in accordance with:

R645-301-731.214 - The North Rilda Area amendment or current MRP must be revised to clarify the extent of ground-water monitoring that will be done in the North Rilda Area during reclamation or before bond release.

R645-301-731.215 - The North Rilda Area amendment or current MRP must be revised to clarify how and when the piezometers in the North Rilda Area will be removed.

R645-301-731.225 - The North Rilda Area amendment or current MRP must be revised to clarify how and when the flumes will be removed from surface-water monitoring sites.

MAPS, PLANS, AND CROSS SECTIONS OF RECLAMATION OPERATIONS

Regulatory Reference: 30 CFR Sec. 784.23; R645-301-323, -301-512, -301-521, -301-542, -301-632, -301-731.

Analysis:

Reclamation monitoring and sampling location maps

Map HM-9 shows locations of surface-water monitoring points used for baseline and operational monitoring in the North Rilda Area. Post-mining monitoring of surface-water will continue at representative stations determined with the aid of the Division. Representative stations will be monitored during high and low flow until release of the reclamation bond, or an earlier date determined through consultation with local, state, and federal agencies (p. 68).

Post-mining ground-water monitoring is not discussed. Map HM-9 shows locations of springs and piezometers used for baseline and operational ground-water monitoring in the North Rilda Area. It can be assumed that any post-mining monitoring will be limited to all or some of these sites; however, it is unclear from the North Rilda Area amendment if any post-mining monitoring of these springs and piezometers is to be done to gather data on ground-water quality and quantity to demonstrate reclamation success. It is unclear when monitoring of these stations will cease.

Findings:

Information in the proposed North Rilda Area amendment to the Deer Creek Mine MRP is not considered adequate to meet the requirements for maps, plans, and cross sections of reclamation operations in the Reclamation Plan. Prior to approval the applicant must provide the following information in accordance with:

R645-301-731.214 - The North Rilda Area amendment or current MRP must be revised to clarify the location of ground-water monitoring stations, if any, that will be used to gather data on water quality and quantity to demonstrate reclamation success in the North Rilda Area.

CUMULATIVE HYDROLOGIC IMPACT ASSESSMENT

Regulatory Reference: 30 CFR Sec. 784.14; R645-301-730.

The Division prepared a CHIA of the entire East Mountain area in 1994. The North Rilda Area was included in the CHIA determination because the leases in the North Rilda Area had been issued to PacifiCorp even though they were not part of the Deer Creek Mine permit. The CHIA is sufficient to determine, for purposes of approval of the North Rilda Area amendment, that the proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area.