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State of Utah
DEPARTMENT OF NATURAL RESOURCES
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October 19, 1998

TO: File

THRU: Daron Haddock, Permit Supervisor

FROM: Sharon Falvey, Senior Reclamation Specialist

RE: Division Order 97A, Hiawatha Coal Company, Hiawatha Complex, ACT/007/011-DO97A, File #2, Carbon County, Utah

SUMMARY:

This amendment provides updated information pertinent to the existing facilities at the site and changes to the site following some contemporaneous reclamation. Further permit applications with updated information and mine plan changes are expected as the Hiawatha Coal Company continues to develop plans for mining. Although portions of this amendment may more clearly reflect the site conditions and proposed reclamation, the plan is not clear and many cross-references to maps and appendices are incorrect.

ANALYSES:

ENVIRONMENTAL RESOURCE INFORMATION

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

CLIMATOLOGICAL RESOURCE INFORMATION

Regulatory Reference: 30 CFR Sec. 783.18; R645-301-724.

Analysis:

The plan presents climatic information obtained at the town of Hiawatha as reported by the U.S. Department of Commerce in 1973. The plan should incorporate current climatological data and data summaries for all data collected at this site. The Division finds that the information in the plan is no longer current.

Hiawatha lies at an elevation of 7,200 feet. According to data from the Western Regional Climate Center Station 423896, recorded from 9/11/21 to 7/31/92, Hiawatha has a mean annual temperature of 45.5 °F and a mean annual precipitation of 13.71 inches The town receives its highest precipitation, 1.8 inches on average, during the month of August. Extreme daily precipitation has exceeded 2.1 inches at the town of Hiawatha.

Findings:

Although the plan has been determined to meet minimum regulatory requirements in the past, current climatic information for the area should be used to updated the permit with future permit amendments.

ALLUVIAL VALLEY FLOORS

Regulatory Reference: 30 CFR Sec. 785.19; R645-302-320.

Analysis:

No Alluvial Valley Floor determination was conducted under this review. It is assumed the Alluvial Valley Floor information in the plan meets the regulatory requirements based on previous mining permit approvals.

Findings:

Findings from previous technical analyses apply.

HYDROLOGIC RESOURCE INFORMATION

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

Analysis:

Sampling and Analysis.

The operator has stated that all water samples will be collected and analyzed according to methods in either the current edition of "Standard Methods for the Examination of Water and Waste Water" or the 40 CFR parts 136 and 434. All laboratory analysis will be done by certified laboratories.

Baseline information.

Some information collected for baseline characteristics were obtained following mining because portions of the permit area were mined prior to the enactment of SMCRA. Information from previously compiled Technical Analyses was excerpted to compile this TA. Additional information was compiled and updated where it seemed appropriate.

Water Rights/Water Use

Historically a water line, from the Mohrland mine portal to the town of Hiawatha, supplied water for mining use. This water line, called the Mohrland pipeline, extends for approximately 4 miles along the Utah Railway right-of-way. The water line can carry up to 1,000 gpm. In 1998, 660 ft of pipeline was upgraded near Mohrland (section R645-301-526, pg. 34, Utility Installation and Support Facilities). After the preparation plant was demolished, the pipeline was no longer considered a support facility but

continued to supply water to the town, to U.S. Fuel, and to Miller Creek for irrigation uses downstream. Currently water flows under the town of Hiawatha, discharges to Miller Creek, and is used for irrigation downstream of the minesite. Additionally, U.S. Fuel is providing water to BLM from its Mohrland Portal water supply for use as habitat enhancement, section 301-322 General Wildlife Mitigation.

Table I

Hiawatha Mine Water Rights

Source	Right Number	Quantity	Priority& period of use	Owner/Use
Left Fork Miller Creek Diversion	91-105 A10735 a4632 cert: 2159	0.7 cfs	8/17/1929 claim referenced to 91-174	ANR Co. Inc., River Gas Corporation, Texaco Exploration and Production Inc., Dominion Reserves/ claim referenced to 91-174.
Underground Tunnel King #1	91-251 A29532 a6961 cert: a1811	0.942 cfs	10/11/57 1/1-12/31	ANR Co. Inc. /Industrial &Municipal.
Underground Tunnel King #1	91-316 a6963 UWC4147 cert:a1812	0.058 cfs	1910 1/1-12/31	ANR Co. Inc. /Industrial &Municipal.
Left Fork Miller Creek Diversion	91-174 A20261 a4656 cert:5294	3.30 cfs up to 101.92 AF	10/14/48 1/1-12/31	ANR Co. Inc. /Industrial &Municipal.
Underground Tunnel King #1	91-322 UWC7236 a8095 cert. a1129	0.152 cfs	9/14/1921 1/1-12/31	ANR Co. Inc. /Industrial &Municipal.
Cedar Creek Diversion	93-3524 A20261 cert. a1713	52.57 AF	4/10/1930 1/1-12/31	ANR Co. Inc. & Intermountain Power /Industrial &Municipal .
Cedar Creek Diversion	93-3525 a6962 cert. a1712	59.51 AF	4/10/1930 10/16-03/14	ANR Co. Inc. /Industrial &Municipal.
Mohrland Mine Seeps and Drains	93-1089	0.446 cfs	1884	United States Fuel Corporation/ Irrigation.

Hiawatha Coal Mine

Water resources used for the Hiawatha mine include diversions to the mine, from Miller Creek and discharges from the mine. Co-Op has water rights to some springs in the area south of Hiawatha and, the ANR Co inc. holds the right to 91-174, application a4656, diverting 3.3 cfs from the Left Fork of Miller Creek for domestic and mining uses. A summary of the water rights is presented in Table I.

The plan references Certificate of Appropriation No. 2159 to be associated with the North Fork of Miller Creek Diversion, section 513.600. This water right references the claim to water right 91-174. Currently an extension is granted, until December 27, 2001, to demonstrate water rights 91-174, 91-251, 91-316, 93-3524 and 93-3525 are meeting the proposed use or, an additional extension may be requested at that time.

Ground-water information.

Greater than 75% of the seeps and springs in the permit and adjacent area issue above the Blackhawk Formation according to the spring inventory obtained, November 7, 1984. Greater than one half of the inventoried springs issue from the North Horn Formation with flow rates varying from 2 to 8 gpm. Approximately one-fifth of the surveyed springs were located in the Blackhawk Formation and these have low flow rates and minimal associated use according to statements from the technical analyses compiled with the first permit issuance.

The Hiawatha Mines Complex encountered approximately 100 gpm in 1972 when mining contacted the Bear Canyon Fault (Environmental Assessment, 1985-1990 permit term). Generally the ground water flows to the south and gravity discharge occurs at the Mohrland Portal. Water that was not used for culinary and industrial uses at Hiawatha flowed into Cedar Creek.

Ground water consumed by the Hiawatha Coal Processing Plant was approximately 786,000 gallons per day (gpd) and the town consumed approximately 30,000 gpd (technical analyses attached to the 1985 decision document). Ground water intercepted by mining and water diverted from the North Fork of Miller Creek was stored in the Hiawatha No. 2 mine. Four bulkheads constructed in 1951 retain the water in the old workings. Maximum storage is about 120 million gallons (368 AF) with 60 million gallons (194 AF) stored under normal operations.

Table 2

Baseline Water Quality

	Average TDS (mg/l)	TSS (mg/l)	Dissolved Na (mg/l)	Dissolved Cl (mg/l)	pH
In mine water	700				
Surface Water (on the Wasatch Plateau)	400	< 30	< 15	< 15	7.6-8.1
Miller Creek at junction Highway 10	3,200				

Surface-water information.

The land use description, section 411.120 pg. 2, describes the flow rates in Miller Creek as varying from 0.1 to 4 cfs and describes the flow rates in Cedar Creek as varying from 0.8 to 4.5 cfs. Stream flow information as described in the TA completed for the Hiawatha Mines Complex initial permit

issuance are summarized in table 3.

Table 3

Streamflow		
Stream	Flow	Region
Miller Creek	Perennial	Below confluence with the North Fork of Miller Creek.
Left Fork of North Fork Miller Creek	Diverted	Underground Storage Reservoir in Hiawatha No. 2 Mine.
Cedar Creek	Perennial	1 cfs is received from the inactive Mohrland portal to the mine complex.

Baseline cumulative impact area information.

The Cumulative Impact Area Information (CHIA) was recently completed for the Gentry Mountain Area on September 16, 1998.

Modeling.

Water modeling specific to the Hiawatha mine was not completed in leu of water monitoring.

Alternative Water Source Information.

Under section 301-332, *Anticipated Impacts of Mining*, the plan commits to mitigate water resource impacts where significant livestock or wildlife watering sites are diminished and found necessary to be replaced, by constructing watering ponds or, troughs and pipelines from alternate water sources. Additionally, the plan states "should any springs or streams be eliminated due to subsidence, U.S. Fuel will immediately notify DOGM for a regulatory agency assessment of the magnitude of the impact. Mitigation is stated to be implemented if necessary within the section entitled *Big Game Habitat*. The party currently responsible for mining impacts should be referenced to replace water impacted by mining.

Probable hydrologic consequences determination.

In the plan under section R645-301-523, Hiawatha Coal Company intends to open King V and VI portals for underground mining by November 1, 1999. Currently the mining operations consist of selling pond fines and, conducting maintenance and reclamation on areas no longer proposed to be used for operations. Therefore, the last technical analyses completed is considered to currently apply for the PHC.

Findings:

This section was found to be complete and accurate under earlier reviews, however, updated information pertaining to water rights, water use, and water replacement information should be made current. **The party presently responsible for mining impacts should be referenced to replace water**

impacted by mining. Information addressed in this TA should be provided in conjunction with future proposed mine plan amendments.

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:

Water Monitoring Location Maps

This map is not being reviewed at this time. It is assumed the baseline monitoring and related information are accurately represented based on previous approvals.

Subsurface Water Resource Maps

This map is not being reviewed at this time. It is assumed the baseline monitoring and related information are accurately represented based on previous approvals.

Surface Water Resource Maps

This map is not being reviewed at this time. It is assumed the baseline surface water resource maps and related information are accurately represented based on previous approvals.

Well Maps

This map is not being reviewed at this time. It is assumed the baseline well resource maps and related information are accurately represented based on previous approvals.

Contour Maps

This map is not being reviewed at this time. It is assumed the baseline contour maps and related information are accurately represented based on previous approvals.

Findings:

Based on earlier approvals this section is determined complete and accurate.

OPERATION PLAN

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.

Stream Buffer Zones

Room and pillar mining with full or partial extraction is the only mining that has occurred at the Hiawatha mine. Within section 645-301-525, the mine plan discusses pillar extraction of second seam mining inside a perennial stream buffer zone. The plan states that 60 days prior to extracting a second seam within a 20 degree angle of draw from a perennial stream U.S. Fuel shall present a detailed evaluation of the anticipated effects of multiple seam mining on perennial streams to the regulatory authority for review and approval and will be based upon multiple seam mining in similar areas (page 25).

The following effects were noted to have the potential to occur with subsidence within the plan:

1. Surface fractures could contribute to changes in existing water patterns for springs, seeps and streams. Diminution of surface and ground water sources could have an affect on livestock and wildlife water availability.

2. Water resources for 11 springs issuing from the North Horn Formation, in the upper Miller Creek Watershed Section 7, 18, 19, 30 and 31 of Township 15 South, Range 8 East combined flow was 24 gpm in October 1983. Three springs issuing from the Castlegate Formation are monitored in Miller Creek.

3. Downstream uses include municipal, industrial, and irrigation. Mining is conducted above the Star Point formation in this location and is upstream of the point of use for these sites. Any water intercepted in mining will likely seep downward and exit at points along this member.

4. Renewable surface water resources above the mined area include three or four stock watering ponds (R645-301-322). According to the plan no significant subsidence effects have been noted on these resources.

Findings:

Based on previous permit issuance and, the current inactive underground mining status, this information is determined complete and accurate.

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.

This information was not reviewed at this time. It is assumed the ground water monitoring and related information are accurately represented based on previous approvals.

Surface-water monitoring.

This information was not reviewed at this time. It is assumed the surface water monitoring and related information are accurately represented based on previous approvals.

Acid and toxic-forming materials.

Hydrocarbons

According to the plan two fuel storage tanks, one 500 gallon unleaded gas and one 10,000 gallon diesel fuel are located inside a concrete storage structure designed to contain the full volume. A SPCC plan is on file in the engineering office.

Other acid and toxic waste information was not reviewed this time. It is assumed the acid and toxic waste and related information are accurately represented based on previous approvals.

Transfer of wells.

Information on well transfer was not reviewed at this time. It is assumed the transfer of wells and related information are accurately represented based on previous approvals

Discharges into an underground mine.

The Hiawatha No. 2 mine, abandoned in 1962, has been used as a water storage reservoir for culinary and mining purposes. Water was approved for diversion, from the North Fork of Miller Creek Middle Fork Canyon to the mine, under appropriated water right no 2159. A structural hazard assessment for the Hiawatha No. 2 mine reservoir is presented in Appendix V-2. This reservoir/impoundment is inspected monthly when used for storage. Exhibit V-15, V-16 and V-17. This activity was approved with the initial permit issuance.

Using this structure again, following the present lack of use, may require additional review measures by the regulatory agencies.

Gravity discharges.

Gravity discharge occurs at the Mohrland Portal and is expected to continue to discharge through mining and following reclamation. See: *Gravity discharges at reclamation.*

Water quality standards and effluent limitations.

A current copy of the UPDES permit needs to be incorporated into the plan so information is easily accessible. The Division will make the necessary comparisons following incorporation into the plan.

Diversions.

Appendix VII-19 has been updated with design calculation for all drainages in the Hiawatha Mine permit area.

Roads

The primary haul road from the Middle Fork loading facility to the processing plant was previously presented with drainage structures on exhibit V-6. The existing discussion in chapter 5 indicates the road drainage information is contained on exhibit V-6 and calculations and design specification were presented in appendix V-13. Currently the information is presented on exhibit VII-18C and the drainage designs are included in appendix VII-19.

North Fork road drainage is shown on drawing F-V-13E. The appendix VII-19 was amended to include including culverts and water bars along the North Fork Road. A stream ford is used to cross the North Fork road. Stream fords are prohibited according to according to 742.422 unless they are specifically approved by the Division as temporary roads used during periods of construction or, if they are not considered a primary road.

Ancillary roads were described in the plan to be; 1) a pre-existing road between pond D003 and the preparation plant used to clean out the sedimentation pond. 2) Access roads to the water tank above Middle Fork and South Fork mine yard, 3) a road from the heavy equipment shop to the rail road crossing. The North Fork Road was not identified as an ancillary road.

In chapter 7 the North Fork drainage control for the road crossing on Miller Creek is incorrectly identified to be in appendix VII-4. Information can be found in appendix VII-19.

Ditches and Culverts

Ditch DD17 leading to the ASCA adjacent to County road 338 and south of Slurry Pond No. 5 is now visible. Based on the information in table 3 of the plan, DD-1 receives 22.31 cfs from DA-1 and 1.35 cfs from DD-13. DD-6 receives 87.10 cfs. Therefore, culvert (1) is sized for flows from DD-A and DD-13 and has some extra capacity. The drainage DD-6 southwest of culvert (1) should be re-sized as DD-6A or, otherwise correct the map to show this ditch bypasses the culvert. The ditches DD-14 and DD-16 draining to sedimentation pond D003 are designed, labeled and illustrated on this map. However, DD-16 is difficult to discern.

A Manning's n equal to 0.033 is used for all ditch designs. This roughness factor is generally the value used for channels that are earth bottom and rubble sides in a winding excavated channel or are a maximum value used for a straight excavated channel with short grass and a few weeds. Where there is a lower roughness factor than is representative for site conditions the design capacity will be adequate but, the velocity for the design would be increased. Inspecting the channel function for design stability will ultimately be determined under field conditions.

Most culverts were sized using 0.033 for the roughness coefficient while, other roughness coefficients for culverts varied from 0.011 to 0.015. Corrugated metal pipe roughness coefficients vary

from 0.021 to 0.026 (Barfield et al.,1981). The hydrology map identifies the culverts as a CMP culvert, an acronym for corrugated metal culverts. Design factors including roughness coefficients should match the culvert site characteristics. Culverts should be appropriately sized according to their site specific characteristics. Culverts not meeting size criteria for open channel flow may meet criteria for full flow assuming there is adequate head. Full flow criteria should be met if open channel flow can not be demonstrated.

Watersheds delineated for the preparation plant area are presented on F-VII-20. Some confusion exists for the watershed DA-13. This area appears to be separated along the railroad spur heading toward the town of Hiawatha. In addition, the areas on top of the refuse piles should be labeled. The current configuration at Pond 005, 004, slurry pond #1 should need to be used to size drainages. For instance it appears the south portion of pond 005 drains down slope to DA-2 according to map VII-18A. This area should be included in determining the ditches design for DD-2 through DD-4.

Middle Fork Area

Hydrology map VII-18 and Surface Facilities map V-5 vary. Culverts 55 and 56 are shown to differ in size on the different maps.

South Fork Area

The culvert (57) is abandoned in place according to Exhibit VII-18B, it is not clear if this 8" line was treated (buried, split or capped) to abandon it in place and minimize on site erosion. The rules state temporary diversions will be removed when no longer needed to achieve the purpose for which they were authorized, R645-301-742.313.

Stream Buffer Zones.

The following is excerpted from the Technical Analyses completed for the initial permit issuance.

> Two of the existing sedimentation ponds, the upper coal storage yard pond and the sedimentation pond associated with Slurry pond No. 1, are within 100 feet of Miller Creek, [a perennial stream]....data from the surface-water quantity or quality do not indicate that any adverse effects on water quantity or quality are associated with these two ponds...

The permit was determined in compliance with regulatory requirement for these locations according to UMC 817.57 Hydrologic Balance: Stream Buffer Zones.

Sediment Control Measures

Appendix VII-15 has designs for sediment traps 1, 3, 4 and 6. These traps are labeled on exhibit VII-18A. One ASCA sediment basin is not labeled. If there is an associated design it was not reviewed. Alternate sediment control measures are presented in appendix 8 of the MRP.

Sediment control measures for the proposed borrow areas include a combination of straw bale dikes, silt fencing or sediment ponds. Runoff controls and post mining topography are detailed in appendix

VIII-18.

Sediment Control

Processing Plant

Surface drainage from the processing plant area and the town of Hiawatha is conveyed to Slurry Pond #5A. According to the information under R645-301-527, the Utah Railway Company owns and maintains railroad corridors and yards that are not part of U. S. Fuels disturbed area. A portion of this area does drain to the Slurry Pont 5A. The remaining drainage is not treated. The Hiawatha Coal Processing Plant has a total of five sedimentation ponds according to information in table V-7.

Page 41, under section 528.400 does not correctly identify the exhibits showing the referenced sediment control measures.

North Fork

The North Fork area has established vegetation within the disturbed area as part of the site reclamation. These areas use alternate sediment control measures (ASCM) however, these areas are not identified as ASCA even though it is included as such in the existing permit. The appropriate information for the ASCM currently included in the plan for the North Fork area should be retained and the appropriate maps showing the ASCA should be referenced.

Sediment Control Measures and Impoundments

Location	Sediment Ponds	Impoundments	ASCM	Comments
Middle Fork	Pond D008	Hiawatha No. 2 mine water storage reservoir.		
South Fork	Pond D009 Pond D011	NA	Bathhouse access road and water tank area	
Processing Plant Facilities	Pond D003 Pond D004 Pond D005 Pond D006 Pond D007	Slurry Pond #1^ Slurry Pond#2* Slurry Pond #4* Slurry Pond #5* Slurry Pond #5A	Six small catch basins.	Slurry Pond #1 and #5A are used for sediment control. Pre-SMCRA use of slurry ponds include sewage containment.
North Fork			revegetated and silt fencing	Information contained in Appendix V-8, is not consistent with other portions of the plan.

^ currently mining coal waste

* reclamation commenced

Sedimentation ponds.

Sedimentation structure designs were previously approved and were not reviewed at this time.

Other treatment facilities.

No other treatment facilities were identified in association with this permit.

Exemptions from siltation structures.

No exemptions from siltation structures were approved under this permit amendment.

Discharge structures.

Sedimentation pond discharge structure designs were previously approved and were not reviewed at this time. Sedimentation Pond 005 was determined to have the capacity for a full containment (non-discharging) structure under earlier reviews.

Impoundments.

Three slurry impoundments currently exist in the permit area and are presented on exhibit V-9. Slurry impoundment #1, Slurry impoundment #4, slurry impoundment #5, have MSHA numbers's 1211-UT-09-0098;-01;-02;-03 respectively. Slurry impoundment #3 no longer exists and an embankment from Slurry pond #2 remains which is now the base of refuse pile No.2.

Hiawatha Coal Company is actively removing pond fines from slurry impoundment #1. Impoundment #5 is being regraded, topsoiled and reseeded and impoundment # 4 was regraded topsoiled and seeded in fall of 1996. Impoundment 5A, a portion of slurry impoundment #5, is presently used for sediment control.

An underground reservoir in the Hiawatha No. 2 mine in Middle Fork Canyon is considered an MSHA structure. Approvals are presented in appendix V-2.

Casing and sealing of wells.

All post SMCRA openings were permanently closed by cementing beds from the bottom of the hole to 50 feet above the highest coal bed that is 4 feet or greater in thickness. The hole collar is plugged with 5 feet of concrete. The same method is proposed to be used for future boreholes unless they are approved for water monitoring (section 529).

Findings:

The plan does not meet the requirements of this section. The permittee must provide the following

in accordance with:

R645-301-120. Chapter 5 and 7 need to be updated to correctly reference the hydrologic information contained in exhibits and appendices. Some specifics are identified in this TA but, these do not include all errors.

R645-301-725.300. A current copy of the UPDES permit needs to be incorporated into the plan so information is easily accessible.

R645-301-742.422. The plan needs to demonstrate that the requirements for stream crossings are met. Fords are prohibited unless they are temporary roads used during periods of construction or, they are not considered a primary road.

R645-301-730. The drainage DD-6 southwest of culvert (1) should be re-sized as DD-6A or, otherwise correct the map to show this ditch bypasses the culvert. The ditches DD-14 and DD-16 draining to sedimentation pond D003 are designed, labeled and illustrated on this map. However, DD-16 is difficult to discern.

R645-301-730. Design factors, especially roughness coefficients, need to match the site specific characteristics. Provide supporting references for the roughness coefficient used or otherwise provide a site specific design criteria that meets minimum regulatory requirements for culverts. (Full flow criteria may work if adequate head exists above the culvert where open channel flow can not be demonstrated to meet design criteria). Design information for drainages needs to be clearly presented. The ditch designs are summarized in a table but, the design storm used for each ditch needs to be clearly presented.

R645-301-730. Watershed DA-13 is not clearly delineated on exhibit F-VII-20. It is somewhat confusing because the watershed appears to be separated along the railroad spur east from the town of Hiawatha. In addition, the areas on top of the refuse piles should be labeled. The current configuration at Pond 005, 004, and slurry pond #1 need to be included for drainage design. For instance, it appears the south portion at the top of pond 005 drains down slope to DA-2, based on map VII-18A, and should be included to size ditches DD-2 through DD-4.

R645-301-742. Retain the appropriate information for the ASCM currently included in the plan for the North Fork area and correct the appropriate maps to show the ASCA.

R645-301-742.313. Culvert (57), is abandoned in place according to the plan, it is not clear if this 8" line was treated (buried, split or capped) to abandon it in place and minimize potential for future on site erosion. The rules state temporary diversions will be removed when no longer needed to achieve the purpose for which they were authorized an appropriate plan should be provided for this culvert.

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 Sampling Location Maps

This map is not being reviewed at this time. It is assumed the baseline monitoring and related information are accurately represented based on previous approvals.

Subsurface Water Resource Maps

This map is not being reviewed at this time. It is assumed the operational monitoring and related information are accurately represented based on previous approvals.

Surface Water Resource Maps

Maps F-VII-20, F-VII-18, F-VII-19, F-V-13-E, were submitted without legends or north arrows. Exhibit V-5 is not certified. Culverts 55 and 56 are shown to differ in size on the Hydrology map VII-18 and Surface Facilities map V-5. On exhibit VII-18A an unlabeled ASCA sediment basin needs to be identified so it's design can easily be located in the plan.

Well Maps

This map is not being reviewed at this time. It is assumed the operational well maps and related information are accurately represented based on previous approvals.

Contour Maps

Some contour information varies between maps. These analyses are discussed elsewhere in the plan.

Findings:

The plan does not meet the requirements of this section. The permittee must provide the following in accordance with:

R645-301-730. The following maps F-VII-20, F-VII-18, F-VII-19, F-V-13-E, were submitted without legends or north arrows. Exhibit V-5 is not certified. Culverts 55 and 56 differ in size between on the Hydrology map VII-18 and Surface Facilities map V-5. On exhibit VII-18A an unlabeled ASCA sediment basin needs to be identified so it's design can easily be located in the plan.

RECLAMATION PLAN

HYDROLOGIC INFORMATION FOR RECLAMATION

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:

Ground-water monitoring.

This information was not reviewed at this time. It is assumed the ground water monitoring through reclamation and related information are accurately represented based on previous approvals.

Surface-water monitoring.

This information was not reviewed at this time. It is assumed the surface water monitoring through reclamation and related information are accurately represented based on previous approvals.

Acid and toxic-forming materials.

The slurry ponds and embankments were sampled and results indicate that Slurry Ponds 1, 3, 4 and 5 have moderate toxicity levels of selenium which vary from 0.91 to 1.93 ppm. Slurry impoundment # 4 has a high iron level of 15.8 ppm but, does not exist in an acidic environment. The analyzed sample(s) have pH levels from 7.35 to 7.5. The coal refuse sampled in pond #4 has a 6.8 pH value.

Complete analyses of this information was not reviewed at this time. It is assumed related information is accurately represented based on previous approvals.

Transfer of wells.

Information pertaining to transfer of wells for reclamation was not reviewed at this time. It is assumed the related information is accurately represented based on previous approvals.

Discharges into an underground mine.

No discharge into an underground mine are approved for the reclamation period.

Gravity discharges.

Information contained in the Technical Analyses associated with the first permitting action at the Hiawatha mine states:

> Generally, mine water flows southerly, away from active mining, and is discharged by gravity flow at the inactive Mohrland portal [into Cedar Creek].

The Mohrland portal entry was used prior to January 21, 1981 and therefore, the regulatory

requirement (R645-303-731.522), to prevent any gravity discharge from the mine, does not apply at this entry. Specifics on the controlled discharge were not reviewed at this time and were not found in the initial TA. This discharge point is regulated under the National Pollutant Discharge Elimination System (NPDES) permit UT-0023094. Future reviews will compare water quality standards and long-term discharge compliance according to the performance standards in the R645 regulations.

Surface openings to the Hiawatha No. 1 mine and King 4 and 5 mines are in a down dip direction to preclude gravity discharges. Although these portals are currently inactive future operations consider using the King 5 portals for access.

Water quality standards and effluent limitations.

No specific problems are identified to date, however, TDS has increased. The Division will make the necessary comparisons with state and federal requirements through time and prior to any bond release.

Diversions.

Drainage Plan

Processing Plant

The areas no longer necessary for railroad and road surfaces need to be regraded to promote drainage from upstream drainages through down gradient locations. Specifically the area north and west of the 24"CMP culvert (34) including the area down gradient of the 36" culvert (6), sedimentation pond 003, and ASCA catch basin 1 needs further re-grading. Areas of concentrated flow should be identified and drainages need to be labeled and designed.

North Fork

The North Fork stream diversion and pipeline to the King 2 mine portal will be reclaimed using in situ soils (chapter 2, pg 36). According to information contained in section R645-301-732 and section R645-301-540, the stream diversion is proposed to be permanent. Some records suggest initial permitting action approved the diversion on the basis that it meets post-mining land use requirements. Approval for the diversion as a permanent structure was stated to be based on the approval included in Appendix V-14, however, no statement approving this as a permanent structure was found in the letter. Currently the North Fork stream diversion is not demonstrated to be needed for post mining land use. Plans for removal must be provided in accordance with R645-301-541.300. Since, this structure has not been shown to be needed for the authorized purpose, it is considered a temporary diversion and needs to be removed in accordance with R645-301-742.313.

Roads

North Fork

The North Fork road, culverts, and a low water crossing are proposed to be retained during reclamation (chapter 5). However the water crossing does not meet the requirements of R645-301-742.422. See the discussion regarding the stream crossing under *Operational Hydrology* in this TA.

Appendix VII-19 is amended to include post-mining diversions including culverts and water bars along the North Fork Road. Map VII-19 provides the locations for water drainage including waterbars and culverts along the North Fork road. These locations were provided in response to DO 97A. The road existed prior to enactment of SMCRA up to a location near the stream crossing (shown on exhibit VII-18-D). The pre-SMCRA road was not upgraded with mining and exists in it's pre-mining location. Water bars and culverts are given for the existing road drainage controls. Water bar design information and ditch designs are found within appendix VII-19.

Processing Plant

The culverts and drainages retained at the Processing Plant need to be labeled, designed and identified. The existing table showing operational design information is stated to use reclamation criteria for the drainages to remain following reclamation but, these are not clearly presented in the table.

Stream buffer zones.

According to chapter 2, if the proposed substitute topsoil area is utilized, HCC commits to consult with the regulatory authority prior to commencing with soil salvage and access road development through the riparian area. However, in Chapter 5 the plan says if borrow area D, is needed a 30 inch culvert will be installed and is sized for the one year six hour event at 10.8 cfs as required for temporary culverts. **Specific approval will be granted by the Division following approval by the agency with regulating authority for stream channel alteration permits prior to accessing the borrow area. The plan should be consistent in all sections.**

Sediment control measures.

Sediment Control for Topsoil Piles

Topsoil and topsoil piles will be constructed following identification during the site regrading. Top soil piles will be protected by diverting channelized flows away from the stockpile. These diversions need to be designed. In the Middle Fork and South Fork the top soil piles are revegetated and have berms and ditches for sediment control measures. It is assumed these berms and ditches were adequately sized with earlier approvals.

Siltation Structures.

Sedimentation Ponds and Diversion Structures

After vegetation is established the applicant has committed to re-grade sediment ponds and diversion structures (chapter 2, pg 38). The existing sedimentation pond and collector cutoff ditches will remain until successful revegetation is demonstrated and approved by DOGM for the drainage. Then they will be removed, regraded and revegetated (chapter 2, pg 39). It is assumed these berms and ditches were adequately sized for the reclamation phase with earlier approvals. The Middle Fork Pond (RA-24) will use

the material in the pond embankment for pond reclamation (chapter 2, pg 36). Sedimentation ponds 011 and 009 (RA-21, Exhibit II-4B) will be also reclaimed using the soil material in the pond embankments (chapter 2, pg 36).

Slurry Impoundments

Slurry ponds #1 and #5A will be regraded. The refuse embankment outslopes will be used to fill and re-grade slurry pond #5. The plan indicates the ponds be shaped as close as possible to the final contours, depending on how many coal fines will remain in the pond (chapter 2, pg 36). If the coal fines do not allow for the pond to be configured similar to the proposed final configuration. The operator must submit a plan for approval showing the final configuration. The text must be changed to indicate the final configuration will not be substantially changed unless there is an approved amendment to the plan. The bond should be adjusted to account for this uncertainty.

Other treatment facilities during reclamation.

Currently there are no other treatment facilities at the site. No reclamation requirements are applicable.

Exemptions from siltation structures during reclamation.

No exemptions from siltation structures during reclamation have been requested or granted in this amendment.

Reclamation Discharge structures.

No discharge structures are proposed to vary from the existing designs from the sedimentation ponds. It is assumed these are complete and accurate based on previous approvals.

Impoundments at reclamation.

No permanent impoundments are proposed for the post mining land use.

Casing and sealing of wells.

Casing and sealing of wells was not reviewed at this time. It is assumed this information is complete and accurate based on previous approvals.

Findings:

The plan does not meet the requirements of this section. The permittee must provide the following in accordance with:

R645-301-742.300. Design factors, especially roughness coefficients, need to match the site specific characteristics. Design information for drainages needs to be clearly presented. The ditch designs are summarized in a table but, the ditches proposed to be retained for reclamation are not labeled on the reclamation map or clearly presented in the table.

Topsoil and topsoil piles constructed following identification during the site reclamation regrading are proposed to be protected by diverting channelized flows away from the stockpile. These diversions need to be designed.

R645-301-541.300. Plans to remove the North Fork stream diversion must be provided. Since this structure has not been shown to be needed for the authorized purpose it is considered a temporary diversion and needs to be removed in accordance with R645-301-742.313.

R645-301-121.200. The text in chapter 2, pg 36 of the plan indicates the ponds will be shaped as close as possible to the final contours, depending on how many coal fines will remain in the pond. If the coal fines do not allow for the pond to be configured similar to the proposed contours an approved amendment would be necessary. The text must be changed indicate the configuration will not be substantially changed unless there is an approved amendment to the plan.

R645-301-742.313. The areas no longer necessary for railroad and road surfaces need to be regraded to promote drainage from upstream drainages through down gradient locations. Areas of concentrated flow should be identified and drainages labeled and designed.

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:

Final surface configuration maps.

The final surface configuration reclamation map shows dark dotted lines that appear to delineate watershed drainage areas but are not included on the legend. The similarity to proposed post-mining drainage ditches results in drainage information which is not clear. Final hydrology map V-9D is not certified nor are the post mining ditches and culverts labeled.

Findings:

The plan does not meet the requirements of this section. The permittee must provide the following in accordance with:

R645-301-512. Certification is required on map V-9D. The dark dotted lines that appear to delineate watershed drainage areas should be included on the legend.

RECOMMENDATION

This submittal did not have redline strikeout text. However, the Division accepted the submittal. Because no red line strikeout was used the submittal was reviewed and compared for changes with the existing plan. Future submittal accepted by the Division without redline strikeout can be assumed to take additional time for review just as it did in this case. It would be appreciated if the Operator is notified and procedure is followed to review only those submittal received with redline strikeout.

Once the issues identified within the TA above are adequately addressed in the plan the amendment can be approved and incorporated. It is recognized some changes made in this amendment require additional text and plan updates not identified in the Division Order which increased the complexity for making the plan clear and accurate.