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TECHNICAL MEMORANDUM
Utah Coal Regulatory Program

August 14, 2009

TO: Internal File

THRU: Daron R. Haddock, Permit Supervisor

FROM: Steve Christensen, Lead

SUBJECT: Wellington Dry-Coal Cleaning Facility Application, Headwaters, Inc., Covol, Permit C/007/0045, Task ID #3349

SUMMARY:

On July 13th, 2009, the Division of Oil, Gas and Mining (the Division) received a permit application package response (the application) from Headwaters, Inc. (the Permittee) for the Wellington Dry-Coal Cleaning Facility (COVOL). The response was submitted to address the deficiencies identified by the previous technical review performed by the Division (Deficiency letter sent May 19th, 2009 Task ID #3256).

The facility utilizes an air-jig method to process coal-bearing materials. Termination of operations is contingent upon economic conditions. As such, the permit term is unknown. The Permittee anticipates that the facility will operate at the site for a period in excess of 5 years.

The anticipated acreage to be affected by the operation is approximately 30 acres. The disturbed area to be reclaimed is 30 acres. The land occupied by the facility is zoned for general industrial use. As such, complete site reclamation will not be required.

The following is the hydrologic analysis relative to the State of Utah R645-Coal Mining Rules. The hydrologic information provided in the application meets the requirements of the State of Utah R645-Coal Mining Rules. The application should be approved at this time.

TECHNICAL ANALYSIS:

ENVIRONMENTAL RESOURCE INFORMATION

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

GENERAL

Regulatory Reference: 30 CFR 783.12; R645-301-411, -301-521, -301-721.

Analysis:

The application meets the General Environmental Resource Information requirements. Beginning on page 7-2, the Permittee provides the general hydrologic information.

Findings:

The application meets the General Environmental Resource Information requirements as outlined in the State of Utah R645-Coal Mining Rules.

CLIMATOLOGICAL RESOURCE INFORMATION

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

Analysis:

The application meets the Climatological Resource Information requirements per the State of Utah R645-Coal Mining Rules. On page 7-6 of the application the Permittee provides climatological information for the site. Data is presented from the Western Regional Climate Center. The Permittee provides normal annual precipitation values, normal annual temperatures as well as the average annual wind speed at the location.

Findings:

The application meets the Climatological Resource Information requirements per the State of Utah R645-Coal Mining Rules.

ALLUVIAL VALLEY FLOORS

Regulatory Reference: 30 CFR 785.19; 30 CFR 822; R645-302-320.

Analysis:

Alluvial Valley Floor Determination

The application meets the Alluvial Valley floor requirements as outlined in the State of Utah R645-Coal Mining Rules. The Permittee addresses alluvial valley floors in Chapter 9 of the application.

The Permittee states, "The COVOL Dry –Coal Cleaning Facility is located in an upland area overlain by a thin veneer of colluvial, slope wash deposits. It is not located within or adjacent to an alluvial valley floor."

Findings:

The application meets the Alluvial Valley floor requirements as outlined in the State of Utah R645-Coal Mining Rules.

HYDROLOGIC RESOURCE INFORMATION

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

Analysis:

Water Rights

The application discusses water rights within the adjacent area of the permit beginning on page 7-3. A previous Division technical analysis (Task ID #2899) had identified water rights that were not discussed and/or presented in the previous submittal. Specifically, upon reviewing the water right information available on the Division of Water Rights database, it was determined that Water Right #91-3295 was located on Miller Creek approximately ¾ of a mile south of the site. The Permittee has amended the water right information in Appendix 7-1 as well depicted Water Right #91-3295 on Figure 7-2, *Surface Point of Diversion Water Rights and Permitted Facility Discharge Locations*.

In addition, the Permittee has amended the water right information contained in Appendix 7-1 to include the numerous places of use (POU) that were identified in the Division of Water Rights Database. Upon review of the 69 POU's within the adjacent area of the site, it

was determined that the Price River Water user's Association (PriWD) held these water rights. These POU's represent water that is diverted from remote locations well outside the permit area and delivered via distribution systems throughout the region for industrial use as well as some limited stock watering and domestic use.

Baseline Groundwater Information

The application meets the Groundwater Baseline requirements as required by the State of Utah R645-Coal Mining Rules.

The previous technical reviews performed by the Division (Task ID #2899, Task ID #3075 and Task ID #3256) had identified deficiencies with the groundwater characterization provided in the initial application. The Division noted during the initial technical analysis that the ground water monitoring requirements for the purpose of obtaining baseline information could be waived if the Permittee could demonstrate that data obtained from adjacent areas is comparable to the conditions found at the site. The Permittee utilized ground water monitoring data from the Savage Coal Terminal facility located approximately ½ mile from the site. In addition, the Permittee provided a groundwater characterization obtained from "*Energy, Mineral and Ground-Water Resources of Carbon and Emery Counties, Utah*", Bulletin 132, Utah Geological Survey, Utah Department of Natural Resources, Salt Lake City, UT.

Additionally, COVOL responded by supplying GW data obtained from one round of sampling at the sites newly installed monitoring well which does not address the baseline requirement of the State of Utah R645-Coal Mining Rules. The Permittee also provided a figure that depicts the location of their monitoring well on the proposed permit area.

Surface Water

The application meets the Surface Water Baseline requirements as required by the State of Utah R645-Coal Mining Rules. The previous technical reviews performed by the Division (Task ID #2899 and Task ID #3075) had identified deficiencies with the surface water characterization provided in the initial application. The Division had requested additional information on Miller Creek as well as a small tributary to Miller Creek located approximately 400 feet southwest of the southwest corner of the permit area.

Upon review of the application, the Permittee has addressed the deficiency on page 7-7. Based upon field observations of vegetation, geomorphic conditions and the presence of surface water in the late summer/early autumn of 2007 and 2008, the Permittee determined that Miller Creek is a perennial stream at it's location south of the permit area. In addition, the USGS topographic map of the area depicts Miller Creek as a solid blue line, which is indicative of a perennial drainage.

The Permittee has characterized the small tributary as ephemeral. The characterization is based upon field observations of vegetation, geomorphic conditions, the lack of surface water as well as a lack of a well-defined surface flow path within the channel. The drainage has a small contributing watershed area.

The surface water information is presented on page 7-3 and 7-5 of the application. Figure 7-2, *Surface Water Rights and Permitted Facility Discharge Locations*, depicts the proposed permit area boundary relative to surface water resources with the permit and adjacent area. The permit boundary is located approximately 350 feet of a tributary drainage to Miller Creek.

The topography of the permit and adjacent areas drains to the south toward Miller Creek. Miller Creek is characterized in the application as being a perennial stream that feeds into the Price River in Wellington, Utah. The application indicates that no historical stream gage data exists for Miller Creek.

Baseline Cumulative Impact Area Information

The application meets the Baseline Cumulative Impact Area Information requirements of R645-301-725. The Permittee has demonstrated that the operation at the site poses a minimal threat of producing any ground and/or surface water impacts. Due to the relatively small size of the site and the robust sediment ponds located either side, it's extremely unlikely that any contamination or disruption could occur off the permit area. The sediment ponds have been designed for total containment of the 10-year, 24-hour design storm event.

Modeling

No numerical modeling of ground or surface water was conducted in the preparation of the application.

Probable Hydrologic Consequences Determination

The application meets the Probable Hydrologic Consequences Determination requirements of R645-301-728.

The application discusses the probable hydrologic consequences from the operation beginning on page 7-7. The potential for hydrologic consequences on surface and ground water resources within the permit and adjacent area are minimal. As no mining activity is associated with the operation, the surface disturbance will be minimal.

The facility will operate under a UPDES Permit (# UTR000685). As part of the UPDES permit, the Permittee has developed a Storm Water Pollution Prevention Plan (SWP3) as well as a Spill Prevention Control and Countermeasure Plan. Copies of these documents are provided in the application in Appendices 7-2, 7-3 and 7-4 respectively.

The surface topography of the site slopes generally to the southeast. Grading of the site has been performed to direct all surface runoff to one of two sediment ponds located in the southeast and southwest corners of the site. Berms will be constructed to prevent storm water runoff from leaving the site. As part of the UPDES permit, both the berms and sediment ponds will be inspected on a quarterly basis or after/during a storm event greater than .5 inches to insure that they are operating as designed. As a result of the surface drainage plan, the potential for increased sedimentation to the receiving drainage (Miller Creek) is considered minimal.

The potential for flooding or stream flow alteration is considered minimal. The disturbed area does not contain surface water drainages. In addition, the disturbed area will be isolated from adjacent areas by the runoff control structures such as earthen berms, diversion ditches and sedimentation ponds. Runoff from all disturbed areas will flow to one of two sedimentation ponds prior to discharge into undisturbed drainages.

Groundwater and surface water availability impacts should be minimal. Due to the minimal amount of surface water resources within the permit and adjacent areas, and due to the runoff controls to be implemented at the site, surface water availability impacts should be negligible. Groundwater availability impacts should be minimal as well due to the relatively impermeable nature of the surface geology and underlying strata of Mancos Shale.

Potential hydrocarbon contamination is addressed on page 7-9 of the application. Impacts due to hydrocarbon contamination are considered to be minimal. All tanks and drums will be stored in secondary containment structures that prevent leaks from ever reaching the ground. Spills caused by filling operations outside of the secondary containment structures will be minimized due to the economic value of the product. In addition, because the storage tanks and drums will be located above ground, leakage from the tanks will be readily detected and repaired. The Permittee has provided the Spill Prevention Control and Countermeasure Plan in Appendix 7-4. The plan mandates in sections, training and operational measures to minimize contamination resulting from the use of hydrocarbon products at the site.

In the previous technical reviews performed by the Division (Task ID #2899 and Task ID #3075) additional information was requested as to whether acid- or toxic-forming materials are to be present at the site. In addition, the Permittee was asked to address how they would identify/determine whether acid- or toxic- forming materials were brought to the site. Several areas were cited in the previous technical analysis where the application needed to provide clarification/discussion as to acid- or toxic-forming materials on the site.

On page 7-14 of the application, the Permittee discusses acid- and toxic-forming materials. The Permittee commits to sampling any material left on site during extended periods of in-activity, "To further minimize the potential for surface- and groundwater contamination, COVOL will sample all coal and coal waste that remains on site after an inactive period of 30 days. COVOL will collect one sample for every 2,000 yd3 of the on-site material, composite these samples for the like material, and have this sample analyzed for acid- and toxic-forming materials in accordance with Tables 7 and 8 of DOGM's Guidelines for the Analysis of Topsoil

and Overburden." Any material that is verified to contain acid- and toxic-forming materials will be processed no longer than one month following the receipt of verifying analyses of the COVOL samples.

Groundwater Monitoring Plan

The application meets the Groundwater Monitoring Plan requirements of R645-301-724.100.

In the previous technical analyses performed by the Division (Task ID #2899 and Task ID #3075), the Permittee was asked to provide a justification for not conducting groundwater monitoring within the permit and adjacent area. The Division noted during the initial technical analysis that the ground water monitoring requirements for the purpose of obtaining baseline information could be waived if the Permittee could demonstrate that data obtained from adjacent areas is comparable to the conditions found at the site. As noted in the ground water baseline deficiency above, the data utilized by the Permittee from the Savage facility was not provided as requested.

Based upon the agreement entered into by the Permittee and the Division (dated September 15th, 2008), the Permittee has agreed to install one groundwater monitoring well down gradient from the proposed operation site. Additionally, the Permittee commits to quarterly water monitoring for a period of one year in order to obtain baseline information. Quarterly water monitoring would also be conducted during the first year of reclamation after operations at the site have ended.

On page 7-6 of the application, the Permittee discusses the ground water monitoring to be conducted at the site. A monitoring well was installed inside the permit area during the fourth quarter of 2008. Water-level data and water-quality samples were collected in December 2008 and will be collected from this well on a quarterly basis for the first year following the well's installation and resume during the first year of reclamation after plant operations have ended. The analytical parameters to be analyzed are listed in Table 7-1. Upon review of Table 7-1, the Permittee has submitted a suite of parameters that follows the Division's Tech005 Directive.

Surface-Water Monitoring Plan

The application meets the Surface Water Monitoring Plan requirements of R645-301-724.200.

In previous technical reviews performed by the Division (Task ID #2899 and Task ID #3075), the Permittee was asked to provide a reasonable justification for not conducting surface-water monitoring at the site. On page 7-4 of the application, the Permittee points out that all runoff from the permit area is routed to one of two sedimentation ponds located on the downstream portions of the site. As the ponds are constructed to fully contain the design storm event (10-year, 24-hour event), the Permittee maintains that there is very little risk of surface

water impacts outside the permit area. The locations of the ponds are shown on Plate 5-1 of the application. Additionally, the discharges from these ponds must comply with the Permittee's UPDES discharge permit (No. UTR000685).

Findings:

The application meets the Hydrologic Resource Information requirements of the State of Utah R645-Coal Mining Rules.

MAPS, PLANS, AND CROSS SECTIONS OF RESOURCE INFORMATION

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

Analysis:

Subsurface Water Resource Maps

The application meets the Maps, Plans and Cross Sections of Resource Information as required by R645-301-731. Figure 7-1, *Generalized Area Hydrostratigraphic Cross-Section (as adapted from Gloyn et al., 2003)*, is a cross-section that depicts the general groundwater system as identified by Utah Geological survey Bulletin 132.

Surface Water Resource Maps

The application meets the Surface Water Resource Maps requirement of R645-301-722. Figure 7-2, *Surface Water Rights and Permitted Facility Discharge Locations*, depicts the surface water resources located within and adjacent to the permit area, including a point-to-point stock watering right located on Miller Creek (Water Right #91-3294).

Well Maps

The application meets the Well Maps requirements of the State of Utah R645-Coal Mining Rules. Figure 7-2 depicts the location of the on-site ground water monitoring well.

Findings:

The application meets the Maps, Plans and Cross Sections of Resource Information requirements of the State of Utah R645-Coal Mining Rules.

OPERATION PLAN

SUBSIDENCE CONTROL PLAN

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

Analysis:

The application meets the Subsidence Control Plan requirements of R645-301-724. On page 5-10 of the application the Permittee states, "There will be no underground mining or subsidence at this facility. Hence, no pre-subsidence survey will be conduced, no areas need to be protected from subsidence, no subsidence control plan will be developed, no subsidence control measures will be implemented, no subsidence damage repair will be performed and no public notice of underground mining activities will be required".

Findings:

The application meets the Subsidence Control Plan requirements of R645-301-724.

ROAD SYSTEMS AND OTHER TRANSPORTATION FACILITIES

Regulatory Reference: 30 CFR Sec. 784.24, 817.150, 817.151; R645-301-521, -301-527, -301-534, -301-732.

Analysis:

Plans and Drawings

The application meets the Plans and Drawings requirements of R645-301-732. Figure 5-3, *Standard Road Cross-Section,* provides the cross-sections and profiles to be used and/or maintained on the COVOL site roads.

Performance Standards

The application meets the Performance Standard requirements of R645-301-742.423. The application discusses the road drainage considerations/designs on page 7-14 in Section 7.3.2.4. The road drainage facilities will incorporate diversion ditches, culverts and containment berms.

The facility will utilize three roads: an access road that leads from Ridge road into the main yard, a road around the perimeter of the main yard and a truck turnaround north of the main yard. None of the roads are located in the channel of an intermittent or perennial stream.

The design specifications for the road ditches and culverts were calculated utilizing a 100-year, 6-hour precipitation event. The diversion hydrology calculations are provided in Appendix 7-7. The Permittee generated the design storm hydrographs used in designing the drainage system of the site by utilizing HydroCAD 8.5. HydroCAD 8.5 is a software application that calculates peak flows, velocities and hydrographs for a given storm event. The Permittee utilized an average curve number of 87 for the disturbed area calculations. The curve number selected is reasonable given the conditions of the site and the soil type.

On page 5-13 of the application, the Permittee states, "No alterations or relocations of natural drainage ways are required within the permit area to accommodate the needs of transportation systems."

Findings:

The application meets the Road Systems and Other Transportation Facilities requirements of the State of Utah R645-Coal Mining Rules.

SPOIL AND WASTE MATERIALS

Regulatory Reference: 30 CFR Sec. 701.5, 784.19, 784.25, 817.71, 817.72, 817.73, 817.74, 817.81, 817.83, 817.84, 817.87, 817.89; R645-100-200, -301-210, -301-211, -301-212, -301-412, -301-512, -301-513, -301-514, -301-521, -301-526, -301-528, -301-535, -301-536, -301-542, -301-553, -301-745, -301-746, -301-747.

Analysis:

Disposal Of Noncoal Mine Wastes

The application meets the Disposal of Noncoal Mine Wastes requirements of R645-301-747. On page 5-14 of the application the Permittee discusses the disposal of noncoal mine waste. The application outlines that noncoal waste generated in the permit area will be temporarily stored in dumpsters and will be regularly collected to be disposed of at the East Carbon Development Company landfill. The Permittee states, "No non-coal waste is permanently disposed of within the permit area". In addition, the Permittee commits to handling any hazardous non-coal waste in accordance with the requirements of Subtitle C of the Resource Conservation and Recovery Act.

Refuse Piles

The application meets the Refuse Pile requirements of R645-301-746.200.

On page 5-5 the Permittee states, "No refuse piles will be located in the permit area". On page 7-25, the Permittee states, "There are no refuse piles at the facility."

Findings:

The application meets the Spoil and Waste Materials requirements of the State of Utah R645-Coal Mining rules.

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:

General

The application meets the General Hydrologic Information requirements as provided for in R645-301-730. Section 7 of the application provides the general hydrologic information for the proposed site and adjacent area.

Water Rights and Replacement

The application meets the Water Rights and Replacement requirements of the State of Utah R645-Coal Mining Rules.

On page 7-14 of the application, the Permittee states, "COVOL will replace the water supply of an owner of interest in real property who obtains all or part of his or her supply of water for domestic, agricultural, industrial or other legitimate use from an underground or surface source, where the supply has been adversely impacted by contamination, diminution or interruption proximately resulting from activities conducted by COVOL in the permit area."

Groundwater Monitoring Plan

The application meets the Groundwater Monitoring Plan requirements of R645-301-731.200.

In the previous technical analyses performed by the Division (Task ID #2899 and Task ID #3075), the Permittee was asked to provide a justification for not conducting groundwater monitoring within the permit and adjacent area. The Division noted during the initial technical analysis that the ground water monitoring requirements for the purpose of obtaining baseline information could be waived if the Permittee could demonstrate that data obtained from adjacent areas is comparable to the conditions found at the site. As noted in the ground water baseline

deficiency above, the data utilized by the Permittee from the Savage facility was not provided as requested.

Based upon the agreement entered into by the Permittee and the Division (dated September 15th, 2008), the Permittee has agreed to install one groundwater monitoring well down gradient from the proposed operation site. Additionally, the Permittee commits to quarterly water monitoring for a period of one year in order to obtain baseline information. Quarterly water monitoring would also be conducted during the first year of reclamation after operations at the site have ended.

On page 7-6 of the application, the Permittee discusses the ground water monitoring to be conducted at the site. A monitoring well was installed inside the permit area during the fourth quarter of 2008. Water-level data and water-quality samples were collected in December 2008 and will be collected from this well on a quarterly basis for the first year following the well's installation and resume during the first year of reclamation after plant operations have ended. The analytical parameters to be analyzed are listed in Table 7-1. Upon review of Table 7-1, the Permittee has submitted a suite of parameters that follows the Division's Tech005 Directive.

Surface-Water Monitoring Plan

The application meets the Surface Water Monitoring Plan requirements of R645-301-724.200.

In previous technical reviews performed by the Division (Task ID #2899 and Task ID #3075), the Permittee was asked to provide a reasonable justification for not conducting surface-water monitoring at the site. On page 7-4 of the application, the Permittee points out that all runoff from the permit area is routed to one of two sedimentation ponds located on the downstream portions of the site. As the ponds are constructed to fully contain the design storm event (10-year, 24-hour event), the Permittee maintains that there is very little risk of surface water impacts outside the permit area. The locations of the ponds are shown on Plate 5-1 of the application. Additionally, the discharges from these ponds must comply with the conditions of the Permittee's UPDES discharge permit (No. UTR000685).

Acid- and Toxic-Forming Materials and Underground Development Waste

The application meets the Acid- and Toxic-Forming Materials and Underground Development Waste requirements of R645-301-731.300.

In the previous technical reviews performed by the Division (Task ID #2899 and Task ID #3075) additional information was requested as to whether acid- or toxic-forming materials are to be present at the site. In addition, the Permittee was asked to address how they would identify/determine whether acid- or toxic- forming materials were brought to the site. Several areas were cited in the previous technical analysis where the application needed to provide clarification/discussion as to acid- or toxic-forming materials on the site.

On page 7-14 of the application, the Permittee discusses acid- and toxic-forming materials. The Permittee commits to sampling any material left on site during extended periods of in-activity: "To further minimize the potential for surface- and groundwater contamination, COVOL will sample all coal and coal waste that remains on site after an inactive period of 30 days. COVOL will collect one sample for every 2,000 yd^3 of the on-site material, composite these samples for the like material, and have this sample analyzed for acid- and toxic-forming materials in accordance with Tables 7 and 8 of DOGM's Guidelines for the Analysis of Topsoil and Overburden." Any material that is verified to contain acid- and toxic-forming materials will be processed no longer than one month following the receipt of verifying analyses of the COVOL samples.

Diversions: General

The application meets the Diversions: General requirements of R645-301-742.300. The hydrologic design considerations and methods are provided in Appendix 7-5 of the application. Plate 7-2, *Site Watershed and Drainage Map Wellington Dry Coal Cleaning Facility*, depicts the drainage system to be utilized at the site as well as the watershed boundaries utilized in sizing the various components of the drainage system. Appendix 7-7 provides the hydrologic calculations for the drainage channels and associated culverts. Table 7-2 provides a summary of the drainage ditch and culvert data.

The ditch capacities and flow velocities were calculated using HydroCAD 8.5. HydroCAD 8.5 uses the Manning and continuity equations. With the post-mining land-use to remain industrial, the diversions are not slated for removal/reclamation following the cessation of operations at the site. As such, the Permittee calculated runoff values assuming permanent diversion structures. A 100-year, 6-hour precipitation event was utilized in the drainage calculations for the diversion ditches.

Beginning on page 7-22, the application provides a summary of the geometry, channel slope, peak discharge, erosion protection, maximum flow velocity and minimum depth values for each diversion ditch and culvert at the facility.

Diversions: Perennial and Intermittent Streams

The application meets the Diversions: Perennial and Intermittent Stream requirements of R645-301-742.300. No diversions of perennial or intermittent streams are planned for this operation.

Sediment Control Measures

The application meets the Sediment Control Measures requirements of R645-301-742. The sediment control measures have been designed to prevent additional contributions of sediment to streams or to runoff outside the permit area, meet applicable effluent limitations and minimize erosion to the extent possible. The structures to be used to control sediment transport

at the site include diversion channels, sedimentation ponds, containment berms, silt fences and road diversions and culverts.

Siltation Structures: Sedimentation Ponds

The application meets the Siltation Structures: Sedimentation Ponds requirements of R645-301-732.200. The design considerations for the sediment pond designs are provided in Section 3 of Appendix 7-5. Plate 7-1 provides cross sections for each of the sedimentation ponds that depict the maximum water storage elevation, maximum sediment storage stage as well as the 60% sediment cleanout stage. Table 7-1 provides a summary of the sediment pond data for both the east and west ponds. Appendix 7-6 provides the sediment storage calculations.

The ponds are designed to work individually. The ponds respectively accept runoff from the eastern and western portions of the disturbed area. The sediment ponds were designed to contain sediment in addition to the runoff produced from the design storm event. The Universal Soil Loss Equation was utilized in determining the expected annual sediment volume reporting to each of the ponds.

The capacity of each pond was designed based on runoff and sediment storage volumes derived from the design storm event as outlined in the regulations. The ponds have been designed to completely contain the 10-year, 24-hour storm event. The spillways were designed to adequately pass the peak flow resulting from the 25-year, 6-hour precipitation event.

In Sections 7.4.2.2 and 7.4.4, the Permittee discusses the discharge of the sediment ponds. If the ponds were to discharge, the water would eventually enter the tributary to Miller Creek via overland flow. Each sediment pond is equipped with a riprap armored spillway (D50= 40 inches).

Discharge Structures

The application meets the Discharge Structures requirements of R645-301-744. The Permittee provides the design considerations in Section 3 of Appendix 7-5.

Each of the sediment ponds is equipped with a swale on its downstream side that serves as a spillway. The spillways were designed to safely discharge the peak flow resulting from the 25-year, 6-hour event as required by R645-301-743.300.

Utilizing the design storm event, the peak velocity of the outflow from the eastern pond was 2.01 feet per second (fps). With the peak velocity less than 5 fps, the flow is considered non-erosive and such erosion protection is not required. The peak velocity of the outflow from the western pond was calculated to be 3.24 cfs. Again, with a peak velocity below 5 fps, erosion protection is not required.

Findings:

The application meets the Hydrologic Information requirements of the State of Utah R645-Coal Mining rules.

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:

Hydrologic Reclamation Plan

The application meets the Hydrologic Reclamation Plan requirements of R645-301-760 and -761. The application provides a detailed reclamation plan in Section 5.40 of the plan. The future land-use of the site is for industrial use. The reclamation plan essentially focuses on rendering the site suitable/compatible for future industrial use.

Beginning on page 5-19 of the application, the Permittee outlines reclamation commitments. Components of the reclamation plan include: removal of any remnants of coal stockpiles, coal residue and coal processing structures and equipment. Stockpiled soil will be redistributed over the areas not intended for re-disturbance by the future site owner. Under the assumption that future uses of the property will require the existing components of the site, roads, parking areas, utilities, fencing, drainage control structures and the septic system will be left in place.

The sediment ponds and associated drainage ditches/diversions will be left in place for the future landowner.

It is anticipated that the final surface configuration of the site will be very similar to the operational phase configuration. No extensive site regarding is anticipated.

Findings:

The application meets the Hydrologic Reclamation Plan requirements of R645-301-760 and -761.

RECOMMENDATIONS:

The application should be approved at this time.

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