CHAPTER 5
ENGINEERING

5.10 Introduction

This chapter provides a discussion of general engineering aspects, an operation plan, a reclamation plan, design criteria, and performance standards related to the Wellington Dry-Coal Cleaning Facility. The existing and proposed facilities have been or will be designed, located, constructed, maintained, and reclaimed in accordance with the operation and reclamation plans.

It should be noted that this facility is used for coal cleaning and is not a coal mine. Thus, several of the sections in this chapter that refer to mining operations are not applicable and have been noted as such.

5.1.1 General Requirements

This permit application includes descriptions of the proposed coal cleaning and facility reclamation operations together with the appropriate maps, plans, and cross sections. Methods and calculations utilized to achieve compliance with the design criteria are also presented.

5.1.2 Certification

Where required by the regulations, cross sections and maps in this permit application have been prepared by or under the direction of, and certified by, qualified registered professional engineers or land surveyors. As appropriate, these persons were assisted by experts in the fields of hydrology, geology, biology, etc.

5.1.2.1 Cross Sections and Maps

Previously Mined Areas. There are no previously mined areas near the facility.
Surface Facilities. A general site map showing the locations of structures, coal cleaning equipment, conveyors, and piles in addition to surface drainage is shown on Plate 5-1. This map includes the locations of topsoil and coal material stockpiles, runoff control structures, and sedimentation ponds. Except for the sedimentation ponds, no other water treatment facilities exist at the site. Plate 5-1 also shows the locations of air pollution control equipment.

The following facilities or activities do not exist or occur within the permit area:

- Coal mining,
- Excess spoil,
- Durable rock fills,
- Storage/disposal of coal mine waste,
- Coal processing waste banks, dams, or embankments, and
- Disposal of non-coal (non-waste rock) waste

It should be noted that, since BRC Wellington ("BRCW") toll processes material received from off-site clients, some of this material may have been classified at those off-site operations as coal mine waste or coal processing waste. However, this material is received and processed by BRCW as coal. Prior to receipt within the permit area, BRCW will evaluate the material to ensure that it can be economically processed. If BRCW cannot economically process the material, the material will be rejected and not allowed on site. Material that is accepted by BRCW is processed to generate one of two (or both) products: high-quality coal and/or low-quality (low-BTU) coal. This coal is then shipped off site in accordance with contract requirements. None of the material processed or generated within the permit area is considered coal mine waste or coal processing waste.

Surface Configurations. The topography noted on Plate 5-1 is based on a survey of the site performed in September 2008. Site grading at the facility has been minimal, and there are a handful of material stockpiles as shown on Plate 5-1. Site reclamation is expected to involve only minor amounts of earthwork.
Hydrology. Certified maps and cross sections associated with the hydrology of the Wellington Dry-Coal Cleaning Facility area are provided in Chapter 7.

Geology. Certified maps and cross sections associated with the geology of the Wellington Dry-Coal Cleaning Facility area are provided in Chapter 6.

5.1.2.2 Plans and Engineering Designs

All plans and engineering designs presented in this permit application were prepared by or under the direction of and certified by a qualified registered professional engineer.

Excess Spoil. No excess spoil will be generated from the permit area.

Durable Rock Fills. No durable rock fills will exist in the permit area.

Coal Mine Waste. No coal mine waste will be stored in the permit area.

Impoundments. Two impoundments are present at the site – one in the southeast corner and one in the southwest corner (see Plate 5-1). They are intended to temporarily contain runoff from the disturbed areas of the site. They were designed and certified by a professional engineer using current, prudent, engineering practices.

Primary Roads. All roads within the permit area are considered primary roads as defined in R645-301-527.120. These roads have been certified by a professional engineer as meeting the requirements of R645-301-534.200 and R645-301-742.420 (see Appendix 5-1).

Variance from Approximate Original Contour. There has been no significant variance from the original contour at this facility. Thus, no variance from the approximate original contour of the site is being requested. Since the facility is located on land zoned for heavy industrial use, future industrial uses of the property will benefit from any site grading which has already been performed.
5.1.3 Compliance with MSHA Regulations and MSHA Approvals

5.1.3.1 Coal Processing Waste Dams and Embankments

No coal processing waste dams or embankments exist within the permit area.

5.1.3.2 Impoundments and Sedimentation Ponds

No impoundments or sedimentation ponds in the permit area meet the size criteria of 30 CFR 77.216(a).

5.1.3.3 Underground Development Waste, Coal Processing Waste, and Excess Spoil

No underground development waste, coal processing waste, or excess spoil is disposed of in the permit area.

5.1.3.4 Refuse Piles

There is no coal refuse stored in the permit area.

5.1.3.5 Underground Openings to the Surface

There are no underground openings within the permit area.

5.1.3.6 Discharges to Underground Mines

No discharges occur from the surface to underground mine workings in the permit area.

5.1.3.7 Surface Coal Mining and Reclamation Activities

No surface coal mining and reclamation activities occur in the permit area.
5.1.3.8 Coal Mine Waste Fires

No coal mine waste will be stored in the permit area. If any coal-related fires occur within the permit area, these will be reported immediately to MSHA and DOGM. Immediate remedial action will be taken as deemed necessary by BRCW to protect public health and safety as well as the environment. Following initial remedial efforts, a long-term plan will be formulated in discussion with MSHA and DOGM to extinguish any existing fires and prevent future fires.

5.1.4 Inspections

5.1.4.1 Excess Spoil

Excess spoil is not generated at the Wellington Dry-Coal Cleaning Facility.

5.1.4.2 Refuse Piles

No refuse piles will be located in the permit area.

5.1.4.3 Impoundments

Inspections of the sedimentation ponds associated with the Wellington Dry-Coal Cleaning Facility will be made at least quarterly. A report of inspection will be prepared by a qualified individual and maintained on site after each inspection.

No new impoundments are planned for construction at the site. If new impoundments are constructed, they will be inspected during and after construction in accordance with R645-301-514.300.
All sedimentation ponds associated with the Wellington Dry-Coal Cleaning Facility will be inspected annually by a registered professional engineer. A certified report will be prepared by a registered professional engineer and submitted to DOGM shortly after each inspection. This report will indicate whether or not the impoundment has been constructed and maintained as designed and in accordance with the approved plan and the R645 rules. The report will also include a discussion of any apparent instability, structural weakness or other hazardous conditions, depth and elevation of any impounded waters, existing storage capacity, existing or required monitoring procedures and instrumentation, and any other aspects of the structure affecting stability, as noted during the inspection. A copy of the inspection report will be maintained at the facility office.

No impoundments that are subject to 30 CFR 77.216 currently exist or are planned within the permit area. If impoundments subject to 30 CFR 77.216 are constructed in the future, these impoundments will be inspected in accordance with 30 CFR 77.216-3.

5.1.5 Reporting and Emergency Procedures

5.1.5.1 Slides

Due to the relatively level plant site, the potential for slides is essentially nonexistent. However, if a slide occurs within the permit area that may have a potential adverse effect on the public, property, health, safety, or the environment, BRCW will notify DOGM by the fastest available means following discovery of the slide and will comply with any remedial measures required by DOGM.

5.1.5.2 Impoundment Hazards

If any examination or inspection of an impoundment discloses that a potential hazard is associated with that impoundment that may have an adverse effect on the public, property, health, safety, or the environment, the person who examined the impoundment will promptly inform DOGM of the finding and of the emergency procedures formulated for public protection and
remedial action. If adequate procedures cannot be formulated or implemented, DOGM will be notified immediately.

5.1.5.3 Temporary Cessation of Operations

Prior to a temporary cessation of operations within the permit area that will last for a period of 30 days or more or as soon as it is known that a temporary cessation will extend beyond 30 days, BRCW will submit to DOGM a notice of intention to cease or abandon operations. This notice will include the following:

- A statement of the exact tonnage of coal which has been cleaned by the facility prior to cessation of operations,
- A discussion of the extent and kind of reclamation activities which will have been accomplished prior to cessation of operations, and
- An identification of the regrading, revegetation, environmental monitoring, and water treatment activities that will continue during the temporary cessation.

During the temporary cessation, BRCW will support and maintain all surface access and will also secure all facilities. The exterior fence surrounding the operations will be maintained and all gates will be closed and locked to prevent unauthorized access to the site by humans and animals, including access to subsurface bins and reclaim tunnels.

5.20 Operation Plan

5.2.1 General

5.2.1.1 Cross Sections and Maps

Previously Mined Areas. There are no active, inactive, or abandoned underground workings, including openings to the surface, within the permit and adjacent areas. No previously surface-mined areas exist within the permit area.
Existing Surface and Subsurface Facilities and Features. Plate 5-1 depicts the following information:

- The location of surface and subsurface features within, passing through, or passing over the permit area, including major electric transmission lines and pipelines (no agricultural drainage tile fields exist within the permit area),
- Each public road located in or within 100 feet of the permit area, and
- The location of each sedimentation pond within the permit area (there are no permanent water impoundments, coal processing waste dams, or coal processing embankments within the permit area).

Buildings located in the permit area are noted on Plate 5-1, while those within 1,000 feet of the permit area are noted on Figure 5-1, including an identification of the current use of the buildings.

Landowner, Right-of-Entry, and Public Interest. Figure 5-2 shows the boundaries of lands and the names of present owners of record of those lands, both surface and subsurface, included in or contiguous to the permit area. BRCW is the owner of all lands within the permit area, as indicated on the legal description provided on the warranty deeds in Appendix 1-3. The permit area consists of 30 fee acres. No Federal or State land exists within the permit area. As the owner of the property, BRCW has a legal right to operate on all of the lands within the permit area. Operations are conducted within 100 feet of a public road as indicated on Plate 5-1.

Mining Sequence and Planned Subsidence. No mining will occur at this facility. Therefore, no subsidence is anticipated.

Land Surface Configuration. Only minor grading of the site has occurred from its pre-operations condition. Original site elevations across the facility dropped approximately 30 feet from north to south, resulting in an average slope of approximately 2% (see Plate 5-1).

Surface Facilities. Plate 5-1 shows the locations of the following surface facilities.
BRC Wellington LLC
Dry-Coal Cleaning Facility

- Buildings, utility corridors, and facilities to be used,
- Coal weighing, unloading, separating, stacking, and loading facilities,
- Air emissions controls,
- Sedimentation ponds,
- Roads, and
- Stockpile areas.

The fenced area shown on Plate 5-1 is the same as the land area for which a performance bond or other guarantee has been posted.

It should be noted that the size and location of coal stockpiles shown on Plate 5-1 are correct based on the survey date of September 2008. However, these piles are dynamic in their configuration, changing in size based on processing requirements. Although the pile sizes may change from time to time, the piles will remain generally as located on Plate 5-1.

The location of the topsoil stockpiles are shown on Plate 5-1. No coal processing waste banks, dams, or embankments exist in the permit area. Similarly, no spoil or coal preparation waste sites exist in the permit area.

General refuse that is generated on site is stored in dumpsters at the location indicated on Plate 5-1. This waste consists predominantly of paper, cardboard, and miscellaneous garbage. This non-hazardous, non-toxic, non-coal, non-waste rock refuse is disposed of periodically at the East Carbon Development Company landfill.

**Transportation Facilities.** Roads that have been constructed, used, or maintained by BRCW in the permit area for the mining and reclamation operations are shown on Plate 5-1. All of the conveyors in the permit area are also shown. Drainage structures associated with the roads are discussed in Section 7.5.2.2. A standard road cross section is provided on Figure 5-3.

As indicated on Plate 5-1, roads within the permit area consist of the following:
These roads are all constructed with the typical cross section shown in Figure 5-3. Road widths vary from 12 to 40 feet within the permit area, depending on the type of vehicle and purpose of the road. The gradient of the access road is approximately 4%. Gradients of the remaining roads are generally 1 to 2% except in short reaches to access loading/unloading areas (where gradients of up to 5% are achieved). The road surface throughout the permit area consists of minus 2-inch material that has been compacted in place. No significant cuts were made during construction of any of the roads. Fill embankments, constructed of the same materials used for the road surface, are located primarily along the Dump bin road and the Loading silo road, as shown on Plate 5-1. The locations of culverts and drainage ditches associated with the permit-area roads are also noted on Plate 5-1.

5.2.1.2 Signs and Markers

Permit Identification Signs. A permit identification sign has been placed so that it is visible from where the facility access road joins Ridge Road. The sign measures 4 feet by 8 feet and contains the following information:

- The name, business address, and telephone number of the permittee and
- The permanent program permit number as obtained from DOGM.

The sign will be retained and maintained until after the release of all bonds for the permit area.
Perimeter Markers. The perimeter of the facility (disturbed area boundary) is marked with a fence.

Buffer Zone Markers. Since the facility is not located near a perennial or intermittent stream channel, there are no stream buffer zone markers at the site.

Topsoil Markers. A marker will be placed on each topsoil stockpile indicating that it contains topsoil.

5.2.2 Coal Recovery

Coal recovery at the Wellington Dry-Coal Cleaning Facility is performed using air and vibratory methods to derive useable grades of coal from high-ash coal delivered from nearby coal mining operations.

5.2.3 Mining Methods

No mining occurs at this facility. This is a dry-coal cleaning facility in which coal is brought from off-site mine sources and processed into a value-added product.

5.2.4 Blasting and Explosives

Blasting and explosives will not be stored or used at the site.

5.2.5 Subsidence

There will be no underground mining or subsidence at this facility. Hence, no presubsidence survey will be conducted, 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.
5.2.6 Mine Facilities

Although the Wellington Dry-Coal Cleaning Facility is not a mine, it contains coal processing equipment that is detailed in the following sections.

5.2.6.1 Mine Structures and Facilities

The Wellington Dry-Coal Cleaning Facility was constructed from July 2005 to January 2006. The facility layout is noted on Plate 5-1. Table 5-1 lists the existing structures at the facility. All structures are actively maintained and are in good functional condition. All of the structures were constructed specifically for use as coal cleaning facilities, have been used and maintained since construction, and are considered adequate to meet the requirements of R645-301.

Selected structures and facilities will be removed following operations in accordance with the reclamation plan discussed in Section 5.40.

5.2.6.2 Utility Installation and Support Facilities

Utility Installations. All operations will be conducted to prevent damage, destruction, or disruption of services provided by electric lines, telephone transmission stations, water lines, and sewer lines which pass over, under, or through the permit area. Since there is no planned subsidence on site, all utilities are located within non-subsidence zones.

Support Facilities. Support facilities at the Wellington Dry-Coal Cleaning Facility will be operated in accordance with the permit issued for the facility. Support facilities will be located, maintained, and used in a manner that:

- Prevents or controls erosion and siltation, water pollution, and damage to public or private property,
To the extent possible, using the best technology currently available, minimizes damage to fish, wildlife, and related environmental values, and

- Minimizes additional contributions of suspended solids to stream flow or runoff outside the permit area.

All support facilities will be removed following operations in accordance with the reclamation plan discussed in Section 5.40.

**Water Pollution Control Facilities.** Water pollution control facilities at the Wellington Dry-Coal Cleaning Facility consist of two sedimentation ponds and the appurtenant structures associated with them. Also, a septic system handles sanitary waste from the site office building. The sedimentation ponds and the septic system will remain intact for the next land user following operations. A discussion of the ability of these ponds to meet the permanent impoundment criteria of R645-301-733.220 through 733.226 is provided in Section 7.3.3.2 of this permit application. Site reclamation is discussed in Section 5.40.

The sedimentation ponds and appurtenant structures have been constructed as discussed in Chapter 7 and are used and maintained as discussed in Section 5.3.3.7.

**5.2.7 Transportation Facilities**

**5.2.7.1 Road Classification**

The access road that leads to the facility from Ridge Road is used to transport coal and is classified as a primary road. Interior roads at the facility are also used to transport coal and classified as primary.
5.2.7.2 Description of Transportation Facilities

No surface conveyors (other than those used to transfer and temporarily stockpile coal and byproduct) or rail systems have been or will be constructed, used, or maintained within the permit area.

**Road Specifications.** Cross sections and profiles of roads that are used or maintained by BRCW are provided in Figure 5-3. Information regarding road drainage is presented in Chapter 7. Additional information regarding permit-area roads is provided in Section 5.2.1.1.

Ridge Road is a paved county road that extends from State Highway 10, just south of Price, Utah to U.S. Highway 191 in Wellington, Utah (a distance of approximately 7 miles). The facility loop road encircles the facility which includes a broad area in which materials are stockpiled (see Plate 5-1). Once full operations commence and are sustained, the loop road will be paved pursuant to the Utah Division of Air Quality Approval Order for the operation.

Roads within the permit area are maintained and repaired as needed using a front-end loader to remove wash-board bumps and fill potholes. This maintenance work is performed at least once per month (more often, if needed). At least once each year a grader is brought on site to rework the road surfaces as needed and clean roadside ditches. After the loop road is paved, maintenance of this surface will include repairs to potholes and other defects that affect the normal operability of the road. This maintenance will occur as needed to ensure the safety and proper functioning of trucks and equipment. Any roads within the permit area that are damaged by a catastrophic event, such as a flood or earthquake, will be repaired as soon as practical after the damage has occurred.

**Drainageway Alterations.** No alterations or relocations of natural drainageways are required within the permit area to accommodate the needs of transportation systems.
5.2.8 Handling and Disposal of Coal, Excess Spoil, and Coal Mine Waste

5.2.8.1 Coal Handling and Transportation

No coal is mined at the site. All coal is trucked to the site, where it is weighed, cleaned, temporarily stockpiled, and trucked off site to its end-use destination.

5.2.8.2 Overburden

No overburden is removed, handled, stored, or transported within the permit area.

5.2.8.3 Spoil, Coal Processing Waste, Non-Coal Waste, and Mine Development Waste

Excess Spoil. No spoil is generated at the Wellington Dry-Coal Cleaning Facility.

Coal Processing Waste. As indicated in Section 5.1.2.1, BRCW processes all material on site as coal, even if some of this material was classified by client facilities as coal processing waste. Hence, this material is considered a product and not a waste. The facility is operated so that all of the coal cleaning products are marketable either as high-quality coal or low-quality coal. This is accomplished by blending various grades of coal so that they satisfy the ash requirements of its customers. Thus, the plant will not generate coal processing waste.

Non-Coal Mine Waste. Non-coal waste generated in the permit area is temporarily stored in dumpsters and is regularly collected to be disposed of at the East Carbon Development Company landfill. No non-coal waste is disposed of within the permit area. No non-coal waste that is defined as hazardous in 40 CFR 261 is currently generated at the facility. If such waste is generated in the future, it will be handled in accordance with the requirements of Subtitle C of the Resource Conservation and Recovery Act and any implementing regulation.
Underground Development Waste. No underground development waste is generated at the Wellington Dry-Coal Cleaning Facility.

Minimization of Acid, Toxic, and Fire Hazards. The sources of coal at the Wellington Dry-Coal Cleaning Facility are located in the Book Cliffs, Wasatch Plateau, and Emery Coal Fields, which historically have not produced acid or toxic coals. Furthermore, coal is only temporarily stored at this facility, the native soils in the permit area are alkaline (see Section 2.2.2.2), and sediment and precipitation runoff is controlled by drainage ditches and sedimentation ponds. Thus, hazards due to acid or toxic coal are either non-existent or greatly minimized by the lack of deleterious materials in the parent product, the temporary nature of on-site storage prior to processing, and the alkaline nature of the native soils at the site that serves to neutralize the effects of potential acidity.

Because coal that is cleaned in the permit area is only temporarily stored at the facility, there is no significant potential for this coal to spontaneously combust. Any coal fires that do occur will be handled as outlined in Section 5.1.3.8. No waste materials that constitute a fire hazard (i.e., grease, lubricants, paints, and flammable liquids) are accumulated where the temporary stockpiles are located.

5.2.8.4 Dams, Embankments, and Impoundments

No dams, embankments, or impoundments are used for the handling or disposal of coal, overburden, excess spoil, or coal mine waste in the permit area.

5.2.9 Management of Mine Openings

There are no mine openings at the Wellington Dry-Coal Cleaning Facility.
5.30 Operational Design Criteria and Plans

5.3.1 General

This application contains a general plan for each sedimentation pond within the permit area. No other water impoundments or coal processing waste banks, dams, or embankments exist in the permit area. Since subsidence will not occur at the site, and no underground mining has occurred beneath the site, no damage will result to facility structures due to subsidence.

5.3.2 Sediment Control

Sediment-control measures for the Wellington Dry-Coal Cleaning Facility are described in Section 7.3.2. The sedimentation structures at the facility consist of two sedimentation ponds on the southeast and southwest corners of the yard, and a system of drainage ditches that report to them. Runoff-control structures have been designed to convey runoff in a non-erosive manner.

In addition to the use of sedimentation ponds and properly designed runoff-control facilities, sediment yields in the permit area are minimized by disturbing the smallest practicable area during the construction or modification of surface facilities, and contemporaneously reclaiming areas suitable for such reclamation.

5.3.3 Impoundments

5.3.3.1 Slope Stability

Except for small berms along the crests, the sedimentation ponds are constructed below grade. Slope stability analyses are, therefore, not necessary.

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5.3.3.2 Foundation Considerations

The sedimentation ponds are constructed below grade in stable, natural soil. Cross sections of the sedimentation ponds are presented in Chapter 7 of this document.

5.3.3.3 Slope Protection

The outslopes and inslopes of the sedimentation ponds are periodically inspected for signs of surface erosion. The inlets and outlets of the ponds are armored with rip rap.

5.3.3.4 Embankment Faces

Sedimentation pond inslopes will be revegetated to protect erosion. Riprap has also been placed to protect pond slopes and embankments near the discharge structures.

5.3.3.5 Highwalls

No highwalls are located within the permitted boundary.

5.3.3.6 MSHA Criteria

No sedimentation ponds in the permit area meet the size criteria of 30 CFR 216(a).

5.3.3.7 Pond Operation and Maintenance Plans

Each sedimentation pond is designed in accordance with R645-301-740. Details of these designs are presented in Chapter 7.

The sedimentation ponds are operated as containment structures, with spillways to discharge water during a storm that exceeds the design capacity. Excess water following a runoff event is held in the ponds until the suspended sediment settles. Water then evaporates, soaks into...
the ground, or is decanted using a portable pump. Water that is pumped from the ponds will be used for dust suppression at the site.

Inspections of the sedimentation ponds are conducted on a quarterly basis (see Section 5.1.4.3). Maintenance that is required to keep the ponds in good working condition is performed on an as-needed basis.

Sediment is removed from the ponds when it accumulates to 60 percent of the design sediment storage volume. If coal collects in the ponds, this coal will be processed in the coal cleaning facility. Non-coal sediment will be blended with the byproduct material.

5.3.4 Roads

5.3.4.1 Location, Design, Construction, Reconstruction, Use, Maintenance, and Reclamation

Control of Damage to Public or Private Property. All roads used by BRCW were designed in accordance with applicable county and facility-use requirements. By designing according to these standards, damage to public or private property has been minimized.

Road Surfacing. The surface of the facility access road from Ridge Road to the office trailer and the loop road within the permit area is currently surfaced with gravel and is maintained to minimize ruts and pot holes (see Section 5.2.7.2). Once full operations have commenced and are sustained, all roads within the facility will be paved. No acid- or toxic-forming materials have been or will be used in the road surfaces.

Slope Stability. There are two road embankments within the permit area (the dump bin road and the loading silo road). No road slope stability issues have been noted at the site. Given the low profile of these structures and their historic stability, no slope stabilization embankments are considered necessary.
5.3.4.2 Environmental Protection and Safety

Safety and environmental protection were primary concerns during the design and construction of the access road. The grade, width, and surface materials used for the roads were selected to be appropriate for the planned duration and use of the roads.

5.3.4.3 Primary Roads

All facility roads have been designed, constructed, and will be maintained to meet the requirements of Utah Administrative Rules R645-301-358, R645-301-527.100, R645-301-527.230, R645-301-534.100, R645-301-534.200, R645-301-542.600, R645-301-542.600, and R645-301-762. Furthermore, the roads have the following characteristics:

- They are located on a stable surface,
- They have been constructed with a sufficiently durable surface for the traffic volume and vehicle speeds on the road,
- They are routinely maintained, and
- Culverts have been designed, constructed, and are maintained to withstand the loads imparted by the vehicle traffic on the road.

5.3.5 Spoil

No spoil is generated in the permit area.

5.3.6 Coal Mine Waste

Since there is no coal mining at this facility, there is no generation of coal mine waste. The Wellington Dry-Coal Cleaning Facility has been designed to operate so that all material brought on site is converted into a marketable product. Therefore, this material is considered a product, not a
waste. This is accomplished by blending various grades of coal products for use at client locations. Although some of the material that is temporarily stockpiled at the site may have been considered coal processing waste at the off-site location from which it is shipped, the material is considered coal prior to receipt on site by BRCW (see Section 5.1.2.1). Since coal storage piles in the permit area are frequently disturbed, no compaction is necessary.

5.3.7 Regraded Slopes

Given the relatively flat nature of the site, reclamation of this facility will not involve significant regrading of slopes.

5.40 Reclamation Plan

5.4.1 General

As indicated in Section 2.2.2.2 of this application, the soil at the BRCW facility is poorly suited for agricultural use. Furthermore, native vegetation in the area is poorly suited for rangeland use of the site (see Section 3.2.1). Hence, in accordance with R645-301-413.120, rather than restoring the land to its pre-operations use it will be restored to a higher or better post-operations industrial land use consistent with the current zoning of the site and adjacent areas. Since the future owner of the site has not yet been identified, the specific industrial use of the site cannot yet be established. This use will, of necessity however, be consistent with the land-use zoning of the site or such variances to that zoning as permitted by the zoning authority at the time. The extent of site restoration following operations will be determined in consultation with the future land owner. At the end of BRCW operations at the site, BRCW will provide the following to DOGM:

- The name of the entity responsible for post-mining land use,
- A statement from that entity identifying their needs for the property, and
- A right of entry agreement between BRCW and the site user if other than BRCW.

Alternatively, if this information cannot be provided, BRCW will provide DOGM with a clear and concise description of methods to be used for reclamation of the site.
Under the industrial post-operation land-use scenario, the extent of future site reclamation is not currently known. However, the following minimum conditions will be met at the end of BRCW operations at the site:

- All coal product piles or other created stockpiles will be cleaned up to a reasonable level and the site will be graded to the extent required by the future land-owner agreement,
- Permanent structures will be removed unless their continued presence is consistent with the post-operations land use, and
- No physical hazards (e.g., exposed wiring, trip/fall/trap hazards, etc.) will be left in place.

For the sake of developing a reclamation cost estimate, it is assumed in this permit application that the 9.7-acre area south of the facility loop road will be revegetated, with the runoff- and sediment-control structures being retained for use by the future landowner. This area is noted on Plate 5-2. It is also assumed for the sake of reclamation cost estimating that all surface structures will be removed from the remaining areas and, given the economic value of the material, that all coal will have been sold and removed from the area prior to reclamation. As noted in several sections of this Chapter, no coal mine waste exists or is generated at the site. It is furthermore assumed that all coal, trash, and toxic materials will be removed or reclaimed and the ground will be regraded upon site closure as indicated on Plate 5-2. Items assumed to remain following closure of the site include site roads, parking areas, utilities, the septic system, drainage-control structures, the exterior fence, and ramps (see Plate 5-2).

5.4.1.1 Commitment

Upon the permanent cessation of operations at the Wellington Dry-Coal Cleaning Facility, BRCW will reclaim the site so that it is compatible with future industrial uses for which the property is zoned. This will include removal of remaining coal stockpiles and coal processing structures and equipment. Stockpiled topsoil will be redistributed over the 9.7-acre area south of the facility loop road and this area will be revegetated using the approved seed mix. Since future
uses of the property are expected to benefit from existing site improvements, much of the site, including roads, parking areas, ramps, utilities, fencing, drainage control structures, and the septic system will be left in place.

5.4.1.2 Surface Coal Mining and Reclamation Activities

No surface coal mining and reclamation activities will be conducted in the permit area.

5.4.1.3 Underground Coal Mining and Reclamation Activities

No underground coal mining and reclamation activities will be conducted in the permit area.

5.4.1.4 Environmental Protection Performance Standards

The plan presented herein is designed to meet the requirements of R645-301 and the environmental protection performance standards of the State Program.

5.4.2 Narratives, Maps, and Plans

5.4.2.1 Reclamation Timetable

A timetable for the completion of each major step in the reclamation plan is presented in Table 5-2.

5.4.2.2 Plan for Backfilling, Soil Stabilization, Compacting, and Grading

Since reclamation is intended to restore the site for future industrial use, no significant backfilling, soil stabilization, compacting, or grading will occur. Any remaining coal piles will be removed and either sold as a product or returned to the original owner. After the coal processing equipment is removed, stockpiled topsoil will be redistributed over the disturbed areas not intended...
for re-disturbance by the future site owner and these areas will be revegetated using the approved seed mix. The sedimentation ponds and appurtenant ditches will be left in place for the next landowner. A discussion of the ability of these ponds to meet the permanent impoundment criteria of R645-301-733.220 through 733.226 is provided in Section 7.3.3.2 of this permit application.

As has been mentioned previously, the site needs of an as-yet undefined future landowner have not yet been determined. It is assumed for bonding purposes that the roadways and their associated fill areas, as well as the runoff control ditches and sedimentation ponds, will be needed to support the site uses of future landowner following closure of the BRCW facility. If the roadways, fill areas, bin/reclaim tunnels, and drainage structures are not needed by the future landowner, the responsibility to remove these structures will be subject of contract arrangements between BRCW and the future landowner.

5.4.2.3 Final Surface Configuration Maps and Cross Sections

It is intended that the final surface configuration will be very similar to the current site. The site office and processing structures will be removed. However, no extensive site regrading is anticipated. The anticipated final surface configuration is shown on Plate 5-2.

5.4.2.4 Removal of Temporary Structures

Coal processing equipment and structures will be removed during reclamation. To the extent possible, these structures and facilities will be salvaged. Those materials requiring off-site disposal will be placed in a licensed landfill. Final decisions regarding salvage or disposal of structures and equipment will be made just prior to reclamation following an assessment of the salvageability of the structures and equipment.

To support the continuing industrial use of the site, several structures will be left in place. These structures include the following:
• Septic system,
• Roads and parking areas,
• Truck dump and loadout hopper embankments,
• Diversions, culverts, and sedimentation ponds, and
• Perimeter fence

5.4.2.5 Removal of Sedimentation Ponds

The sedimentation ponds will be left in place for the future landowner. A discussion of the ability of these ponds to meet the permanent impoundment criteria of R645-301-733.220 through 733.226 is provided in Section 7.3.3.2 of this permit application.

5.4.2.6 Roads

All roads and parking areas within the permit area will be left in place for the future landowner.

5.4.2.7 Final Abandonment of Mine Openings and Disposal Areas

There are no mine openings or disposal areas within the permit area.

5.4.2.8 Estimated Cost of Reclamation

The estimated cost to reclaim the Wellington Dry-Coal Cleaning Facility is provided in Chapter 8. Estimated quantities of materials involved in reclamation are also provided in Chapter 8.

5.50 Reclamation Design Criteria and Plans

5.5.1 Casing and Sealing of Underground Openings

There are no underground openings within the permit area.
5.5.2 Permanent Features

5.5.2.1 Small Depressions

Site reclamation will be performed to restore the facility for future industrial use. Roads and diversions will be left in place. Due to the low slope angles present at the site and the presence of roads and diversions to intercept surface runoff, small depressions will not be necessary.

5.5.2.2 Permanent Impoundments

No coal or coal waste impoundments exist within the permitted boundary. The two sedimentation ponds will be left intact for the future landowner. A discussion of the ability of these ponds to meet the permanent impoundment criteria of R645-301-733.220 through 733.226 is provided in Section 7.3.3.2 of this permit application.

5.5.3 Backfilling and Grading

Plans for backfilling and grading of the site upon reclamation have been presented in Section 5.4.2.2. This plan was designed to comply with the applicable requirements of R645-301-500 and R645-301-700. As indicated in Section 5.4.2.2, backfilling and grading operations will be conducted in a controlled manner.

5.5.3.1 Disturbed Area Backfilling and Grading

Approximate Original Contour. The disturbed area will not be significantly altered from the approximate original contour.

Elimination of Highwalls, Spoil Piles, and Depressions. No highwalls or spoil piles exist at the site. Two depressions that serve as sedimentation ponds will be left intact for the future
landowner. A discussion of the ability of these ponds to meet the permanent impoundment criteria of R645-301-733.220 through 733.226 is provided in Section 7.3.3.2 of this permit application.

**Slope Stability.** No significant slopes exist within the permitted boundary that will require regrading.

**Erosion and Water Pollution.** Existing sediment-control structures will be left in place to minimize water pollution and erosion. Additional water-quality concerns do not exist at the site (see Chapter 7).

**Post-Mining Land Use.** The disturbed area will be backfilled and regraded in a manner that supports the post-mining industrial land use.

### 5.5.3.2 Spoil and Waste

**Spoil.** No spoil is generated within the permit area.

**Refuse Piles.** No refuse piles exist within the permit area.

**Coal Processing Waste.** No coal processing waste exists within the permit area. It is possible that small quantities (less than 1,500 tons) of coal will exist on site prior to reclamation. If so, this coal will be sold or returned to the original owner prior to reclamation of the site.

### 5.5.3.3 Exposed Coal Seams, Acid- and Toxic-Forming Materials, and Combustible Materials

**Exposed Coal Seams.** No coal seams will be exposed as part of this operation.

**Acid- and Toxic-Forming Materials.** No acid-forming materials exist at the site.
**Combustible Materials.** No combustible materials will be exposed as part of coal cleaning operations. All combustible materials that are used or produced during operations will be disposed of off site at a proper disposal facility.

5.5.3.4 Cut-and-Fill Terraces

No cut and fill terraces are present at the facility.

5.5.3.5 Highwalls From Previously Mined Areas

No highwalls exist within the permit area.

5.5.3.6 Approximate Original Contour

The facility has been constructed in a relatively flat area, part of which was previously disturbed. Only minor alterations have been made to the original contour to level the site and to achieve proper drainage of storm water runoff. Since the site remains relatively level, the existing contour approximates the original contour. In addition, the site will be used for industrial purposes following reclamation of the facility; therefore, no substantial regrading of the site is needed during reclamation.

5.5.3.7 Backfilling and Grading - Thin Overburden

No surface coal mining and reclamation activities involving thin overburden occur within the permit area.

5.5.3.8 Backfilling and Grading - Thick Overburden

No surface coal mining and reclamation activities involving thick overburden occur within the permit area.
5.5.3.9 Regrading of Settled and Revegetated Fills

No regrading of settled and revegetated fills is anticipated in the permit area.

5.60 Performance Standards

Coal mining and reclamation operations at the Wellington Dry-Coal Cleaning Facility will be conducted in accordance with the approved permit and the requirements of R645-301-510 through R645-301-553.
TABLE 5-1
Permit Area Structures

<table>
<thead>
<tr>
<th>Structure(a)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Truck Scale (TS-1)</td>
</tr>
<tr>
<td>Truck Scale (TS-2)</td>
</tr>
<tr>
<td>Truck Dump Hopper</td>
</tr>
<tr>
<td>Blending Hopper</td>
</tr>
<tr>
<td>Plant Feed Hopper</td>
</tr>
<tr>
<td>Alternate Truck Loading Hopper</td>
</tr>
<tr>
<td>Radial Stacker Feed Conveyor (C-01)</td>
</tr>
<tr>
<td>Plant Feeder Conveyor (C-02)</td>
</tr>
<tr>
<td>Screen Feed Conveyor (C-03)</td>
</tr>
<tr>
<td>Fines Feed Conveyor (C-04)</td>
</tr>
<tr>
<td>Coarse Feed Conveyor (C-05)</td>
</tr>
<tr>
<td>By-Product Conveyor (C-06)</td>
</tr>
<tr>
<td>Product Conveyor (C-07)</td>
</tr>
<tr>
<td>200 Ton Bin Feed Conveyor</td>
</tr>
<tr>
<td>Self-Cleaning Belt Magnet</td>
</tr>
<tr>
<td>Screen with Support Structure</td>
</tr>
<tr>
<td>Crusher with Support Structure</td>
</tr>
<tr>
<td>Air Jigs with Fans and Support Structure</td>
</tr>
<tr>
<td>Bag Houses with Fans</td>
</tr>
<tr>
<td>Collected Dust Transport System</td>
</tr>
<tr>
<td>Raw Feed Radial Stacker (RS-01)</td>
</tr>
<tr>
<td>Product Radial Stacker (RS-02)</td>
</tr>
<tr>
<td>By-Product Radial Stacker (RS-03)</td>
</tr>
<tr>
<td>Diverter Gate</td>
</tr>
<tr>
<td>200 Ton Bin</td>
</tr>
<tr>
<td>Loading Chutes with Flow Control Gates</td>
</tr>
</tbody>
</table>

(a) See Plate 5-1 for location within the facility
**TABLE 5-2**

Reclamation Timetable

<table>
<thead>
<tr>
<th>Activity</th>
<th>Approximate Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stockpile residual coal-bearing materials on site</td>
<td>½ week</td>
</tr>
<tr>
<td>Process residual coal-bearing materials in facility</td>
<td>2 weeks</td>
</tr>
<tr>
<td>Remove coal and process byproduct</td>
<td>½ week</td>
</tr>
<tr>
<td>Remove coal-processing equipment</td>
<td>4 weeks</td>
</tr>
<tr>
<td>• Conveyors C-1 through C-8</td>
<td></td>
</tr>
<tr>
<td>• Radial stackers RS-1 through RS-3</td>
<td></td>
</tr>
<tr>
<td>• Air jig/baghouse</td>
<td></td>
</tr>
<tr>
<td>• Crusher</td>
<td></td>
</tr>
<tr>
<td>• Truck dump</td>
<td></td>
</tr>
<tr>
<td>• Silo</td>
<td></td>
</tr>
<tr>
<td>• Plant feed hopper</td>
<td></td>
</tr>
<tr>
<td>• Alternate loadout hopper</td>
<td></td>
</tr>
<tr>
<td>• Truck scales TS-1 and TS-2</td>
<td></td>
</tr>
<tr>
<td>Remove remaining structures to be retained</td>
<td>1 week</td>
</tr>
<tr>
<td>Grade minor areas and spread topsoil</td>
<td>½ week</td>
</tr>
<tr>
<td>Revegetate regraded areas</td>
<td>½ week</td>
</tr>
<tr>
<td>APPROXIMATE TOTAL TIME</td>
<td>9 weeks</td>
</tr>
</tbody>
</table>
APPENDIX 5-1

Road Certification
FIGURE 5–3. STANDARD ROAD CROSS-SECTION

DRAINAGE DITCH CUT WITH GRADER

HAUL ROAD

ROAD BASE

PLAN VIEW

NTS

SECTION

NTS
APPENDIX 5-1

Road Certification
January 14, 2008

Ms. Gina Rau  
Environmental Manager  
COVOL Engineered Fuels, LC  
10653 South River Front Parkway, Suite 300  
South Jordan, Utah 84095  

Subject: Wellington Dry-Coal Cleaning Facility  
Road Certification  

Dear Ms. Rau:

I have examined the roadways associated with the Wellington Dry-Coal Cleaning Facility of COVOL Engineered Fuels. Based on my field evaluation and understanding of operations at the site, it is my opinion that the roadways, as constructed, provide adequate environmental protection and safety appropriate for their planned life and use. If the type and size of equipment that is typically used at the site is operated in a safe manner, it is my opinion that the roadway grades, widths, and surface materials will adequately serve the facility’s needs.

It is further my opinion that the roadways have been constructed to provide adequate drainage control through the use of ditches and culverts. I have reviewed the hydrologic calculations associated with these structures and believe that their design is sufficient to pass the peak runoff safely from the 100-year, 6-hour precipitation event.

Based on my review, I hereby certify that the roads meet the requirements of R645-301-534.200 and R645-301-742.420.

Please contact me if you have any questions.

Sincerely,

[Signature]

Richard B. White, P.E.  
President  
EarthFax Engineering, Inc.

INCORPORATED  
August 31, 2009  
Div. of Oil, Gas & Mining