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EarthFax

June 15, 2017

Daron Haddock
Utah Division of Oil, Gas and Mining
1594 West North Temple
Suite 1210
Salt Lake City, Utah 84114-5801

Submitted via email to: daronhaddock@utah.gov
stevechristensen@utah.gov
suzannesteab@utah.gov

Subject: Wellington Dry-Coal Cleaning Facility
Response to Division mid-term review comments
Task #5316

Dear Daron:

At the request of BRC Wellington, I am pleased to submit electronic copies of changes to the Mining and Reclamation Plan for the Wellington Dry-Coal Cleaning Facility. These changes, which are accompanied by the required C1 and C2 Forms, were made to address comments resulting from the recent mid-term permit review by the Division of Oil, Gas and Mining.

Please contact me or Kyle Edwards (435-613-1631) if you have any questions regarding this submittal. Thank you for your assistance in this process.

Sincerely,

Richard B. White, P.E.
Consulting Civil and Environmental Engineer
EarthFax Engineering Group, LLC

APPLICATION FOR COAL PERMIT PROCESSING

Permit Change New Permit Renewal Exploration Bond Release Transfer

Permittee: BRC Wellington, LLC

Mine: Wellington DryCoal Cleaning Facility

Permit Number: C/007/0045

Title: Response to mid-term review, Task ID 5316

Description, Include reason for application and timing required to implement:

Response to DOGM comments related to the mid-term review

Instructions: If you answer yes to any of the first eight (gray) questions, this application may require Public Notice publication.

- Yes No 1. Change in the size of the Permit Area? Acres: _____ Disturbed Area: _____ increase decrease.
- Yes No 2. Is the application submitted as a result of a Division Order? DO# _____
- Yes No 3. Does the application include operations outside a previously identified Cumulative Hydrologic Impact Area?
- Yes No 4. Does the application include operations in hydrologic basins other than as currently approved?
- Yes No 5. Does the application result from cancellation, reduction or increase of insurance or reclamation bond?
- Yes No 6. Does the application require or include public notice publication?
- Yes No 7. Does the application require or include ownership, control, right-of-entry, or compliance information?
- Yes No 8. Is proposed activity within 100 feet of a public road or cemetery or 300 feet of an occupied dwelling?
- Yes No 9. Is the application submitted as a result of a Violation? NOV # _____
- Yes No 10. Is the application submitted as a result of other laws or regulations or policies?
Explain: _____
- Yes No 11. Does the application affect the surface landowner or change the post mining land use?
- Yes No 12. Does the application require or include underground design or mine sequence and timing? (Modification of R2P2)
- Yes No 13. Does the application require or include collection and reporting of any baseline information?
- Yes No 14. Could the application have any effect on wildlife or vegetation outside the current disturbed area?
- Yes No 15. Does the application require or include soil removal, storage or placement?
- Yes No 16. Does the application require or include vegetation monitoring, removal or revegetation activities?
- Yes No 17. Does the application require or include construction, modification, or removal of surface facilities?
- Yes No 18. Does the application require or include water monitoring, sediment or drainage control measures?
- Yes No 19. Does the application require or include certified designs, maps or calculation?
- Yes No 20. Does the application require or include subsidence control or monitoring?
- Yes No 21. Have reclamation costs for bonding been provided?
- Yes No 22. Does the application involve a perennial stream, a stream buffer zone or discharges to a stream?
- Yes No 23. Does the application affect permits issued by other agencies or permits issued to other entities?

Please attach four (4) review copies of the application. If the mine is on or adjacent to Forest Service land please submit five (5) copies, thank you. (These numbers include a copy for the Price Field Office)

I hereby certify that I am a responsible official of the applicant and that the information contained in this application is true and correct to the best of my information and belief in all respects with the laws of Utah in reference to commitments, undertakings, and obligations, herein.

Print Name

Sign Name, Position, Date

Subscribed and sworn to before me this _____ day of _____, 20____

Notary Public

My commission Expires: _____, 20____ }

Attest: State of _____ } ss:

County of _____

For Office Use Only:	Assigned Tracking Number:	Received by Oil, Gas & Mining
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Form DOGM- C1 (Revised March 12, 2002)

CHAPTER 1

LEGAL, FINANCIAL, COMPLIANCE, AND RELATED INFORMATION

1.10 Minimum Requirements

1.1.1 Introduction

This chapter of the Wellington Dry-Coal Cleaning Facility permit application provides information regarding the ownership and control of the permit area. The compliance status of the operator at other locations is also provided herein. The facility covered by this permit application has been in operation since January 2006.

The Wellington Dry-Coal Cleaning Facility (MSHA ID 42-02398 issued 2/10/2005) is used for coal cleaning and is not a coal mine. As a result, some sections of Utah's coal mine permitting rules do not strictly apply to this site. Given that fact, the prior applicant (Covol Engineered Fuels, LC) and the Utah Division of Oil, Gas and Mining held discussions over a period of several months prior to the submittal of this permit application in order to establish the submittal requirements. Correspondence associated with these discussions is provided in Appendix 1-1.

An environmental compliance assessment was conducted of the Wellington operations in 2006. A copy of the opinion report resulting from that assessment is provided in Appendix 1-2. That report includes copies of environmental permits, plans, policies, and procedures that were in place at the time of the assessment.

This document has been arranged in the format of the R645-301 regulations. For example, Section 1.10 corresponds to R645-301-110, Section 1.1.1 corresponds to R645-301-111, Section 1.1.2.2 corresponds to R645-301-112.200, etc.

1.1.2 Identification of Interests

BRC Wellington LLC (hereafter referred to as “BRCW”) is a subsidiary of DB RC Investments II LLC and an affiliate of Bowie Refined Coal LLC and various subsidiaries of Deutsche Bank, as indicated in Figure 1-1. BRCW is the owner of the dry coal cleaning facility located in Carbon County, Utah. Bowie Refined Coal, LLC (“BRC”) is the operator of the facility. Furthermore, BRC is the owner and/or managing member of DB RC Investments I, LLC and DB RC Investments II, LLC. The Deutsche Bank affiliates shown on Figure 1-1 (DB AG Cayman Islands Branch and DBAH Capital) are equity investors only with respect to the BRC companies.

Bowie Refined Management, LLC (“BRM”) does not have any ownership in any of the entities included in Figure 1-1. BRM exists only in a contractual relationship to DB RC Investments II, LLC. BRM was created initially to share in expected tax credits, along with DB RC Investments II, LLC. To date, no tax credits have occurred nor are they expected to occur in the future.

The facility is located within Section 14, Township 15 South, Range 10 East, SLBM, approximately 2 miles west of Wellington, Utah.

1.1.2.1 Business Entity

BRCW and BRC are both limited liability companies. The affiliated Deutsche Bank subsidiaries are also limited liability companies.

1.1.2.2 Applicant and Operator

APPLICANT: BRC Wellington LLC
6100 Dutchmans Lane, Suite 900
Louisville, KY 40205
Facility Phone: (435)613-1631

Headquarters Office Phone: (502)584-6022

Payment of abandoned mine land reclamation fees, if any, will be the responsibility of the Managing Member of BRCW. Inquiries regarding the payment of this fee should be directed to this individual at the mailing address and phone number indicated above. The person currently occupying this position is indicated in Section 1.1.2.3.

OPERATOR: Bowie Refined Coal, LLC
6100 Dutchmans Lane, Suite 900
Louisville, KY 40205
Facility Phone: (435) 613-1631
Headquarters Office Phone: (502)584-6022

1.1.2.3 Officers and Directors

The directors and officers DB RC Investments I LLC (FEIN 46-1601691), DB RC Investments II LLC (FEIN 46-1613542), and BRCW (FEIN 36-4743889) are:

<u>Name</u>	<u>Title</u>	<u>Date position was assumed</u>
Steve Rickmeier (100% owner)	Managing Member	09/20/2012

The addresses and phone numbers for the officers and directors of DB RC Investments I, LLC, DB RC Investments II, LLC, and BRC are the same as the applicant.

Written correspondence to BRCW or BRC regarding the operations should be addressed to:

Kyle Edwards, Resident Agent
BRC Wellington LLC
1865 West Ridge Road
Wellington, UT 84654
(435)613-1631

The directors and officers of BRC (FEIN 46-0911657) are:

<u>Name</u>	<u>Title</u>	<u>Date position was assumed</u>
Steve Rickmeier (100% owner)	Managing Member	09/20/2012

Mr. Rickmeier's ownership of BRC is divided between Rickmeier Advisors, Inc. (FEIN 36-4483193, owning 45% of BRC), ~~and~~ Rickmeier Partners LP (FEIN 35-2202674, owning 45% of BRC), and personally in his own name (10%). This individual holds the same position and the same ownership percentage in each of the following companies:

- Bowie Refined Management LLC
- BRC Chinook LLC
- BRC Pinnacle LLC
- BRC Rockcrusher LLC
- BRC Greenfuels LLC
- BRC Alabama No. 3 LLC
- BRC Alabama No. 4 LLC
- BRC Alabama No. 5 LLC
- BRC Alabama No. 7 LLC

This individual also has partial ownership, through BRC, in DB RC Investments II, LLC, which then owns 100% of BRC Minuteman LLC and BRC Wellington LLC. The organizational structure of BRC is outlined in Figure 1-1.

1.1.2.4 Coal Mining and Reclamation Operation Permit Applications

The following list represents all permits issued to BRC, along with applicable identification numbers of applications or permits:

<u>Permit</u>	<u>Issuing Authority</u>	<u>Status</u>
UPDES Permit (No. UTR000685)	Utah Dept. Environmental Quality, Division of Water Quality	Approved
Approval Order (DAQE# AN2952001-03)	Utah Dept. Environmental Quality, Division of Air Quality	Approved

Certificate of Insurance and Business Authorization	Utah Industrial Development Commission	Approved
Mining and Reclamation Permit (C0070045)	Utah Department of Natural Resources, Division of Oil, Gas and Mining	Approved

The permits and operations held by subsidiary and/or affiliated companies of BRC are indicated in Table 1-1.

Neither Wellington City nor Carbon County required the prior owner of the facility to file development plans prior to construction of the facility. Neither of these local governmental bodies placed reclamation obligations on BRCW or required that BRCW file a reclamation bond. Wellington City issued a Conditional Use Permit to the prior to grant a variance for the height of their loadout silo. A copy of the Conditional Use Permit is provided in Appendix 1-4. The prior owner provided Wellington City with a letter of assurance that they would “lend its financial support and cause [the owner] to manage the coal and residual material located at the facility in accordance with applicable laws.” In this letter, the prior owner also indicated that they would “ensure that [the owner] will remove all coal and residual material location on the property (excluding material used for improvements).” A copy of this letter of assurance is provided in Appendix 1-4. BRCW intends to comply with these commitments.

1.1.2.5 Legal or Equitable Owner of the Surface and Mineral Properties to be Mined

Bowie Refined Coal, LLC is the legal and equitable owner of the entire 30-acre surface parcel included within the permit area (see Appendix 1-3). BRC’s right to enter the property and conduct operations thereon is not the subject of current litigation. There will be no mining at this facility. Thus, the mineral properties will not be affected by the operation. A property ownership map of the permit and adjacent areas is presented as Figure 5-2. No area within the lands to be affected by the facility is under a real estate contract.

1.1.2.6 Owners of Record of Property Contiguous to Proposed Permit Area

The following owners of surface lands are contiguous to the permit boundary:

High Country Forest Products
8243 Old Federal Road
Montgomery, Alabama 36117

Price City
185 East Main Street
Price, Utah 84501

State of Utah
203 State Capitol Building
Salt Lake City, Utah 84114

Circle K Ranch
P.O. Box 700
Price, Utah 84501

Denver and Rio Grande Western Railroad
1700 Farnham Street
10th Floor South
Omaha, Nebraska 68102

The locations of these lands relative to the permit area are shown on Figure 5-2A.

1.1.2.7 MSHA Numbers

The MSHA number for the operation is: 42-02398

1.1.2.8 Interest in Contiguous Lands

The applicant neither owns nor controls, directly or indirectly, a legal equitable interest in any lands contiguous to the permit area.

1.1.3 Violation Information

~~Neither BRCW nor any major stockholder of BRCW having any interest, either legal or equitable, in the Wellington facility have had a State or Federal mining permit suspended or revoked or a security deposited in lieu of bond revoked.~~ BRCW acknowledges that Cessation Orders have been issued by the States of Kentucky and Indiana to Bowie Refined Coal, LLC and BRC Chinook, LLC, respectively. A printout from the U.S. Office of Surface Mining Applicant/ Violator System regarding these Cessation Orders is provided in Appendix 1-6. BRCW understands that these related entities are in communication with the applicable State agencies in Kentucky and Indiana to resolve these Cessation Orders. It is BRCW's position that the Cessation Orders should not affect the status of the DOGM permit for the Wellington facility during the mid-term review. No Notices of Non-compliance have been issued within the last 3 years to BRCW ~~or a related entity.~~

1.1.4 Right-of-Entry Information

The facility is located on lands that are entirely owned by the parent company of the operator (see Appendix 1-3). Hence, no other right of entry is required.

1.1.5 Status of Unsuitability Claims

Since there is no mining at this facility, the issue of unsuitability claims is not applicable.

1.1.6 Permit Term

The following information is presented to identify permit term requirements and stipulations. Operations at the facility began in January 2006 using an air-jig method to process coal-bearing materials. Termination of operations will be determined by economic conditions.

The timing of this termination is, therefore, unknown. It is anticipated that the Applicant will operate at the site for a period in excess of 5 years.

The anticipated total acreage to be affected during operations is 30 acres. The permit and adjacent areas have been zoned by Wellington City for “light industrial purposes” (Zone M-1). Permitted uses under this zoning include a variety of industrial and manufacturing operations, as indicated in Appendix 1-4. Since the land occupied by the facility has been zoned for general industrial use and will be used for that purpose following the cessation of BRCW’s operations, complete site reclamation will not be required (See chapters 4 and 5).

1.1.7 Insurance and Proof of Publication

A certificate of Insurance issued to BRC is provided in Appendix 8-2. A copy of the newspaper advertisement is provided in Appendix 1-5 indicating that the application has been submitted to DOGM and is available for public comment.

1.1.8 Filing Fee

The permit filing fee was paid upon submittal of the application.

1.20 Permit Application Format and Contents

The permit application contains clear, concise, current information, in the format of the DOGM regulations.

1.30 Reporting of Technical Data

All technical data submitted in the permit application is accompanied by the names of persons or organizations that collected and analyzed the data. The technical data also contains the

dates of collection and analysis of the data, and descriptions of the method used to collect and analyze data, as indicated in subsequent sections of this application. Professionals qualified in the subject, planned or directed the technical analyses. These professionals included the following:

- Richard B. White, P.E. – President/Civil and Environmental Engineer, EarthFax Engineering, Inc. (engineering, hydrology, bonding, alluvial valley floors)
- Ari Menitove – Geological Engineer, EarthFax Engineering, Inc. (geology, soils)
- Chris Jensen – Consultant, Canyon Environmental, LLC (cultural resources, biology)

1.40 Maps and Plans

The maps submitted in this permit application correspond to the format required by the regulations. The entire permit area was developed prior to the initial submittal of this permit application on January 15, 2008.

1.50 Completeness

The Applicant believes the information in this application to be complete and correct.

TABLE 1-1

Related-Entity Permits

Entity and State	Permit	Issuing Authority	Status
BRC Alabama No. 7, LLC (Alabama) FEIN 32-0392802	Operator on Mine Permits P3247 (MSHA ID 01-03364 issued 5/24/2007), P3256 (MSHA ID 01-03365 issued 5/24/2007), P3257 (MSHA ID 01-03278 issued 5/1/2006), and P3260 (MSHA ID 01-03362 issued 4/20/2007)	Alabama Surface Mining Commission	Issued
BRC Chinook, LLC (Indiana) FEIN 37-1703437	Permittee on Mine Permit P-00004 (MSHA ID 12-02397 issued 3/23/2007)	Indiana Dept of Natural Resources	Issued
BRC Chinook, LLC (Indiana) FEIN 37-1703437	NPDES Permit No. ING040176 (MSHA ID 12-02397 issued 3/23/2007)	Indiana Dept of Environmental Management	Issued
BRC Chinook, LLC (Indiana) FEIN 37-01703437	SSOA 167-27370-00055 [Air Permit] (MSHA ID 12-02397 issued 3/23/2007)	Indiana Dept of Environmental Management	Issued
Minuteman (Kentucky) FEIN 36-4743728	Permittee on Mine Permit 889-8005 (MSHA ID 15-19205 issued 3/21/2008)	Kentucky Division of Mine Permits	Issued
Minuteman (Kentucky) FEIN 36-4743728	KPDES Permit No. 0107158 (MSHA ID 15-19205 issued 3/21/2008)	Kentucky Division of Water	Issued
Minuteman (Kentucky) FEIN 36-4743728	Air Permits S-07-145 (MSHA ID 15-19205 issued 3/21/2008) and S-08-039 (MSHA ID 15-19071 issued 12/6/2007)	Kentucky Division of Air Quality	Issued
Minuteman (Kentucky) FEIN 36-4743728	UIC Permit KYV0047 (MSHA ID 15-19205 issued 3/21/2008)	USEPA Region 4	Issued
Minuteman (Kentucky) FEIN 36-4743728	UIC Permit KYV0053 (MSHA ID 15-19205 issued 3/21/2008)	USEPA Region 4	Issued
BRC Pinnacle, LLC (West Virginia) FEIN 61-1696678	Operator on Mine Permit No. 0402292 (MSHA ID 46-09146 issued 2/18/2008)	WV Dept of Env. Protection	Issued
BRC Pinnacle, LLC (West Virginia) FEIN 61-1696678	Air Permit G10-C104 (MSHA ID 09146 issued 2/18/2008)	WV Department of Environmental Protection	Issued
BRC Alabama No. 5, LLC (Alabama) FEIN 61-1696887	Operator on Mine Permit P3199 (MSHA ID 01-00563 issued 7/1/2008)	Alabama Surface Mining Commission	Issued

CHAPTER 3 BIOLOGY

3.10 Introduction

This chapter provides a general description of the biological resources found in the vicinity of the Wellington Dry-Coal Cleaning Facility, and describes measures taken to protect biological resources adjacent to the permit area. As indicated in Appendix 3-1, information concerning biological resources in the area was obtained from a literature search, a field survey by a competent biologist, and consultation with the Utah Division of Wildlife Resources (“DWR”) and the U.S. Fish and Wildlife Service (“USFWS”).

Unlike many coal mining operations which are located in previously undisturbed areas, the Wellington Dry-Coal Cleaning facility occupies property that is zoned for general industrial purposes and the site was disturbed prior to the submittal of this application. Given the poor suitability of site soils for agricultural and rangeland purposes (see Section 2.2.2.2 of this application), the site will be reclaimed for future industrial use rather than restoring the site to its undisturbed condition (see also Section 4.1.2.1 of this application). This is in accordance with R645-301-413.120. Also, unlike many coal mining operations, the area impacted by the facility is almost exclusively limited to the permit area boundary. No subsidence, groundwater, or surface water impacts are expected to extend off site. This is due to the lack of underground mining and subsidence at this facility as well as environmental controls that include runoff, sediment, and fugitive dust management, fencing off the permit area, and proper waste disposal. Thus, while biological resources inside the permit boundary may have been affected by current uses of the property, efforts have been taken to protect biological resources in the undisturbed areas adjacent to the permit boundary.

3.1.1 Vegetative, Fish and Wildlife Resources

General vegetative, fish and wildlife resource conditions in the vicinity of the Wellington Dry-Coal Cleaning Facility are discussed in Appendix 3-1 and Section 3.20.

3.1.2 Potential Impact to Vegetative, Fish and Wildlife Resources

Potential impacts to vegetative, fish and wildlife resources and the associated mitigation plans are presented in Appendix 3-1 and Sections 3.30 and 3.40 of this application.

3.1.3 Description of Reclamation Plan

The plan to reclaim vegetative, fish and wildlife resources to a condition suitable for the post-operations land use is presented in Section 3.40.

3.20 Environmental Description

3.2.1 Vegetation Information

3.2.1.1 Plant Communities Within the Proposed Permit and Adjacent Areas

As indicated in Appendix 3-1, the general area is characterized as a greasewood/rabbitbrush plant community. Vegetation within and/or adjacent to the facility consists of the following:

Trees

- Russian olive (*Elaeagnus angustifolia*) – also considered a noxious species
- Tamarisk (*Tamarix spp.*) – also considered a noxious species
- Fremont cottonwood (*Populus fremontii*)
- Willow (*Salix spp.*)

Shrubs:

- Big sage (*Artemisia tridentata*)
- Big rabbitbrush (*Chrysothamnus nauseosus*)
- Greasewood (*Sarcobatus vermiculatus*)
- Winterfat (*Krascheninnikovia lanata*)
- Broom snakeweed (*Gutierrezia sarothrae*)
- Skunkbush (*Rhus trilobata*)
- Inkweed (*Suaeda torreyana*)
- Shadscale (*Atriplex confertifolia*)

Forbs

- Halogeton (*Halogeton glomeratus*)
- Curlycup gumweed (*Grindelia squarrosa*)
- Desert trumpet (*Eriogonum inflatum*)
- Showy milkweed (*Asclepias speciosa*)
- Russian thistle (*Salsola iberica*)
- Plains prickly pear cactus (*Opuntia polyacantha*)
- Rocky Mountain bee plant (*Cleome serrulata*)
- Common sunflower (*Helianthus annulus L.*)
- Diffuse knapweed (*Centaurea diffusa*)

Grasses:

- Foxtail barley (*Hordeum murinum*)
- Cheatgrass (*Bromus tectorum*)
- Indian ricegrass (*Orizopsis hymenoides*)

Vegetation within the site boundary is primarily isolated to the edges of the fenced area. Approximately 70% of the vegetative species within and adjacent to the site consists of cheatgrass, rabbitbrush, greasewood, Russian thistle, big sage, and halogeton. Based on observations in adjacent undisturbed areas, the facility area was likely dominated by rabbitbrush, greasewood, sage, and native prior to any disturbance in the region. However, cheatgrass, halogeton, and Russian thistle have commonly invaded many areas since the region was settled, and likely existed in the permit area prior to development (Chris Jensen, personal communication, 13 Oct 2008).

Miller Creek is a perennial stream that exists about 0.4 mile south of the Wellington site. A riparian corridor exists along this stream for a width of 25 to 50 feet. Vegetation within this corridor consists predominantly of Russian olive (*Elaeagnus angustifolia*) and Tamarisk (*Tamarix spp.*), with a few Fremont cottonwood (*Populus fremontii*) and Willow (*Salix sp.*) trees. Both Russian olive and Tamarisk are classified as noxious species.

3.2.1.2 Land Productivity Prior to Mining

Cover density in adjacent undisturbed areas averages approximately 55 to 65% (Chris Jensen, personal communication, 13 Oct 2008). Based on the general uniformity of vegetation in undisturbed areas outside the boundary fence, it is assumed that cover densities within the site area prior to disturbance were similar to those that now exist outside of the boundary fence in adjacent areas.

3.2.2 Fish and Wildlife Information

Undisturbed lands in the area generally support limited wildlife habitat, which is mainly due to the lack of precipitation, unproductive soils, and sparse vegetation. Disturbed areas support even less wildlife.

During a site inspection conducted in September 2008, cottontail rabbit (*Sylvilagus audubonii*) and some ant mounds were the only signs of wildlife observed within the BRC Wellington permit area (see Appendix 3-1). Although maps obtained from the DWR web site indicate that mule deer and pronghorn antelope may occupy the general area surrounding the Wellington site, no evidence (e.g., scat, tracks, grazed vegetation) of big game species known to inhabit the region (e.g. mule deer, elk, antelope, big horn sheep) was identified in the permit or adjacent areas. Forage for these large herbivores is generally sparse within the area.

The DWR has also indicated that burrowing owls may be present in the general vicinity of the Wellington site. A burrowing owl assessment was conducted of the area on September 25, 2008 by Chris Jensen, Project Biologist with Canyon Environmental. Mr. Jensen's qualifications for conducting this assessment are summarized in Appendix 3-2. This assessment was conducted by walking transects across the permit and adjacent areas at a spacing of 10 to 15 feet. In the absence of specific guidelines established by the State of Utah for conducting these assessments, guidelines promulgated by the States of Arizona, California, and Colorado were used for this assessment. Anthony Wright, Regional Sensitive Species Biologist with the DWR, indicated that these methodologies were appropriate for use in Utah (see Appendix 3-1). No burrows indicating the presence of burrowing animals were found within or adjacent to the site. However, prairie dogs and their burrows were observed approximately one-half mile east of the site near Ridge Road and appropriate habitat for prairie dogs and burrowing owls is located south and east of the permit area as noted in Appendix 3-1.

In order to best determine the presence or absence of burrowing owls in the areas adjacent to the coal cleaning facility, the prior owner conducted an additional burrowing owl survey in June 2010. A representative from the prior owner consulted with DWR and DOGM prior to conducting the survey to verify the appropriate time and protocol to be used to implement the survey. The results of this survey have been placed in the DOGM confidential file.

Given the lack of perennial surface water, there is no fish habitat within the permit area.

3.2.2.1 Level of Detail

The scope and level of detail within this document are sufficient to design the protection and enhancement plan for wildlife and fish in the area.

3.2.2.2 Site-specific Resource Information

A site-specific evaluation of wildlife within the permit and adjacent areas was conducted on September 25, 2008. The results of this evaluation are provided in Appendix 3-1. Information obtained from DWR and USFWS as part of that evaluation indicates that critical habitat areas have been designated in Carbon County (as a whole) for the following Federally-protected species (see Appendix 3-1):

- Mexican spotted owl (*Strix occidentalis lucida*) – Threatened
- Humpback chub (*Gila cypha*) – Endangered
- Bonytail chub (*Gila elegans*) – Endangered
- Razorback sucker (*Xyrauchen texanus*) – Endangered
- Colorado pikeminnow (*Ptychochelilus lucius*) – Endangered

Critical habitat areas for the Mexican spotted owl are located in the Book Cliffs about 25 miles east of the permit area. Given this significant distance, activities at the BRC Wellington site will not adversely impact this species or its critical habitat. Critical habitat areas for the Humpback chub, Bonytail chub, Razorback sucker, and Colorado pikeminnow are found in the Green River more than 30 miles east of the permit area. Runoff- and sediment-control measures that have been implemented within the Wellington permit area preclude adverse impacts to these species or their critical habitats.

Under the USFWS Windy Gap Process, projects within the Upper Colorado River Basin may be assessed a one-time conservation fee, depending on annual water usage, to study and protect endangered fish species. The conservation fee is generally assessed only if the annual water consumption exceeds 100 acre-feet. BRC Wellington owns 6 shares of water for use in the permit area, equating to 6 acre-feet of water per year. Actual water usage from October 31, 2006 through November 31, 2007 was 4.1 acre-feet. BRC Wellington acknowledges that the assessment of the conservation fee must be decided by the U.S. Fish and Wildlife Service, with this assessment potentially being independent of the 100 acre-foot value.

Appendix 3-1 indicates that the following endangered, threatened, or sensitive species may be present in the general vicinity of the permit area:

- Black-footed ferret (*Mustela nigrapes*) – Endangered/extirpated
- Burrowing owl (*Athene cunicularia*) – State sensitive
- White-tailed prairie dog (*Cynomys leucurus*) – State sensitive
- Bluehead sucker (*Catostomus discobolus*) – State sensitive

Black-footed ferrets feed on prairie dogs as their primary food source. As such, their potential presence cannot be ruled out when prairie dog towns exist. The fact that no prairie-dog burrows have been observed within and adjacent to the permit area makes it improbable that ferrets exist in this area. The closest prairie-dog town is located approximately one-half mile east of the permit area. The lack of potential black-footed ferret habitat in the permit and adjacent areas, together with prohibitions on personnel and equipment access outside of the chain-link boundary fence, indicate that site activities will have no adverse impacts on this species or its habitat.

Burrowing owls utilize existing mammal burrows or sometimes excavate their own burrows in soil for nesting. The fact that no burrows have been observed within and adjacent to the permit area makes it improbable that burrowing owls currently exist in the permit and adjacent areas. However, the area does contain potentially suitable conditions for nesting of burrowing owls. Plans to minimize potential impacts to this species are presented in Section 3.3.3 of this application.

White-tailed prairie dogs live in underground burrows. No such burrows have been observed within and adjacent to the permit area. Given the developed nature of the Wellington site, the existence of the boundary fence, access restrictions outside of that fence, and the lack of identified burrows in the permit and adjacent areas, it is doubtful that site activities would adversely impact prairie dogs or their habitats.

The Bluehead sucker is a bottom-dwelling fish species that occurs in the upper Colorado River basin. This species may occur in Miller Creek, approximately 0.4 mile south of the permit area. Runoff-and sediment-control measures implemented in the permit area will eliminate the potential for sediment to reach Miller Creek from the BRC Wellington site, thereby minimizing potential impacts to this species.

Migratory raptors may forage in the area and could nest in the riparian corridor along Miller Creek. Given the distance from the permit area, activities at the BRC Wellington site will not directly impact potential nesting sites for these raptors. However, the raptors may prey on species that occur within or adjacent to the permit area. These prey species include cottontail rabbit (*Sylvilagus audubonii*), jackrabbit (*Lepus spp.*), and white-tailed prairie dog (*Cynomys leucurus*). Plans to minimize potential impacts to migratory raptors in the area are discussed in Section 3.3.3 of this application.

3.2.2.3 Fish and Wildlife Service Review

If requested, the applicant authorizes the release of information pertaining to Section 3.2.2 and 3.3.3 to the U.S. Fish and Wildlife Service Regional and Field office for their review.

3.2.3 Maps and Aerial Photographs

No maps or aerial photographs will be used to address the biological resources of the permit area.

3.30 Operation Plan

3.3.1 Measures Taken to Disturb the Smallest Practicable Area

No disturbance will occur beyond the fenced area that constitutes the disturbed and permit area boundary. All areas within the fence may be used for active operations. Thus, interim

revegetation of the site is not feasible. The area within the fence is the smallest practicable area of disturbance for this operation.

3.3.2 Description of Anticipated Impacts of Subsidence

No subsidence associated with the Wellington Dry-Coal Cleaning Facility will occur since the facility does not conduct underground mining operations.

3.3.3 Plan to Minimize Disturbances and Adverse Impacts

A limited number of potential biological concerns were identified in Appendix 3-1 that may require attention to minimize the adverse impacts of facility operations in the permit area. These potential concerns and plans to minimize adverse impacts are as follows:

- The Bluehead sucker, a State-sensitive species, may be present in Miller Creek. Runoff- and sediment-control facilities at the site have been installed and will be maintained to minimize disturbances to Miller Creek, thereby minimizing potential impacts to this species. No diversions from or discharges of water to Miller Creek currently occur or are planned. However, if future site activities require the diversion of water from or the direct discharge of water to Miller Creek, BRC Wellington will first consult with DWR and implement appropriate methods to ensure that potential impacts to this species are minimized.
- Burrowing owls, a State-sensitive species, do not currently occur on or adjacent to the site (as indicated by a lack of burrows). However, due to the presence of suitable breeding habitat at the site, this species could inhabit the site in the future. Therefore, if future land-disturbing activities are planned at the site during the Burrowing owl breeding season (February through August), BRC Wellington will conduct a pre-construction survey of the area to determine whether or not Burrowing owls are present in the area to be disturbed. If they are found in the area of proposed disturbance, discussions will be held with DWR to determine the most prudent plan of action. This may include avoiding construction in the subject area until after the breeding season is over, until all of the chicks had fledged the burrow, or until the adults have vacated the site.
- Migratory raptors may forage at the Wellington site or nest in the riparian corridor along Miller Creek. If future land-disturbing activities are planned at the site during the

raptor nesting season (February through September), BRC Wellington will conduct a pre-construction survey to determine whether or not raptors are nesting in the area to be disturbed. If they are found in the area of proposed disturbance, construction in the subject area will be postponed until after the nesting season is over.

- Various prey species of interest to raptors may be present in the permit area. Raptors may perch on facility equipment in search of such prey. Employees will be alerted during periodic staff meetings of the presence of raptors and told to avoid contact with or harassment of the raptors.

No big-game wildlife species are known to frequent the permit or adjacent areas. However, to protect larger species if they do occur in the area, the fence around the BRC Wellington facility will be maintained during operations. No disturbance will occur outside of that fenced area. Furthermore, runoff control measures will be maintained to preclude off-site surface-water impacts. Other protective measures within the disturbed area boundary include adhering to clean industrial hygiene procedures, properly disposing of all waste (papers, cans, bottles, etc.), and instructing employees not to hunt or harass wildlife. Thus, measures have been implemented to minimize adverse impacts to fish and wildlife and related environmental resources.

3.40 Reclamation Plan

As indicated in Section 2.2.2.2 of this application, the soil at the Wellington 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-disturbance land 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. The extent of site restoration following operations is discussed more fully in Section 5.40 of this permit application.

Under the post-operation industrial land use, complete post-operation revegetation of the site is not anticipated. However, a proposed seed mix, application rate, and other plans have been developed for those areas of the site that will require revegetation to support the post-operation

land use (see Section 3.4.1). Aspects of the reclamation plan related to fish and wildlife are discussed in Section 3.4.2.

3.4.1 Revegetation

Due to the future industrial use of the site following coal-cleaning operations, the extent of future revegetation is not currently known. However, for the sake of developing a reclamation cost estimate, it is assumed in this permit application that the area south of the facility loop road will be revegetated during reclamation. This area, in which the runoff- and sediment-control structures will be retained for use by the future landowner, covers 9.7 acres of the permit area. The precise areas to be revegetated will be determined in consultation with the future site owner. Areas requiring revegetation will be treated as outlined below.

3.4.1.1 Schedule and Timetable

Any revegetation of the site will begin after the plant growth medium has been replaced. To the extent feasible, seeding will occur in the late fall, just prior to the onset of snow fall. If this schedule is not feasible, grasses and forbs will be planted in the late spring (May or early June), while shrubs and seedlings will be planted in the late summer through early fall (late August through early October).

3.4.1.2 Descriptions

Species and Amounts of Seed. All revegetated areas will be planted with the seed mix specified in Table 3-1.

Method Used for Planting and Seeding. Revegetation will be performed using broadcast methods.

Mulching Techniques. Mulch consisting of grass hay or alfalfa hay will be applied at a rate of at least 2 tons per acre to areas being revegetated following preparation of the soil and prior to seeding. Mulch materials will only be obtained from fields that are certified by the County Extension Agent as noxious weed free. Mulch will be spread over the surface of the area to be revegetated using mechanical spreading, mechanical blowers, or hand spreading. Mulch will then be incorporated into the soil by plowing or chiseling to a depth of at least 12 inches.

Irrigation, Pest, and Disease Control. No persistent pesticides will be used in the permit area unless previously approved by DOGM.

Measures Proposed for Revegetation Success. Revegetation success will be monitored in accordance with Appendix A of DOGM's "Vegetation Information Guidelines." As indicated in Section 1.40 of this application, the entire permit area is disturbed. This condition, together with the fact that all land outside of the permit area is owned by individuals other than BRC Wellington, precludes the establishment of a permanent revegetation reference area. Hence, prior to revegetation of the site, BRC Wellington will confer with DOGM to select a temporary reference area on adjacent property that is representative of the permit area. BRC Wellington understands that a DOGM biologist will conduct a site visit prior to August 1, 2017 to make decisions regarding a temporary reference area. BRC Wellington will then seek landowner permission to monitor that location in accordance with the Vegetation Information Guidelines. Assuming that this permission can be obtained, the temporary reference and revegetated areas will be inspected for plant growth and erosion at a schedule and using methods that comply with the Vegetation Information Guidelines. Revegetation success standards will be established in consultation with DOGM once a temporary reference area is established and surveyed. ~~The operator will apply additional seed mix as deemed necessary.~~

3.4.1.3 Greenhouse Studies, Field Trials or Other Equivalent Studies

If DOGM requires additional testing for the purpose of demonstrating that reclamation as required by the State Program can be accomplished according to information given in this document, the applicant will comply.

3.4.2 Fish and Wildlife

3.4.2.1 Enhancement Measures

Wildlife habitat will be enhanced during reclamation through the use of runoff controls to prevent excessive erosion and through the use of a seed mix that includes plants that are indigenous to the area.

3.4.2.2 Plants Used for Wildlife Habitat

The post-operation land use will be industrial. Hence, the reclamation plan has not been specifically developed to support a fish and wildlife post-operation land use.

3.4.2.3 Cropland

Cropland is not a post-operation land use.

3.4.2.4 Residential, Public Service and Industrial Land Use

Although the post-operation land use is industrial, the site is not of sufficient size to permit the effective use of greenbelts and other substantial wildlife enhancements in reclamation.

3.50 Performance Standards

3.5.1 General Requirements

The Applicant commits to conduct all operations in accordance with Sections R645-301-330 through R645-301-340 of the regulations.

3.5.2 Contemporaneous Reclamation

Given the limited extent of areas within the permit boundary that are not in active use, contemporaneous reclamation is not considered practical at the facility.

3.5.3 Revegetation: General Requirements

As noted above, in order to support the post-operation industrial land use, it is assumed that only areas south of the site loop road will be reclaimed following the Wellington operations. For areas that will be developed for industrial, commercial, or residential use less than 2 years after regrading is completed, the vegetative ground cover and retained erosion-control structures will be adequate to control erosion. This revegetation plan complies with the requirement that a vegetative cover will be established on all reclaimed areas. The vegetative cover will be in accordance with the approved permit and reclamation plan.

3.5.3.1 Vegetative Cover

For areas that will be revegetated, the seed mix is intended to provide vegetative cover that will be diverse, effective, and permanent. The seed mix was selected with to be compatible with the climate, potential seedbed quality, and drought tolerance.

Native Species. The vegetative mixture is comprised of species native to the area. The seeds will be purchased from suppliers who will certify their purity, germination, hard seed, and percentages of maximum weed seed contents.

Extent of Cover. The vegetative cover will be at least equal in extent to the natural vegetation as measured in an adjacent reference area at the time of revegetation (see Section 3.4.1.2).

Stabilizing. The area to be revegetated will be mulched during reclamation. This mulching, together with the vegetative cover mixture, will provide erosional stability at least equivalent to that of adjacent undisturbed areas.

3.5.3.2 Reestablished Plant Species

Compatible. The plant species proposed for revegetation have been selected to be compatible with the intended post-operation land use.

Seasonal Characteristics. Because the reclamation seed mix is dominated by native species, the revegetation plant species will have the same growing season as the native vegetation.

Self-generation. The revegetation seed mix consists of species capable of self-generation and plant succession.

Compatibility. The seed mix proposed for revegetation contains plants native to the area and compatible with the plants and animals species of the permit area.

Federal and Utah Laws or Regulations. The seed mixture purchased to revegetate the mine area will contain neither poisonous nor noxious plant species. No species will be introduced in the area without being approved by DOGM.

3.5.3.3 Vegetative Exception

The applicant does not require vegetative exception at this time.

3.5.3.4 Cropland

The permit area contains no land designated as cropland for post-operation land use.

3.5.4 Revegetation: Timing

Areas intended for revegetation will be reclaimed during the first normal period for favorable planting conditions after replacements of the plant-growth medium, as discussed in Section 3.4.1.1.

3.5.5 Revegetation: Mulching and Other Soil Stabilizing Practices

Areas to be revegetated will be mulch as described in Section 3.4.1.2. If excessive erosion occurs following revegetation and prior to bond release, those affected areas will be repaired using a method approved by DOGM.

3.5.6 Revegetation: Standards for Success

The standards for revegetation success are detailed in Section 3.4.1.2.

3.5.6.1 Success of Revegetation

The success of revegetation will be judged on the effectiveness of the vegetation for post-operation land use and the standards outlined in Section 3.5.3. Success will be determined in accordance with Appendix A of DOGM's Vegetation Information Guidelines (see Section 3.4.1.2).

3.5.6.2 Standards for Success

Standards of success will be applied in accordance with the approved post-operation industrial land use.

Grazing Land or Pasture Land. No areas within the permit area are designated as grazing or pasture lands.

Cropland. No area within the permit area is designated as cropland.

Fish and Wildlife Habitat. No area within the permit area is designated as fish and wildlife habitat.

Industrial, Commercial or Residential. The entire permit area is designated as industrial. Revegetation of the site will adequately control erosion.

Previously Disturbed Areas. There is no previously disturbed area within the permit boundary.

3.5.6.3 Siltation Structure Maintenance

Siltation structures will be maintained until removal is authorized by DOGM and the disturbed areas have been stabilized and revegetated. For additional details on siltation structures, see Section 5.4.2.

3.5.6.4 Removal of Siltation Structures

To more adequately support the post-operation industrial land use, the siltation structures will remain on site following closure of the Wellington facility.

3.5.7 Revegetation: Extended Responsibility Period

BRC Wellington will be responsible for revegetation success during the extended responsibility period or until the property is sold to another company for industrial purposes, whichever is sooner. The period of extended responsibility will begin after the last year of augmented seeding, fertilization, irrigation, or other revegetation work, excluding husbandry as approved by DOGM. Vegetation parameters will equal or exceed the approved success standard during the last two years of the responsibility period. The success standards are outlined in Sections 3.5.6.1 and 3.5.6.2 of this application.

BRC Wellington will comply with DOGM-approved husbandry practices, consisting of normal conservation practices within the region of the operation. These practices may include disease, pest, and vermin control; pruning; reseeding; and transplanting.

3.5.8 Protection of Fish, Wildlife, and Related Environmental Values

This plan is designed to minimize disturbances and adverse impacts on fish, wildlife and their related environments. BRC Wellington will periodically educate their employees about wildlife needs and their importance. This will be done during periodic staff meetings by making the employees aware of species of concern (see Section 3.2.2.2) and their prey base. The mitigation requirements of Section 3.3.3 will also be discussed with existing employees during periodic staff meetings and with new employees during initial orientation. Given the lack of permanent surface water in the permit and adjacent areas, there are no fisheries within the permit area.

3.5.8.1 Existence of Endangered or Threatened Species

There are no known endangered or threatened species within the permit area. Therefore, facility operations will not result in the destruction or adverse modification of critical habitats. If State- or Federally-listed endangered or threatened species are discovered in the permit area in the future, the presence of these species will be reported to DOGM upon their discovery. Operations thereafter, including site reclamation, will proceed in accordance with appropriate DOGM stipulations.

3.5.8.2 Bald and Golden Eagles

No suitable bald or golden eagle habitat exists in the permit and adjacent areas. If such habitat is discovered in the future, BRC Wellington will promptly report such habitat to DOGM and will proceed with operations thereafter in accordance with appropriate DOGM stipulations. If these species are observed in the area, BRC Wellington will make employees aware of the species and their prey base during periodic staff meetings in accordance with Section 3.3.3 of this plan.

3.5.8.3 Taking of Endangered or Threatened Species

The applicant understands that there is no permission implied by these regulations for taking of endangered or threatened species, their nests, or eggs.

3.5.8.4 Replacement of Wetland and Riparian Vegetation

No wetland or riparian habitat exists in the permit area, nor has any such habitat been disturbed by this operation. The closest riparian habitat is located along Miller Creek approximately 0.4 mile south of the permit area (see Appendix 3-1).

3.5.8.5 Manmade Wildlife Protection Measures

Electric Power Lines. Power lines to and within the permit area are buried which eliminates electrocution hazards to raptors.

Potential Barriers. The permit area is limited in aerial extent and is located in an area zoned for industrial use. A chain link fence has been constructed to keep wildlife from entering the facility and being exposed to the industrial hazards located within. Given the limited area of the facility, wildlife can easily migrate around the outside of the fence if needed.

Pond Protection. The perimeter facility fence excludes large wildlife from encountering the sedimentation ponds. No site ponds contain hazardous concentrations of toxic-forming materials.

TABLE 3-1

Revegetation Seed Mixture

Scientific Name	Common Name	Application Rate (pls lb/acre)
Shrubs		
<i>Atriplex gardneri</i> var. <i>cuneata</i>	Castle Valley saltbush	2.0
<i>Atriplex corrugata</i>	Mat saltbush	3.0
<i>Atriplex confertifolia</i>	Shadscale	4.0
<i>Ceratoides lanata</i>	Winterfat	4.0
Forbs		
<i>Eriogonum inflatum</i>	Desert trumpet	1.0
<i>Helianthus annuus</i>	Annual sunflower	4.0
<i>Oenothera caespitosa</i>	Evening primrose	0.3
<i>Sphaeraicea coccinea</i>	Globemallow	0.5
Grasses		
<i>Bouteloua gracilis</i>	Blue grama	0.5
<i>Elymus lanceolatus</i>	Thickspike wheatgrass	2.0
<i>Elymus cinereus</i>	Great Basin wildrye	2.0
<i>Elymus smithii</i>	Western wheatgrass	1.0
<i>Hilaria jamesii</i>	Galleta	2.0
<i>Sporobolus airoides</i>	Alkalai sacaton	0.2
<i>Stipa comata</i>	Needle and thread	3.0
<i>Stipa hymenoides</i>	Indian ricegrass	2.0
<i>Distichlis spicata</i>	Saltgrass	0.5
TOTAL		32.0

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 (either directly or blended with other material) 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, updated based on a Google Earth image dated August 17, 2015 and a site survey conducted in December 2016. ~~Site grading at the facility has been minimal, and there are a handful of material stockpiles as shown on~~ Plate 5-1 shows the locations of processing equipment, coal and topsoil stockpiles, roadways, equipment storage areas, drainage features, etc. as of December 2016. 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:

- 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~~ noted on that plate. 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:

- Access road
- Loop road
- Scale road
- Scale bypass road
- Dump bin road
- Loading silo road

These roads are all constructed with the typical cross section shown in Figure 5-3. Road widths vary generally from 12 to 40 feet within the permit area, depending on the type of vehicle and purpose of the road (see Appendix 5-1). 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 surface of the access road is asphalt. The ~~road~~ surface of the remaining roads throughout the permit area, except the southern third of the loop road, consists of minus 2-inch material that has been compacted in place. No significant cuts were made during construction of any of the roads. The surface of the southern third of the loop road consists of crushed coal. Fill embankments, constructed of the same materials used for the road surface, are located primarily along the Dump bin road and the Loading bin 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. Additional information regarding the facility roads and a discussion of the adequacy of the roads to serve site needs is provided in Appendix 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. All coal processed by BRCW is owned by a client that intends to sell the coal following processing by BRCW. Since BRCW is paid on a toll basis for cleaning the coal, it is in BRCW's best interest to maximize the use and conservation of the coal resource.

The standard commercial alternative to the process used by BRCW to clean coal is to use liquid-based separation technologies. These technologies require the use of significant quantities of water and chemical additives which must then be disposed of when no longer useful. Since the BRCW process avoids the use of these liquids, the recovery methods used at the site allow BRCW to recover coal in a manner that protects the environmental integrity of the region.

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.

As with liquid-based coal cleaning operations, the BRCW process relies on density differences to separate high-quality coal from low-quality coal. In general, raw material is introduced into the process and air (rather than liquid) is injected at appropriate pressures and volumes to separate the lighter coal from the heavier material that contains coal and ash. The clean coal product and the “reject” are either both returned to the client or, following return of the clean coal to the client, BRCW blends the “reject” (which is actually a high-ash, low-quality coal) with other coal processed at the site in a manner that still allows clients to meet contract requirements. By using a dry cleaning rather than a liquid cleaning process, BRCW avoids water pollution and precludes the attendant hazards to the health and safety of the public.

Depending on coal quality and other factors, the BRCW facility can process approximately 2,500 tons per day of coal under ideal conditions. However, the amount of coal processed at the BRCW facility on an annual basis is fully dependent upon client requests. Therefore, it is impossible for BRCW to provide an estimate of the anticipated annual and total processing of coal.

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 pre-subsidence 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 indicates that the loop road will be paved once full operations are underway. However, it has been BRCW's experience that more dust is generated from paved roadways than from unpaved roadways since particulates on a paved roadway tend to be ground to even finer particle sizes while particulates that land on roadways constructed as at the Wellington site tend to work into the permeable road surface and are adequately controlled by dust-suppression watering. Therefore, BRCW will maintain the current road surfaces and modify the Utah Division of Air Quality Approval Order appropriately.

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. The length of time during which coal is stored on the site is largely dependent on client decisions (e.g., coal sales, blending, etc.) that are beyond the control of BRCW.

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.

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 stability analyses of road 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 or subsequent~~ sale by 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 occupied by the large coal storage piles north of the southern extent 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 remaining coal will have been sold and removed be hauled from the area to the Savage coal terminal and given to the owner of that site for subsequent sale and/or blending 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 in the south portion of the ~~facility loop road~~ site 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~~ hailed to the nearby Savage coal terminal. 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 some~~ coal will exist on site prior to reclamation. As noted on Plate 5-1, the quantity of coal on site during a December 2016 survey was 88,538 tons. For the sake of the reclamation bond, it was assumed that 95,000 tons (141,000

yd³ based on a unit weight of 50 lb/ft³) of coal would be on site at the time of reclamation and that all of this coal would be hauled to the Savage coal terminal as part of the reclamation effort. If so, this coal will be sold or returned to the original owner prior to reclamation of the site. The owner of the Savage coal terminal has indicated that they will accept this residual coal at no cost. Therefore, the reclamation cost estimate accounts only for loading, hauling, and dumping of the residual coal at the Savage facility.

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

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

^(a) See Plate 5-1 for location within the facility

TABLE 5-2

Reclamation Timetable

Activity	Approximate Time
Stockpile residual coal-bearing materials on site	½ week
Process residual coal-bearing materials in facility	2 weeks
Remove coal and process byproduct	½ week
Remove coal-processing equipment <ul style="list-style-type: none"> • Conveyors C-1 through C-8 • Radial stackers RS-1 through RS-3 • Air jig/baghouse • Crusher • Truck dump • Silo • Plant feed hopper • Alternate loadout hopper • Truck scales TS-1 and TS-2 	4 weeks
Remove remaining structures to be retained	1 week
Grade minor areas and spread topsoil	½ week
Revegetate regraded areas	½ week
APPROXIMATE TOTAL TIME	9 weeks

CHAPTER 7 HYDROLOGY

7.10 Introduction

7.1.1 General Requirements

This chapter presents a description of:

- Existing hydrologic resources within the permit and adjacent areas;
- Proposed operations and the potential impacts to the hydrologic balance;
- Methods of compliance with design criteria;
- Applicable hydrologic performance standards; and
- Hydrologic reclamation plans for the Wellington Dry-Coal Cleaning Facility.

7.1.2 Certification

All appropriate maps, plans, and cross sections presented in this chapter have been certified by a qualified, registered professional engineer.

7.1.3 Inspection

Impoundments associated with the mining and reclamation operations will be inspected as described in Section 5.1.4.3 of this document.

7.20 Environmental Description

7.2.1 General Requirements

This section presents a description of the pre-operational hydrologic resources within the permit and adjacent areas that may be affected or impacted by the operation and reclamation of the facility and site.

7.2.2 Cross Sections and Maps

7.2.2.1 Location and Extent of Subsurface Water

According to Gloyn et al. (2003), groundwater in the general area occurs in shallow, discontinuous, perched Quaternary colluvial deposits above bedrock and in the Ferron Sandstone Member of the Mancos Shale, which is approximately 700 feet below the ground surface at the permit area. These two potential water-bearing units are separated by the Bluegate Shale Member of the Mancos Shale, which is highly impermeable. A generalized hydrostratigraphic cross section of the area is presented in Figure 7-1.

Shallow, perched groundwater may occur in the area in disconnected, unconsolidated materials that overly relatively impermeable bedrock. The primary sources of recharge to these layers are precipitation, infiltration from losing reaches of streams, irrigation, and groundwater discharge from bedrock. These water-bearing units generally range in thickness from a few feet to up to several tens of feet. Groundwater in these units generally contains high total dissolved solids (“TDS”) concentrations (Gloyn et al., 2003).

The prior owner installed a monitoring well in the permit area in December 2008. Since shallow groundwater generally follows the surface contour, the direction of shallow groundwater flow beneath the permit area was assumed to be toward the southeast. To monitor the effects, if

any, of facility operation, the well was installed near the southeast corner of the operating facility at the location indicated in Figure 7-2. This well was drilled using hollow-stem auger methods to a depth of 13 feet in the Mancos Shale, at which point refusal was encountered. The well was completed with 2-inch diameter PVC screen and casing, with a 20- to 40-mesh silica sand filter pack and a bentonite surface seal. Lithologic and completion logs for the well are provided in Appendix 7-1.

The monitoring well was sampled on December 24, 2008, with the data collected during that monitoring event presented in Table 7-1. As indicated, the depth to groundwater in December 2008 was 12.0 feet. The water had a temperature of 12.1°C, with a field pH of 7.40 and a field specific conductance of 9.900 μ S. The water is a sodium-sulfate type, with a total dissolved solids concentration of 11,000 mg/L. Total and dissolved iron concentrations were detected at 300 and <0.050 mg/L, respectively. Total and dissolved manganese concentrations were detected at 3.9 and 0.57 mg/L, respectively. Analyses of subsequent samples collected from this monitoring well show similar results (see Table 7-1).

The Ferron Sandstone consists of very fine-grained, silty sandstone with abundant interbedded carbonaceous shale. It is located about 700 feet below the ground surface of the permit area, and is approximately 80 feet thick in the region (Gloyn et al, 2003). A coal-bed methane well constructed in Township 14S Range 10E, SLBM (one township north of the permit area) and completed in the Ferron Sandstone contained 6,500 to 9,000 mg/L TDS (Gloyn et al, 2003). Another well drilled into the Ferron Sandstone about 0.3 mile north of the coal cleaning facility did not encounter any groundwater (source: DOGM Oil and Gas Well Database).

7.2.2.2 Location of Surface Water Bodies

A map showing the location of surface water bodies in the area is provided in Figure 7-3. A listing of water rights data is presented in Appendix 7-2. As indicated in that appendix, 69 point-of-use water rights exist in Section 14, T. 15 S., R. 10 E. (the section in which the permit area

is located). The vast majority of these rights are held by the Price River Water User's Association and represent water that is diverted remote from the permit area and delivered via distribution systems throughout the region for industrial use (as well as limited stockwatering and domestic use). The only point-of-diversion water rights filed in Section 14 are for stock watering on Miller Creek (see Figure 7-3). This map also shows the locations of the facility sedimentation ponds, which are the only permitted discharge locations at the site.

7.2.2.3 Locations of Monitoring Stations

As indicated in Section 7.4.2.2, all runoff from the permit area flows into sedimentation ponds located in the downstream portions of the site. These ponds were constructed to contain far more than the quantities of sediment and runoff required by the DOGM regulations. Hence, surface outflows from the permit boundary are not anticipated except under conditions of extreme precipitation. Since all surface runoff from the permit area will flow into the sedimentation ponds, no surface monitoring stations other than the pond outlets have been installed for this facility. The locations of these ponds are shown on Plate 5-1. BRC Wellington ("BRCW") is required to monitor the discharges from these ponds in accordance with UPDES discharge permit No. UTR000685 issued by the Utah Division of Water Quality.

The prior owner installed one monitoring well in December 2008 to monitor groundwater at the downgradient edge of the permit area. The location of this monitoring well, as shown on Figure 7-2, was selected in consultation with DOGM. Groundwater resources are not used at or near the site, and it is unlikely that they are impacted by activities within the permit area. The shallow groundwater beneath the site is not beneficially used and contains poor quality water, as indicated in Section 7.2.2.1.

The facility uses municipal water and site runoff is controlled in accordance with the R645 rules and a Storm Water Pollution Prevention Plan. No perennial water bodies occur within the permit area.

7.2.2.4 Location and Depth of Water Wells

No water-supply wells currently exist in the permit area. However, as noted above, a monitoring well was installed within the permit area in the fourth quarter of 2008. Stratigraphic and completion logs of this well are provided in Appendix 7-1.

7.2.2.5 Surface Topography

Surface topographic features in the permit and adjacent areas are shown on Plate 5-1. Note that, other than the sedimentation ponds, the topography shown on this map was surveyed prior to site grading at the facility. The size and locations of the sedimentation ponds are based on a survey performed in September 2008. The site is relatively flat and only minor site regrading was performed to facilitate the drainage of storm water runoff. Since the existing site contours approximate the original site contours and the sedimentation ponds have a great deal of extra capacity, the hydrology calculations discussed in this chapter should adequately represent site conditions.

7.2.3 Sampling and Analysis

A groundwater monitoring well was installed within 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 installation of the well and during the first year of reclamation after plant operations cease. Analytical parameters to be analyzed are listed in Table 7-1. These parameters were determined in consultation with DOGM.

As discussed in Section 7.2.2.3, all runoff from the permit area flows into sedimentation ponds located in the downstream (southern) portion of the site. Hence, surface water monitoring

will consist of sampling discharges (if any) from the sedimentation ponds in accordance with the UPDES permit.

7.2.4 Baseline Information

Surface water, groundwater, and climatic resource information is presented in this section to assist in determining the baseline hydrologic conditions which exist in the area of the facility. This information provides background data on the hydrologic balance of the area.

7.2.4.1 Groundwater Information

A brief discussion of groundwater information is included in section 7.2.2.1 of this document. Groundwater in the vicinity of the Wellington Dry-Coal Cleaning facility has been found in localized shallow, perched zones within unconsolidated surficial materials weathered from the Bluegate Shale and within the Ferron Sandstone. Based on the findings from a groundwater monitoring well drilled in the permit area, shallow groundwater is naturally saline, contains ing high levels of dissolved solids, and is generally poorly suited for drinking or irrigation.

7.2.4.2 Surface Water Information

The Wellington Dry-Coal Cleaning Facility is located on land that drains to the south toward Miller Creek, located approximately 2000 feet south of the permit area. Drainage occurs as overland flow or in ephemeral washes that flow in direct response to precipitation events. Based on field observations of vegetation, geomorphic conditions, and the presence of some surface water in the late summer/early autumn of 2007 and 2008 as well as the late winter/early spring of 2009, it appears that Miller Creek is a perennial stream at its location south of the permit area. These observations are supported by the fact that Miller Creek appears on the USGS topographic map of the area as a solid line (the symbol used for perennial streams). Miller Creek feeds into the Price River in Wellington, Utah. The Price River is a tributary of the Green River. Stream gage data

collected from 1972 to 1986 shows that the average annual flow volume of the Price River just below its confluence with Miller Creek is 105,565 acre-feet (Utah Division of Water Resources, 2000). No historical stream gage data exist for Miller Creek.

Figure 7-3 shows a tributary to Miller Creek approximately 400 feet southwest of the southwest corner of the permit area. Based on field observations of vegetation, geomorphic conditions, the lack of surface water, and the lack of a well-defined surface flow path within the greater channel, this tributary appear to be an ephemeral channel that receives surface runoff in response to rainfall and snowmelt events. These observations are supported by the limited drainage area and the fact that this stream is represented on the USGS topographic map with a symbol other than a solid line. Irrigation return flow may also discharge into this channel 900 to 1000 feet south-southeast of the permit area.

As part of the UPDES permit, water samples will be collected from the sedimentation ponds before any impounded water is released. A copy of the UPDES Permit is included in Appendix 7-3. Published water quality data for the Price River show a decrease in water quality as it flows from the Wasatch Plateau toward the Green River. This decrease is attributed to the presence of soluble minerals in the surrounding rocks (principally the Mancos Shale), saline soils, and irrigation return flows. Typical TDS values are 400 mg/L in the upper reaches of the Price River, 600 to 2,400 mg/L near Wellington, and 2,000 to 4,000 mg/L at Woodside, which is several miles downstream (Mundorff, 1972).

7.2.4.3 Geologic Information

Geologic information related to the permit and adjacent areas is presented in Chapter 6 of this document.

7.2.4.4 Climatological Information

Based on regional data collected from June 1980 to January 2005, normal annual precipitation at the permit area is about 9.2 inches per year. Most of this precipitation occurs during July through September as a result of summer thunderstorms (Western Regional Climate Center - <http://www.wrcc.dri.edu/index.html>).

The station closest to the facility that reports wind data is located at the airport at Price, Utah (approximately 5 miles west of the facility). The average annual wind speed at this location between 1996 and 2006 was 6.8 mph (Western Regional Climate Center web site).

The normal annual temperature at the Price Warehouses, Utah station (located 5 miles west of the facility) is 49.9° F. Seasonally, this temperature varies from a normal monthly low of 13.4° F in January to a normal monthly high of 90.0° F in July (Western Regional Climate Center web site).

7.2.4.5 Supplemental Information

No supplemental information is required at this time.

7.2.4.6 Survey of Renewable Resource Lands

The existence and recharge of aquifers in the permit and adjacent areas is discussed in Sections 7.2.2.1 and 7.2.4.1 of this document.

7.2.4.7 Alluvial Valley Floor Requirements

Information regarding the presence or absence of alluvial valley floors in the permit and adjacent areas is presented in Chapter 9 of this document.

7.2.5 Baseline Cumulative Impact Area Information

Information concerning the hydrology of the region is available in various publications, including Mundorff (1972), Waddell et al. (1981), Waddell et al. (1982), Waddell et al. (1986), and Gloyn et al. (2003). Since the hydrologic impact of the operations will be insignificant, it is not anticipated that revisions will be needed to the Cumulative Hydrologic Impact Assessment of the area.

7.2.6 Modeling

No numerical groundwater or surface water modeling was conducted in support of this document.

7.2.7 Alternative Water Source Information

No surface mining has been or will be conducted in the permit and adjacent areas. Therefore, this section does not apply to the Wellington Dry-Coal Cleaning Facility.

7.2.8 Probable Hydrologic Consequences

This section addresses the probable hydrologic consequences of coal cleaning and reclamation operations in the permit and adjacent areas. Mitigating measures are discussed generally in this section and as well as in Section 7.3 of this document.

7.2.8.1 Potential Impacts to Surface and Groundwater

Potential impacts of coal cleaning on the quality and quantity of surface and groundwater flow are discussed in the facility's Storm Water Pollution and Prevention Plan and may include the following:

- Coal, equipment fuels and fluids from the truck dump and coal storage area;
- Equipment fuels and fluids from the front end loader;
- Coal and lubricant from the conveyor belt; and
- Coal and lubricant from the silo.

A copy of the SWP3 is included in Appendix 7-4. These potential impacts are addressed in the following sections of this document.

7.2.8.2 Baseline Hydrologic and Geologic Information

Baseline geologic information is presented in Chapter 6 of this document. Baseline hydrologic information is presented in Sections 7.2.4.1 and 7.2.4.2 of this document.

7.2.8.3 PHC Determination

Potential Impacts to the Hydrologic Balance. Potential impacts to the hydrologic balance are addressed in the following subsections of this document.

Acid- or Toxic- Forming Materials. As noted in Section 5.2.8.3, the coal processed in the permit area comes from coal fields that historically have not produced significant acid or toxic materials. This greatly minimizes the potential for acid- or toxic-forming materials to be present at the site. Furthermore, coal is only temporarily stored in the permit area, the native soils at the site are alkaline, and sediment and runoff are retained on site through the use of sedimentation ponds.

This further minimizes the potential for drainage from the site to adversely affect water quality, vegetation, public health, and safety of workers and the public.

Sediment Yield. The potential impact of mining and reclamation on sediment yield is an increase in sediment in the surface waters downstream from disturbed areas. Sediment-control measures (such as sedimentation ponds, drainage ditches, etc.) have been designed and constructed to minimize this impact. All runoff from the facility is directed toward one of two on-site sedimentation ponds that allow for sediment to settle. The ponds contain spillways to control discharge in the unlikely event that the ponds overflow. All runoff controls are regularly inspected (see Section 5.1.4) and maintained. The facility operates under UPDES Permit UTR000685, and also has a Storm Water Pollution Prevention Plan and a Spill Prevention Control and Countermeasure Plan. Copies of these permits are attached in Appendices 7-2, 7-3, and 7-4 respectively.

Acidity, Total Suspended Solids, and Total Dissolved Solids. Probable impacts of operations on the acidity and total suspended solids concentrations of surface and groundwater in the permit and adjacent areas were addressed previously in this section.

Flooding or Streamflow Alteration. The disturbed area is isolated from surrounding areas by runoff control structures such as earthen berms, diversion ditches, and sedimentation ponds. Runoff from all disturbed areas flows to sedimentation ponds prior to discharge to adjacent undisturbed drainages. Since no mining or exploration will occur at this site, there will be no impact on flooding or stream flows due to subsidence.

Groundwater and Surface Water Availability. Runoff controls at the site will minimize impacts to adjacent surface resources. As noted in Section 7.2.4.2, impacts to groundwater are also considered to be insignificant due to a combination of limited groundwater resources, poor groundwater quality, and relatively impermeable geologic materials at the site. Furthermore, the

coal cleaning facility uses limited amounts of water, thereby further minimizing potential adverse impacts to surface and groundwater.

Potential Hydrocarbon Contamination. Diesel fuel, oils, greases, and other hydrocarbon products are stored and used at the site for a variety of purposes. Diesel is stored in an above-ground tank that is provided with secondary containment. Spills onto the ground have the potential to occur during filling of the storage tank or filling of mobile equipment. Similarly, spills from drums containing greases and other oils may potentially occur during use at the site.

The probable future extent of the contamination caused by diesel and oil spillage is expected to be small for four reasons. First, all tanks and drums are stored in secondary containment structures that prevent leaks from reaching the ground. Second, spills caused by filling operations outside of the secondary containment structures will be minimized due to the economic value of the product. Third, because the tanks and drums are located above ground, leakage from the tanks can be readily detected and repaired. Finally, the Spill Prevention Control and Countermeasure Plan included in Appendix 7-5 mandates inspection, training, and operational measures to minimize the extent of contamination resulting from the use of hydrocarbons at the site.

Road Salting. No salting of the haul road occurs within the permit area. Hence, no impact will result from this action in the permit or adjacent areas.

Coal Haulage. Coal is hauled on the haul road within the permit area. Coal spillage will be promptly picked up. In addition to spills, wind may carry coal dust or small pieces of coal away from the open top of coal trucks. The impact from fugitive coal dust is considered to be insignificant due to the fugitive dust control measures implemented at the site.

7.2.9 Cumulative Hydrologic Impact Assessment (CHIA)

Information is provided in this application that will allow DOGM to update a Cumulative Hydrologic Impact Assessment if necessary.

7.30 Operation Plan

7.3.1 General Requirements

This permit application includes an operation plan which addresses the following:

- Groundwater and Surface Water Protection and Monitoring Plan
- Design Criteria and Plans
- Performance Standards
- Reclamation Plan.

7.3.1.1 Hydrologic-Balance Protection

Groundwater Protection. As indicated in Section 7.2.8.3, no significant potential exists for acid- or toxic-forming materials to be present in the permit area. If these materials are found to be present, they will be handled in accordance with Section 7.3.1.3. In this manner, BRCW will manage operations to prevent or control discharges of pollutants to the groundwater.

Surface Water Protection. A runoff control plan has been implemented to minimize, to the extent possible, additional contributions of suspended solids to streamflow outside the permit area, and otherwise prevent water pollution. BRCW will maintain adequate runoff- and sediment-control facilities to protect local surface waters.

7.3.1.2 Water Monitoring

Groundwater Monitoring. The prior owner installed one groundwater monitoring well within the permit area during the fourth quarter of 2008. Monitoring of this well will occur as outlined in Section 7.2.3.

As indicated in Section 7.2.2.1, the groundwater monitoring well at the site was drilled southeast of the operation area of the facility, at a location that was assumed to be downgradient of the operating area. BRCW acknowledges that coal stockpiles have been placed south of this monitoring well, in an area that may not be monitored by the well. However, this is not considered problematic for the following reasons:

- Trace elements (ie., potential pollutants) are generally only minimally leachable from coal by water (Norris et al., 2010);
- The Bluegate Shale on which the site is constructed is only minimally permeable (Gloyn et al., 2003); and
- The Bluegate Shale is approximately 700 feet thick at the site (see Section 7.2.2.1).

Hence, the potential for impacts from leaching of coal to occur to any groundwater other than in the discontinuous of the naturally-saline Bluegate Shale are essentially non-existent.

Surface Water Monitoring. No streams exist within permit area. The closest perennial stream (Miller Creek) is located about 2000 feet south of the permit area. Therefore, only storm water will be monitored where it discharges from the sedimentation ponds. Monitoring of these discharges will be conducted in accordance with the requirements of the UPDES permit.

7.3.1.3 Acid- and Toxic-Forming Materials

As noted in Section 7.2.8.3, no significant potential exists for acid- or toxic-forming materials to be present at the site or to adversely affect water quality, vegetation, public health, and safety of workers and the public. To further minimize the potential for surface- and groundwater

contamination, BRCW will sample all coal and coal waste that remains on site after ~~at~~ the site (not the pile) has been inactive for a period of 30 days. BRCW 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. 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 BRCW samples.

7.3.1.4 Transfer of Wells

No water supply wells exist at the facility.

7.3.1.5 Discharges

Two UPDES discharges are associated with the Wellington Dry-Coal Cleaning Facility – one for each sedimentation pond.

7.3.1.6 Stream Buffer Zones

The facility is not located within 100 feet of any perennial or intermittent stream channels. Thus, no buffer zones have been designated.

7.3.1.7 Cross Sections and Maps

The locations of water rights for current users of surface water in the general area are provided on Figure 7-3. Discharges associated with the sedimentation ponds are located as presented on this figure.

7.3.1.8 Water Rights and Replacement

BRCW 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 BRCW in the permit area.

7.3.2 Sediment Control Measures

The existing sediment control measures within the permit area have been designed, constructed, and maintained to prevent additional contributions of sediment to streams or to runoff outside the permit area. In addition, they have been designed to meet applicable effluent limitations, and minimize erosion. The structures to be used for the runoff control at the site include diversion channels, sedimentation ponds, containment berms, silt fences, and road diversions and culverts.

7.3.2.1 Siltation Structures

The siltation structures within the permit area consist of the sedimentation ponds described in Section 7.3.2.2.

7.3.2.2 Sedimentation Ponds

Two sedimentation ponds store precipitation runoff from the facility. Ordinarily, runoff collected in these ponds is allowed to evaporate or percolate into the ground. Sediment that accumulates in the ponds will be removed as needed. Runoff may be pumped out of the sediment ponds and used for dust suppression in accordance with the air quality permit.

Compliance Requirements. All sedimentation ponds will be maintained until the site is reclaimed or transferred to a future landowner. The sedimentation ponds were designed to contain sediment in addition to the runoff resulting from the 10-year, 24-hour storm event. The spillways for the sedimentation ponds were designed to adequately pass the peak flow resulting from the 25-year, 6-hour precipitation event.

MSHA Requirements. The sedimentation ponds at the site do not meet the size criteria of MSHA requirements defined in 30 CFR 77.216.

7.3.2.3 Diversions

The objective of the runoff control plan is to isolate, to the maximum degree possible, runoff from disturbed areas. All diversion ditches are maintained with adequate erosion protection in the ditch sections where flow velocities are great enough that a ditch lining is necessary. Adequate ditch capacities are maintained in all ditch sections. Culverts are kept free of debris. Detailed diversion design is presented in Section 7.4.2.

7.3.2.4 Road Drainage

Road drainage facilities include diversion ditches, culverts, and containment berms. Additional road drainage design information is presented in Section 7.4.2. All road drainage diversions will be maintained and repaired as needed following the occurrence of a large storm event. Culvert inlets and outlets will be kept clear of sediment and other debris.

7.3.3 Impoundments

7.3.3.1 General Plans

Two sedimentation ponds operate at the facility as described in Section 7.3.2.2.

Certification. All maps and cross sections of the sedimentation ponds have been prepared by or under the direction of and certified by a qualified, registered, professional engineer.

Maps and Cross Sections. The topography and cross sections for the sedimentation ponds are located on Plate 7-1. The geometry of drainage channels and the sedimentation ponds were measured in the field, and placed on the map using an aerial photograph of the site.

Narrative. A description of each sedimentation pond is presented in Sections 7.3.2.2 and 7.4.2 of this document.

Subsidence Survey Results. Since no mining occurs at the site, a subsidence survey is not presented.

Hydrologic Impact. The hydrologic and geologic information required to assess the hydrologic impacts of the impoundments can be found in Section 7.2.4 and Chapter 6, respectively.

Design Plans and Construction Schedule. No additional impounding structures are proposed for the facility at this time. Designs of all existing structures are described in this document.

7.3.3.2 Permanent and Temporary Impoundments

Requirements. Impoundments at the facility consist of the two sedimentation ponds. These ponds will be retained following closure of the site for use by the future landowner to control runoff from the property. They have been designed and constructed using current, prudent, engineering practices. Since they have been constructed below grade, they are considered to be stable. Specific hydrologic design criteria for each impoundment are presented in Section 7.4.3.

Each impoundment will be inspected regularly based on the schedule contained in Section 5.1.4.3. The sedimentation ponds meet the requirements for retention as permanent impoundments as indicated below:

- R645-301-733.221: The future use of the ponds would be for runoff and sediment control. The ponds were designed in accordance with the requirements of the R645 rules, which requirements are consistent with the storm-water control requirements of the Utah Division of Water Quality. Thus, the size and configuration of the impoundments is adequate for their future intended use as storm-water control structure.
- R645-301-733.222: The ponds have been designed to meet the water-quality requirements of the R645 rules, which rules are consistent with Utah and federal water-quality standards for storm-water control structures. Hence, discharges from the ponds will meet applicable effluent limitations and will not degrade the quality of receiving waters below applicable Utah and federal water-quality standards.
- R645-301-733.223: The ponds will function in the future as runoff-control structures. As such, their operation is independent of water-level fluctuations.
- R645-301-733.224: The ponds are designed as runoff- and sediment-control structures. It is not intended that they be accessed by water users, either now or in the future.
- R645-301-733.225: The effect of the ponds on the quantity and quality of water in the general area is discussed in Section 7.2.8.3 of this application. Beneficial effects to water quality and insignificant effects on water quantity will continue in the future.
- R645-301-733.226: The ponds were designed to serve as storm-water control structures. This is accomplished by retaining sediment and detaining runoff on site to minimize the effects of site development on adjacent lands. The ponds are suitable to serve these functions in the future.

Hazard Notifications. The sedimentation ponds will be examined for structural weakness and erosion at least four times per year.

7.3.4 Discharge Structures

The discharge structures at the site include the spillways on the sedimentation ponds. These discharge structures are described in Section 7.4.4.

7.3.5 Disposal of Excess Spoil

No excess spoil is generated at the facility.

7.3.6 Coal Mine Waste

No coal mine waste is stored at the facility.

7.3.7 Noncoal Mine Waste

Non-coal mine waste is not stored or disposed of on site (see Chapter 5).

7.3.8 Temporary Casing and Sealing of Wells

The future groundwater monitoring well at the facility will be constructed in compliance with R645-301-748.

7.40 Design Criteria and Plans

7.4.1 General Requirements

This section includes site-specific plans that incorporate minimum design criteria for the control of drainage from disturbed areas. Refer to Appendix 7-6 for a description of the hydrologic design methods used to design the sedimentation ponds and diversion structures at the facility.

7.4.2 Sediment Control Measures

7.4.2.1 General Requirements

Design. Existing sediment control measures have been designed, constructed and maintained to:

- Prevent additional contributions of sediment to stream flow or to runoff outside the permit area,
- Meet the effluent limitations defined in R645-301-751, and
- Minimize erosion to the extent possible.

Measures and Methods. The sediment control measures at the facility include:

- Retention of sediment within the disturbed area
- Diversion of runoff using channels or culverts through disturbed areas to prevent additional erosion

- Provide straw bale dikes, riprap, dugout ponds, silt fencing, and other measures that reduce overland flow velocities, reduce runoff volumes or trap sediment.

7.4.2.2 Siltation Structures

General Requirements. Additional contributions of suspended solids and sediment to stream flow or runoff outside the permit area is being prevented to the extent possible using two sedimentation ponds as siltation structures. They are located in the southeast and southwest corners of the disturbed area. Each structure has been certified by a qualified registered professional engineer. They have been designed, constructed and maintained as described in Chapter 5 and Sections 7.3.3 and 7.4.3.

Sedimentation Ponds. The sedimentation ponds are designed to work individually. One pond receives runoff from the eastern portion of the disturbed area, and one pond receives runoff from the western portion of the disturbed area. Neither of the ponds is located within a perennial stream channel.

Sediment Storage Volume. The sedimentation ponds were designed to contain sediment in addition to runoff from the design storm event. The expected annual sediment volume reporting to each of the sedimentation ponds was calculated using a modified form of the Universal Soil Loss Equation developed specifically for conditions in Utah (Israelsen et al., 1984). As indicated in Table 7-2 and Appendix 7-7, the calculated annual sediment volume deposited in the eastern sedimentation pond is 333 cubic feet, and the calculated annual sediment volume deposited in the western sedimentation pond is 134 cubic feet.

The east and west sedimentation ponds have been constructed to store 16,930 and 12,730 cubic feet of sediment, respectively. These volumes correspond to approximately 51 and 95 years of average annual sediment storage for the east and west ponds, respectively. The practical effect of the substantial sediment storage life of the ponds will be to provide excess runoff storage during the period of facility operation. Based on a bottom elevation of 5,493.8 feet in the east

sedimentation pond and 5,498.2 feet in the west sedimentation pond, the elevation in each sedimentation pond corresponding to the maximum sediment storage is 5,498.6 feet in the east pond (4.8 feet above the bottom) and 5,505.4 feet in the west pond (7.2 feet above the bottom). The 60% sediment cleanout elevations for the east and west sedimentation ponds are 5,497.3 feet and 5,503.4 feet, respectively (3.5 and 5.2 feet above the bottoms, respectively). Refer to Appendix 7-7 for sediment storage calculations.

Detention Time. Given the substantial storage volume of the ponds relative to standard site requirements, an adequate detention time will be provided in each pond to allow the effluent to meet UPDES limitations. Prior to discharge of pond water to the adjacent area, this water will be sampled to ensure that it meets the above-referenced effluent limitations. Water may be periodically pumped from the ponds and used for dust suppression within the permit area.

Design Runoff Event. The sedimentation ponds are designed to fully contain runoff resulting from the 10-year, 24-hour precipitation event. The drainage characteristics, including contributing area, runoff curve number, and hydraulic length were calculated as shown in Appendix 7-7. The runoff storage volumes for the design event were calculated to be 36,970 and 14,850 cubic feet for the east and west ponds, respectively. In order to contain runoff from the design precipitation event and the design sediment volume, the elevations of the spillways were located at 5,503.8 feet and 5,508.0 feet for the east and west sedimentation ponds, respectively.

Sediment Removal. Sediment will be removed from the when the sediment level reaches an elevation corresponding to 60% of the total sediment storage volume. As noted in Plate 7-1 and Appendix 7-7, the 60% clean-out elevation is 5,497.3 feet and 5,503.4 feet for the east and west sedimentation ponds, respectively. Sediment that contains a significant amount of coal will be processed at the coal cleaning facility. Sediment that contains an insignificant amount of coal will be blended with byproduct produced at the facility.

Excessive Settlement. The sedimentation ponds within the permit area were excavated into natural soil. Excessive settlement has not been observed and, given the excavated construction, is not anticipated in the future at either sedimentation pond.

Embankment Material. Sedimentation pond embankment materials are free of sod, large roots, frozen soil, and acid- or toxic forming coal-processing waste.

Compaction. During construction the sedimentation ponds, the limited embankments were compacted using standard construction practices.

MSHA Sedimentation Ponds. The sedimentation ponds at the site do not meet the size criteria of MSHA requirements defined in 30 CFR 77.216.

Sedimentation Pond Spillways. Each sedimentation pond is equipped with a swale on its downstream side that serves as a spillway. Each spillway is trapezoidal in cross section and measures approximately 2 feet deep and 1 foot wide with 1H:1V side slopes. These spillways were designed to safely discharge the peak flow resulting from the 25-year, 6-hour precipitation event (see Appendix 7-7). If the ponds spill, this water will discharge as overland flow, eventually reaching Miller Creek if it does not first infiltrate. The design spillway event was modeled using HydroCAD 8.5 computer software. Since the sedimentation ponds contain sufficient volume to contain several years' worth of sediment yield, it is likely that the ponds will not spill during BRCW operations.

In the eastern pond, the peak inflow during the 25-year, 6-hour precipitation was calculated to be 9.99 cubic feet per second ("cfs"), and the peak outflow through the spillway was calculated to be 2.29 cfs with a peak velocity of 2.01 feet per second ("fps"). Since the peak outflow velocity is less than approximately 5 fps, it is considered non-erosive, and erosion protection is not required. The peak stage during this event was calculated to be 5,504.3 feet (10.5 feet above the pond bottom).

In the western pond, the peak inflow during the 25-year, 6-hour precipitation was calculated to be 3.24 cfs, and the peak outflow was calculated to be 0.04 cfs with a peak velocity of 0.46 fps. Since the peak outflow velocity is less than approximately 5 fps, it is considered non-erosive, and erosion protection is not required. The peak stage during this event was calculated to be 5,508.03 feet (9.8 feet above the pond bottom).

Other Treatment Facilities. No other water treatment facilities are located within the permit area.

Exemptions. Two alternate sediment control areas exist at the locations shown on Plate 7-2. These areas will be bounded by a minimum 6-inch high berm or fiber roll as indicated, each installed on the inside of the facility fence. Calculations to support the design of these alternate sediment control areas are provided in Appendix 7-9.

The berm noted on Plate 7-2 is existing and was installed during site grading along the interior of the facility fence. This berm, which has the approximate dimensions noted on Plate 7-2, effectively keeps runoff from flowing off site to the property west of the facility. The berm will be maintained with a minimum height of 6 inches.

Fiber rolls will be installed at the location shown on Plate 7-2 in accordance with manufacturer's instructions. Approximately half of the roll will extend below the ground surface and individual sections of fiber roll will be overlapped horizontally to preclude bypass of sediment. Each fiber roll will be staked into the ground on centers that do not exceed 4 feet. Although the junction point of the berm and fiber rolls may vary somewhat from that indicated on Plate 7-2, a barrier with a minimum height of 6 inches will be maintained in the indicated locations.

7.4.2.3 Diversions

General Requirements. The diversions within the permit area consist of drainage ditches and culverts. All diversions within the permit area have been designed to minimize adverse impacts to the hydrologic balance, to prevent material damage outside the permit area, and to assure the safety of the public. They have been designed, located, constructed, maintained, and used to:

- Be stable
- Provide protection against flooding and resultant damage to life and property
- Prevent, to the extent possible, additional contributions of suspended solids to stream flow outside the permit area
- Comply with all applicable local, state, and federal laws and regulations

Peak discharge rates from the drainages within the permit area were calculated for use in determining the adequacy of the existing diversion ditches and culverts. Since the diversions will remain in place for the future landowner following cessation of BRCW operations, runoff was calculated assuming permanent diversion structures based on the 100-year, 6-hour precipitation event of 1.74 inches. Curve numbers were based on those defined in Appendix 7-7. A description of the methods used to determine the peak discharge rates is presented in Appendix 7-8.

Watershed boundaries for the facility are presented on Plate 7-2. The disturbed area boundary is surrounded by a berm along the upstream edge and its sides in order to divert runoff around the site. Thus, the watersheds that drain the facility consist only of disturbed areas. The watershed contributing to the east sedimentation pond has been divided into five sub-watersheds which total 17.4 acres in area. The watershed contributing to the west sedimentation pond has been divided into three sub-watersheds which total 7.0 acres in area. The remaining 5.6 acres of the site are situated along the edges of the facility, outside of the diversion ditches, and is not disturbed. All of the area within the watersheds reporting to the ditches and the sedimentation ponds has been considered to be disturbed in the hydrology calculations.

The size and location of each existing diversion ditch and culvert were mapped using an aerial photograph of the site and verified in the field. All diversions are shown on Plate 7-2. The capacity and freeboard of each diversion ditch were determined based on the minimum ditch slope, while the maximum velocity and need for erosion protection were verified based on the maximum ditch slope. The capacity of each culvert was determined using the minimum culvert slope and the outlet velocity and riprap protection was verified using the culvert outlet slope. Slopes were measured from a pre-construction contour map of the site. A description of the methods used to determine diversion capacities, flow velocities, and erosion protection requirements is presented in Appendix 7-6. All diversion calculations are presented in Appendix 7-8.

Diversion of Perennial and Intermittent Streams. There are no diversions of perennial or intermittent streams at the facility.

Diversion Ditches and Culverts. A summary table 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 is presented in Table 7-3. Diversion hydrology calculations are detailed in Appendix 7-8. Each ditch and culvert has been constructed to non-erosively convey the peak flow resulting from the 25-year, 6-hour precipitation event and to contain the flow resulting from the 100-year, 6-hour precipitation event. A description of the diversion ditches and culverts within the facilities area is presented below and in Table 7-2. The ditches are named according to the watersheds that they drain. Ditches prefixed by the letter “E” ultimately report to the east sedimentation pond, and ditches prefixed by the letter “W” ultimately report to the west sedimentation pond. Since some watersheds are drained by culverts instead of ditches, the ditches are not numbered strictly chronologically. Refer to Plate 7-2 for the locations of each watershed and diversion structure.

- **Ditch E-1 (Upper).** This ditch exists on the east edge of the permit area just within the permit area boundary. It conveys runoff from the northern portion and eastern

edge of the site southward toward the east sedimentation pond. It begins at the outlet of culvert C-1 and continues to the outlet of culvert C-2.

- **Ditch E-1 (Lower).** This ditch conveys runoff southward from the outlet of culvert C-2 to culvert C-7 at the inlet of the east sedimentation pond.
- **Ditch E-3.** This ditch conveys runoff from the southeastern corner of the inner yard to the east sedimentation pond.
- **Ditch E-4.** This ditch conveys runoff southward from the region between the top of the truck dump hopper embankment and the road on the east edge of the permit area.
- **Ditch E-5.** This ditch conveys runoff eastward along the southern edge of the permit area toward the east sedimentation pond. It captures runoff from the eastern watershed of the inner yard that is not captured by ditch E-3.
- **Ditch W-1 (Upper).** This ditch runs along the west edge of the permit area. It conveys runoff from the northern portion and western edge of the site southward toward the west sedimentation pond. It begins just west of the northwest corner of the yard access road and extends to the outlet of culvert C-3.
- **Ditch W-1 (Lower).** This ditch runs from the outlet of culvert C-3 to culvert C-5 at the inlet of the west sedimentation pond. It conveys runoff from the W-1 (Upper) Ditch and the W-2 Ditch into the west sedimentation pond.
- **Ditch W-2.** This ditch runs on the east side of the silo and its access road, and drains the area located to the east. It drains into culvert C-3, which feeds into Ditch W-1 (Lower).
- **Ditch W-3.** This ditch conveys runoff westward along the southern edge of the permit area toward the west sedimentation pond. It captures runoff from the area south of the perimeter access road that drains toward the west sedimentation pond.
- **Culvert C-1.** This culvert conveys runoff from watershed E-2 under the truck turn-around road in the northeastern corner of the site. It provides drainage for the area enclosed by the road embankments for the yard perimeter road and the truck turn-around.
- **Culvert C-2.** This culvert conveys runoff under the road in the southeastern corner of the permit area. It provides drainage for the area enclosed by the road embankments for watershed E-4, including the yard perimeter road and the truck dump hopper.

- **Culvert C-3.** This culvert conveys runoff under the road in the southwestern corner of the permit area. It provides a route for drainage from Ditch W-2 to travel under the road and into Ditch W-1 (Lower).
- **Culvert C-4.** This culvert is installed within Ditch W-1 (Lower) to allow vehicular access into the area south of the Loop Road.
- **Culvert C-5.** This culvert is installed at the inlet to the west sedimentation pond. Riprap with a minimum median diameter of 6 inches has been installed at the outlet of this culvert to provide erosion protection.
- **Culvert C-6.** This culvert is installed beneath the southeast corner of the Loop Road and extends a sufficient distance to allow vehicular access from the east to the area south of the road.
- **Culvert C-7.** This culvert is installed at the inlet to the east sedimentation pond. Riprap with a minimum median diameter of 10 inches has been installed at this outlet of this culvert to provide erosions protection.

7.4.2.4 Road Drainage

Roads at the facility include 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. All of the roads have been constructed to include adequate drainage control with the use of diversion ditches, culverts, and containment berms. None of the roads are located in the channel of an intermittent or perennial stream. All roads have been located to minimize downstream sedimentation and flooding. Diversion ditches and culverts for all roads are described in Section 7.4.2.3 above.

7.4.3 Impoundments

The existing impoundments within the permit area consist of two sedimentation ponds along the southern boundary of the disturbed area. Pertinent information regarding these ponds is presented in Sections 7.3.2.2 and 7.4.2.2.

7.4.4 Discharge Structures

The discharge structures within the permit area consist of the spillways on each sedimentation pond. The spillways have been designed to safely pass the peak discharge resulting from the 25-year, 6-hour rainfall event, assuming starting pond storage equal to the 60% sediment cleanout volume and the 10-year, 24-hour runoff volume. Detailed information for each sedimentation pond is presented in Sections 7.3.2.2 and 7.4.2.2.

Each sedimentation pond is equipped with a swale on its downstream side that serves as a spillway. Small embankments have been constructed adjacent to the spillways. Each spillway is trapezoidal in cross section and measures approximately 2 feet deep and 3 feet wide with 1H:1V side slopes. The spillways are armored with rip rap ($D_{50} = 4$ inches). If they spill, this water will discharge as overland flow toward Miller Creek.

7.4.4.1 Erosion Protection

Each discharge structure was evaluated to determine the adequacy of the existing riprap and the hydraulic capacity of the structure during the 25-year, 6-hour precipitation event. The calculations for the discharge structures within the facilities area are presented in Appendix 7-7. Peak discharges from all of the discharge structures during their design events did not exceed 5 feet per second (fps). Thus, the flows are considered non-erosive.

7.4.4.2 Design Standards

All discharge structures within the permit area were designed and constructed according to standard engineering design procedures.

7.4.5 Disposal of Excess Spoil

No excess spoil is generated or disposed of within the permit area.

7.4.6 Coal Mine Waste

7.4.6.1 General Requirements

No coal mine waste is stored on site.

7.4.6.2 Refuse Piles

No refuse piles are located at the facility.

7.4.6.3 Impounding Structures

No impounding structures within the permit area have been constructed of coal mine waste or are used to impound coal mine waste.

7.4.6.4 Return of Coal Processing Waste to Underground Workings

No underground workings are located at this facility.

7.4.7 Disposal of Noncoal Mine Waste

Disposal of noncoal waste is discussed in Chapter 5.

7.4.8 Casing and Sealing of Wells

The groundwater monitoring well to be installed in the permit area will be cased and sealed at the surface to prevent potential acid or other toxic drainage from entering groundwater via the well. The surface will be completed with a lockable steel casing to protect the well and ensure the safety of people, livestock, wildlife, and machinery.

7.50 Performance Standards

All operations and reclamation will be conducted to minimize disturbance to the hydrologic balance within the permit and adjacent areas, prevent material damage to the hydrologic balance outside the permit area, and support approved post operations land uses.

7.5.1 Water Quality Standards and Effluent Limitations

Discharges of water from disturbed areas will be in compliance with all applicable Utah and federal water quality laws and regulations and with applicable effluent limitations for coal mining contained in 40 CFR Part 434. The area outside of the permit-area fence line will be inspected at least once each calendar quarter for the presence of wind-blown coal dust. Accumulations of coal dust more than ½-inch thick will be cleaned within seven days of discovery using shovels or vacuum trucks. Coal dust thus removed will be placed within the permit area at a location that drains to a sedimentation pond.

7.5.2 Sediment Control Measures

All sediment control measures will be located, maintained, constructed and reclaimed according to plans and designs presented in Sections 7.3.2, 7.4.2, and 7.6.0.

7.5.2.1 Siltation Structures and Diversions

Siltation structures and diversions will be located, maintained, constructed and reclaimed according to plans and designs presented in Sections 7.3.2, 7.4.2, and 7.6.3.

7.5.2.2 Road Drainage

All roads will be located, designed, constructed, reconstructed, used, maintained and reclaimed according to plans and designs presented in Sections 7.3.2.4, 7.4.2.4, and 7.6.2. All roads have been designed to:

- Control or prevent erosion and siltation by maintaining or stabilizing all exposed surfaces in accordance with current, prudent engineering practices;
- Control or prevent additional contributions of suspended solids to stream flow or runoff outside the permit area;
- Neither cause nor contribute to, directly or indirectly, the violation of effluent standards given under Section 7.5.1.
- Minimize the diminution to or degradation of the quality or quantity of surface- and ground-water systems;
- Refrain from significantly altering the normal flow of water in streambeds or drainage channels.

7.5.3 Impoundments and Discharge Structures

Impoundments and discharge structures will be located, maintained, constructed and reclaimed as described in Sections 7.3.3, 7.3.4, 7.4.3, 7.4.5, and 7.6.0.

7.5.4 Disposal of Excess Spoil, Coal Mine Waste and Noncoal Mine Waste

Handling and disposal of coal mine waste and noncoal mine waste is described in Sections 7.3.6, 7.3.7, 7.4.6, 7.4.7, 7.6.0 and Chapter 5.

7.5.5 Casing and Sealing of Wells

When no longer needed, the groundwater monitoring well in the permit area will be abandoned in accordance with R645-301-765 and the requirements of the Utah Division of Water Rights.

7.60 Reclamation

7.6.1 General Requirements

A detailed reclamation plan for the facility is presented in Section 5.40. In general, BRCW will ensure that all temporary structures are removed and reclaimed. Permanent diversions will be maintained properly and will meet the requirements of the approved reclamation plan for permanent structures and impoundments. BRCW will renovate the diversion structures if necessary to meet the requirements of R614-301 and R614-302 and to conform to the approved reclamation plan.

7.6.2 Roads

All site roads will be retained for use under the operational industrial land use.

7.6.2.1 Restoring the Natural Drainage Patterns

The facility does not interfere with natural drainage patterns that require restoration.

7.6.2.2 Reshaping Cut and Fill Slopes

No cut and fill slopes are located at the facility.

7.6.3 Siltation Structures

7.6.3.1 Maintenance of Siltation Structures

All siltation structures will be maintained in accordance with the approved reclamation plan.

7.6.3.2 Removal of Siltation Structures

It is anticipated that siltation structures at the site will be retained following reclamation, for use by the future landowner, in accordance with the reclamation plan presented in Section 5.40.

7.6.4 Structure Removal

A timetable for the removal of each structure is presented in Table 5-2.

7.6.5 Permanent Casing and Sealing of Wells

When no longer needed, the groundwater monitoring well in the permit area will be abandoned in accordance with R645-301-765 and the requirements of the Utah Division of Water Rights.

REFERENCES

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- Gloyn, R.W., D.E. Tablet, B.T. Tripp, C.E. Bishop, C.D. Morgan, J.W. Gwynn, and R.E. Blackett, 2003. Energy, Mineral, and Groundwater Resources of Carbon and Emery Counties, Utah. Bulletin 132, Utah Geological Survey, Utah Department of Natural Resources. Salt Lake City, Utah.
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- Mundorff, J.C., 1972. Reconnaissance of Chemical Quality of Surface Water and Fluvial Sediment in the Price River Basin, Utah. Technical Publication No. 39. Utah Department of Natural Resources. Salt Lake City, Utah.
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TABLE 7-1

Results of Groundwater Analyses

Parameter	Dated Sampled			
	24 Dec 2008	17 Mar 2009	15 Jun 2009	23 Sep 2009
Field Analyses (units as indicated)				
Depth to water (ft) ^(a)	12.00	12.01	12.53	12.54
Temperature (°C)	12.1	11.0	15.7	17.1
pH (std units)	7.40	7.13	6.71	6.90
Specific conductance (µS)	9,900	--	9,370	9,990
Laboratory Analyses (mg/L)				
Bicarbonate as CaCO ₃	270	270	260	280
Calcium	390	370	390	410
Carbonate as CaCO ₃	<10	<10	<10	<10
Chloride	84	68	66	75
Iron, dissolved	<0.050	<0.050	0.97	0.92
Iron, total	300	5.6	0.27	5.6
Magnesium	270	270	260	270
Manganese, dissolved	0.57	0.60	0.58	0.50
Manganese, total	3.9	0.75	0.58	0.50
Nitrate/Nitrite as N	0.34	0.015	0.41	0.036
Potassium	36	26	28	29
Sodium	1,900	2,000	2,000	2,200
Sulfate	5,700	5,600	5,500	6,100
Total dissolved solids	11,000	8,900	8,800	8,400

^(a) Measured as depth from ground surface

TABLE 7-2

Summary of Sedimentation Pond Data

	East Pond	West Pond
Assumed bottom elevation (ft)	5,493.8	5,498.2
Assumed crest elevation (ft)	5,505.8	5,510.0
Total Storage Capacity (ft ³)	53,900	36,070
Calculated Annual Sediment Volume (ft ³)	333	134
10-Year, 24-Hour Precip. Runoff Volume (ft ³)	36,970	14,850
Sediment Storage Capacity (ft ³)	16,930	21,220
60% Sediment Storage Cleanout Volume (ft ³)	10,160	12,730
Sediment Cleanout Elevation (ft)	5,498.6	5,505.4
Peak Stage of 10-Year, 24-Hour Precipitation Event Plus 60% Sediment Storage Capacity (ft)	5,503.0	5,506.4
Invert elevation of 3-foot wide armored spillway (ft)	5,503.7	5,508.0
Peak Pond Inflow Due to 25-Year, 6-Hour Precipitation Event (cfs)	9.24	2.70
Peak Pond Outflow due to 25-Year, 6-Hour Precipitation Event (cfs)	2.26	0.29
Peak Pond Outflow Velocity due to 25-Year, 6-Hour Precipitation Event (fps)	2.0	0.8
Peak Stage of 25-Year, 6-Hour Precipitation Event Following a 10-Year, 24-Hour Precipitation Event with Pond Full to 60% of Sediment Storage Capacity (ft)	5,504.3	5,508.1

Notes:

- Refer to Appendix 7-7 for calculations related to sedimentation pond design
- Pond dimensions were surveyed by EIS Environmental and Engineering Consulting in November 2007. Absolute elevations were assumed by superimposing the survey data on the pre-construction topography provided by Mine and Mill Engineering. Each pond has a berm extending approximately 2 ft above the ground surface.

TABLE 7-3

Summary of Drainage Ditch and Culvert Data

Structure	Description	Peak Flow (cfs) ^(a)	Max. Flow Depth (ft) ^(b)	Max. Flow Velocity (fps) ^(c)	Required Riprap D ₅₀ (in)
Ditches					
E-1 Upper	Triangular, 1:1 sides, 1.5' deep	1.75	0.91	2.57	None
E-1 Lower	Triangular, 1.5:1 sides, 1.5' deep	1.75	0.73	2.62	None
E-3	Trapezoidal, 2.5:1 left, 1:1 right, 0.5' bottom, 1.5' deep	4.80	0.84	3.41	None
E-4	Triangular, 2:1 left, 1:1 right, 1.2' deep	1.16	0.60	2.12	None
E-5	Triangular, 4:1 sides, 1.0' deep	4.98	0.76	3.40	None
W-1 Upper	Triangular, 2:1 sides, 2.0' deep	1.50	0.65	2.60	None
W-1 Lower	Triangular, 2:1 sides, 2.0' deep	2.44	0.83	2.54	None
W-2	Trapezoidal, 1:1 left, 2:1 right, 2.0' bottom, 1.0' deep	2.79	0.51	3.20	None
W-3	Triangular, 4.5:1 left, 1:1 right, 1.0' deep	1.81	0.74	2.54	None
Culverts					
C-1	Corrugated, 18" diameter	1.40	0.35	4.46	None
C-2	Corrugated, 18" diameter	0.63	0.24	3.45	None
C-3	Corrugated, 18" diameter	2.23	0.49	4.51	None
C-4	Corrugated, 18" diameter	1.17	0.44	2.76	None
C-5	Corrugated, 18" diameter	2.70	0.34	9.02	6
C-6	Corrugated, 18" diameter	4.80	0.83	4.83	None
C-7	Corrugated, 18" diameter	9.24	0.69	11.54	10

^(a) 25-yr, 6-hr event (see Appendix 7-7)

^(b) Based on minimum channel slope (see Appendix 7-8)

^(c) Based on maximum channel slope (see Appendix 7-8)

BRC Wellington LLC
Dry-Coal Cleaning Facility

Permit Application
~~August 2016~~June 2017

APPENDIX 1-6

April 2017 AVS Printout

Evaluation OFT

Entities: 7

249037 Rickmeier Advisors Inc - ()
---249036 Steve Rickmeier - (Owner)
---249036 Steve Rickmeier - (President)
---253716 Bowie Refined Coal LLC - (Subsidiary Company)
-----249036 Steve Rickmeier - (Member)
-----249036 Steve Rickmeier - (Shareholder)
249044 Gillian L Rickmeier Trust - ()
---249038 Rickmeier Partners LP - (Subsidiary Company)
-----249036 Steve Rickmeier - (Partner)
-----253716 Bowie Refined Coal LLC - (Subsidiary Company)
-----249036 Steve Rickmeier - (Member)
-----249036 Steve Rickmeier - (Shareholder)
249045 Mark G Rickmeier Trust - ()
---249038 Rickmeier Partners LP - (Subsidiary Company)
-----249036 Steve Rickmeier - (Partner)
-----253716 Bowie Refined Coal LLC - (Subsidiary Company)
-----249036 Steve Rickmeier - (Member)
-----249036 Steve Rickmeier - (Shareholder)
254465 BRC Wellington LLC - ()
---249036 Steve Rickmeier - (Member)

Narrative

Request Narrative

BRC Wellington LLC
| Dry-Coal Cleaning Facility

Permit Application
~~October 2013~~ June 2017

APPENDIX 5-1

Road Certification



June 14, 2017

Mr. Kyle Edwards
BRC Wellington, LLC
1865 West Ridge Road
Wellington, UT 84654

Subject: Wellington Dry-Coal Cleaning Facility
Road Certification

Dear Mr. Edwards:

I have examined the roadways associated with the Wellington Dry-Coal Cleaning Facility of BRC Wellington, LLC. These roadways consist of the following:

- Access road
- Loop road
- Scale road
- Scale bypass road
- Dump bin road
- Loading silo road

The locations of these roads are depicted on Plate 5-1 of the "*Permit Application for the Wellington Dry-Coal Cleaning Facility.*" A typical cross section of the roadways is provided in Figure 5-3 of the Application.

Based on my observations and measurements, the access road has a gradient of 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). It is my professional opinion that these grades are adequate for the practiced uses at the site. Road widths within the permit area generally vary from 10 to 40 feet, depending on the type of vehicle and purpose of the road. The road that accesses the site from Ridge Road is a wider exception due to the need to accommodate the wide turning radii of coal-haul trucks. Typical widths of individual roads within the permit area are noted in Table 1.

The access road is paved. The surface of all other roads within the permit area except the Loop road were constructed with 2-inch minus material that has been compacted in place. Over the years since construction, coal fines and local fine-grained, wind-blown soil has worked into this surface in several areas. Roadways that were surfaced with 2-inch minus material are subject to relatively heavy loads from coal-haul trucks. During several site visits over a period of many years, I have not observed any conditions in the heavy-load roadways that indicate failure or unsafe conditions. Therefore, based on this empirical evidence, it is my opinion that the foundations, surfaces, and other design features of these roadways are appropriate for their use.

The surface on the northern two-thirds of the Loop road also consists of 2-inch minus material that has been compacted in place. This portion of the Loop road is also occasionally subject to heavy loads. I have also not observed failure or safety concerns associated with the Loop road in the northern two-thirds of the site, indicating that the foundation, surface, and other design features of the Loop road in this area are appropriate for its use.

The location of the southern third of the Loop road is dynamic, changing as the footprint of the south coal stockpiles changes. Therefore, the southern third of the Loop road is not a designed road but rather a temporary trail that exists on crushed coal along the edges of the stockpiles used to access the opposite side of the stockpiles. This portion of the Loop road is used primarily by light trucks and front-end loaders. The surface of the Loop road in this area is maintained as needed to allow infrequent access around the stockpiles. Even so, I have not observed any conditions in the southern portion of the Loop road that indicate failure or unsafe conditions. Therefore, based on this empirical evidence, it is my opinion that the southern portion of the Loop road adequately serves its purpose.

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 bin road, as shown on Plate 5-1 from the Application. The locations of culverts and drainage ditches associated with the permit-area roads are also noted on Plate 5-1.

Based on my field observations and a review of calculations contained in the above-noted Application, it is 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 drainage structures and concur that their design is sufficient to safely convey the peak flow resulting from the 100-year 6-hour precipitation event.

It is further my opinion that the roadways, as constructed, provide adequate environmental protection and safety appropriate for the planned life and use of the roadways. 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.

Since the roadways associated with the BRC Wellington site are used to transport coal, they are all classified under R645-301-527.121 as primary roads. In accordance with R645-301-512.500, I hereby certify that the design and construction of these roads meet the requirements of R645-301-534.200 and R645-301-742.420. As such:

- In order to ensure environmental protection and safety appropriate for the planned duration and use of the site roads, the design and construction of the roads has incorporated appropriate limits for grades, width, and surface materials as evidenced by several years of usage without environmental or safety issues associated with the roads.
- In order to minimize erosion, the site roads are located on the most stable surface available and these roads do not ford streams. Furthermore, drainage systems associated with each road meet the requirements of R645-301-742.423.

Kyle Edwards
June 14, 2017
Page 3

Please contact me if you have any questions.

Sincerely,



Richard B. White, P.E.
Consulting Civil and Environmental Engineer

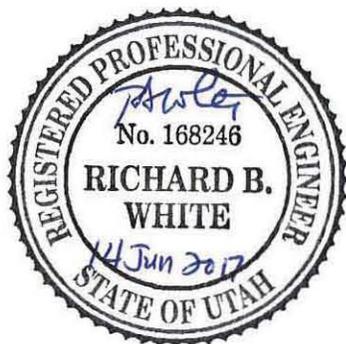


TABLE 1

Typical Widths of Roads Within the
BRC Wellington Permit Area

Road	Typical Width
Access road	150 ft at Ridge Road 20 ft at permit boundary
Loop road	15-25 ft (northern two-thirds) 10-12 ft (southern third)
Scale road	10-15 ft
Scale bypass road	10-12 ft
Dump bin road	18-20 ft
Loading silo road	10-15 ft

APPENDIX 8-1

Reclamation Bond Cost Estimate

**EarthFax Engineering Group, LLC
Reclamation Cost Estimate**

Project: BRC Wellington Reclamation Bond Estimate
 Project #: UC-1461-01
 Estimator: R.B. White
 Date: 15-Jun-17
 Costs: Means 2017 Heavy Construction Cost Data, bare costs, except as otherwise noted

Means No./Source	Description	Units	Est. Quan.	Unit Price	Adj. Price	Total Cost
Means pg 603	Price, Utah cost adjustment	-	-	-	85.0%	-
31 23 16.42 1650	Excavate residual coal from piles with FE loader	CY	141,000	\$1.13	\$0.96	\$ 135,431
31 23 16.42 011	Load residual coal onto trucks	CY	141,000	\$0.17	\$0.14	\$ 20,375
31 23 23.20 4030	Haul residual coal to Savage coal terminal*	CY	141,000	\$2.32	\$1.97	\$ 278,052
02 41 16.17 0440	Demolish concrete slab, 6" thick with rebar	SF	31,000	\$0.81	\$0.69	\$ 21,344
02 41 16.17 1140	Demolish footing, 2'x3' with rebar	LF	1,856	\$16.60	\$14.11	\$ 26,188
02 41 16.17 2500	Demolish concrete, 12" thick with rebar	SF	5,080	\$1.17	\$0.99	\$ 5,052
02 41 16.13 0500	Demolish small building, steel	CF	576	\$0.31	\$0.26	\$ 152
02 41 13.38 2700	Demolish water pipe, 4" diameter	LF	220	\$4.45	\$3.78	\$ 832
02 41 13.40 0160	Demolish 18" culvert (assume all steel CMP)	LF	255	\$2.84	\$2.41	\$ 616
02 41 13.38 1600	Remove electric conduit	LF	1,055	\$2.00	\$1.70	\$ 1,794
02 41 13.38 1600	Remove telephone condit	LF	62	\$2.00	\$1.70	\$ 105
G1030 805 1320	Trench for conduit removal (assumed 2' wide by 3' deep)	LF	1,592	\$4.08	\$3.47	\$ 5,521
02 41 16.17 4200	On-site disposal of debris	CY	1,320	\$9.15	\$7.78	\$ 10,266
G1030 125 1300	Cut and fill soil to final grade	CY	1,100	\$16.35	\$13.90	\$ 15,287
31 23 16.42 1650	Spread topsoil	CY	1,302	\$1.13	\$0.96	\$ 1,251
31 23 16.42 0260	Prepare/gouge topsoil	CY	1,302	\$1.76	\$1.42	\$ 1,849
32 92 19.14 5300	Apply seed mix	MSF	423	\$16.50	\$28.00	\$ 11,844

SUBTOTAL	\$ 535,957
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INDIRECT COSTS

Mob/Demob	10 %	\$ 53,596
Contingency	5 %	\$ 26,798
Engineering redesign	2.5 %	\$ 13,399
Main office expense	6.8 %	\$ 36,445
Project management fee	2.5 %	\$ 13,399

TOTAL ESTIMATED PRESENT WORTH COST	\$ 679,594
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Bond escalation rate (per DOGM) =	0.007	
Number of years to be escalated =	4 (To 2021)	
Escalation =		\$ 19,229

TOTAL ESCALATED RECLAMATION COST (2021 Dollars) =	\$ 698,823
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BOND AMOUNT (rounded to nearest \$1,000) =	\$ 699,000
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*Assumes 95,000 tons of residual coal with a unit weight of 50 lb/ft3 (1350 lb/ton) - see Standard Handbook for Civil Engineers, Fourth Edition (1996), Table 15.2(c), average of anthracite and bituminous piled coal. The owner of the Savage coal terminal has indicated that they will accept the residual coal at no cost.

- Notes:
- Adjusted unit price based on total Location Factor of 85.0 for Price, Utah (see Means, p. 603)
 - Steel demolition cost assumed to be paid for by the salvage value of the structures.

BRC Wellington LLC
| Dry-Coal Cleaning Facility

Permit Application
~~October 2013~~ June 2017

APPENDIX 8-2

Certificate of Insurance

